

DEN NORSKE NORDHAVS-EXPEDITION

1876—1878.

ZOOLOGI.

PYCNOGONIDEA.

VED

G. O. SARS.

MED 15 PLANCHER OG 1 KART.



CHRISTIANIA.
GRØNDAHL & SØNS BOGTRYKKERI.
1891.

I COMMISSION HOS H. ASCHERHOUG & CO.

THE NORWEGIAN NORTH-ATLANTIC EXPEDITION

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BY

G. O. SARS.

WITH 15 PLATES AND 1 MAP.



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Indledning.

Den eiendommelige Gruppe af Arthropoderne, som ialmindelighed gaar under Benævnelsen *Pycnogonider* eller Havspindler, har længe hørt til de mindst kjendte Former indenfor den nævnte store Dyrafdeling, og deres systematiske Stilling har derfor ogsaa lige til det sidste været meget tvivlsom. I den nyere Tid er imidlertid vort Kjendskab til disse Dyr bleven væsentlig udvidet, idet Gruppen er bleven gjort til Gjenstand for en meget indgaaende Behandling af forskjellige af vor Tids Forskere. Det er især 2 større Arbejder over disse Dyr, som her maa nævnes, nemlig Prof. A. Dohrn's Bearbejdelse af de i Golfen ved Neapel forekommende Former, og Dr. Hoek's Report over det rige under Challenger Expeditionen indsamlede Materiale. I begge disse betydelige Arbejder er der, foruden Beskrivelser af en hel Del nye Slægter og Arter, ogsaa leveret meget vigtige Bidrag til disse Dyrs anatomiske Bygning og Udviklingshistorie, ligesom ogsaa Forsøg til en præcisere Inddeling er bleven gjort. Angaaende Havspindlernes Forhold til andre Arthropoder, er begge disse Forskere enige i, at de ikke, som før ialmindelighed antaget, kan henføres til Arachnidernes Classe, ligesaa lidt som de kan inordnes under Krebsdyrene, men at de maa danne en egen distinct Gruppe (Classe) inden Arthropodernes vidtloftige Stamme. Dette er utvivlsomt rigtigt og vil vistnok blive havdet af alle senere Forskere, hvorved ogsaa mange Misforstaaelser ved Tydningen af de forskjellige Dele, der sammensætter Pycnogonidernes Legeme, vil blive undgaaet.

Det under Nordhavs Expeditionen indsamlede Materiale af Pycnogonider er meget betydeligt, og da de nordiske Former idethele maa siges endnu at være mindre vel kjendte, har jeg troet at burde levere udførlige Beskrivelser og Afbildninger af samtlige Arter. Foruden de under selve Expeditionen erholdte Arter er for Fuldstændigheds Skyld medtaget de af mig gennem en lang Række af Aar ved Norges Kyster observerede Former, hvortil endnu kommer nogle under Nordenskjöld's Expedition 1875 i det kariske Hav indsamlede Pycnogonider, som velvilligt har været mig tilsendt til Undersøgelse af Dr. A. Stuxberg, Direktor af Gotheborgs Museum. Det paa denne Maade tilveiebragte Materiale er saaledes ikke lidet omfattende og vil kunne give et temmelig fuldstændigt Overblik over Pycnogonidfaunaen i de nordiske og arktiske Have. Det vil

Den norske Nordhavsexpedition. G. O. Sars: Pycnogonidea.

Introductory.

The peculiar group of Arthropods generally passing under the name of *Pycnogonida*, or Sea-Spiders, have long been one of the least known forms in that large division of animals; and their systematic position has continued up to the present day very doubtful. Of late years, however, our acquaintance with these animals has been essentially extended, the group in question having had exhaustive treatment by several naturalists of repute. Two rather voluminous productions on Pycnogonids crave special notice here, viz., Professor A. Dohrn's elaborate investigation of the forms occurring in the Bay of Naples, and Dr. Hoek's Report on the rich material from the "Challenger" Expedition. In each of these important works, we have, besides descriptions of a number of new genera and species, most valuable contributions to the anatomical structure and development of the Pycnogonidea, along also with attempts in the way of a more precise classification. Concerning the relation of the sea-spiders to other Arthropods, both authors are agreed, that we cannot, as formerly for the most part assumed, refer these animals to the class Arachnida, or rather range them under the Crustacea, but that they must form a distinct group (class) within the extensive sub-kingdom of the Arthropoda. This view is unquestionably correct, and will doubtless be taken by all subsequent naturalists, which cannot fail moreover to obviate many misconceptions that tend to arise in determining the various parts composing the body of Pycnogonids.

The material embracing Pycnogonids from the Norwegian North-Atlantic Expedition proved very copious; and the Northern forms being on the whole as yet but little known, I have seen fit to furnish detailed descriptions and drawings of all the species. Exclusive of the forms met with on the Expedition, regard has been paid to those observed by the author during a long series of years on the coast of Norway, and also to a few Pycnogonids collected in the Kara Sea on Nordenskjöld's Expedition, 1875, kindly sent me for examination by Dr. A. Stuxberg, Director of the Gothenburg Museum. The material thus brought together is, we see, sufficiently comprehensive, affording as it does a good general view of the Pycnogonidian fauna in the Northern and Arctic Seas. Collation of Dohrn's memoir will show at a glance the character of that fauna

ved en Sammenligning med Dohrn's Værk strax falde i Øinene, at denne Fauna's Character er meget væsentlig forskjellig fra den i Middelhavet raadende. Navnlige er den store Artsrigdom inden *Nymphonidernes* Familie i hoi Grad characteristisk for de nordlige Have i Modsætning til Middelhavet, hvor hidtil kun en eneste herhen hørende Art er bleven observeret. Ogsaa er de i de nordlige Have forekommende Former idethele af betydelig større (tildels colossale) Dimensioner end de i Middelhavet forefundne, som i Sammenligning med hine er gjennemgaaende rene Dværgformer.

Ved den systematiske Inddeling af de nordiske Pycnogonider har jeg tildels fundet at burde tage Familiernes i en noget snævrere Begrænsning end af tidligere Forskere sædvanlig gjort, hvorved selvfølgelig Familiernes Antal er bleven noget forøget. Enkelte tidligere opstillede Slægter, som af senere Forskere igjen er inddragne, har jeg ligeledes fundet paany at maatte hævde, ligesom en Del nye Slægter er opstillede. Jeg anser det for meget sandsynligt, at man ved et fuldstændigere Kjendskab til de eksisterende Arter vil finde det nødvendigt at gaa endnu videre i denne Retning, og at ogsaa en høiere Inddeling af Familiernes i Ordener engang vil blive etableret, hvad der dog for Tiden vanskeligt lader sig gennemføre.

Angaaende Terminologien, saa hersker her, som ogsaa inden andre Grupper af Arthropoderne, stor Uoverensstemmelse mellem forskellige Autores. *Kröyer*, der i Lighed med *Milne-Edwards* var mest tilbøielig til at henregne Pycnogoniderne til Crustaceerne, benytter saaledes Termini hentede fra disse sidste Dyr (Mandibler, Maxiller, Rostrum), medens andre Forskere, der holdt paa Pycnogonidernes Affinitet med Arachniderne, anvender paa de samme Dele ganske andre Betegnelser, mere i Overensstemmelse med den for sidstnævnte Classe sædvanlig brugelige Terminologi. Navnlige vil man finde, at de forreste Par Lemmer figurerer hos de forskjellige Autores under de mest forskjelligartede Betegnelser (Mandibler, Antenner, Kindbakkeantenner, Pedipalpi, Kjævefodder etc.). Af de nyere Forfattere har *Hoek* i alt væsentligt henholdt sig til den tidligere mest brugelige Terminologi, medens *Dohrn* har for Lemmernes Vedkommende opgivet enhver særskilt Betegnelse, idet han blot beskriver dem efter deres Orden som No. I, II, III etc. Dette er vistnok en meget nem Maade at undgaa alle Vanskeligheder, men Methoden er neppe praktisk og vil derfor vistnok ikke blive adopteret af andre Forskere. En Terminologi faar man nok bekvemme sig til at anvende; men jeg tror, at man her gjør rigtigst i at vælge saavidt muligt indifferente Betegnelser, der ikke involverer nogen Homologisering med Lemmerne har andre Arthropoder. Nedenfor meddeles de af mig i nærværende Arbeide benyttede Termini, hvis nærmere Forklaring vil sees af hosstaaende Figur, forestillende en Nymphon-Art seet fra Rygsiden, med kun en af Fodderne tegnet.

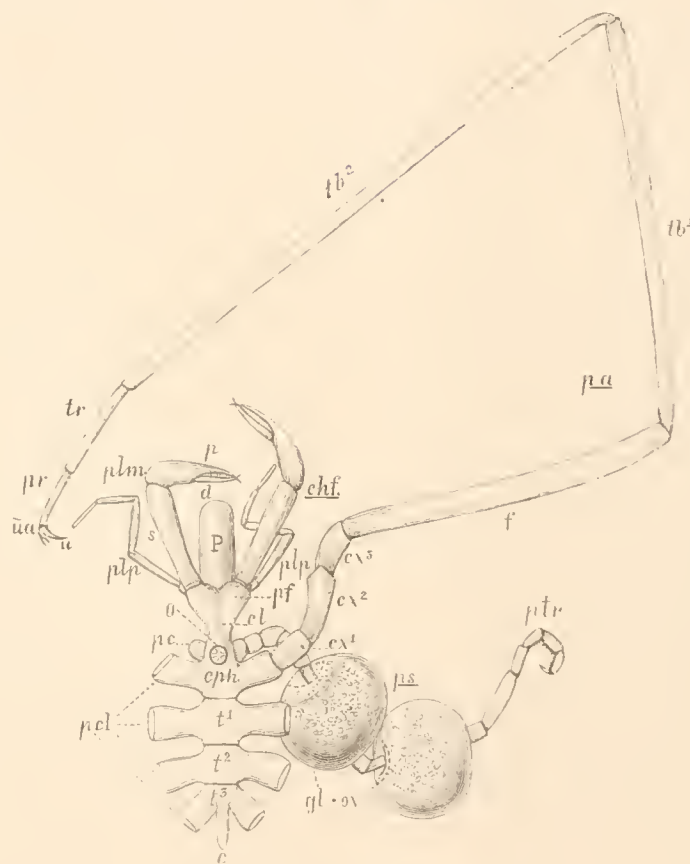
to be essentially different from that of the Mediterranean forms. In particular, the great number of species belonging to the family *Nymphonidae* is eminently characteristic of the Northern Seas as contrasted with the Mediterranean, where but a single species referable to that family has been observed. Moreover, the forms inhabiting the Northern Seas attain as a rule much larger dimensions (some are even gigantic) than those occurring in the Mediterranean, which, compared to the former, must be regarded as veritable dwarf-forms.

In working out the systematic classification of the Northern Pycnogonidea, the author has partly found reason to take the families in a somewhat more restricted sense than generally done by earlier naturalists, thus occasioning a slight augmentation in the number of families. A few formerly established genera, rejected by subsequent zoologists, he has also seen fit to maintain, and some new genera have likewise been instituted. I regard as highly probable, that a more intimate acquaintance with the existing species will of necessity lead still farther in the same direction, and also that a higher division of the families into orders must eventually be made, though at the time being such an innovation would most certainly prove difficult to carry out.

As regards the terminology, very considerable disagreement is found to prevail, alike in this group and in other divisions of the Arthropoda. *Kröyer*, who, in common with *Milne-Edwards*, felt most inclined to class the Pycnogonids with the Crustaceans, adopts terms taken from the latter animals (mandibles, maxillæ, rostrum), whilst other authors, that held to the affinity of the Pycnogonidea with the Arachnida, apply for the same parts totally different appellations, more in accordance with the terminology in general use for the latter class. In particular, it will be found that the foremost pair of limbs figure among the various authors under the most heterogeneous designations (mandibles, antennæ, maxillary palps, pedipalpi, maxillary feet, etc.). Of later authors, *Hoek* has kept in all essentials to the terminology most in use formerly, whereas *Dohrn*, as regards the limbs, has rejected every separate appellation, simply describing them in their natural order, as No. I, II, III, etc. This is certainly a very convenient way of getting over difficulties, but the method can hardly be termed practical, and therefore stands little chance of being adopted by other authors. A terminology of some kind we must submit to use; but in my judgment we should as far as possible make choice of indifferent terms that do not involve anything homologous with the limbs in other Arthropoda. Overleaf are given the terms employed in the present Memoir, the more precise signification of which will be seen from the accompanying figure, that represents a species of Nymphon, — dorsal aspect, — with only one of the legs fully drawn.

P. Snabelen (proboscis) eller Mundsegmentet.
 eph. Hovedsegmentet (segmentum cephalicum).
 pf. Pandedelen (pars frontalis).
 cl. Halsen (collum).
 o. Øiekunden (tuberculum oculiferum).
 pc. Halsfortsatser (processus colli), til Fæste for de
 falske Fodder.
 t¹—t³. 3 Kropssegmenter (segmenta trunci).
 c. Halsegmentet (segmentum caudale).
 pel. Legemets Sidefortsatser (processus laterales corporis).
 til Fæste for Gangfodderne.
 chf. Saxlemmerne (cheliferi).
 s. Skaftet (scapus).
 ch. Saxen (chela), eller Haanden.
 plm. Palmen (palma).
 p. den ubevægelige Finger (pollex).
 d. den bevægelige Finger (dactylus).

P. proboscis, or oral segment.
 eph. cephalic segment.
 pf. frontal part.
 cl. neck.
 o. oculiferous tubercle.
 pc. processes of the neck, for the insertion of the false
 legs.
 t¹—t³. 3 segments of trunk.
 c. caudal segment.
 pel. lateral processes of the body, for the insertion of the
 ambulatory legs.
 chf. cheliferi.
 s. scape.
 ch. chela, or hand.
 plm. palm.
 p. immovable finger.
 d. movable finger.



Nymphon Strömii, Kröyer. ♀.

plp. Følerne (palpi).
 ps. De falske Fodder (pedes spurii).
 ptr. Endedelen (pars terminalis).
 gl.ov. Æggekugler (globæ ovorum).
 pa. Gangfod (pes ambulatorius).
 ex¹—ex³. 3 Hofteled (articuli coxales).
 f. Laarled (articulus femoralis).
 tb¹—tb². 2 Lægled (articuli tibiales).
 tr. Tarsalled (tarsus).
 pr. Fodled (propodus).
 u. Endeklo (unguis terminalis).
 ua. Bikloer (unguiculi auxiliarii).

plp. palpi.
 ps. false legs.
 ptr. terminal part.
 gl.ov. egg-globes.
 pa. ambulatory leg.
 ex¹—ex³. 3 coxal joints.
 f. femoral joint.
 tb¹—tb². 2 tibial joints.
 tr. tarsus.
 pr. propodus
 u. terminal claw
 ua. auxiliary claws.

De nedenfor opførte nye Arter har af mig tidligere været kortelig characteriserede i 3 foreløbige, i Archiv f. Mathem. og Naturvidenskab indførte Afhandlinger. Nogle af disse her første Gang omtalte Arter er tildels af senere Forskere bleven gjenfundne og noiere beskrevne og afbildede, dog ikke saa udførligt, at jeg finder en fornyet Beskrivelse nødvendig.

De af ældre Autores givne Beskrivelser og Figurer af Pycnogonider er ialmindelighed yderst ufuldkomne, og det er derfor ogsaa forbunden med særdeles stor Vanskelighed at identificere de af dem opstillede Arter, ja i enkelte Tilfælde endog ligefrem ugjort. Dog tror jeg, at adskillige af de nyere Forskere har her ikke gjort sig den tilstrækkelige Umage og forkastet som ubrugelige et større Antal af ældre Beskrivelser end strengt taget nødvendigt. Navnlig synes dette at have været Tilfældet med Dohrn, hvad der klarlig nok fremgaar af det eiendommelige Factum, at alle de af ham opførte Arter fra Golfen ved Neapel beskrives som nye, alene med Undtagelse af en eneste, *Rhynchothorax mediterraneus*, og det uagtet ikke faa middelhavske Former, tidligere har været beskrevne, enkelte til og med fra samme Lokalitet. At flere af de i Dohrn's Værk opførte nye Arter i Virkeligheden er identiske med tidligere beskrevne, anser jeg for ganske utvivlsomt, og jeg har ogsaa Grund til at antage, at enkelte af de nye Slægter vil vise sig uholdbare som saadanne. For de nordiske Arters Vedkommende har jeg saa samvittighedsfuldt som muligt confereret med ældre Beskrivelser og har ogsaa seet mig istand til at hævde i sin Ret igjen enkelte forglemte eller negligerede, af tidligere Forskere (f. Ex. Goodsir) opstillede Arter.

Den i nærværende Værk givne Fremstilling er af rent descriptiv Art og har væsentlig kun til Formaal, ved en indgaaende sammenlignende Undersøgelse af de mere almindelige Bygningsforhold at faa noiere udbredt de til den nordiske Pycnogonidfauna hørende Slægter og Arter. Hvad den finere anatomiske Bygning og Udviklingshistorien angaar, saa finder jeg, at denne vigtige Del af Pycnogonidernes Naturhistorie er saa udtømmende behandlet i enkelte af de nyere Værker, navnlig af Dohrn og Hoek, at jeg i denne Henseende kun har lidet eller intet nyt at tilføie.

The new species given below, the author has before briefly characterized in 3 preliminary Reports in Archiv for Mathematik og Naturvidenskab. Some of these species, mentioned here for the first time, have been in part met with by subsequent naturalists, and described and figured in detail, though not so fully as, in my opinion, to render a new description superfluous.

The descriptions and figures of Pycnogonids by earlier authors are as a rule exceedingly defective; and hence we find it a matter of very great difficulty to identify the species they institute, nay in some cases actually impossible. Meanwhile, I certainly think that some of the recent authors fail to show sufficient discretion, rejecting as unserviceable a greater number of descriptions than strictly requisite. This would more especially seem to be the case with Dohrn, which indeed appears from the singular fact, that all the species he mentions from the Bay of Naples are described as new, save only *Rhynchothorax mediterraneus*, and yet although not a few Mediterranean forms had been previously described, nay some from even the same locality. That several of the new species mentioned in Dohrn's work are really identical with species formerly established, I regard as unquestionable; and I have reason to believe that several of the new genera will prove untenable as such. Regarding the Northern species, I have collated with the greatest possible care earlier descriptions and feel warranted in re-establishing divers wholly forgotten or ignored species instituted by earlier naturalists (e. g. Goodsir).

The exposition given in this work is of a purely descriptive character, and its chief aim is merely, by a thorough comparative examination of the more general structural details, to attain a more precise determination of the genera and species belonging to the Northern Pycnogonidian fauna. As regards the more delicate anatomical structure and the development, I find this important part of the natural history of the Pycnogonids so exhaustively treated of in some of the more recently published works, especially those of Dohrn and Hoek, that I have but little if anything to add in this respect.

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Beskrivelse af Slægter og Arter.

Fam. 1. Pycnogonidæ.

Familiecharacter. Saxlemmer og Følere manglende hos begge Kjon i fuldt udvoxet Tilstand. Falske Fodder kun tilstede hos Hannen.

Bemærkninger. Til denne Familie regner jeg kun 2 bekjendte Slægter, nemlig *Pycnogonum* og *Phoxichilus*, der begge stemmer overens i ovenstaaende Characterer, om de end i andre Henseender viser ikke ubetydelige Forskjelligheder. Slægterne *Hannonia* Hoek og *Rhynchothorax* Costa, som af andre Forskere henregnes til denne Familie, tror jeg rettest bør indordnes under 2 andre Familier, den første under Familien *Pallenidæ*, den sidste under Familien *Pasithoidæ*.

Gen. **Pycnogonum.** Brünnich (1764).

Slægtscharacter. Legemet undersætsigt bygget, med haarde, knudrede Integumenter, kun svagt haarbesat. Snabelen mere eller mindre lige fortilstrakt, glat. Oieknuden stump. De falske Fodder meget smaa, 9-leddede, med simple Torner og endende med en kraftig Klo. Gangfodderne forholdsvis korte og robuste, med Tarsalledet meget kort, Endekloen kraftigt udviklet, som oftest uden Bikloer. Kun et enkelt Par af Kjonsaabninger hos begge Kjon, beliggende paa sidste Fodpars 2det Høfteled. Æggemassen enkelt, kageformig.

Bemærkninger. Af denne Slægt, den først beskrevne inden nærværende Dyrklasse, kjendte man indtil for nyligt kun en eneste Art, *P. littorale* Strom. I Dohrn's Værk over de i Golfen ved Neapel forekommende Pycno-

Description of Genera and Species.

Fam. 1. Pycnogonidæ.

Family Character. — Cheliferi and palpi wanting in adults of both sexes. False legs present only in male.

Remarks. — As of this family I class but 2 known genera, viz., *Pycnogonum* and *Phoxichilus*, both agreeing in the fore-mentioned characters, though in other respects exhibiting by no means inconsiderable points of difference. The genera *Hannonia* Hoek and *Rhynchothorax* Costa, which other naturalists refer to this family, should, in my judgment, rather be placed under 2 different families, the former under the family *Pallenidæ* and the latter under the family *Pasithoidæ*.

Gen. **Pycnogonum.** Brünnich (1764).

Generic Character. — Body squareset, having hard, rough integuments, sparingly furnished with hair. Proboscis extending more or less straight forwards, smooth. Oculiferous tubercle obtuse. The false legs very small, nine-jointed, with simple spines, and terminating in a powerful claw. Ambulatory legs comparatively short and robust, with the tarsus very short, terminal claw powerfully developed, as a rule without auxiliary claws. A single pair only of generative openings in either sex, on the 2nd coxal joint of the last pair of legs. Egg-mass simple, cake-shaped.

Remarks. — Of this genus, the one first described belonging to the present class of animals, was known till of late but a single species, *P. littorale* Strom. In Dohrn's work however on the Pycnogonidea (Pantopoda) occurring

gonidea (Pantopoda) beskrives imidlertid 2 Arter, *P. nodosum* og *P. pusillum*, der begge er vel adskilte fra den typiske Art. Hertil kommer endnu en ny nordisk Art, *P. crassirostre*, som i det følgende nærmere skal beskrives. Arterne af denne Slægt er let kjendelige ved deres ualmindelig undersætsige Kropform, korte og kraftige Gangfødder, de ualmindelig haarde og kuddrede Integumenter og den enkle, kageformige ydre Ægmasse. De synes delvis at føre et halvt parasitisk Liv, idet de ofte er fundne fastklamrede til Actinier og andre lavere Sodyr.

I. *Pycnogonum littorale* (Strom).

(Pl. I, fig. 1, a—i).

Phallangium littorale. Strom, Physisk og oekonomisk Beskrivelse over Fogderiet Søndmor, p. 209, Tab. I, fig. 17.

Pycnogonum balænarum, Linné, Syst. Nat. ed. XII, I, p. 1028.

Pycnogonum littorale, O. Fabr. Fauna Gronlandica, p. 233.
" " O. F. Müller, Zool. Dan. III, p. 68, Tab. CXIX, fig. 10—12.

Pycnogonum balænarum, Latreille, Hist. nat. des Crustacés et des Insectes, Tome VII, p. 332.

" " Goodsir, Ann. Nat. Hist. Vol. 14, p. 1, Pl. 1, fig. 1—2.

Pycnogonum littorale, Milne Edwards, Hist. nat. des Crustacés, Vol. III, p. 537, Pl. 41, fig. 6.

" " Johnston, Mag. Zool. and Botany, Vol. I, p. 376, Pl. XIII, figs. 1—3.

" " Kroyer, Bidrag til Kundskab om Pycnogoniderne. Nat. Tidsskrift, ny Række, I p. 126.

" " Gaimard's Voyage en Scandinavie, Crust. Pl. 38, fig. 4, a—e.

Pycnogonum pelagicum, Stimpson, Invertebrata of Grand Manan, p. 37.

Pycnogonum littorale, Jarzynsky, Præmissus catalogus Pycnogonidarum inventarum in mari glaciali ad oras Lapponiæ Rossicæ et in mari albo.

" " Moebius, Jahresb. der Commission zur Unters. der Deutschen Meere, I, p. 153.

" " Hoek, Ueber Pycnogoniden. Nederl. Archiv f. Zool., Bd. III, p. 236, Tab. XV, fig. 1—3.

" " Wilson, Synopsis of the Pycnogonida of New England. (Transact. Conn. Acad. of Arts & Sciences, Vol. V) p. 4.

" " Idem, Report on the Pycnogonida of New England and adjacent waters. United States Commission of Fish and Fisheries. Report f. 1878, p. 469, Pl. 1, fig. 1—3.

" " Hoek, Report on the Pycnogonida of the Challenger Exped. Appendix I. Pycnogonida of the Cruise of the Knight Errant, p. 99.

in the Bay of Naples, are described 2 species, *P. nodosum* and *P. pusillum*, both quite distinct from the typical species. Besides these, there is a new Northern species, *P. crassirostre*, to be described farther on. The species of this genus are easily recognizable by their remarkably thickset form of body, short and powerful ambulatory legs, the hard and rugged integuments, and the simple, cake-shaped outer egg-mass. They would seem in great part to lead a parasitical life, being often found firmly clasped to Actinians and other low-organized marine animals.

I. *Pycnogonum littorale* (Strom).

(Pl. I, fig. 1, a—i).

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Pycnogonum littorale, Idem. Nouvelles études sur les Pycnogonides, p. 520.

" " Hansen, „Zoologia Danica“ Spindeldyr, Tab. VII, fig. 23.

" " Hansen, Fortegnelse over de hidtil i de Danske Have fundne Pycnogonider. Nat. Tidsskr. 3 Række, B. 14, p. 652.

" " G. O. Sars, Pycnogonidea borealia & arctica, No 1.

Artscharacter. Legemet temmelig bredt, noget nedtrykt. Paa Rygsiden af hvert Kropssegment et mere eller mindre høit, koniskt Fremspring; mellem det forreste Fremspring og Øieknuden et mindre saadant. Legemets Sidefortsætter brede, næsten sammenstødende, hver oventil ved Enden forsynet med en stump Knude. Øieknuden afrundet, med forholdsvis meget smaa og vidt adskilte Corneæ. Snabelen omtrent af Legemets halve Længde, stærkt afsmalnende mod Enden, med det ydre Parti smalt cylindrisk. Halesegmentet spadeformigt udvidet mod Enden, Spidsen afkuttet. Gangfodderne kortere end Legemet, særdeles kraftigt byggede, med ru, kornet Hud; Laarledet og 1ste Lægled størst, omtrent af ens Længde, hvert ved Enden oventil gaaende ud i 2 stumpe Fremspring; Tarsalleddet særdeles kort, trekantet, bredere end Fodledet, oventil næsten skjult af foregaaende Led; Fodledet noget krummet, neppe afsmalnende mod Enden; Endekloen særdeles kraftig, mere end halvt saa lang som Fodledet, uden Bikloer. De falske Fodder hos Hannen cylindriske, med de 4 ydre Led større end de 4 indre. Endekloen kraftigt udviklet og krummet i Enden. Farven gulhvid eller brun. Hunnens sædvanlige Længde 15^{mm}; Spandvidde 26^{mm}; Hannen noget mindre.

Bemærkninger. Som det vil sees af Synonymien, har denne karakteristiske og let kjendelige Form været observeret og omtalt af saagodt som alle de Naturforskere, der overhovedet har beskæftiget sig med disse Dyr. Men den har, paa Grund af en vis Lighed i den ydre Habitus, af Linné og flere senere Forskere været forvekslet med de forøvrigt vidt forskellige, til Amphipodernes Orden hørende Hvallus (Cyamus), og det er herfra at den Linnéiske Artsbenævnelse „bakenarum“ skriver sig. Arten er egentlig først bleven noiere undersøgt og beskrevet af den bekjendte danske Naturforsker Krøyer, hvem vi overhovedet skylder den første ordentlige Bearbejdelse af Gruppen. I den nyere Tid er denne Art bleven gjort til Gjenstand for en fornyet Undersøgelse af Wilson og Hoek, og navnlig har den sidste Forsker paavist flere Eiendommeligheder ved dens indre Organisation.

Beskrivelse. Legemets Længde er hos fuldt udvoxede Hunner, regnet fra Spidsen af Snabelen til Enden af Halesegmentet, sædvanligvis omkring 15^{mm}, med en Spandvidde mellem Spidsen af Gangfodderne af circa 26^{mm}. Hannerne er ialmindelighed noget mindre end Hunnerne, men forøvrigt af et meget lignende Udseende.

Pycnogonum littorale, Idem. Nouvelles études sur les Pycnogonides, p. 520.

" " Hansen, „Zoologia Danica“ Spindeldyr, Tab. VII, fig. 23.

" " Hansen, Fortegnelse over de hidtil i de danske Have fundne Pycnogonider. Nat. Tidsskr. 3 Række, Bd. 14, p. 652.

" " G. O. Sars, Pycnogonidea borealia & arctica, No 1.

Specific Character. — Body rather broad and somewhat depressed. On the dorsal side of each segment of the body a more or less elevated conical projection; between the foremost projection and the oculiferous tubercle one of smaller size. The lateral processes of the body broad, well-nigh contiguous, each provided above with an obtuse knob. The oculiferous tubercle rounded, with comparatively very small and widely distant corneæ. The proboscis about half the length of the body, rapidly tapering towards the extremity, and with the outer part slender cylindrical. The caudal segment spatulate-expanded towards the extremity, tip truncate. Ambulatory legs shorter than body, exceedingly powerful, with a rough, granulous skin; femoral joint and 1st tibial joint largest, about equal in length, each with the extremity above taking the form of 2 obtuse projections; tarsus remarkably short, triangular, broader than propodus, above almost concealed by the preceding joints; propodus slightly curved, scarcely at all tapering towards the extremity; terminal claw uncommonly powerful, more than half as long as propodus, without auxiliary claw. The false legs in the male cylindric, having the 4 outer joints larger than the 4 inner, terminal claw powerfully developed and curving towards the extremity. Colour yellowish-white or brown. Ordinary length of female 15^{mm}; extent 26^{mm}; male a trifle smaller.

Remarks. — As will appear from the synonymy, this characteristic and easily recognisable form has been observed and mentioned by well-nigh all naturalists that have had their attention anyway drawn to these animals. But from a certain resemblance in the outer habitus, it has by Linné and several later authors been confounded with the whale-louse (Cyamus), belonging to the order Amphipoda; hence the Linnean specific appellation „bakenarum.“ The species was first carefully examined and described by the well-known Danish naturalist Krøyer, to whom indeed we are also indebted for the first systematic working-up of the group. Of late this species has been made the subject of renewed investigation, by Wilson and Hoek, the latter naturalist more especially having pointed out divers peculiarities distinguishing its inner organization.

Description. — The length of the body in full-grown females, taken from the tip of the proboscis to the extremity of the caudal segment, measures as a rule close upon 15^{mm}, the extent between the points of the ambulatory legs reaching 26^{mm}. The males are generally somewhat smaller than the females, but for the rest of very similar appearance.

Legemet er (se Pl. I. fig. 1) af ualmindelig undersætsig og sammentrængt Form, samt ved vel markerede Sutureer delt i 6 paa hinanden følgende Afsnit eller Segmenter, hvoraf det forreste forestiller Snabelen, det bagerste Halsesegmentet. Ethvert af de 4 midterste Segmenter udvider sig til Siderne til en kort og tyk, i Enden afkuttet Fortsats, hvortil Gangfodderne er fæstede. Disse laterale Fortsatser er tæt sammentrængte og kun skilte ved yderst smale, spaltformige Mellemrum, hvorfor Legemets Midtparti antager en temmelig bred, oval, noget nedtrykt Form. Det bagerste Par af Sidefortsatserne er betydelig kortere end de øvrige og kun skilte bagtil ved et smalt Indsnit, fra hvis Bund Halsesegmentet udgaar. Det forreste af de egentlige Kropssegmenter, det saakaldte Hovedsegment, der egentlig maa opfattes som fremkommet ved en Sammensmeltning af flere Segmenter, er som sædvanlig det største og omtrent dobbelt saa bredt som langt. Dog er det forreste Parti, eller Pandedelen, her langt fra saa udviklet som hos de fleste øvrige Pycnogonideer og uden nogen egentlig Hals. Det viser i Enden en kraveformig Fortykkelse, der ligesom omfatter Roden af Snabelen (se ogsaa Fig. 1 a og 1 f), og har oventil, i nogen Afstand fra Forkanten en temmelig stærkt fremspringende, men i Enden stumpt afrundet Knude (Oieknuden). Paa den øvre Flade af denne Knude sees de 4 lindseformige Corneæ, der med sit underliggende Pigment fremstiller Dyrets Synsorganer. Disse Corneæ er hos nærværende Art meget smaa og vidt adskilte, samt ordnede 2 og 2 paa hver Side af Midtlinien (se Fig. 1 b). Bag Oieknuden findes paa Legemets Rygside langs Midtlinien en Række af 5 mere eller mindre høje, stumpt koniske Fremspring (se Fig. 1 a), hvoraf de 2 tilhører Hovedsegmentet, ethvert af de øvrige et særskilt Segment; de 3 midterste af disse Fremspring er altid de største. Desuden findes ved Enden af Legemets Sidefortsatser, ligeledes paa Rygsiden, en mere eller mindre tydelig stump Knude. Halsesegmentet (se Fig. 1 e) er horizontalt stillet og næsten af spadedannet Form, stærkt indknebet ved Basis og successivt udvidet mod Enden, der er næsten tvært afkuttet eller med en neppe mærkelig Vinkel i Midten; dets Længde er omtrent lig de 2 foregaaende Segmenter tilsammen.

Snabelen (se Fig. 1, 1 a og 1 f) udgaar i horizontal Retning fra Enden af Hovedsegmentet, dog saaledes, at dens Endeparti er svagt nedboiet (se Fig. 1 a). Den er omtrent halvt saa lang som det øvrige Legeme og ved Basis neppe meget smalere end den forreste Del af Hovedsegmentet. Af Form er den udpræget konisk og temmelig stærkt afsmalnende mod Enden, med det ydre Parti smalt indtrukket og af cylindrisk Form. Ovenfra eller nedenfra seet viser Snabelens Sidecontourer en svag dobbelt Indbøgtning, som ogsaa er bemærket af Wilson. Paa Spidsen af Snabelen ligger Mundaabningen (se Fig. 1 f), som har den sædvanlige trekantede Form, men mangler tydeligt udviklede Læbeplader.

The body (see Pl. I. fig. 1) is remarkably thickset and compact in form, and divided by well-marked sutures into 6 consecutive parts, or segments, the foremost of which represents the proboscis, the hindmost the caudal segment. Each of the 4 median segments expand at the sides, forming a short and thick truncate process, to which the ambulatory legs are affixed. These lateral processes lie crowded together, with but exceedingly narrow, fissure-like intervals between; and hence the medial part of the body assumes a rather broad, oval, somewhat depressed form. The posterior pair of lateral processes are considerably shorter than the rest, and separated behind by only a narrow incision, from the bottom of which issues the caudal segment. The most anterior of the true segments of the body, the so-called cephalic segment, which, strictly, must be regarded as a fusion together, so to speak, of several segments, is as usual the largest, and about twice as broad as long. Meanwhile the foremost or frontal part is in this animal far from being so developed as in most other Pycnogonids, and is also without any neck proper. It exhibits at the extremity a collar-shaped inspissation, encompassing, as it were, the base of the proboscis (see too fig. 1 a and fig. 1 f), and having above, at some distance from the front margin, a rather abruptly projecting, but at the extremity rounded knob (the oculiferous tubercle). On the upper surface of this protuberance are seen the 4 lenticular corneæ, which, along with the underlying pigment, constitute the visual organs of the animal. In the present species, these corneæ are exceedingly small and wide apart and arranged, 2 and 2 together, on each side of the medial line (see fig. 1 b). Behind the oculiferous tubercle, occurs on the dorsal side of the body, along the medial line, a series of 5 more or less elevated, obtuse conical projections (see fig. 1 a), 2 of which belong to the cephalic segment, each of the others to a separate segment; the 3 middlemost of these projections are invariably the largest. Moreover, at the extremity of the lateral processes of the body, likewise on the dorsal side, we observe a more or less distinct obtuse protuberance. The caudal segment (see fig. 1 e), placed horizontally, is almost spatulate in form, very much constricted at the base, and expands successively towards the extremity, which is nearly truncate or with a well-nigh imperceptible angle in the middle; its length about equals that of the 2 preceding segments taken together.

The proboscis (see fig. 1, 1 a and 1 f) issues, with a horizontal direction, from the extremity of the cephalic segment, though in such manner as to give its terminal part a slight downward bend (see fig. 1 a). It measures about half the length of the rest of the body, and is at the base very little if at all slenderer than the foremost part of the cephalic segment. It has a marked conical form and tapers rather abruptly towards the extremity, with the outer portion slenderly produced and cylindrical in form. Viewed from above or from below, the lateral contours of the proboscis exhibit a faint twofold curvature, also noticed by Wilson. At the extremity of the proboscis lies the buccal orifice (see fig. 1 f), which has the

Af Lemmer findes hos Hunnen kun de 4 Par Gangfodder. Hertil kommer inidlertid hos Hannen et 5te Par, fra Bugsiden af Hovedsegmentet udgaaende Lemmer, de saakaldte falske Fodder (se Fig. 1 f). Derimod er der hos fuldt udviklede Dyr intetstomhelst Spor hverken af Saxlemmer eller Folere at opdage.

Gangfodderne (Fig. 1 c) er af temmelig plump og kraftig Bygning, noget kortere end Legemet og bestaaende af det saedvanlige Antal (8) Led. Af de 3 Hofteled er det 1ste størst og temmelig bredt, især paa sidste Fodpar (se Fig. 1), hvor det ligger tæt ind mod Halesegmentet, der herved viser sig ligesom indkilet mellem Basis af dette Fodpar. Laarledet er omtrent saa langt som de 2 sidste Hofteled tilsammen og af en noget uregelmæssig Form, med den indre Kant vinkelformigt udbuet paa Midten og den ydre eller øvre Kant gaaende ud ved Enden af Ledet i 2 jevnstillede, mere eller mindre tydelige koniske Fremspring. 1ste Lægled er lidt kortere end Laarledet, stærkt indknebet ved Roden og gaar ved Enden paa den øvre Side ud i 2 lignende, men noget mindre Fremspring. 2det Lægled er betydelig mindre, noget skraat afskaaret i Enden og viser Antydning til lignende Fremspring som paa de 2 foregaaende Led. Tarsalledet (se ogsaa Fig. 1 d) er meget kort, af trekantet Form og paa Ydersiden næsten ganske dækket af foregaaende Led; dets indre Kant er buetformigt boiet og, ligesom en Del af foregaaende Leds Inderkant, tæt besat med korte, tornformige Børster. Fodledet er mere end 3 Gange længere end Tarsalledet, men betydelig smalere, temmelig stærkt krummet og overalt omtrent af ens Brede. Inderkanten er noget concav og tæt besat med lignende korte Børster som paa Tarsalledet og ender med en liden smalt afrundet Lap. Endekloen er særdeles kraftig, mere end halvt saa lang som Fodledet og af hornbrun, ofte næsten sort Farve. Den er i sit ydre Parti jævnt krummet og ender med en sylskarp Spids. Af Bikløer er der ikke det mindste Spor at opdage.

De falske Fodder findes, som anført, alene hos Hannerne, og deres Function synes her udelukkende kun at være den at fastholde den ydre Ægmasse. De er (se Fig. 1 f) fæstede til hver Side under den forreste Del af Hovedsegmentet til et lidet afrundet Fremspring, og er i Sammenligning med samme hos andre Pycnogonideer meget smaa og svage, idet de knapt opnaar $\frac{1}{4}$ af Legemets Længde. Ved noiere Undersøgelse (Fig. 1 g) viser de sig at bestaa af det samme Antal Led som Gangfodderne og ender som disse med en kraftig Klo; men Længdeforholdet mellem Leddene er meget forskjelligt. De 4 første Led er forholdsvis meget smaa og næsten af ens Længde, hvorefter de følgende 4 er noget større, navnlig 5te og 6te. Langs den indre Kant af Leddene bemærkes nogle meget smaa og uregelmæssigt fordelte Tørner af ganske simpel Form (Fig. 1 h). Endekloen er omtrent saa lang som det

usual triangular form, though wanting distinctly developed lip-plates.

Of limbs, occur in the female only the 4 pairs of ambulatory legs. The male however is furnished with a 5th pair, the so-called false legs (see fig. 1 f), issuing from the ventral side of the cephalic segment. On the other hand, in fully developed animals no trace can be detected of either cheliferi or palps.

The ambulatory legs (fig. 1 c) are rather clumsy and powerful in structure, somewhat shorter than the body, and composed of the usual number (8) of joints. Of the 3 coxal joints, the first is the largest, and rather broad, more especially on the last pair of legs (see fig. 1), where it lies close up to the caudal segment, which has thus the appearance of being wedged in between the base of this pair of legs. The femoral joint is about as long as the 2 last coxal joints taken together and of a somewhat irregular form, with the inner margin bent out angularly in the middle and the outer or upper margin running at the extremity of the joint into 2 parallel, more or less distinctly conic projections. The 1st tibial joint is a trifle shorter than the femoral, very considerably restricted at the base, and divides at the extremity on the upper side into 2 similar, but somewhat smaller projections. The 2nd tibial joint is a good deal smaller, cut off somewhat obliquely at the extremity, and indicates the occurrence of similar projections, as in the 2 preceding joints. The tarsus (see fig. 1 d) is very short, triangular in form, and on the outer side well-nigh wholly covered by the preceding joint; its inner margin is arched and, as with part of the inner margin of preceding joint, densely beset with short spiciform bristles. The propodus has more than 3 times the length of the tarsus, but is considerably narrower, very much curved, and everywhere of well-nigh the same breadth. The inner margin is a little concave, densely beset with short bristles similar to those on the tarsus, and terminates in a small, narrowly rounded lobe. The terminal claw is remarkably powerful, more than half as long as the tarsus, and of a horny brown, often well-nigh black colour. It has the outer part uniformly curved and terminates in a sharp point. Of auxiliary claws not a trace can be detected.

The false feet occur, as stated above, in the males only; and their function would seem to be exclusively that, of grasping the outer egg-mass. They are affixed (see fig. 1 f) on either side, under the foremost part of the cephalic segment, to a small rounded projection, and are, as compared with those limbs in other Pycnogonids, very small and feeble, attaining scarcely one-fourth of the length of the body. On closer examination (fig. 1 g), they are found to have the same number of joints as the ambulatory legs, and, like those limbs, they terminate in a powerful claw; but as to length, the proportion between the joints is rather different. The 4 first joints are comparatively very small and almost equal in length, whereas the following 4 are somewhat larger, in particular the 5th and 6th. Along the inner margin of the joints extend a few very small and irregularly distributed spines of quite a simple

foregaaende Led, og som paa Gangfodderne stærkt chitiniseret, med det ydre Parti krummet og endende i en sylskarp Spids.

Den ydre Ægmasse (Fig. 1 i), der her som hos alle andre Pycnogonideer kun findes hos Hammerne, er enkelt og kageformig, af uregelmæssig afrundet Form og dækker Størsteparten af Dyrets Bugside. De enkelte Æg er overordentlig smaa og talrige, omsluttede af en fælles meget tynd og gjennemsigtig Membran.

Alle Dyrets Integumenter er meget haarde og tykke, med en noget ru Overflade, bevirket af talrige smaa knudeformige Fremspring. Hist og her findes, navnlig paa Lemmerne meget korte og spredte Haar, der dog kun ved stærk Forstørrelse lader sig paavise.

Farven er noget varierende fra lyst hvidgul indtil mørkt brunlig eller rustfarvet.

Forekomst og Levevis. Ved Norges Kyster forekommer denne Art meget almindelig ligesaa fra Christianiafjorden til Vadsø, hyppigst ganske nær Stranden paa ringe Dyb, men i enkelte Tilfælde ogsaa paa meget større Dybder, indtil 150 Favne. Ved Lofoten og Finmarken har jeg taget den ikke almindelig i Fjæren under Stene.

I sine Bevægelser er den overordentlig langsom og træg, endog i højere Grad end nogen anden mig bekendt Pycnogonide. Som oftest ser man den næsten ubevægelig fastklamret til en eller anden Gjenstand, kun af og til visende en svag Strækning og Boining af en eller flere af Gangfodderne. Snablen synes dog at kunne bevæges temmelig frit og paa to forskellige Maader, idet den dels kan bøies i forskellige Retninger i Forhold til Hovedsegmentet, dels til en vis Grad inddrages i eller udskydes fra dette. Som ovenfor antydnet, er der Grund til at antage, at Dyret idetmindste under visse Omstændigheder fører et Slags parasitisk Liv. Det er nemlig meget almindeligt, at man finder denne Form fastklamret til de store paa grundt Vand levende Actinier, f. Ex. *Tealia digitata* og *crassicornis*. Hvorvidt det er det af disse Dyrs Legeme afsondrede Slim eller de forskellige fremmede, til Actiniens Legeme klæbende Partikler, der tjener den til Næring, er imidlertid endnu ikke med Sikkerhed godtgjort.

Udbredning. Arten synes at have en særdeles vid geographisk Udbredning. Dog er det muligt, at man i enkelte Tilfælde har forvekslet andre nærstaaende Arter med denne Form. Philippi's Angivelse af dens Forekomst i Middelhavet, ved Neapel, anser jeg saaledes for meget tvivlsom, da den ikke senere af Dohrn er paavist her, men vel et Par andre Arter af Slægten. Ligeledes finder jeg, at Artens Forekomst ved Chili (ifølge Nicolet) og ved Japan (ifølge Slater) i høj Grad tiltrænger Bekræftelse. Efter min Formening er den en væsentlig kun for de nordlige Have karakteristisk Form, hvad der ogsaa synes at bekræftes deraf, at den ved vore nordlige Kyster ialmindelighed opnaar en kraftigere Udvikling og betydeligere Størrelse end længere sydpaa. Foruden ved Norge kjendes den

form (fig. 1 b). The terminal claw is about as long as the preceding joint, and, like the ambulatory legs, highly chitinized, with the outer part curved and terminating in a most acute point.

The outer egg-mass (fig. 1 i), which in this animal, as in all Pycnogonids, we find in the males only, is simple and cake-like, of an irregular rounded form, and covers the greater part of the ventral surface. The ova are exceedingly small and numerous, and invested with a common very thin and translucent membrane.

All the integuments of the animal are uncommonly hard and thick, with a roughish surface, occasioned by numerous small tubercular protuberances. Here and there occur, more especially on the limbs, very short and scattered hairs, perceptible only however under a strong magnifier.

The colour is somewhat variable, ranging from a light whitish-yellow to dark-brownish, or rusty.

Occurrence and Habits. — On the coasts of Norway this species is very common from the Christianiafjord to Vadsø, being met with most frequently near the shore in shallow water, but in some cases at a very considerable depth, down even to 150 fathoms. In Lofoten and Finmark I have not seldom taken it on the beach, from under stones.

In its movements this animal is remarkably slow and sluggish, more so indeed than any other Pycnogonid I know of. As a rule you see it firmly clasped to some object or other, well-nigh motionless, a feeble stretching or bending now and then of one or more of the ambulatory legs being the only sign of life. The proboscis however admits, it would seem, of being moved with comparative freedom and in two different ways, since, on the one hand, it can be bent about in various directions to the cephalic segment, and, on the other, to a certain extent be withdrawn into or ejected from that part. As intimated above, there is reason to assume that the animal — at least under certain conditions — leads a kind of parasitic life. For very often this form is found firmly clasped to the large Actiniae inhabiting shallow water, e. g., *Tealia digitata* and *crassicornis*. Whether it be the mucus secreted by these animals, or the different particles of foreign matter adhering to their body, that serve the Pycnogonid as food, is a question however not yet finally settled.

Distribution. — This species would appear to have a wide geographical distribution. Meanwhile, it may be that in some cases a nearly related form has been confounded with the present Pycnogonid. Philippi's statement as to its occurrence in the Mediterranean, at Naples, I regard as highly doubtful, Dohrn not having observed it there, though he met with two other species of the genus. Likewise, too, the occurrence of the species on the coast of Chili (according to Nicolet), and on the coast of Japan (according to Slater), calls, I certainly think, for confirmation. In my judgment, it is a form essentially characteristic of Northern Seas, which indeed appears from the fact of its attaining a more powerful development and more considerable size on the northern

fra den murmanske Kyst og det hvide Hav (ifølge Jarzynsky), fra Kysterne af Danmark (Krøyer, Hansen), Tydskland (Möebius), Belgien (Hoek), Frankrige (Milne-Edwards), de britiske Oer (Johnston o. fl.), Island (Krøyer), ? Grønland (Fabr.), samt Nordamerikas Østkyst (Wilson).

2. *Pycnogonum crassirostre*, G. O. Sars.

(Pl. I, Fig. 2, a—h).

Pycnogonum crassirostre, G. O. Sars, *Pycnogonidea borealia & arctica*, No. 2.

Artscharacter. Legemet mere langstrakt end hos foregaaende Art, næsten cylindrisk, fortil tykkere, med Sidefortsætterne forholdsvis korte og skilte ved større Mellemrum. Langs Legemets Rygside en Række af stumpe Knuder. Halsesegmentet aflangt ovalt, med Spidsen jævnt afrundet. Øieknuden stumt tibrundet med forholdsvis store, nær sammen stillede Corneæ. Snabelen skjævt nedadrettet, forholdsvis kort og tyk, neppe mere end $\frac{1}{3}$ saa lang som Kroppen, cylindrisk konisk, med Enden afstumpet, ikke uddraget. De falske Fodder hos Hannen meget smaa og svage, med de 2 første Led større end de øvrige, Endekloen tynd og kun svagt krummet. Gangfodderne kortere end Legemet, af en lignende Bygning som hos foregaaende Art, men med Tarsalleddet smalere og mere regelmæssigt firkantet. Farven brunlig eller rustfarvet. Hannens Længde 10^{mm} ; Hannens $6\frac{1}{2}^{mm}$.

Bemærkninger. Denne nye Art er let kjendelig fra *P. littorale*, foruden ved sin ringere Størrelse, ved sit smaaere, næsten cylindriske Legeme, de korte og vidt adskilte Sidefortsætser, Halsesegmentets Form, men især ved den betydelig kortere og tykkere Snabel, hvilken sidste Character har givet Anledning til Artsbenævnelsen. Ogsaa i de falske Fodders og Gangfoddernes Bygning kan paavises en Del mindre Differentser, der sætter Artens Gyldighed udenfor al Tvivl.

Beskrivelse. Længden af Legemet hos den fuldt udviklede Hun er kun 10^{mm} , altsaa adskilligt ringere end hos foregaaende Art. Hannen er betydelig mindre, nemlig kun $6\frac{1}{2}^{mm}$ lang.

Legemet er hos begge Kjon (se Pl. I, Fig. 2, 2a) temmelig robust, men dog forholdsvis kjendelig smalere end hos foregaaende Art, næsten trindt og noget afsmalende forfra bagtil. Segmenterne er meget skarpt afsatte fra hinanden og noget indknøbne i sin forreste Del. De fra dem udgaaende Sidefortsætser er forholdsvis meget smaa og, uligt hvad Tilfældet er hos den typiske Art, ved temmelig brede Mellemrum skilte fra hinanden. Langs Rygsiden af Legemet findes som hos foregaaende Art en Række

coasts of this country than farther south. Exclusive of Norway, it has been taken on the Murman coast and the coast of the White Sea (according to Jarzynsky) on the coasts of Denmark (Krøyer, Hansen), those of Germany (Möebius), Belgium (Hoek), France (Milne-Edwards), the British Islands (Johnston and others), Iceland (Krøyer), Greenland (Fabr.), and the east coast of North America (Wilson).

2. *Pycnogonum crassirostre*, G. O. Sars.

(Pl. I, fig. 2, a—h).

Pycnogonum crassirostre, G. O. Sars, *Pycnogonidea borealia & arctica*, No. 2.

Specific Character. — Body more elongate than in preceding species, almost cylindrical, anteriorly stouter, with lateral processes comparatively short and separated by wider intervals. Along the dorsal surface of the body extend a series of obtuse protuberances. Caudal segment oval throughout, with the point evenly rounded off. Oculiferous tubercle obtusely rounded, with comparatively large, closely set corneæ. Proboscis pointing obliquely downwards, relatively short and thick, but very little more than one-third the length of the body, conico-cylindric, with extremity truncate, not produced. The false legs in the male very small and feeble, having the 2 first joints larger than the rest, terminal claw slender and but slightly curved. Ambulatory legs shorter than body, of a structure similar to that in the preceding species, but with the tarsus more slender and more regularly quadrangular. Colour brownish or rusty. Length of female reaching 10^{mm} , that of male $6\frac{1}{2}^{mm}$.

Remarks. — This new species may be easily distinguished from *P. littorale*, not only by its inferior size, its more slender, well-nigh cylindrical body, the short and widely distant lateral processes, the form of the caudal segment, but also, and in particular, by its considerably shorter and thicker proboscis, from which latter character indeed the specific designation is derived. In the structure too of the false legs and of the ambulatory legs can be shown divers minor differences, that place the genuineness of the species beyond all doubt.

Description. — The length of the body in the fully developed female reaches only 10^{mm} , hence is a good deal less than in the preceding species. The male is much smaller, not more than $6\frac{1}{2}^{mm}$ long.

The body is in both sexes (see Pl. I, fig. 2, 2a) rather robust, though perceptibly slenderer than in the preceding species, almost cylindrical, and tapers somewhat antero-posteriorly. The segments are marked off very sharply from each other, and somewhat instricted in the foremost part. The lateral processes issuing from them are comparatively very small, and, unlike what is the case in the typical species, separated one from the other by rather wide intervals. Along the dorsal surface of the body oc-

af Fremspring; men disse er her (se Fig. 2 a) betydelig lavere, stumpt afrundede i Spidsen og det forreste og bagerste af dem neppe mere end antydende. Ligeledes findes ved Enden af enhver af Sidefortsatserne oventil en ganske lav, knudeformig Forhoining. Af Segmenterne er det forreste, eller Hovedsegmentet som sædvanlig størst og næsten af samme Længde som Brede, med Pandedelen meget kort og som hos foregaaende Art endende med en cirkulær Fortykkelse, hvori Snabelen er ligesom indsenket (se Fig. 2 c). Halesegmentet (se Fig. 2 og 2 h) er forholdsvis omtrent af samme Længde som hos *P. littorale*, men af en temmelig afvigende Form. Det er nemlig aflangt ovalt, eller næsten cylindrisk, med det ydre Parti ganske jævnt afrundet, ikke som hos foregaaende Art spadeformigt udvidet og afkuttet i Spidsen.

Oieknuden (Fig. 2 b) er stumpt afrundet og rettet noget forover saant beliggende ganske nær Hovedsegmentets Forkant (se Fig. 2 a). De 4 Corneæ er kjendelig større end hos foregaaende Art og ogsaa nærmere stillede sammen (sml. Fig. 2 b og 1 b).

Snabelen (se Fig. 2, 2 a, 2 c) er af et meget karakteristisk Udseende og temmelig ulig samme hos *P. littorale*. Den er forholdsvis kort og tyk, neppe mere end $\frac{1}{4}$ saa lang som det øvrige Legeme og noget skraat nedadrettet. Af Form er den næsten cylindrisk, kun meget lidet afsmalende mod Enden, der ikke som hos foregaaende Art er smalt udtrukket, men stumpt afkuttet. Mundaabningen viser heller ikke en saa regulær trekantet Form som hos hin Art, men har Kanterne noget uregelmæssigt foldede (se Fig. 2 c).

De falske Fodder hos Hannen (se Fig. 2 c, 2 d) er yderst smaa og forholdsvis kjendelig spinklere end hos *P. littorale*, næsten traadformige. Længdeforholdet af de enkelte Led er ogsaa temmelig afvigende. Saaledes er her de 2 første Led ubetinget de største, og af de følgende Led er det 5te og 6te noget større end baade de 2 foregaaende og efterfølgende. Endekloen (se ogsaa Fig. 2 c) er kjendelig tyndere og viser kun en ganske svag og jevn Krumning. De paa disse Lemmer fæstede Torner er meget smaa og spredte uden nogen bestemt Orden, dels i Kanterne, dels paa den ydre eller indre Side af Leddene.

Gangfodderne (Fig. 2 f) er adskilligt kortere end Legemet og viser idethele en med samme hos foregaaende Art temmelig overensstemmende Bygning, dog med enkelte mindre Afvigelser. Af Leddene er det 4de eller Laarledet baade det største og kraftigste, omtrent af samme Længde som de 3 Hoftelid tilsammen, og kjendelig længere end det følgende Led. Det viser indad et lignende vinkelformigt Fremspring som hos *P. littorale*, hvorimod de hos denne Art ved Enden af dette og de 2 følgende Led forekommende koniske Fortsatser mangler eller er i ethvert Fald yderst ntydelige. De 2 Lægled aftager hurtigt baade i Længde og Tykkelse og har hvert nær Enden

cur as in the preceding species a series of projections; but in this animal they are considerably lower, obtusely rounded at the point, and the first and last but little more than rudimentary. Moreover, at the extremity of each lateral process we observe above a low, knob-shaped protuberance. Of the segments, the foremost, or cephalic segment, is as usual the largest, and well-nigh of the same length as breadth, with the frontal part exceedingly short and, as in the preceding species, terminating in a circular inspissation, into which the proboscis would seem, as it were, to be sunk (see fig. 2 c). The caudal segment (see fig. 2 and 2 h) is relatively of about the same length as in *P. littorale*, but rather different in form. It is oblongo-ovate, or almost cylindrical, with the outer part uniformly rounded off, not as in the preceding form spatulate-expanded and truncate at the point.

The oculiferous tubercle (fig. 2 b) is obtusely rounded and directed somewhat forwards, as also placed close to the front margin of the cephalic segment (see fig. 2 a). The 4 corneæ are perceptibly larger than in the preceding species and nearer together (compare fig. 2 b with fig. 1 b).

The proboscis (see fig. 2, 2 a, 2 c) has a most characteristic appearance, differing not a little from that in *P. littorale*. It is relatively short and thick, hardly more than one-third as long as the rest of the body, and points somewhat obliquely downward. In form it is almost cylindrical, tapering but very slightly towards the extremity, which is not, as in the preceding species, slenderly produced, but obtusely truncated. Neither does the buccal orifice show so regularly triangular a form as in that species, but has the margins irregularly folded (see fig. 2 c).

The false legs in the male (see fig. 2 c, 2 d) are very small indeed and more appreciably slender than in *P. littorale*, nay almost filiform. The relative length of the different joints differs too considerably. Thus, in this animal the 2 first joints are without question the largest, and of the following the 5th and 6th are a trifle larger than both the 2 preceding and the 2 succeeding ones. The terminal claw (see also fig. 2 c) is perceptibly thinner, and exhibits but a very slight and uniform bend. The spines observed on these limbs are very small, and occur scattered, without regular arrangement, partly along the margins and partly on the outer or inner surface of the joints.

The ambulatory legs (fig. 2 f) are a good deal shorter than the body, and exhibit on the whole a structure agreeing rather closely with that in the preceding species, though with a few minor differences. Of the joints, the 4th or femoral joint is the largest and most powerful, about equal in length to the 3 coxal joints taken together, and appreciably longer than the succeeding joint. It has an angular projection similar to that in *P. littorale*, whereas the 2 conical processes observed in that species at the extremity of this joint and of the 2 following ones are wanting, or at least very indistinct. The 2 tibial joints diminish rapidly alike in length and thickness, and have each, near

i den ydre Kant en ualmindelig lang og fin Borste. Tarsalledet (se Fig. 2 g) er ganske lidet, næsten kvadratisk og neppe bredere end Fodledet; dets ovre Del er her fri, ikke som hos den typiske Art dækket af foregaaende Led. Fodledet har idethele en lignende Form som hos denne Art, ligesom ogsaa Endekloen viser et meget overensstemmende Udseende. Hele Inderkanten af Fodledet og Tarsalledet samt en Del af 2det Lægled er ogsaa her forsynet med en tæt Bræmme af fine Torner, og Fodledet har desuden i Yderkanten en temmelig regelmæssig Rad af circa 10 fine Borster.

Integumenterne er som hos foregaaende Art særdeles haarde og tykke, med en ru, kornet eller fint knudret Overflade.

De paa Spiritus opbevarede Exemplarer har en temmelig mørk brunlig eller rustfarvet Couleur.

Forekomst. Tre Exemplarer af denne meget distinkte Art, en fuldvoxen Hun og to Hanner fandtes ved noiére at gjenneengaa en hel Del Exemplarer af *P. littorale* indsamlede af mig paa forskellige Kanter af vor Kyst og alle opbevarede paa et enkelt større Glas. Den noiére Lokaltet, hvor disse 3 Exemplarer er tagne, kan jeg saaledes desværre ikke nu opgive; men jeg antager, at de stammer fra temmelig dybt Vand.

Udbredning. Ifølge skriftlig Meddelelse fra Dr. Hansen er Arten dette Aar (1888) taget af Prem. Lieutenant Ryder paa 66° N. B., 24° 9' V. L. (udfor Dyrefjord paa Island), paa 30 F. D., grov Sand og Skjæl; Bundtemperatur 7.2° C.

Gen. 2. *Phoxichilus*, Latreille (1816).

Slægtscharacter. Legemet smalt og langstrakt, med vel adskilte Sidefortsætter. Hovedsegmentet forholdsvis kort, med Pandedelen kun lidet fremspringende og kraveformigt udvidet omkring Roden af Snabelen, oventil med en Trærforhøining bevæbnet med 2 korte tandformige Fremspring. Halesegmentet cylindrisk, opret. Øieknuden stærkt fremspringende, konisk. Snabelen skraat nedadrettet, næsten cylindrisk, afkuttet i Enden og besat med korte Torner; Mundaabningen med complicerede Læbeplader. De falske Fodder hos Hannen 7-leddede, med simple, spredte Torner, sidste Led meget lidet og ligesom indsaenket i det foregaaende, uden Klo. Gangfodderne lange og spinkle, delvis piggede, Tarsalledet meget lidet, skaalformigt, Fodledet kraftigt udviklet, mere eller mindre krummet, den indre Kant pladeformigt udvidet ved Basis og bevæbnet med stærke, fortil krummede Torner, Endekloen robust, med vel udviklede Bilkloer. Kjonsaabningerne hos Hunnen paa 2det Hoftelid af samtlige Fodder, hos Hannen kun paa de

the extremity on the outer margin, a very long and delicate bristle. The tarsus (see fig. 2 g) is quite small, almost quadrate, and hardly broader than the propodus; its upper part in this animal is free, not as in the typical species covered by the preceding joint. The propodus has on the whole a form similar to that in the said species, and the terminal claw too agrees very closely in appearance. The whole inner margin of the propodus and the tarsus, as also part of the 2nd tibial joint, is furnished with a dense fringe of delicate spines, and the propodus has besides, on the outer margin, a comparatively regular series of about 10 delicate bristles.

As in the preceding species, the integuments are hard and thick, with a rough, granular or finely tuberculous surface.

Examples preserved in spirit have a rather dark brownish or rusty colour.

Occurrence. — Three examples of this very distinct species, a fullgrown female and two males, were found on looking over more closely a number of specimens of *P. littorale* collected by the author from different parts of the Norwegian coast, and all preserved in one large glass jar. The exact locality where these 3 individuals were taken I cannot therefore now unfortunately state; but I should say they came from rather deep water.

Distribution. — According to a communication by letter from Dr. Hansen, the species has been taken this year (1888) in lat. 66° N. long 24° 9' W. (off Dyrefjord, Iceland), from a depth of 30 fathoms; coarse shelly sand; bottom-temperature 7.2° C.

Gen. 2. *Phoxichilus*, Latreille (1816).

Generic Character. — Body slender and elongate, with well-defined lateral processes. Cephalic segment comparatively short, with frontal part but slightly projecting and expanded in the form of a collar round the base of the proboscis, having moreover above a slight transversal prominence armed with 2 short dentiform projections. Caudal segment cylindric, erect. Oeniferous tubercle very considerably projecting, conic. Proboscis pointing obliquely downward, well-nigh cylindrical, truncate at the extremity, and beset with short spines; buccal orifice with complicated labial plates. The false feet in the male seven-jointed, with simple scattered spines, the last joint exceedingly small, and sunk, as it were, into that preceding it, without any claw. Ambulatory legs long and slender, in part spiked, tarsus very small, calyx-shaped, propodus powerfully developed, more or less curved, the inner margin lamellar-expanded at the base, and provided with strong, anteriorly curving spines, terminal claw robust, with well-developed

3 bagerste Par. Flere uregelmaessig kugleformige ydre Ægmasser tilstede hos Hannen.

Bemærkninger. Denne Slægt skiller sig, som det vil sees, i mange Henseender meget væsentligt fra foregaaende, og det er egentlig kun den fuldstændige Mangel af Saxlemmer og Folere, der har ledet til at man ialmindelig hentører den til samme Familie som Slægten *Pycnogonum*. Naar afsees fra denne, for begge Slægter fælles Character, synes nærværende Slægt i Virkeligheden at slutte sig nærmere til de til følgende Familie, *Phorichilidiidae*, horende Former. Jeg finder det derfor meget sandsynligt, at man, naar flere Slægter og Arter bliver kjendte, vil finde det nødvendigt at opstille for denne Slægt en egen Familie. Der er af forskellige Autores opført en hel Del Arter af nærværende Slægt; men det er meget langt fra, at disse formentlige Arter er tilstrækkelig skarpt distingverede fra hverandre, og jeg anser det derfor for rimeligt, at deres Tal vil blive betydelig reduceret. Under disse Omstændigheder vil en fornyet, udførlig Beskrivelse af den i de nordiske Have forekommende Art neppe findes at være overflødig.

3. *Phoxichilus spinosus*, (Mont.).

(Pl. I. Fig. 3, a—g).

Phallangium spinosum, Montagu, Transact. Linn. Soc. London, Vol. IX, p. 100, Pl. V, fig. 7.

Phoxichilus spinosus, Johnston, Mag. of Zool. & Botany, I, p. 377.

" " Kroyer, Nat. Tidsskr., ny Række, I, p. 125.

" " Gaimard's Voyage Scandinavie, Pl. 35 Fig. 1, a—f.

" " Goodsir, Ann. Nat. Hist. Vol. 14, p. 2, Pl. 1, fig. 3—5.

? *Endeis gracilis*, Philippi, Arch. f. Nat. Jahrg. 9, Bd. 1.

? *Phoxichilus inermis*, Hesse, Ann. d. Sci. Nat. Zool. VII, p. 199.

? *Phoxichilus lavis*, Grube, Mitth. über St. Malo und Roscoff, p. 31 & 50, Tab. 1, Fig. 1, 1 c.

? *Phoxichilus vulgaris*, Dohrn, die Pantopoden des Golfes von Neapel; p. 169, Tab. X, Fig. 6; Tab. X a, Fig. 16—20; Tab. XI, Fig. 1—10, 12, 13, 16—27.

Phoxichilus spinosus, Hoek, Nouvelles études sur les Pycnogonides, p. 518, Pl. XXVIII, Fig. 33.

" " G. O. Sars, Pycnogonidea borealia & arctica, No. 3.

Artscharacter. Legemet smalt cylindrisk, med Sidefortsætserne vidt adskilte og omtrent saa lange som Legemet er bredt, enhver ved Enden oventil forsynet med et tandformigt Fremspring. Hovedsegmentet neppe længere

auxiliary claws. The generative openings in the female occur on the 2nd coxal joint of each leg, in the male on the 3 posterior pairs only. Numerous irregular globe-shaped outer egg-masses in the male.

Remarks. — This genus is, as will appear, in many respects very essentially distinguished from the preceding, and indeed the total absence of cheliferi and palps has alone led to its being generally classed under the same family as the genus *Pycnogonum*. Nay, apart from this character, common to both genera, the present genus would seem to approximate more closely the forms of the next family, *Phorichilidiidae*. Hence, when a greater number of genera and species shall have become known, it will, I certainly think, prove necessary to establish a separate family for this genus. Many species belonging to the present genus have been instituted by different authors; but these species are far from being defined with sufficient precision, and I regard therefore as highly probable that a considerable reduction will be made in their number. Under these circumstances, to describe anew and in detail the species occurring in the Northern Seas is hardly superfluous.

3. *Phoxichilus spinosus*, (Mont.).

(Pl. I, fig. 3, a—g).

Phallangium spinosum, Montagu, Transact. Linn. Soc. London, Vol. IX, p. 100, Pl. V, fig. 7.

Phoxichilus spinosus, Johnston, Mag. of Zool. & Botany, I, p. 377.

" " Kroyer, Nat. Tidsskr., Ny Række, I, p. 125.

" " Gaimard, Voyage en Scandinavie, Pl. 35, fig. 1, a—f.

" " Goodsir, Ann. Nat. Hist., Vol. 14, p. 2, Pl. 1, figs. 3—5.

? *Endeis gracilis*, Philippi, Arch. f. Nat. Jahrg. 9, Bd. 1.

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? *Phoxichilus vulgaris*, Dohrn, Die Pantopoden des Golfes von Neapel; p. 169, Tab. X, fig. 6; Tab. X a, fig. 16—20; Tab. XI, fig. 1—10, 12, 13, 16—27.

Phoxichilus spinosus, Hoek, Nouvelles études sur les Pycnogonides, p. 518, Pl. XXVIII, fig. 33.

" " G. O. Sars, Pycnogonidea borealia & arctica, No. 3.

Specific Character. — Body slender-cylindrical, with the lateral processes wide apart and about as long as the body is broad, each furnished at the extremity above with a dentiform projection. Cephalic segment hardly longer

end det følgende Segment. Frontaltornerne rykkede nær sammen, den kraveformige Udvidning forsynet oventil i Midten med en kort Indbugtning. Halesegmentet aflangt ovalt, afstumpet i Enden og til hver Side bevæbnet med en kort Torn. Oieknuden noiagtig i Midten af Hovedsegmentet, hoi, konisk tilspidset, de 4 Corneæ forholdsvis smaa, nærmere Basis end Spidsen. Snabelen mere end halvt saa lang som det øvrige Legeme og neppe smalere end dette, svagt udvidet paa Midten. De falske Fodder hos Hannen omtrent af Legemets halve Længde, 2det Led størst, 5te Led større end ethvert af de 2 foregaaende og fætteløgende, stærkt krummet, sidste Led trekantet, neppe halvt saa langt som foregaaende, med 2 korte Torner i den indre Kant. Gangfodderne næsten 3 Gange længere end Legemet, bevæbnede med spredte Torner af ulige Størrelse, 2det Hofteled længere end de 2 øvrige tilsammen, Laarlæddet dobbelt saa langt som Hoftesnittet og endende udad med en konisk med 2 uligelange Torner bevæbnet Fortsats, 1ste Lægle kortere end 2det, der omtrent er af Laarlæddets Længde, Tarsallæddet skjevt afrundet, Fodlæddet omtrent 4 Gange længere end bredt, endende udad i et spidst Hjørne, Inderkanten ved Basis bevæbnet med 5 stærke Torner, de 2 yderste jevnstillede, Endekloen mere end halvt saa lang som Fodlæddet, Bikloerne omtrent halvt saa lange som Endekloen. Legemet gjennemsigtigt, med Tarmen og dens Sideudvidninger af grøn Farve. Legemets Længde hos Hunnen 4^{mm}, Spandvidde 23^{mm}; Hannen noget mindre.

Bemærkninger. At den ved Norges Kyster forekommende Form er identisk med Montagu's Art, derom kan der neppe være nogen Tvivl, og heller ikke den af Hoek ved Frankriges Nordkyst undersøgte Form synes i nogen Henseende at skille sig fra vor Art. Da Hoek har taget sine Exemplarer paa den selvsamme Lokaltet, hvorfra Grube har sin *P. larvis*, og har paavist mindre Differentser hos ulige udviklede Individuer, holder han Grube's Art for identisk med sin, ligesom han anser det for sandsynligt, at den af Hesse som *P. inermis* opførte Form heller ikke er artsforskjellig. Hvad endelig de to af Dohrn fra Golfen ved Neapel opførte Arter angaar, saa viser begge saavel stor Overensstemmelse indbyrdes som med den typiske Art. Den ene af Arterne, *P. charybdæus* opgives imidlertid at være mere end dobbelt saa stor som den anden, *P. vulgaris*, der derimod i saa Henseende ganske svarer til vor Art, med hvilken jeg derfor er tilbøielig til at anse den for identisk. Philippi's *Endeis gracilis* maa ligeledes aabenbart henregnes til denne Art. Som forskjellige Arter bliver saaledes kun tilbage *P. charybdæus* Dohrn, der forøvrigt, naar afsees fra dens almindelige Størrelse, kun lidet synes at skille sig fra Montagu's Art, og *P. meridionalis* Bohm, som ifølge sit Findested (Singapoor) vel neppe kan være identisk med nogen af de europæiske Arter.

Beskrivelse. Legemets Længde hos fuldt udviklede Hunner er omkring 4^{mm}, med en Spandvidde af 23^{mm}. Hunnerne synes som Regel at være noget, skjøndt ikke meget, mindre end Hunnerne.

Af Form er Legemet (se Pl. I, Fig. 3, 3 a, 3 c, 3 d)

than that succeeding it, frontal spines near together, the collar having above in the middle a slight sinus. Caudal segment oblong-oval, truncate at the extremity, and on either side armed with a short spine. Oculiferous tubercle exactly in the middle of the cephalic segment, prominent, acuminate, the 4 corneæ comparatively small, nearer the base than the point. Proboscis more than half as long as, and hardly slenderer than the rest of the body, slightly expanded in the middle. The false legs in the male about half the length of the body, 2nd joint largest, 5th joint larger than either of the 2 preceding or succeeding it, sharply curved, last joint triangular, scarcely half as long as the preceding, with 2 short spines on the inner margin. Ambulatory legs well-nigh thrice the length of the body, armed with scattered spines, unequal in size, 2nd coxal joint longer than the 2 others taken together, femoral joint twice as long as coxal section, and terminating outwards in a conical process, armed with 2 spines of different length, 1st tibial joint shorter than 2nd, the latter about as long as femoral joint, tarsus obliquely rounded, propodus about 4 times longer than broad, terminating outwards in a sharp corner, inner margin furnished at base with 5 strong spines, the 2 outermost placed side by side, terminal claw more than half as long as propodus, auxiliary claws about half the length of terminal claw. Body translucent, with the intestine and its lateral expansions of a green colour. Length of body in the female 4^{mm}, extent 23^{mm}; male somewhat smaller.

Remarks. — That the form occurring on the coasts of Norway is identical with Montagu's species, can hardly admit of doubt; nor indeed would the animal observed by Hoek on the north coast of France appear to differ in any respect from the present species. Hoek having taken his specimens in precisely the same locality whence Grube obtained his *P. larvis*, and having shown too minor differences to characterise unequally developed individuals, he holds Grube's species as identical with his own, regarding moreover as probable that *P. inermis*, established by Hesse, is not either specifically distinct. Finally, as to the two species established by Dohrn from the Bay of Naples, both exhibit close agreement alike individually and with the typical species. One of the species, *P. charybdæus*, is stated however to be more than double the size of the other, *P. vulgaris*, which in that respect agrees exactly with our species, with which therefore I am disposed to consider it identical. Philippi's *Endeis gracilis* must likewise obviously be referred to that species. Hence, as distinct species we have left only *P. charybdæus* Dohrn, which, apart from its remarkable size would appear to differ but little from Montagu's form, and *P. meridionalis* Bohm, that, judging from its habitat (Singapoor), can hardly be identical with any of the European species.

Description. — The length of the body in fully developed females reaches about 4^{mm}, with an extent of 23^{mm}. The males would seem as a rule to be somewhat, though not much, smaller than the females.

In form (see Pl. I, figs. 3, 3 a, 3 c, 3 d) the body is

særlig smalt og langstrakt, cylindrisk og næsten overalt af ens Brede, eller kun ganske ubetydeligt afsmalnende bagtil. Segmenterne er ved skarpt markerede Suturer afgrænsede fra hinanden, og det 1ste, eller Hovedsegmentet, neppe synderlig længere end de øvrige. Sidefortsætterne, der paa 1ste Segment udgaar omtrent fra Midten, er paa de 2 følgende Segmenter rykkede nærmere deres bagre Del og udgaar paa sidste Kropssegment lige fra Enden. De er ved betydelige Mellemrum skilte fra hinanden, af cylindrisk Form og omtrent saa lange som Legemet er bredt. Ovenpå har enhver af dem lige ved Enden et vel markeret tornformigt Fremspring. Hovedsegmentet er forholdsvis kort, med det forreste Parti, eller Pandedelen, ligesom hos foregående Slægt, kun lidet fremspringende. Paa den øvre Side har dette Parti (se Fig. 3 c) en noget buet Tværforhøining, der er bevæbnet med to temmelig nær sammen stillede tornformige Fremspring. Den forreste Kant af Hovedsegmentet danner over Basis af Snabelen en kraveformig Udvidning, der i Midten viser et lidet Indsnit eller Indbugtning. Halesegmentet (Fig. 3 g) er ikke som hos *Pycnogonum* horizontalt stillet, men altid rettet lige opad, dannende en ret Vinkel med det øvrige Legeme (se Fig. 3 d). Det er omtrent af samme Længde som sidste Kropssegment, af aflang oval Form og næsten overalt af ens Brede. Enden er afstumpet og bærer til hver Side en kort Torn, fæstet til en tydelig Afsats.

Oiekuden (Fig. 3 e), der er beliggende noiagtig i Centret af Hovedsegmentets Rygside, er særlig høj, pyramidal eller konisk og ender i en skarp Spids. De 4 Corneæ er forholdsvis smaa og ligger nærmere Basis end Spidsen af Oiekuden. Til hver Side, lidt høiere op paa Oiekuden, sees et lidet knudeformigt Fremspring, som ogsaa forefindes her hos andre *Pycnogonider* og som af Dohrn ansees for et Slags Sandseccapparat.

Snabelen (se Fig. 3 a, 3 c, og 3 d) er af forholdsvis betydelig Størrelse, mere end halvt saa lang som det øvrige Legeme og neppe smalere end dette, samt skraat nedadrettet. Af Form er den cylindrisk eller noget tendannet, med en svag men tydelig Fortykkelse paa Midten, og Spidsen stumpt afkuttet. I hele dens ydre Parti, fra den mediane Fortykkelse af, er den besat med spredte, skraat fortil rettede fine Tørner, der ved Enden bliver tættere sammentrængte. Mundaabningen viser den sædvanlige trekantede Form og er omgivet af temmelig complicerede Læbeplader, hvis finere Bygning er udførligt beskrevet i Dohrn's Værk. Da Snabelen, ligesom det hele øvrige Legeme, er temmelig gjennemsigtig, skimtes i dens Indre mere eller mindre tydeligt det i den bagre Halvdel beliggende complicerede System af børstebesatte Chitinlister og til hver Side af samme 2 smalle fortil rettede blindseklformige Forlængelser af Tarmen (se Fig. 3 c).

Saxlemmer og Folere mangler hos det voksne Dyr, ligesom hos foregående Slægt. Dog er der Grund til

exceedingly slender and elongate, cylindrical, and well-nigh everywhere of the same breadth, or tapers but very little posteriorly. The segments are divided from each other by sharply defined sutures, and the 1st or cephalic segment is not much longer than the others. The lateral processes, which on the 1st segment proceed from about the middle, on the 2 following segments approach closer the posterior part, and issue on the last body-segment from the extremity itself. They have wide intervals between them, are of cylindrical form, and about as long as the body is broad. Above, right at the extremity, each has a well-pronounced spiniform projection. The cephalic segment is comparatively short, with the anterior section, or frontal part, but slightly projecting, as in the preceding genus. On the upper surface, this part (see fig. 3 c) has a somewhat arched transversal prominence, armed with 2 spiniform projections, set close together. The anterior margin of the cephalic segment forms, over the base of the proboscis, a sort of collar, exhibiting in the middle a slight incision, or sinus. The caudal segment (fig. 3 g) is not placed horizontally, as in *Pycnogonum*, but always directed straight upward, at right angles with the rest of the body (see fig. 3 d). It measures about the same length as the last body-segment, is of an oblong oval form, and has well-nigh everywhere equal breadth. The extremity is obtuse, and has on either side a short spine, affixed to a distinct ledge.

The oculiferous tubercle (fig. 3 a), placed exactly in the centre of the dorsal side of the cephalic segment, is very elevated, pyramidal or conic as to form, and terminates in a sharp point. The 4 corneæ are comparatively small, and lie nearer the base than the point of the oculiferous tubercle. On either side, a little higher up the oculiferous tubercle, is seen a small knob-shaped projection, also occurring in other *Pycnogonids*, and which Dohrn takes for a kind of sensory apparatus.

The proboscis (see figs. 3 a, 3 c, and 3 d) is comparatively large in size, upwards of half as long as, and hardly at all more slender than, the rest of the body, and obliquely directed downward. Cylindric or somewhat fusiform, it has a slight but distinct inspissation in the middle, with the point obtusely truncate. Throughout the whole of its outer part, from the median inspissation, it is furnished with distant, anteriorly pointing, delicate spikes, at the extremity set closer together. The buccal orifice, presenting the usual triangular form, is surrounded by rather complicated labial plates, the more intricate structure of which Dohrn fully describes in his work. The proboscis, in common with the rest of the body, being comparatively translucent, we can detect, inwards, more or less distinctly, the complicated system of bristle-bearing chitinous fillets in the posterior half, and on either side 2 slender, anteriorly directed caecal prolongations of the intestine (see fig. 3 c).

The cheliferi and palpi are absent in the adult animal, as with the preceding genus. Meanwhile, there is

med Dohrn at antage, at de 2 smaa ovenfor omtalte tornformige Fremspring paa den øvre Side af Hovedsegmentets Pandedel repræsenterer et ubetydeligt Rudiment af de hos Larverne tydeligt udviklede Saxlemmer, ligesom en buetformig Chitinliste paa Siderne af dette Segments Halsdel (se Fig. 3 a) antyder det Sted, hvor hos Larverne de til Følerne svarende Lemmer har havt sin Plads.

De falske Fødder (Fig. 3 f), der som hos foregaaende Slægt kun er tilstede hos Hannerne (se Fig. 3 c, 3 d), er forholdsvis betydelig kraftigere udviklede end hos denne Slægt og lige udstrakte mere end halvt saa lange som hele Legemet. Som hos andre Pycnogonideer er de fæstede paa hver Side til et knudeformigt fra Hovedsegmentets Halsdel udgaaende Fremspring, umiddelbart foran Legemets forreste Sidefortsætter, og er bøiede ind under Kroppen, visende en udpræget S-formig Krumning. De er kun sammensatte af 7 Led, meget ulige i Længde og besatte med korte, som oftest hagetformigt omboiede og uden nogen Orden fordelte Torner. Hvad Leddenes indbyrdes Forhold angaar, saa er det 1ste forholdsvis kort og tykt, hvorimod 2det er stærkt forlænget, mere end dobbelt saa langt. De 2 følgende Led er igjen adskilligt kortere og tilsammen neppe betydelig længere end 2det, 5te derimod mere forlænget, skjøndt kortere end 2det, og meget stærkt krummet. 6te Led er af oval eller elliptisk Form og har ved Enden en skaalformig Fordybning, fra hvis Bund det yderst lille 7de eller sidste Led rager frem. Dette er af trekantet Form og uden Klo, men forsynet i den indre Kant med 2 korte Torner af samme Beskaffenhed som de øvrige paa disse Lemmer fæstede.

Gangfodderne (se Fig. 3) er særdeles spinkle, næsten 3 Gange længere end Legemet, og besatte med spredte Torner af noget ulige Størrelse. 2det Hofteled er temmelig stærkt forlænget, mere end dobbelt saa langt som de 2 øvrige tilsammen og noget indknebet ved Basis. Det har paa Undersiden nær Spidsen hos begge Kjon en hos Hunnen større, hos Hannen betydelig mindre Aabning til Udtømmelse af Kjønssstoffene; hos Hannerne synes dog disse Aabninger ganske at mangle paa 1ste Fodpar. Laarledet er af betydelig Størrelse, omtrent dobbelt saa langt som hele Hoftepartiet, og gaar ved Spidsen paa den ydre Side ud i en konisk, med 2 ulige lange Torner bevæbnet Fortsætter. Hos Hunnen er dette Led mere eller mindre opsvulmet paa Grund af de i dets Indre sig udviklende Æg og har paa Midten 2 skraat overfor hinanden stillede temmelig stærke Torner. 1ste Lægled er kortere end Laarledet, hvorimod 2det er omtrent af samme Længde som dette, begge af lineær Form og besatte med temmelig lige udviklede Torner. Tarsalledet (se Fig. 3 b) er særdeles lidet og meget bevægeligt forbundet med foregaaende Led. Det er af uregelmæssig afrundet Form, stærkt udrandet i Enden og udad springende frem i en smal, med 2 smaa Børster besat Lap; dets indre Kant er stærkt ud-

reason to assume with Dohrn, that the 2 small spiniform projections mentioned above, on the upper surface of the frontal portion of the cephalic segment, represent a slight rudiment of the chelifori, distinctly developed in the larvæ, as also an arched chitinous fillet on either side of the neck-part of that segment (see fig. 3 a) indicates the place whence, in the larvæ, the limbs corresponding to the palpi had their origin.

The false legs (fig. 3 f), which, as in the preceding genus, are present in the males only (see figs. 3 c, 3 d), have relatively a much more powerful development than in that genus, and measure, fully extended, upwards of half the length of the whole body. As in other Pycnogonids, they are affixed on either side to a knob-shaped projection issuing from the neck-part of the cephalic segment, immediately anterior to the first pair of lateral processes of the body, and are bent in under the trunk, exhibiting a marked S-shaped curve. They are composed of only 7 joints, very unequal in length, and beset with short spines, as a rule unguiform-recrurus, and distributed without any order whatever. Concerning the relative size of the joints, the 1st is comparatively short and thick, whereas the 2nd is very considerably produced, nay more than twice as long. The 2 succeeding joints, again, are a good deal shorter, and, taken together, hardly much longer than the 2nd; the 5th on the other hand is more elongate, though shorter than the 2nd, and very much curved. The 6th joint is oval or elliptic in form, and has at the end a bowl-shaped depression, from the bottom of which the exceedingly small 7th, or terminal, joint is seen to protrude. This joint is of triangular form and without any claw, but provided on its inner margin with 2 short spines, similar in character to the others affixed to those limbs.

The ambulatory legs (see fig. 3) are remarkably slender, almost 3 times longer than the body, and beset with scattered spines of somewhat unequal size. The 2nd coxal joint is a good deal produced, more than twice as long as the 2 others taken together, and somewhat constricted at the base. On the under surface, it has, near the extremity, in both sexes, an opening, — for the female comparatively large, for the male much smaller, — to evacuate the generative matter; in the males, this opening would appear to be entirely wanting on the 1st pair of legs. The femoral joint is of considerable size, about double the length of the whole coxal part, and protends at the point on the outer surface as a conic projection, armed with 2 unequally long spines. In the female, this joint is more or less swollen, owing to the eggs in course of development within, and exhibits moreover, placed obliquely opposite one to the other, 2 rather powerful spines. The 1st tibial joint is shorter than the femoral joint, whereas the 2nd is about of the same length; both are linear in form and beset with well-nigh equally developed spines. The tarsus (see fig. 3 b) is exceedingly small, and very movably connected with the preceding joint. It has an irregular rounded form, being deeply emarginated at the extremity, and

buet og bevaernet med flere Torner, hvoraf en udmærker sig ved betydeligere Størrelse. Fodledet er meget kraftigt udviklet, ikke fuldt 4 Gange længere end bredt og temmelig stærkt krummet. Det er langs den ydre Kant og ved Enden besat med en Del uregelmæssigt fordelte Torner, hvoraf den til det ydre tilspidsede Hjørne fæstede er størst. Inderkanten af Ledet er jævnt indbugtet og danner ved Basis en bred pladeformig Udvidning; langs hvilken til særegne Afsatser er fæstet 5 meget stærke fortil krummede Torner, hvoraf dog de 2 yderste er stillede jevnside; foran dem følger en Rad af omkring 7 noget mindre Torner. Endekloen er meget kraftig, mere end halvt saa lang som Fodledet, mod hvis indre tornbesatte Kant den kan indboies. Den er stærkt krummet og ved Basis fortil forsynet med 2 vel udviklede, til en særegen Afsats fæstede Bikloer, der omtrent er af Endekloens halve Længde. De 2 ovenbeskrevne sidste Led tilligemed Endekloen danner et meget kraftigt Griberekskab, hvormed Dyret kan klatre sig fast til Hydroider og andre Gjenstande paa Havbunden.

Integumenterne er temmelig tykke, af lederagtig Consistens og overalt forsynede med smaa cirkulære Felt (Åbninger for Hudkjertler). De er hos det levende Dyr temmelig gjennemsigtige, saa at forskellige af de indre Organer mere eller mindre tydeligt skinner igjennem, navnlig den intensiv grønfarvede Tarm med sine lige ind i Fodledet rækkende Sideforlængelser. Seet fra Buggsiden viser sig ogsaa Buggangliekjæden med sine 5 store Ganglier meget tydeligt (se Fig. 3 a) skinnende igjennem Huden.

Ingen af de af mig undersøgte Individuer var ægbærende. Men ifølge Dohrn skal Hammerne til sine Tider være forsynede med et sort Antal, til de falske Fodder klæbende kugleformige Ægmasser, der ofte ganske dækker Undersiden af Legemet og hver indeholder talrige meget smaa Æg.

Dyrets Farve har, navnlig paa Grund af den gennemskinnede Tarm med sine blinksækformige Forlængelser, en mere eller mindre intensiv grøn, sjældnere brunagtig Tone.

Forekomst. Jeg har kun taget denne Form paa en eneste Localitet ved vor Vestkyst, Renneso ved Stavanger, paa nogle faa Farnes Dyb mellem Alger og Hydroider. I vort Museum opbevares imidlertid en Del Exemplarer tagne af min Fader ved Florø og Manger, og et enkelt Individ fra Søndmør. Kroyers Exemplarer var ligeledes fra vor Vestkyst.

Udbredning. Arten er aabenbart en mere sydlig Form; thi Jarzynsky's Angivelse af dens Forekomst ved Russisk Lapland tror jeg maa bero paa en Feiltagelse.

projects outwards as a narrow lobe, beset with 2 small bristles; its inner margin is considerably arched and armed with several spines, one of these exhibiting a much larger size. The propodus is very powerfully developed, not quite 4 times as long as broad, and rather sharply curved. Along the outer margin, and at the extremity, it is beset with a number of irregularly disposed spines, of which that affixed to the sharp outer corner is largest. The inner margin of the joint is uniformly incurvate, and constitutes at the base a broad lamellar expansion, along which are affixed, to separate ledges, 5 very strong, anteriorly bending spines, the 2 outermost however being in juxtaposition; in front of them extends a series of about 7 somewhat smaller spines. The terminal claw is very powerful, more than half the length of the propodus, against the inner spiniferous margin of which it admits of being bent. It is strongly curved, and furnished at the base anteriorly with 2 well-developed auxiliary claws, affixed to a special ledge, and attaining about half the length of the terminal claw. The 2 last joints, described above, together with the terminal claw, constitute an exceedingly powerful prehensile organ, by means of which the animal can clasp hold of Hydroids and other objects met with on the sea-bed.

The integuments are rather thick, coriaceous in consistence, and everywhere provided with small circular areas (openings for the cuticular glands). In the living animal, they are comparatively translucent, so that divers of the inner organs shine more or less distinctly through, in particular the dark green-coloured intestine, with its lateral prolongations extending even into the propodus. Viewed from the ventral side, the nervous chord, with its 5 large ganglia, can also be seen, shining through the skin (see fig. 3 a).

None of the specimens I examined were ovigerous. But according to Dohrn, the males are furnished at times with a large number of globular egg-masses adhering to the false legs, which often quite cover the under surface of the body and contain each of them numerous minute ova.

The colour of the animal, more especially owing to the translucent intestine with its caecal prolongations, has a more or less pronounced green, seldom a brownish tint.

Occurrence. — I have taken this form in but a single locality, on the west coast of Norway, Renneso near Stavanger, at the depth of a few fathoms, between Algae and Hydroids. In the University Museum, however, are preserved divers specimens collected by my father at Florø and Manger, as also a solitary individual from Søndmør. Kroyer's specimens were likewise from the west coast of the country.

Distribution. — The species is evidently more of a southern form; for Jarzynsky's statement as to its occurrence on the coast of Russian Lapland, must, I certainly

Foruden ved vore Kyster er den kjendt fra de Britiske Oer (Montagu o. fl.), Frankriges Nordkyst (Hoek) og Middelhavet (Dohrn).

Fam. 2. Phoxichilidiidæ.

Character. Saxlemmer vel udviklede; Følere manglende; falske Fodder kun tilstede hos Hannen.

Bemærkninger. Denne Familie, der af andre Forskere har været slaaet sammen dels med foregaaende dels med efterfølgende Familie (Pallenidæ), indeholder for Tiden kun 3 Slægter, nemlig *Phoxichilidium* M.-Edw., *Omerus* Hesse og *Anoplodactylus* Wilson. I enkelte Henseender viser de herhen hørende Former vistnok adskillig Overensstemmelse med Slægten *Phoxichilus*, men kan neppe henføres til samme Familie som denne, da de hos hin Slægt manglende Saxlemmer her er vel udviklede hos begge Kjøen. Fra de til følgende Familie, *Pallenidæ*, hørende Former skiller de sig ved en mindre fuldkommen Udvikling af de falske Fodder og navnlig ved disse Lemmers Forekomst udelukkende kun hos Hannerne.

Gen. 3. *Phoxichilidium*, M.-Edw. (1840).

Syn. *Orithyia*, Johnston.

Slægtscharacter. Legemet cylindrisk, med forholdsvis korte og vel adskilte Sidefortsætter. Hovedsegmentet fortil neppe fremragende over Snabelens Basis. Halsesegmentet simpelt, ovalt, noget opadrettet. Oieknuden beliggende foran Midten af Hovedsegmentets Rygside. Snabelen kort, cylindrisk, udgaaende noget ventralt fra Hovedsegmentets forreste Del. Saxlemmerne forholdsvis kraftige. Skaftet kolloformigt, Saxen oval, glat, med Fingrene stærkt krummede og udpræget foreipate. De falske Fodder hos Hannen 5-leddede, med sidste Led forholdsvis stort, sammentrykt og stærkt krummet, uden Klo, men med hageformige Torner til Siderne og i den indre Kant. Gangfodderne næsten glatte, mere eller mindre forlængede. Laarledet hos Hannen stærkt opsvulmet, Tarsalledet meget lidet, Fodledet kraftigt udviklet, krummet og i Inderkanten ved Basis bevæbnet med stærke fortilkrummede Torner; Endekloen kraftig, med tydelige Bikloer. Kjønsaabningerne paa 2det Hoftelid af samtlige Fodder. Flere kugleformige Ægmasser fæstede til hver af de falske Fodder hos Hannen.

Bemærkninger. I den Begrænsning, hvori Slægten her tages, er den væsentlig characteriseret ved det fortil ikke udover Snabelens Rod fremragende Hovedsegmentet.

think, in some way be erroneous. Exclusive of the coast of Norway, it is known from the British Islands (Montagu and others), the north coast of France (Hoek), and the Mediterranean (Dohrn).

Fam. 2. Phoxichilidiidæ.

Character. — Chelifori well developed, palpi absent; false legs in male only.

Remarks. — This family, classed by other naturalists partly along with the preceding and partly with the succeeding family (Pallenidæ), comprises only 3 genera, viz., — *Phoxichilidium* M.-Edw., *Omerus* Hesse, and *Anoplodactylus* Wilson. True, the forms belonging to the family exhibit in some respects considerable agreement with the genus *Phoxichilus*, but can however hardly be referred to the same family, since the chelifori wanting in that genus occur well developed in this, and in both sexes. From the forms classing under the following family *Pallenidæ*, they are distinguished by a less perfect development of the false legs, and more especially by the occurrence of these limbs without exception in the males alone.

Gen. 3. *Phoxichilidium*, M.-Edw. (1846).

Syn. *Orithyia*, Johnston.

Generic Character. — Body cylindric, with comparatively short and well separated lateral processes. Cephalic segment projecting anteriorly but very little if at all beyond base of proboscis. Caudal segment simple, oval, pointing somewhat upward. Oculiferous tubercle placed before the middle of the dorsal surface of the cephalic segment. Proboscis short, cylindric, issuing a trifle ventrally from the anterior portion of the cephalic segment. Chelifori comparatively powerful, scape clavate, chela oval, smooth, with the fingers strongly curved, and markedly foreipate. The false legs in the male five-jointed, with the last joint comparatively large, compressed, and strongly curved, without claw, but with unguiform spines at the sides and along the inner margin. Ambulatory legs well-nigh smooth, more or less elongate, femoral joint in female much swollen, tarsus very small, propodus powerfully developed, curved, and armed along the inner margin at the base with strong anteriorly curving spines; terminal claw powerful, with distinct auxiliary claws. Genital openings on 2nd coxal joint of all the legs. Numerous globular shaped egg-masses attached to each of the false legs in the male.

Remarks. — In the restricted sense in which we here take the genus, it is principally characterized by the cephalic segment not projecting anteriorly beyond the base

de forholdsvis kraftigt udviklede Saxlemmer og ved Bygningen af de falske Fodder hos Hannen. Foruden den nedenfor nærmere beskrevne typiske Art, horer med Sikkerhed herhen kun 2 andre Arter, nemlig *P. minor* Wilson og *P. robustum* Dohrn. De øvrige til denne Slægt henførte Arter horer dels til følgende Slægt, *Anoplodactylus* Wilson, dels maa de skilles generisk fra begge, hvad der navnlig synes at gjælde de af Hoek fra Challenger Expeditionen beskrevne exotiske Former, hvoraf flere maaske ikke engang horer til denne Familie¹. Hos os forekommer kun en enkelt Art af Slægten.

4. *Phoxichilidium femoratum* (Rathke).

(Pl. II. Fig. 1. a—g).

- Nymphon femoratum*, Rathke, Naturh. Selsk. Skrifter, V, p. 201.
Orithya coccinea, Johnston, Mag. of Zool. & Botany, I, p. 378, Pl. XII, Fig. 4—6.
 ? *Phoxichilidium globosum*, Goodsir, Edinb. New Phil. Journ. Vol. 32, p. 136, Pl. 3, fig. 1.
Phoxichilidium coccineum, Idem, Ann. Nat. Hist. Vol. 14, p. 2, Pl. 1, fig. 6—8.
Phoxichilidium femoratum, Kroyer, Nat. Tidsskr., 2 Række, Bd. 1, p. 122.
 " " Gaimard's Voyage en Scandinavie, Pl. 38, fig. 2, a—g.
Phoxichilidium maxillare, Stimpson, Marine Invertebrata of Grand Manan, p. 37.
 " " Wilson, Trans. Conn. Acad. V, p. 12, Pl. IV, fig. 1, a—c.
 " " Idem, United States Commission of Fish and Fisheries, Report for 1878, p. 480, Pl. III, figs. 12—15.
 ? *Phoxichilidium femoratum*, Hoek, Nederl. Arch. f. Zoologie, Bd. 3, p. 6, Tab. XV, fig. 8—10.
 ? " " Idem, Arch. de Zool. experiment. IX, p. 512, Pl. XXVI, fig. 18—21, Pl. XXVII, fig. 19.
 " " Hansen, Zool. Danie, Tab. VII, fig. 21.
 " " Idem, Nat. Tidsskr. 3 Række, Bd. 14, p. 650.
 " " G. O. Sars, Pycnogonidea borealia & arctica No. 4.

Artscharacter. Legemet temmelig robust, noget tykkere fortil; Sidefortsatserne vel adskilte, neppe længere end Legemet er bredt. Hovedsegmentet noget længere end det følgende Segment, med Pandedelen meget kort og svagt

of the proboscis, the comparatively well-developed chelifori, and the structure of the false legs in the male. Exclusive of the typical species, described more in detail below, only 2 other species can with certainty be classed under the genus, viz. — *P. minor* Wilson and *P. robustum* Dohrn. The other species referred to this genus belong partly to the following genus, *Anoplodactylus* Wilson, and partly must be regarded as generically distinct from both, which would seem in particular to apply to the exotic forms described by Hoek from the "Challenger" Expedition, several of which perhaps do not even belong to that family.¹ On the coasts of Norway but one species of the genus is met with.

4. *Phoxichilidium femoratum* (Rathke).

(Pl. II. fig. 1. a—g)

- Nymphon femoratum*, Rathke, Naturh. Selsk. Skrifter, V, p. 201.
Orithya coccinea, Johnston, Mag. of Zool. & Botany, I, p. 378, Pl. XII, fig. 4—6.
 ? *Phoxichilidium globosum*, Goodsir, Edinb. New Phil. Journ., Vol. 32, p. 136, Pl. 3, fig. 1.
Phoxichilidium coccineum, Idem, Ann. Nat. Hist. Vol. 14, p. 2, Pl. 1, figs. 6—8.
Phoxichilidium femoratum, Kroyer, Nat. Tidsskrif. 2 Række, Bd. 1, p. 122.
 " " Gaimard's Voyage en Scandinavie, Pl. 38, fig. 2, a—g.
Phoxichilidium maxillare, Stimpson, Marine Invertebrata of Grand Manan, p. 37.
 " " Wilson, Trans. Conn. Acad. V, p. 12, Pl. IV, fig. 1, a—c.
 " " Idem, United States Commission of Fish and Fisheries, Report for 1878, p. 480, Pl. III, figs. 12—15.
 ? *Phoxichilidium femoratum*, Hoek, Nederl. Arch. f. Zoologie, B. 3, p. 6, Tab. XV, fig. 8—10.
 ? " " Idem, Arch. de Zool. expériment. IX, p. 512, Pl. XXVI, fig. 18—21, Pl. XXVII, fig. 19.
 " " Hansen, Zool. Danie, Tab. VII, fig. 21.
 " " Idem, Nat. Tidsskr. 3 Række, Bd. 14, p. 650.
 " " G. O. Sars, Pycnogonidea borealia & arctica No. 4.

Specific Character. — Body rather robust, somewhat stouter anteriorly, lateral processes well defined, hardly longer than body is broad. Cephalic segment a trifle greater in length than that succeeding it, with

¹ Hoek angiver nemlig hos disse, at de falske Fodder er tilstede hos begge Kjon, hvad der klarlig nok synes mig at vise, at de horer ind under Fam. Pallenidae.

¹ Thus Hoek states as to these forms, that the false legs are present in both sexes, which in my judgment clearly shows the forms to class under the family Pallenidae.

indbugtet i Midten af Forkanten. Halesegmentet forholdsvis lidet, ovalt, ubevæbnet. Oieknuden stump konisk, de 4 Corneæ temmelig smaa, beliggende nærmere Basis end Spidsen af Oieknuden. Snabelen neppe halvt saa lang som det øvrige Legeme, cylindrisk, afstumpet i Spidsen. Saxlemmerne længere end Snabelen, Saxen noget kortere end Skaffet. Fingrene af Palmens Længde, særdeles kraftige og hageformigt krummede i Enden. De falske Fodder hos Hannen, lige udstrakte, næsten af Legemets Længde, uden at regne Snabelen, stærkt S-formigt bøiede. 3die Læd længst, sidste Læd lidt kortere end næstsidste, med 3 stærke hageformige Torner i den indre Kant nær Basis, og en Række af tyndere Torner langs hver Side. Gangfodderne temmelig kraftige, omtrent $2\frac{1}{2}$ Gang længere end Legemet, næsten nøgne, Laarledet størst, de 2 Lægled omtrent af ens Længde. Tarsalledet uregelmæssigt trekantet, Fodledet omtrent 3 Gange længere end bredt, Inderkanten ved Basis bevæbnet med 6 stærke Torner, Endekloen noget mere end halvt saa lang som Fodledet, Bikkloerne tydeligt fremragende, men smaa. Farven rød eller brunlig (sepiafarvet). Legemets Længde har Humen 3^{mm} ; Spandvidde 20^{mm} .

Bemærkninger. Jeg anser det for noget tvivlsomt, hvorvidt alle i ovenstaaende Synonymliste opregnede Former i Virkeligheden refererer sig til denne Art. Den af Goodsir som *P. globosum* opførte Form kan vistnok erkjendes som en Phoxichilidium; men den er altfor ufuldkomment beskrevet og afbildet til at Arten med Sikkerhed kan bestemmes. Ligeledes er jeg i nogen Tvivl, hvorvidt den af Hoek ved Holland og Nordkysten af Frankrige observerede Form er samme Art. Fodledets Bevæbning er nemlig, efter de af Hoek leverede og som det synes meget nøiagtige Afbildninger, temmelig forskjellig ved det ringe Antal af Torner, der er fæstede til Inderkantens basale Udvidning. Hos alle de af mig undersøgte Exemplarer er Tallet af disse Torner constant 6, og hermed stemmer ogsaa hvad Wilson angiver for den nordamerikanske Form, hvis Identitet med den typiske Art synes at være utvivlsom.

Beskrivelse. Humens sædvanlige Længde er omkring 3^{mm} , med en Spandvidde af 20^{mm} ; Hannerne er som sædvanlig noget mindre. Exemplarer fra Grønland er dog adskilligt større.

Legemet er (se Pl. II, Fig. 1, 1 a, 1 b) forholdsvis temmelig undersætsigt, cylindrisk, noget tykkere fortil end bagtil, og har Segmenterne ved vel markerede Sutures begrænsede fra hinanden. Sidefortsatserne er forholdsvis korte, neppe længere end Legemet er bredt, og skilte ved temmelig brede Mellemrum; naar undtages paa sidste Kropssegment, udgaar de omtrent fra Midten af Segmenterne. Hovedsegmentet er noget længere end det følgende Kropssegment og har Pandedelen forholdsvis meget kort, neppe fremragende over Snabelens Basis og i Forkanten mellem Roden af Saxlemmerne svagt indbugtet. Halesegmentet er forholdsvis lidet, af simpel oval Form og neppe tydeligt afgrænset fra sidste Kropssegment; det er altid

the frontal part very short and slightly incurved at the middle of the fore margin. Caudal segment comparatively small, oval, unarmed. Oculiferous tubercle obtusely conic, the 4 corneæ rather small, placed nearer the base than the extremity of the tubercle. Proboscis scarcely half as long as rest of body, cylindrical, truncate at extremity. Chelifori longer than proboscis, chela a little shorter than scape, fingers the length of palm, exceedingly powerful and hooked at the points. The false legs in the male attaining when fully extended almost the length of the body, exclusive of proboscis, sharply bent in an sigmoid curve. 3rd joint longest, last joint a little shorter than penultimate, with 3 strong, unguiform spines on the inner margin, near the base, and a row of more slender spines along either side. Ambulatory legs rather powerful, about $2\frac{1}{2}$ times as long as the body, almost bare; femoral joint largest, the 2 tibial joints about equal in length, tarsus irregularly triangular, propodus about 3 times longer than broad, inner margin at base armed with 6 strong spines, terminal claw a little more than half as long as propodus, auxiliary claws plainly projecting, but small. Colour red or brownish (sepia-tint). Length of body in female 3^{mm} ; extent 20^{mm} .

Remarks. — I regard as somewhat doubtful whether all the forms enumerated in the above List of Synonymes can properly be referred to this species. The form established by Goodsir as *P. globosum*, may certainly pass for a Phoxichilidium; it is however much too imperfectly described and figured to admit of determining the species with certainty. Likewise, I am far from sure that the form observed by Hoek off the coast of Holland and the north coast of France is the same species. The armature of the propodus must, judging from Hoek's various and, it would seem, very accurate representations, differ not a little by reason of the small number of spines affixed to the basal expansion of the inner margin. In every specimen I have examined, the number of these spines was constant, viz., 6; and this agrees too with what Wilson states for the North American form, whose identity with the typical species would appear to be unquestionable.

Description. — Usual length of female about 3^{mm} , with an extent of 20^{mm} ; the males as a rule somewhat smaller. Specimens from Greenland however attain a considerably larger size.

The body (see Pl. II, fig. 1, 1 a, 1 b) is comparatively rather squareset, cylindric, somewhat thicker anteriorly than posteriorly, and has the segments limited by well-defined sutures. The lateral processes are comparatively short, hardly longer than the body is broad, and separated one from the other by rather wide intervals; save on the last segment of the trunk, they issue from about the middle of the segments. The cephalic segment is a trifle longer than the succeeding segment of the trunk, and has the frontal part comparatively very short, projecting hardly beyond the base of the proboscis, and on the anterior margin between the origin of the chelifori slightly incurved. The caudal segment is comparatively small, of a simple

noget skjævt opadrettet og mangler enhver Art af Bevægning.

Øieknuden (Fig. 1 c) har sin Plads betydelig foran Midten af Hovedsegmentets Rygside, ikke langt fra Forkanten. Den er af noget uregelmæssig stump konisk Form og har de 4 Corneæ beliggende nær Basis. Ved nøiere Undersøgelse viser disse sidste sig af noget ulige Størrelse, idet de 2 forreste er kjendelig større end de 2 bagerste.

Snabelen udgaar (se Fig. 1 a) noget ventralt fra Hovedsegmentets Forende og er lidt skjævt nedadrettet. Den er neppe halvt saa lang som det øvrige Legeme og af cylindrisk Form, med Enden stumpt afkuttet; ganske nær Spidsen har den en svag cirkulær Indknibning (se Fig. 1 b). Mundaabningen er af den sædvanlige triangulære Form.

Saxlemmerne (Fig. 1 d) er forholdsvis kraftigt udviklede og betydelig længere end Snabelen. De bestaar af et temmelig tykt, lige fortil rettet, cylindrisk eller noget kolleformigt, euleddelt Skaft, og et med dette meget bevægeligt forbundet terminalt Afsnit, Saxen. Denne sidste er af oval Form, kortere end Skaftet og ligesom dette ganske glat. Fingrene er særdeles kraftige og stærkt chitiniserede, omtrent af Palmens Længde og mod Enden meget stærkt hageformigt krummede, saa at der mellem dem altid er et meget stort aabent Rum. Den bevægelige Finger, som ligger nederst, er noget længere end den ubevægelige, saa at den, naar Saxen lukkes, lægger sig med Spidsen udenom den ubevægelige, uden at krydse samme (se Fig. 1 e).

Af Følere er der, ligesaa lidt som hos de i det foregaaende beskrevne Former, det mindste Spor at opdage.

De falske Fodder (Fig. 1 f), som kun er tilstede hos Hamnerne, er indleddede paa hver Side til et lidet knudeformigt Fremspring, der ligger noget ventralt umiddelbart foran Insertionen af de forreste Sidefortsatser (se Fig. 1 a, 1 b). De er forholdsvis kraftigt udviklede og, lige udstrakte, næsten af Kroppens Længde, naar Snabelen fraregnes. I almindelighed viser de imidlertid en meget stærk S-formig Bøining og er slaaede ind under Dyrets Bugside. De bestaar kun af 5 tydeligt begrænsede Led, og naar Kroyer har beskrevet disse Lemmer som 7-leddede, da kommer dette aabenbart deraf, at han har regnet det knudeformige Fremspring, hvortil de er fæstede, som et særskilt Led og desuden feilagtigt har taget en svag Indknibning i Midten af sidste Led som en virkelig Artikulation. Af Leddene er det 1ste kortest men temmelig tykt, det 3die længst og 2det og 4de omtrent af ens Størrelse. Sidste Led er lidt kortere end disse, dog forholdsvis bredere, sammentrykt og stærkt krummet, uden Klo, men bevæbnet i Inderkanten nær Basis med 3 tæt sammentrængte hageformige Torner og desforuden til hver Side med en Rad af lignende skjøndt noget svagere Torner. Forøvrigt er disse Lemmer kun meget sparsomt besatte med meget smaa, simple tornformige Borster.

oval form, and not distinctly marked off from the last segment of the trunk; it is always directed somewhat obliquely upward, and does not exhibit any kind of armature whatever.

The oculiferous tubercle (fig. 1 c) has its place considerably anterior to the middle of the dorsal surface of the cephalic segment, not far from the anterior margin. It exhibits a somewhat irregular obtusely-conic form, and has the 4 corneæ placed near the base. On closer examination these are found to differ somewhat in size, the 2 foremost being appreciably larger than the 2 hindmost.

The proboscis issues (see fig. 1 a) a little ventrally from the anterior extremity of the cephalic segment, and points somewhat obliquely downward. It is hardly half as long as the rest of the body and of cylindric form, with the extremity obtusely truncate; in close proximity to the point it has a faint circular constriction (see fig. 1 b). The buccal orifice is of the usual triangular form.

The chelifori (fig. 1 d) are of comparatively powerful development and considerably longer than the proboscis. They consist of a rather thick, anteriorly directed, cylindric or somewhat claviform, one-jointed scape and, connected very movably with it, a terminal section, the chela. The latter is oval in form, shorter than the scape, and, like that part, quite smooth. The fingers are exceedingly powerful and highly chitinized, about as long as the palm, and towards the extremity very strongly hooked, so as always to admit of a large open space between them. The movable finger being the lower of the two, is a trifle longer than the immovable, and hence, on the chela being shut, it will lie with the point beyond the immovable one, without crossing it (see fig. 1 e).

Of palpi, as in the forms previously described, not the slightest trace can be found.

The false legs (fig. 1 f), present in the males only, are jointed on either side to a small tuberculiform projection, lying in a somewhat ventral position immediately anterior to the origin of the foremost lateral processes (see fig. 1 a, 1 b). They are comparatively of powerful development, and, when fully extended, well-nigh equal in length to the body, excluding the proboscis. Generally, however, they assume a very decided sigmoid curve, and are folded in under the ventral surface of the animal. They consist of 5 distinctly defined joints, and if Kroyer has described these limbs as seven-jointed, this must obviously arise from his having counted the tuberculiform projection to which they are affixed as a distinct joint, and moreover erroneously having mistaken a faint constriction in the middle of the last joint for a true articulation. Of the joints, the 1st is shortest, but rather thick, the 3rd longest and the 2nd and 4th about equal in size. The terminal joint is a little shorter than the two last, but relatively broader, compressed, and strongly curved, without any claw, though armed along the inner margin with 3 closely set, unguiform spines, and having besides on either side a row of similar but somewhat feebler spines. For the rest, these limbs are very sparingly beset with exceedingly small, simple spiniform bristles.

Gangfodderne (se Fig. 1) er forholdsvis temmelig robuste og mindre stærkt afsmalnende mod Enden end sædvanligt. De er neppe mere end $2\frac{1}{2}$ Gang længere end Legemet og ser ved første Øiekast ganske glatte ud. Ved nyere Undersøgelse viser de sig imidlertid overalt temmelig tæt besatte med særdeles smaa mikroskopiske Torner, der giver dem en noget ru Overflade. Af Leddene er Laarledet det største og hos Hannerne ofte stærkt opblæst paa Grund af de i dets indre sig udviklende Æg. De 2 Lægled er indbyrdes næsten af ens Længde og ethvert af dem omtrent saa langt som Hoftepartiet. Tarsalledet (se Fig. 1 g) er meget lidet, af triangular Form og særdeles bevægeligt forbundet med foregaaende Led; det gaar paa den ydre Side ud i en tilspidset Flig og har Inderkanten ganske svagt udbuet samt besat med nogle længere Borster og en enkelt stærk Torn. Fodledet (ibid.) er særdeles kraftigt udviklet, omtrent 3 Gange længere end bredt og stærkt krummet. Det er overalt besat med korte tornformige Borster og har Inderkanten dybt indbugtet samt ved Roden noget pladeformigt udvidet; til Randen af denne Udvidning er fæstet 6 stærke, fortil krummede Torner, hvoraf de 2 forreste er stillede jevnside. Endekloen er kraftig, noget krummet og omtrent halvt saa lang som Fodledet. Bikloerne er derimod meget smaa, skjøndt tydeligt udviklede og ragende frem foran Endekloens Yderkant.

Integumenterne er temmelig tykke og af lederagtig Consistens, samt halvt gjennemsigtige.

De til de falske Fodder hos Hannerne fæstede ydre Ægmassers Antal er vexlende, ofte særdeles stort (se Fig. 1 a), af kugledannet Form og indeholdende talrige meget smaa Æg.

Farven er ialmindelighed mere eller mindre intensiv rød, navnlig hos de paa grundere Vand forekommende Individuer, undertiden mørk brunlig eller sepia-farvet.

Forekomst. Arten synes at forekomme langs vor hele Kyst, sædvanligvis paa ganske grundt Vand. Ved Finmarken har jeg endog taget den i Fjæren under Stene sammen med *Pycnogonum littorale*. Den gaar imidlertid af og til ogsaa ned til meget betydelige Dyb, og jeg har endog ved Florø optaget et Exemplar, en fuldt udviklet Hun, fra et Dyb af 100 Favne.

Udbredning. Arten er utvivlsomt en udpræget nordlig Form og opnaar i Overensstemmelse hermed sin kraftigste Udvikling i de arktiske Have. Foruden ved Norges Kyster er den saaledes kjendt fra den murmanske Kyst (Jarzynsky), Grønland (Kroyer) og Nordamerikas Østkyst (Wilson). Mod Syd gaar den til de britiske Oer (Johnston o. fl.), Danmark (Kroyer, Hansen) og, hvis den af Hoek undersøgte Form virkelig er den samme, ogsaa til Holland og Frankriges Nordkyst.

The ambulatory legs (see fig. 1) are comparatively rather robust, and taper less abruptly towards the extremity than usual. They measure scarcely more than $2\frac{1}{2}$ times the length of the body, and appear at the first glance to be quite smooth. On closer examination however, they are found to be rather closely beset with microscopically minute spines, which give them a somewhat rough surface. Of the joints, the femoral is the largest, and in the females often very much swollen, owing to the eggs developing within. The 2 tibial joints are well-nigh of one length, and each about as long as the coxal section. The tarsus (see fig. 1 g) is very small, of triangular form, and very movably connected with the preceding joint; on the outer side it terminates as a pointed lappet, having the inner margin faintly arched and beset with a few comparatively long bristles and one strong spine. The propodus (ibid.) is most powerfully developed, about 3 times as long as broad, and strongly curved. It is everywhere beset with short spiniform bristles, and has the inner edge deeply emarginate, as also at the base somewhat lamellarly expanded; to the margin of this expansion are affixed 6 strong, anteriorly curving spines, the 2 foremost in juxtaposition. The terminal claw is powerful, slightly curved, and about half as long as the propodus. The auxiliary claws on the other hand are very small, though distinctly developed, and project beyond the outer margin of the terminal claw.

The integuments are rather thick and coriaceous in consistence, and semi-translucent.

The number of the outer egg-masses attached to the false legs in the male, is found to vary, being often exceedingly large (see fig. 1 a); they have a globular form and contain numerous minute eggs.

The colour is generally a more or less vivid red, in particular of specimens from shallower water, sometimes dark-brownish or a sepia tint.

Occurrence. — The species would seem to occur along the whole of the Norwegian coast, as a rule in quite shallow water. In Finmark I have even taken it on the beach, under stones, along with *Pycnogonum littorale*. In some cases however it goes down to a very considerable depth, and at Florø I have even brought up a specimen, a fully developed female, from about 100 fathoms.

Distribution. — The species is unquestionably a well-marked Northern form, attaining accordingly its fullest development in the Arctic Seas. Hence, besides the coasts of Norway, it is known from the Murman coast (Jarzynsky), Greenland (Kroyer), and the east coast of North America (Wilson). Southward, its range extends to the British Islands (Johnston and others), Denmark (Kroyer, Hansen), and, assuming the form examined by Hoek to be really the same, also to Holland and the north coast of France.

Gen. 4. **Anoplodactylus**, Wilson (1878).

Transact. Conn. Acad. Arts & Sciences. Vol. V.

Slægtscharacter. Legemet mere eller mindre smækkert, med forholdsvis lange Sidefortsatser. Hovedsegmentet fortil indknebet og fremragende over Roden af Snabelen. Halesegmentet mere eller mindre forlænget. Oieknuden beliggende ved Enden af Pandedelen, vel udviklet eller rudimentær. Snabelen udgaaende fra Hovedsegmentets ventrale Side, skraat nedadrettet. Saxlemmerne forholdsvis svage, haarbesatte, med Saxen liden og Fingrene neppe forciperede. De falske Fodder hos Hannen 6-leddede, sidste Led meget lidet, børstebesat, uden Klo. Gangfodderne spinkle, mere eller mindre forlængede, sparsomt haarbesatte. Tarsalleddet meget kort, Fodleddet forlænget, med Inderkanten fremspringende ved Basis og her bevæbnet med stærke Torner. Endekloen stærkt forlænget, leformig, Bikloerne yderst smaa og rudimentære, ikke fremragende foran Endekloens Yderkant. Flere kugleformige Ægmasser fæstede til de falske Fodder hos Hannen.

Bemærkninger. Den Character, hvorpaa Wilson væsentlig synes at have grundet denne Slægt, nemlig den formentlige Mangel af Bikloer, er vistnok ubrugelig, da saadanne i Virkeligheden forefindes, skjøndt i en meget rudimentær Tilstand; men jeg tror dog, at Slægten bør opretholdes, da de herhen hørende Arter viser en Del andre eiendommelige Characterer, der synes at maatte kunne tillægges generisk Betydning, saasom Hovedsegmentets characteristiske Form, Saxlemmernes svagere Bygning, og navnlig det større Antal Led i de falske Fodder. Slægten synes at tælle ikke faa Arter. Foruden den typiske Form, *A. lentus* Wilson, og de to nedenfor nærmere beskrevne Arter, horer herhen *Phorichilidium virescens* Hodge, samt efter al Sandsynlighed de 2 af Dohrn beskrevne middelhavske Arter, *P. angulatum* og *exiguum*. Endelig synes den af Hoek fra Challenger Expeditionen opførte Art *P. insigne*, ialfald at domme efter de falske Fodders Udseende, nærmest at maatte henregnes til samme Slægt.

5. **Anoplodactylus petiolatus** (Kroyer).

(Pl. II, Fig. 2, a—l).

Phorichilidium petiolatum, Kroyer, Nat. Tidsskr. 2 Række, Bd. 1, p. 123.

" " Gaimard's Voyage en Scandinavie, Pl. 38, fig. 3, a—f.

Pallene pygmaea, Hodge, Ann. Mag. Nat. Hist., 3 ser., V. XIII, p. 116. Pl. XIII, fig. 16—17.

Phorichilidium mutilatum, Semper, Arb. aus des Zool. Zool. Inst. in Würzburg. Bd. 1, p. 271. Tab. 17, Fig. 12—16.

Den norske Nordhavsexpedition. G. O. Sars: Pycnogonidea.

Gen. 4. **Anoplodactylus**, Wilson (1878).

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Generic Character. Body more or less slender, with comparatively long lateral processes. Cephalic segment anteriorly constricted and projecting beyond base of proboscis. Caudal segment more or less elongate. Oculiferous tubercle located at extremity of frontal part, well-developed or rudimentary. Proboscis issuing from ventral side of cephalic segment, directed obliquely downwards. Chelifori comparatively feeble, covered with hair, having the chela small and the fingers scarcely forcipate. False legs in the male 6-jointed, terminal joint very small, bristle-bearing, without any claw. Ambulatory legs slender, more or less elongate, sparingly hair-beset, tarsal joint very short, propodal joint produced, with inner margin projecting at base, and armed there with strong spines, terminal claw elongate, falciform, auxiliary claws exceedingly small and rudimentary, not projecting beyond outer margin of terminal claw. Several globular egg-masses attached to the false legs in the male.

Remarks. — The character on which Wilson would seem to have chiefly founded this species, viz., its supposed want of auxiliary claws, is certainly untenable, as such do really occur, although in a very rudimentary state; meanwhile the genus should, I cannot but think, be retained, as the species classed under it exhibit certain other peculiar characters, to which apparently we can assign generic value, thus, for example, the characteristic form of the cephalic segment, the feeble structure of the chelifori, and more especially the greater number of joints in the false legs. The genus would appear to comprise not a few species. Excluding the typical form, *A. lentus*, Wilson, and the 2 species described below, it counts *Phorichilidium virescens*, Hodge, and in all probability the 2 Mediterranean species, *P. angulatum* and *exiguum*, described by Dohrn. Finally, the species established by Hoek from the "Challenger" Expedition, *P. insigne*, judging at least by the appearance of the false legs, would appear to approximate the same genus closest.

5. **Anoplodactylus petiolatus** (Kroyer).

(Pl. II, fig. 2, a—l).

Phorichilidium petiolatum, Kroyer, Nat. Tidsskr. 2 Række, Bd. 1, p. 123.

" " Gaimard's Voyage en Scandinavie, Pl. 38, fig. 3, a—f.

Pallene pygmaea, Hodge, Ann. Mag. Nat. Hist. 3 ser., V. XIII, p. 116. Pl. XIII, figs 16, 17.

Phorichilidium mutilatum, Semper, Arb. aus der Zool. Inst. in Würzburg. Bd. 1, p. 271. Tab. 17, fig. 12—16.

Phorichilidium longicolle. Dohrn, Die Pantopoden des Golfes von Neapel, p. 177, Tab. XIII, Fig. 1—8.

Phorichilidium pygmaeum. Hoek, Arch. Zool. expér. IX, p. 514, Pl. XXVI & XXVII, fig. 22—25.

Phorichilidium petiolatum. Hansen, Zool. Danicæ, Tab. VII, fig. 22.

" " Hansen, Nat. Tidsskr., 3 Række, Bd. 14, p. 650.

Anoplodactylus petiolatus, G. O. Sars, Pycnogonidea borealia et arctica, No. 5.

Artscharacter. — Legemet temmelig bredt, noget nedtrykt, med Sidefortsatserne mindre vidt adskilte og hver ved Enden oventil forsynet med et lidet koniskt Fremspring. Hovedsegmentet saa langt som de 3 følgende Segmenter tilsammen, fortil uddraget til en meget smal, over Roden af Snabelen fremragende Hals. Halsesegmentet horizontalt, stærkt forlænget. Oieknuden særdeles høj, cylindrisk, forsynet til hver Side af Spidsen med et vinkelformigt Fremspring; de 4 Corneæ beliggende nærmere Spidsen end Basis, skjævt stillede, de 2 bagerste højere op end de 2 forreste. Snabelen forholdsvis kort, neppe mere end $\frac{1}{3}$ saa lang som Legemet, simpelt cylindrisk. Saxlemmerne af Snabelens Længde, Skaffet smalt cylindrisk, Saxen halvt saa lang, Fingrene omtrent af Palmens Længde, den ubevægelige Finger næsten lige, den bevægelige jævnt krummet og længere end hin. De falske Fodder hos Hannen omtrent af Legemets Længde (excl. Snabelen); 3die Led stærkt forlænget og smalt, de 3 ydre Led hurtigt aftagende i Størrelse, sidste særdeles lidet, ovalt. Gangfodderne neppe mere end dobbelt saa lange som Legemet, forholdsvis spinkle og besatte med spredte Børster. Laarledet størst og omtrent af Hoftepartiets Længde, de 2 Lægled lige lange, Tarsalledet meget lidet, trekantet, Fodledet smalt, stærkt krummet og ved Basis indad dannende en smalt afrundet, med 2 stærke Torner bevæbnet pladeformig Udvidning; den indre Kant af Leddet bevæbnet med en Rad af smaa fortil krummede Torner, hvorpaa følger en tynd, ndelt Lamelle: Endekloen næsten af Fodledets Længde, leformig. Farven hvidagtig. Legemets Længde 2^{mm} ; Spandvidde 10^{mm} .

Bemærkninger. At baade den af Hodge som *Pallene pygmaea* opførte Form og Dohrn's *Phorichilidium longicolle* horer herhen, anser jeg for utvivlsomt. Ligeledes maa jeg være enig med Hansen, naar han opfører den af Semper under Benævnelsen *Phorichilidium mutilatum* omtalte Form fra Helgoland som Synonym. Arten har ved den smalt udtrukne Hals og høje Oieknude et saa characteristisk Udseende, at den neppe er til at tage fejl af.

Beskrivelse. Hannens Længde er neppe mere end 2^{mm} , med en Spandvidde af 10^{mm} . Hannerne er som sædvanlig lidt mindre.

Legemet er (se Pl. II, Fig. 2, 2 a, 2 b) noget undersøetsigt og i Forhold til Længden temmelig bredt, lidt nedtrykt og afsmalnende bagtil, med vel markerede Sutureer mellem Segmenterne. Sidefortsatserne er forholdsvis lange, men ikke meget vidt adskilte. De har hver ved Enden oventil et lidet koniskt Fremspring, og de 2 mellemste Par

Phorichilidium longicolle. Dohrn, Die Pantopoden des Golfes von Neapel, p. 117, Tab. XIII, fig. 1—8.

Phorichilidium pygmaeum. Hoek, Arch. Zool. expér. IX, p. 514, Pl. XXVI & XXVII, fig. 22—25.

Phorichilidium petiolatum. Hansen, Zool. Danicæ, Tab. VII, fig. 22.

" " Hansen, Nat. Tidsskr., 3 Række, Bd. 14, p. 650.

Anoplodactylus petiolatus, G. O. Sars, Pycnogonidea borealia et arctica, No. 5.

Specific Character. — Body rather broad, somewhat flattened, with the lateral processes less widely separated, and each having above, at the extremity, a small conical projection. Cephalic segment as long as the 3 following segments collectively, produced anteriorly to a very narrow neck, extending over the base of the proboscis. Caudal segment horizontal, greatly prolonged. Oculiferous tubercle remarkably protuberant, cylindric, furnished on each side of the point with an angular projection; the 4 corneæ nearer the point than the base, position oblique, the 2 posterior ones higher up than the 2 anterior ones. Proboscis comparatively short, scarcely more than one-third as long as the body, plain, cylindric. Chelifori measuring the length of proboscis, scape narrow cylindric, chela half as long, fingers about the length of palm, immobile finger well-nigh straight, mobile finger uniformly curved and longest. False legs in the male about the length of the body (excl. proboscis); 3rd joint very elongate and slender, the 3 outer joints diminishing rapidly in size, last one exceedingly small, oval. Ambulatory legs scarcely more than twice as long as the body, comparatively slender and beset with scattered bristles, femoral joint largest and about the length of coxal region, the 2 tibial joints equally long, tarsal joint very small, triangular, propodal joint slender, sharply curved, and at the base forming inwards a narrow, rounded lamellar expansion armed with 2 strong spines; inner margin of the joint armed with a row of small, anteriorly curved spines, to which succeeds a thin, undivided lamella; terminal claw well-nigh as long as propodal joint, falciform. Colour whitish. Length of body 2^{mm} ; extent 10^{mm} .

Remarks. — The form described by Hodge as *Pallene pygmaea*, and Dohrn's *Phorichilidium longicolle* belong, I think, unquestionably, to this species. Moreover, I quite agree with Hansen in regarding the form from Helgoland, mentioned by Semper under the name of *Phorichilidium mutilatum*, as a synonym. The species acquires by reason of the slenderly produced neck and protuberant oculiferous tubercle, so characteristic an appearance, as to hardly admit of confounding it with any other.

Description. — The length of the female is scarcely more than 2^{mm} , with an extent of 10^{mm} . The males are, as usual, a trifle smaller.

The body (see Pl. II, fig. 2, 2 a, 2 b) is somewhat short and stout, and, relatively to its length, rather broad, slightly flattened, and tapers posteriorly, with well marked sutures between the segments. The lateral processes are comparatively long, but not much separated. They each have at the extremity above, a small conic projection, and

udgaar noiagtig fra Midten af de tilsvarende Segmenter. Hovedsegmentet, der omtrent er saa langt som de 3 følgende Segmenter tilsammen, er i sit bagre Parti temmelig bredt, men indknibes umiddelbart foran de forreste Sidefortsatser pludselig meget stærkt og skyder frem som en smal cylindrisk Hals ud over Snabelens Basis. Til Enden af dette cylindriske Parti af Hovedsegmentet er Saxlemmerne fæstede, og umiddelbart bag dem hæver Oieknuden sig i Veiret (se Fig. 2 b). Halssegmentet (Fig. 2 l) er ualmindelig stærkt forlænget, omtrent saa langt som de 2 foregaaende Segmenter tilsammen, og horizontalt stillet (se Fig. 2 b). Det er af næsten cylindrisk Form og stumpet tilspidset i Enden, med en kort Borste til hver Side nær Spidsen.

Oieknuden (Fig. 2 c) er særdeles hoi, cylindrisk, og viser sig, seet forfra eller bagfra, at have til hver Side nær Spidsen en fremspringende Vinkel. De 4 Corneæ ligger nærmere Spidsen end Basis af Oieknuden, dog ikke lige høit, idet de 2 forreste og betydelig større Corneæ ligger lavere end de 2 bagerste (se Fig. 2 b).

Snabelen udgaar her (se Fig. 2 b) tydeligt fra Hovedsegmentets ventrale Side og er noget skraat nedadrettet. Den er forholdsvis kort, neppe mere end $\frac{1}{3}$ saa lang som Legemet og af simpel cylindrisk Form, med Enden stumpet afkuttet.

Saxlemmerne (Fig. 2 d), der fra Enden af Hovedsegmentet ligesom hænger ud over Snabelen, er af temmelig svag Bygning, omtrent af Snabelens Længde og besat med fine Haar. Skaffet er smalt cylindrisk og kun lidet fortykket i Enden. Saxen er neppe halvt saa lang og meget smal, med Fingrene omtrent af Palmens Længde og beggaaende ud i en sylskarp Spids. Den bevægelige Finger, som her ligger oventil, er noget længere og mere buet end den ubevægelige, der næsten er ganske lige.

Af Følere er der ikke det mindste Spor at opdage.

De falske Fødder hos Hannen (se Fig. 2 b, 2 f) er temmelig spinkle og, lige udstrakte, næsten af Legemets Længde. De bestaar af 6 vel begrænsede Led, hvoraf det 3die er særdeles stærkt forlænget og tyndt, selv længere end begge de foregaaende Led tilsammen; det danner med 2det Led en stærk knæformig Bøining og viser i nogen Afstand fra Basis en utydelig Indknibning, der ved første Oiekast let kan tages for en virkelig Leddeling. De 3 sidste Led aftager hurtigt i Størrelse og er tilsammen kortere end 3die; 4de Led gaar i Flugt med 3die, medens de 2 yderste Led er med en stærk albueformig Bøining slaaede op mod 4de. Begge disse sidste Led, men navnlig det overordentlig lille, ovale Endeled, er besat med en hel Del tilbageboiede stive Borster, medens den øvrige Del af af disse Lemmer kun er forsynet med simple korte Haar.

Gangfolderne (se Fig. 2) er ikke af synderlig betydelig Længde, neppe mere end dobbelt saa lange som Legemet, men af temmelig spinkel Form og besatte med spredte

the 2 mesial pairs issue exactly from the middle of the corresponding segments. The cephalic segment, which is about as long as the 3 following segments taken together, is rather broad in its posterior part, but immediately anterior to the foremost of the lateral processes is abruptly constricted, and projects as a narrow cylindrical neck over the base of the proboscis. To the extremity of this cylindrical part of the cephalic segment the chelifori are attached, and immediately behind them rises the oculiferous tubercle (see fig. 2 b). The caudal segment (fig. 2 l) is remarkably elongate, about as long as the 2 preceding segments taken together, and horizontally placed (see fig. 2 b). It is well-nigh cylindrical in form and obtusely acuminate at the extremity, with a short bristle on each side near the point.

The oculiferous tubercle (fig. 2 c) is exceedingly protuberant, cylindric, and is seen to have, when viewed anteriorly or posteriorly, on each side, near the point, a projecting angle. The 4 corneæ lie nearer the point than the base of the oculiferous tubercle, although not on the same level, as the 2 foremost and considerably larger corneæ are placed lower than the 2 hindmost (see fig. 2 b).

The proboscis in this animal (see fig. 2 b) is distinctly seen to issue from the ventral side of the cephalic segment, and is directed somewhat obliquely downward. It is comparatively short, hardly more than one-third as long as the body, and of a plain, cylindrical form, with the extremity obtusely truncated.

The chelifori (fig. 2 d), which hang out, as it were, over the proboscis from the extremity of the cephalic segment, are of rather feeble structure, about as long as the proboscis, and beset with fine hairs. The scape is narrow cylindric, and but slightly tumefacted at the extremity. The chela measures hardly half the length, is very narrow, with the fingers about as long as the palm, and both running to an awl-shaped point. The mobile finger, placed in this animal above, is somewhat longer and more curved than the immobile one, which is almost quite straight.

Of palpi not a trace can be detected.

The false legs in the male (see fig. 2 b, 2 f) are rather slender, and, when fully extended, measure well-nigh the length of the body. They consist 6 well-defined joints, of which the 3rd is especially elongated and thin, longer even than both the preceding joints taken together; it forms along with the 2nd joint a strong geniculate bend, and exhibits at some distance from the base an indistinct constriction, at the first glance easily mistaken for a true articulation. The 3 last joints diminish rapidly in size, and taken together, are shorter than the 3rd; the 4th joint extends in line with the 3rd, whereas the 2 outermost joints are, by a strong, elbow-shaped bend folded up against the 4th. Both the latter joints, but in particular the exceedingly small, oval, terminal joint, are beset with a number of stiff, recurved bristles, while the remaining part of the limbs is furnished merely with plain, short hairs.

The ambulatory legs (see fig. 2) do not attain any considerable length, measuring hardly more than double that of the body, but are rather slender in form and beset with

Børster, der navnlig ved Enden af Leddene er tydelige og temmelig lange. Laarledet er ogsaa her det største og hos den fuldt udviklede Hun temmelig opblæst paa Grund af de sig i dets indre udviklende Æg; det har ved Enden paa Ydersiden et lidet knudeformigt, med en længere Børste besat Fremspring. De 2 Lægled er indbyrdes omtrent af ens Længde, og det sidste af dem har i nogen Afstand fra Spidsen i Yderkanten en usædvanlig lang og tynd Børste, fæstet til et knudeformigt Fremspring (se Fig. 2 h). Tarsalledet (ibid.) er meget lidet og som hos foregaaende Slægt særdeles bevægeligt forbundet med foregaaende Led. Det er af trekantet Form og gaar saavel paa den indre som ydre Side ud i et vinkelformigt Hjørne. Fodledet er forholdsvis smalt og stærkt krummet, med Yderkanten besat med en regelmæssig Rad af fine Børster. Iderkanten springer frem ved Basis i Form af en smalt tilrundet pladeformig Udvidning, hvortil er fæstet 2 stærke, fortal krummede Tørner og umiddelbart foran dem en Del simple Børster. Langs den øvrige, jævnt indbugtede Del af Iderkanten findes bagtil en Rad af 6 meget smaa fortal krummede Tørner, hvorpaa følger en sammenhængende klar Chitinplade, til Siderne af hvilken staar nogle faa fine Børster. Endekloen er særdeles lang, næsten af Fodledets Længde, leformig, og kan med Spidsen boies ind mod den basale Udvidning af Iderkanten. Bikkloerne er yderst smaa og rudimentære, og rager ikke frem foran Endekloens Yderkant, hvorfor de meget let kan oversees. Hos Hannerne er Gangfodderne (Fig. 2 i) udmærkede derved, at 2det Hoftelid gaar ved Enden ud i en temmelig stærkt fremspringende, noget konisk, med Børster besat Fortsats, paa hvis Ende Kjonsaabningen har sin Plads. Desuden har Laarledet foran Midten i Yderkanten en til et smalt Rør uddraget Fortsats (se ogsaa Fig. 2 k), der indeholder Mundingen for den saakaldte Kitkjærtel, ved hvis Secret Æggene sammenkittes og fæstes til de falske Fodder.

Integumenterne er temmelig tynde og gjennemsigtige, med mindre tydeligt udpræget Skulptur.

De til de falske Fodder hos Hannen fæstede ydre Ægmasser (se Fig. 2 b) er som hos foregaaende Slægt talrige og af kugledannet Form, men Æggene forholdsvis betydelig større.

Farven er ialmindelighed hvidagtig, lidt spillende i det grønne.

Forekomst. Jeg har taget denne Art i store Mængder paa et Par Punkter ved vor Sydkyst, Risoer og Arendal, hvor den forekom paa 6—12 F. D., Mudderbund. Rimeligvis forefindes den ogsaa langs vor hele Vestkyst, men er paa Grund af sin ringe Størrelse og lidet iøjnefaldende Farve, hidtil bleven overseet. Det nordligste, jeg har truffet den, er ved Tjøto i Nordland.

Udbredning. I Modsætning til *Phorichilidium femoratum* synes denne Art at være en udpræget sydlig Form.

scattered bristles, distinct and rather long, more especially at the end of the joints. Also in this animal the femoral joint is largest, and in the fully developed female rather dilated, by reason of the eggs developing within; at the extremity, on the outer surface, it has a small, nodular projection, bearing a longish bristle. The 2 tibial joints are of about equal length, and the ultimate one has, at some distance from the point, on the outer margin, an unusually long and delicate bristle, attached to a nodular projection (see fig. 2 h). The tarsal joint (ibid.) is extremely small and, as in the preceding genus, very flexibly articulated with the preceding joint. Its form is triangular, and alike on the inner and the outer side it passes into an angular corner. The propodal joint is comparatively slender and strongly curved, with the outer margin beset with a regular series of delicate bristles. The inner margin projects at the base in the form of a narrow, rounded, lamellar expansion, to which are attached 2 strong, anteriorly curving spines, and immediately in front of them a number of plain bristles. Along the remaining, uniformly concave part of the inner margin, occur, posteriorly, a row of 6 very small, anteriorly curving spines, to which succeeds a thin continuous chitinous plate to whose sides a few delicate bristles are attached. The terminal claw is exceedingly long, well-nigh the length of the propodus, falciform, and admits of being bent in, with the point against the basal expansion of the inner margin. The auxiliary claws are remarkably small and rudimentary, not projecting beyond the outer margin of the terminal claw, and may thus be easily overlooked. In the males, the ambulatory legs (fig. 2 i) are distinguished by the 2nd coxal joint running out at the extremity as a rather strongly projecting, somewhat conical, bristle-beset process, on the end of which the sexual opening is located. Moreover, the femoral joint has, just anterior to the middle on the outer margin, a process, drawn out to a narrow tube (see too fig. 2 k), which contains the mouth of the so-called agglutinative gland, whose secretion serves for gluing together the ova and fixing them to the false legs.

The integuments are rather thin and translucent, with not very prominent sculpture.

The outer egg-masses attached to the false legs in the male (see fig. 2 b) are, as in the preceding genus, numerous, and globular in form, but the eggs relatively a good deal larger.

The colour is generally whitish, with a slight greenish play.

Occurrence. — I have met with this species in great abundance in two localities on the south coast of this country, Risoer and Arendal, where it occurred at a depth of 6—12 fathoms; mud bottom. Probably it is found, too, along the whole of our west coast, but has from its trifling size and inconspicuous colour been passed by unnoticed. The farthest north I have taken it is at Tjøto in Nordland.

Distribution. — Unlike *Phorichilidium femoratum*, this species would seem to be a well-marked southern form.

Foruden ved Norge er den kjendt fra Danmark (Kroyer, Hansen), de britiske Oer (Hodge), Helgoland (Semper), Holland og Nordkysten af Frankrige (Hoek), samt i Middelhavet (Dohrn).

6. *Anoplodactylus typhlops*, G. O. Sars.

(Pl. II. Fig. 3, a—c).

Anoplodactylus typhlops, G. O. Sars, Pycnogonidea borealia et arctica No. 6.

Artscharacter. ♀. Legemet særdeles spinkelt, cylindrisk, med vidt adskilte Sidefortsatser af betydelig Længde. Hovedsegmentet kortere end de 2 følgende Segmenter tilsammen, som hos foregaaende Art fortil udtrukket i Form af en smal, over Roden af Snabelen fremragende Hals. Halsesegmentet forholdsvis kort, opadrettet. Oieknuden rudimentær, uden Spor af Pigment eller Cornæ. Snabelen særdeles stor, skjævt nedadrettet, udvidet paa Midten, næsten tendannet. Saxlemmerne lange og spinkle, Skaffet smalt cylindrisk, noget, Saxen neppes mere end $\frac{1}{3}$ saa lang, med kort Palm og lange, i Enden stærkt krummede, børstebesatte Fingre. Gangfodderne stærkt forlængede, mere end 3 Gange længere end Legemet, sparsomt haarbesatte; 2det Høfteled længere end de to øvrige tilsammen; Laarledet meget stort, smalt tenformigt; de 2 Lægled indbyrdes omtrent af ens Længde; Tarsalledet særdeles lidet, skaalformigt; Fodledet smalt og stærkt forlænget, næsten lige og ved Basis indad gaaende ud i en smalt afrundet Udvidning, bevæbnet med 3 Torner, de 2 forreste stillede jævnsides, den bagerste særdeles lang og næsten lige; Underkanten af Ledet forsynet med en regelmæssig Rad af korte Torner; Endekloen meget lang, leformig. Farven hvidagtig. Legemets Længde 3^{mm} ; Spandvidde 22^{mm} .

Bemærkninger. Denne meget distincte, nye Art, der aabenbart tilhører Slægten *Anoplodactylus* Wilson, er let kjendelig fra de øvrige bekjendte Arter ved Legemets ualmindelig spinkle Form, de stærkt forlængede Gangfodder, den store, tendannede Snabel, men især ved den fuldstændige Mangel af Oine.

Beskrivelse. Længden af det eneste foreliggende Exemplar, en fuldt udviklet Hun, er 3^{mm} , med en Spandvidde af 22^{mm} . Arten opnaar saaledes en meget betydelig Størrelse end foregaaende.

Af Form er Legemet (se Pl. II. Fig. 3, 3 a, 3 c) særdeles smalt og langstrakt, cylindrisk, med sidste Kropssegment noget smalere end de øvrige, og Sidefortsatserne ualmindelig stærkt forlængede, næsten dobbelt saa lange som Legemet er bredt. De er af cylindrisk Form, lidt indknebne ved Basis og uden noget knudeformigt Fremspring ovenfor, samt skilte ved særdeles vide Mellemrum. Hovedsegmentet (se ogsaa Fig. 3 b) er omtrent saa langt som de 2 følgende Segmenter tilsammen og af en lignende

Exclusive of Norway, it is known from Denmark (Kroyer, Hansen), the British Islands (Hodge), Helgoland (Semper), Holland and the north coast of France (Hoek), and the Mediterranean (Dohrn).

6. *Anoplodactylus typhlops*, G. O. Sars.

(Pl. II. fig. 3, a—c).

Anoplodactylus typhlops, G. O. Sars, Pycnogonidea borealia et arctica No. 6.

Specific Character. — ♀ Body remarkably slender, cylindrical, with widely separated lateral processes of considerable length. Cephalic segment shorter than the 2 succeeding segments taken together, produced anteriorly, as in the preceding species, in the form of a slender neck projecting over the base of the proboscis. Caudal segment comparatively short, directed upwards. Oculiferous tubercle rudimentary, without a trace of pigment or cornea. Proboscis exceedingly large, pointing obliquely downward, expanded in the middle, almost fusiform. Cheliferi long and slender, scape narrow cylindrical, bare, chela hardly more than one-third as long, with short palm and long fingers, bristle-bearing and strongly curved at the extremity. Ambulatory legs very elongate, more than 3 times longer than body, sparingly furnished with hairs; 2nd coxal joint exceeding in length the 2 others taken together; femoral joint very large, slenderly fusiform; the 2 tibial joints about equal in length; tarsal joint exceedingly small, bowl-shaped; propodal joint slender and very elongate, almost straight, and produced at the base inwards, as a narrow, rounded expansion, armed with 3 spines, the 2 foremost in juxtaposition, the hindmost remarkably long and almost straight; inner margin of the joint bearing a regular series of short spines; terminal claw very long, falciform. Colour whitish. Length of body 3^{mm} ; extent 22^{mm} .

Remarks. — This very distinct new species, clearly belonging to the genus *Anoplodactylus*, Wilson, is easy to distinguish from the other known species, by reason of the body's uncommonly slender form, the very elongate ambulatory legs, the large fusiform proboscis, but especially the complete absence of eyes.

Description. — The length of the single specimen obtained, a fully developed female, is 3^{mm} , with an extent of 22^{mm} . The species thus attains a considerably larger size than the preceding one.

In form, the body (see Pl. II. fig. 3, 3 a, 3 c) is exceedingly slender and elongate, cylindric, with the last segment of the trunk a trifle more slender than the others, and the lateral processes uncommonly elongated, well-nigh twice as long as the body is broad. They are of cylindrical form, slightly constricted at the base, and without any nodular projection above, and are separated by exceedingly wide intervals. The cephalic segment (see too fig. 3 b) is about as long as the 2 succeeding segments taken

Form som hos foregaaende Art. Som hos denne sidste indknibes det nemlig umiddelbart foran de forreste Sidefortsatser pludselig meget stærkt og skyder ud over Roden af Snabelen i Form af en smal, cylindrisk Hals, til hvis Spids Saxlemmerne er fæstede. Halsesegmentet er forholdsvis lidet, neppe saa langt som sidste Segment, af simpel konisk Form og stærkt opadrettet (se Fig. 3 a).

Oieknuden (se Fig. 3 a) er ganske rudimentær, kun dannende en meget svagt fremspringende tilrundet Forhøjning ved Enden af Hovedsegmentets Pandedel. Den mangler ethvert Spor baade af Pigment og Synselementer.

Snabelen (se Fig. 3 a, 3 c) er af meget betydelig Størrelse, omtrent saa lang som Hovedsegmentet og det derpaa følgende Segment tilsammen, og udgaar som hos foregaaende Art helt ventralt. Den er skraat nedadrettet og af noget tendannet Form, med en meget udpræget Fortykkelse paa Midten.

Saxlemmerne (se Fig. 3 a, 3 b, 3 c) er overordentlig spinkle og omtrent af Snabelens Længde. Skaftet er smalt cylindrisk, med det ydre Parti kun ganske svagt fortykket, og uden tydelig Haarbesætning. Saxen (Fig. 3 d) er neppe mere end $\frac{1}{3}$ saa lang som Skaftet, stærkt indknebet ved Basis og har Palmen meget kort og kun forsynet med en enkelt kort Borste i Yderkanten. Fingrene er mere end dobbelt saa lange som Palmen, temmelig rigeligt borstebesatte og i Enden stærkt krummede. Den bevægelige Finger er som hos foregaaende Art længst og mere jævnt krummet samt krydser med Spidsen den ubevægelige Finger, naar Saxen lukkes.

Af Følere er der, ligesaa lidt som hos foregaaende Art det mindste Spor, og da det undersøgte Exemplar er en Hun, mangler ogsaa de falske Fødder fuldstændigt.

Gangfodderne (se Fig. 3) er meget stærkt forlængede og tynde, mere end 3 Gange længere end Legemet, og kun sparsomt haarbesatte. Af Hoftelæddene er det 2det temmelig stærkt forlænget, mere end dobbelt saa langt som de 2 øvrige tilsammen og meget smalt ved Basis. Laarlæddet er af betydelig Størrelse, ikke saa lidet længere end Hoftepartiet og af smal tendannet Form, samt viser i sit Indre, foran den laterale Blindsæk, talrige sig udviklende Æg. De 2 Læglædd er noget kortere og indbyrdes omtrent af ens Længde. Tarsallæddet (se Fig. 3 e) er yderst lidet, næsten skaalformigt, og har i Inderkanten nogle tynde Tørner, hvoraf en er noget stærkere end de øvrige. Fodlæddet er forholdsvis stærkt forlænget og smalt samt mindre krummet end hos foregaaende Art, med en Del korte Børster i Yderkanten og ved Enden. Inderkanten danner som hos foregaaende Art ved Basis en skarpt markeret smalt afrundet Udvidning, der bærer 3 Tørner, hvoraf de 2 forreste er stillede jævnsides; den 3die Torn er ualmindelig lang og tynd samt næsten lige udstaaende. Den øvrige Del af Inderkanten er besat med en regelmæssig Rad af korte, fortil krummede Tørner, 18—20 i Tallet. Endekloen er

together, and similar in form to that of the preceding species. As in the latter, it is constricted, just anterior to the foremost of the lateral processes, very abruptly and projects over the base of the proboscis in the form of a slender cylindrical neck, to the point of which the chelifori are attached. The caudal segment is comparatively small, hardly as long as the last segment, of plain conic form, and directed almost vertically (see fig. 3 a).

The oculiferous tubercle (see fig. 3 a) is quite rudimentary, forming but a very slightly projecting rounded prominence at the extremity of the frontal part of the cephalic segment. It does not exhibit the slightest trace of either pigment or visual elements.

The proboscis (see fig. 3 a, 3 c) is of very considerable size, about as long as the cephalic segment and that succeeding it taken together, and issues, as in the preceding species, quite ventrally. It points obliquely downwards, and is somewhat fusiform in shape, with a very prominent tumification in the middle.

The chelifori (see fig. 3 a, 3 b, 3 c) are remarkably slender, and about the length of the proboscis. The scape is narrow cylindric, with the outer part but very slightly tumified, and having no distinct covering of hair. The chela (fig. 3 d) is hardly more than one-third as long as the scape, very considerably constricted at the base, and has the palm extremely short, and furnished with but a single short bristle on the outer margin. The fingers are more than twice as long as the palm, rather abundantly bristle-beset, and strongly curved at the extremity. The mobile finger is, as in the preceding species, the longest, and more uniformly curved, and, on the chela being closed crosses with its point the immobile one.

As in the preceding species, not the slightest trace of palpi can be detected, and the specimen examined being a female, the false legs are also wholly absent.

The ambulatory legs (see fig. 3) are very considerably elongate and slender, measuring more than 3 times the length of the body, and but sparingly beset with hairs. Of the coxal joints, the 2nd is rather elongated, upwards of twice as long as the 2 others taken together, and very narrow at the base. The femoral joint is of considerable size, considerably longer than the coxal region, and of a slender fusiform shape, exhibiting also within it, anterior to the lateral cæcum, numerous eggs in course of development. The 2 tibial joints are somewhat shorter, and about equal in length. The tarsal joint (see fig. 3 e) is exceedingly small, almost bowl-shaped, and has on the inner margin a few delicate spines, one a little stronger than the rest. The propodal joint is comparatively very elongate and slender, and less curved than in the preceding species, with a number of short spines along the outer margin and at the extremity. The inner margin forms, as in the preceding species, at the base, a well-marked, narrow rounded dilation, bearing 3 spines, the 2 foremost in juxtaposition; the 3rd spine is remarkably long and slender, and well-nigh straight. The remaining part of the inner

særdeles lang, udpræget leformig, med Inderkanten tilskjærp-
pet og Enden gaaende ud i en sylskarp Spids; Bikloerne,
som hos foregaaende Art, yderst smaa og rudimentære, ikke
fremragende foran Endekloens Yderkant.

Integumenterne er temmelig tykke, men boielige og
viser under Mikroskopet en fint granuleret Structur.

Legemet er af hvidagtig Farve og halvt gennemskinnende,
saa at flere af de indre Dele skimtes mere eller mindre
tydeligt igjennem Huden. Sees Dyret fra Bogsiden (Fig.
3 c), viser saaledes Buggangliekjæden sig temmelig tydeligt;
den bestaar, som hos de øvrige til denne Familie hørende
Former, kun af 4 Ganglier, idet det forreste Ganglion
mangler eller rettere er sammensmeltet med det følgende.

Forekomst. Det ovenfor beskrevne Exemplar toges
ved Magerø, sonden om Trondhjemsfjorden, paa et Dyb af
ca. 100 Favne.

Fam. 3. Pallenidæ.

Character. Saxlemmer vel udviklede; Følere mang-
lende; falske Fodder tilstede hos begge Kjønn.

Bemærkninger. Ved de ovennævnte Characterer er
denne Familie vel skilt saavel fra foregaaende som efterføl-
gende Familie, imellem hvilke den har sin naturlige Plads.
Foruden de 3 i det følgende nærmere omtalte Slægter,
hører herhen ogsaa den af Dohrn opstillede Slægt *Neopallene*,
hos hvem et Rudiment af Følere er tilstede. End-
videre tror jeg, som allerede ovenfor bemærket, at flere af
de af Hoek som Phoxichilidier beskrevne Former fra Chal-
lenger Expeditionen rettest bør henføres til denne Familie
og indordnes under en eller flere nye Slægter. Hvad ende-
lig de 3 af sidstnævnte Forfatter, ligeledes fra Challenger
Expeditionen, beskrevne *Pallene*-Arter angaar, saa synes
mig ingen af dem rigtigt at ville passe ind under nogen af
de 3 nordiske Slægter, og, da de ogsaa indbyrdes viser
ikke ubetydelige Forskjelligheder, skulde jeg være mest til-
boielig til at antage, at de repræsenterer 3 nye Slægtstyper
enhørende til nærværende Familie.

Gen. 5. *Pallene*, Johnston 1837.

Slægtscharacter. Legemet glat, mere eller mindre
smalt, cylindrisk, med vel adskilte Sidefortsætter. Hoved-
segmentet forholdsvis stort, med tydelig Hals og stærkt ud-
videt Pandedel. De to sidste Kropssegmenter sammensmel-
tede med hinanden. Halesegmentet meget lidet, stumpt ko-
nisk, opadrettet. Øiekuden mere eller mindre ophøiet,

margin exhibits a regular series of short, anteriorly curv-
ing spines, 18—20 in number. The terminal claw is exceed-
ingly long, distinctly falciform, with the inner margin shar-
pened and produced at the extremity to an awl-like point;
the auxiliary claws, as in the preceding species, exceedingly
small and rudimentary, not projecting beyond the outer
margin of the terminal claw.

The integuments are rather thick, but flexible, and ex-
hibit under the microscope a fine, granular sculpturing.

The body is whitish in colour and semi-translucent,
so that several of the inner parts are seen, more or less
distinctly, shining through the integument. Viewed from the
ventral side (fig. 3 c), the animal accordingly exhibits,
pretty distinctly, the ventral chain of ganglia; the latter
consists, as in the other forms belonging to this family,
of but 4 ganglia, as the foremost ganglion is wanting, or
rather is fused into that succeeding it.

Occurrence. The specimen described above was taken
at Magerø, south of the Trondhjemsfjord, from a depth
of about 100 fathoms.

Fam. 3. Pallenidæ.

Character. Cheliferi well developed; palpi wanting or
rudimentary; false legs present in both sexes.

Remarks. By the above given characters this family
is well distinguished, both from the preceding and the suc-
ceeding one, between which it has its natural place. Ex-
clusive of the 3 genera spoken of more at large in the
sequel, to this family also belongs the genus established by
Dohrn, *Nespallene*, in which a rudiment of palpi is present.
Moreover, I certainly think, as already noticed above, that
several of the forms from the Challenger Expedition, des-
cribed by Hoek as Phoxichilidians, should properly be refer-
red to this family, and be classed under one or more new
genera. Finally, as to the 3 *Pallene* species from the
Challenger Expedition, likewise described by that author,
none of them, it seems to me, can strictly be ranked under
any of the 3 Northern genera; and exhibiting as they do
differences by no means trifling, I am most inclined to
regard them as representing 3 new generic types belonging
to the present family.

Gen. 5. *Pallene*, Johnston 1837.

Generic Character. Body smooth, more or less slen-
der, cylindrical, with well separated lateral processes. Ce-
phalic segment comparatively large, with neck distinct and
frontal part prominently expanded. The two last segments
of the trunk coalescent. Caudal segment very small, obtusely
conic, directed upwards. Oculiferous tubercle more or less

med vel udviklede Synselementer. Snabelen kort, fortillet, noget udvidet i sit ydre Parti; Mundaabningen simpel. Saxlemmerne forholdsvis korte, Skaffet tykt, cylindrisk, Haanden aflag oval, med Fingrene konisk tilspidsede og fint tandede i Inderkanten. De falske Fodder stærkt forlængede og smale, 10-leddede, 5te Led hos Hannen længere end de øvrige og ved Enden forsynet med en kort tilbagebøjet Flig; de 4 ydre Led langs Inderkanten besatte med en regelmæssig Rad af pladeformige, i Kanterne fint ciliære Torner; sidste Led stumpet tilbundet i Enden, uden Klo. Gangfodderne mere eller mindre stærkt forlængede, sparsomt børstebesatte, med Laarledet stærkt opsvulmet hos Hunnerne; Tarsalleddet yderst lidet; Fodleddet kraftigt udviklet og bevæbnet i Inderkanten ved Basis med stærke Torner; Endekloen forholdsvis kort, men kraftig; Bikloerne vel udviklede. Kjonsaabningerne har Hunnen ved Enden af 2det Hofteled paa alle Fodder, hos Hannen kun paa de 2 bagerste Par. De ydre Æg meget store og fæstede enkeltvis til de falske Fodder, uden at være sammenkittede til sammenhængende Masser.

Bemærkninger. I den Begrænsning, hvori Slægten her tages, er den hovedsageligt characteriseret ved den forholdsvis smækre, cylindriske Krop, den eiendommelige Udvikling af Hovedsegmentet, den ualmindelig korte Snabel, Saxlemmernes og navnlig de falske Fodders Struktur, endelig ved Tilstedeværelsen af vel udviklede Bikloer paa Gangfodderne. Ligeledes tør de 2 sidste Kropssegmenters Sammensmeltning gjælde for et generisk Mærke.

Typen for Slægten er den nedenfor noiere beskrevne *P. brevirostris*, Johnston. I den nyere Tid er desuden af Dohrn opført 1 middelhavske Arter, der utvivlsomt horer ind under denne Slægt og slutter sig meget nær til den typiske Art, hvortil endnu kommer en 6te nordisk Art, som i det følgende nærmere skal beskrives.

7. *Pallene brevirostris*, Johnston.

(Pl. III, Fig. 1, a—h).

Pallene brevirostris, Johnston, Mag. of Zool. & Botany, Vol. 1, p. 380, Pl. XII, fig. 7—8.

Pallene brevirostris, Hoek, Nederl. Archiv f. Zoologie, Vol. III, p. 237, Tab. XV, Fig. 4—7.

Pallene empusa, Wilson, Transact. Connect. Acad., Vol. V, p. 9, Pl. III, fig. 2, a—g.

„ „ Idem, United States Commission for Fish and Fisheries, Report for 1878, p. 476, Pl. II, fig. 5—7.

Pallene brevirostris, Hoek, Arch. de Zool. expér. IX, p. 511, Pl. XXVI, fig. 17.

Pallene brevirostris, Hansen, Zool. Danicæ, Tab. 7, fig. 20.
„ „ Idem, Naturh. Tidsskrift 3 Række, Bd. 14, p. 649.

protuberant, with well developed visual elements. Proboscis short, anteriorly directed, somewhat expanded in its outer part; oral orifice plain. Chelifori comparatively short, scape thick, cylindric, hand oblongo-oval, with the fingers conically pointed and finely dentated along the inner margin. False legs very elongate and slender, ten-jointed, 5th joint in male longer than the rest, and furnished at the extremity with a short recurved lappet; the 4 outer joints along the inner edge armed with a regular series of lamellar spines, finely ciliate along the margins; terminal joint obtusely rounded at the extremity, without any claw. Ambulatory legs more or less prolonged, sparingly setous, with the femoral joint a good deal swollen in the female; tarsal joint exceedingly small; propodal joint powerfully developed, and armed along the inner edge, at the base, with strong spines; terminal claw comparatively short, but powerful; auxiliary claws well developed. Sexual openings in female at the end of the 2nd coxal joint on all the legs, in male on the 2 posterior pairs only. The outer eggs very large, each fixed by itself to the false legs, without being glued together in masses.

Remarks. In the restricted sense in which the genus is taken here, its chief characteristics consist in the comparatively slender cylindrical body, the peculiar development of the cephalic segment, the remarkably short proboscis, the structure of the chelifori, and more particularly that of the false legs, and finally, in the presence of well developed auxiliary claws on the ambulatory legs. The coalescence of the 2 last segments of the trunk may likewise perhaps be taken as a generic feature.

The type of the genus is *P. brevirostris*, Johnston, described in detail below. Of late, too, Dohrn has established 4 Mediterranean species, unquestionably referable to this genus, which agree very closely with the typical species, to which comes a Northern species — the 6th, described more at large in the sequel.

7. *Pallene brevirostris*, Johnston.

(Pl. III, fig. 1, a—h).

Pallene brevirostris, Johnston, Mag. of Zool. & Botany, Vol. 1, p. 380, Pl. XII, fig. 7—8.

Pallene brevirostris, Hoek, Nederl. Archiv f. Zoologie, Vol. III, p. 237, Tab. XV, figs. 4—7.

Pallene empusa, Wilson, Transact. Connect. Acad., Vol. V, p. 9, Pl. III, fig. 2, a—g.

„ „ Idem, United States Commission for Fish and Fisheries, Report for 1878, p. 476, Pl. II, figs. 5—7.

Pallene brevirostris, Hoek, Arch. de Zool. expér. IX, p. 511, Pl. XXVI, fig. 17.

Pallene brevirostris, Hansen, Zool. Danicæ, Tab. VII, fig. 20.
„ „ Idem, Naturh. Tidsskrift 3 Række, Bd. 14, p. 649.

Pallene brevirostris, G. O. Sars, Pycnogonidea borealia et arctica, No. 7.

Artscharacteristik. Kroppen noget undersætsig, med Sidefortsætterne neppe længere end Segmenternes Bredde. Hovedsegmentet længere end de øvrige Segmenter tilsammen. Halsen temmelig tyk og ikke skarpt begrænset fra Pandedelen: Afstanden fra Oieknuden til Hovedsegmentets Forkant mindre end fra samme til Halsesegmentet, Oieknuden temmelig lav, stumpt tilspidset. Snabelen omtrent halvt saa lang som Hovedsegmentet. Saxlemmerne meget korte, Haanden af Skaffets Længde, Fingrene kortere end Palmen. De falske Fodder hos Hunnen af Legemets Længde, hos Hannen en halv Gang til saa lange, sidste Led med 9 pladeformige Torner. Gangfodderne omtrent $3\frac{1}{2}$ Gang længere end Kroppen, 2det Hofteled ikke dobbelt saa langt som de to øvrige tilsammen; 2det Læglied omtrent 3 Gange længere end det terminale Afsnit (Tarsal- og Fodledet); Fodledet noget krummet, med 5 stærke Torner i det basale Parti af Inderkanten, Bikloerne noget kortere end Endekloen. Legemet gennemsgigt med brede, opakt hvide Tverbaand over Gangfodderne. Længden af Kroppen $1\frac{1}{2}^{mm}$, Spandvidde 11^{mm} .

Bemærkninger. Jeg kan ikke betvivle, at den her omhandlede Form er den af Johnston først beskrevne Art. Hvad den nordamerikanske Form, *P. empusa*, Wilson, angaar, saa er den allerede af Hoek og Hansen identificeret med nærværende Art, og jeg finder heller ikke, at den af Wilson givne Beskrivelse og de af ham meddelte Figurer afviger saa meget, at der kan være Grund til at antage nogen specifik Forskjel. Hvorvidt nogen af de 4 af Dohrn opstillede middelhavske Arter lader sig henføre til nærværende Art, synes mig noget tvivlsomt. De 2 Arter *P. spectrum* og *P. Tiberi* synes at være de, der mest ligner vor Art, uden at jeg dog tør identificere nogen af dem med samme.

Beskrivelse. Legemets Længde hos fuldt udviklede Hunner overskrider neppe $1\frac{1}{2}^{mm}$, og Spandvidden 11^{mm} ; Hannerne er i Regelen lidt mindre.

Legemet er (se Pl. III, Fig. 1, 1 a og 1 b) forholdsvis noget undersætsigt, navnlig i Sammenligning med følgende Art, af cylindrisk Form og neppe afsmalnende bagtil. Den egentlige Krop er kun delt i 3 tydeligt begrænsede Segmenter, idet de 2 sidste er fuldstændig sammensmeltede med hinanden, uden at der er det mindste Spor af nogen Suture mellem begge at opdage. Fuldkommen det samme er ogsaa Tilfældet med følgende Art, og jeg har Grund til at antage, at dette er en for samtlige Arter af nærværende Slægt fælles Character, som kun ikke har været tilstrækkelig paagtet af tidligere Forskere. Hovedsegmentet er af særdeles betydelig Størrelse, selv kjendelig længere end de øvrige Segmenter tilsammen, hvad der væsentlig skyldes den stærke Udvikling af det frontale Parti. Den foran Oieknuden liggende Del af dette Segment er nemlig over $2\frac{1}{2}$ Gang saa lang som den bagenfor samme liggende Del, og viser en tydeligt indknebet og temmelig lang cylindrisk Hals, der dog ganske successivt udvider sig til det stærkt fortykkede

Den norske Nordhavsexpedition. G. O. Sars: Pycnogonidea.

Pallene brevirostris, G. O. Sars, Pycnogonidea borealia et arctica, No. 7.

Specific Character. Body somewhat short and stout, with the lateral processes scarcely longer than the segments are broad. Cephalic segment exceeding in length that of the other segments taken together, neck rather thick and not sharply defined from the frontal part; distance from the oculiferous tubercle to the anterior margin of the cephalic segment less than from the former to the caudal segment. Oculiferous tubercle rather low, obtusely pointed. Proboscis about half as long as cephalic segment. Chelifori exceedingly short, half the length of the scape, fingers shorter than palm. The false legs in the female the length of the body, in the male half as long again, last joint with 9 lamellar spines. Ambulatory legs about $3\frac{1}{2}$ times the length of the body, 2nd coxal joint not twice as long as the 2 others taken together; 2nd tibial joint about 3 times as long as the terminal portion (tarsal joint and propodal joint); propodal joint somewhat curved, with 5 strong spines in the basal part of the inner margin, the auxiliary claws a trifle shorter than the terminal claw. Body translucent, with broad opaque white transverse bands across the ambulatory legs. Length of body $1\frac{1}{2}^{mm}$, extent 11^{mm} .

Remarks. I see no reason to doubt that the form here treated is the species first described by Johnston. As regards the North American form, *P. empusa*, Wilson, that has been already identified by Hoek and Hansen with the present species; nor does Wilson's description, and the figures he has furnished, in my judgment, deviate sufficiently to warrant our assuming any specific distinction. Whether any of the 4 Mediterranean species established by Dohrn admit of being referred to the present form, appears to me somewhat doubtful. The 2 species *P. spectrum* and *P. Tiberi* would seem to be those bearing the closest resemblance to our species, although I would not venture to identify either of them with it.

Description. The length of the body in fully developed females hardly exceeds $1\frac{1}{2}^{mm}$, and the extent hardly 11^{mm} ; the males are, as a rule, somewhat smaller.

The body (see Pl. III, figs. 1, 1 a and 1 b) is comparatively short and stout, particularly when compared with the following species, has a cylindrical form and scarcely tapers at all posteriorly. The body proper is divided into only 3 distinctly defined segments, as the 2 terminal ones completely coalesce without the slightest trace of having a suture. Precisely the same is the case with the following species, and I have reason to believe that this is a character common to all species of the present genus, but which has not been sufficiently regarded by earlier naturalists. The cephalic segment is especially of great size, being appreciably longer than all the rest taken together, which must chiefly be ascribed to the strong development of the frontal part. The part of this segment in front of the oculiferous tubercle is more than $2\frac{1}{2}$ times the length of the part behind it, and exhibits a distinctly constricted and rather long cylindrical neck, which, however, expands quite gradually to the strongly tumefied terminal part, from which the proboscis and the chelifori

terminale Parti, hvorfra Snabelen og Saxlemmerne udgaar. Sidefortsætterne er temmelig vidt adskilte og neppe længere end Legemet er bredt. Det forreste til Hovedsegmentet hørende Par udgaar fra dettes bagerste Parti, medens det følgende Par udgaar noiagtig fra Midten af det tilsvarende Segment. Det bagerste Par er, som sædvanlig, noget kortere end de øvrige og stærkt bagudrettede. Fra Indsnittet mellem begge udgaar det overordentlig lille Halesegment, der er stærkt opadrettet (se Fig. 1 b), og af simpel konisk Form, med Enden svagt kløftet og forsynet til hver Side med en kort Borste (Fig. 1 h).

Oieknuden er kun lidet ophøiet (se Fig. 1 b), af stump konisk Form, og ved Basis forsynet med de 4 sædvanlige Enkeltoine, indleirede i et mørkt Pigment.

Snabelen er (se Fig. 1 a, 1 b) ualmindelig kort, neppe halvt saa lang som Hovedsegmentet, og næsten lige fortil strakt. Den er temmelig tyk, cylindrisk, dog noget udvidet i sit ydre Parti, og har Spidsen stumpt tilrundet, med Mundaabningen simpel, uden nogen Borstebeavæbning.

Saxlemmerne er forholdsvis korte og undersætsige, paa langt nær ikke saa lange som Hovedsegmentet, med Skaftet simpelt cylindrisk og ved Enden udad forsynet med en Del fine Borster. Haanden er omtrent af samme Længde som Skaftet og horizontalt indadrettet. Den er (Fig. 1 c) af aflang oval eller næsten pæredannet Form og besat ved Basis af Fingrene med stærke Borster. Fingrene er neppe længere end Palmen og gaar i umiddelbar Flugt med samme. De er konisk tilspidsede og kun yderst svagt krummede, samt noget ulige i Længde, idet den ubevægelige Finger er kjendelig kortere end den bevægelige; den første har ikke blot langs Inderkanten, men ogsaa til Siderne flere smaa tandformige Knuder, hvorimod disse paa den bevægelige Finger er meget utydelige.

Af Folere er der intet Spor at opdage (se Fig. 1 a).

De falske Fødder er tilstede hos begge Kjønn og fæstede paa hver Side til et knudeformigt Fremspring tæt foran de forreste Sidefortsætter (se Fig. 1 a og 1 b). Som hos de i det foregaaende omtalte Former, er de slaaede ind under Kroppen og viser i Almindelighed paa Midten en mere eller mindre stærk albuformig Bøining. De bestaar hos begge Kjønn af 10 Led, hvoraf de 5 yderste danner et vel begrændset terminalt Afsnit. Angaaende disse Lemmers Længde, saa er den noget forskjellig hos de 2 Kjønn. Hos Hunnen (Fig. 1) er de lige udstrakte neppe længere end Legemet, medens de hos Hannen (Fig. 1 a) er næsten en halv Gang til saa lange. Dette kommer af den forholdsvis betydelig stærkere Udvikling hos Hannen af 4de og navnlig 5te Led, hvilket sidste desuden udmærker sig ved en fligformig, med et Par Borster besat Udvidning i Enden, hvoraf intet Spor er at se hos Hunnen. De 5 Led, der danner Endepartiet (Fig. 1 d), er næsten af ens Længde, og de 4 yderste langs Inderkanten besatte med en regelmæssig Rad af eiendommelige, lamelleformige Torner, der er særdeles fint indskaarne eller ligesom cilierede i

issue. The lateral processes are rather wide apart and hardly longer than the body is broad. The foremost pair belonging to the cephalic segment, issue from its hindmost part, whereas the succeeding pair have their origin exactly in the middle of the corresponding segment. The hindmost pair are, as usual, a little shorter than the others and are strongly directed backwards. From the incision between the two, issues the exceedingly small caudal segment, directed strongly upwards (see fig. 1 b), and of a simple conic form, with the extremity faintly cleft and furnished on each side with a short bristle (fig. 1 h).

The oculiferous tubercle is but slightly protuberant (see fig. 1 b), of an obtuse conic form, and at the base provided with the 4 simple eyes, or lenses, embedded in a dark pigment.

The proboscis (see fig. 1 a, 1 b) is remarkably short, scarcely half as long as the cephalic segment, and extended almost straight forwards. It is rather thick, cylindrical, although somewhat expanded in its outer part, and has the point obtusely rounded with the oral opening plain, and no setous armature.

The chelifori are comparatively short and stout, not so long, by far, as the cephalic segment, with the scape plain cylindric, and at the extremity outwards furnished with a number of delicate bristles. The hand is about the same length as the scape, and directed horizontally inwards. It is oblongo-oval or well-nigh pyriform (fig. 1 c), and at the base of the fingers beset with strong bristles. The fingers are scarcely longer than the palm, and extend in immediate line with it. They are conically acuminate and but very slightly curved, also somewhat unequal in length, the immobile finger being appreciably shorter than the mobile one; not only has the former along its inner edge, but likewise at the sides, several minute dentiform nodules, whereas those on the latter are very indistinct.

Of palpi no trace can be detected (see fig. 1 a).

The false legs are present in both sexes, and attached on each side to a nodular projection immediately in front of the foremost of the lateral processes (see figs. 1 a and 1 b). As in the forms previously spoken of, they are folded in, under the trunk, and generally exhibit, at the middle, a more or less prominent, elbow-shaped bend. They are composed, in both sexes, of 10 joints, the 5 outermost forming a well defined terminal division. As regards the length of these limbs, it differs somewhat in the two sexes. In the female (fig. 1), when fully extended, they are hardly longer than the body, while in the male (fig. 1 a) they are almost half as long again. This comes of the relatively much fuller development in the male of the 4th, and more particularly 5th joint, which last has, moreover, a lobular expansion at the extremity beset with one or two setæ, no trace of which can be found in the female. The 5 joints constituting the terminal division (fig. 1 d) are well-nigh equal in length, and the 4 outermost are, along the inner edge, furnished with a regular series of peculiar lamelliform spines, having the edges very

Kanterne. Sidste Led (Fig. 1 e) ender stumt tilrundet, uden Spor af nogen Endeklo; det bærer 9 af de ovennævnte lamelleformige Torner, hvoraf den yderste er størst.

Gangfodderne er (se Fig. 1) af spinkel Form, omtrent $3\frac{1}{2}$ Gang længere end Legemet og kun sparsomt børste-besatte. Af de 3 Hofteled er det midterste stærkt forlænget, omtrent dobbelt saa langt som de 2 øvrige tilsammen, og noget kofleformigt opsvulmet i Enden, hvor den ydre Kjonsaabning er beliggende. Laarledet er hos Hunnen (se Fig. 1) ofte særdeles stærkt opsvulmet paa Midten, eller næsten tenformigt, paa Grund af de i det indre sig udviklende Æg, hvoraf de 3 eller 4 midterste kan opnaa en meget anseelig Størrelse (se Fig. 1 f). 1ste Lægled er adskilligt kortere end Laarledet og noget indknebet ved Basis. Derimod er 2det Lægled vel saa langt som hint Led og af lineær Form. Det af Tarsal- og Fodledet dannede terminale Afsnit af Foden er forholdsvis kort, neppe $\frac{1}{3}$ saa langt som 2det Lægled, men særdeles bevægeligt forbundet med dette Led og minder idethale i sin Structur om *Sl. Phoxichilus*. Tarsalledet (se Fig. 1 g) er yderst lidet, af triangular Form, og har i Inderkanten en stærk Torn foruden en Del sædvanlige Børster. Fodledet er kraftigt udviklet og noget krummet samt i Inderkanten bevæbnet med stærke Torner, hvoraf navnlig de 5 bagerste udmærker sig ved betydelig Størrelse. Ved nyere Undersøgelse viser disse sidste sig egentlig at være ordnede i 2 Rader, hvoraf den ene indeholder kun 2, den anden 3 Torner. Langs Yderkanten og ved Spidsen bærer dette Led desuden en Del temmelig lange og tynde Børster. Endekloen er forholdsvis kraftig og stærkt krummet, dog neppe mere end halvt saa lang som Fodledet. Den bærer ved Basis fortil 2 vel udviklede Bikkloer, mere end halvt saa lange som selve Kloen.

De til de falske Fodder hos Hannen fæstede Æg er (se Fig. 1 a) forholdsvis meget store, kugleformige, og faa i Antal, ialmindelighed omkring 6 Stykker paa hver Fod. De er fæstede særskilt til det stærkt forlængede 5te Led, uden som hos de fleste øvrige *Pycnogonider* at være omgivne af nogen fælles Omhygningsmembran.

Dyret er i levende Tilstand meget gjennemsigtigt og næsten farveløst. Dog findes i Regelen ved Enden af hvert Led paa Gangfodderne afsat et opakt, kridhvidt Pigment, der ved gennemfaldende Lys ser mørkt ud og giver Fodderne et mere eller mindre udpræget tværbaandet Udseende.

Forekomst. Jeg har taget denne Art ikke sjelden ved vor Sydkyst, f. Ex. ved Risør og Arendal, paa forholdsvis grundt Vand mellem Alger og Hydroider. Den forekommer ogsaa af og til ved vor Vestkyst (Stavanger) og gaar nordlig lige op til Tjøto i Nordland.

Udbredning. Foruden ved Norge er Arten observeret ved de britiske Øer (Johnston o. fl.), Danmark (Hansen), Holland og Nordkysten af Frankrige (Hoek), endelig ved Østkysten af Nordamerika, hvis, som jeg formoder,

delicately indented or, as it were, ciliated. The last joint (fig. 1 e) ends obtusely rounded, without the slightest trace of a terminal claw; it bears 9 of the above-mentioned lamelliform spines, the outermost being the largest.

The ambulatory legs (see fig. 1) are slender in form, about $3\frac{1}{2}$ times as long as the body, and but sparingly beset with setae. Of the 3 coxal joints, the mesial one is very considerably produced, measuring about twice the length of the two others taken together, and somewhat claviform expanded at the extremity, where the exterior sexual orifice is located. The femoral joint in the female (see fig. 1) is often very much swollen in the middle, or almost fusiform, owing to the eggs developing within, of which the 3 or 4 midmost can attain a very considerable size (see fig. 1 f). The 1st tibial joint is a good deal shorter than the femoral joint and slightly constricted at the base. On the other hand, the 2nd tibial joint is rather longer than the 1st, and of linear form. The terminal division of the leg formed by the tarsal and propodal joints, is comparatively short, hardly $\frac{1}{3}$ as long as the 2nd tibial joint, but very flexibly connected with that joint, and, on the whole, in its structure calls to mind the genus *Phoxichilus*. The tarsal joint (see fig. 1 g) is exceedingly small, triangular in form, and has on the inner edge a strong spine besides a number of the usual setae. The propodal joint is powerfully developed and slightly curved, also on the inner margin armed with strong spines; the 5 hindmost of which are especially distinguished by their very considerable size. On closer examination the latter are found to be arranged in 2 series, the one with 2, the other with 3 spines. Along the outer margin and at the point, this joint bears, besides, a number of rather long, fine setae. The terminal claw is comparatively powerful and strongly curved, but hardly more than half as long as the propodal joint. It has at the base, in front, 2 well developed auxiliary claws, measuring more than half the length of the claw itself.

The eggs attached to the false legs in the male (see fig. 1 a) are, comparatively, very large, globular, and few in number, as a rule about 6 on each leg. They are attached separately to the greatly produced 5th joint, without, as in most other *Pycnogonids*, being surrounded by a common enveloping membrane.

In the living state the animal is very pellucid and almost colourless. As a rule, however, there may be observed, at the extremity of each joint of the ambulatory legs, an opaque chalky white pigment deposited, which by transmitted light acquires a dark shade, and gives to the legs a more or less prominent transversally banded appearance.

Occurrence. I have taken this species, not infrequently, off the south-west coast of Norway, e. g. at Risør and Arendal, in comparatively shallow water, among algæ and hydroidæ. It occurs, too, now and again, off our west coast (Stavanger), and extends as far north as Tjøto in Nordland.

Distribution. Besides off Norway, the species has been met with off the British Islands (Johnston and others), Denmark (Hansen), Holland and the north coast of France (Hoek), and, finally, on the east coast of North America, if

P. empusa, Wilson, virkelig er identisk med vor Art. I de arktiske Have er den derimod aldrig bleven observeret og Arten synes derfor idethale at maatte betragtes som en sydlig Form.

8. *Pallene producta*, G. O. Sars.

(Pl. III, fig. 2, a—d).

Pallene producta, G. O. Sars, *Pycnogonidea borealia et arctica*, No. 8.

Artsecharacteristik. Meget nær *P. brevirostris*, men af betydelig slankere Kropsform. Hovedsegmentet $1\frac{1}{2}$ Gang til saa langt som de øvrige tilsammen, med særdeles smal og forlænget Hals og stærkt fortykket Pandedel. Oieknuden omtrent i Midten af Legemets Længde, stærkt ophøiet og konisk tilspidset. Snabelen som hos *P. brevirostris*. Saxfodderne ligeledes af samme Bygning, men forholdsvis noget større og med stærkere forlængede Fingre. De falske Fodder fæstede i nogen Afstand fra de forreste Sidefortsætter til Siderne af Halsen; Bygningen som hos *P. brevirostris*. Gangfodderne særdeles spinkle og forlængede, med 2det Hofted over dobbelt saa langt som de 2 øvrige tilsammen. Fodledet omtrent som hos foregaaende Art, men Bikloerne forholdsvis længere. Dyret gjenemsigtigt, uden al Pigmentering. Legemets Længde 2^{mm} , Spandvidde 18^{mm} .

Bemærkninger. Nærværende Form staar i saagodt-som alle anatomiske Detailler saa særdeles nær *P. brevirostris*, at jeg har været i nogen Tvivl om dens Berettigelse som selvstændig Art. Da imidlertid Dohrn har gjort os bekendt med flere, som det synes, ligesaa nærstaaende Arter fra Middelhavet, og jeg ikke har fundet nogen tydelige Overgange mellem nærværende Form og den typiske Art, har jeg troet at maatte hævde dens specifikke Forskel. I sin ydre Habitus viser den en paafaldende Lighed med den af Dohrn under Benævnelsen *P. phantoma* fra Middelhavet beskrevne Art, men skiller sig meget bestemt ved Formen af Fodledet og ved de betydelig større og ganske glatte Bikloer.

Beskrivelse. Legemets Længde er omkring 2^{mm} , med en Spandvidde af 18^{mm} ; altsaa adskilligt større end hos foregaaende Art.

Formen er (se Pl. III, Fig. 2) idethale betydelig spinklere end hos den typiske Art, saavel hvad selve Kroppen som Fodderne angaar. Hovedsegmentet er her af en aldeles excessiv Længde, mere end $1\frac{1}{2}$ Gang længere end de øvrige tilsammen, og navnlig udmærket ved den overordentlig stærkt forlængede og smalt cylindriske Hals, der meget skarpt afgrænses sig fra den stærkt udvidede, næsten kolleformige Pandedel. De 2 sidste Kropssegmenter er som hos *P. brevirostris* fuldstændig sammenvoxne med hin-

as I believe, *P. empusa*, Wilson, found there, is really identical with our species. In the Polar Seas, on the other hand, it has never been observed, and hence we are, on the whole, warranted in regarding the species as a southern form.

8. *Pallene producta*, G. O. Sars.

(Pl. III, fig. 2, a—d).

Pallene producta, G. O. Sars, *Pycnogonidea borealia et arctica*, No. 8.

Specific character. Very closely approximating *P. brevirostris*, but of a much more slender form of body. Cephalic segment as long as one and a half times all the others taken together, with neck extremely slim and prolonged and frontal part greatly tumefacted. Oculiferous tubercle located at about the middle of the length of the body, exceedingly protuberant and conically acuminate. Proboscis as in *P. brevirostris*. Chelifori similar in structure as well, but relatively somewhat larger and with more prolonged fingers. False legs attached to the sides of the neck, at some distance from the foremost of the lateral processes; structure as in *P. brevirostris*. Ambulatory legs exceedingly slender and prolonged, with 2nd coxal joint more than twice as long as the two others taken together; propodal joint nearly as in preceding species, but the auxiliary claws relatively longer. Animal translucent, without any pigmentation whatever. Length of body 2^{mm} , extent 18^{mm} .

Remarks. The present form approaches in almost all its anatomical details so remarkably near to *P. brevirostris*, that I have felt much doubt respecting its claim to rank as a distinct species. As Dohrn has, however, made us acquainted with several, it would seem, as closely approximating species from the Mediterranean, and not having myself found any distinct transitions between the present form and the typical species, I have seen fit to maintain its specific distinction. In its external habitus it exhibits a striking resemblance to Dohrn's Mediterranean species *P. phantoma*, but differs very decidedly in the form of the propodal joint and the much larger and perfectly smooth auxiliary claws.

Description. The body measures about 2^{mm} in length and has an extent of 18^{mm} ; therefore a good deal larger than in the preceding species.

The form (se Pl. III, fig. 2) is, on the whole, considerably more slender than in the typical species, both as regards the body and the legs. The cephalic segment has, in this animal, quite a remarkable length, more than one and a half times the length of the others taken together, and is, in particular, distinguished by the greatly prolonged and narrow cylindrical neck, which is very sharply defined from the strongly expanded, almost claviform frontal part. The 2 last segments of the trunk are, as in *P. brevirostris*, completely

anden. Halsesegmentet er af samme Udseende som hos denne Art, ligesom ogsaa Kroppens Sidefortsætter.

Oieknuden er beliggende omtrent i Midten af Legemet Længde og skiller sig kjendelig fra samme hos foregaaende Art ved sin høie, konisk tilspidsede Form (se Fig. 2 a, 2 b). Dens Spids er mere eller mindre foroverbøiet, og Lindserne ved Basis af Oieknuden synes forholdsvis noget mindre end hos *P. brevirostris*.

Snabelen forholder sig ganske som hos denne Art, naar undtages, at den er en Smule længere i Forhold til Bredden.

Ogsaa Saxlemmerne viser en meget overensstemmende Bygning: Kun synes de, ligesom overhovedet alle Kropsvedhæng, at være noget mere forlængede, ligesom ogsaa Fingrenes Længde i Forhold til Palmen er noget større (se Fig. 2 c).

De falske Fødder er her, ligesom Tilfældet er med den middelhavske Art *P. phantoma*, fæstede, i en kjendelig Afstand fra de forreste Sidefortsætter, til Siderne af Halsen. De er hos Hannen, lige udstrakte, betydelig længere end Legemet og stemmer saavel i Leddenes indbyrdes Forhold som Bevæbning ganske overens med samme hos *P. brevirostris*.

Gangfodderne er (se Fig. 2) overordentlig spinkle og forlængede; da imidlertid ogsaa Kroppen er stærkt forlængt, vil Længdeforholdet mellem Legemet og Fodderne omtrent blive det samme som hos foregaaende Art. Af Leddene er det 2det Hofteled ualmindelig langt og smalt, over dobbelt saa langt som de 2 øvrige tilsammen. De 3 følgende Led er ogsaa betydelig længere end hos *P. brevirostris*, hvorimod deres indbyrdes Længdeforhold ikke er meget forskelligt. Fodledet (se Fig. 2 d) viser idethede en meget lignende Form og Bevæbning som hos foregaaende Art. Derimod er Bikhørerne her kjendelig større, næsten af Endekloens Længde.

De til de falske Fødder hos Hannen fæstede Æg er (se Fig. 2) som hos *P. brevirostris*, faa i Antal og forholdsvis store, fuldkommen kugleformede og ikke omgivne af nogen fælles Membran.

Hele Dyret er i levende Tilstand i høj Grad gjennemsigtigt og uden de hvide Tværbaand over Gangfodderne, der forefindes hos foregaaende Art.

Forekomst. Jeg har taget nogle faa Exemplarer af denne Form ved Apelvær i Nordre Trondhjems Amt. De forekom paa et temmelig betydeligt Dyb, 60—100 Favne, Lerbund.

coalescent. The caudal segment exhibits the same appearance as in that species, as also do the lateral processes of the body.

The oeniferous tubercle is located nearly in the middle of the length of the body, and is perceptibly distinguished from that of the preceding species by its elevated, conically acuminate form (see fig. 2 a, 2 b). Its point is more or less bent forwards, and the lenses at the base of the tubercle would seem to be, relatively, somewhat smaller than in *P. brevirostris*.

The proboscis occurs precisely as in the said species, save in being a trifle longer, proportionally to the breadth.

The cheliferi, too, exhibit a very similar structure, only they would seem, as indeed is the case generally with all appendages of the body, to be somewhat more prolonged, the length of the fingers in proportion to that of the palm, being also somewhat greater (see fig. 2 c).

The false legs in this animal, as in the Mediterranean species *P. phantoma*, are attached, at an appreciable distance from the foremost lateral processes, to the sides of the neck. In the male, when fully extended, they are considerably longer than the body, and agree, alike in the relative proportion of the joints and the armature, with the false legs in *P. brevirostris*.

The ambulatory legs (see fig. 2) are uncommonly slender and elongate; as the trunk, however, is also much produced, the proportion in length between the body and the legs will be nearly the same as in the preceding species. Of the joints, the 2nd coxal joint is remarkably long and slender, more than twice as long as the 2 others taken together. The 3 succeeding joints are likewise a good deal longer than in *P. brevirostris*, whereas their mutual relation as to length is not very different. The propodal joint (see fig. 2 d) exhibits much the same form and armature as in the preceding species. The auxiliary claws are, however, appreciably larger, almost as long as the terminal claw.

The eggs attached to the false legs in the male (see fig 2) are, as in *P. brevirostris*, few in number and comparatively large, quite globular in shape, and not enveloped in any common membrane.

The entire animal is, in the living state, remarkably translucent, and without the white transverse bands across the ambulatory legs observed in the preceding species.

Occurrence. I have taken a few specimens of this form at Apelvær in Nordre Trondhjems Amt. They were brought up from a considerable depth, 60—100 fathoms; clay bottom.

Gen. 6. **Pseudopallene**, Wilson, 1878.(Syn: **Pallene**, Krøyer).

Slægtscharacteristik. Legemet af robust Form, delvis pigget, med Sidefortsætterne mere eller mindre tæt sammentrængte. Hovedsegmentet af middelmaadig Størrelse, stærkt udvidet i Enden, med forholdsvis kort og tyk Hals. De 2 sidste Kropssegmenter tydeligt afgrænsede fra hinanden. Halesegmentet forkænget, koniskt, delvis pigget. Oieknuden stump tilrundet, med vel udviklede Synselementer. Snabelen skjævt nedadrettet, konisk, Spidsen mamilleformigt udtrukket, Mundaabningen omgivet af en tæt Krands af fine Børster. Saxlemmerne kraftigt udviklede, Skaftet pigget, Saxen (hos fuldt udviklede Individuer) robust, skraat nedadrettet, udvidet mod Enden, Fingrene indadrettede, korte og tykke, med tuberkelformige Fremspring i Inderkanten og stump Spids. De falske Fødder 10-leddede, endende med en vel udviklet Klo, 5te Led hos Hannen med en kort Flig i Enden. Gangfodderne mere eller mindre undersætsige, piggede: Laarledet hos Hunnen stærkt opsvulmet; Tarsalleddet meget lidet; Fodledet mere eller mindre krummet, med stærke Torner i Inderkanten; Endekloen kraftigt udviklet, men uden Spor af Bikløer. De ydre Æggemasser med talrige forholdsvis smaa Æg omgivne af en fælles Membran.

Bemærkninger. Jeg er fuldkommen enig med Dr. Hansen i, at denne af Wilson først opstillede Slægt bør opretholdes. Foruden ved den fuldstændige Mangel af Bikløer, adskiller denne Slægt sig fra den typiske ved flere andre vigtige Characterer, saasom Snabelens Form, Saxlemmernes Bygning, de med en tydelig Klo endende falske Fødder, den eiendommelige piggede Bevæbning af Gangfodderne; endelig, som af Dr. Hansen paavist, ogsaa ved Udviklingen. Man kjender hidtil kun med Sikkerhed 2 herhen hørende Arter, som begge er nordiske og i det følgende nærmere vil blive omtalte.

8. **Pseudopallene circularis**, (Goodsir).

(Pl. III, Fig. 3, a—h).

Pallene circularis, Goodsir, On some new species of Pycnogonida. Edinburgh New Phil. Journal 1842, Vol. 32, p. 136, Pl.

Pallene intermedia, Krøyer, Bidrag til Kundsk. om Pycnogoniderne, l. c. p. 119 (adult.)

— — Idem, Gaimard's Voyage en Scandinavie, pl. 37, Fig. 2 a—g.

Pallene discoidea, Krøyer, Bidrag til Kundsk. om Pycnogoniderne, l. c. p. 120 (jun.).

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 37, fig. 3, a—g.

Gen. 6. **Pseudopallene**, Wilson, 1878.(Syn: **Pallene**, Krøyer).

Generic Characters. Body robust in form, partly spinous, with lateral processes more or less crowded together. Cephalic segment of medium size, very much expanded at the extremity, with comparatively short and thick neck. The 2 last segments of the trunk distinctly defined from each other. Caudal segment produced, conic, partly spinous. Oculiferous tubercle obtusely rounded, with well developed visual elements. Proboscis directed obliquely downwards, conic, point mamilliform exerted, oral orifice surrounded by a dense wreath of delicate bristles. Chelifori powerfully developed, scape spinous, the chela (in full-grown specimens) robust, directed obliquely downwards, expanded towards the extremity, fingers directed inwards, short and thick, with nodular projections on the inner edge and point obtuse. False legs ten-jointed, terminating with a well developed claw, 5th joint in male with a short lobe at the extremity. Ambulatory legs more or less thickset and spinous; femoral joint in female exceedingly swollen; tarsal joint very small; propodal joint more or less curved, with strong spines on the inner edge; terminal claw powerfully developed, but without any trace of auxiliary claws. The outer egg-masses, consisting of numerous comparatively small ova, enveloped in a common membrane.

Remarks. I quite agree with Dr. Hansen, that this genus, first established by Wilson, should be maintained. Besides its absolute want of auxiliary claws, the genus differs from the typical one in divers other important characters, as, for example, the form of the proboscis, the structure of the chelifori, the false legs terminating in a distinct claw, the peculiar spinous armature of the ambulatory legs; and finally, too, as pointed out by Dr. Hansen, in the development. Up to the present time, only 2 species can, with certainty, be referred to this genus; both Northern ones and which will subsequently be spoken of more at large.

9. **Pseudopallene circularis**, (Goodsir).

(Pl. III, fig. 3, a—h).

Pallene circularis, Goodsir, On some new species of Pycnogonida. Edinburgh New Phil. Journal 1842, Vol. 32, p. 136, Pl.

Pallene intermedia, Krøyer, Bidrag til Kundsk. om Pycnogoniderne, l. c. p. 119 (adult.)

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 37, fig. 2 a—g.

Pallene discoidea, Krøyer, Bidrag til Kundsk. om Pycnogoniderne, l. c. p. 120 (jun.).

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 37, fig. 3, a—g.

Pallene hispida, Stimpson, Invertebrata of Grand Manan, p. 37 (adult).

Pseudopallene hispida, Wilson, Synopsis of the Pycnogonida of New England, p. 10, Pl. III, fig. 1 a—c (adult).

— — Idem, Rep. U. S. Comm. Fish and Fisheries VI, p. 478, Pl. II, fig. 9.

Pseudopallene discoidea, Wilson, Synopsis of the Pycnogonida of New England, p. 12, Pl. III, fig. 3, a—c (jun.).

— — Idem, Rep. U. S. Comm. Fish and Fisheries VI, p. 479, Pl. II, fig. 10.

Pseudopallene intermedia, Hansen, Kara Havets Pycnogonider, p. 21, Tab. XIX, fig. 2 a—l (adult. & jun.).

Pseudopallene circularis, G. O. Sars. Pycnog. borealia et arctica, No. 9.

Artsecharacteristik. Legemet særdeles plumpt og undersætsigt, med Sidefortsætterne næsten sammenstødende; de 2 midterste Kropssegmenter ovenfor med en Længderad af høje pigformige Fortsætser. Hovedsegmentet neppe saa langt som de 3 følgende tilsammen, Halsen særdeles kort, næsten obsolet. Saxlemmerne forholdsvis korte, Skaffet cylindrisk, med stærke pigformige Fortsætser ved Enden, Saxen neppe længere end Skaffet, triangular, den ubevægelige Finger med en enkelt afrundet Knude i Midten af Inderkanten; den bevægelige Finger glat. De falske Fødder forholdsvis korte, de ydre Led besatte med simple, uregelmæssigt ordnede Torner i Inderkanten. Gangtødderne korte og robuste, neppe mere end dobbelt saa lange som Legemet, og forsynede, især langs Ydersiden, med stærke pigformige Fortsætser, fint ciliære i Kanterne og bærende en stiv Børste i Spidsen; Fodledet stærkt krummet og bevæbnet i Inderkanten med omkring 8—10 stærke Torner: Endekloen kortere end Fodledet. Farven gulbrun. Legemets Længde $3\frac{1}{2}^{mm}$; Spandvidde 19^{mm} .

Bemærkninger. Der kan efter min Mening ingen- somhelst Tvivl være om, at Goodsir's *Pallene circularis* er identisk med Krøyer's *P. discoidea*, og, da Goodsir's Afhandling er publiceret 3 Aar tidligere end Krøyer's, maa selvfølgelig det af førstnævnte Forsker foreslaaede Navn, *circularis*, bibeholdes for Arten. Dr. Hansen har først paavist, at de 2 Krøyerske Arter, *P. intermedia* og *discoidea* hører sammen, den første repræsenterende fuldt udviklede, den anden yngre Individuer; noget, hvis Rigtighed jeg ogsaa ved egne lagttagelser kan bekræfte. Den amerikanske Form *P. hispida*, synes heller ikke i nogen Henseende at skille sig fra fuldvoxne Exemplarer af nærværende Art, ligesaa lidt som den af Wilson som *Pseudopallene discoidea* beskrevne Form lader sig adskille fra yngre Individuer (= *Pallene discoidea*, Krøyer).

Beskrivelse. Legemets Længde er hos fuldt udviklede Individuer omtrent $3\frac{1}{2}^{mm}$, med en Spandvidde af 19^{mm} . Nogen bemærkelig Forskel i Størrelsen hos de 2 Køn findes ikke.

Formen er (se Pl. III, Fig. 3) ualmindelig kort og undersætsigt, i hvilken Henseende denne Art noget minder om Arterne af Skegten *Ammonothea*, Leach. Selve Kroppen

Pallene hispida, Stimpson, Invertebrata of Grand Manan, p. 37 (adult).

Pseudopallene hispida, Wilson, Synopsis of the Pycnogonida of New England, p. 10, Pl. III, fig. 1 a—c (adult).

— — Idem, Rep. U. S. Comm. Fish and Fisheries VI, p. 478, Pl. II, fig. 9.

Pseudopallene discoidea, Wilson, Synopsis of the Pycnogonida of New England p. 12, Pl. III, fig. 3, a—c (jun.).

— — Idem, Rep. U. S. Comm. Fish and Fisheries VI, p. 479, Pl. II, fig. 10.

Pseudopallene intermedia, Hansen, Kara Havets Pycnogonider, p. 21, Tab. XIX, fig. 2 a—l (adult & jun.).

Pseudopallene circularis, G. O. Sars. Pycnog. borealia et arctica, No. 9.

Specific Characters. Body exceedingly clumsy and thickset, with lateral processes well-nigh contiguous; the 2 median segments of the body above with a longitudinal series of prominent spiniform projections. Cephalic segment hardly as long as the 3 succeeding ones taken together, neck extremely short, almost absent. Cheliferi comparatively short, scape cylindric with strong spiniform projections at the extremity, chela hardly longer than scape, triangular, immobile finger with a single rounded protuberance at the middle of the inner edge; mobile finger smooth. False legs comparatively short, outer joints beset with plain, irregularly disposed spines on the inner margin. Ambulatory legs short and robust, scarcely more than twice as long as body, and furnished, especially along the outer side, with strong spiniform projections delicately ciliated at the edges, and bearing a stiff bristle at the point; propodal joint greatly curved, and armed on the inner edge with about 8—10 strong spines; terminal claw shorter than propodal joint. Colour a yellowish brown. Length of body $3\frac{1}{2}^{mm}$; extent 19^{mm} .

Remarks. In my opinion, there can not be the slightest doubt that Goodsir's *Pallene circularis* is identical with Krøyer's *P. discoidea*, and as Goodsir's Memoir appeared 3 years previous to Krøyer's, the name *circularis* proposed by the former naturalist, must, as a matter of course, be retained for the species. Dr. Hansen was the first to point out that the 2 Krøyer species, *P. intermedia* and *P. discoidea* are the same, the former representing fully developed the latter immature individuals — a fact borne out by my own observations. The North American form, *P. hispida*, does not seem to differ either from adult specimens of the present species, and just as little does the form described by Wilson under the name of *Pseudopallene discoidea* permit itself to be distinguished from younger specimens (= *Pallene discoidea*, Krøyer).

Description. The length of the body in fully developed specimens is about $3\frac{1}{2}^{mm}$, the extent about 19^{mm} . Any appreciable difference in size between the 2 sexes can not be detected.

The form (see Pl. III, fig. 3) is remarkably short and thickset, in which respect this species calls somewhat to mind the species of the genus *Ammonothea*, Leach. The body

er (se Fig. 3 a, 3 b) forholdsvis bred, og, da de fra samme radierende Sidefortsatser er næsten sammenstødende, faar herved det centrale Parti af Legemet ved første Oiekast Udseendet af en mere eller mindre cirkelformig Skive; heraf Artsbetegnelserne *circularis* og *discoidea*. Alle Krops-segmenter er tydeligt begrænsede ved vel markerede Suture, og det forreste (Hovedsegmentet) som sædvanlig det største, skjønt neppe længere end de 3 følgende tilsammen. Ved en stærk median Indknibning er dette Segment delt i 2 Partier, hvoraf det forreste forestiller Pandedelen, det bagerste den fodbærende Del. Begge er kun skilt ved et ganske smalt Mellemrum, og nogen egentlig Hals er saaledes i Grunden ikke tilstede. Pandedelen er stærkt fortykket og oventil forsynet med en Tværrad af smaa pigformige Fortsatser; dens forreste Kant er noget udrandet i Midten, mellem Insertionen af Saxlemmerne. De 2 følgende Krops-segmenter er hvert i Midten af Rygsiden forsynet med en Længderad af hoie pigformige Fortsatser, hvoraf de paa det bagerste Segment er mere eller mindre sammensmeltede ved Roden (se Fig. 3 a). Sædvanligvis findes paa det forreste Segment 3, paa det bagerste 4 saadanne Fortsatser, alle fint cilierede i Kanterne og bærende i Spidsen en enkelt stiv Borste. Legemets Sidefortsatser (se Fig. 3 b) er forholdsvis store, omtrent saa lange som Kroppen er bred, og af noget kølledannet Form; ved Enden har hver af dem oventil en Krands af lignende pigformige Fortsatser, som de paa Rygsiden af Kroppen. Som sædvanlig er de 2 Par midterste Sidefortsatser de største og sidste Par mindst. Halesegmentet (Fig. 3 g) er forholdsvis langt, horizontalt, og af smal cylindrisk eller noget konisk Form, samt forsynet med smaa Pigge oventil og i Kanterne.

Oieknuden, der omtrent er beliggende paa Midten af Hovedsegmentet, er (se Fig. 3 a) forholdsvis lav og stump tiltrundet, samt noget bagudrettet. Synselementerne er vel udviklede og af sædvanlig Bygning.

Snabelen, der er noget skraat nedadrettet (se Fig. 3 a), er adskilligt kortere end Hovedsegmentet og af konisk Form, med Spidsen mummilleformigt uddraget; omkring Mundaabningen findes en tæt Krands af særdeles fine Borster, der dog mangler hos ganske unge Exemplarer (se Fig. 3 h).

Saxlemmerne er hos fuldt udviklede Exemplarer (se Fig. 3 a, 3 b) meget kraftigt udviklede, skjønt ikke af nogen særdeles betydelig Længde. Skaffet er tykt, cylindrisk og oventil ved Enden forsynet med en Tværrad af 4 pigformige Fortsatser, hvoraf navnlig den yderste udmerker sig ved betydelig Størrelse. Haanden, der er skraat nedad- og indadrettet mod Spidsen af Snabelen, er omtrent af Skaffets Længde og stærkt opsvulmet, næsten af triangular Form og paa den øvre Side forsynet med korte borstebærende Fortsatser og spredte Haar. Fingrene er meget korte, stærkt indadrettede og ender begge i en stump Spids. Den bevægelige Finger er ganske glat, hvorimod den ubevægelige har et stærkt knudeformigt Fremspring i Midten af

itself (see fig. 3 a, 3 b) is comparatively broad, and as the lateral processes radiating therefrom are well-nigh contiguous, the central part of the body acquires, thus, at the first glance, the appearance of a more or less circular disc: hence the specific designations *circularis* and *discoidea*. All the segments of the body are distinctly defined by well marked sutures, the foremost (cephalic segment) being as usual the largest, although hardly longer than the 3 succeeding ones taken together. A deep median constriction divides this segment into 2 portions, of which the foremost represents the frontal, and the hindmost the pediferous part. They are separated by only an exceedingly narrow interval, and a neck therefore, strictly speaking, does not exist. The frontal part is very much tumefacted, and furnished above with a transverse series of small spiniform projections; its anterior edge is somewhat emarginate in the middle, between the insertions of the chelifori. The 2 succeeding segments of the trunk are each provided in the middle of the dorsal side with a longitudinal series of prominent spiniform projections, those on the posterior segment coalescing, more or less, at the base (see fig. 3 a). There occur on the foremost segment, as a rule, 3, on the hindmost 4 such processes, all delicately ciliated along the edges and bearing at the point a single stiff bristle. The lateral processes of the body (see fig. 3 b) are comparatively large, about as long as the trunk is broad, and somewhat clavate in form; at the extremity, each has a wreath of spiniform projections similar to those on the dorsal side of the trunk. As usual, the 2 middle pairs of lateral processes are largest, and the last pair smallest. The caudal segment (fig. 3 g) is comparatively long, horizontal, and of a narrow cylindric or somewhat conic form, and is also furnished above and at the edges with small spines.

The oculiferous tubercle, located at about the middle of the cephalic segment (see fig. 3 a), is comparatively low and obtusely rounded, and has a somewhat backward direction. The visual elements are well developed and of the usual structure.

The proboscis, which is directed somewhat obliquely downwards (see fig. 3 a), is a good deal shorter than the cephalic segment, and conic in form with the point mamilliform exerted: round the oral orifice is seen a dense wreath of exceedingly delicate bristles, which is absent, however, in very young specimens (see fig. 3 h).

The chelifori are, in full-grown specimens (see figs. 3 a, 3 b), very powerfully developed, although not of any considerable length. The scape is thick, cylindric, and furnished above, at the extremity, with a transverse series of 4 spiniform projections, the outermost of which, in particular, attains a considerable size. The hand, directed obliquely downward and inward, towards the tip of the proboscis, is about the length of the scape and much swollen, almost triangular in form, and provided on the upper side with short setiferous processes and scattered hairs. The fingers are very short, directed considerably inwards, and terminate, both of them, in an obtuse point. The mobile finger is quite smooth, whereas the immobile one has a prominent nodular

Inderkanten. Begge Fingre er stærkt chitiniserede og derfor af mørk hornbrun Farve. Hos yngre Individider (= *P. discoidea*, Krøyer) viser disse Lemmer (se Fig. 3 h) et temmelig afvigende Udseende og er idethele betydelig svagere udviklede end hos fuldvoxne Exemplarer. Navnlig er Saxen meget forskjellig. Den er nemlig paa langt nær ikke saa stærkt opsvulmet og af temmelig regelmæssig oval Form, med Fingrene udstrakte i Palmens Axe samt endende i en fin, noget indbøiet Spids. Inderkanten af begge Fingre er desuden fint tandet i hele Længden, og den ubevægelige Finger mangler ethvert Spor af det stærke knudeformige Fremspring, som forefindes her hos fuldvoxne Individider.

De falske Fødder, der er fæstede noget ventralt, nedenunder Forkanten af de forreste Sidefortsatser, er forholdsvis korte, navnlig hos Hunnen. Hos Hannen er de vistnok noget længere (se Fig. 3 a), men opnaar dog neppe Legemets Længde. 5te Led har hos Hannen ved Enden en lignende fligformig Fortsats som hos foregaaende Slægt. De 4 ydre Led (Fig. 3 d) aftager successivt i Størrelse og er langs Inderkanten forsynede med en Del temmelig uregelmæssigt ordnede Torner uden Sidetænder (Fig. 3 e). Det forholdsvis lille sidste Led har kun 2 saadanne og bærer i Spidsen en vel udviklet Endeklo, der i Inderkanten er fint tandet.

Gangfodderne (se Fig. 3, 3 f) er af usædvanlig kort og robust Form, neppe mere end dobbelt saa lange som Kroppen, og bevæbnede med talrige koniske, i Kanterne fint haarede, pigformige Fortsatser, hver bærende i Spidsen en stiv Borste. Disse Fortsatser er paa de 2 Lægled temmelig regelmæssigt ordnede i 3 Rækker, hvoraf de i den ydre Kant fæstede navnlig er stærkt udviklede, givende Fødderne her et regelmæssigt saugtakket Udseende (se Fig. 3 f). Paa Laarledet er de noget mere uregelmæssigt ordnede, og paa Hoftepartiet grupperer de sig især om Enden af Leddene. Som hos foregaaende Slægt er Laarledet hos fuldt udviklede Hunner (Fig. 3) stærkt opsvulmet paa Grund af de sig i dets Indre udviklende Æg, der dog her aldrig opnaar en saa betydelig Størrelse. Hos Hammerne er dette Led (se Fig. 3 f) adskilligt smalere, noget indsnøret paa Midten og desuden udmærket ved 2 stærke afrundede Knuder i Inderkanten; en lignende Knude findes ogsaa paa ethvert af de 2 følgende Led nær Basis. Angaaende Leddenes indbyrdes Længdeforhold, saa er Laarledet omtrent saa langt som de 3 Hofteled tilsammen; 1ste Lægled er omtrent af Laarledets Længde, medens 2det er kjendelig længere og smalere. Tarsalledet er meget lidet, dog forholdsvis større end hos foregaaende Slægt, af triangular Form, med Inderkanten skydende ud i en afrundet, med korte Torner besat Lap. Fodledet er kraftigt udviklet og temmelig stærkt krummet; det er langs Inderkanten bevæbnet med omkring 8—10 stærke Torner, hvoraf de 4 bagerste er størst. Endekloen er stærkt chitiniseret, noget kortere end Fodledet og jævnt krummet. Af Bikløer er der ikke det mindste Spor at opdage.

projection in the middle of the inner margin. Both fingers are highly chitinized and therefore of a dark horny brown colour. In young specimens (= *P. discoidea*, Krøyer) these limbs exhibit a rather deviating appearance (see fig. 3 h) and are, on the whole, much less developed than in full-grown examples. The chela especially is very different. It does not occur nearly so tumid and has a rather regular oval form, with the fingers extended in the axis of the palm and ending in a fine, somewhat incurvate point. The inner edge of both fingers, moreover, is delicately dentated throughout its whole length, and the immobile finger fails to exhibit any trace of the prominent nodular projection, found here in adult specimens.

The false legs, which are attached somewhat ventrally underneath the anterior edge of the foremost lateral processes, are comparatively short, more especially in the female. In the male they are, indeed, somewhat longer (see fig. 3 a), but hardly attain the length of the body. The 5th joint in the male has, at the extremity, a lobular process similar to that in the preceding genus. The 4 outer joints (fig. 3 d) diminish successively in size, and are furnished along the inner edge with a number of rather irregularly disposed spines without lateral teeth (fig. 3 e). The last, comparatively small joint has only 2 such spines, and bears at the point a well developed terminal claw, finely dentated on the inner edge.

The ambulatory legs (see fig. 3, 3 f) are remarkably short and robust in form, scarcely more than twice as long as the body, and armed with numerous conical spiniform projections delicately ciliated on the edges, each bearing at the tip a stiff bristle. On the 2 tibial joints these projections are rather regularly arranged in 3 series, those attached to the outer edge being, in particular, strongly developed, imparting to the legs here a regular serrate appearance (see fig. 3 f). On the femoral joint they are somewhat less regularly disposed, and on the coxal part they group themselves mostly about the extremity of the joints. As in the preceding genus, the femoral joint in fully developed females (fig. 3) is very much swollen, owing to the eggs in course of development within, which do not, however, attain here any considerable size. In the males this joint (see fig. 3 f) is much more slender, somewhat constricted in the middle, and distinguished, moreover, by 2 prominent rounded protuberances on the inner edge; a similar protuberance is also found on each of the 2 succeeding joints near the base. Respecting the mutual longitudinal relation of the joints, the femoral joint is about as long as the 3 coxal joints taken together; the 1st tibial joint is about the length of the femoral joint, whereas the 2nd is appreciably longer and narrower. The tarsal joint is very small, yet comparatively larger than in the preceding genus, triangular in form, with the inner edge projecting as a rounded lobe, beset with short spines. The propodal joint is powerfully developed and rather strongly curved; it is armed along the inner edge with about 8—10 strong spines, the 4 hindmost of which are largest. The terminal claw is highly chitinized, somewhat shorter than the propodal joint, and evenly curved. Of auxiliary claws not a trace can be detected.

De til de falske Fødder hos Hannen fæstede Æg er forholdsvis betydelig mindre og talrigere end hos foregaaende Slægt og danner 2 afrundede Masser, hver omgivet af en fælles Membran.

Dyrets Farve er i levende Tilstand gulagtig, hos ældre Individuer næsten gulbrun. Men ofte er Legemet saa tæt besat med fremmede, til de talrige pigformige Fortsætter heftende Dele, at baade Legemets Form og Farve er vanskelig at observere.

Forekomst. Jeg har taget denne Art paa flere Steder af vor Vestkyst og nordlig lige til Vadsø. Den synes alene at forekomme paa forholdsvis grundt Vand, fra 6—20 Favne, mellem Alger og Hydroider.

Udbredning. Arten synes idethele at maatte betragtes som en udpræget nordlig Form. Foruden ved Norge er den nemlig af Krøyer noteret fra Grønland, af Wilson fra Nordamerikas Østkyst, af Jarzynsky fra den murmanske Kyst og af Dr. Hansen fra Novaja Zemljas Sydvestkyst. Goodsir's Exemplarer var fra Kysten af Skotland.

10. *Pseudopallene spinipes* (Fabr.).

(Pl. III, Fig. 4, a—g).

Pycnogonum spinipes, Fabricius, Fauna Grønlandica, p. 232.
Pallene spinipes, Krøyer, Bidrag til Kundsk. om Pycnogoniderne, I. c., p. 118.

— — Idem, Gaimards Voyage en Scandinavie, Pl. 37, fig. 1, a—g.

Pseudopallene spinipes, G. O. Sars, Pycnogonidea borealia et arctica, No. 10.

Artscharacter. Legemet forholdsvis mindre undersætsigt end hos *P. circularis*, med Sidefortsætterne videre skilte og piggede i Enden. Rygsiden af Kroppen glat, uden pigformige Fortsætter. Hovedsegmentet noget længere end de 3 følgende tilsammen, med tydelig, skjønt kort Hals, Pandedelen stærkt fortykket og oventil ved Enden bevæbnet med korte Torner. Halesegmentet noget opadrettet, kortere end hos *P. circularis*. Oieknuden særdeles lav, tilrundet. Snabelen stærkt nedadrettet, af samme Beskaffenhed som hos foregaaende Art. Saxlemmerne hos fuldvoxne Individuer meget store, Skaftet cylindrisk med flere tornformige Fortsætter oventil, Haanden længere end Skaftet, nedadrettet, successivt udvidet mod Enden, Fingrene meget korte, stærkt indadrettede, begge med et knudeformigt Frenspring i Inderkanten og stumpt afrundet Spids. De falske Fødder hos Hannen længere end Legemet, de 4 ydre Led forsynede med en regelmæssig Rad af saugtakke Torner. Gangfødderne stærkt forkængede, næsten 4 Gange længere end Legemet og bevæbnede med talrige, forholdsvis smaa, glatte pigformige Fortsætter, hver med en Børste i Spidsen; Føddet forholdsvis smalere end hos *P. circularis*, med 4 stærke Torner i det bagre Parti af Inderkanten; Endekloen

The ova attached to the false legs in the male are, relatively, a good deal smaller and more numerous than in the preceding genus, and form 2 rounded masses, each enveloped in a common membrane.

Colour of the animal in the living state yellowish, in aged specimens well-nigh yellowish-brown. Often, however, the body is so densely beset with extraneous substances adhering to the numerous spiniform projections, that both the form and colour of the body are difficult to recognise.

Oecurrence. I have taken this species in several localities on the West Coast of this country and as far north as Vadsø. It would seem to occur only in comparatively shallow water — from 6 to 20 fathoms — among Algæ and Hydroidæ.

Distribution. The species should, it would appear, on the whole, be regarded as a well-marked Northern form. Besides from Norway, it is mentioned by Krøyer from Greenland, by Wilson from the east coast of North America, by Jarzynsky from the Murman Coast, and by Dr. Hansen from the south-west coast of Novaja Zemlja. Goodsir's specimens were from the coast of Scotland.

10. *Pseudopallene spinipes* (Fabr.).

(Pl. III, fig. 4, a—g).

Pycnogonum spinipes, Fabricius, Fauna Grønlandica, p. 232.
Pallene spinipes, Krøyer, Bidrag til Kundsk. om Pycnogoniderne, I. c., p. 118

Pallene spinipes, Krøyer, Gaimard's Voyage en Scandinavie, Pl. 37, fig. 1, a—g.

Pseudopallene spinipes, G. O. Sars, Pycnogonidea borealia et arctica, No. 10.

Specific Character. Body relatively less thickset than in *P. circularis*, with the lateral processes farther apart, and spinous at the extremity. Dorsal surface of trunk smooth, without spiniform projections. Cephalic segment somewhat longer than the 3 succeeding ones taken together, with distinct, although short neck, frontal part much tumefacted and armed above, at the end, with short spines. Caudal segment directed a little upwards, shorter than in *P. circularis*. Oculiferous tubercle exceedingly low, rounded. Proboscis pointing strongly downwards, similar in character to that of preceding species. Cheliferi in full-grown specimens very large, scape cylindrical with several spiniform projections above, hand longer than scape, directed downwards, expanding gradually towards the extremity; fingers very short, directed greatly inwards, both with a nodular projection on the inner edge and an obtusely rounded point. False legs in male longer than the body, the 4 outer joints furnished with a regular series of serrate spines. Ambulatory legs much elongated, almost 4 times as long as body, and armed with numerous, comparatively small and smooth spiniform projections, each bearing a bristle at the point; propodal joint relatively slenderer than in *P. circu-*

kortere end Fodledet, leformig krummet. Farven gulbrun. Legemets Længde $4\frac{1}{2}^{mm}$; Spandvidde 39^{mm} .

Bemærkninger. Nærværende Art hører aabenbart til samme Slægt som foregaaende, men er let kjendelig ved sin betydelig slankere Kropsform og navnlig ved de stærkt forlængede Gangtødder, hvis Bevægning ligeledes er afvigende. Ogsaa i Saxlemmerne og de falske Fødders Bygning er der vel udprægede Differentser.

Beskrivelse. Hos fuldvoxne Individer gaar Legemets Længde op til $4\frac{1}{2}^{mm}$, med en Spandvidde af 39^{mm} , og denne Art opnaar altsaa en meget betydeligere Størrelse end foregaaende.

Legemsformen er (se Pl. III, Fig. 4) idethele betydelig slankere end hos *P. circularis*. Selve Kroppen er mindre bred, næsten cylindrisk, og har Rygsiden ganske glat, uden Spor af den hos foregaaende Art paa de 2 midtre Segmenter forekommende Pigrække (se Fig. 4 a). Sidefortsætterne er forholdsvis længere og skilte ved bredere Mellemrum. Ved Enden har de, som hos foregaaende Art, en Krands af Pigge, men som er forholdsvis kortere og heller ikke saa regelmæssigt ordnede. Hovedsegmentet er noget længere end de 3 følgende Segmenter tilsammen og har en tydelig, skjønt meget kort Hals. Pandedelen er, som hos foregaaende Art, stærkt fortykket og ovenil ved Enden bevæbnet med korte pigformige Fortsætter. Forkanten er temmelig dybt udrandet mellem Insertionen for Saxlemmerne. Halsegmentet er forholdsvis noget kortere end hos *P. circularis* og mere oprettet, forøvrigt af en lignende Form.

Oieknuden, der ligger noget bag Midten af Hovedsegmentet, er særdeles lav og stumpt tilrundet (se Fig. 4 a); de 4 Linsener er temmelig store og alle af ens Størrelse.

Snabelen (se Fig. 4 a, 4 b, 4 c) forholder sig i sin Bygning ganske som hos foregaaende Art, men er stærkere nedadrettet og ligeledes forholdsvis noget større.

Saxlemmerne er hos fuldt udviklede Exemplarer (se Fig. 4 a, 4 b) af meget betydelig Størrelse, lige udstrakte næsten af Legemets Længde og stærk chitiniserede, navnlig i det ydre Parti. Skaffet er forholdsvis tykt, cylindrisk, og ovenil, saavel ved Enden som længere bagtil, bevæbnet med flere stærke pigformige Fortsætter. Haanden er særdeles kraftigt udviklet, noget længere end Skaffet og næsten lige nedadrettet, dannende en skarp Vinkel med Skaffet. Af Form er den (Fig. 4 d) aflang trekantet, successivt udvidet mod Enden og er besat med korte Pigge og Haar. Fingrene er, som hos foregaaende Art meget korte, afstumpede i Spidsen og stærkt indadrettede. Enhver af dem har i Midten af den stærkt chitiniserede Inderkant et knudeformigt Fremspring, som paa den ubevægelige Finger synes at være dobbelt. Hos ganske unge Exemplarer (se Fig. 4 g) observeres en fuldkommen analog Forskjel i disse Lemmers Bygning som hos foregaaende Art. Fingrene mangler dog

latis, with 4 strong spines on the posterior part of the inner edge; terminal claw shorter than propodal joint, falciform curvate. Colour yellowish brown. Length of body $4\frac{1}{2}^{mm}$, extent 39^{mm} .

Remarks. The present species obviously belongs to the same genus as the preceding one, but is readily distinguished by its much more slender form of body and, in particular, by the greatly elongated ambulatory legs, which likewise deviate as to armature. Also in the structure of the chelifori and false legs, well marked differences occur.

Description. In full-grown specimens the length of the body reaches $4\frac{1}{2}^{mm}$, with an extent of 39^{mm} ; this species attains, therefore, a much more considerable size than the preceding one.

The form of the body (see Pl. III, fig. 4) is, on the whole, a good deal slenderer than in *P. circularis*. The trunk itself is less broad, almost cylindrical, and has the dorsal surface quite smooth, without a trace of the series of spines (see fig. 4 a) observed on the 2 medial segments in the preceding species. The lateral processes are relatively longer, and marked off by wider intervals. At the extremity may be observed, as in the foregoing species, a wreath of spines, but relatively shorter, neither are they so regularly arranged. The cephalic segment is somewhat longer than the 3 following segments taken together, and has a distinct, although very short neck. As in the preceding species, the frontal part is very considerably tumefacted and armed above, at the extremity, with short spiniform projections. The anterior edge is rather deeply emarginate between the insertions of the chelifori. The caudal segment is relatively somewhat shorter than in *P. circularis* and is more erect; similar in form otherwise.

The oculiferous tubercle, located somewhat posteriorly to the middle of the cephalic segment, is exceedingly low and obtusely rounded (see fig. 4 a); the 4 lenses are rather large and uniform in size.

The proboscis (see figs. 4 a, 4 b, 4 c) does not, in its structure, differ from that of the preceding species, although it points more abruptly downwards, and is relatively somewhat larger.

The chelifori in fully developed specimens (see figs. 4 a, 4 b) attain a very considerable size, being, when fully extended, almost as long as the body, and are highly chitinized, especially in the outer part. The scape is comparatively thick, cylindrical, and armed above, both at the extremity and farther back, with several strong spiniform projections. The hand is most powerfully developed, somewhat longer than the scape, and directed well-nigh straight downwards, forming an acute angle with the scape. In form (fig. 4 d) it is oblongo-triangular, expanding gradually towards the end, and beset with short spines and hairs. As in the preceding species, the fingers are very short, obtuse at the tips, and strongly incurvate. Each of them has, in the middle of the highly chitinized inner edge, a nodular projection, apparently double on the immobile finger. In very young specimens (see fig. 4 g) may be observed a difference in the structure of these limbs, perfectly analogous

her ethvert Spor af de fine Tænder i Inderkanten, som findes hos unge Individuer af hin Art, og har Spidserne noget stærkere indboiede.

De falske Fodder er forholdsvis kjendelig længere end hos foregaaende Art, hos Hunnen (se Fig. 4 a) omtrent af Legemets Længde, hos Hannen (Fig. 4) betydelig længere og som hos foregaaende Art forsynede med en konisk Flig ved Enden af 5te Led. De 4 ydre Led er langs Inderkanten bevæbnede med en regelmæssig Række af saugtakke Torner (se Fig. 4 e). Endekloen er forholdsvis længere end hos *P. circularis* og har flere Tænder i Inderkanten.

Gangtoddene (se Fig. 4) udmærker sig ved sin betydelige Længde, der næsten er 4 Gange saa stor som Legemets. De er overalt tæt besatte med pigförmige, børstebærende Fortsætter, der dog er betydelig mindre end hos foregaaende Art og ganske glatte i Kanterne. Af Hoftedene er det 2det stærkt forlænget, betydelig længere end de 2 øvrige tilsammen. Laarledet er hos Hunnen temmelig stærkt opsvulmet paa Midten, hos Hannen (Fig. 4) betydelig smalere og noget buet. 1ste Lægled er omtrent af Laarledets Længde, medens 2det er kjendelig længere og meget smalt. Tarsalledet (se Fig. 4 f) er noget større end hos foregaaende Art, skraat afskaaret i Enden og i Inderkanten bevæbnet med flere, udad i Længde tiltagende Torner. Fodledet er næsten ret, forholdsvis smalere end hos *P. circularis* og bevæbnet i Inderkanten med stærke Torner, hvoraf navnlig de 4 eller 5 bagerste udmærker sig ved betydelig Størrelse. Endekloen er kraftigt udviklet, leformigt krummet og noget kortere end Fodledet. Af Bikhøer er der, ligesaa lidt som hos foregaaende Art, det mindste Spor at opdage.

De ydre Ægmasser (se Fig. 4) forholder sig som hos foregaaende Art.

Dyrets Farve er mere eller mindre intens gul, gaaende hos ældre Individuer over til gullbrunt.

Forekomst. Denne Art synes ved vore Kyster at være sjældnere end foregaaende. Jeg har taget den paa et Par Punkter ved vor Vestkyst, fremdeles ved Lofoten og ved Finmarken lige til Vadso. Den forekommer under lignende Forhold som *P. circularis* og oftest sammen med denne Art.

Udbredning. Som foregaaende Art er den en udpræget nordlig Form og synes derfor ogsaa at naa sin kraftigste Udvikling i de arktiske Have. Foruden ved Norge er den noteret fra Grønland (Krøyer) og den murmanske Kyst (Jarzynsky). Et enkelt Exemplar har jeg havt Anledning til at undersøge fra det Kariske Hav, taget under Nordenskjold's Expedition. Derimod er den hverken observeret ved Danmark, de britiske Øer eller Østkysten af Nordamerika.

to that of the preceding species. The fingers are, however, without a trace of the fine teeth on the inner edge found in young specimens of that species, and have the points a little more incurvate.

The false legs are appreciably longer than in the preceding species, those of the female (see fig. 4 a) attaining about the length of the body, those of the male (fig. 4) considerably exceeding it, and furnished, as in the preceding species, with a conical lobe at the end of the 5th joint. The 4 outer joints are armed along the inner edge with a regular series of serrate spines (see fig. 4 e). The terminal claw is relatively longer than in *P. circularis*, and has several teeth on the inner edge.

The ambulatory legs (see fig. 4) are distinguished by their great length, nearly 4 times as great as that of the body. They are everywhere beset with spiniform setous processes, a good deal smaller however than in the preceding species, and quite smooth on the edges. Of the coxal joints, the 2nd is much elongated, considerably exceeding in length the 2 others taken together. The femoral joint in the female is a good deal swollen in the middle, in the male (fig. 4) much more slender and somewhat arcuate. The 1st tibial joint is about the length of the femoral joint, whereas the 2nd is appreciably longer and very narrow. The tarsal joint (see fig. 4 f) is somewhat larger than in the preceding species, obliquely truncate at the extremity, and armed on the inner edge with several spines, increasing in length outwards. The propodal joint is well-nigh straight, relatively narrower than in *P. circularis*, and armed on the inner edge with strong spines, the 4 or 5 posterior of which are characterized by considerable size. The terminal claw is powerfully developed, falciform curve, and somewhat shorter than the propodal joint. As in the preceding species, no trace of auxiliary claws can be detected.

The outer egg-masses (see fig. 4) as in *P. circularis*.

The colour of the animal is a more or less vivid yellow, in aged specimens changing into yellowish-brown.

Occurrence. On the coast of Norway this species would seem to be rarer than the preceding one. I have taken it in one or two localities on the West Coast, also at Lofoten and on the coast of Finmark as far as Vadso. It is met with under the same conditions as *P. circularis* and most frequently in company with that species.

Distribution. Like the preceding species, this is a well-marked Northern form, and would also, therefore, appear to attain its greatest development in the Arctic Seas. Besides Norway, the animal has been recorded from Greenland (Krøyer), and the Murman Coast (Jarzynsky), and I have also had an opportunity of examining a single specimen from the Kara Sea, taken on Nordenskjold's Expedition. On the other hand it has not been observed either on the coasts of Denmark or those of the British Islands; nor has it been recorded from the eastern coast of North America.

Gen. 7. **Cordylochele**, G. O. Sars, 1888.

Slægtscharacter. Legemet glat, uden pigformige Fortsatser, med Sidefortsatserne vel adskilte. Hovedsegmentet af meget betydelig Størrelse, med mere eller mindre forlænget Hals, og Pandedelen pludselig særdeles stærkt udvidet og noget affladet. Halsesegmentet lidet, horizontalt. Oieknuden lav, afrundet, med vel udviklede Synselementer. Snabelen horizontal, konisk, Spidsen mamilleformig, men uden Børstekrands. Saxlemmerne særdeles robuste, Haanden overordentlig stærkt opsvulmet, næsten kugleformig og lige indadrettet. Fingrene meget korte, i Flugt med Palmen, den ubevægelige med et lamelleformigt Frenspring i Inderkanten. De falske Fodder 10-leddede, 5te Led hos Hannen med en børstebesat Flig i Enden, de ydre Led bevæbnede med en regelmæssig Række af stærke saugtakke Torner; Endekloen vel udviklet. Gangfodderne forlængede, uden pigformige Fortsatser, men tæt besatte med korte Haar, Tarsalledet kort, Fodledet kraftigt udviklet og bevæbnet i Inderkanten med stærke Torner; Endekloen forlænget, uden Bikkloer.

Bemærkninger. Denne nye Slægt staar vistnok i flere Henseender meget nær foregaaende, men synes mig dog at maatte kunne hævdes, især da allerede 3 distincte Arter foreligger, der utvivlsomt, saavel i den ydre Habitus som i visse anatomiske Characterer, slutter sig nær sammen til en naturlig Gruppe. Fra foregaaende Slægt er de herhen hørende Arter let kjendelige ved sit fuldstændig glatte Legeme, Hovedsegmentets eiendommelige Form og navnlig ved Saxlemmernes Bygning, endelig ved Mangelen af pigformige Fortsatser paa Gangfodderne. Fra den typiske Slægt, *Pallene*, skiller de sig blandt andet ved den fuldstændige Mangel af Bikkloer paa Gangfodderne og ved de falske Fodders Bygning, i hvilke Henseender de stemmer mere overens med Sl. *Pseudopallene*. Typen for Slægten er den af mig tidligere under Benævnelsen *Pallene malleolata* kortelig characteriserede Form, hvortil jeg nu kan føie 2 nye, vel udprægede Arter.

II. **Cordylochele malleolata**, G. O. Sars.

(Pl. IV, Fig. 1, a—k).

Pallene malleolata, G. O. Sars, Crustacea & Pycnogonida nova in itinere 2do et 3tio Exped. Norvegicæ anno 1877 & 1878 collecta, No. 48.

Pallene malleolata, Hoek, The Pycnogonida dredged in the Faroe Channel during the cruise of H. M. S. „Triton“. Trans. Royal Soc. Edinburgh, Vol. XXXII, Part 1, p. 6, Pl. 1, fig. 7.

Cordylochele malleolata, G. O. Sars, Pycnogonidea borealia et arctica, No. 11.

Artscharacter. Legemet undersætsigt, med Sidefortsatserne kun skilte ved smale Mellemrum. Hovedsegmentet næsten af Legemets halve Længde, naar Snabelen undtages; Pandedelen særdeles stærkt udvidet, over dobbelt saa bred som Legemet; Halsen skarpt begrændset, cylind-

Gen. 7. **Cordylochele**, G. O. Sars, 1888.

Generic Character. Body smooth, without spiniform projections, lateral processes well developed. Cephalic segment of very considerable size, with neck more or less prolonged and the frontal part abruptly and to a great extent expanded, and somewhat flattened. Caudal segment small, horizontal. Oculiferous tubercle low, rounded, with well developed visual elements. Proboscis horizontal, conical, point mamilliform, but without any setous wreath. Chelifori exceedingly robust, hand remarkably swollen, well-nigh globular, and directed straight inwards, fingers very short, in a line with the palm, the immobile one with a lamelliform projection on the inner edge. False legs 10-jointed, the 5th joint in male with a setous lobe at the extremity, the outer joints armed with a regular series of strong serrated spines; terminal claw well developed. Ambulatory legs elongated, without spiniform projections but densely beset with short hairs, the tarsal joint short, propodal joint powerfully developed and armed on the inner edge with strong spines; terminal claw produced, without auxiliary claws.

Remarks. This new genus no doubt approximates in several respects very closely to the preceding one, but should, I think, notwithstanding, be maintained, more especially as we have already 3 distinct species, which indubitably, both in their external habitus and certain anatomical characters, agree so closely as to form a natural group. From the preceding genus these species may be easily recognised by their perfectly smooth body, the peculiar form of the cephalic segment, and, in particular, by the structure of the chelifori, finally, by the absence of spiniform projections on the ambulatory legs. From the typical genus, *Pallene*, they differ, amongst other features, in the absolute want of auxiliary claws on the ambulatory legs and in the structure of the false legs, exhibiting, in respect of them, greater agreement with the genus *Pseudopallene*. The type of the genus is the form I have briefly characterised under the appellation *Pallene malleolata*, to which I can now add 2 new well defined species.

II. **Cordylochele malleolata**, G. O. Sars.

(Pl. IV, fig. 1, a—k).

Pallene malleolata, G. O. Sars, Crustacea & Pycnogonida nova in itinere 2do et 3tio Exped. Norvegicæ anno 1877 & 1878 collecta, No. 48.

Pallene malleolata, Hoek, The Pycnogonida dredged in the Faroe Channel during the cruise of H. M. S. „Triton“. Trans. Royal Soc. Edinburgh, Vol. XXXII, Part 1, p. 6, Pl. 1, fig. 7.

Cordylochele malleolata, G. O. Sars, Pycnogonidea borealia et arctica, No. 11.

Specific Character. Body thickset, with lateral processes only separated by narrow intervals. Cephalic segment well-nigh half as long as the body, excepting the proboscis; frontal part very much expanded, more than twice as broad as body; neck sharply defined, cylindric, as long as frontal

drisk, af Pandedelens Længde. Oieknuden meget lav, afrundet, med Synselementerne vel adskilte. Snabelen kortere end Hovedsegmentet. Saxlemmerne overordentlig kraftige, med kugleformigt opblæst og tæt haaret Haand; Fingrene kortere end Palmen, stærkt chitiniserede, med krummet, hornbrun Spids; det pladeformige Fremspring paa den ubevægelige Finger tandet i Kanten; den bevægelige Finger med en knudeformig Fortsats i Midten af Inderkanten. De falske Fodder hos Hammen $1\frac{1}{2}$ Gang længere end Legemet; 5te Led saa langt som de 2 foregaaende tilsammen; Endedelens 5 Led successivt aftagende i Størrelse, de laterale Torner smalt lancetformige og fint saugtakkede i Kanterne; Endekloen forholdsvis kort. Gangfodderne robuste, neppe 3 Gange længere end Legemet og tæt haarede; 2det Hoftelæddet omtrent saa langt som de 2 øvrige tilsammen; Laarlæddet neppe dobbelt saa langt som Hoftepartiet, 1ste Læggelæddet kortere end Laarlæddet; Tarsallæddet meget kort, bredere end langt, med talrige Torner i Inderkanten; Fodlæddet kraftigt udviklet og noget krummet, det basale Parti af Inderkanten noget udvidet og bevæbnet med omkring 7 tæt sammentrængte forlængede Torner; Endekloen betydelig kortere end Fodlæddet, leformig krummet. Farven ensformig gulhvid. Legemets Længde $11\frac{1}{2}^{mm}$. Spandvidde 70^{mm} .

Bemærkninger. Fra de 2 øvrige, nedentor nærmere beskrevne Arter er denne let kjendelig ved Pandedelens betydelige Størrelse, de overordentlig kraftigt byggede Saxlemmer, og de mindre stærkt forlængede, tæt haarede Gangfodder.

Beskrivelse. Legemets Længde, fra Spidsen af Snabelen til Enden af Halevedhængen, gaar op til $11\frac{1}{2}^{mm}$, og Spandvidden til 70^{mm} . Nærværende Form opnaar saaledes en meget anseelig Størrelse.

Legemsformen er (se Pl. IV, Fig. 1) idethele temmelig robust, saavel hvad Kroppen selv angaar som i Henseende til Lemmerne. Kropssegmenterne er skarpt begrænsede fra hinanden, og de fra dem udgaaende Sidefortsatser skilte ved tydelige, skjøndt smale Mellemrum. Rygsiden af Segmenterne er fuldkommen glat, og heller ikke paa Sidefortsatserne bemærkes noget Spor af de hos foregaaende Slægt her forekommende pigformige Fremspring. Hovedsegmentet (se Fig. 1 a, 1 b, 1 c) har hos nærværende Art opnaaet en ganske overordentlig Udvikling. Det indtager omtrent Legemets halve Længde, naar Snabelen fraegnes, og er navnlig udmærket ved den colossale Størrelse af Pandedelen. Denne sidste, der er meget skarpt afmarkeret fra den bagfor liggende Del, er over dobbelt saa bred som den øvrige Krop og har langs Midten en rendeformig Fordybning, medens Sidelælene er stærkt opsvulmede og ved Insertionen for Saxlemmerne besatte med korte Haar. Det mellem Pandedelen og den fødbærende Del af Segmentet liggende Parti danner en vel begrænset cylindrisk Hals, omtrent af Pandedelens Længde. Halesegmentet (Fig. 1 k), der ikke ved nogen tydelig Satur er skilt fra sidste Kropssegment, er forholdsvis meget lidet, horisontalt, og af simpel cylindrisk Form, eller lidt afsmalnende mod Enden, der er stumpt tilrundet.

Oenliferous tubercle very low, rounded, with visual elements distinctly separated. Proboscis shorter than cephalic segment. Chelifori remarkably powerful, with globular, inflated, and densely ciliated hand; fingers shorter than palm, highly chitinized, with curvate, horny-brown tips; the lamelliform projection on the immobile finger dentated on the edge; the mobile finger with a nodular process in the middle of the inner edge. False legs in the male one and a half times as long as the body; the 5th joint as long as the 2 preceding ones taken together; the 5 joints of terminal part diminishing successively in size, lateral spines narrow-lanceolate and finely serrated on the edges; terminal claw comparatively short. Ambulatory legs robust, hardly 3 times the length of body and densely hairy; 2nd coxal joint about as long as the 2 others taken together; femoral joint scarcely double the length of coxal part. 1st tibial joint shorter than femoral joint; tarsal joint very short, broader than long, with numerous spines on the inner edge; propodal joint powerfully developed and somewhat curved, basal part of inner margin somewhat expanded and armed with about 7 closely crowded elongated spines; terminal claw considerably shorter than propodal joint, falciform curvate. Colour a uniform yellowish white. Length of body $11\frac{1}{2}^{mm}$, extent 70^{mm} .

Remarks. From the 2 other species, described in detail below, this form is easy to distinguish, by the considerable size of the frontal part, the remarkably powerful structure of the chelifori and the less elongated, densely hairy ambulatory legs.

Description. The length of the body, measured from the tip of the proboscis to the end of the caudal appendage, reaches $11\frac{1}{2}^{mm}$, and the extent 70^{mm} . The present species attains therefore a very considerable size.

The form of the body (see Pl. IV, fig. 1) is, on the whole, rather robust, both as regards the trunk itself as well as the limbs. The segments of the trunk are sharply defined from one another, and the lateral processes issuing from them are separated by distinct though narrow intervals. The dorsal surface of the segments is perfectly smooth, and neither can any trace be detected on the lateral processes of the spiniform projections found in the preceding genus. The cephalic segment (see fig. 1 a, 1 b, 1 c) in the present species has attained a most remarkable development. It occupies about half the length of the body, excepting the proboscis, and is chiefly characterized by the enormous size of the frontal part. The latter, sharply defined from the part behind it is more than twice as broad as the rest of the trunk, and exhibits along the middle a canalicular depression, whereas the lateral parts are very much swollen, and beset, at the insertions of the chelifori, with short hairs. The part between the frontal and pediferous portions of the segment forms a well defined cylindrical neck, about the same length as the frontal part. The caudal segment (fig. 1 k) not separated by any distinct suture from the last segment of the trunk, is relatively very small, horizontal, and plain cylindric in form, or tapering a little towards the extremity, which is obtusely rounded.

Oieknuden (se Fig. 1 a, 1 c) er særdeles lav, jævnt afrundet og beliggende ved den bagre Trediedel af Hovedsegmentets Længde, eller lige over Basis af Halsen. De 4 Lindser er (se Fig. 1 e) forholdsvis smaa og temmelig vidt adskilte; til enhver af dem horer en skarpt begrændset bagerformig Ansamling af mørkt Pigment, hvis Spids vender mod Centrum af Oieknuden.

Snabelen er (se Fig. 1 a, 1 b, 1 c) betydelig kortere end Hovedsegmentet, horizontalt fortilrettet og af konisk Form. Spidsen er (se fig. 1 d) udtrækket til en kort Mamille, hvorpaa Mundaabningen er beliggende. Den er ikke som hos foregaaende Slægt, omgivet af nogen egentlig Børstebands, men kun, ligesom det tilgrændsende Parti af Snabelen, fint cilieret.

Saxlemmerne (se Fig. 1 a, 1 b, 1 c), der er fæstede til Pandedelens Sidehjørner, adskilte ved et temmelig betydeligt Mellemrum, er overordentlig kraftigt udviklede og af næsten koldannet Form. Skaffet er forholdsvis tykt, cylindrisk og, naar undtages nogle meget smaa Haar ved det ydre Hjørne, ganske glat. Haanden (Fig. 1 f) er omtrent af Skaffets Længde, men mere end dobbelt saa bred, næsten kugleformigt opsvulmet og tæt besat med fine Haar, der navnlig henad den ubevægelige Finger bliver særdeles tætte og danner her et tykt fildtagtigt Overtræk. Den er horizontalt indadrettet, saaledes, at dens Ende ialmindelighed møder den tilsvarende paa den anden Side lige under Spidsen af Snabelen (se Fig. 1 b). Fingrene er korte og tykke, paa langt nær ikke af Palmens Længde, og stærkt chitiniserede navnlig i Spidsen, som derved antager en mørk hornbrun Farve. Den ubevægelige Finger, som i Haandens naturlige Stilling ligger fortil, er ikke tydeligt afsat fra Palmen, hvis umiddelbare Fortsættelse den danner. Den er forsynet indad med en lamelleformig Fortsats, der er fint tandet i Kanten og egentlig udgaar fra den nedre Flade, medens selve Kanten af Fingeren viser sig indenfor den hageformigt krummede Spids dybt indbugtet og længere bagtil forsynet med et tandformigt Fremspring (se Fig. 1 f). Den bevægelige Finger, der er betydelig smalere end den ubevægelige, har paa Midten et lignende tandformigt Fremspring, der, naar Saxen er lukket, griber ind mellem det tilsvarende Fremspring paa den ubevægelige Finger og den lamelleformige Fortsats.

Af Følere er der, ligesaa lidt som hos de i det foregaaende omtalte Pyenogonideer, det mindste Spor at opdage (se Fig. 1 b).

De falske Fødder (se Fig. 1 b), der hver artikulerer med et fra Siderne af Halsen tæt foran de forreste Sidefortsætter udgaaende knudeformigt Fremspring, bestaar hos begge Kjon af 10 Led og ender med en vel udviklet, skjønt ikke meget lang Klo. Som sædvanlig er disse Lemmer hos Hamnerne stærkere udviklede end hos Hunnerne, og er hos de første lige udstrakte, næsten $1\frac{1}{2}$ Gang længere end Legemet, hvad der væsentlig skyldes den betydeligere Størrelse af 5te Led. Medens dette Led hos Hunnerne (se Fig. 1) neppe er længere end det foregaaende, er det her (se Fig. 1 b) fuldkommen lige saa langt som de 2 foregaaende til-

The oculiferous tubercle (see fig. 1 a, 1 c) is exceedingly low, evenly rounded, and placed on the posterior longitudinal third-part of the cephalic segment, or immediately above the base of the neck. The 4 lenses (see fig. 1 e) are comparatively small and rather far apart: to each of them belongs a sharply defined cup-shaped aggregation of dark pigment, whose point is directed towards the centre of the oculiferous tubercle.

The proboscis (see fig. 1 a, 1 b, 1 c) is considerably shorter than the cephalic segment, of a conical form, and directed horizontally forwards. The point (see fig. 1 d) is drawn out to a short mamilla, on which occurs the oral opening. It is not, as in the preceding genus, surrounded by a definite wreath of setae, but like the adjacent part of the proboscis is only finely ciliated.

The cheliferi (see fig. 1 a, 1 b, 1 c), attached to the lateral corners of the frontal part, and separated by a considerable interval, are most powerfully developed and well-nigh claviform. The scape is relatively thick, cylindric, and, saving a few very short hairs at the outer corner, perfectly smooth. The hand (fig. 1 f) measures about the length of the scape, but is more than twice as broad, almost globularly tumified, and densely beset with fine hairs, which, down the immobile finger especially, become exceedingly dense, constituting here a thick, felt-like covering. It points horizontally inwards, in such manner as generally to meet at its end the corresponding one of the other side, immediately under the tip of the proboscis (see fig. 1 b). The fingers are short and thick, not nearly attaining the length of the palm, and are highly chitinized, in particular at the point, which thereby acquires a dark horny-brown colour. The immobile finger, which in the natural position of the hand is located anteriorly, is not distinctly defined from the palm, of which it is a direct continuation. It is furnished inwards with a lamelliform process, finely dentated on the edge and really issuing from the lower surface, whereas the edge of the finger itself appears, inside the unciform curvate point, deeply emarginate and farther back provided with a dentiform projection (see fig. 1 f). The mobile finger, a good deal narrower than the immobile, has in the middle a similar dentiform projection, which, when the chela is closed, interlocks with the corresponding projection on the immobile finger and the lamelliform process.

As in the Pyenogonidea previously mentioned, not a trace of palpi can be detected (see fig. 1 b).

The false legs (see fig. 1 b), each articulating with a nodular projection that issues from the sides of the neck just in front of the foremost lateral processes, are in both sexes composed of 10 joints, and terminate with a well developed although not very long claw. As usual, these limbs are in the male more fully developed than in the female, and attain in the former, when fully extended, well-nigh one and a half times the length of the body, chiefly owing to the much greater size of the 5th joint. While this joint in the female (see fig. 1) measures hardly as long as the preceding one, it is here quite as long as the 2 foregoing

sammen og udmærker sig desuden ved en noget afvigende Form, idet det successivt udvides mod Enden, der gaar ud i en temmelig stor omboiet med tætte Børster besat Lap. Saavel dette som det foregaaende Led er desuden forsynet med et betydeligt Antal af eiendommelige, hageformigt omboiede Smaaborster, der rimeligvis tjener til at fæste og holde i Situs de ydre Æggemasser. Af de Led, der sammensætter det terminale Parti (Fig. 1 g), er det 1ste størst, skjøndt ikke meget længere end det derpaa følgende, og overalt tæt haaret. De 4 følgende Led aftager successivt lidt i Størrelse og er alle temmelig sammentrykte samt stærkt indknebne ved Basis. I Inderkanten har disse Led en regelmæssig Rad af smalt lancetformige Torner, der ved stærk Forstørrelse (Fig. 1 h) viser sig at være særdeles fint saugtakkede i sit ydre Parti, medens de nærmere Basis har i hver Kant en Del betydelig grovere tandformige Fremspring. Endekloen er betydelig kortere end sidste Led og fint tanded i Inderkanten.

Gangfodderne (se Fig. 1) er af forholdsvis robust Bygning og ikke fuldt 3 Gange længere end Legemet. De er, navnlig i sit ydre Parti, tæt haarede, hvorimod lignende pigformige Fortsatser som hos foregaaende Slægt ganske mangler. Af de 3 Hoftepartiet sammensættende Led er det midterste omtrent saa langt som de 2 øvrige tilsammen og noget kølleformigt opsvulmet i Enden. Laarledet er forholdsvis stort, skjøndt neppe dobbelt saa langt som Hoftepartiet, og hos Hunnen noget opsvulmet paa Grund af de sig i dets Indre udviklende Æg. 1ste Lægled er kortere end Laarledet, hvorimod 2det Lægled er adskilligt længere og betydelig smalere. Tarsalledet (se Fig. 1 i) er særdeles kort, bredere end langt og af trekantet Form; paa Ydersiden gaar det ud i en liden tilspidset Lap og har langs den stærkt buede Inderkant en tæt Rad af Torner, der tiltager i Længde udad. Fodledet er kraftigt udviklet og noget krummet, med Inderkanten tydeligt indbugtet i Midten og ved Basis noget pladeformigt udvidet samt her bevæbnet med en Rad af 6 eller 7 temmelig forlængede og tæt sammentrængte Torner. Den øvrige Del af Inderkanten bærer ogsaa en Rad af Torner, men som er meget mindre, og langs Yderkanten og ved Spidsen er Ledet tæt haaret. Endekloen er betydelig kortere end Fodledet, temmelig tynd og leformigt krummet, uden det mindste Spor af Bikhør.

Dyrets Farve er i levende Tilstand ensformig gulhvid.

Forekomst. Af denne interessante Form blev 4 fuldvoxne Exemplarer indsamlede under Nordlavs Expeditionens sidste Togt. Exemplarerne var fra 3 forskellige Stationer, nemlig Stat. 290, 362, 363. Af disse er den 1ste beliggende omtrent midtvejs mellem Finmarken og Beeren Eiland, de 2 øvrige i Havet udenfor Spitzbergens Nordvestkyst; Dybden fra 191 til 459 Favne.

Udbredning. Arten er utvivlsomt at betragte som en ægte arktisk Form. Foruden i Nordhavet forekommer

taken together, and characterised, too, by a somewhat deviating form, expanding successively, as it does, towards the extremity, which projects in a rather large, recurved, with dense setae beset lobe. Both this and the preceding joint are, moreover, provided with a considerable number of small peculiar recurved hamate bristles, serving probably to attach and retain *in situ* the outer egg-masses. Of the joints composing the terminal part (fig. 1 g), the 1st is largest, although not much longer than the one succeeding it, and everywhere densely hairy. The 4 following joints diminish successively a little in size, and are all rather compressed, as also very much constricted at the base. On the inner edge these joints have a regular series of slender lanceolate spines, which, under a strong magnifier (fig. 1 h), appear most finely serrated in their outer part, whereas, nearer the base, they have on each edge a number of considerably coarser dentiform projections. The terminal claw is a good deal shorter than the last joint, and finely dented on the inner edge.

The ambulatory legs (see fig. 1) are comparatively robust in structure and not quite 3 times as long as the body. They are, more especially in their outer part, densely hairy, whilst spiniform processes, similar to those in the preceding genus, are altogether wanting. Of the 3 joints composing the coxal region, the mesial one attains about the length of the 2 others taken together, and is somewhat clavately swollen at the extremity. The femoral joint is comparatively large, although hardly twice as long as the coxal part, and in the female somewhat swollen owing to the eggs developing within it. The 1st tibial joint is shorter than the femoral joint, whereas the 2nd tibial joint is considerably longer and much narrower. The tarsal joint (see fig. 1 i) is exceedingly short, broader than long, and triangular in form; on the outer side it projects as a small acuminate lobe, and exhibits along the arcuate inner edge dense series of spines increasing in length outwards. The propodal joint is powerfully developed and somewhat curved, with the inner edge distinctly emarginate in the middle, and at the base somewhat lamellarly expanded, as also armed in that part with a series of 6 or 7 rather elongated and densely crowded spines. The upper part of the inner edge also bears a series of spines, but much smaller, and along the outer edge and at the point the joint is densely hairy. The terminal claw is much shorter than the propodal joint, rather thin and falciform curvate, without exhibiting the slightest trace of auxiliary claws.

The colour of the animal in the living state is a uniform yellowish white.

Occurrence. Of this interesting form only 4 adult examples were collected on the last cruise of the North-Atlantic Expedition. The specimens were from 3 different Stations, viz. Stats. 290, 362, 363. The 1st of these lies about midway between Finmark and Beeren Island, the other 2 in the ocean off the north-west coast of Spitzbergen: depth from 191 to 459 fathoms.

Distribution. The species must unquestionably be regarded as a true Arctic form. Besides in the Norwegian Sea,

den nemlig ogsaa i det Kariske Hav, hvortil jeg har havt til Undersøgelse 2 vel udprægede Exemplarer indsamlede under Nordenskjöld's Expedition fra et Dyb af 40—50 Favne.

12. *Cordylochele longicollis*. G. O. Sars.

(Pl. IV. Fig. 2, a—g).

Cordylochele longicollis. G. O. Sars. Pycnogonidea borealia & arctica. No. 12.

Artscharacter. Legemet betydelig slankere end hos foregaaende Art. med Sidefortsætterne vidt adskilte. Hovedsegmentet af Legemets halve Længde, naar Snabelen fraregnes, med særdeles stærkt forlænget og smal Hals; Pandedelen vel begrændset, men forholdsvis betydelig mindre end hos *C. malleolata*, neppe halvt saa lang som Halsen og ikke opnaaende Legemets dobbelte Bredde. Oieknuden noget mere ophøiet end hos foregaaende Art. med særdeles store, næsten sammenstødende Linsler. Snabelen som hos foregaaende Art. Saxlemmerne forholdsvis mindre robuste. Skaflet smalere. Haanden kugleformigt opsvulmet og besat med korte Haar. Fingrene kortere end Palmen, mindre stærkt chitiniserede og mindre krummede i Spidsen. den pladeformige Fortsats glat, ikke tandet. De falske Fodder hos Hammen stærkt forlængede og tynde; 5te Led kortere end de 2 foregaaende tilsammen: Endedelens 1ste Led stærkere forlænget; de laterale Torner omtrent som hos foregaaende Art; Endekloen tynd og forlænget. Gangfodderne sparsomt haarbesatte, forholdsvis spinkle. 4 Gange længere end Legemet; 2det Hoftelid betydelig længere end de 2 øvrige tilsammen; Laarledet dobbelt saa langt som Hoftepartiet; 1ste Læglid omtrent af Laarledets Længde, 2det $\frac{1}{2}$ Gang længere; Tarsalledet triangulært, neppe bredere end langt, med en enkelt Torn ved Enden i Inderkanten; Fodledet smalt og forlænget, næsten lige, med 5—6 stærke Torner ved Basis af Inderkanten; Endekloen næsten af Fodledets Længde, sammentrykt, leformig. Farven hvidagtig. Legemets Længde 8^{mm}, Spandvidde 77^{mm}.

Bemærkninger. Skjøndt utvivlsomt meget nær beslægtet med foregaaende Art, er denne dog let kjendelig ved den betydelig spinklere Legemsform, den lange og smale Hals og de stærkt forlængede og tynde Gangfodder. Ogsaa i Saxlemmernes Bygning er der vel udprægede Differenser, ligesom ogsaa Oieknuden viser et forskjelligt Forhold af Synselementerne.

Beskrivelse. Længden af Legemet hos fuldvoxne Individer er omkring 8^{mm}, med en Spandvidde af 77^{mm}, og denne Art opnaar saaledes ikke den anseelige Størrelse som foregaaende.

Legemsformen er (se Pl. IV. Fig. 2) betydelig slankere end hos den typiske Art. baade hvad selve Kroppen og Lemmerne angaar, og Legemets Sidefortsætser, som hos foregaaende Art var tæt sammentrængte, er som Folge heraf her skilte ved temmelig brede Mellemrum. Hovedsegmentet (se Fig. 2 a, 2 b) indtager fuldkommen Halvparten

Den norske Nordhavsexpedition. G. O. Sars: Pycnogonidea.

it occurs, too, in the Kara Sea, whence I have had for examination 2 well marked specimens taken on Nordenskjöld's Expedition from a depth of 40—50 fathoms.

12. *Cordylochele longicollis*. G. O. Sars.

(Pl. IV. fig. 2, a—g).

Cordylochele longicollis. G. O. Sars. Pycnogonidea borealia & arctica. No. 12.

Specific Character. Body much more slender than in the preceding species, with the lateral processes wide apart. Cephalic segment half the length of the body, excepting the proboscis, with the neck remarkably elongate and slender: frontal part well defined but relatively much smaller than in *C. malleolata*, scarcely half as long as the neck and not attaining twice the length of the body. Oculiferous tubercle somewhat more protuberant than in the preceding species, with exceedingly large, well-nigh contiguous lenses. Proboscis as in the preceding species. Chelifori relatively less robust, scape slenderer, hand globularly tumid and beset with short hairs, fingers shorter than palm, less strongly chitinised and not so curved at the point. The lamelliform process smooth, not dentate. False legs in male very elongate and slender; 5th joint shorter than both the preceding ones taken together; 1st joint of terminal part considerably elongated; lateral spines much as in the preceding species; terminal claw slender and elongate. Ambulatory legs sparingly furnished with hair, comparatively slender, 4 times the length of body; 2nd coxal joint much longer than both the others taken together; femoral joint twice as long as the coxal region; 1st tibial joint about the length of femoral joint. 2nd half as long again; tarsal joint triangular, hardly broader than long, with a single spine at the end of the inner edge; propodal joint slender and elongate, well-nigh straight, with 5—6 strong spines at the base of the inner edge; terminal claw almost the length of propodal joint, compressed, falciform. Colour whitish. Length of body 8^{mm}, extent 77^{mm}.

Remarks. Though doubtless very nearly related to the preceding species, this form may be easily recognised by its much slimmer body, the long and narrow neck and exceedingly elongate and slender ambulatory legs. In the structure, too, of the chelifori well-marked differences occur, and the oculiferous tubercle also exhibits a deviating relation with respect to the visual elements.

Description. The length of the body in full-grown specimens is about 8^{mm}, the extent 77^{mm}, and this species, therefore, does not attain the considerable size of the preceding one.

The body (see Pl. IV. fig. 2) is much more slim than in the typical species, both as regards the trunk itself and the limbs; and the lateral processes of the body, which in the preceding form were crowded together, are, in the present one, from this cause, separated by rather wide interspaces. The cephalic segment (see fig. 2 a, 2 b) occupies quite half

af Legemets Længde, naar Snabelen fraregnes, og er navnlig udmærket ved den overordentlig stærkt forlængede og smale cylindriske Hals. Derimod er Pandedelen her betydelig mindre, idet den neppe er halvt saa lang som Halsen og heller ikke paa langt nær dobbelt saa bred som Kroppen paa det tykkeste. Den er som hos foregaaende Art skarpt afmærket fra Halsen, noget fordybet langs den øvre Side og har Sidehjørnerne stumpt afrundede. Halesegmentet viser en lignende Form som hos foregaaende Art, men har Spidsen mere tydeligt indskaaret i Midten.

Oieknuden er ogsaa her (se Fig. 2 a) temmelig lav, dog noget mere fremspringende end hos den typiske Art og stumpt tilspidset i Enden. Lindserne er (se Fig. 2 c) særdeles store, næsten sammenstødende, og det til enhver hørende Pigment, synes her at danne en fælles central Masse.

Snabelen forholder sig i alt væsentligt ganske som hos foregaaende Art.

Ogsaa Saxlemmerne er (se Fig. 2 a, 2 b) af en meget lignende Bygning, om de end i Detaljerne viser enkelte vel udprægede Differentser. De er idethele paa langt nær ikke saa robuste, som hos den typiske Art, og har Skaffet temmelig smalt, cylindrisk og ganske glat. Haanden (Fig. 2 d) er, som hos foregaaende Art, stærkt opsvulmet, næsten kugleformig, men af forholdsvis ringere Størrelse og besat med korte, temmelig ens udviklede Haar. Fingrene, der er adskilligt kortere end Palmen, er mindre stærkt chitiniserede, med Spidsen kun meget svagt krummet. Paa den ubevægelige Finger findes ogsaa her et pladeformigt Fremspring, men dette har her en ganske glat, ikke tandet, Eg. og den tandformige Fortsats i Inderkanten af denne Finger synes at mangle, eller er ialfald meget utydelig. Derimod har den bevægelige Finger i Midten af Inderkanten en tydelig saadan Fortsats.

De falske Fodder er hos Hannen (se Fig. 2 a) stærkt forlængede og idethele spinklere end hos foregaaende Art. 5te Led er ogsaa her det længste og har i Enden en lignende børstebesat Lap; men Forskjellen i Længde mellem dette og det foregaaende Led er dog her mindre end hos den typiske Art. Af Endepartiets Led (Fig. 2 c) er det 1ste næsten saa langt som de 2 følgende tilsammen og cylindrisk. Randtornerne paa de 4 ydre Led (Fig. 2 f) stemmer i Bygning nær overens med samme hos foregaaende Art, men synes forholdsvis noget smalere. Endekloen er ligeledes tyndere og mere forlænget end hos denne Art.

Gangfodderne (se Fig. 2) er, sammenlignede med samme hos *C. malleolata*, særdeles spinkle og forlængede, næsten 4 Gange længere end Legemet, og kun sparsomt haarbesatte. Af Hoftelæddene er 2det stærkt forlænget, længere end de 2 øvrige tilsammen; Laarlæddet er hos Hannen dobbelt saa langt som Hoftepartiet og noget opsvulmet, skjøndt mindre end hos foregaaende Art; 1ste Læglæddet er neppe kortere end Laarlæddet og 2det do. er $\frac{1}{2}$ Gang længere og meget smalt. Tarsallæddet (se Fig. 2 g) er, som hos foregaaende Art, meget lidet, dog længere i

the length of the body, excepting the proboscis, and is chiefly characterized by the prodigiously elongated and narrow cylindrical neck. On the other hand the frontal part is considerably smaller, being scarcely half as long as the neck and not, by far, twice as broad as the trunk where thickest. As in the preceding species, it is sharply marked off from the neck, somewhat hollowed along the upper side, and has the lateral corners obtusely rounded. The caudal segment exhibits a similar form to that of the foregoing species but has the point more distinctly incised in the middle.

The oculiferous tubercle is also in this animal (see fig. 2 a) rather low, projecting, however, somewhat more than in the typical species, and has the extremity obtusely acuminate. The lenses (see fig. 2 c) are exceedingly large, well-nigh contiguous, and the pigment belonging to each would seem to constitute here a common central mass.

The proboscis is in all essential characteristics precisely as in the preceding species.

Also the chelifori (see fig. 2 a, 2 b) exhibit a very similar structure, although with certain well-marked minor differences. They are, on the whole, by no means so robust as in the typical species and have the scape rather narrow, cylindrical, and quite smooth. The hand (fig. 2 d) is, as in the preceding species, very much swollen, almost globular, but comparatively small in size and beset with rather uniformly developed short hairs. The fingers, a good deal shorter than the palm, are less highly chitinised, with the point only gently curved. On the immobile finger occurs, too, in this animal, a lamelliform projection, but with a perfectly smooth, not dentated, edge, and the dentiform process on the inner edge would seem to be absent or at least, is very indistinct. The mobile finger has, however, in the middle of the inner edge, such a process distinctly developed.

The false legs in the male (see fig. 2 a) are very elongate and, on the whole, more slender than in the preceding species. The 5th joint is, also, in the present form the longest, and has at the extremity a similar setiferous lobe; but the difference in length between this and the preceding joint is, however, less than in the typical species. Of the joints composing the terminal part (fig. 2 c), the 1st is well-nigh as long as the 2 succeeding ones taken together, and is cylindric in form. The marginal spines on the 4 outer joints (fig. 2 f) correspond in structure, almost quite, with those of the preceding species, but would seem to be relatively somewhat slenderer. The terminal claw is likewise more slender and elongate than in the said form.

The ambulatory legs (see fig. 2) are, as compared with those of *C. malleolata*, excessively slim and elongated, almost 4 times longer than the body, and but sparingly beset with hair. Of the coxal joints the 2nd is very elongate, its length exceeding that of the 2 others taken together; the femoral joint in the female is twice as long as the coxal part and somewhat tumid, although less so than in the preceding species; the 1st tibial joint is hardly shorter than the femoral joint, and the 2nd is half as long again and very slender. The tarsal joint (see fig. 2 g) is, as in the preceding

Forhold til Breden og af triangulær Form, med en enkelt stærk Torn i Inderkanten. Fodleddet er forholdsvis længere og smalere end hos *C. malleolata* samt mindre krummet. Det har i Inderkanten ved Basis 5 stærke, udad i Længde tiltagende Torner, hvorpaa følger en Rad af meget mindre saadanne. Endekloen er stærkt forlænget, næsten af Fodleddets Længde, sammentrykt, leformig, med Inderkanten tilskjærpet.

Af de indsamlede Exemplarer var et Par ægbærende. Æggene er (se Fig. 2 a) forholdsvis smaa og sammenkittede til en rundagtig Masse, der omgiver 4de Led af enhver af de falske Fodder.

Dyrets Farve er i levende Tilstand ensformig hvidagtig, med gennemskinnende gul Tarm og Tarmblindsække.

Forekomst. Jeg har taget denne karakteristiske Art paa 2 Punkter ved vor Kyst, nemlig ved Løfoten og ved Selsøvig i Nordland. Paa begge Steder forekom den enkeltvis paa cirka 100—120 F. D., Lerbund.

13. *Cordylochele brevicollis*. G. O. Sars.

(Pl. IV. Fig. 3, a—g).

Cordylochele brevicollis, G. O. Sars. *Pycnogonidea borealia* & *arctica*, No. 13.

Artscharacter. Legemet undersætsigt, med Sidefortsætterne tæt sammentrængte. Hovedsegmentet betydelig kortere end de følgende Segmenter tilsammen. Halsen meget kort. Pandedelen mindre stærkt udvidet. Oieknuden særdeles lav, jævnt afrundet, med forholdsvis smaa og vidt adskilte Lindser. Snabelen næsten af Hovedsegmentets Længde. Saxlemmerne forholdsvis mindre robuste end hos den typiske Art; Haanden mindre opsvulmet og af noget uregelmæssig Form; Fingrene længere end Palmen, den bevægelige glat, den ubevægelige med en kun lidet udviklet lamelleformig Fortsats. Nedenfor Saxlemmernes Insertion til hver Side en liden Knude som Rudiment af Føle. Ledknuderne for de falske Fodder ganske udfyldene Mellemrummet mellem Pandedelen og den forlærende Del af Hovedsegmentet. De laterale Torner paa de 4 ydre Led af disse Lemmer meget stærke, bredt lancetformige, med utydelig crenulerede Kanter. Gangfodderne tæt besatte med yderst korte Haar, næsten 4 Gange længere end Legemet, men betydelig kortere end hos *C. longicollis*; 2det Høfteled forholdsvis kort; Laarledet stærkt forlænget, næsten 3 Gange saa langt som Høftepartiet og længere end 1ste Lægled; Tarsalleddet forholdsvis større end hos de 2 øvrige Arter; Fodleddet derimod kortere, afsnalmende mod Enden og bevæbnet med 4—5 større Torner i Inderkanten, hvoraf 1 er fæstet omtrent i Midten; Endekloen stærkt

species very small, although long in proportion to breadth, and triangular in form, with a single strong spine on the inner edge. The propodal joint is relatively longer and slenderer than in *C. malleolata*, and also less curved. It has on the inner edge, at the base, 5 strong spines increasing in length, outwards, to which succeed a series of very small ones. The terminal claw is exceedingly elongate, attaining well-nigh the length of the propodal joint, compressed, falciform, with the inner edge sharpened.

Of the specimens collected a few were ovigerous. The eggs (see fig. 2 a) are comparatively small and glued together in a spherical mass, enveloping the 4th joint of each of the false legs.

The colour of the animal, in the live state, is uniformly whitish, with yellowish intestine and intestinal cæca shining through.

Occurrence. I have taken this characteristic species in 2 localities on our coast, viz. at Løfoten and at Selsøvig in Nordland. In both places it occurred sparingly, at a depth of about 100—120 fathoms; clay bottom.

13. *Cordylochele brevicollis*. G. O. Sars.

(Pl. IV. fig. 3, a—g).

Cordylochele brevicollis, G. O. Sars. *Pycnogonidea borealia* & *arctica*, No. 13.

Specific Character. Body thickset, with the lateral processes crowded together. Cephalic segment considerably shorter than the following ones taken together, neck very short, frontal part less prominently expanded. Oculiferous tubercle exceedingly low, evenly rounded, with comparatively small and widely separated lenses. Proboscis measuring well-nigh the length of the cephalic segment. Chelifori relatively less robust than in the typical species; hand not very tumid and somewhat irregular in form; fingers longer than palm, the mobile one smooth, the immobile with an only slightly developed lamelliform process. Below the insertion of the chelifori, on either side, a small protuberance — the rudiment of palpi. The articulating knots of the false legs entirely occupy the interspace between the frontal and the pediferous part of the cephalic segment. The lateral spines on the 4 outer joints of these limbs very strong, broadly lanceolate, with indistinct crenulated edges. Ambulatory legs densely beset with exceedingly short hairs, well-nigh 4 times longer than body, but considerably shorter than in *C. longicollis*; 2nd coxal joint comparatively short; femoral joint very elongate, attaining almost 3 times the length of coxal part, and longer than 1st tibial joint; tarsal joint relatively larger than in both the other species; propodal joint, on the contrary, shorter, tapering towards the extremity, and armed with 4—5 largish spines on

forlænget, konisk tilspidset i Enden. Farven hvidgul. Legemets Længde 10^{mm} , Spandvidde 80^{mm} .

Bemærkninger. Nærværende Art er navnlig karakteriseret ligeoverfor de 2 foregaaende ved den særdeles korte Hals, hvad der har givet Anledning til Artsbetegnelsen. Den er desuden let kjendelig ved den mindre stærkt udvidede Pandedel samt ved Saxlemmernes og Gangfoddernes Bygning.

Beskrivelse. Legemets Længde hos fuldvoxne Individuer er 10^{mm} , med en Spandvidde af 80^{mm} , og denne Art opnaar saaledes en meget anseelig Størrelse.

Legemsformen er idethele (se Pl. IV, Fig. 3) temmelig robust, og denne Art ligner i saa Henseende ved første Oiekast mere den typiske Form end foregaaende Art, trods det at Gangfodderne er betydelig stærkere forlængede end hos hin. Selve Kroppen (se Fig. 3 a) viser en meget undersætsig og sammentrængt Form, og Sidefortsatserne er derfor ogsaa kun skilte ved meget smale, spaltformige Mellemrum. Hovedsegmentet er forholdsvis betydelig mindre end hos de 2 foregaaende Arter, idet det paa langt nær ikke opnaar Kroppens halve Længde, og Pandedelen er heller ikke saa stærkt udvidet. Halsen er, i Modsætning til hvad Tilfældet var hos foregaaende Art, her meget kort, selv betydelig kortere end hos den typiske Art, og mellem Pandedelen og de forreste Sidefortsatser er der derfor kun et lidet Mellemrum, som til Siderne ganske udfyldes af Ledknuderne for de falske Fodder. Halsegmentet er omtrunt af samme Udseende som hos *C. malleolata*.

Oieknuden er særdeles lav og jævnt tilrundet samt udmærket ved den ringe Størrelse af Lindserne (se Fig. 3 b); disse er endnu videre skilte fra hinanden end hos *C. malleolata* og tydeligt grupperede 2 og 2 til hver Side, hver med et forholdsvis lidet og skarpt begrænset Pigmentbæger.

Snabelen (se Fig. 3 a) synes forholdsvis noget større end hos de foregaaende Arter, idet den næsten er af Hovedsegmentets Længde; dens Bygning er forøvrigt fuldkommen som hos hine Arter.

Saxlemmerne (se Fig. 3 a) er vistnok, sammenlignet med samme hos andre Pycnogonideer, temmelig kraftigt udviklede, men dog paa langt nær ikke i den Grad som hos den typiske Art, og selv hos foregaaende Art synes disse Lemmer i visse Henseender at være mere robuste. Skæftet er ganske glat, cylindrisk, dog med Yderkanten noget indbuet ved Basis. Haanden er langt fra saa stærkt opsvulmet som hos de 2 foregaaende Arter og derfor heller ikke saa udpræget kugleformig, men af noget uregelmæssig sammentrykt Form. Den er overalt tæt besat med særdeles korte Haar, der henad den ubevægelige Finger bliver noget længere, uden dog at antage den filtagtige Character som hos *C. malleolata*. Fingrene er her kjendelig længere end Palmen, og den ubevægelige Finger smalere end hos de 2 øvrige Arter og mere tydeligt begrænset fra Palmen, idet Forkanten paa Grænsen mellem begge danner en tydelig, omend svag, Indbugtning. I In-

the inner edge, of which one is affixed near the middle; terminal claw very elongate, conically acuminate at the extremity. Colour whitish-yellow. Length of body 10^{mm} , extent 80^{mm} .

Remarks. The present species is chiefly characterised, compared with the 2 preceding ones, by its exceedingly short neck, and hence its specific designation. It is, moreover, easily recognised by the less prominently expanded frontal part, as also by the structure of the chelifori and ambulatory legs.

Description. The length of the body in full-grown specimens is 10^{mm} , the extent 80^{mm} ; this species attains therefore, a very considerable size.

The body (se Pl. IV, fig. 3) is, on the whole, comparatively robust, and the animal resembles in that respect, at first sight, rather the typical form than the preceding species, notwithstanding that the ambulatory legs are a good deal more elongate than in the former. The trunk itself (see fig. 3 a) exhibits a very thickset and compact form, and the lateral processes are, consequently, marked off by only very narrow, fissure-like interspaces. The cephalic segment is relatively much smaller than in the 2 preceding species, not attaining, by far, half the length of the trunk, nor is the frontal part so prominently expanded. The neck in the present form is distinguished from that of the preceding species, by being very short, considerably shorter even than in the typical form, and between the frontal part and the foremost lateral processes there is, therefore, but a narrow interspace, which at the sides is wholly filled up by the articulatory knots of the false legs. The caudal segment exhibits nearly the same appearance as in *C. malleolata*.

The oculiferous tubercle is very low and evenly rounded, and characterised by the small size of the lenses (see fig. 3 b); the latter occur still farther apart than in *C. malleolata*, and are distinctly arranged 2 and 2 on each side, each with a comparatively small and sharply defined pigmentary cup.

The proboscis (see fig. 3 a) would seem to be relatively somewhat larger than in the 2 preceding species, attaining well-nigh the length of the cephalic segment; its structure is for the rest precisely as in those forms.

The chelifori (see fig. 3 a) are indeed, as compared with those in other Pycnogonids, rather powerfully developed, though not, by far, to such an extent as in the typical species, and even in the preceding species these limbs would appear to be in some respects more robust. The scape is quite smooth, cylindrical, but with the outer edge a little incurvated at the base. The hand is by no means so tumid as in the 2 preceding species, and therefore not so prominently globular, but is somewhat irregularly compressed in form. It is everywhere densely beset with exceedingly short hairs, which, as they approach the immobile finger become somewhat longer, without however assuming the felt-like character observed in *C. malleolata*. The fingers are in this animal appreciably longer than the palm, and the immobile finger is slenderer than in the 2 other species and more distinctly marked off from the palm, as the anterior edge, on the boundary between both, forms

derkanten af denne Finger findes en temmelig lav lamelliform Udvidning, der fortil, strax indenfor Fingrenes Spids, danner et vinkelformigt Fremspring. Derimod er Inderkanten af den bevægelige Finger ganske glat.

Nedenfor Saxlemmernes Insertion bemærkes (se Fig. 3 a) hos alle de undersøgte Exemplarer til hver Side et lidet knudeformigt Fremspring. Da disse Fremspring netop er beliggende der, hvor hos andre Pycnogonideer Følerne pleier at være fæstede, er der al Grund til at anse dem for et ubetydeligt Rudiment af disse Lemmer. Hos ingen af de 2 øvrige Arter har jeg kunnet opdage det mindste Spor af disse Knuder.

De falske Fodder forholder sig, som hos de 2 øvrige Arter, noget forskjelligt hos de 2 Køn, idet de hos Hannen (Fig. 3 d) er betydelig længere end hos Hunnen (Fig. 3 c), hvad der især skyldes den stærkere Udvikling af 5te Led, ved hvis Ende den sædvanlige borstebesatte Lap forefindes. De ydre Led stemmer, i Henseende til det indbyrdes Længdeforhold, temmelig nøie overens med samme hos foregaaende Art. Derimod viser de laterale Torner et meget afvigende Udseende. De er nemlig (se Fig. 3 f) for det første forholdsvis meget større og tykkere, bredt lancetformige, og dernæst mangler de ganske Saugtakker, idet Randen kun viser et uregelmæssigt bølgeformigt Forløb.

Gangfodderne (se Fig. 3) viser en temmelig robust Bygning, men er betydelig stærkere forlængede end hos den typiske Art, næsten 4 Gange længere end Legemet, og adskiller sig ogsaa i Detaillerne meget bestemt fra samme hos begge de øvrige Arter. De er overalt tæt besatte med meget smaa, næsten mikroskopiske Haar, der giver dem et fint loddent Udseende. Hoftepartiet er her forholdsvis kort, neppe længere end Bredden mellem de midterste Sidefortsætter, og Forskjellen i Længde mellem dets 3 Led mindre end hos de 2 øvrige Arter. Laarledet er derimod meget stærkt forlænget, omtrent $2\frac{1}{2}$ Gang længere end Hoftepartiet, og er hos Hunnen, som sædvanlig, tykkere end hos Hannen. 1ste Lægled er kjendelig kortere end Laarledet, medens 2det Lægled, som sædvanlig, er det længste af alle. Tarsalledet (se Fig. 3 g) er forholdsvis betydelig større end hos de 2 foregaaende Arter, længere end bredt og successivt noget udvidet mod Enden. Derimod er Fodledet forholdsvis mindre kraftigt udviklet, neppe mere end dobbelt saa langt som Tarsalledet, og noget afsmalende mod Enden. Det er i Inderkanten bevæbnet med circa 5 større Torner, hvoraf 1 er fæstet omtrent i Midten, de øvrige nærmere Basis. Ende-kloen er stærkt forlænget, vel saa lang som Fodledet, konisk tilspidset og mindre stærkt krummet end hos de 2 øvrige Arter.

Farven er i levende Tilstand omtrent som hos *C. malleolata*, nemlig enstørmig hvidgul.

Forekomst og Udbredning. Ved vore Kyster har jeg kun observeret nærværende Art paa et eneste Punkt, nemlig ved Vadsø, hvor jeg for mange Aar siden tog et

a distinct although slight incurvation. On the inner edge of this finger a rather low lamelliform expansion occurs, which, anteriorly, just within the point of the fingers, constitutes an angular projection. The inner edge of the mobile finger is, on the contrary, quite smooth.

Below the insertion of the cheliferi was found (see fig. 3 a), in all the specimens examined, on either side, a small tuberculiform projection. Those projections being located just where the palpi in other Pycnogonidea occur, there is every reason to regard them as a trifling rudiment of these limbs. In neither of the 2 other species have I succeeded in discovering the slightest trace of the said projections.

The false legs deviate somewhat, as in both the other species, in the 2 sexes, those of the male (fig. 3 d) being considerably longer than those of the female (fig. 3 c), mainly arising from the greater development of the 5th joint, at whose extremity the usual setiferous lobe occurs. The outer joints agree, as to their mutual relative proportions in length, rather closely with those of the preceding species. On the other hand, the lateral spines exhibit a very different appearance. They are (see fig. 3 f), in the first place, relatively much larger and thicker, broadly lanceolate, and, in the second place, they are totally destitute of saw-teeth, the edge simply exhibiting an irregular, undulatory line.

The ambulatory legs (see fig. 3) exhibit a rather robust structure but are much more elongate than in the typical species, attaining well-nigh 4 times the length of the body, differing, too, in several details, very decidedly, from those in both the other forms. They are everywhere densely beset with very minute, almost microscopic hairs, which gives them a delicate downy appearance. The coxal part in this animal is relatively short, hardly longer than the breadth between the mesial lateral processes, and the difference in length between its 3 joints is less than in the 2 other species. The femoral joint, on the other hand, is very much elongated, about two and a half times longer than the coxal part, and, as usual, thicker in the female than in the male. The 1st tibial joint is appreciably shorter than the femoral one, whilst the 2nd tibial joint is, as usual, the longest of all. The tarsal joint (see fig. 3 g) is, relatively, a good deal larger than in the 2 preceding species, and somewhat gradually expanded towards the end. On the other hand, the propodal joint is relatively less powerfully developed, hardly more than twice as long as the tarsal joint, and tapers a little towards the extremity. It is armed on the inner edge with about 5 largish spines, one of which is affixed near the middle, the others nearer the base. The terminal claw is much elongated, rather longer than the length of the propodal joint, conically acuminate, and less sharply curved than in the 2 other species.

The colour is, in the live state, about as in *C. malleolata*, viz., a uniform whity yellow.

Occurrence and Distribution. On the coasts of Norway, I have observed the present species in but one locality, viz. at Vadsø, where, many years ago, I took a soli-

enkelt Exemplar, en fuldvoxen Han, paa et Dyb af circa 100 Fathne, Lerbund. Arten forekommer imidlertid ogsaa i det Kariske Hav, hvorfra jeg har havt til Undersøgelse 2 Exemplarer, et ganske ungt Individ og en fuldvoxen Hun, indsamlede under Nordenskjöld's Expedition fra et Dyb af 50 Fathne. Det synes heraf med Sikkerhed at fremgaa, at Arten er en ægte arktisk Form.

Fam. 4. Nymphonidæ.

Character. Saxlemmer og Følere vel udviklede, de sidste 5-leddede. Falske Fodder tilstede hos begge Kjon.

Bemærkninger. I den Begrænsning, hvori Familien her tages, nemlig kun omfattende den tidligere Slægt *Nymphon*, er den hovedsageligt characteriseret ligeoverfor de i det foregaaende omtalte Familier ved Tilstedeværelsen af vel udviklede Følere, og fra de følgende Familier dels ved disse Lemmers Structur, dels ved den kraftige Udvikling af Saxlemmerne. Familien slutter sig i Henseende til flere Bygningsforhold nærmest til Fam. *Pullenidæ*, uden at jeg dog finder at kunne forbinde begge til en Familie, saaledes som af enkelte Forskere gjort. Paa den anden Side har jeg troet at burde opløse den tidligere Slægt *Nymphon* i 3 Slægter, og jeg antager det ikke for usandsynligt, at man ved et noiere Kjendskab til de herhen hørende Former vil finde det nødvendigt at gaa endnu videre i denne Retning.

Gen. 8. *Nymphon*, Fabr. 1794.

Slægtscharacter. Legemet glat, mere eller mindre smalt, cylindrisk, med vel sondrede Sidefortsætter. Hovedsegmentet temmelig stort, med vel markeret Hals og noget udvidet Pandedel. Halsesegmentet forholdsvis lidet, cylindrisk, opadrettet. Oieknuden mere eller mindre opøiet, Lindserne af ens Størrelse og beliggende nærmere Basis af Oieknuden. Snabelen forholdsvis stor, fortilrettet, cylindrisk, glat, afrundet i Enden. Saxlemmerne kraftigt udviklede, Haanden forholdsvis smal, Fingrene sædvanlig kortere end Palmen, konisk tilspidsede og fint tandede i Inderkanten. Følerne af middelmaadig Længde, 1ste Led meget lidet, de 2 sidste tæt børstebesatte og dannende med foregaaende Led en mere eller mindre udpræget Vinkel. De falske Fodder 10-leddede, sparsomt børstebesatte, 4de og 5te Led hos Hannen stærkt forlængede og tynde, de 4 ydre Led med en regelmæssig Rad af saugtakkede Torner, Endekloen vel udviklet, tandet i Inderkanten. Gangfodderne sædvanlig stærkt forhængede og spinkle, sparsomt haarede, 2det Læggled længst, Tarsalledet mere eller mindre forlængt, Fodledet sædvanlig lineært, Endekloen med tydelige Bikhøer. De ydre Æggemasser hos Hannen kugleformige,

tary example, a full-grown male, from a depth of about 100 fathoms; clay bottom. The species also occurs, however, in the Kara Sea, whence I have had 2 specimens for examination, a quite young individual and a full-grown female, collected on Nordenskjöld's Expedition from a depth of 50 fathoms. Hence, it appears, with considerable certainty, that the species is a true Arctic form.

Fam. 4. Nymphonidæ.

Characters. Chelifori and palpi well developed, the latter five-jointed. False legs present in both sexes.

Remarks. In the restricted sense in which the family is spoken of here, comprising merely the earlier genus *Nymphon*, it is characterised, as compared with the previously mentioned families, by the presence of well-developed palpi, and from the subsequent families, partly by the structure of these limbs and partly by the powerful development of the chelifori. The family approximates closest, in certain structural peculiarities, to the family *Pullenidæ*, without affording, in my judgment, sufficient reason to combine them into one family, as has been done by some naturalists. On the other hand, I have seen fit to break up the earlier genus, *Nymphon*, into 3 genera, and think it not improbable, that a more intimate acquaintance with the forms in question will show the necessity of going still farther in that direction.

Gen. 8. *Nymphon*, Fabr. 1794.

Generic Character. Body smooth, more or less slender, cylindric, with well-defined lateral processes. Cephalic segment rather large, with well-marked neck and somewhat expanded frontal part. Caudal segment comparatively small, cylindric, directed upwards. Oculiferous tubercle more or less elevated, the lenses equal in size, and located nearer to the base of the oculiferous tubercle. Proboscis comparatively large, anteriorly directed, cylindric, smooth, rounded at the extremity. Chelifori powerfully developed, hand comparatively narrow, fingers as a rule shorter than palm, conically acuminate, and finely dentate on the inner margin. Palpi of moderate length, 1st joint very small, the 2 last densely setiferous and forming with the preceding joint, a more or less prominent angle. False legs ten-jointed, sparingly beset with bristles, 4th and 5th joints in male very elongate and slender, the 4 outer joints with a regular series of serrated spines, terminal claw well developed, dentated on the inner margin. Ambulatory legs as a rule exceedingly elongate and slender, sparingly bristle-beset, 2nd tibial joint longest, tarsal joint more or less prolonged, propodal joint usually linear.

indeholdende tabrige smaa Æg, sædvanlig 1 paa hver af de falske Fodder, sjældnere i dobbelt Antal.

Bemærkninger. Som Type for denne særdeles artsrige Slægt kan nærmest *Nymphon grossipes*, Fabr., gjælde. Arterne er her ordnede nogenlunde i en bestemt Rækkefølge, forbindende med hinanden 4 underordnede Typer, nemlig *N. gracile*, Leach, *N. longitarse*, Kröyer, *N. Strömii*, Kröyer og *N. serratum*, G. O. Sars. Om enhver af disse 4 Arter grupperer sig mere eller mindre tydeligt de her opførte Former, medens den ovenfor anførte hoinordiske Art paa en Maade i sig forener alle 4 Grupperes Characterer.

14. *Nymphon gracile*, Leach.

(Pl. V, Fig. 1, a—h).

Nymphon gracile, Leach, Zool. Miscel. Vol. 1. p. 45. Pl. XIX, fig. 1.

— — Johnston, Mag. of Zool. and Botany, Vol. 1, p. 280, Pl. XII, Fig. 9—12.

— — Hoek, Nederl. Arch. f. Zoologie, III, p. 243, Pl. XV, Fig. 11—13.

— — Idem, Arch. de Zoologie expérim., IX, p. 498, Pl. XXIII, fig. 1—5.

— — Hansen, Zool. Danica, Tab. VII, Fig. 18.

— — Idem, Naturh. Tidsskr. 3 Række, Bd. 14, p. 648.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 14.

Artscharacter. Legemet noget undersætsigt, cylindrisk, med Sidefortsatserne ikke meget vidt adskilte. Hovedsegmentet omtrent saa langt som de 2 følgende Segmenter tilsammen, Halsen forholdsvis kort, Pandedelen temmelig stærkt udvidet. Oieknuden stumpt konisk, neppe højere end bred ved Basis. Snabelen næsten af Hovedsegmentets Længde. Saxlemmerne kraftige, Haanden af Skaffets Længde, aflang oval. Fingrene noget kortere end Palmen. Følerne med 2det og 3die Led af ens Længde, sidste Led lidt længere end næstsidsite og begge tilsammen af 3die Leds Længde. De falske Fodder forholdsvis korte, Endedelen længere end de 2 foregaaende Led tilsammen. Randtørnerne med omtrent 7 Saugtakker til hver Side, hvoraf det bagre Par er betydelig stærkere end de øvrige, Endekloen forholdsvis kort. Gangfødderne neppe mere end 3 Gange længere end Legemet, besatte med stive spredte Borster; Laarlæddet hos Hunnen temmelig opsvulmet, 1ste Læglædd kortere, 2det do. omtrent af Laarlæddets Længde og neppe dobbelt saa langt som de 2 ydre Led tilsammen; Tarsallæddet betydelig kortere end Fodlæddet, det sidste kraftigt udviklet, noget krummet og bevæbnet med 4 stærke Tørner i Inderkanten; Endekloen neppe mere end halvt saa lang som Fodlæddet, meget stærk, Bikloerne vel udviklede, omtrent af Endekloens halve Længde. Farven hvid,

terminal claw with distinct auxiliary claws. The outer egg-masses in male globular, containing numerous minute ova, usually 1 on each of the false legs, more rarely the double number.

Remarks. As the most approximate type of this very comprehensive genus, we may take *Nymphon grossipes*, Fabr. The species are arranged here in a somewhat definite succession, connecting with each other 4 subordinate types, viz., *N. gracile*, Leach, *N. longitarse*, Kröyer, *N. Strömii*, Kröyer, and *N. serratum*, G. O. Sars. Round each of these 4 species, the forms described here, group more or less distinctly, whilst the northern species above recorded comprises in a sense, within itself, the characters of all the 4 groups.

14. *Nymphon gracile*, Leach.

(Pl. V, fig. 1, a—h).

Nymphon gracile, Leach, Zool. Miscell. Vol. I, p. 45, Pl. XIX, fig. 1.

— — Johnston, Mag. of Zool. and Botany, Vol. I, p. 280, Pl. XII, figs. 9—12.

— — Hoek, Nederl. Archiv f. Zoologie, III, p. 243, Pl. XV, figs. 11—13.

— — Idem, Archiv de Zoologie expérim., IX, p. 498, Pl. XXIII, figs. 1—5.

— — Hansen, Zool. Danica, Tab. VII, fig. 18.

— — Idem, Naturh. Tidsskr., 3 Række, Bd. 14, p. 648.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 14.

Specific Character. Body somewhat thickset, cylindrical, with the lateral processes not very far apart. Cephalic segment about as long as the 2 succeeding segments taken together, neck comparatively short, frontal part rather considerably expanded. Oculiferous tubercle conical-obtuse, hardly higher than broad at base. Proboscis well-nigh equalling the cephalic segment in length. Chelifori powerful, hand as long as scape, oblongo-oval, fingers somewhat shorter than palm. Palpi with 2nd and 3rd joint of one length, last joint a trifle longer than the penultimate one, and both together equalling the length of 3rd joint. False legs comparatively short, terminal part longer than the 2 preceding joints taken together, marginal spines with about 7 saw-teeth on either side, the posterior pair considerably stronger than the others, terminal claw comparatively short. Ambulatory legs hardly more than 3 times longer than body, beset with stiff scattered bristles; femoral joint in female rather tumid; 1st tibial joint shorter, 2nd about the length of femoral joint and scarcely twice as long as the 2 outer joints taken together; tarsal joint considerably shorter than propodal joint, the latter powerfully developed, somewhat curved, and armed with 4 strong spines on the inner edge; terminal claw scarcely more than half as long as propodal joint, very strong; auxiliary claws well developed, about half the length of terminal claw.

med mere eller mindre tydelige violette Tverbaand. Legemets Længde $2\frac{1}{2}^{mm}$; Spandvidde 15^{mm} .

Bemærkninger. Nærværende Art er egentlig først kjendeligt beskrevet af Hoek. Hvorvidt den i Virkeligheden er identisk med den af Leach saaledes benævnte Art, anser ogsaa Hoek for meget tvivlsomt. Derimod mener han med Bestemthed i Johnstons Beskrivelse at gjenkjende sin Art. Om den her omhandlede Forms Identitet med den af Hoek beskrevne, kan der efter min Mening ingensomhelst Tvivl være. Egentlig er Artsnavnet *gracile* kun lidet betegnende, da der gives mange Arter af en langt slankere Kropsform, ja nærværende Form horer endog i Virkeligheden til de i denne Henseende mindst udprægede af Slægten.

Beskrivelse. Hos ingen af de af mig indsamlede Exemplarer overskrider Legemets Længde $2\frac{1}{2}^{mm}$, medens Hoek angiver 4^{mm} som Maximum. Spandvidden har jeg fundet at være omkring 15^{mm} . Af alle her opførte Arter af Slægten er denne saaledes den mindste.

Legemets Form (se Pl. V, Fig. 1) er vistnok temmelig spinkel, sammenlignet med samme hos flere andre Pycnogonideer; men blandt Arterne af nærværende Slægt udmærker den sig, som ovenfor bemærket, slet ikke i saa Henseende. Ja Gangfodderne er her i Forhold til Kroppen endog kortere end hos nogen af de her opførte Arter. Selve Kroppen (Fig. 1 a, 1 b) er cylindrisk og noget nær af ens Bredde overalt, ganske glat og med Segmenterne vel sondrede fra hinanden. Sidefortsætterne er omtrent saa lange som Kroppen er bred og vel adskilte, skjøndt Mellemrummene mellem dem ikke er synderlig brede. Hovedsegmentet er temmelig stort, omtrent saa langt som de 2 følgende Segmenter tilsammen og har en tydelig, skjøndt forholdsvis kort Hals; Pandedelen er ved Enden omtrent dobbelt saa bred som Halsen og langs Midten oventil noget rendelformigt fordybet. Halsesegmentet er forholdsvis lidet, simpelt cylindrisk og afrundet i Enden, samt noget opadrettet.

Oieknuden (se Fig. 1 a, 1 c), hvis Afstand fra Panderanden er omtrent dobbelt saa stor som fra den bagre Kant af Hovedsegmentet, er noget ophøiet, af stump konisk Form; dog er Hoiden neppe saa stor som Breden ved Basis. Lindserne er vel udviklede, af ens Storrelse og beliggende nærmere Basis end Spidsen af Oieknuden; det underliggende Pigment er af mørkerød Farve.

Snabelen (se Fig. 1 a, 1 b) er noget kortere end Hovedsegmentet og lige fortilstrakt. Den er temmelig tyk, cylindrisk, med Enden stump tilrundet, og ganske glat.

Saxlemmerne (ibid.) er kraftigt udviklede og lige udstrakte, betydelig længere end Hovedsegmentet. Skaffet er cylindrisk, lidt buet og ved Enden i den ydre Kant forsynet med nogle korte Haar. Haanden (Fig. 1 d), der sædvanligvis er rettet indad under en ret Vinkel med Skaffet, er omtrent af dettes Længde, temmelig opsvulmet, af aflang oval Form og henimod Basis af Fingrene besat med

Colour white, with more or less distinct violet transversal bands. Length of body $2\frac{1}{2}^{mm}$, extent 15^{mm} .

Remarks. Hoek was really the first to give a recognizable description of the present species. But whether it is really identical with the species thus designated by Leach, Hoek also regards as very doubtful. On the other hand, he feels quite sure that the form described by Johnston can be none other than his species. The identity of the form treated of here with Hoek's species can, in my judgment, admit of no doubt whatever. The specific name *gracile* is really not significative, as there are many species with a far more slender body, indeed the present form belongs even to the least characteristic of the genus in that respect.

Description. In none of the specimens collected by the writer does the length of the body exceed $2\frac{1}{2}^{mm}$, whereas Hoek gives 4^{mm} as the maximum. The extent I have found to be about 15^{mm} . Of all the species recorded here, this is therefore the smallest.

The body (se Pl. V, fig. 1) is indeed rather slender compared with that of several other Pycnogonids; but, as stated above, in this respect it in no wise distinguishes itself among the species of the present genus. Indeed, the ambulatory legs are, in relation to the body, even shorter than in any of the species here recorded. The trunk itself (fig. 1 a, 1 b) is cylindric and well-nigh uniform in breadth throughout, quite smooth, and with the segments well separated from each other. The lateral processes are about as long as the trunk is broad, and well separated, though the interspaces between them are not particularly broad. The cephalic segment is rather large, about as long as the 2 succeeding segments taken together, and has a distinct though comparatively short neck; the frontal part is at the end about twice as broad as the neck, and along the middle dorsally somewhat canalicularly hollowed. The caudal segment is comparatively small, simple cylindric, rounded at the extremity and also directed a little upwards.

The oculiferous tubercle (see fig. 1 a, 1 c), located about twice as far from the frontal edge as from the posterior edge of the cephalic segment, is somewhat elevated, conically obtuse in form; the height is, however, scarcely as great as the breadth at the base. The lenses are well developed, equal in size, and located nearer to the base than to the point of the oculiferous tubercle; the subjacent pigment has a dark-red colour.

The proboscis (see fig. 1 a, 1 b), pointing straight forwards, is somewhat shorter than the cephalic segment. It is rather thick, cylindric, with the tip obtusely rounded, and quite smooth.

The chelifori (ibid.) are powerfully developed and, extended straight out, a good deal longer than the cephalic segment. The scape is cylindrical, somewhat arcuate, and at the extremity on the outer edge provided with a few short hairs. The hand (fig. 1 d), which is generally directed inwards at a right angle to the scape, attains about the length of that part, is rather swollen, oblongo-oval in form, and

korte og tætte Haar. Fingrene er noget kortere end Palmen, konisk tilspidsede og har Spidserne noget boiede. Inderkanten af begge er forsynet med en tæt Rad af smaa Tænder og slutter tæt sammen, naar Saxen er lukket, idet de omhandlede Tænder griber ind mellem hinanden. Af Fingrene er den bevægelige noget længere end den ubevægelige og mindre bred ved Basis.

Folerne (Fig. 1 e), der udspringer noget nedenfor Saxlemmerne til hver Side af Snabelens Basis (se Fig. 1 a), er lidt kortere end hine og meget spinklere. De bestaar, som hos alle Nymphonider, af 5 Led, hvoraf det 1ste er meget lidet. De 2 derpaa følgende Led er forlængede og indbyrdes omtrent af samme Længde, det yderste af dem noget fortykket mod Enden og besat i begge Kanter med en Del korte Borster. De 2 sidste Led danner tilsammen en temmelig bevægelig Endedel, der danner en mere eller mindre tydelig Vinkel med foregaaende Led, af hvis Længde den omtrent er. Af dens 2 Led er det 1ste noget kortere end det 2det og kolleformigt opsvulmet i Enden. Sidste Led er af aflang oval Form, stumpet tilrundet i Enden og, ligesom det foregaaende, tæt besat med korte og stive Borster.

De falske Fodder (se Fig. 1 a, 1 b), der som sædvanlig udspringer til hver Side fra et afrundet Fremspring lige foran og noget nedenfor Basis af de forreste Sidefortsætter, og er boiede ind under Legemet med en mere eller mindre stærk S-formig Boining, er forholdsvis korte, idet de, lige udstrakte, neppe er længere end Legemet. De bestaar af 10 tydeligt begrænsede Led, hvoraf de 3 første er meget korte, hvorimod de 2 derpaa følgende er temmelig forlængede og indbyrdes omtrent lige lange. Endepartiet (Fig. 1 f) er kjendelig længere end disse 2 Led tilsammen og har 1ste Led kun lidet større end det følgende, men adskilligt tykkere og tæt haaret. De 4 ydre Led er stærkt sammentrykte og aftager successivt i Størrelse samt bærer i Inderkanten en regelmæssig Rad af lancetfornige Torner, 7—8 paa hvert Led. Disse Torner er (Fig. 1 g) alle af ens Udseende, grovt saugtakke i Kanterne, og bestaar ligesom af 2 Afsnit, et tykkere basalt Parti, der til hver Side gaar ud i en stærk Torn, og et mere sammentrykt terminalt Parti, der i hver Kant har 6 regelmæssige Saugtakker. Endekloen er tydeligt udviklet, noget kortere end sidste Led og fint tandet i Inderkanten.

Gangfodderne (se Fig. 1) er forholdsvis kortere end hos de øvrige Arter af Slægten, neppe mere end 3 Gange længere end Legemet, og besatte med spredte, men stærke, næsten tornformige Borster. Laarledet er kun lidet længere end Hoftepartiet og hos Hunnen temmelig stærkt opsvulmet. 1ste Lægled er kortere end Laarledet, hvorimod 2det Lægled omtrent er af dette Leds Længde, men meget smalere. Det terminale Parti af Foden (Tarsal- og Fodledet) er mere end halvt saa langt som 2det Lægled og meget bevægeligt forbunden med samme. Tarsalledet er (se Fig. 1 h) forholdsvis kort, successivt udvidet mod Enden og ved det indre Hjørne bevæbnet med en stærk Torn. Fodledet er mere end dobbelt saa langt som Tarsalledet

towards the base of the fingers, and densely beset with short hairs. The fingers are a trifle shorter than the palm, conically-acuminated, and have the points somewhat bent. The inner edges of both fingers have a row of close-set small teeth and lie close together, when the chela is shut, the said teeth interlocking with each other. The mobile finger is somewhat longer than the immobile one and less broad at the base.

The palpi (fig. 1 e), issuing a little below the chelifori on either side of the base of the proboscis (se fig. 1 a), are somewhat shorter than the latter and much more slender. They are, as in all Nymphonids, composed of 5 joints, the 1st being very small. The 2 succeeding joints are prolonged and of about equal length, the outer one being somewhat tumified towards the end and beset on both edges with a number of short bristles. The 2 last joints together constitute a rather mobile terminal part, which forms a more or less distinct angle with the preceding joint, the length of which it about equals. Of its 2 joints the 1st is a trifle shorter than the 2nd and claviformly tumified at the extremity. The last joint is oblongo-oval in form, obtusely rounded at the end, and, like the preceding one, is densely beset with short, stiff bristles.

The false legs (see fig. 1 a, 1 b), issuing as usual on either side from a rounded projection immediately anterior to and a little below the base of the foremost lateral processes, and bent in under the body with a more or less prominent S-shaped curve, are comparatively short, attaining, when fully extended, hardly the length of the body. They have 10 distinctly defined joints, the 3 first being very short, whereas the 2 succeeding ones are considerably elongated and about equal in length. The terminal part (fig. 1 f) is appreciably longer than those 2 joints taken together, and its 1st joint is but little larger than the following one, but a good deal thicker and densely hirsute. The 4 outer joints are very much compressed, diminish successively in size, and on the inner edge carry a regular series of lanceolate spines, 7—3 on each joint. These spines (fig. 1 g) are all of them similar in appearance, coarsely serrate along the edges, and consist, as it were, of 2 sections, a thicker basal part projecting on either side as a strong spine, and a more compressed terminal part with 6 regular secondary teeth on either edge. The terminal claw is distinctly developed, somewhat shorter than the last joint, and finely dentate on the inner margin.

The ambulatory legs (see fig. 1) are relatively shorter than in the other species of the genus, being hardly more than 3 times longer than the body, and beset with scattered, but strong, well-nigh aculeiform bristles. The femoral joint is but little longer than the coxal part, and in the female considerably swollen. The 1st tibial joint is shorter than the femoral joint, whereas the 2nd tibial joint is about the same length as the latter, but is much more slender. The terminal part of the leg (tarsal and propodal joint) is more than half as long as the 2nd tibial joint and very flexibly connected to it. The tarsal joint (see fig. 1 h) is comparatively short, successively expanded towards the extremity, and armed at its inner corner with a strong spine. The

og noget krummet; det er langs den ydre Kant og ved Enden besat med korte Borster og har i Inderkanten 4 stærke Torner, fæstede til særskilte Afsatser. Endekloen er neppe halvt saa lang som Fodledet, men meget kraftig og stærkt chitiniseret. Bikloerne er vel udviklede og omtrent halvt saa lange som Endekloen.

Dyrets Farve er i levende Tilstand hvidagtig, halvt gjennemsigtigt, med et mere eller mindre tydeligt ndpræget, vakkert violet Pigment, der baade er afsat paa selve Kroppen og paa Lemmerne, hvor det danner tydelige Tværbånd.

Forekomst. Jeg har kun taget denne lille Art ved vor Sydkyst (Risoer, Arendal), hvor den forekom enkeltvis paa ganske grundt Vand mellem Alger. Paa vort Universitets Museum findes ogsaa nogle Exemplarer af denne Art fra vor Vestkyst, indsamlede af min Fader, men bestemte som *N. brevitaræ*. Kroyer.

Udbredning. Arten er utvivlsomt at betragte som en mere sydlig Form. Foruden ved Norge er den nemlig noteret fra de britiske Øer (Leach, Johnston). Danmark (Hansen), Holland og Nordkysten af Frankrige (Hoek). Derimod er den ukjendt i de arktiske Have.

propodal joint is more than twice as long as the tarsal joint and somewhat curved; it is beset, along the outer edge and at the end with short bristles, and has on the inner edge 4 strong spines, affixed to separate ledges. The terminal claw is hardly half as long as the propodal joint, but very powerful and highly chitinised. The auxiliary claws are well developed and about half as long as the terminal claw.

The colour of the animal, is in the living state, whitish, semi-transparent, with a beautiful, more or less distinct, beautiful, violet pigment, deposited both on the trunk itself and on the limbs, where it forms well defined transverse bands.

Occurrence. This diminutive species I have taken exclusively on the south coast of Norway (Risoer, Arendal), where it is sparingly met with in very shallow water between algæ. In our University Museum there are a few specimens of this form from the west coast of the country collected by my late father, but determined as *N. brevitaræ*, Kroyer.

Distribution. The species must unquestionably be regarded as a more southern form. Besides Norway, it is recorded from the British Islands (Leach, Johnston), Denmark (Hansen), Holland and the north coast of France (Hoek). On the other hand it is quite unknown in the Arctic Seas.

15. *Nymphon rubrum*. Hodge.

(Pl. V, fig. 2, a—k).

Nymphon rubrum, Hodge, Reports of deep sea dredging on the coasts of Northumberland and Durham 1862—64, p. 41, Pl. X, fig. 1.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 15.

Artscharacter. Legemet særdeles smalt og langstrakt, med vidt adskilte forlængede Sidefortsætter, enhver ved Enden oventil forsynet med 2 stive divergerende Borster. Hovedsegmentet omtrent saa langt som de 2 følgende Segmenter tilsammen, med stærkt forlænget og smal Hals; Pandedelen forholdsvis kun lidet udvidet. Oiekuden stærkt ophøiet, konisk tilspidset, høiere end bred. Snabelen neppe mere end halvt saa lang som Hovedsegmentet. Saxlemmerne svagere end hos foregaaende Art, Haanden kortere end Skafet, tæt haaret, Fingrene kortere end Palmen, omtrent som hos *N. gracile*. Følerne spinkle, 2det og 3die Led omtrent af ens Længde, sidste Led dobbelt saa langt som næstsidste. De falske Fødder hos Hannen længere end Legemet; 4de og 5te Led særdeles stærkt forlængede og tynde; Endepartiet neppe længere end 5te Led, med talrige Randtorner, de sidste af en lignende Bygning som hos *N. gracile*. Gangfødderne særdeles spinkle, over 3 Gange længere end Legemet, og besatte med spredte, stærkt chitiniserede Borster; Laarledet omtrent saa langt som

15. *Nymphon rubrum*, Hodge.

(Pl. V, fig. 2, a—k).

Nymphon rubrum, Hodge, Reports of deep sea dredging on the coasts of Northumberland and Durham 1862—64, p. 41, Pl. X, fig. 1.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 15.

Specific Character. Body exceedingly slender and elongate, with widely separated, prolonged lateral processes, each at the extremity above provided with 2 stiff diverging bristles. Cephalic segment about as long as the 2 succeeding ones taken together, with exceedingly elongate and slender neck; frontal part, comparatively, but little expanded. Oculiferous tubercle remarkably elevated, conically-acuminated, higher than broad. Proboscis hardly more than half as long as the cephalic segment. Chelitori less powerful than in the preceding species, hand shorter than the scape, densely hirsute, fingers shorter than the palm, about as in *N. gracile*. Palpi very slender, 2nd and 3rd joints nearly equal in length, last joint twice as long as the penultimate one. False legs in male longer than the body; 4th and 5th joints greatly elongated and slender, terminal part scarcely longer than 5th joint, with numerous marginal spines, similar in structure to those of *N. gracile*. Ambulatory legs exceedingly slender, more than 3 times longer than the body, and beset with scattered, highly chitinised bristles; femoral joint about as

1ste Lægled; 2det Lægled betydelig længere og over dobbelt saa langt som det terminale Parti; Tarsalleddet næsten af Fodleddets Længde; det sidste næsten ret og bevæbnet i Inderkanten med talrige, ulige lange Torner; Endekloen omtrent halvt saa lang som Fodleddet, Bikhjørnerne vel udviklede, noget kortere end hos foregaaende Art. Farven (ifølge Hodge) rød, med mørkere Tverbaand. Legemets Længde $4\frac{1}{2}^{mm}$; Spandvidde 23^{mm} .

Bemærkninger. Nærværende Form stemmer idethele saa vel overens med den af Hodge paa o. a. St. givne Beskrivelse og Figur, at jeg ikke kan tvivle om begges Identitet. Den er let kjendelig fra foregaaende Art ved det betydelig spinklere Legeme, hvorfor denne Art langt heller fortjente Benævnelsen af *gracile*. Som af ovenstaaende Diagnose vil sees, viser den ogsaa i de anatomiske Detaljer flere vel udprægede Differentser.

Beskrivelse. Legemets Længde er hos fuldvoxne, aalbærende Hanner $4\frac{1}{2}^{mm}$, med en Spandvidde af 23^{mm} , og denne Art opnaar saaledes en betydeligere Størrelse end foregaaende.

Legemsformen er (se Pl. V, Fig. 2) idethele ualmindelig spinkel, ialfald hos Hannerne, og navnlig er selve Kroppen (Fig. 2 a, 2 b) udmærket ved sin overordentlig smale og langstrakte Form. Sidefortsætterne er adskilligt længere end Legemet er bredt, smalt cylindriske og skilte ved betydelige Mellemrum. De udgaar alle fra den bagre Del af de respective Segmenter og har ved Enden oventil 2 meget inieffaldende grove, divergerende Borster. Hovedsegmentet er omtrent saa langt som de 2 følgende Segmenter tilsammen og udmærket ved den stærkt forlængede og smale Hals; derimod er Pandedelen forholdsvis betydelig mindre ndvidet end hos foregaaende Art. Halsegmentet er næsten lige opadrettet og forholdsvis smalere end hos *N. gracile*.

Oieknuden (se Fig. 2 a, 2 c), der er beliggende ved den bagre Fjerdedel af Hovedsegmentets Længde, er stærkt ophøiet, koniskt tilspidset i Enden, og betydelig høiere end bred. Lindserne er forholdsvis noget større end hos foregaaende Art og af mere elliptisk Form.

Snabelen (se Fig. 2 a, 2 b) er forholdsvis kort, neppe halvt saa lang som Hovedsegmentet, forøvrigt af en lignende Form som hos foregaaende Art.

Saxlemmerne er (se Fig. 2 a, 2 b) betydelig svagere end hos *N. gracile* og, lige udstrakte, neppe længere end Hovedsegmentet. Skaftet er smalt cylindrisk og mod Enden temmelig tæt haaret. Haanden (Fig. 2 d) er noget kortere end Skaftet, smalere end hos *N. gracile* og tæt haarbesat. Fingrene er kortere end Palmen og viser en lignende Form og Bevægning som hos denne Art.

Folerne (Fig. 2 e) er endnu forholdsvis noget spinklere end hos foregaaende Art, forøvrigt af en meget lignende Bygning. Som hos denne Art er 2det og 3die Led

long as 1st tibial joint. 2nd tibial joint considerably longer and more than twice as long as the terminal part; tarsal joint well-nigh the length of propodal joint; the latter nearly straight and armed on the inner edge with numerous spines unequal in length. Terminal claw about half as long as the propodal joint, auxiliary claws well developed, somewhat shorter than in the preceding species. Colour (according to Hodge) red, with darker transverse bands. Length of body $4\frac{1}{2}^{mm}$, extent 23^{mm} .

Remarks. The present form agrees, on the whole, so closely with the description and figure given by Hodge in the above-cited Memoir, as to leave, I think, no doubt whatever of the identity of both. It is easily distinguished from the preceding species by its much more slender body, and hence has far greater claim to the designation *gracile*. As will appear from the above diagnosis, it exhibits, too, in the anatomical details divers well marked differences.

Description. The length of the body in full-grown ovigerous males is $4\frac{1}{2}^{mm}$, the extent 23^{mm} , and this species attains accordingly a more considerable size than the preceding one.

The body (see Pl. V, fig. 2) is, on the whole, uncommonly slender, at least in the males, and more especially is the trunk (figs. 2 a, 2 b) distinguished by its remarkably slender and elongate form. The lateral processes are considerably longer than the body is broad, narrow cylindric, and separated by rather wide interspaces. They all issue from the posterior part of the respective segments and have, at the extremity above, 2 very conspicuous coarse, diverging bristles. The cephalic segment is about as long as the 2 succeeding ones taken together, and is characterised by the greatly elongated and slender neck; the frontal part, on the other hand, is relatively much less expanded than in the preceding species. The caudal segment is directed well-nigh straight upwards, and is relatively more slender than in *N. gracile*.

The oculiferous tubercle (see fig. 2 a, 2 c), located at the posterior fourth of the length of the cephalic segment, is exceedingly elevated, conically-acuminated at the extremity, and considerably higher than broad. The lenses are relatively somewhat larger than in the preceding species and more elliptic in form.

The proboscis (see figs. 2 a, 2 b) is comparatively short, hardly half as long as the cephalic segment, otherwise similar in form to that of the preceding species.

The chelifori (see fig. 2 a, 2 b) are considerably feebler than in *N. gracile*, and hardly longer, when fully extended, than the cephalic segment. The scape is narrow cylindric, and towards the extremity rather closely beset with hairs. The hand (fig. 2 d) is somewhat shorter than the scape, narrower than in *N. gracile*, and densely hirsute; the fingers are shorter than the palm and exhibit a similar form and armature as in that species.

The palpi (fig. 2 e) are relatively somewhat slenderer than in the preceding species, but otherwise of very similar structure. As in that species, the 2nd and 3rd joints are about

omtrent af ens Længde. Derimod er sidste Led her forholdsvis større og dobbelt saa langt som næstsidste.

De falske Fodder er hos Hannen (se fig. 2 a, 2 b) særdeles stærkt forlængede og tynde, lige udstrakte, kjendelig længere end Legemet. Af Leddene er (se Fig. 2 f) 4de og 5te overordentlig lange og smale, noget indknebne ved Basis og successivt udvidede mod Enden, hvor de i Kanterne er besatte med en Del meget fine Haar. Endepartiet (Fig. 2 g) er neppe længere end 5te Led og har det 1ste Led betydelig større end de øvrige. Randtørnerne paa de ydre Led (Fig. 2 h) er talrigere end hos foregaaende Art, men af en meget lignende Bygning; dog synes den ydre Del at være noget bredere og har ialmindelighed 1 Par Sangtakker flere. Endekloen er omtrent halvt saa lang som sidste Led og temmelig kraftig.

Gangfodderne (se Fig. 2) er særdeles spinkle, mere end 3 Gange længere end Legemet og besatte med spredte, usædvanlig grove, næsten pigformige Borster (Fig. 2 k). At Leddene er 2det Hofteled temmelig stærkt forlænget, omtrent af samme Længde som de 2 øvrige tilsammen. Laarledet er hos Hannen meget smalt og noget fortykket i Enden, hvor det har et Knippe af de ovenomtalte Borster. 1ste Lægled er omtrent af Laarledets Længde, medens 2det do. er betydelig længere og særdeles tyndt. Tarsalledet er (se Fig. 2 i) temmelig forlænget, af linear Form og neppe udvidet mod Enden. Fodledet er kun ubetydelig længere end Tarsalledet, forholdsvis smalt og næsten lige. Det har i Inderkanten flere stærke Tørner, hvoraf 5 udmerker sig ved betydelig Længde. Begge disse Led tilsammen er kortere end Halvparten af 2det Lægled. Endekloen er omtrent halvt saa lang som Fodledet, temmelig kraftig og jævnt krummet. Bilkloerne er vel udviklede, dog forholdsvis noget kortere end hos foregaaende Art.

De ydre Ægmasser (se Fig. 2 a, 2 b) er kugleformige og indeholder talrige Æg; de er fæstede til 5te Led af de falske Fodder. Hos et af de undersøgte Exemplarer var en lignende Ægmasse ogsaa fæstet til 4de Led.

Farven er, ifølge Hodge, vakker rød, med Tværbaand af en mørkere rød Colour. Selv har jeg forsonit at notere mig Farven.

Forekomst. I vort Universitets Museum opbevares 2 Exemplarer af denne Art, begge Hanner. De er ifølge den paa Glasset paaheftede Etiquette tagne af min Fader ved Florø og benævnt *N. hispidum* n. sp. Ved at gjenneemgaa mit Materiale af Pycnogonider, finder jeg blandt Exemplarer af *N. gracile*, tagne ved vor Sydkyst, et enkelt yngre Individ, der ganske stemmer overens med hine, alene med den Forskjel, at Tarsalledet er noget kortere.

Udbredning. Foruden ved Norge er denne Art kun observeret ved de britiske Oer af Hodge, som tog et enkelt Exemplar ved Kysten af Durham. Saavidt man heraf

equal in length. The last joint, on the other hand, is relatively greater, and twice as long as the penultimate one.

The false legs in the male (see fig. 2 a, 2 b) are exceedingly elongated and slender, and, when fully extended, appreciably longer than the body. Of the joints (see fig. 2 f) the 4th and 5th are remarkably long and slender, somewhat constricted at the base, and successively expanded towards the extremity, where they are beset on the edges with a number of very fine hairs. The terminal part (fig. 2 g) is scarcely longer than the 5th joint and has its 1st joint considerably larger than the others. The marginal spines on the outer joints (fig. 2 h) are more numerous than in the preceding species, but much the same in structure; yet their outer portion would seem to be somewhat broader, and has in general 1 pair of secondary teeth more. The terminal claw is about half as long as the last joint and rather powerful.

The ambulatory legs (see fig. 2) are exceedingly slender, more than 3 times longer than the body, and beset with scattered, unusually coarse well-nigh spiniform bristles (fig. 2 k). Of the joints, the 2nd coxal is considerably prolonged, attaining about the same length as the 2 others taken together. The femoral joint is, in the male, very slender and somewhat tumified at the extremity, exhibiting there a fascicle of the aforesaid bristles. The 1st tibial joint is about the same length as the femoral one, whereas the 2nd is a good deal longer and exceedingly thin. The tarsal joint (see fig. 2 i) is rather elongate, linear in form, and but little if at all expanded at the extremity. The propodal is only a trifle longer than the tarsal joint, comparatively slender, and well-nigh straight. It has on the inner edge several stout spines, 5 of them distinguished by considerable length. Both these joints taken together are shorter than half of the 2nd tibial joint. The terminal claw is about half as long as the propodal joint, rather powerful, and evenly curved. The auxiliary claws are well developed, though relatively a little shorter than in the preceding species.

The outer egg-masses (see fig. 2 a, 2 b) are globular in form and contain numerous ova; they are affixed to the 5th joint of the false legs. In one of the specimens examined a similar egg-mass was also found on the 4th joint.

The colour is, according to Hodge, a fine red with transverse bands of a darker red hue. I myself omitted to note the colour.

Occurrence. The Christiania University Museum has 2 specimens of this form, both males. They were taken, according to the label on the glass, by my late father at Florø, and designated *N. hispidum* n. sp. On going through my material of Pycnogonids, I lighted, among examples of *N. gracile* from our south coast, on a single immature individual agreeing in every respect with those specimens, save that the tarsal joint is a trifle shorter.

Distribution. Besides Norway, this species has only been observed on the coasts of the British Islands by Hodge, who met with a solitary specimen on the coast

kan gjøre nogen Slutning, synes nærværende Art, ligesom foregaaende, at være en sydlig Form.

16. *Nymphon brevitarse*. Kroyer.

(Pl. V, Fig. 3, a—g).

Nymphon hirsutum, Kroyer, Gronlands Amphipoder, p. 92, (non Sabine).

Nymphon brevitarse, Kroyer, Nat. Tidsskr. N. R. Bd. 1, p. 115.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 36, Fig. 4, a—f.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 16.

Artscharacter. Legemet noget undersætsigt, med forholdvis korte og ikke meget vidt adskildte Sidefortsættelser. Hovedsegmentet omtrent saa langt som de 2 følgende Segmenter tilsammen, Halsen kort og tyk, Pandedelen af middelmaadig Brede. Oieknuden meget lav, afrundet i Enden. Snabelen næsten af Hovedsegmentets Længde, Saxlemmerne kraftigt udviklede, Haanden af Skæftets Længde, successivt udvidet mod Enden, Fingrene betydelig kortere end Palmen. Folerne forholdvis robuste, 3die Led noget kortere end 2det, sidste Led kun lidet længere end næstsidste og betydelig smalere. De falske Fodder hos Hannen af middelmaadig Længde, Endepartiet længere end 5te Led, Raudtornerne som hos de 2 foregaaende Arter, men med 7 Par Sangtakker i den ydre Del. Gangfodderne omtrent 3 Gange længere end Legemet, kraftigere end hos *N. rubrum* og besatte med spredte bløde Borster; Tarsalledet kortere end Fodledet; dette sidste temmelig kraftigt, med 6 stærke Torner i Inderkanten; Endekloen mere end halvt saa lang som Fodledet, Bikloerne vel udviklede, men noget kortere end hos de 2 foregaaende Arter. Legemets Længde 3^{mm}; Spandvidde 20^{mm}.

Bemærkninger. Jeg antager det for utvivlsomt, at nærværende Form er identisk med Kroyers Art, da den i alt væsentligt stemmer meget nøie overens med den af ham givne Beskrivelse og de i Gaimard's Reiseværk meddelte Figurer. Mr. Wilson mener, at Kroyers Art kun er en Ungdomsform af *N. grossipes*, og ogsaa senere Forskere har henholdt sig til denne hans Opfatning. Det er mig en Tilfredsstillelse nu at kunne hævde Kroyers Art igjen i sin Ret. Den er nemlig utvivlsomt artsforskjellig fra *N. grossipes*, og slutter sig i Virkeligheden meget nærmere til *N. gracile*. Fra begge disse Arter er den strax let og sikkert at kjende ved Oieknudens meget forskjellige Form, en Character, som ogsaa er fremhævet af Kroyer.

Beskrivelse. Legemets Længde hos det eneste foreliggende Exemplar, en fuldvoxen ægbærende Han, er

of Durham. So far as this will admit of our drawing a conclusion, the present species would seem, like the foregoing, to be a southern form.

16. *Nymphon brevitarse*, Kroyer.

(Pl. V, fig. 3, a—g).

Nymphon hirsutum, Kroyer, Gronlands Amphipoder, p. 92, (non Sabine).

Nymphon brevitarse, Kroyer, Nat. Tidsskr. N. R., Bd 1, p. 115.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 36, fig. 4, a—f.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 16.

Specific Character. Body somewhat thickset, with comparatively short and not very widely separated lateral processes. Cephalic segment about as long as the 2 following segments taken together, neck short and thick, frontal part of moderate breadth. Oculiferous tubercle very low, rounded at the extremity. Proboscis well-nigh the length of the cephalic segment. Cheliferi powerfully developed; hand as long as scape, successively expanding towards the extremity; fingers a good deal shorter than palm. Palpi comparatively robust, 3rd joint somewhat shorter than 2nd, last joint but a trifle longer than the penultimate one and much more slender. False legs in male of moderate length, terminal part longer than 5th joint, marginal spines as in the 2 preceding species, but with 7 pairs of secondary teeth on the outer part. Ambulatory legs about 3 times longer than body, more powerful, than in *N. rubrum* and beset with scattered soft setae; tarsal joint shorter than propodal; the latter rather powerful, with 6 strong spines on the inner edge; terminal claw more than half as long as the propodal joint; auxiliary claws well developed, but somewhat shorter than in the 2 preceding species. Length of body 3^{mm}, extent 20^{mm}.

Remarks. I regard the present form as unquestionably identical with Kroyer's species, agreeing, as it does, in all essential particulars, very closely with the description he has given and the illustrations furnished in Gaimard's Work. Mr. Wilson opines, that Kroyer's species is merely an immature form of *N. grossipes*, and also subsequent naturalists have adhered to that view. I am highly gratified in now being able to reinstate Kroyer's species. The animal is, beyond doubt, specifically distinct from *N. grossipes* and approximates in reality much nearer to *N. gracile*. From both those species it may at once be easily and surely known, by the very different form of the oculiferous tubercle, a character on which Kroyer has also laid stress.

Description. The length of the body in the only example before me, a full-grown ovigerous male, is some-

noget over 3^{mm} , med en Spandvidde af 20^{mm} . I Henseende til Størrelse staar den saaledes midt imellem de 2 foregaaende Arter.

Legemets Form (se Pl. V, Fig. 3) er forholdsvis noget undersætsig, og denne Art ligner derfor i sin almindelige Habitus mere *N. gracile* end *N. rubrum*; dog er Fodderne betydelig stærkere forlængede end hos den første af disse Arter. Selve Kroppen (Fig. 3 a) er cylindrisk, med Sidefortsætterne temmelig korte og skilte ved ikke meget brede Mellemrum. Hovedsegmentet er noget længere end de 2 følgende Segmenter tilsammen og har en forholdsvis kort og tyk Hals; Pandedelen forholder sig omtrent som hos *N. gracile*.

Oieknuden (Fig. 3 b), der omtrent er beliggende dobbelt saa langt fra Panderanden som fra Hovedsegmentets bagre Rand, skiller sig væsentlig i Form fra samme hos de 2 foregaaende Arter, idet den er meget lav og bredt afrundet i Enden, saaledes som allerede af Kroyer angivet. Linserne er forholdsvis store.

Snabelen (se Fig. 3 a) er omtrent af Hovedsegmentets Længde og neppe bredere end dettes Halsdel.

Saxlemmerne (ibid.) er temmelig kraftige og ligner noget samme hos *N. gracile*. Dog viser Haanden (Fig. 3 c) ved nærmere Undersøgelse en noget afvigende Form. Den er omtrent af Skaffets Længde, kort haaret og temmelig smal ved Basis, hvorimod den successivt udvides mod Enden. Fingrene er forholdsvis korte, paa langt nær ikke af Palmens Længde og danner en stump Vinkel med samme; deres Bevæbning er forøvrigt som hos de 2 foregaaende Arter.

Folerne (Fig. 3 d) er kjendelig mere robuste end hos de 2 foregaaende Arter og har 3die Led noget kortere end 2det. Sidste Led er forholdsvis mindre, kun ubetydeligt længere end næstsidste og meget smalere.

De falske Fodder (Fig. 3 e) er mindre forlængede end hos *N. rubrum*, paa Grund af 4de og 5te Leds ringere Udvikling, og Endepartiet er kjendelig længere end 5te Led. Randtornerne (Fig. 3 f) viser en lignende Bygning som hos de 2 foregaaende Arter, men er forholdsvis noget større og Yderkanten er som hos *N. rubrum* forsynet med 7 Par Saugtakker.

Gangfodderne (se Fig. 3) er omtrent 3 Gange længere end Legemet og forholdsvis mindre spinkle end hos *N. rubrum*. De ere besatte med temmelig lange men spredte Borster, der er bløde, ikke som hos de 2 foregaaende Arter pigformige. Leddenes indbyrdes Længdeforhold er omtrent som hos *N. rubrum*; dog synes 2det Lægled forholdsvis noget kortere og er neppe mere end dobbelt saa langt som det terminale Afsnit. Tarsalledet (se Fig. 3 g) er vistnok betydelig kortere end Fodledet, men dog forholdsvis noget længere end hos *N. gracile*. Det er noget skjævt afskaaret i Enden og har som hos hin Art ved det indre Hjørne en stærk Torn. Fodledet er kraftigt udviklet, men mindre stærkt krummet end hos *N. gracile*, og har i Inderkanten

what over 3^{mm} , the extent 20^{mm} . As to size, therefore, it ranks between the 2 preceding species.

The form of the body (see Pl. V, fig. 3) is comparatively somewhat thickset, and this species resembles accordingly, in its general habitus, rather *N. gracile* than *N. rubrum*; the legs, however, are much more prolonged than in the former of those species. The trunk itself (fig. 3 a) is cylindric, with the lateral processes rather short and separated by not very broad interspaces. The cephalic segment is a trifle longer than the 2 following segments taken together, and has a relatively short and thick neck; the frontal part much the same as in *N. gracile*.

The oculiferous tubercle (fig. 3 b), located about twice as far from the frontal margin as from the posterior margin of the cephalic segment, is considerably distinguished in form from that of the 2 preceding species, chiefly in its being very low and broadly rounded at the extremity, as already stated by Kroyer. The lenses are comparatively large.

The proboscis (see fig. 3 a) has about the length of the cephalic segment and is scarcely broader than the cervical part.

The cheliferi (ibid.) are rather powerful and somewhat resemble those of *N. gracile*. Yet the hand exhibits (fig. 3 c), on closer examination, a somewhat deviating form. It is nearly as long as the scape, beset with short hairs, and rather narrow at the base, whilst also it successively expands towards the extremity. The fingers are relatively short, not nearly attaining the length of the palm, and they form an obtuse angle with it. Their armature otherwise is just as in the 2 preceding species.

The palpi (fig. 3 d) are appreciably more robust than in the 2 preceding species, and have the 3rd joint somewhat shorter than the 2nd. The last joint is relatively smaller, only a trifle longer than the penultimate one and much more slender.

The false legs (fig. 3 e) are less prolonged than in *N. rubrum*, owing to the slight development of the 4th and 5th joints, and the terminal part is appreciably longer than the 5th joint. The marginal spines (fig. 3 f) have a similar structure to that of the 2 preceding species, but are relatively somewhat larger, and their outer part is furnished, as in *N. rubrum*, with 7 pairs of secondary teeth.

The ambulatory legs (see fig. 3) are about 3 times longer than the body and relatively less slender than in *N. rubrum*. They are beset with rather long but scattered setæ, soft, not as in the 2 preceding species spiniform. The mutually relative length of the joints is about as in *N. rubrum*; the 2nd tibial joint would seem, however, to be relatively somewhat shorter, and is scarcely more than twice as long as the terminal part. The tarsal joint (see fig. 3 g) is indeed considerably shorter than the propodal joint, but still a little longer, relatively, than in *N. gracile*. It is somewhat obliquely truncate at the extremity, and bears, as in that species, at the inner corner a strong spine. The propodal joint is powerfully developed, though less curved

6 stærke Torner, fæstede til ligemange særskilte Afsatser. Endekloen er noget mere end halvt saa lang som Fodleddet og temmelig stærk. Bikkloerne er vel udviklede, dog adskiligt kortere end hos de 2 foregaaende Arter.

De ydre Ægmasser (se Fig. 3 c) er af uregelmæssig kugledannet Form og fæstede omkring 4de Led af de falske Fodder. De tårige Æg er omgivne af en fælles tynd membranøs Kapsel.

Forekomst. Det ovenfor beskrevne Exemplar blev taget under Nordenskjold's Expedition 1876 i Strædet Matotschkin Sharr paa 10—15 F. D., Lerbund.

Udbredning. Arten er først beskrevet af Krøyer fra Grønland. Derimod er den hverken observeret ved Norges eller Englands Kyster; thi Angivelserne om dens Forekomst her beror ganske sikkert paa en Forveksling med enten *N. gracile* eller ganske unge Exemplarer af en eller anden af de øvrige Arter.

17. *Nymphon glaciale*, Lilljeborg.

(Pl. VI, Fig. 1, a—g).

Nymphon glaciale, Lilljeborg, Bidrag till Norra Rysslands och Norriges fauna. Kgl. Vet. Akad. Handl. 1850, II, p. 311.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 17.

Artscharacter. Legemet noget mindre undersætsigt end hos foregaaende Art. med temmelig lange, vel skilte Sidefortsatser. Hovedsegmentet noget længere end de 2 følgende Segmenter tilsammen, Halsen vel begrænset og smalere end Snabelen, Pandedelen temmelig stærkt fortykket. Oieknuden forholdsvis lav, stump tilspidset i Enden. Snabelen kortere end Hovedsegmentet. Saxlemmerne af middelmaadig Størrelse. Haanden noget kortere end Skaffet, aflang oval, Fingrene omtrent af Palmens Længde. Følerne med 2det og 3die Led af ens Længde, sidste Led noget længere end næstsidste. De falske Fodder hos Hannen længere end Legemet, 4de Led kortere end 5te, Endedelen omtrent af dette sidste Leds Længde, Randtornerne bredt lancetformige, med et Par stærke Tænder nærmere Basis og det ydre Parti fint og regelmæssigt saugtakket. Gangfødderne neppe 3 Gange længere end Legemet og besatte med temmelig lange, men spredte Haar; Tarsalleddet forlænget, lineært; Fodleddet lidt kortere, med omtrent 9 stærke Torner i Inderkanten: Endekloen noget mere end halvt saa lang som Fodleddet, meget kraftig; Bikkloerne vel udviklede, af Endekloens halve Længde. Legemets Længde 4^{mm} ; Spandvidde 34^{mm} .

than in *N. gracile*, and has on the inner edge 6 strong spines, each affixed to its separate ledge. The terminal claw is a little more than half as long as the propodal joint and rather powerful. The auxiliary claws are well developed, though considerably shorter than in the 2 preceding species.

The outer egg-masses (see fig. 3 c), affixed round the 4th joint of the false legs, have an irregular globular form. The numerous ova are enclosed in common, in a thin membranous capsule.

Occurrence. The specimen described above was taken on Nordenskjold's Expedition, 1876, in the Strait of Matotschkin Sharr at a depth of 10—15 fathoms; clay bottom.

Distribution. This species was first described by Krøyer, from Greenland. It has not been observed, however, either on the coasts of Norway or England, as all statements of its occurrence there have unquestionably arisen from confounding the animal with either *N. gracile* or quite young examples of some one or other of the known species.

17. *Nymphon glaciale*, Lilljeborg.

(Pl. VI, fig. 1, a—g).

Nymphon glaciale, Lilljeborg, Bidrag till Norra Rysslands och Norriges fauna. Kgl. Vet. Akad. Handl. 1850, II, p. 311.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 17.

Specific Character. Body somewhat less thickset than in the preceding species, with rather long, well separated lateral processes. Cephalic segment somewhat longer than the 2 succeeding segments taken together, neck well marked off and more slender than proboscis, frontal part very considerably tumified. Oculiferous tubercle comparatively low, obtusely pointed at the extremity. Proboscis shorter than cephalic segment. Cheliferi of moderate size; hand a trifle shorter than scape, oblongo-oval; fingers about the length of palm. Palpi with 2nd and 3rd joints equal in length, last joint somewhat longer than penultimate one. False legs in male longer than body; 4th joint shorter than 5th; terminal part about the length of that (5th) joint, marginal spines broadly lanceolate, with a pair of strong teeth nearer the base, and the outer division finely and regularly serrate. Ambulatory legs hardly 3 times longer than body and beset with rather long, but scattered hairs; tarsal joint prolonged, linear; propodal joint a trifle shorter, with about 9 strong spines on the inner edge; terminal claw somewhat more than half as long as the propodal joint, very powerful; auxiliary claws well developed, half the length of the terminal claw. Length of body $4\frac{1}{2}^{mm}$, extent 34^{mm} .

Bemærkninger. Nærværende Form stemmer idethale saa vel med den af Professor Lilljeborg givne Diagnose af sin *N. glaciale*, at jeg maa betragte begge som identiske. Arten staar paa en Maade midt imellem *N. brevitarise* og *N. grossipes*, men er ganske sikkert forskjellig fra begge.

Beskrivelse. Legemets Længde hos fuldt udviklede ægbærende Hanner er omtrent $4\frac{1}{2}^{mm}$, med en Spandvidde af 34^{mm} . Arten opnaar saaledes en betydeligere Storrelse end *N. brevitarise*, men staar dog i denne Henseende langt tilbage for *N. grossipes*.

Formen er (se Pl. VI, fig. 1) noget mindre undersætsig end hos *N. brevitarise*, skjøndt Fodderne ikke er fuldt saa lange som hos denne Art. Kroppen (Fig. 1 a, 1 b) er imidlertid kjendelig slankere, med forholdsvis betydelig længere og ogsaa noget videre adskilte Sidefortsætter. Hovedsegmentet er noget længere end de 2 følgende Segmenter tilsammen og har en tydelig begrændset og temmelig smal Hals. Pandedelen er forholdsvis stærkt udvidet i Enden og oventil i Midten, som sædvanlig, noget rendeformig fordybet.

Oieknuden (Fig. 1 c), der er beliggende dobbelt saa langt fra Panderanden som fra Hovedsegmentets bagre Rand, er kun lidet ophøiet og stumpet tilspidset i Enden. Linsernerne er forholdsvis store og af sædvanligt Udseende.

Snabelen (se Fig. 1 a, 1 b) er forholdsvis kort og tyk, paa langt nær ikke af Hovedsegmentets Længde og temmelig stærkt nedadrettet.

Saxlemmerne (ibid.) er af middelmaadig Storrelse og har Skaftet noget længere end Haanden. Den sidste (Fig. 1 d) er temmelig bred, oval, eller aflang trekantet og besat med korte Haar. Fingrene er omtrent af Palmens Længde og viser den sædvanlige Form og Bevæbning.

Folerne (Fig. 1 c) har 2det og 3die Led af ens Længde og Endepartiet omtrent saa langt som 3die Led. Sidste Led er af aflang oval Form og noget længere og smalere end næstsidste.

De falske Fodder hos Hannen er temmelig stærkt forlængede, lige udstrakte, kjendelig længere end Legemet, og har 4de Led noget kortere end 5te, der omtrent er af Endepartiets Længde. Randtornerne (Fig. 1 f) er bredt lancetformige og har, ligesom hos de foregaaende Arter, nærmere Basis et Par stærke Tænder, medens den spydformigt tilspidsede Endedel er meget fint og regelmæssigt saugtaket i Kanterne.

Gangfodderne (se Fig. 1) er temmelig spinkle, skjøndt neppe fuldt 3 Gange længere end Legemet og besatte med spredte tynde Borster. 1ste Læggled er omtrent af Laarledets Længde, hvorimod 2det do. er omtrent $\frac{1}{5}$ længere og ikke fuldt dobbelt saa langt som det terminale Afsnit. Tarsalledet (se Fig. 1 g) er stærkere forlænget end hos *N. brevitarise* og af lineær Form. Fodledet er lidt kortere, temmelig kraftigt, men neppe krummet, og i Inderkanten bevæbnet med et betydeligt Antal (omtrent 9) stærkt forlængede Torner. Endekloen er forholdsvis kort, kun lidt

Remarks. The present form agrees, on the whole, so closely with the diagnosis given by Professor Lilljeborg of his *N. glaciale*, that I cannot but regard the two as identical. The species ranks, in a sense, midway between *N. brevitarise* and *N. grossipes*, but is different, without doubt, from both.

Description. The length of the body in fully developed ovigerous males is about $4\frac{1}{2}^{mm}$, the extent 34^{mm} . Hence the species attains a more considerable size than *N. brevitarise*, but in that respect falls far behind *N. grossipes*.

The form (see Pl. VI, fig. 1) is somewhat less thick-set than in *N. brevitarise*, though the legs are not quite as long as in that species. The trunk (fig. 1 a, 1 b) is, however, appreciably more slender, with the lateral processes relatively a good deal longer and farther apart. The cephalic segment is somewhat longer than the 2 following segments taken together, and has a distinctly defined and rather slender neck. The frontal part is comparatively greatly expanded at the extremity, and above in the middle, is, as usual, somewhat canalicularly hollowed.

The oculiferous tubercle (fig. 1 c), located twice as far from the frontal margin as from the posterior edge of the cephalic segment, is but little elevated, and obtusely pointed at the end. The lenses are comparatively large and of the usual appearance.

The proboscis (see fig. 1 a, 1 b) is comparatively short and thick, not nearly attaining the length of the cephalic segment, and is strongly directed obliquely downwards.

The chelifori (ibid.) are of moderate size and have the scape somewhat longer than the hand; the latter (fig. 1 d) is rather broad, oval, or oblong trigonal, and beset with short hairs. The fingers are about as long as the palm, and exhibit the usual form and armature.

The palpi (fig. 1 c) have the 2nd and 3rd joints of equal length, and the terminal part about as long as the 3rd joint. The last joint is oblongo-oval in form, and somewhat longer and slenderer than the penultimate one.

The false legs in the male are considerably elongated, when fully extended, of greater length even than the body, and have the 4th joint somewhat shorter than the 5th, which attains about the length of the terminal part. The marginal spines (fig. 1 f) are broadly lanceolate and have, as in the foregoing species, nearer to the base, a pair of strong teeth, whereas the hastiform acuminate terminal part is very finely and regularly serrated on the edges.

The ambulatory legs (see fig. 1) are rather slender, though hardly quite attaining 3 times the length of the body, and are beset with scattered fine setæ. The 1st tibial joint is about same length as the femoral one, whereas the 2nd is about $\frac{1}{5}$ longer and not quite twice as long as the terminal section. The tarsal joint (see fig. 1 g) is more prolonged than in *N. brevitarise*, and is linear in form. The propodal joint is a trifle shorter, rather powerful, but very little if at all curved, and is armed on the inner edge with a considerable number (about 9) of very elongate spines.

mere end halvt saa lang som Fodledet, men meget stærk. Bikloerne ere vel udviklede og omtrent af Endekloens halve Længde.

De ydre Ægmasser var paa et af de undersøgte Exemplarer (se Fig. 1) særdeles store og tilstede i dobbelt Antal paa hver af de falske Fødder.

Forekomst. Jeg har af denne Art havt Anledning til at undersøge 4 Exemplarer, indsamlede under Nordenskjolds Expedition 1875 i det kariske Hav, Dybden 3—12 Fæne, Sandbund.

Udbredning. Prof. Lilljeborg observerede denne Form ved Schuretskaja i Russisk Lapland. Af andre Forskere er den ikke noteret. Dog maa Arten ifølge de her opførte Findesteder utvivlsomt ansees for en ægte arktisk Form, og dens specifikke Benævnelse „glaciale“ maa derfor kaldes vel begrundet.

18. *Nymphon grossipes* (Fabr.).

(Pl. VI, fig. 2, a—i).

Pycnogonum grossipes. Fabricius, Fauna grönlandica, p. 229.
Nymphon grossipes. Krøyer, Grönlands Amphipoder, p. 92.
 — — Idem, Nat. Tidsskr. N. R., Bd. 1, p. 108.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 36, Fig. 1, a—h.

— — Wilson, Trans. Connect. Acad. Scien. Vol. V, p. 20, Pl. VII, Fig. 1, a—q.

— — Idem, U. S. Commiss. of Fish and Fisheries, Report for 1878, p. 491, Pl. VI, figs. 32—37, Pl. VII, fig. 42.

— — Hoek, Nederl. Arch. f. Zool. Suppl. 1, p. 12, Pl. I, fig. 17—21.

— — Hansen, Kara Havets Pycnogonider, p. 16, Tab. XVIII, Fig. 8, 8a.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 18.

Artscharacter. Legemet temmelig spinkelt, med Sidefortsætterne vel adskilte. Hovedsegmentet omtrent saa langt som de 3 følgende Segmenter tilsammen. Halsen smalt cylindrisk, af middelmaadig Længde, Pandedelen stærkt udvidet. Øieknuden høj, konisk tilspidset. Snabelen forholdsvis stor, næsten af Hovedsegmentets Længde. Saxlemmerne særdeles kraftige. Haanden af Skaftets Længde med Palmen stærkt forlænget, næsten cylindrisk og tæt besat med korte Haar. Fingrene neppe mere end halvt saa lange og kun meget svagt krummede i Spidsen. Følerne forholdsvis store, 2det Led ualmindelig kort, neppe mere end halvt saa langt som 3die, sidste Led dobbelt saa langt som næstsidste og afsmalnende mod Enden. De falske Fødder hos Hannen stærkt forlængede, mere end $\frac{1}{2}$ Gang til saa lange, som Legemet, 5te Led noget længere end 4de. Endedelen kortere end 5te Led, Randtornerne smalt lancetformige, med

Den norske Nordhavsexpedition, G. O. Sars: Pycnogonidea.

The terminal claw is comparatively short, only little more than half as long as the propodal joint, but exceedingly powerful. The auxiliary claws are well developed, and are about half the length of the terminal claw.

The outer egg-masses were in one of the specimens examined (see fig. 1) remarkably large, and present in double the usual number on each of the false legs.

Occurrence. Of this species I have had the opportunity of examining 4 specimens collected on Nordenskjold's Expedition, 1875, in the Kara Sea: depth from 3 to 12 fathoms, bottom sandy.

Distribution. Professor Lilljeborg observed this form at Schuretskaja in Russian Lapland. By other naturalists it is not recorded. The species must, however, to judge from the localities here given, be unquestionably regarded as a true Arctic form, and, hence, its specific designation „glaciale“ must be said to be well founded.

18. *Nymphon grossipes*, (Fabr.).

(Pl. VI, fig. 2, a—i).

Pycnogonum grossipes. Fabricius, Fauna grönlandica, p. 229.
Nymphon grossipes. Krøyer, Grönlands Amphipoder, p. 92.
 — — Idem, Nat. Tidsskr. N. R., Bd. 1, p. 108.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 36, fig. 1, a—h.

— — Wilson, Trans. Connect. Acad. Scien. Vol. V, p. 20, Pl. VII, fig. 1, a—q.

— — Idem, U. S. Commiss. of Fish and Fisheries, Report for 1878, p. 491, Pl. VI, figs. 32—37, Pl. VII, fig. 42.

— — Hoek, Nederl. Arch. f. Zool. Suppl. 1, p. 12, Pl. I, fig. 17—21.

— — Hansen, Kara Havets Pycnogonider, p. 16, Tab. XVIII, fig. 8, 8a.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 18.

Specific Characters. Body rather slim, with the lateral processes well separated. Cephalic segment about as long as the 3 succeeding segments taken together, neck slender cylindrical, of moderate length, frontal part greatly expanded. Oculiferous tubercle high, conically acuminate. Proboscis comparatively large, almost the length of the cephalic segment. Chelifori exceedingly powerful, hand the length of scape, with the palm greatly prolonged, well-nigh cylindric and densely beset with short hairs, fingers scarcely more than half as long and but very gently curved at the tips. Palpi comparatively large, 2nd joint uncommonly short, scarcely more than half as long as the 3rd one; last joint twice as long as the penultimate one and tapering towards the extremity. False legs in male exceedingly elongated, more than half as long again as the body, 5th joint somewhat longer than the 4th, terminal part shorter than 5th joint, marginal

et Par stærke Tænder nærmere Basis, Yderdelen fint saugtakket. Gangfodderne tynde og forlængede, 4 Gange længere end Legemet, næsten nøgne, 2det Læglied $\frac{1}{3}$ længere end 1aarledet og 3 Gange saa langt som det terminale Afsnit: Tarsalledet lineært, sædvanlig lidt længere end Fodledet: dette sidste stærkt krummet og bevæbnet i Inderkanten med circa 6 forlængede Tørner; Endekloen kraftig, noget mere end halvt saa lang som Fodledet; Bikkloerne vel udviklede, næsten af Endekloens halve Længde. Legemets Længde 6^{mm} ; Spandvidde 54^{mm} .

Bemærkninger. Hvorvidt Fabricius's *Pycnogonum grossipes* er identisk med nærværende Form, maa jeg anse for noget tvivlsomt. Sikkert er det imidlertid at Krøyers *Nymphon grossipes* falder sammen med den her omhandlede Art. Artsnavnet *grossipes* synes imidlertid af flere af de tidligere Antorer at have været anvendt for andre Arter, navnlig *N. Strömii*, og i den nyere Tid har enkelte Forskere, følgende Wilsons Exempel, under dette Navn tillige indbefattet 2 andre Krøyerske Arter, nemlig *N. brevitarse* og *N. mixtum*. At dette er urigtigt, er allerede ovenfor paavist for den første af disse Arters Vedkommende, og ogsaa den sidste af disse Former tror jeg, som nedenfor vil sees, at kunne hævde som en vel begrundet Art. I den Begrænsning, hvori jeg opfatter nærværende Art, er den blandt andet vel characteriseret ved de ualmindelig kraftigt udviklede Saxlemmer, hvis Haand desuden viser en meget eiendommelig Form, fremdeles ved Følernes Bygning og navnlig det indbyrdes Længdeforhold af disse Lemmers Led.

Beskrivelse. Legemets Længde hos fuldt udviklede, ægbærende Individer har jeg fundet at være omkring 6^{mm} , med en Spandvidde af 54^{mm} . Arten opnaar saaledes en meget betydeligere Størrelse end de i det foregaaende omtalte Former.

Legemsformen (se Pl. VI, Fig. 2) maa idethele siges at være temmelig spinkel, og navnlig er Fodderne betydelig længere end hos de i det foregaaende omtalte Arter. Selve Kroppen (Fig. 2 a, 2 b) er af den sædvanlige cylindriske Form, med Segmenterne skarpt markerede og Sidefortsætserne temmelig stærkt forlængede samt skilte ved forholdsvis brede Mellemrum. Hovedsegmentet er af betydelig Størrelse, omtrent saa langt som de 3 følgende Segmenter tilsammen, og har en tydeligt begrændset, smalt cylindrisk Hals. Den foran samme beliggende Pandedel er stærkt udvidet, næsten 3 Gange bredere end Halsen og har den forreste Kant, mellem Insertionen for Saxlemmerne, jævnt udrandet. Halesegmentet (Fig. 2 i) er tydeligt indskaaret i Spidsen, forøvrigt af sædvanligt Udseende.

Oieknuden (Fig. 2 c), der ligger omtrent dobbelt saa langt fra Panderanden som fra Hovedsegmentets bagre Rand, er stærkt ophøiet og konisk tilspidset i Enden. Lindserne er forholdsvis store og ligger nærmere Basis end Spidsen af Oieknuden.

spines slender lanceolate, with a pair of strong teeth near the base, outer part finely serrated. Ambulatory legs slender and elongated, 4 times the length of the body, well-nigh bare; 2nd tibial joint $\frac{1}{3}$ longer than the femoral joint and 3 times as long as the terminal part; tarsal joint linear, usually rather longer than the propodal joint; the latter very considerably curvate and armed on the inner edge with about 6, elongate spines; terminal claw powerful, a little more than half as long as the propodal joint; auxiliary claws well developed, almost half the length of the terminal claw. Length of body 6^{mm} ; extent 54^{mm} .

Remarks. Whether Fabricius's *Pycnogonum grossipes* is identical with the present form I must regard as somewhat open to doubt. Meanwhile, it is quite certain that Krøyer's *Nymphon grossipes* agrees exactly with the species treated of here. The specific term *grossipes* would seem, however, to have been applied by divers of the earlier authors to other species, more especially to *N. Strömii*, and of late a few naturalists have comprised under this designation 2 other species of Krøyer's, viz., *N. brevitarse* and *N. mixtum*. That such a classification is wrong, has been already shown above with respect to the former of those species; and also the latter of the two can, I think, as will appear farther on, be maintained as a well-defined species. In the restricted sense in which I have regarded the present species, it is well characterised, among other criteria, by the remarkably powerfully developed chelifori, their hand, too, exhibiting a very peculiar form; furthermore, by the structure of the palpi, and, in particular, by the longitudinal relations of the joints of those limbs mutually.

Description. The length of the body in fully developed, ovigerous individuals I have found to be, about 6^{mm} , the extent 54^{mm} . The species attains, therefore, a much more considerable size than any of the foregoing forms.

The body (see Pl. VI, fig. 2) must, on the whole, be called rather slender, the legs especially being much longer than in any of the previously mentioned species. The trunk itself (fig. 2 a, 2 b) is of the usual cylindrical form, with the segments sharply marked off, and the lateral processes considerably elongated and separated by relatively broad interspaces. The cephalic segment is of considerable size, about as long as the 3 following segments taken together, and has a distinctly defined, narrow cylindric neck. The frontal part, located before it, is very much expanded, almost 3 times broader than the neck, and has the anterior edge, between the insertion of the chelifori, evenly emarginate. The caudal segment (fig. 2 i) is distinctly incised at the point, otherwise its appearance is as usual.

The oculiferous tubercle (fig. 2 c), placed at about twice the distance from the frontal margin as from the posterior edge of the cephalic segment, is strongly protuberant and conically acuminate at the extremity. The lenses are comparatively large and lie nearer to the base than the point of the oculiferous tubercle.

Snabelen (se Fig. 2 a, 2 b) er forholdsvis stor, næsten af Hovedsegmentets Længde og betydelig tykkere end dettes Halsdel. Den er af regelmæssig cylindrisk Form, med Spidsen stumpt tilbundet, og næsten horizontalt fortilrettet.

Saxlemmerne (ibid.) er særdeles kraftigt udviklede. Skaffet er forholdsvis tykt, cylindrisk, eller lidt udvidet mod Enden, og besat med spredte Haar. Haanden (Fig. 2 d) er omtrent af Skaffets Længde og udmærket ved den smale, næsten cylindriske Form af Palmen, der er tæt besat med korte Haar. Fingrene er forholdsvis korte, neppe synderlig mere end halvt saa lange som Palmen, meget stærkt chitiniserede, derfor af mørk hornbrun Farve, og kun ganske svagt krummede; de danner med Palmen en temmelig udpræget stump Vinkel.

Følerne (Fig. 2 e) er ligeledes forholdsvis kraftigt udviklede og navnlig udmærkede ved det meget ulige Længdeforhold af 2det og 3die Led. Medens det 1ste af disse Led er forholdsvis ualmindelig kort, er det andet særdeles stort, næsten dobbelt saa langt og betydelig længere end det terminale Parti. Sidste Led er ogsaa ualmindelig stort, mere end dobbelt saa langt som næstsidste og successivt afsmalnende mod Enden.

De falske Fodder hos Hammen (se Fig. 2 a) er stærkt forlængede, lige udstrakte mere end $1\frac{1}{2}$ Gang til længere end Legemet, og har 4de og navnlig 5te Led særdeles lange og smale samt noget fortykkede i Enden. Det terminale Parti er betydelig kortere end 5te Led og har 1ste Led omtrent saa langt som de 2 følgende tilsammen. Randtornerne paa de ydre Led (Fig. 2 f) er smalt lancetformige og har som hos de i det foregaaende omtalte Arter et Par stærke basale Tænder, medens deres ydre Del er fint saugtakket.

Gangfodderne (se Fig. 2) er meget tynde og stærkt forlængede, omtrent 4 Gange længere end Legemet, og kun besatte med meget smaa, kun ved stærk Forstørrelse synlige Haar. Af Leddene er 2det Hofteled omtrent dobbelt saa langt som de 2 øvrige tilsammen. 1ste Lægled er kun ubetydelig længere end Laarledet, hvorimod 2det do. er $\frac{1}{3}$ til saa langt og mere end 3 Gange længere end det terminale Afslut. Tarsalledet (se Fig. 2 g) er af smal lineær Form og noget varierende i Længde, ialmindelighed noget længere end Fodledet, sjældnere omtrent af dettes Længde eller endog lidt kortere (se Fig. 2 h). Fodledet er temmelig stærkt krummet og langs Inderkanten bevæbnet med omtrent 6 stærkt forlængede Torner, hvoraf de 4 inderste er størst. Endekloen er ialmindelighed særdeles stærk, men kort, ikke synderlig mere end halvt saa lang som Fodledet. Hos enkelte Exemplarer fra større Dyb er den imidlertid (se Fig. 2 h) kjendelig længere og tyndere. Bikloerne er vel udviklede og oftest omtrent halvt saa lange som Endekloen.

The proboscis (see fig. 2 a, 2 b) is comparatively large, almost the length of the cephalic segment, and a good deal thicker than the cervical part. It has a regular cylindrical form, with the point obtusely rounded, and is directed almost horizontally forwards.

The chelifori (ibid.) are particularly powerfully developed. The scape is comparatively thick, cylindrical, or a little expanded towards the end, and beset with scattered hairs. The hand (fig. 2 d) is about the length of the scape, and is characterised by the narrow, well-nigh cylindric form of the palm, which is densely beset with short hairs. The fingers are comparatively short, scarcely any more than half the length of the palm, highly chitinated, and therefore of a dark horny-brown colour, and but very gently curved; they form along with the palm a rather prominent obtuse angle.

The palpi (fig. 2 e) have likewise a relatively powerful development, and are characterised, in particular, by the very unequal longitudinal relations of the 2nd and 3rd joints. While the 1st of these joints is, relatively, unusually short the other is exceedingly large, well-nigh twice as long, and much longer than the terminal part. The last joint is also uncommonly large, more than twice as long as the penultimate one, and diminishes successively towards the end.

The false legs in the male (see fig. 2 a) are exceedingly elongated, straightly extended more than half as long again as the body, and have the 4th, and particularly the 5th joint remarkably long and slender, as well as somewhat tumefacted at the extremity. The terminal part is a good deal shorter than the 5th joint, and has the 1st joint about as long as the 2 following ones taken together. The marginal spines on the outer joint (fig. 2 f) are slender lanceolate, and have, as in the previously mentioned species, a pair of strong basal teeth, while their outer part is finely serrate.

The ambulatory legs (see fig. 2) are very slender and greatly elongated, about 4 times longer than the body, and only beset with very minute hairs, perceptible alone by the aid of a strong magnifier. Of the joints the 2nd coxal joint is about double the length of the 2 others taken together. The 1st tibial joint is but very little longer than the femoral one, whereas the 2nd is $\frac{1}{3}$ longer, and more than 3 times the length of the terminal section. The tarsal joint (see fig. 2 g) has a slender linear form and varies somewhat in length, being as a rule somewhat longer than the propodal joint, more rarely about the same length as that joint or even somewhat shorter (see fig. 2 h). The propodal joint is rather sharply curved, and is armed along the inner edge with about 6, elongated spines, of which the 4 innermost are the largest. The terminal claw is, in general, exceedingly strong but short, not much more than half as long as the propodal joint. In some specimens from considerable depths it is, however, (see fig. 2 h) appreciably longer and slenderer. The auxiliary claws are well developed, and are, most frequently, about half as long as the terminal claw.

De ydre Ægmasser (se Fig. 2) forholder sig omtrent som hos foregaaende Art og er som hos denne ofte tilstede i dobbelt Antal paa hver af de falske Fødder.

Forekomst. Ved vore Kyster har jeg kun observeret denne Art i den arktiske Region, saaledes ved Tromsø. Under Nordh. Expeditionen toges den typiske Form ikke naahmindelig ved Norske Øer. Nordvestsiden af Spitzbergen, paa 10—30 F. D. Desuden indsamledes Exemplarer af Varieteten „abyssicola“ paa følgende Havstationer: Stat. 164, 336, 343, den første beliggende udenfor Lofoten, de 2 øvrige Syd af Spitzbergen; Dybden fra 70 til 743 Favne. Ogsaa fra Nordenskjöld's Expedition 1875 har jeg haft nogle faa Exemplarer til Undersøgelse, indsamlede dels i Strædet Matotshkin Scharr dels ved Cap. Grebeni; Dybden 2—14 Favne.

Udbredning. Arten er udbredt til Grønland (Krøyer), Østkysten af Nordamerika (Wilson), Barents Soen (Hoek) og det kariske Hav (Hansen). Derimod er jeg tilbøielig til at anse Angivelserne om dens Forekomst længere syd (i Nordsoen og ved Englands Kyster) som beroende paa en Forvexling med andre nærtstaaende Arter.

19. *Nymphon mixtum*, Krøyer.

(Pl. VI, fig. 3, a—i).

Nymphon mixtum, Krøyer, Nat. Tidsskr. N. R. Bd. 1, p. 110.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 35, Fig. 2, a—f.

— — Buchholz, Zweite Deutsche Nordpolarfahrt, Crust. p. 397.

Nymphon grossipes, Hoek, Zool. Chall. Exped. P. X., p. 44, Pl. III, figs. 9—12 (*N. armatum*).

Nymphon mixtum, Hansen, Zool. Dan. Tab. VII, Fig. 19.

— — Idem, Nat. Tidsskr. 3 R. Bd. 14, p. 649.

Nymphon mixtum, G. O. Sars, Pycnogonidea borealia & arctica No. 19.

Artscharacter. Legemet særdeles spinkelt, med vidt adskilte forlængede Sidefortsatser. Hovedsegmentet længere end de 3 følgende Segmenter tilsammen, med særdeles smal og forlænget Hals, Pandedelen kun lidt udvidet. Øieknuden stærkt ophøiet, Enden udtrukket i en konisk Spids. Snabelen vel udviklet, noget kortere end Hovedsegmentet. Saxlemmerne svagere end hos foregaaende Art. Haanden neppe saa lang som Skaffet, lidt udvidet mod Enden. Fingrene længere og mere krummede end hos *N. grossipes*, næsten af Palmens Længde. Følerne meget spinkle, 2det og 3die Led af ens Længde, sidste Led kun ubetydeligt længere end næstsidste. De falske Fødder hos Hannen næsten dobbelt saa lange som Legemet, 4de Led lidt længere end 5te, Endedelen kortere end dette Led. Randtor-

The outer egg-masses (see fig. 2) are about as in the preceding species, and, as in that form, often occur in double the usual number on each of the false legs.

Occurrence. On the coasts of Norway I have observed this species only in the Arctic region, for inst., at Tromsø. On the North Atlantic Expedition, the typical form was not infrequently taken off the Norway Islands, the north-west coast of Spitzbergen, in depths of 10—30 fathoms. Specimens of the variety „abyssicola“ were further collected at the following ocean-stations: Stat. 164, 336, 343, the first lying off Lofoten, the 2 others south of Spitzbergen; depth from 70 to 743 fathoms. Also from Nordenskjöld's Expedition in 1875, I have had a few specimens for examination, collected partly in the Strait of Matotshkin Scharr, partly at Cape Grebeni; depth 2—14 fathoms.

Distribution. The species extends as far as Greenland (Krøyer), the east coast of North America (Wilson), Barents Sea (Hoek), and the Kara Sea (Hansen). As to the statements of its occurrence farther south (in the North Sea and off the coasts of England), I am inclined to think they must arise from confounding the animal with other closely allied forms.

19. *Nymphon mixtum*, Krøyer.

(Pl. VI, fig. 3, a—i).

Nymphon mixtum, Krøyer, Nat. Tidsskr. N. R. Bd. 1, p. 110.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 35, fig. 2, a—f.

— — Buchholz, Zweite Deutsche Nordpolarfahrt, Crust. p. 397.

Nymphon grossipes, Hoek, Zool. Chall. Exped. P. X., p. 44, Pl. III, figs. 9—12 (*N. armatum*).

Nymphon mixtum, Hansen, Zool. Dan. Tab. VII, fig. 19.

— — Idem, Nat. Tidsskr. 3 R. Bd. 14, p. 649.

Nymphon mixtum, G. O. Sars, Pycnogonidea borealia & arctica No. 19.

Specific Characters. Body exceedingly slender, with widely separated, elongated lateral processes. Cephalic segment longer than the 3 following segments taken together, with the neck exceedingly slim and elongate, frontal part but slightly expanded. Oculiferous tubercle remarkably protuberant, extremity drawn out as a conical point. Proboscis well developed, somewhat shorter than the cephalic segment. Cheliferi less powerful than in the preceding species; hand hardly as long as scape, a little expanded towards the extremity; fingers longer and more curvate than in *N. grossipes*, almost the length of the palm. Palpi very slender, 2nd and 3rd joints equal in length, last joint only inconsiderably longer than the penultimate one. False legs in male almost twice as long as the body, 4th joint a trifle longer than 5th.

nerne mindre forlængede end hos foregaaende Art. Gangfodderne overordentlig spinkle, $4\frac{1}{2}$ –5 Gange længere end Legemet; Tarsalleddet stærkt forlænget og tyndt; Fodledet, forholdsvis kort, ofte neppe halvt saa langt som Tarsalleddet, ret, Inderkanten bevæbnet med 7–8 forlængede Torner; Endekloen kort og stærk, neppe halvt saa lang som Fodledet; Bikhjørnerne ualmindelig forlængede, omtrent $\frac{2}{3}$ saa lange som Endekloen. Farven gullig med brede orange-farvede Tværbaand. Legemets Længde $9\frac{1}{2}$ mm; Spandvidde 95 mm.

Bemærkninger. Som ovenfor bemærket, kan jeg ikke være enig med Wilson og flere senere Forskere, naar de anser denne Form kun som en Varietet af *N. grossipes*. Wilson selv har neppe engang havt for sig den rette Krøyerske Art, og at senere Forskere uden videre har adopteret denne Forfatters Opfatning, maa bero paa en mindre indgaaende Undersøgelse af de her omhandlede Former. Som af ovenstaaende Diagnose vil sees, viser nemlig nærværende Art, foruden i Længdeforholdet af Halsen og de 2 ydre Fodled, ogsaa vel udprægede Forskelligheder i Saxlemmernes og Følernes Bygning, hvilket synes at maatte sætte dens specifikke Forskjel fra *N. grossipes* udenfor al Tvivl. Den af Hoek fra Challenger Expeditionen beskrevne Form, der paa Planchen er benævnt *N. armatum*, synes mig, ialfald at domme efter Følernes Udseende, ubetinget at maatte henføres til nærværende Art, og ikke, som Hoek i Texten anfører, til *N. grossipes*.

Beskrivelse. Legemets Længde hos de største af mig undersøgte Exemplarer gaar op til $9\frac{1}{2}$ mm, med en Spandvidde af 95 mm, og denne Art opnaar saaledes en meget anseelig Størrelse.

Legemsformen er (se Pl. VI, Fig. 3), som ogsaa af Krøyer fremstillet, særdeles spinkel, og navnlig udmærker Fodderne sig ved sin ualmindelige Længde og Tyndhed. Selve Kroppen (Fig. 3 a, 3 b) er af smal cylindrisk Form, med Sidefortsætterne stærkt forlængede og skilte ved meget brede Mellemrum; de udgaar her fra den bagre Del af de respective Sementer, medens deres Basis hos foregaaende Art indtager, ialfald paa de 2 midterste Segmenter, omtrent Midten af Sidefladerne. Hovedsegmentet er af betydelig Længde, vel saa langt, som de 3 følgende Segmenter tilsammen, og udmærket ved den særdeles smale og forlængede Hals, der er dobbelt saa lang som Pandedelen; denne sidste er derimod her kjendelig mindre end hos *N. grossipes*.

Oiekuden er (se Fig. 3 a) paa Grund af Halsens betydelige Længde her mere end 3 Gange længere fjernet fra Panderanden end fra Hovedsegmentets bagre Rand. Den er stærkt ophøiet, lige opadrettet, og gaar i Enden ud i en skarp konisk Spids (Fig. 3 c). Lindserne er vel udviklede og forholder sig som hos foregaaende Art.

terminal part shorter than the latter joint, marginal spines less elongated than in the preceding species. Ambulatory legs remarkably slender, from $4\frac{1}{2}$ to 5 times longer than the body; tarsal joint greatly prolonged and slender; propodal joint relatively short, often hardly half as long as tarsal joint, straight, inner edge armed with 7–8 elongated spines; terminal claw short and powerful, scarcely half as long as the propodal joint; auxiliary claws uncommonly elongated, about $\frac{2}{3}$ as long as the terminal claw. Colour yellowish white, with broad, orange-coloured transversal bands. Length of body $9\frac{1}{2}$ mm, extent 95 mm.

Remarks. As stated above, I do not agree with Wilson and several other later naturalists in regarding this form as only a variety of *N. grossipes*. Indeed, Wilson himself has hardly had before him the true Krøyer species, and that later naturalists should so readily have adopted Mr. Wilson's view, must, I think, arise from a less thorough examination of the forms treated of here. As will appear from the above diagnosis, the present species exhibits, not only in the longitudinal relations of the neck and the 2 outer leg-joints, but also in the structure of the cheliferi and palpi, well marked differences, which would seem to place its specific distinction from *N. grossipes* beyond all doubt. The form described by Hoek from the Challenger Expedition, designated *N. armatum* in the plate, should, I think, to judge from the appearance of the palpi, unquestionably be referred to the present species, and not, as Hoek in the text says, to *N. grossipes*.

Description. The length of the body in the largest specimens I have examined reaches $9\frac{1}{2}$ mm, the extent 95 mm, and this species attains, therefore, a very considerable size.

The body (see Pl. VI, fig. 3) is, as represented too, by Krøyer, exceedingly slender, and the legs are, in particular, distinguished by their remarkable length and slinness. The trunk itself (fig. 3 a, 3 b) is narrow cylindrical in form, with the lateral processes exceedingly elongated and marked off by very broad interspaces: they issue, in this animal, from the posterior part of the respective segments, whereas their base in the preceding species occupies, at least on the 2 medial segments, about the middle of the lateral surfaces. The cephalic segment is of considerable length, quite as long as the 3 succeeding segments taken together, and characterised by the exceedingly slender and elongated neck, which is double the length of the frontal part; the latter, on the other hand, is appreciably smaller than in *N. grossipes*.

The oculiferous tubercle (see fig. 3 a), is here, owing to the considerable length of the neck, more than 3 times as far from the frontal margin as from the posterior edge of the cephalic segment. It is exceedingly protuberant, directed straight upwards, and runs out at the end to a sharp conical point (fig. 3 c). The lenses are well developed and, otherwise, are as in the preceding species.

Snabelen (se Fig. 3 a, 3 b) er, som hos foregaaende Art, vel udviklet, lidt kortere end Hovedsegmentet, og af den sædvanlige cylindriske Form, samt lige fortilrettet.

Saxlemmerne (ibid) er derimod kjendelig svagere end hos denne Art og har Skafteet noget længere end Haanden. Denne sidste (Fig. 3 d) er mindre robust, noget udvidet mod Enden og besat med længere, men mere spredte Haar. Fingrene er noget bugtede og forholdsvis stærkere forlængede end hos *N. grossipes*, kun lidt kortere end Palmen, og har Spidserne stærkere indboiede, saa at de krydser hinanden, naar Saxen er lukket.

Folerne (Fig. 3 e) skiller sig ligeledes meget bestemt fra samme hos foregaaende Art. De er betydelig spinklere og har 2det og 3die Led omtrent af ens Længde. Heller ikke er Forskjellen i Størrelse mellem de 2 ydre Led synderlig udpræget, idet næstsidste Led her er betydelig stærkere forlænget. Begge disse Led tilsammen er omtrent lig 3die Led i Længde.

De falske Fødder hos Hannen (se Fig. 3 a) er overordentlig stærkt forlængede og spinkle, lige udstrakte næsten dobbelt saa lange som Legemet. 4de og 5te Led er særdeles tynde og viser i Enden en meget joinefaldende Opsvulming; af disse 2 Led er, uligt hvad Tilfældet er hos *N. grossipes*, det sidste noget længere end det første. Endelen (Fig. 3 f) er betydelig kortere end 5te Led og har 1ste Led længere end de 2 følgende tilsammen. Randtornerne paa de ydre Led (Fig. 3 g) er bredere end hos *N. grossipes*, mere nærmende sig til den Form som træffes hos *N. glaciale* (smk. Fig. 1 f).

Gangfodderne (se Fig. 3) er her af en ganske overordentlig Længde, næsten 5 Gange længere end Legemet, og særdeles spinkle. Som hos foregaaende Art, er de kun sparsomt besatte med særdeles korte Haar, saa at de ved første Oikast synes næsten nøgne. Af Leddene er 2det Hoftelæddet næsten dobbelt saa langt som de 2 øvrige tilsammen. Laarlæddet er hos Hannen kun svagt opsvulmet, hos Hannen særdeles smalt, cylindrisk. 1ste Læglæddet er kjendelig længere end Laarlæddet, og 2det do. er særdeles smalt og forlænget. Tarsallæddet er, som hos foregaaende Art, noget variabelt i Længde, men dog altid betydelig længere end hos denne Art, ofte dobbelt saa langt som Fodlæddet (se Fig. 3 h), sjældnere kun $\frac{1}{3}$ længere (se Fig. 3 i). Langs Inderkanten er dette Led besat med tårige fine Torner, hvoraf dog enkelte er kjendelig grovere og ordnede enkeltvis med bestemte Mellemrum. Fodlæddet (se Fig. 3 h, 3 i) er forholdsvis kort og ganske lige, ikke som hos *N. grossipes* krummet; det er i Inderkanten bevæbnet med 7—8 mere eller mindre forlængede Torner. Endekloen er forholdsvis kort og stærk, neppe mere end halvt saa lang som Fodlæddet, men har Bikloerne ualmindelig store, omtrent $\frac{2}{3}$ saa lange som Kloen.

The proboscis (see fig. 3 a, 3 b) is, as in the preceding species, well developed, slightly shorter than the cephalic segment, of the usual cylindrical form, and directed straight forwards.

The chelifori (ibid) are, on the other hand, appreciably feebler than in the preceding species, and have the scape somewhat longer than the hand. The latter (fig. 3 d) is less robust, somewhat expanded towards the extremity, and beset with longish but rather scattered hairs. The fingers are somewhat sinuous and, relatively, more elongated than in *N. grossipes*, only little shorter than the palm, and have the tips considerably incurved, so that they cross each other when the chela is shut.

The palpi (fig. 3 e) also deviate very decidedly from those of the preceding species. They are much more slender and have the 2nd and 3rd joints about equal in length. Nor is the difference in size between the 2 outer joints particularly prominent, as the penultimate one is, in this animal, a good deal more produced. Both these joints taken together about equal the 3rd joint in length.

The false legs in the male (see fig. 3 a) are remarkably elongate and slender, when fully extended, about twice as long as the body. The 4th and 5th joints are exceedingly thin, and exhibit at the extremity a very conspicuous tumefaction; of these 2 joints, the latter is, unlike what occurs in *N. grossipes*, somewhat longer than the former. The terminal part (fig. 3 f) is considerably shorter than the 5th joint, and has the 1st joint longer than the 2 following ones taken together. The marginal spines on the outer joints (fig. 3 g) are broader than in *N. grossipes*, approximating rather the form observed in *N. glaciale* (comp. fig. 1 f).

The ambulatory legs (see fig. 3) are in this animal of a most prodigious length, nearly 5 times that of the body, and are exceedingly slender. As in the preceding species, they are but sparingly beset with particularly short hairs, so that at the first glance they appear almost naked. Of the joints, the 2nd coxal joint is almost twice as long as the 2 others taken together. The femoral joint is, in the female, but slightly swollen, in the male exceedingly slender, cylindric. The 1st tibial joint is appreciably longer than the femoral one, the 2nd exceedingly slender and elongated. The tarsal joint varies a little in length, as in the preceding species, but is yet always considerably longer than in that form, being often twice as long as the propodal joint (see fig. 3 h), more rarely only $\frac{1}{3}$ longer (see fig. 3 i). Along the inner edge, this joint is furnished with numerous delicate spines, some of which are, however, appreciably coarser and distributed singly at definite intervals. The propodal joint (see fig. 3 h, 3 i) is relatively short and quite straight, not, as in *N. grossipes*, curved; it is armed on the inner edge with 7—8 more or less elongated spines. The terminal claw is comparatively short and powerful, hardly more than half as long as the propodal joint, but has the auxiliary claws uncommonly large, — about $\frac{2}{3}$ as long as the claw itself.

De ydre Ægmasser forholder sig omtrent som hos *N. grossipes*.

Farven hos det levende Dyr er hvidgul med brede, vakkert orangerfarvede Tværbaand over Legemet og Lemmerne.

Forekomst. Nærværende Art er meget almindelig langs vor hele Kyst paa 10—50—100 F. D. Under Nordhavs-Expeditionen blev Exemplarer tagne i Saltstrømmen samt paa følgende Hav-Stationer: Stat. 31, 223, 273, 290, den 1ste beliggende udenfor vor Vestkyst, den 2den Syd af Jan Mayen, de 2 sidste Nord af Finmarken; Dybden fra 70—417 F. Ogsaa fra det kariske Hav har jeg havt nogle faa Exemplarer til Undersøgelse, indsamlede under Nordenskjolds Expedition 1875.

Udbredning. Angaaende Artens øvrige Udbredning er det vanskeligt at afgjøre noget med fuld Sikkerhed, da senere Forskere ialmindelig ikke har villet anerkjende den som saadan. Den synes imidlertid ifølge Dr. Hansens Meddelelse at forekomme ved Danmark (Hellebæk), ligesom 2 Exemplarer, „nærmest svarende til Formen mixtum Kr.“, af samme Forfatter anføres som tagne under Dijnphna's Expedition ved Vestkysten af Novaja Semlja. Af Hodge angives den at forekomme ved England (Kysten af Durham), og Buchholz nævner Arten fra Østkysten af Grønland og fra Spitsbergen. De af Hoek fra Challenger Expeditionen omtalte Exemplarer blev tagne ved Østkysten af Nord-Amerika (Syd af Halifax), paa 83 F. D. Arten synes herefter at have en særdeles vid geographisk Udbredning, skjøndt den nærmest er at betragte som en arktisk Form.

The outer egg-masses are about as in *N. grossipes*.

The colour in the living animal is a whitish yellow, with broad transversal bands of a beautiful orange hue on the body and limbs.

Occurrence. The present species is very common along the whole coast of Norway, at a depth of 10—50—100 fathoms. On the North Atlantic Expedition specimens were taken in the Saltström and at the following ocean-stations: Stat. 31, 223, 273, 290, the first lying off the West Coast of Norway, the 2nd South of Jan Mayen, the 2 last North of Finmark; depth from 70 to 417 fathoms. Also from the Kara Sea I have had a few specimens for examination, collected on Nordenskjold's Expedition in 1875.

Distribution. As to the further distribution of the species, it is difficult to say anything with certainty, later naturalists having in general not been disposed to recognize its claim to specific distinction. Meanwhile it would seem, according to Dr. Hansen's statement, to occur on the Coast of Denmark (Hellebæk), while, also, 2 specimens, „approximating closest the form mixtum Kr.“, are recorded by the same author as taken on Dijnphna's Expedition, on the West Coast of Novaja Semlja. By Hodge it is said to occur on the English Coast (that of Durham), and Buchholz records the species from the East Coast of Greenland and from Spitzbergen. The specimens mentioned by Hoek from the Challenger Expedition were taken on the East Coast of North America (South of Halifax), at a depth of 83 fathoms. The species would seem from these data to have an exceedingly wide geographical distribution, though strictly it must be regarded as an Arctic form.

20. *Nymphon microrhynchum*, G. O. Sars.

(Pl. VII, Fig. 1, a—g).

Nymphon longitarse, Hansen. Kara-Havets Pycnogonider, p. 15, Tab. XVIII, Fig. 7, a—c (non Krøyer).

Nymphon microrhynchum, G. O. Sars, Pycnogonidea borealia & arctica No. 20.

Artscharacter. Legemet af spinkel Form, med vidt adskilte Sidefortsatser. Hovedsegmentet noget længere end de 2 følgende Segmenter tilsammen, Halsen smal og forlænget, Pandedelen temmelig fortykket i Enden. Oieknuden meget lav, stumpt tilspidset i Enden. Snabelen forholdsvis liden, neppe mere end halvt saa lang som Hovedsegmentet. Saxlemmerne temmelig korte, Haanden neppe saa lang som Skaffet, tæt haaret; Fingrene meget korte, neppe mere end halvt saa lange som Palmen. Følerne med 3die Led noget kortere end 2det, sidste Led dobbelt saa langt som næstsidste og begge tilsammen længere end 3die Led. De falske Fodder af middelmaadig Længde, Randtornerne omtrent som hos *N. brevitarse*. Gangfodderne tynde og forlængede, næsten 5 Gange længere

20. *Nymphon microrhynchum*, G. O. Sars.

(Pl. VII, fig. 1, a—g).

Nymphon longitarse, Hansen. Kara-Havets Pycnogonider, p. 15, Tab. XVIII, fig. 7, a—c (non Krøyer).

Nymphon microrhynchum, G. O. Sars, Pycnogonidea borealia & arctica No. 20.

Specific Characters. Body slender, with widely separated lateral processes. Cephalic segment somewhat longer than the 2 succeeding segments taken together, neck slender and elongated, frontal part tumefacted at the extremity. Oculiferous tubercle very low, obtusely pointed at the end. Proboscis comparatively small, scarcely more than half as long as the cephalic segment. Chelifori rather short, hand hardly as long as scape, densely hirsute; fingers very short, hardly more than half as long as palm. Palpi with the 3rd joint somewhat shorter than the 2nd, last joint twice as long as the penultimate one, and both taken together longer than the 3rd joint. False legs of moderate length, marginal spines about as in *N. brevitarse*. Ambulatory legs slim and elongated, well-nigh 5 times longer than the body, and beset

end Legemet, og besatte med spredte Haar; Tarsalledet lineært, Fodledet ligeledes meget smalt og kun lidet kortere end Tarsalledet. Inderkanten besat med fine, haarformige Tørner, hvoraf 2 eller 3 paa Midten er noget stærkere; Endekloen temmelig stærkt forlænget, men med forholdsvis smaa Bikkloer. Legemets Længde 5^{mm} ; Spandvidde 46^{mm} .

Bemærkninger. Nærværende Art udmærker sig navnlig ved den ringe Størrelse af Snabelen, hvad der har givet Anledning til Artsbenævnelsen. Ogsaa i de øvrige anatomiske Detailler er den, som af ovenstaaende Diagnose vil sees, vel adskilt fra de i det foregaaende omtalte Arter. Ved noiere at conferere med Dr. Hansens Arbejde over Kara Havets Pycnogonider, ser jeg, at den af ham under Benævnelsen *N. longitarse* beskrevne Form er denne og ikke Krøyer's Art.

Beskrivelse. Legemets Længde hos det største af de 2 foreliggende Exemplarer, der synes at være en ung Hun, er 5^{mm} , med en Spandvidde af 46^{mm} . Dr. Hansen opgiver Længden til 5.50^{mm} .

Legemets Form er (se Pl. VII, Fig. 1) meget spinkel og Lemmerne tynde og forlængede. Kroppen (Fig. 1 a, 1 b) er af smal cylindrisk Form, med Sidefortsatserne lange og tynde samt skilte ved brede Mellenrum. Hovedsegmentet er noget længere end de 2 følgende Segmenter tilsammen og har Halsen meget smal og forlænget, hvori mod Pandedelen er temmelig stærkt fortykket i Enden.

Oieknuden (Fig. 1 c), der er beliggende næsten 3 Gange længere fra Panderanden end fra Hovedsegmentets bagre Rand, er ganske lav, med Enden stumpt tilspidset. Lindserne er forholdsvis smaa.

Snabelen (se Fig. 1 a, 1 b) er ualmindelig kort, neppe mere end halvt saa lang som Hovedsegmentet og noget skraat nedadrettet. Den er af den sædvanlige cylindriske Form og betydelig tykkere end Hovedsegmentets Halsdel.

Saxlemmerne (ibid.) er forholdsvis temmelig smaa og har Haanden (Fig. 1 d) noget kortere end Skaflet samt tæt besat med korte Haar. Fingrene er meget korte, neppe mere end halvt saa lange som Palmen og kun lidet krummede; som hos de fleste øvrige Arter danner de med Palmen en stump Vinkel.

Følerne (Fig. 1 e) har 3die Led lidt kortere end 2det, og sidste Led ualmindelig stort, omtrent dobbelt saa langt som næstsidste; begge disse Led er tæt haarede og tilsammen adskilligt længere end 3die Led.

De falske Fodder (see Fig. 1 b) er hos det undersøgte Exemplar neppe længere end Legemet og har 4de og 5te Led af ens Længde. Randtørnerne paa de ydre Led (Fig. 1 f) ligner i sin Bygning samme hos *N. brevitarso*, men har de basale Tænder noget svagere.

Gangfodderne (se Fig. 1) er meget spinkle og forlængede, næsten 5 Gange længere end Legemet, og besatte med spredte Haar. 2det Hoftled er omtrent dobbelt saa laa langt som de 2 øvrige tilsammen. De 3 følgende Led tiltager successivt i Længde og 2det Lægled er omtrent

with scattered hairs; tarsal joint linear, propodal joint likewise very slender and but little shorter than tarsal joint, the inner edge beset with delicate, capillary spines, of which 2 or 3 in the middle are somewhat stouter; terminal claw a good deal produced, but with relatively small auxiliary claws. Length of body 5^{mm} , extent 46^{mm} .

Remarks. The present species is distinguished chiefly by the small size of the proboscis, a character that has suggested the specific designation. Also in the other anatomical details, it is, as shown by the above diagnosis, well defined from all the previously mentioned species. After a closer comparison with Dr. Hansen's work on the Pycnogonidea of the Kara Sea, I find the form he describes as *N. longitarse*, Krøyer, to be this, and not Krøyer's species.

Description. The length of the body in the largest of the 2 specimens before me, apparently a young female, is 5^{mm} , the extent 46^{mm} . Dr. Hansen gives the length as 5.50^{mm} .

The body (see Pl. VII, fig. 1) is very slender and the limbs slim and elongated. The trunk (fig. 1 a, 1 b) has a narrow, cylindrical form, with the lateral processes long and slender and separated by broad interspaces. The cephalic segment is somewhat longer than the 2 succeeding segments taken together, with the neck very narrow and elongated, whereas the frontal part is pretty much tumefacted at the extremity.

The oculiferous tubercle (fig. 1 c), located well-nigh 3 times farther from the frontal margin than from the posterior edge of the cephalic segment, is quite low, with the extremity obtusely pointed. The lenses are comparatively small.

The proboscis (see fig. 1 a, 1 b) is uncommonly short, hardly more than half as long as the cephalic segment, and is directed somewhat obliquely downwards. It has the usual cylindric form and is much thicker than the cervical part of the cephalic segment.

The chelifori (ibid.) are, comparatively, rather small and the hand (fig. 1 d) is somewhat shorter than the scape, also densely beset with short hairs. The fingers are very short, hardly more than half as long as the palm and but little curvate; as in most of the other species, they form an obtuse angle with the palm.

The palpi (fig. 1 e) have the 3rd joint a little shorter than the 2nd, and the last joint uncommonly large, about twice as long as the penultimate one; both these joints are densely hairy and, taken together, considerably longer than the 3rd one.

The false legs (see fig. 1 b), in the specimen examined, are scarcely longer than the body and have the 4th and 5th joints equal in length. The marginal spines on the outer joints (fig. 1 f) resemble in structure those in *N. brevitarso*, but have the basal teeth somewhat feeblor.

The ambulatory legs (see fig. 1) are very slim and elongated, well-nigh 5 times longer than the body, and beset with scattered hairs. The 2nd coxal joint is about twice as long as the 2 others taken together. The 3 following joints increase successively in length, and the 2nd tibial

$\frac{1}{4}$ længere end Laarledet og næsten 3 Gange saa langt som det terminale Afsnit. Tarsalledet (se Fig. 1 g) er af smal lineær Form og ubetydeligt længere end Fodledet. Dette sidste er endnu noget smalere, ligeledes lineært og i Inderkanten besat med meget smaa, næsten haarformige Torner, hvoriblandt dog bemærkes omtrent i Midten nogle faa noget stærkere saadanne. Endekloen er temmelig stærkt forlænget, skjonndt adskilligt kortere end Fodledet, og sylformigt tilspidset i Enden. Bikloerne er forholdsvis smaa, neppe $\frac{1}{4}$ saa lange som Endekloen.

Forekomst. Det ovenfor beskrevne Exemplar, tilligemed et meget mindre Individ, blev taget under Norden-skjolds Expedition 1875 i det kariske Hav paa et Dyb af 40—50 Farne. De af Dr. Hansen undersøgte Exemplarer var ligeledes fra det kariske Hav.

21. Nymphon Sluiteri, Hoek.

(Pl. VII, Fig. 2, a—g).

Nymphon Sluiteri, Hoek, Nederl. Archiv f. Zool. Supplem. 1, p. 18, Pl. II, fig. 30—34.

— — Hansen, Kara Havets Pycnogonider, p. 12, Tab. XVIII, Fig. 5, a—b.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 21.

Artscharacter. Legemet spinkelt med vidt adskilte forlængede Sidefortsætter. Hovedsegmentet saa langt som de 2 følgende Segmenter tilsammen, Halsen tynd og forlænget, Pandedelen kun lidet udvidet. Oieknuden stærkt ophøiet, med Enden konisk tilspidset. Snabelen næsten af Hovedsegmentets Længde. Saxlemmerne mindre kraftige; Haanden omtrent af Skaffets Længde, noget udvidet paa Midten og besat med korte Haar; Fingrene næsten af Palmens Længde, temmelig stærkt krummede i Enden. Folerne med 2det Led betydelig kortere end 3die; sidste Led næsten dobbelt saa langt som næstsidste og afsmalende mod Enden; begge tilsammen omtrent af 3die Leds Længde. De falske Fødder hos Hannen $\frac{2}{3}$ længere end Legemet, 4de og 5te Led omtrent af ens Længde, Endedelen kortere end 5te Led, Randtornerne smalt lancetformige med et Par stærkere Tænder nærmere Basis, det ydre Parti fint saugtakket. Gangfødderne stærkt forlængede, omtrent 5 Gange længere end Legemet og besatte med korte og spredte Haar; 2det Lægled meget smalt, mere end $\frac{1}{3}$ længere end Laarledet, men neppe mere end dobbelt saa langt som det terminale Afsnit; Tarsalledet forlænget, lineært; Fodledet adskilligt kortere, noget afsmalende mod Enden, og bevæbnet i Inderkanten med tynde, næsten borsteformige Torner; Endekloen særdeles lang, næsten af Fodledets Længde, leformigt krummet ved Basis og endende i en sylformig Spids;

Den norske Nordhavsexpedition. G. O. Sars: Pycnogonidea.

joint is about $\frac{1}{4}$ longer than the femoral one, and nearly 3 times as long as the terminal section. The tarsal joint (see fig. 1 g) is narrow, linear in form, and but very little longer than the propodal joint. The latter joint is still somewhat slenderer and also linear, and is beset on the inner edge with exceedingly small, well-nigh capilliform spines, among which a few somewhat stronger ones are observed almost in the middle. The terminal claw is a good deal produced, though considerably shorter than the propodal joint, and is acuminate in the form of an awl at the extremity. The auxiliary claws are comparatively small, scarcely $\frac{1}{4}$ of the length of the terminal claw.

Occurrence. The above described specimen as well as a much smaller individual, were taken on Norden-skjöld's Expedition in 1875, in the Kara Sea, at a depth of 40—50 fathoms. The specimens examined by Dr. Hansen were also from the Kara Sea.

21. Nymphon Sluiteri, Hoek.

(Pl. VII, fig. 2, a—g).

Nymphon Sluiteri, Hoek, Nederl. Archiv f. Zool. Supplem. 1, p. 18, Pl. II, fig. 30, 34.

— — Hansen, Kara Havets Pycnogonider, p. 12, Tab. XVIII, fig. 5, a—b.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 21.

Specific Characters. Body slender, with widely separated elongated lateral processes. Cephalic segment as long as the 2 succeeding ones taken together, neck slim and elongate, frontal part only slightly expanded. Oculiferous tubercle exceedingly elevated, with the extremity conically acuminate. Proboscis well-nigh as long as the cephalic segment. Chelifori not very powerful; hand about as long as the scape, somewhat expanded in the middle, and beset with short hairs; fingers nearly as long as the palm, a good deal curved at the tip. Palpi with the 2nd joint considerably shorter than the 3rd; last joint nearly twice as long as the penultimate one and tapering towards the extremity, and together about as long as the 3rd joint. False legs in male $\frac{2}{3}$ longer than the body, 4th and 5th joints about equal in length, terminal part shorter than 5th joint, marginal spines slender lanceolate, with a pair of strongish teeth near the base, outer part finely serrate. Ambulatory legs greatly elongated, about 5 times longer than the body, and beset with short and scattered hairs; 2nd tibial joint very slender, upwards of $\frac{1}{3}$ longer than the femoral joint but hardly more than twice as long as the terminal section; tarsal joint elongated, linear; propodal joint a good deal shorter, tapering a little towards the end, and armed on the inner edge with delicate, well-nigh setiform spines; terminal claw particularly long, almost as long as the propodal joint, falciformly arcuate at the base and terminating

Bikloerne særdeles smaa. Legemets Længde 7^{mm} ; Spandvidde 66^{mm} .

Bemærkninger. Denne af Hoek først beskrevne Art er let kjendelig ved de ydre Fodleds Form og navnlig ved den stærkt forlængede Endeklo og de smaa Bikloer. Ogsaa Saxlemmernes Bygning er eiendommelig. Iøvrigt slutter den sig temmelig nær til *N. grossipes*.

Beskrivelse. Legemets Længde har jeg fundet at være omkring 7^{mm} , med en Spandvidde af 66^{mm} .

Legemstørrelsen er (se Pl. VII, Fig. 2), som hos foregaaende Art, meget spinkel, og Lemmerne tynde og forlængede. Kroppen (Fig. 2 a, 2 b) er smal cylindrisk, med Sidefortsætserne temmelig stærkt forlængede og skilte ved brede Mellemrum. Hovedsegmentet er ikke fuldt saa stærkt forlænget som hos foregaaende Art, neppe længere end de 2 følgende Segmenter tilsammen, og har Halsen meget smal. Pandedelen er her kjendelig mindre udvidet end hos de fleste øvrige Arter af Skegten og ogsaa meget kort.

Oieknuden (Fig. 2 c), der ligger ved den bagre Trediedel af Hovedsegmentets Længde, er temmelig ophøiet, med Enden konisk tilspidset. Forfra eller bagfra seet, viser den noget ovenfor Midten til hver Side en meget tydelig Afsats. Lindserne er noget større end hos foregaaende Art, forøvrigt af sædvanligt Udseende.

Snabelen (se Fig. 2 a, 2 b) er omtrent af Hovedsegmentets Længde, regelmæssig cylindrisk og næsten horisontalt fortilrettet.

Saxlemmerne (ibid.) er temmelig forlængede, men forholdsvis noget svagere byggede end hos foregaaende Art. Skaftet er smalt cylindrisk og omtrent af Snabelens Længde, Haanden (Fig. 2 d) ubetydelig kortere og forholdsvis smal, dog noget udvidet paa Midten og besat med korte Haar. Fingrene er betydelig stærkere forlængede end hos de i det foregaaende omtalte Arter, næsten af Palmens Længde og temmelig stærkt krummede i Enden, saa Spidserne krydser hinanden, naar Saxen er lukket.

Følerne (Fig. 2 e) ligner temmelig samme hos *N. grossipes*. Som hos denne Art er 2det Led betydelig kortere end 3die, skjøndt Forskjellen her er noget mindre. Endedelen er omtrent af 3die Leds Længde og kjendelig tykkere end den øvrige Del. Af dens Led er sidste, som hos *N. grossipes*, næsten dobbelt saa langt som næstsidste og noget afsmalnende mod Enden.

De falske Fodder hos Hannen (se Fig. 2 b) er stærkt forlængede, omtrent $\frac{2}{3}$ længere end Legemet, men mindre spinkle end hos *N. grossipes* og *N. mixtum*. Længdeforholdet af Leddene er omtrent som hos denne sidste Art. Randtørnerne paa de ydre Led (Fig. 2 f) er smalt lancetformige og har, som hos de i det foregaaende omtalte Arter nærmere Basis et Par større Tænder, medens Endepartiet er fint saugtakket.

in an awl-shaped point; auxiliary claws exceedingly small. Length of body 7^{mm} , extent 66^{mm} .

Remarks. This species, first described by Hoek, is easily known by the form of the outer leg-joints and, in particular, by the greatly prolonged terminal claw and the small auxiliary claws. The structure, too, of the chelifori is peculiar. It agrees, otherwise, rather closely with *N. grossipes*.

Description. The length of the body I have found to be about 7^{mm} , the extent 66^{mm} .

The body (see Pl. VII, fig. 2) is, as in the preceding species, very slender, and the limbs are slim and elongated. The trunk (fig. 2 a, 2 b) is narrow cylindric, with the lateral processes considerably elongated, and separated by broad intervals. The cephalic segment is not quite so elongated as in the preceding species, hardly longer than the 2 following segments taken together, and the neck is very slender. The frontal part in this animal, is appreciably less expanded than in most of the other species of the genus, and is also very short.

The oculiferous tubercle (fig. 2 c), which is situated at the posterior third of the length of the cephalic segment, is rather elevated, with the extremity conically acuminate. Viewed anteriorly or posteriorly, it exhibits, a little above the middle, on either side a very distinct ledge. The lenses are somewhat larger than in the preceding species, otherwise it has the usual appearance.

The proboscis (see fig. 2 a, 2 b) is about same length as the cephalic segment, regular cylindric in form and directed well-nigh horizontally forward.

The chelifori (ibid.) are rather elongated, but relatively of somewhat feebler structure than in the preceding species. The scape is slender cylindric and about same length as the proboscis, the hand (fig. 2 d) is a trifle shorter and comparatively slender, though slightly expanded in the middle, and is beset with short hairs. The fingers are much more elongated than in any of the previously mentioned species, well-nigh same length as the palm, and are a good deal curved at the extremity; the points therefore cross each other when the chela is shut.

The palpi (fig. 2 e) have considerable resemblance to those organs in *N. grossipes*. As in that species, the 2nd joint is much shorter than the 3rd, though the difference is here somewhat less. The terminal part is about same length as the 3rd joint and is appreciably thicker than the remainder. Of its joints, the last is, as in *N. grossipes*, almost twice as long as the penultimate one and tapers a little towards the extremity.

The false legs in the male (fig. 2 b) are greatly elongated, about $\frac{2}{3}$ longer than the body, but less slender than in *N. grossipes* and *N. mixtum*. The relative lengths of the joints are about the same as in the latter species. The marginal spines on the outer joints (fig. 2 f) are slender lanceolate, and have, as in all the previously mentioned species, near the base, a pair of rather large teeth, whilst the terminal part is finely serrate.

Gangfodderne (se Fig. 2) er spinkle og forlængede, omtrent 5 Gange længere end Legemet, og besatte med korte, spredte Haar. 2det Hofteled er over dobbelt saa langt som de 2 øvrige tilsammen. Laarledet omtrent $\frac{1}{3}$ længere end Hoftepartiet og temmelig opsvulmet hos Hunnen. 1ste Lægled er kjendelig længere end Laarledet, og 2det do., som sædvanlig, det længste, meget tyndt og noget afsmalnende mod Enden. Det terminale Parti af Foden er stærkere udviklet hos denne Art end hos de fleste øvrige og omtrent halvt saa langt som 2det Lægled. Tarsalledet (se Fig. 2 g) er af lineær Form og adskilligt længere end Fodledet. Dette sidste afsmalnes successivt noget mod Enden og er i Inderkanten besat med tynde, næsten børsteformige Torner, hvoraf de 4—5 inderste pleier at være længst. Endekloen er særdeles stærkt forlænget, næsten af Fodledets Længde, leformigt krummet ved Basis og ender i en sylskarp Spids. Bikkloerne er derimod overordentlig smaa, neppe mere end $\frac{1}{10}$ saa lange som Endekloen.

De ydre Ægmasser (se Fig. 2 b) er forholdsvis ikke synderlig store, uregelmæssigt kugleformige, hvorimod de i dem indeholdte Æg er større end sædvanligt. De er sædvanligvis fæstede omkring 4de Led af de falske Fodder, dog ikke sjelden til 5te Led; i enkelte Tilfælde er de tilstede i dobbelt Antal paa hver af disse Lemmer.

Forekomst. Et enkelt Exemplar af denne Art blev under Nordh. Expeditionens sidste Togt taget omtrent midtvejs mellem Finmarken og Beeren Eiland (Stat. 290) paa 191 F. D. Jeg har imidlertid havt Anledning til at undersøge en hel Del Exemplarer af samme Art, indsamlede under Nordenskjöld's Expedition 1875 paa forskellige Punkter i det kariske Hav; Dybden fra 20 til 60 Favne.

Udbredning. Arten er først beskeven af Hoek fra Barents Søen efter et enkelt mindre vel konserveret Exemplar og er senere af Dr. Hansen anført fra det kariske Hav. Andetsteds er den ikke bleven observeret; men de ovenanførte Lokalteter er nok til at stemple den som en ægte arktisk Form.

The ambulatory legs (see fig. 2) are slender and elongated, about 5 times longer than the body, and beset with short, scattered hairs. The 2nd coxal joint is more than twice as long as the 2 other ones taken together; the femoral joint is about $\frac{1}{3}$ longer than the coxal part, and is rather swollen in the female. The 1st tibial joint is appreciably longer than the femoral one, and the 2nd is, as usual, the longest, very slender, and tapers somewhat towards the extremity. The terminal part of the leg is more fully developed in this than in most of the other species, and is about half the length of the 2nd tibial joint. The tarsal joint (see fig. 2 g) is linear in form and considerably longer than the propodal joint. The latter joint diminishes successively, somewhat, towards the end, and is beset on the inner edge with delicate, well-nigh setiform spines, of which the 4 or 5 innermost are usually the longest. The terminal claw is particularly elongated, almost the length of the propodal joint, falciformly arcuate at the base, and terminates in a point as sharp as an awl. The auxiliary claws, on the other hand, are remarkably small, scarcely more than $\frac{1}{10}$ of the length of the terminal claw.

The outer egg-masses (see fig. 2 b) are, relatively, not very large, irregularly globular in form, whereas the ova they contain are larger than usual. They are generally adherent round the 4th joint of the false legs, not infrequently, however, to the 5th joint; in some cases they are present in double numbers on each of those limbs.

Occurrence. A single specimen of this species was taken on the last cruise of the North Atlantic Expedition, about midway between Finmark and Beeren Eiland (Stat. 290), at a depth of 191 fathoms. I have however, had the opportunity of examining a great many specimens of the same species collected on Nordenskjöld's Expedition in 1875, from various localities in the Kara Sea; depth 20 to 60 fathoms.

Distribution. The species has been first described by Hoek, from a single, not very well preserved, specimen taken in Barent's Sea, and it has since been recorded by Dr. Hansen from the Kara Sea. It has not been observed elsewhere, but the localities given above suffice to establish it as a true Arctic form.

22. *Nymphon longitarse*, Krøyer.

(Pl. VII, Fig. 3, a—h).

Nymphon longitarse. Krøyer, Nat. Tidsskr. N. R. Bd. 1, p. 112.

— — Idem, Gaimard's Voyage en Scandinavie, Pl. 36, fig. 2, a—f.

— — Wilson, Trans. Conn. Acad. Vol. V, p. 19, Pl. VII, fig. 2, a—h.

— — Idem, United States Commission of Fish and Fisheries, Report f. 1878, p. 489, Pl. VI, fig. 30—31.

22. *Nymphon longitarse*, Krøyer.

(Pl. VII, fig. 3, a—h).

Nymphon longitarse, Krøyer, Nat. Tidsskr. N. R. Bd. 1, p. 112.

— — Krøyer, Gaimard's Voyage en Scandinavie, Pl. 36, fig. 2, a—f.

— — Wilson, Trans. Conn. Acad. Vol. V, p. 19, Pl. VII, fig. 2, a—h.

— — Idem, United States Commission of Fish and Fisheries, Report for 1878, p. 489, Pl. VI, fig. 30—31.

Nymphon longitarse. Hoek, Niederl. Archiv f. Zool. Suppl. 1. p. 15, Pl. 1, fig. 22—23.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 22.

Artscharacter. Legemet overordentlig spinkelt, med vidt skilte Sidefortsatser. Hovedsegmentet stærkt forlænget, længere end de 3 følgende Segmenter tilsammen, Halsen særdeles lang og smal, Pandedelen jævnt udvidet mod Enden. Øieknuden stumpet tilrundet. Snabelen noget kortere end Hovedsegmentet. Saxlemmerne forholdsvis svage, Haanden noget kortere end Skafet, kun lidet opsvulmet, haaret, Fingrene forlængede, af Palmens Længde og stærkt krummede i Spidsen. Følerne spinkle, 2det og 3die Led af ens Længde, næstsidste Led noget kortere end sidste og begge tilsammen længere end 3die. De falske Fødder hos Hannen $\frac{1}{2}$ Gang længere end Legemet, 4de og 5te Led af ens Længde, Endedelen længere end 5te Led; Randtornerne forholdsvis smaa og mindre tæt saugtakkede end hos foregaaende Art. Gangfødderne overordentlig spinkle, mere end 5 Gange længere end Legemet og besatte med korte spredte Haar; 2det Lægled næsten dobbelt saa langt som Laarledet og særdeles smalt. Tarsalledet forlænget, lineært; Fodledet lidet mere end halvt saa langt, Inderkanten besat med meget smaa Torner; Endekloen neppe mere end halvt saa lang som Fodledet; Bikløerne meget smaa. Farven blegrod. Legemets Længde 6^{mm} ; Spandvidde 62^{mm} .

Bemærkninger. Nærværende Art ligner noget i sin ydre Habitus den ovenfor beskrevne *N. microrhynchum*, med hvilken Dr. Hansen har forvexlet den, men er let kjendelig ved den betydelig stærkere forlængede Hals, Øieknudens Form, Saxlemmernes Bygning og Forholdet af de 2 ydre Fødder.

Beskrivelse. Legemets Længde er omtrent 6^{mm} , med en Spandvidde af 62^{mm} .

Formen er hos denne Art (se Pl. VII, Fig. 3) maaske spinklere end hos nogen anden Art af Slægten, saavel hvad Kroppen som Lemmerne angaar. Kroppen (Fig. 3 a, 3 b) er af den sædvanlige smalt cylindriske Form, dog ovenfra seet noget afsmalnede bagfra fortil (se Fig. 3 a). Sidefortsatserne er lange og smale, samt skilte ved brede Mellemrum; som hos *N. mixtum*, udgaar de alle fra den bagre Del af de respektive Segmenter. Hovedsegmentet er af meget betydelig Størrelse, selv længere end de 3 følgende Segmenter tilsammen, og udmærket ved den overordentlig smale og forlængede Hals. Pandedelen udvides jævnt mod Enden og er her mere end dobbelt saa bred som Halsen.

Øieknuden (Fig. 3 c), der paa Grund af Halsens Længde er mere end 3 Gange længere fjernet fra Panderanden end fra Hovedsegmentets bagre Rand, er noget ophøiet, men, uligt de fleste øvrige Arter, stumpet afrundet i Enden. Lindserne er forholdsvis store og beliggende omtrent ved Midten af Øieknudens Høide.

Nymphon longitarse, Hoek, Niederl. Archiv. f. Zool. Suppl. 1. p. 15, Pl. 1, fig. 22—23.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 22.

Specific Characters. Body remarkably slender, with widely separated lateral processes. Cephalic segment very much elongated, longer than the 3 succeeding ones taken together. Neck exceedingly long and slender, frontal part evenly expanded towards the extremity. Oculiferous tubercle obtusely rounded. Proboscis somewhat shorter than the cephalic segment. Chelifori relatively feeble, hand a trifle shorter than the scape, only little swollen, hairy, fingers elongate, same length as the palm, and sharply curved at the point. Palpi slender, 2nd and 3rd joints equal in length, penultimate joint somewhat shorter than the ultimate one and both together longer than the 3rd. False legs in male $\frac{1}{2}$ as long again as the body, 4th and 5th joints equal in length, terminal part longer than 5th joint; marginal spines comparatively small and less densely serrate than in the preceding species. Ambulatory legs remarkably slender, more than 5 times longer than the body, and beset with short, scattered hairs; 2nd tibial joint well-nigh twice as long as the femoral one and exceedingly slender; tarsal joint elongate, linear; propodal joint little more than half as long, inner edge beset with minute spines; terminal claw scarcely more than half the length of the propodal joint; auxiliary claws very small. Colour pale red. Length of body 6^{mm} , extent 62^{mm} .

Remarks. The present species exhibits, in its outer habitus, some resemblance to the above described *N. microrhynchum*, with which Dr. Hansen has confounded it, but it is easily distinguishable by the much more elongated neck, the form of the oculiferous tubercle, the structure of the chelifori, and the relative lengths of the 2 outer leg-joints.

Description. The length of the body is about 6^{mm} , the extent 62^{mm} .

The body (see Pl. VII, fig. 3) is in this animal more slender, perhaps, than in any other species of the genus, both as regards the trunk and the limbs. The trunk (fig. 3 a, 3 b) is of the usual narrow, cylindrical form but, viewed from above, diminishes a little from rear to front (see fig. 3 a). The lateral processes are long and slender, and are separated by wide intervals; as in *N. mixtum*, they all issue from the posterior part of the respective segments. The cephalic segment is of very considerable size, longer even than the 3 following segments taken together, and is characterised by the remarkably slender and elongated neck. The frontal part expands uniformly towards the end, and is here more than twice as broad as the neck.

The oculiferous tubercle (fig. 3 c), which, owing to the length of the neck, lies more than 3 times farther from the frontal margin than from the posterior edge of the cephalic segment, is somewhat elevated but, unlike most of the other species, is obtusely rounded at the extremity. The lenses are comparatively large, and are located about midway up the tubercle.

Snabelen (se Fig. 3 a, 3 b) er vel udviklet, dog adskilligt kortere end Hovedsegmentet, og af den sædvanlige cylindriske Form.

Saxlemmerne (ibid.) er forholdsvis spinkelt byggede, med Skaftet smalt cylindrisk og omtrent af Snabelens Længde. Haanden (Fig. 3 d) er noget kortere end Skaftet og ligeledes forholdsvis spinkel, ganske svagt udvidet paa Midten og besat med korte Haar. Fingrene er stærkt forlængede, omtrent af Palmens Længde, og stærkt krummede i sit ydre Parti, hvorfor Spidserne krydser hinanden, naar Saxen er lukket.

Folerne (Fig. 3 e) er ligeledes ualmindelig smale og forlængede, med 2det og 3die Led af ens Længde. Endepartiet er noget længere end 3die Led og har næstsiste Led kun lidet kortere end sidste.

De falske Fodder hos Hannen (se Fig. 3 b) er mere end $\frac{1}{2}$ Gang længere end Legemet og har 4de og 5te Led omtrent lige lange, medens Endedelen (Fig. 3 f) er adskilligt længere. Randtornerne (Fig. 3 g) er forholdsvis smaa, forovrigt af en lignende Bygning som hos de foregaaende Arter. Ved Enderne af Leddene findes imidlertid enkelte Torner af en simplere Form, paa hvilke de stærke basale Tænder synes at mangle.

Gangfodderne (se Fig. 3) er overordentlig spinkle og forlængede, mere end 5 Gange længere end Legemet og besatte med korte, spredte Haar. 2det Hoftled er adskilligt længere end de 2 øvrige tilsammen, og de 3 følgende Led tiltager stærkt i Længde, saa at 2det Lægled næsten er dobbelt saa langt som Laarledet. Det terminale Afsnit (Fig. 3 h) er meget smalt og noget mere end $\frac{1}{3}$ saa langt som 2det Lægled. Tarsalledet er stærkt forlænget, næsten dobbelt saa langt som Fodledet, og noget buet. Fodledet er noget smalere og lige, samt i Inderkanten kun besat med yderst korte haarformige Torner; hos enkelte Exemplarer sees dog paa Midten nogle faa (sædvanlig 4) noget stærkere, tiltrykte Torner. Endekloen er forholdsvis kort, kun lidet mere end halvt saa lang som Fodledet, og Bikloerne er meget smaa, neppe $\frac{1}{4}$ saa lange som Endekloen.

De ydre Ægmasser (se Fig. 3 b) er af middelmaadig Storrelse, cylindrisk-kugleformige og sædvanligvis fæstede omkring 5te Led af de falske Fodder, undertiden dog ogsaa paa 4de. En enkelt Gang har jeg paa hver af de falske Fodder fundet ikke mindre end 3 særskilte Ægmasser, 2 paa 4de og 1 paa 5te Led. Æggene er forholdsvis betydelig mindre end hos *N. Sluiteri*.

Dyret er i levende Tilstand temmelig gjennemsigtigt, med et blegt kjødbrødt Anstrog, især ved Enden af Krops-segmenterne og Leddene paa Fodderne.

Forekomst. Jeg har truffet denne Art af og til langs vor hele Kyst paa 20—100 F. D. Under Nordhavs-Expeditionen toges 4 Exemplarer udenfor Sydspidsen af Spitsbergen (Stat. 336) paa 70 F. D. Desuden har jeg

The proboscis (see fig. 3 a, 3 b) is well developed, considerably shorter, however, than the cephalic segment, and of the usual cylindric form.

The chelifori (ibid.) are comparatively slender in structure, with the scape narrow cylindric and about same length as the proboscis. The hand (fig. 3 d) is a trifle shorter than the scape and is, also comparatively slender, very slightly expanded in the middle, and beset with short hairs. The fingers are exceedingly elongate, well-nigh the length of the palm, and sharply curved in their outer part; the points therefore cross each other when the chela is shut.

The palpi (fig. 3 e) are also uncommonly slender and elongate, with the 2nd and 3rd joints equal in length. The terminal part is a trifle longer than the 3rd joint with the penultimate joint only little shorter than the terminal one.

The false legs in the male (see fig. 3 b) are more than half as long again as the body, and have the 4th and 5th joints about uniform in length, while the terminal part (fig. 3 f) is a good deal longer. The marginal spines (fig. 3 g) are comparatively small, but similar in structure, otherwise, to those in all the preceding species. At the ends of the joints there occur, however, a few spines of a simpler form on which the strong basal teeth are apparently wanting.

The ambulatory legs (see fig. 3) are extremely slender and elongate, more than 5 times longer than the body, and beset with short, scattered hairs. The 2nd coxal joint is considerably longer than the 2 others taken together, and the 3 succeeding joints increase rapidly in length, so that the 2nd tibial joint is almost twice as long as the femoral one. The terminal section (fig. 3 h) is very slender and something more than $\frac{1}{3}$ of the length of the 2nd tibial joint. The tarsal joint is greatly elongated, nearly twice as long as the propodal joint, and somewhat arcuate. The propodal joint is a trifle slenderer, and straight, and beset along the inner edge with only extremely short, capilliform spines; in some specimens there are seen, however, in the middle, a few (generally 4) somewhat stronger, adpressed spines. The terminal claw is comparatively short, but little more than half the length of the propodal joint, and the auxiliary claws are very small, hardly $\frac{1}{4}$ the length of the terminal one.

The outer egg-masses (see fig. 3 b) are of moderate size, cylindrically globular, and generally adherent round the 5th joint of the false legs, sometimes, however, on the 4th one also. Once only did I find on each of the false legs as many as 3 separate egg-masses, 2 on the 4th and 1 on the 5th joint. The ova are, relatively, a good deal smaller than in *N. Sluiteri*.

The animal is, in the living state, rather transparent, with a pale carnation tint, especially at the end of the body-segments and on the leg-joints.

Occurrence. I have now and again met with this species at a depth of from 20—100 fathoms along the whole coast of Norway. On the North Atlantic Expedition, 4 specimens were taken off the southern extremity of

havt til Undersøgelse 2 vel udprægede Exemplarer af denne Art fra det kariske Hav, indsamlede under Nordenskjöld's Expedition 1876 paa 17 F. D.

Udbredning. Arten er udbredt til Grønland (Kroyer), Barents Soen (Hoek) Østkysten af Nordamerika (Wilson). Af Hodge anføres den ogsaa fra England (Kysten af Durham).

23. *Nymphon leptocheles*, G. O. Sars.

(Pl. VIII, Fig. 1, a—i).

Nymphon leptocheles, G. O. Sars. Pycnogonidea borealia & arctica, No. 23.

Artscharacter. Legemet temmelig spinkelt, med vidt adskilte Sidefortsætter. Hovedsegmentet kun lidet længere end de 2 følgende Segmenter tilsammen. Halsen forholdsvis kort, men stærkt indknebet. Pandedelen temmelig bred. Oieknuden noget ophøiet, lige afskaaret i Enden, med spidst udtrukne Sidehjørner. Snabelen forholdsvis stor, af Hovedsegmentets Længde. Saxlemmerne ualmindelig svage. Haanden noget kortere end Skaffet, meget smal og tæt haaret, Fingrene stærkt forlængede og tynde, længere end Palmen. Følerne meget spinkle, med 2det og 3die Led af ens Længde, næstsidsste stærkt forlænget, næsten dobbelt saa langt som sidste. De falske Fodder hos Hannen noget længere end Legemet, 5te Led vel saa langt som 4de og forsynet med en Rad af børstebærende Knuder. Endedelen noget kortere end 5te Led. Randtørnerne grovt sangtakkede, uden nogen stærkere Tand ved Basis. Gangfodderne spinkle, næsten 5 Gange længere end Legemet, og besatte med korte spredte Haar, 2det Lægled særdeles tyndt, $\frac{1}{3}$ længere end Laarlæddet og mere end dobbelt saa langt som det terminale Afsnit; Tarsallæddet lineært, forlænget; Fodledet adskilligt kortere, ligeledes meget smalt og langs Inderkanten besat med særdeles smaa, haarformige Tørner; Endekloen af middelmaadig Længde, jævnt krummet i det ydre Parti; Bikloerne smaa. Farven hvidagtig. Legemets Længde $6\frac{1}{2}^{mm}$; Spandvidde 62^{mm} .

Bemærkninger. Fra alle øvrige Arter af Slægten er denne let kjendelig ved de ualmindelig svagt byggede Saxlemmer og navnlig ved Haandens spinkle Form, ligeledes ved Følernes og de falske Fodders Bygning. I Beskaffenheden af de 2 ydre Fodled ligner den noget *N. longitarse*, men kjendes let fra denne Art blandt andet ved den betydelig kortere Hals. I visse Henseender synes den at danne en Overgang til den følgende Gruppe af Slægten, for hvilken *N. Strömii*, Kr. er Typen.

Beskrivelse. Legemets Længde er hos fuldvoksne Exemplarer omkring $6\frac{1}{2}^{mm}$, med en Spandvidde af 62^{mm} .

Formen er (se Pl. VIII, Fig. 1) idethele temmelig slank, dog neppe i den Grad som hos foregaaende Art. Kroppen (Fig. 1 a, 1 b) er smalt cylindrisk og har Side-

Spitzbergen (Stat. 336), at a depth of 70 fathoms. Moreover, I have had for examination 2 well marked individuals of this species from the Kara Sea, collected on Nordenskjöld's Expedition in 1876 at a depth of 17 fathoms.

Distribution. The species extends to Greenland (Kröyer), Barents Sea (Hoek), and the east coast of North America (Wilson). Hodge also records it from England (coast of Durham).

23. *Nymphon leptocheles*, G. O. Sars.

(Pl. VIII, fig. 1, a—i).

Nymphon leptocheles, G. O. Sars. Pycnogonidea borealia et arctica, No. 23.

Specific Characters. Body rather slender, with widely separated lateral processes. Cephalic segment but little longer than the 2 following segments taken together, neck comparatively short but strongly constricted, frontal part rather broad. Oculiferous tubercle somewhat elevated, truncated at the extremity, with acute, produced lateral corners. Proboscis comparatively large, same length as the cephalic segment. Chelifori uncommonly feeble, hand a trifle shorter than the scape, very narrow and densely hairy, fingers exceedingly elongate and slim, longer than the palm. Palpi very slender, with 2nd and 3rd joints equal in length, the penultimate one greatly elongated, nearly twice as long as the terminal one. False legs in male somewhat longer than the body, 5th joint a little longer than the 4th and furnished with a row of setiferous tubercles, terminal part a little shorter than 5th joint, marginal spines coarsely serrate, without any strong tooth at the base. Ambulatory legs slender, almost 5 times longer than the body, and beset with short, scattered hairs. 2nd tibial joint particularly slender, $\frac{1}{3}$ longer than the femoral one, and more than twice as long as the terminal section; tarsal joint linear, elongate; propodal joint considerably shorter, likewise very slender, and beset along the inner edge with exceedingly small capilliform spines; terminal claw of moderate length, evenly curved in the outer part; auxiliary claws small. Colour whitish. Length of body $6\frac{1}{2}^{mm}$, extent 62^{mm} .

Remarks. This animal is easily recognised from all the other species of the genus, by the remarkably feeble chelifori and, particularly, by the slender form of the hand, also by the structure of the palpi and the false legs. In the character of the 2 outer leg-joints it resembles a little *N. longitarse*, but may, amongst other criteria, be at once distinguished from that species by the considerably shorter neck. In some respects it would seem to constitute a transition to the succeeding group of the genus of which *N. Strömii*, Kr. is the type.

Description. The length of the body in full-grown specimens is about $6\frac{1}{2}^{mm}$, the extent 62^{mm} .

The body (see Pl. VIII, fig. 1) is rather slender, though hardly to such a degree as in the preceding species. The trunk (fig. 1 a, 1 b) is narrow cylindrical, and has

fortsatserne temmelig forlængede samt skilte ved brede Mellemrum. Hovedsegmentet er betydelig kortere end hos *N. longitarse*, neppe længere end de 2 følgende Segmenter tilsammen. Halsen er vistnok tydeligt begrændset og stærkt indknebet, men paa langt nær ikke af den enorme Længde som hos hin Art, hvorimod Pandedelen er kjendelig større, omtrent 3 Gange bredere end Halsen.

Oieknuden ligger her neppe mere end dobbelt saa langt fra Panderanden som fra Hovedsegmentets bagre Rand. Den er noget ophøiet og synes, naar Dyret sees fra Siden (Fig. 1 b), afrundet i Spidsen. Seet forfra eller bagfra (Fig. 1 c), viser den sig noget afsmalnende mod Enden, der er tvært afkuttet, med Sidehjørnerne uddragne i Form af smaa tandformige Fremspring. Lindserne, der har en noget elliptisk Form, ligger omtrent ved Midten af Oieknudens Hoide.

Snabelen (Fig. 1 a, 1 b) er stærkt forlænget, neppe kortere end Hovedsegmentet, horisontalt fortilrettet og af den sædvanlige cylindriske Form.

Saxlemmerne (ibid.) er ualmindelig spinkle og svagt byggede. Skaffet er smalt cylindrisk og omtrent af Snabelens Længde, Haanden adskilligt kortere, tæt haaret, og meget smal, med forholdsvis kort Palm og stærkt forlængede Fingre. Disse sidste (Fig. 1 c), der er kjendelig længere end Palmen, er særdeles smale og temmelig stærkt krummede i sit ydre Parti, endende med meget tynde indboiede Spidsor. Tænderne i Inderkanten er længere og mindre tætstillede end hos de foregaaende Arter og omtrent af ens Udseende paa begge Fingre.

Folerne (Fig. 1 f) udmærker sig ligeledes ved sin spinkle Form og er neppe kortere end Saxlemmerne. Af Leddene er 2det og 3die omtrent af ens Længde, hvorimod de 2 ydre Led er meget ulige i Størrelse, idet, uligt hvad Tilfældet er hos de fleste øvrige Arter, næstsidste Led her er betydelig, næsten dobbelt saa langt som sidste. Begge disse Led tilsammen er noget længere end 3die Led.

De falske Fodder hos Hannen (se Fig. 1 a) er noget mindre stærkt forlængede end hos foregaaende Art, neppe synderlig længere end Legemet, og har 5te Led størst. Dette Led er desuden udmærket ved Tilstedeværelsen langs Inderkanten af en Række eiendommelige knudeformige Udvæxter, hver forsynet med en kort, omboiet Borste. Endedelen (Fig. 1 g) er noget kortere end 5te Led og har 1ste Led temmelig bredt ved Basis og noget sammentrykt fra Siderne samt tæt besat med korte stive Haar, der ligeledes er fæstede til smaa knudeformige Fremspring. Randtornerne paa de ydre Led (Fig. 1 h) forholder sig noget ulige, idet de ved Enden af Leddene er grovt saugtaktede i hele sin Længde, medens de paa Midten af Leddene er mere lancetdannede og har 2 Par smaa Tænder ved Basis, de øvrige Sangtakker meget brede, pladeformige.

the lateral processes rather elongated and also separated by broad intervals. The cephalic segment is considerably shorter than in *N. longitarse*, scarcely longer than the 2 succeeding segments taken together. The neck is indeed distinctly defined and greatly constricted, though not nearly the prodigious length met with in that species, whereas the frontal part is appreciably larger, about 3 times the breadth of the neck.

The oculiferous tubercle in this animal lies hardly more than twice as far from the frontal margin as from the posterior edge of the cephalic segment. It is somewhat elevated and, when the animal is viewed laterally (fig. 1 b), seems rounded at the point. Seen either anteriorly or posteriorly (fig. 1 c), it appears tapering somewhat, towards the end, which is transversely truncated with the lateral corners produced as small dentiform projections. The lenses are somewhat elliptic in form, and are located about midway up the tubercle.

The proboscis (see fig. 1 a, 1 b) is exceedingly elongated, scarcely shorter than the cephalic segment, directed horizontally forward, and of the usual cylindric form.

The chelifori (ibid.) are uncommonly slim and feeble in structure. The scape is slender cylindrical and about same length as the proboscis, the hand a good deal shorter, densely covered with hair and very narrow, with relatively short palm and greatly elongated fingers. The latter (fig. 1 c), which are appreciably longer than the palm, are particularly slender, and rather sharply bent in the outer part, terminating in very fine incurvate points. The teeth on the inner edge are longer and less closely arranged than in any of the preceding species, and are well-nigh similar in appearance in both fingers.

The palpi (fig. 1 f), likewise distinguished by their slender form, are but very little, if at all, shorter than the chelifori. Of the joints, the 2nd and 3rd are about equal in length, whereas the 2 outer ones are very unequal in size, in so far, that the penultimate joint, unlike what is the case in most of the other species, is, in this animal, considerably, indeed almost twice as long as the terminal one. Both these joints taken together are somewhat longer than the 3rd.

The false legs in the male (see fig. 1 a) are not quite so prominently elongated as in the preceding species, very little, if at all, longer than the body, and have the 5th joint largest. This joint is, moreover, characterised by the presence along the inner edge of a series of peculiar tuberculiform excrescences, each of which is furnished with a short recurvate bristle. The terminal part (fig. 1 g) is somewhat shorter than the 5th joint, with the 1st joint rather broad at the base and somewhat compressed from the sides, and closely beset with short, stiff hairs, which are also secured to small tuberculiform projections. The marginal spines on the outer joints (fig. 1 h) vary somewhat in character, as those at the end of the joints are coarsely serrate throughout the whole of their length, whereas those at the middle of the joints are more lanceolate in form and have 2 pairs of small teeth at the base; the rest of the denticles are very broad and lamellar.

Gangfodderne (se Fig. 1) er temmelig spinkle, næsten 5 Gange længere end Legemet og besatte med korte, spredte Haar. 2det Hoftelid er stærkt forlænget, betydelig længere end de 2 øvrige tilsammen, Laarledet temmelig stærkt opsvulmet hos Hunnen, medens det hos Hannen er meget smalt og af lineær Form. 1ste Lægled er lidt og 2det do. $\frac{1}{3}$ længere end Laarledet og særdeles spinkelt. Endepartiet (Fig. 1 i) er ligeledes meget smalt, ikke fuldt halvt saa langt som 2det Lægled, og ligner noget samme hos *N. longitarse*. Tarsalledet er ogsaa her temmelig forlænget, dog forholdsvis kortere end hos hin Art. Fodledet er ligeledes meget smalt, lineært og noget, skjøndt ikke meget, kortere end Tarsalledet; det er besat langs Inderkanten med talrige meget smaa, næsten haarformige Torner, hvoraf enkelte, fæstede i regelmæssig Afstand fra hinanden, er ubetydelig stærkere. Endekloen er noget mere forlænget end hos *N. longitarse* og gaar ud i en fin, noget buet Spids. Bikkloerne er, som hos denne Art, meget smaa, neppe mere end $\frac{1}{5}$ saa lange som Endekloen.

De ydre Ægmasser er forholdsvis meget smaa og sædvanlig fæstede omkring 5te Led af de falske Fødder. Æggene er derimod kjendelig større end hos foregaaende Art.

Forekomst og Udbredning. Jeg har truffet denne meget distincte Art temmelig hyppig langs vor hele Vestkyst, idetmindste til Lofoten, paa 50—100 F. D. Et enkelt Exemplar toges under Nordhavs-Expeditionens sidste Togt omtrent midtvejs mellem Finmarken og Beeren Eiland (Stat. 290) paa 191 F. D. Paa andre Punkter er ikke denne Art bleven observeret, og det stiller sig saaledes noget tvivlsomt, hvorvidt den kan ansees som en ægte arktisk Form.

The ambulatory legs (see fig. 1) are rather slender, almost 5 times as long as the body, and beset with short, scattered hairs. The 2nd coxal joint is greatly elongated, considerably longer than both the others taken together; the femoral joint a good deal swollen in the female, whereas in the male it is very slim, and linear in form. The 1st tibial joint is a little, and the 2nd joint a third, longer than the femoral joint and are exceedingly slender. The terminal part (fig. 1 i) is likewise very slim, not quite half as long as the 2nd tibial joint, and has some resemblance to that of *N. longitarse*. The tarsal joint is also here rather elongated, though relatively shorter than in the species named. The propodal joint is likewise very slender, linear, and a little, though not much, shorter than the tarsal one; it is beset along the inner edge with numerous very small, well-nigh capilliform spines, a few of which, attached at regular intervals from each other, are inconsiderably stouter. The terminal claw is a little more elongated than in *N. longitarse*, and runs out in a fine, somewhat arcuated point. The auxiliary claws are, as in that species, very small, hardly more than one-fifth as long as the terminal claw.

The outer egg-masses are relatively very small and, as a rule, are adherent round the 5th joint of the false legs. The eggs themselves are, on the other hand, appreciably larger than in the preceding species.

Occurrence and Distribution. I have met with this very remarkable species pretty frequently along the whole of the West coast of Norway, at least as far north as Lofoten, at a depth of 50—100 fathoms. A single specimen was taken on the last cruise of the North-Atlantic Expedition about midway between Finmark and Beeren Eiland (Stat. 290) at a depth of 191 fathoms. In other localities this species has not been observed, and it is therefore somewhat doubtful whether the animal can be regarded as a true Arctic form.

24. *Nymphon Strömii*, Krøyer.

(Pl. VIII. Fig. 2, a—k).

Phalangium marimum, Ström, Physisk og oekonomisk Beskrivelse af Fögderiet Söndmör, Tab. I, fig. 16.

Nymphon grossipes, Abildgaard, Animalium Daniæ & Norvegiæ Historia, Tab. CXIX, fig. 5—9 (non Fabr.)

Nymphon Strömii, Krøyer, Nat. Tidsskr. N. R. Bd. 1, p. 111.

— — — Idem, Gaimard's Voyage en Scandinavie, Pl. 35, Fig. 3, a—f.

Nymphon giganteum, Goodsir, Ann. Mag. Nat. Hist. Vol. XVI, p. 293.

Nymphon Strömii, Wilson, Trans. Conn. Acad. Sciences, Vol. V, p. 17, Pl. VI, fig. 1, a—h.

— — — Idem, U. S. Comm. of Fish and Fisheries, Report f. 1878, p. 485, Pl. V, VI, fig. 29.

24. *Nymphon Strömii*, Krøyer.

(Pl. VIII, fig. 2, a—k).

Phalangium marimum, Ström, Physisk og oekonomisk Beskrivelse af Fögderiet Söndmör, Tab. I, fig. 16.

Nymphon grossipes, Abildgaard, Animalium Daniæ & Norvegiæ Historia, Tab. CXIX, fig. 5—9 (non Fabr.)

Nymphon Strömii, Krøyer, Nat. Tidsskr. N. R. Bd. 1, p. 111.

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Nymphon Strömii, Wilson, Trans. Conn. Acad. Sciences, Vol. V, p. 17, Pl. VI, fig. 1, a—h.

— — — Idem, U. S. Comm. of Fish and Fisheries, Report f. 1878, p. 485, Pl. V, VI, fig. 29.

Nymphon Strömii. G. O. Sars, Pycnogonidea borealia & arctica. No. 24.

Artscharacter. Legemet noget undersætsigt, med temmelig tykke og ikke meget vidt skilte Sidefortsætter. Hovedsegmentet meget stort, saa langt som de 3 følgende Segmenter tilsammen. Halsen kort, Pandedelen stærkt udvidet. Øieknuden meget lav og afrundet i Enden. Snabelen af Hovedsegmentets Længde. Saxlemmerne særdeles kraftigt udviklede. Skaftet noget fortykket i Enden. Haanden meget stor, længere end Skaftet, næsten nogen, buet; Fingrene forlængede, omtrent af Palmens Længde, begge med Enden skarpt tilspidset og indboiet. Tænderne i Inderkanten af den ubevægelige Finger betydelig større og færre i Antal end paa den bevægelige Finger. Folerne slanke, dobbelt saa lange som Snabelen. 2det Led lidt længere end 3die, de 2 ydre Led meget smale og forlængede, sidste Led kortest. De falske Fodder kun lidt længere end Legemet, 4de og 5te Led af ens Længde. Endedelen længere end 5te Led. Randtørnerne tykke, triangulært tilspidsede, med mere eller mindre tydeligt saugtakke Kanter. Gangfodderne omtrent 5 Gange længere end Legemet og næsten nogne; 2det Lægled næsten dobbelt saa langt som Laarledet og 4 Gange længere end det terminale Afsnit; Tarsalleddet lineært. Fodleddet betydelig kortere, med meget smaa Tørner i Inderkanten; Endekloen kort og tyk, neppe halvt saa lang som Fodleddet; Bikloerne ikke fuldt $\frac{1}{3}$ saa lange som Endekloen. Farven rødgul. Legemets Længde 15^{mm}; Spandvidde 150^{mm}.

Bemærkninger. Jeg anser det for meget rimeligt, at Ström's *Phalangium marinum* er denne Art. Ligeledes synes det mig at være utvivlsomt, at den af O. Fr. Müller under Benævnelsen *Nymphon grossipes* opførte og af Abildgaard p. o. a. St. afbildede Form horer herhen. Mere tvivlsomt kunde det synes at være, hvorvidt Goodsir's *N. giganteum* er identisk med nærværende Art, da denne Forfatter kun med et Par Ord omtaler samme. Men allerede Artsbetegnelsen synes mig dog med Bestemthed at pege hen paa nærværende Form, der horer til vore største Pycnogonideer. Angaaende den af Wilson beskrevne Form, har jeg været i nogen Tvivl, om den ikke maaske snarere var at henføre til følgende Art. Dog synes mig, at Beskaffenheden af de ydre Fodled, saaledes som de er afbildede af denne Forsker, mere stemmer med samme hos *N. Strömii*. Jeg anser det forøvrigt for sandsynligt, at Wilson har havt for sig begge Arter, uden at have erkjendt deres Artsforskjel. Ogsaa de fleste nyere Autores har sammenblandet Kroyers Art med den følgende, meget nærstaaende *N. gracilipes* Heller. Fra de foregaaende Arter er nærværende Form meget let kjendelig ved de ualmindelig store Saxlemmer, de stærkt forlængede Folere, og ved den betydelige Storrelse.

Beskrivelse. Legemets Længde gaar op til 15^{mm}, med en Spandvidde af 150^{mm}, og denne Art horer saaledes til de største Arter af Slægten.

Legemets Form (se Pl. VIII, Fig. 2) maa vel idethele kaldes spinkel, navnlig naar Hensyn tages til de stærkt

Nymphon Strömii. G. O. Sars, Pycnogonidea borealia & arctica. No. 24

Specific Characters. Body somewhat thickset, with rather thick and not very widely separated lateral processes. Cephalic segment very large, as long as the 3 succeeding segments taken together, neck short, frontal part greatly expanded. Oculiferous tubercle very low and rounded at the end. Proboscis same length as the cephalic segment. Chelitori particularly powerfully developed, scape tumefacted somewhat at the extremity, hand very large, longer than the scape, almost bare, arcuate; fingers elongated, about the length of the palm, both with the extremity sharply pointed and incurvate, teeth on the inner margin of the immobile finger considerably larger and less numerous than on the mobile finger. Palpi slender, twice as long as the proboscis, 2nd joint a little longer than the 3rd, the 2 outer joints very slim and elongated, last joint shortest. False legs but little longer than the body, 4th and 5th joints equal in length, terminal part longer than the 5th joint, marginal spines stout, triangularly acuminate, with more or less distinct serrated edges. Ambulatory legs about 5 times longer than the body and well-nigh bare; 2nd tibial joint almost twice as long as the femoral joint and 4 times longer than the terminal section; tarsal joint linear, propodal joint considerably shorter, with minute spines on the inner edge; terminal claw short and thick, hardly half as long as the propodal joint; auxiliary claws not quite one-third the length of the terminal claw. Colour reddish-yellow. Length of body 15^{mm}, extent 150^{mm}.

Remarks. I regard it to be very probable, that Ström's *Phalangium marinum* is this species. In my judgment, too, the form recorded by O. Fr. Müller under the designation *Nymphon grossipes*, and illustrated by Abildgaard, belongs undoubtedly to it. There is, it would seem, greater reason to question the identity of Goodsir's *N. giganteum* with the present species, as that author notices the animal with a few words only. Meanwhile, the specific designation itself clearly points, I think, to the present form, which is one of the largest of our Pycnogonids. As regards the form described by Wilson, I have felt some doubt whether it should not rather be referred to the following species. The character of the outer leg-joints, however, as these are illustrated by that naturalist, exhibit, I think, closer agreement with that of *N. Strömii*. I think, however, that Wilson probably had both species before him, but failed to recognise their specific distinction. Most later authors, too, have confounded Kröyer's species with the following very nearly related form, *N. gracilipes*, Heller. The present form is easy to distinguish from the preceding species, by the remarkably large cheliferi, the greatly elongated palpi, and by its great size.

Description. The length of the body reaches as much as 15^{mm}, the extent 150^{mm}; and this species is therefore one of the largest of the genus.

The body (see Pl. VIII, fig. 2) must, on the whole, be described as slender, more especially as regards

forlængede Lemmer. Derimod er Kroppen selv (Fig. 2 a, 2 b) temmelig undersætsig, og Sidefortsatserne forholdsvis tykke samt mindre vidt adskilte end hos mange af de øvrige Arter. Hovedsegmentet er forholdsvis af betydelig Størrelse, omtrent saa langt som de 3 følgende Segmenter tilsammen, men har en temmelig kort Hals, hvorimod Pandedelen er større og bredere end sædvanligt.

Oieknuden (Fig. 2 c), der er beliggende omtrent dobbelt saa langt fra Panderanden som fra Hovedsegmentets bagre Rand, er meget lav og stumpt afrundet i Enden. Lindserne er forholdsvis store og af noget elliptisk Form.

Snabelen (se Fig. 2 a, 2 b) er vel udviklet, omtrent af Hovedsegmentets Længde og af den sædvanlige cylindriske Form.

Saxlemmerne (ibid.) er betydelig større end hos nogen af de i det foregaaende omtalte Arter og lige udstrakte næsten af Kroppens Længde (: Snabelen). Skaffet er temmelig tykt, cylindrisk, dog noget udvidet i Enden og ganske nogent. Haanden (Fig. 2 d) er af meget anselig Størrelse, fuldkommen saa lang som Skaffet, og temmelig smal i Forhold til Længden. Den er stærkt buet og næsten nogen, kun ved Basis af Fingrene besat med nogle yderst smaa Haar. Fingrene er stærkt forlængede, omtrent af Palmens Længde og ender begge i skarpe indboiede Spidser. Tænderne langs Inderkanten af den ubevægelige Finger er af betydelig Størrelse, flere Gange saa stærke som de paa den bevægelige Finger og ogsaa færre i Antal (se Fig. 2 e).

Føleerne (Fig. 2 f) er stærkt forlængede og spinkle, sædvanligvis zigzag-formigt boiede, og kun besat med meget korte Børster. Af Leddene er det 3die noget kortere end 2det, og de 2 ydre Led ualmindelig spinkle, tilsammen betydelig længere end 3die Led. Det overordentlig smale, lineære sidste Led har jeg paa alle de af mig undersøgte Exemplarer fundet lidt kortere end næstsidste.

De falske Fodder (se Fig. 2 b) er, lige udstrakte, noget længere end Legemet, forholdsvis kraftigere hos Hannen end hos Hunnen, forøvrigt ikke meget forskellige. 4de og 5te Led er omtrent af ens Længde, og Endedelen adskilligt længere end ethvert af disse Led. Randtornerne paa de ydre Led er meget stærke, triangulært tilspidsede og grovt saugtakke i Kanterne, uden nogen stærkere Tand ved Basis (se Fig. 2 g). Paa de i Midten af Leddene fæstede Torner pleier imidlertid Saugtakkerne at være betydelig mindre udprægede, næsten forsvindende (Fig. 2 h).

Gangfodderne (se Fig. 2) er af meget betydelig Længde, mere end 5 Gange længere end Legemet, og næsten ganske nogne. De afsmalnes lidt mod Enden, skjøndt ikke saa stærkt som hos flere af de i det foregaaende omtalte Arter, hvorfor de idethele synes noget mere robuste. 2det Hoftled er noget kortere end de 2 øvrige tilsammen, og Laarledet omtrent $\frac{1}{3}$ længere end Hoftepartiet. 1ste Lægled er kjendelig længere end Laarledet og 2det do. ualmindelig

the exceedingly elongated limbs. On the other hand, the trunk itself (fig. 2 a, 2 b) is rather thickset, and the lateral processes are relatively thick and less widely separated than in many of the other species. The cephalic segment is, relatively, of considerable size, about as long as the 3 following segments taken together, but with a rather short neck, whereas the frontal part is larger and broader than usual.

The oculiferous tubercle (fig. 2 c), placed about twice as far from the frontal margin as from the posterior edge of the cephalic segment, is very low and obtusely rounded at the end. The lenses are comparatively large and somewhat elliptical in form.

The proboscis (see fig. 2 a, 2 b) is well developed, about as long as the cephalic segment, and of the usual cylindrical form.

The chelifori (ibid) are considerably larger than in any of the previously mentioned species, when fully extended almost the length of the trunk (less the proboscis). The scape is rather thick, cylindrical, but somewhat expanded at the extremity and quite bare. The hand (fig. 2 d) is of very considerable size, quite as long as the scape, and rather narrow in proportion to the length. It is exceedingly arcuate and well-nigh bare, only at the base of the fingers is it beset with a few extremely delicate hairs. The fingers are very much elongated, about same length as the palm, and both terminate in acute incurvate points. The teeth along the inner edge of the immobile finger are of considerable size, several times as strong as those on the mobile finger, and are less numerous (see fig. 2 e).

The palpi (fig. 2 f) are greatly elongated and slender, bent usually in zigzag form, and only beset with very short bristles. Of the joints, the 3rd is somewhat shorter than the 2nd, and the 2 outer joints are remarkably slender, together considerably longer than the 3rd joint. The last uncommonly slim, linear joint, I have found, in all the specimens examined, to be a little shorter than the penultimate one.

The false legs (see fig. 2 b) when fully extended, are somewhat longer than the body, in the male relatively more powerful than in the female, not very different otherwise. The 4th and 5th joints are about equal in length, and the terminal part is a good deal longer than either of these joints. The marginal spines on the outer joints are very strong, triangularly pointed, and coarsely serrate on the edges, without any strong tooth at the base (see fig. 2 g). On the spines attached in the middle of the joints, the denticles are, however, in general, much less distinct, indeed almost imperceptible (fig. 2 h).

The ambulatory legs (see fig. 2) are of very considerable length, more than 5 times longer than the body, and are almost quite bare. They taper a little towards the extremity, though not so much as in several of the previously mentioned species; wherefore they would seem to be somewhat more robust. The 2nd coxal joint is a little shorter than the 2 others taken together, and the femoral joint is about one-third longer than the coxal part. The 1st tibial

stærkt forlænget, næsten dobbelt saa langt som Laarledet og omtrent $\frac{1}{4}$ længere end det terminale Afsnit. Tarsalledet (se Fig. 2 i) er af lineær Form og betydelig længere end Fodledet, der er kjendelig smalere og i Inderkanten besat med en Rad af meget smaa Torner, mellem hvilke der findes fine Haar (se Fig. 2 k). Endekloen er ualmindelig kort, neppe halvt saa lang som Fodledet, men meget stærk, sammentrykt og endende i en skarp Spids. Bikloerne er af middelmaadig Størrelse, næsten $\frac{1}{3}$ saa lange som Endekloen.

De ydre Ægmasser (se Fig. 2) er temmelig store, kugleformige, og indeholder talrige yderst smaa Æg. Ofte er de tilstede i dobbelt Antal paa enhver af de falske Fodder.

Farven er i levende Tilstand mere eller mindre intenst gulrød, navnlig mod Enden af Leddene paa Fodderne.

Forekomst. Dette er uden Sammenligning den ved vor Syd- og Vestkyst almindeligste Pycnogonide og forekommer ofte i store Mængder paa maadeligt Dyb, fra 10 til 50 Favne. Det nordligste, jeg har truffet den er ved Lofoten. Ved Finmarken synes den derimod at erstattes af følgende Art.

Udbredning. Foruden ved Norge er Arten kun med Sikkerhed observeret ved England (Goodsir) og Ostkysten af Nordamerika (Wilson); thi Angivelserne af dens Forekomst i de arktiske Have beror ganske sikkert paa en Forveksling med følgende Art. At domme efter dens Forekomst ved vore Kyster, synes den at være en mere sydlig (boreal) Form.

25. *Nymphon gracilipes*, Heller.

(Pl. VIII, Fig. 3, a—g).

Nymphon gracilipes, Heller, Crust. Pycnog. & Tunic. d. Österr. Ung. Nordpol Exped. p. 40, Tab. IV, Fig. 15, Tab. V, Fig. 1—2.

Nymphon Strömii, Hoek. Niederl. Archiv f. Zool. Supplem. 1, p. 9, Pl. 1, fig. 9—16 (non Krøyer).

— — Hansen, Kara Havets Pycnogonider, p. 9, Tab. XVIII, Fig. 3 (non Krøyer).

Nymphon gracilipes, G. O. Sars, Pycnogonidea borealia & arctica, No. 25.

Artscharacter. Ydre Habitus meget lig samme hos foregående Art. Hovedsegmentet betydelig længere end de 3 følgende Segmenter tilsammen, Pandedelen endnu bredere end hos *N. Strömii*. Oieknuden lav, stumpt afkuttet i Enden. Snabelen af Hovedsegmentets Længde, noget afsmalnende. Saxlemmerne forholdsvis større og kraftigere end hos foregående Art, Haanden betydelig længere end Skaftet, stærkt buet, Fingrene længere end Palmen. Spidsen af den bevægelige næsten ret, af den

joint is appreciably longer than the femoral one and the 2nd joint is remarkably elongated, well-nigh twice as long as the femoral joint and about one-fourth longer than the terminal section. The tarsal joint (see fig. 2 i) is linear in form and considerably longer than the propodal joint, which is appreciably slenderer and beset on the inner edge with a series of very small spines with fine hairs between them (see fig. 2 k). The terminal claw is uncommonly short, hardly half as long as the propodal joint, but very strong, compressed, and terminating in a sharp point. The auxiliary claws are of moderate size, almost one-third longer than the terminal claw.

The outer egg-masses (see fig. 2) are rather large, globular in shape, and contain numerous, exceedingly small ova. They often occur in double numbers on each of the false legs.

The colour in the living state, is a more or less intense yellowish-red, particularly towards the end of the joints of the legs.

Occurrence. This is beyond comparison the Pycnogonid most commonly met with on the south and west coasts of Norway, and often occurs in great abundance at moderate depths, from 10 to 50 fathoms. The farthest north that I have taken it is off Lofoten. On the Finmark coast it appears, on the other hand, to be replaced by the following species.

Distribution. Besides off Norway, England (Goodsir) and the east coast of North America (Wilson) are the only places where the species has with certainty been observed; as the statements of its occurrence in the Arctic seas rest quite assuredly on a confusion of the animal with the following species. To judge from its occurrence off the coasts of this country, it would seem to be a more southern (boreal) form.

25. *Nymphon gracilipes*, Heller.

(Pl. VIII, fig. 3, a—g).

Nymphon gracilipes, Heller, Crust. Pycnog. & Tunic. d. Österr. Ung. Nordpol Exped. p. 40, Tab. IV, fig. 15, Tab. V, fig. 1, 2.

Nymphon Strömii, Hoek. Niederl. Archiv f. Zool. Supplem. 1, p. 9; Pl. 1, fig. 9—16 (non Krøyer).

— — Hansen, Kara Havets Pycnogonider, p. 9, Tab. XVIII, fig. 3 (non Krøyer).

Nymphon gracilipes, G. O. Sars, Pycnogonidea borealia & arctica, No. 25.

Specific Characters. Outer habitus much the same as in the preceding species. Cephalic segment considerably longer than the 3 following segments taken together, frontal part still broader than in *N. Strömii*. Oculiferous tubercle low, obtusely truncated at the extremity. Proboscis same length as the cephalic segment, somewhat tapering. Chelifori relatively larger and more powerful than in the preceding species, hand considerably longer than the scape, exceedingly arcuate, fingers longer than the palm, the point of the mobile one

ubevægelige stærkt indboiet. Følerne med 2det og 3die Led af ens Længde, sidste Led længere end næstsidsite. De falske Fødder hos Hannen næsten $\frac{1}{3}$ længere end Legemet, Endedelen noget længere end 5te Led, Randtørnerne forholdsvis noget smærkere end hos foregaaende Art. Gangfodderne næsten 5 Gange længere end Legemet, stærkt afsmaende; 2det Lægled særdeles smalt og forlænget, dog neppe dobbelt saa langt som Laarledet; Tarsalledet og Fodledet omtrent af ens Længde, begge meget spinkle og lineære; Endekloen stærkt forlænget, næsten af Fodledets Længde; Bikhøerne yderst smaa. Legemets Længde 18^{mm}; Spandvidde 190^{mm}.

Bemærkninger. Nærværende Form staar vistnok overordentlig nær foregaaende, men forekommer mig dog at maatte specifikt adskilles, da jeg ved Undersøgelse af talrige Exemplarer af begge har kunnet paavise flere distinctive Charakterer, der synes mig at være konstante. Vistnok tror saavel Hoek som Hansen at have seet Overgangstørmer; men begge disse Forskere har væsentlig kun henholdt sig til en enkelt Karakter, nemlig Kloens Længde paa Gangfodderne. At denne til en vis Grad vil kunne variere, anser jeg ikke for umuligt, skjøndt jeg hos ingen af de under Nordhavs-Expeditionen indsamlede talrige Exemplarer har fundet nogen mærkbar Forskjel i denne Henseende. Hoek har, som Støtte for sin Antagelse af begge Formers Identitet, afbildet de ydre Fødder af 1ste Par Gangfodder hos et og samme Individ, hvorfra den ene Fod viser det sædvanlige Forhold af Kloen, medens den anden har mere Karakteren af *N. Strömii*. Jeg kan imidlertid ikke indrømme, at dette er et fulgyldigt Bevis for begge Formers Artsidentitet, da det ikke saa ganske sjelden hænder, at de ydre Led kan være deformerede paa en eller anden af Fodderne, som Folge af en tilfældig Læsion og ufuldkommen Regeneration. Foruden ved de ydre Fødders indbyrdes Længdeforhold og Endekloens betydelige Længde, skiller nærværende Art sig, som af ovenstaaende Diagnose vil sees, ved de endnu kraftigere udviklede Saxlemmer, paa hvilke Fingrene er kjendelig længere i Forhold til Palmen, fremdeles ved det indbyrdes Længdeforhold af Følernes Led, endelig ved Legemets betydeligere Størrelse og noget mere robuste Form.

Da Miers omtrent samtidigt med Heller har beskrevet en Nymphon-Art fra det antarktiske Hav under samme Navn, har Böhm¹ foreslaaet at forandre Artsnavnet *gracilipes* til *Helleri*. Miers har imidlertid i en senere Afhandling selv omdøbt sin Art til *N. antarcticum*, hvorfra den af Böhm foreslaaede Navneforandring bliver unødvendig.

Beskrivelse. Legemets Længde hos de største under Nordhavs-Expeditionen indsamlede Exemplarer er ikke mindre end 18^{mm}, med en Spandvidde af 190^{mm}, og denne Art er saaledes ikke blot den største af Slægten, men tillige en af de største bekjendte Pycnogonideer.

almost straight, and of the immobile one greatly incurvated. Palpi with 2nd and 3rd joints equal in length, ultimate joint longer than the penultimate one. False legs in the male almost one-third longer than the body, terminal part somewhat longer than 5th joint, marginal spines relatively more slender than in the preceding species. Ambulatory legs almost 5 times longer than the body, rapidly tapering; 2nd tibial joint exceedingly slim and elongate, yet hardly twice as long as the femoral joint; tarsal joint and propodal joint about equal in length, both very slender and linear; terminal claw greatly elongated, length almost that of the propodal joint; auxiliary claws exceedingly small. Length of body 18^{mm}, extent 190^{mm}.

Remarks. The present form no doubt approximates to the preceding one very closely, but yet, should, it seems to me, be specifically distinguished, as, on examining numerous specimens of both, I have succeeded in detecting several distinctive characters, which appear, to me, to be constant ones. Both Hoek and Hansen believe, it is true, that they have observed transition forms; but both those naturalists have dwelt chiefly on a single character, viz., the length of the claw on the ambulatory legs. That the character in question may vary to a certain extent, I do not regard as impossible, though I have not found any appreciable variation in that respect in any of the numerous specimens collected on the North Atlantic Expedition. To support his assumption of the identity of both forms, Hoek has drawn the outer leg-joints of the 1st pair of ambulatory legs in one and the same individual, with the one leg exhibiting the usual relations in the claw, whereas the other shows more the character of the relations in *N. Strömii*. I can not, however, admit that to be a perfectly satisfactory proof of the specific identity of both forms, as the outer joints are not so very infrequently deformed on one or other of the legs, in consequence of an accidental lesion and imperfect regeneration. Besides the longitudinal relations of the outer leg-joints *inter se* and the considerable length of the terminal claw, the present species is, as seen from the above diagnosis, distinguished by the still more powerfully developed cheliferi in which the fingers are appreciably longer in proportion to the palm, further, by the longitudinal proportion of the joints of the palpi *inter se*, and, finally, by the considerably larger size and somewhat more robust form of the body.

Dr. Miers having described about contemporaneously with Heller a Nymphon species from the Antarctic Ocean under the same designation, Böhm¹ has proposed to change the specific name of *gracilipes* to *Helleri*. Miers has, however, himself, in a subsequent memoir, renamed his species *N. antarcticum*; the change of name proposed by Böhm is therefore now unnecessary.

Description. The length of the body in the largest specimens collected on the North Atlantic Expedition, is not less than 18^{mm}, with an extent of 190^{mm}; this species is, thus, not only the largest of the genus but also one of the largest Pycnogonidea known.

¹ Pycnogoniden des Museums zu Berlin.

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Legemets Form er (se Pl. VIII, Fig. 3) idethele meget lig samme hos foregaaende Art. Dog synes selve Kroppen (Fig. 3 a) noget mere robust, med Sidefortsatserne tykkere og tættere sammentrængte. Hovedsegmentet er af meget betydelig Størrelse, kjendelig længere end de 3 følgende Segmenter tilsammen, og har Pandedelen forholdsvis endnu større og bredere end hos *N. Strömii*, hvorimod Halsen forholder sig ens hos begge.

Øieknuden (Fig. 3 b) er, som hos foregaaende Art, lav og afrundet, eller noget stumpt afkuttet i Spidsen. Lindserne synes noget mindre end hos denne Art.

Snabelen (se Fig. 3 a) er forholdsvis stor, fuldkommen saa lang som Hovedsegmentet, og afsmalnes successivt mod Enden, der er næsten tvært afkuttet.

Saxlemmerne (ibid.) er endnu betydelig større og kraftigere end hos foregaaende Art og, lige udstrakte, selv længere end Kroppen ($\div$ Snabelen), med meget tykt og noget krummet Skaft. Haanden (Fig. 3 c) er kjendelig længere end Skaftet og af en lignende stærkt forlænget og buet Form som hos *N. Strömii*. Fingrene er imidlertid her kjendelig længere end Palmen, og skjøndt deres Bevægning idethele stemmer med denne Art, vil man dog ved noiere Undersøgelse finde, at Forholdet mellem Tænderne paa begge er mindre ulige (se Fig. 3 d). Den bevægelige Finger er stærkt buet i sit basale Parti, hvorimod Spidsen næsten er fuldkommen lige. Omvendt er Spidsen af den ubevægelige Finger meget stærkt indboiet (se Fig. 3 d).

Følerne (Fig. 3 e) er af en lignende slank og forlænget Form som hos *N. Strömii*, men skiller sig ved nærmere Undersøgelse ved et noget forskjelligt Længdeforhold af de enkelte Led. Saaledes er 2det og 3die Led her omtrent af ens Længde, og sidste Led er kjendelig længere end næstsidste samt noget fortykket i sit ydre Parti.

De falske Fødder hos Hannen (se Fig. 3 a) er kraftigt udviklede og næsten $\frac{1}{3}$ længere end Legemet. 4de Led er lidt kortere end 5te, og Endedelen er ikke meget længere end dette sidste Led. Randtornerne (Fig. 3 f) er forholdsvis smalere og kort saugtakkede; dog er ogsaa her de i Midten af Leddene fæstede Torner noget forskellige, idet de baade er kortere og mindre tydeligt saugtakkede.

Gangfødderne (se Fig. 3) er næsten 5 Gange længere end Legemet og afsmalnes kjendelig mod Enden, hvorfor de synes noget spinklere end hos foregaaende Art. 2det Læglæd er særdeles smalt og som sædvanlig det længste, dog paa langt nær ikke dobbelt saa langt som Laarledet og kun lidt mere end 3 Gange længere end det terminale Afsnit. Tarsal- og Fodledet (Fig. 3 g) er omtrent af ens Længde, eller Fodledet ubetydeligt kortere, og begge meget smale, af lineær Form. Endekloen udmerker sig i hoi Grad ved sin betydelige Længde, idet den, ganske i Modsætning til hvad Tilfældet er hos *N. Strömii*, næsten er saa lang som Fodledet, og meget smal, gaaende ud i

The appearance of the body (see Pl. VIII, fig. 3) resembles, on the whole, very closely that of the preceding species. The trunk itself, however, (fig. 3 a) would seem to be somewhat more robust, with the lateral processes thicker and crowded more together. The cephalic segment is of very considerable size, appreciably longer than the 3 succeeding segments taken together, and has the frontal part even relatively larger and broader than in *N. Strömii*, whereas the neck is alike in both.

The oculiferous tubercle (fig. 3 b) is, as in the preceding species, low and rounded, or somewhat obtusely truncated at the point. The lenses seem to be slightly smaller than in that species.

The proboscis (see fig. 3 a) is comparatively large, fully as long as the cephalic segment, and tapers gradually towards the end, which is almost transversely truncated.

The chelifori (ibid.) are even considerably larger and more powerful than in the preceding species, and, when fully extended even longer than the trunk (less the proboscis), with very thick and somewhat arcuate scape. The hand (fig. 3 c) is appreciably longer than the scape, and of similar, very elongated and curvate form as that of *N. Strömii*. The fingers, however, are in the present species appreciably longer than the palm, and though, on the whole, their armature agrees with that of *N. Strömii*, a closer examination will show, that the relation between the teeth in the two forms is less unlike (see fig. 3 d). The mobile finger is greatly curved in its basal part, whereas the point is almost perfectly straight. The point of the immobile finger is, on the contrary, very strongly incurvate (see fig. 3 d).

The palpi (fig. 3 e) are slender and elongated in form, as in *N. Strömii*, but, on closer examination, distinguish themselves by somewhat different longitudinal proportions in the individual joints. Thus, the 2nd and 3rd joints are about equal in length, and the last joint is appreciably longer than the penultimate one and also somewhat incrassated in its outer part.

The false legs in the male (see fig. 3 a) are powerfully developed, and almost one-third longer than the body. The 4th joint is a little shorter than the 5th, and the terminal part is not much longer than that last-named joint. The marginal spines (fig. 3 f) are, relatively, more slender and shortly serrated; but, also, here the spines secured in the middle of the joints vary somewhat, being both shorter and less distinctly serrated.

The ambulatory legs (see fig. 3) are almost 5 times longer than the body, and taper appreciably towards the extremity, they therefore seem somewhat more slender than in the preceding species. The 2nd tibial joint is exceedingly narrow, and is, as usual, the longest, though greatly less than twice the length of the femoral joint, and but little more than 3 times longer than the terminal section. The tarsal and propodal joints (fig. 3 g) are about equal in length, or the propodal joint inconsiderably shorter, and both are very narrow and linear in form. The terminal claw distinguishes itself greatly by its considerable length, as it, quite in contrast to what is the case in *N. Strömii*, is

en sylformig Spids. Derimod er Bikloerne forholdsvis meget mindre end hos hin Art, neppe $\frac{1}{10}$ saa lang som Ende-kloen.

De ydre Ægmasser (se Fig. 3 a) forholder sig omtrent som hos foregaaende Art. Æggene er yderst smaa og talrige.

Forekomst. Ved vore Kyster synes denne Art kun at være indskrænket til den arktiske Region; jeg har saaledes taget den ikke sjelden i Varangerfjord ved Vadsø paa 60—100 F. D. Under Nordhavs-Expeditionen erholdtes talrige Exemplarer paa forskellige Punkter, saaledes ved Jan Mayen, i Adventbay paa Spitsbergen og i Havet udenfor Spitsbergens Nordvestkyst (Stat. 362, 363); Dybden fra 70 til 459 Favne. Desuden har jeg havt til Undersøgelse flere vel udprægede Exemplarer fra det kariske Hav, indsamlede under Nordenskjolds Expedition 1875; Dybden 10—80 Favne.

Udbredning. Arten synes at have en vid Udbredning i de arktiske Have. Den er saaledes observeret ved Frants Josephs Land (Heller), i Barents Søen (Hoek), det kariske Hav (Hansen), Grinnels Land (Miers) og, som jeg formoder, ogsaa ved Østkysten af Nordamerika (Wilson).

26. *Nymphon elegans*, Hansen.

(Pl. IX, Fig. 1, a—g).

Nymphon gracilipes, G. O. Sars. Prodrömus descriptionis etc.; Pycnogonida No. 3 (non Heller).

Nymphon elegans, Hansen, Kara-Havets Pycnogonider. p. 11, Tab. XVIII, Fig. 4, a—d.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 26.

Artscharacter. Temmelig lig de 2 foregaaende Arter, men noget spinklere og med Sidefortsatserne videre skilte. Hovedsegmentet længere end de 3 følgende Segmenter tilsammen, Halsen tynd, Pandedelen stærkt udvidet. Oieknuden særdeles lav, afrundet. Snabelen kortere end Hovedsegmentet, smalt cylindrisk. Saxlemmerne meget stærkt forlængede og smækre: Skaftet krummet i Enden; Haanden neppe længere end Skaftet, stærkt buet og smal, Fingrene af Palmens Længde, Spidsen af den bevægelige Finger knudeformig fortykket, af den ubevægelige hageformigt indkrummet, Tænderne i Inderkanten af Fingrene, navnlig paa den ubevægelige, af meget ulige Størrelse. Folerne særdeles tynde og forlængede, 2det Led betydelig længere end 3die, de 2 sidste Led af ens Længde og tilsammen neppe længere end 3die. De falske Fodder hos Hannen omtrent af Legemets Længde, meget tynde, 5te Led længst og længere end Endedelen, Randtornerne smalt lancetformige og grovt saugtakke i Kanterne. Gangfodderne

almost as long as the propodal joint, and very narrow, running out to an awl-shaped point. The auxiliary claws are, on the contrary, relatively much smaller than in that species, hardly one-tenth as long as the terminal claw.

The outer egg-masses (see fig. 3 a) have much the same character as in the preceding species. The ova are exceedingly small and numerous.

Occurrence. On the coasts of Norway this species seems to be restricted to the Arctic region. I have, thus, not infrequently taken the animal in the Varangerfjord near Vadsø, at a depth of from 60 to 100 fathoms. On the North-Atlantic Expedition numerous specimens were collected in divers localities; for instance, off Jan Mayen, in Advent Bay, Spitzbergen, and in the ocean off the north-west coast of Spitzbergen (Stats. 362, 363); depth from 70 to 459 fathoms. I have, besides, had sent me for examination, several well-marked specimens from the Kara Sea, taken on Nordenskjöld's Expedition in 1875; depth from 10 to 80 fathoms.

Distribution. The species seems to be widely distributed throughout the Arctic Seas. It has been met with off Frantz Joseph's Land (Heller), in the Barents Sea (Hoek), the Kara Sea (Hansen), off Grinnel's Land (Miers), and, as I suppose, also on the east coast of North-America (Wilson).

26. *Nymphon elegans*, Hansen.

(Pl. IX fig. 1, a—g).

Nymphon gracilipes, G. O. Sars. Prodrömus descriptionis etc.; Pycnogonida No. 3 (non Heller).

Nymphon elegans, Hansen, Kara-Havets Pycnogonider. p. 11, Tab. XVIII, fig. 4, a—d.

— — G. O. Sars, Pycnogonidea borealia & arctica. No. 26.

Specific Characters. Rather closely resembling the 2 preceding species, but somewhat slenderer, and with the lateral processes farther apart. Cephalic segment longer than the 3 following segments taken together, neck thin, frontal part much expanded. Oculiferous tubercle exceedingly low, rounded. Proboscis shorter than the cephalic segment, narrow cylindrical. Chelifori very much elongated and slender; scape curved at the extremity; hand hardly longer than the scape, exceedingly arcuate and narrow, fingers same length as palm, point of the mobile finger incrassated in tuberculiform, and of the immobile one unguiformly incurvate, teeth on inner edge of the fingers, especially on the immobile one, very unequal in size. Palpi exceedingly thin and elongated, 2nd joint considerably longer than the 3rd, the 2 last joints equal in length and, taken together, hardly longer than the 3rd. False legs in male about same length as the body, very thin, 5th joint longest and longer than the terminal part, marginal spines slender lanceolate and coarsely serrated

næsten 5 Gange længere end Legemet, stærkt afsmalnende; 2det Læglied særdeles smalt og forlænget, mere end 4 Gange saa langt som det terminale Afsnit, Tarsalledet lidt længere end Fodleddet, begge smale og lineære, med smaa spredte Torner i Inderkanten; Endekloen betydelig kortere end Fodleddet, Bikloerne forholdsvis smaa. De ydre Ægmasser smaa, kugleformige med forholdsvis store Æg. Legemets Længde 9^{mm} ; Spandvidde 91^{mm} .

Bemærkninger. I min Prodrumus har jeg urigtigt identificeret denne Form med Heller's *N. gracilipes*. Senere har Dr. Hansen beskrevet den under ovenstaaende Navn. Den staar meget nær de 2 foregaaende Arter, fra hvilke den dog strax er kjendelig, foruden ved ringere Størrelse og spinklere Form, ved de betydelig stærkere forlængede Saxlemmer og navnlig ved den eiendommelige Maade, hvorpaa Fingrene ender. Ogsaa Følerne er stærkere forlængede og viser et andet Længdeforhold af Leddene. I Henseende til de ydre Fodleds Bygning staar den paa en Maade midt imellem de 2 foregaaende Arter.

Beskrivelse. Legemets Længde hos fuldvoxne ægbærende Exemplarer er omkring 9^{mm} , med en Spandvidde af 91^{mm} , og denne Art staar saaledes adskilligt tilbage i Størrelse for de 2 foregaaende.

Legemets Form er (se Pl. IX, Fig. 1) temmelig spinkel, og navnlig er selve Kroppen (Fig. 1 a) kjendelig smalere end hos de 2 foregaaende Arter, med Sidefortsætserne videre skilte. Hovedsegmentet er af betydelig Størrelse, noget længere end de 3 følgende Segmenter tilsammen, og har, som hos de 2 foregaaende Arter, Pandedelen stærkt fortykket; derimod er Halsen her forholdsvis smalere.

Oieknuden er særdeles lav og viser sig, seet fra Siden (Fig. 1 a), jævnt afrundet. Den har imidlertid, som hos andre Arter, til hver Side et noget fremspringende Hjørne, hvorfor den, forfra eller bagfra seet (Fig. 1 b), synes mere tvært afkuttet. Lindserne er af sædvanligt Udseende og temmelig store.

Snabelen (se Fig. 1 a) er noget kortere end Hovedsegmentet og af regelmæssig cylindrisk Form, samt kjendelig smalere end hos de 2 foregaaende Arter.

Saxlemmerne (ibid.) udmærker sig ved sin nalmindelige Længde, hvorfor de ialmindelighed bæres stærkt vinkelformigt boiede, med Skafte næsten perpendikulært opadrettet. Lige udstrakte er de ikke langt fra af hele Legemets Længde (incl. Snabelen), og har Skafte og Haanden omtrent lige lange. Det første er forholdsvis meget smalt, cylindrisk og i sit ydre Parti temmelig stærkt buet. Haanden (Fig. 1 c) er ligeledes forholdsvis betydelig smalere end hos de 2 foregaaende Arter og næsten nogen, kun ved Basis af Fingrene besat med yderst smaa og fine Haar. Som hos hine Arter danner Fingrenes Axe en Vinkel med Palmens, hvorfor den hele Haand synes temmelig stærkt buet. Fingrene er omtrent af Palmens Længde og har begge i den indre Kant talrige spidse Tænder (se

on the edges. Ambulatory legs well-nigh 5 times longer than the body, rapidly tapering, 2nd tibial joint exceedingly narrow and elongate, more than 4 times longer than the terminal section, tarsal joint a little longer than the propodal joint, both narrow and linear, with small scattered spines on the inner edge; terminal claw considerably shorter than the propodal joint, auxiliary claws comparatively small. The outer egg-masses small, globular, with comparatively large ova. Length of body 9^{mm} ; extent 91^{mm} .

Remarks. In my Prodrumus I have erroneously identified this form with Heller's *N. gracilipes*. Dr. Hansen has subsequently described it under the above-given name. It approximates very closely the 2 preceding species, from which, however, it can be at once distinguished, not only by its inferior size and more slender form, but also by the much more elongated chelifori, and, in particular, by the peculiar manner in which the fingers terminate. The palpi, too, are more elongated, and shew other longitudinal relations in the joints. As regards the structure of the outer leg-joints, it is, in a manner, intermediate between the 2 foregoing species.

Description. The length of the body in full-grown ovigerous specimens is about 9^{mm} , with an extent of 91^{mm} , and this species ranks accordingly, as to size, a good deal below the 2 preceding ones.

The body (see Pl. IX, fig. 1) is rather slender, and the trunk itself (fig. 1 a) is, in particular, appreciably narrower than in the 2 preceding species, with the lateral processes wider apart. The cephalic segment is of considerable size, somewhat longer than the 3 following segments taken together, and has, as in the 2 preceding species, the frontal part greatly incrassated; the neck, on the contrary is, relatively narrower.

The oculiferous tubercle is exceedingly low, and, when viewed laterally appears (fig. 1 a), evenly rounded. Meanwhile, it exhibits, on either side, as in other species, a somewhat projecting corner; and hence, viewed anteriorly or posteriorly (fig. 1 b), it appears more transversely truncated. The lenses present the usual appearance and are rather large.

The proboscis (see fig. 1 a) is somewhat shorter than the cephalic segment and of regular cylindrical form, and it is appreciably narrower than in the 2 preceding species.

The chelifori (ibid.) are distinguished by their uncommon length, and they are, therefore, usually carried sharply flexed, at an angle with the scape, directed almost vertically upwards. When fully extended their length is not much less than that of the whole body (including the proboscis), and they have the scape and the hand about equal in length. The former is comparatively very narrow, cylindrical, and in its outer part rather strongly arcuated. The hand (fig. 1 c) is likewise, comparatively, a good deal narrower than in the 2 preceding species, and well-nigh bare, only at the base of the fingers is it beset with minute and delicate hairs. As in those species, the axis of the fingers forms an angle with that of the palm, and the whole hand thus acquires a rather strongly arenate

Fig. 1 d), der navnlig paa den ubevægelige Finger er af meget ulige Længde, idet større Tænder her temmelig regelmæssigt afvexler med neppe halvt saa store. Begge Fingre udmærker sig forøvrigt i hoi Grad ved den eiendommelige Maade, hvorpaa de ender. Den ubevægelige Finger gaar nemlig ud i en særdeles stærkt, bageformigt indadkrummet skarp Spids, medens den bevægelige omvendt ender med en stump knudeformig Opsvulmning (se Fig. 1 d).

Folerne (Fig. 1 e) er overordentlig tynde og forlængede, hvorfor de ialmindelighed viser en meget stærk zigzag-formig Krumning. Det indbyrdes Længdeforhold af Leddene skiller sig ogsaa kjendeligt fra samme hos de 2 foregaaende Arter. 2det Led er saaledes her betydelig længere end 3die, hvorimod de 2 ydre Led er forholdsvis mindre og smalere, omtrent af ens Størrelse og begge tilsammentagne neppe længere end 3die Led. Som hos de 2 foregaaende Arter er disse Lemmer kun besatte med meget korte og spredte Haar.

De falske Fodder hos Hannen (se Fig. 1 a) er forholdsvis meget spinkle og lige udstrakte neppe længere end Legemet. Af Leddene er det 5te størst og længere end Endedelen. Randtornerne (Fig. 1 f) er smalt lancetformige og grovt saugtakkede i Kanterne.

Gangfodderne (se Fig. 1) er meget spinkle og stærkt afsmalnende mod Enden, samt næsten nøgne. De er henimod 5 Gange længere end Legemet og har 2det Lægled forholdsvis endnu stærkere forlænget end hos *N. gracilipes* og af særdeles smal lineær Form. Det terminale Afsnit er neppe $\frac{1}{4}$ saa langt som 2det Lægled og har Fodledet noget kortere end Tarsalledet; begge Led er smalt lineære og i den indre Kant bevæbnede med korte Torner, imellem hvilke staar Grupper af meget finere saadanne. Endekloen er betydelig kortere end Fodledet, dog af kjendelig spinklere Form end hos *N. Strömii*. Bikloerne er forholdsvis smaa, neppe mere end $\frac{1}{4}$ saa lange som selve Kloen.

De ydre Ægmasser (se Fig. 1 a) er forholdsvis mindre end hos de 2 foregaaende Arter, af kugledannet Form og kun tilstede i et enkelt Par. Derimod er Æggene kjendelig større end hos hine Arter.

Forekomst. Ved vore Kyster har jeg endnu ikke observeret denne Art. Derimod toges den under Nordhavs-Expeditionen i stort Antal paa mange forskellige Punkter. Den er noteret fra ikke mindre end 11 forskellige Stationer, nemlig: St. 18, 31, 48, 124, 164, 262, 275, 312, 315, 343, 363. Af disse ligger de 3 første i den sydligste Del af det af os undersøgte Havstrøg, dels nærmere den norske Kyst, dels nærmere Island (St. 48); de 2 følgende Stationer ligger i Havet udenfor Nordlandskysten og Lofoten; de øvrige 6 falder alle paa den nordlige Del af det af os bereiste Havstrøg, dels i Østhavet (St. 262, 275), dels i Naboskabet af Beeren Eiland og Spitsbergen; Dybden fra

appearance. The fingers are about as long as the palm, and both have, on the inner edge, numerous sharply pointed teeth (see fig. 1 d), which, more particularly on the immobile finger, are very unequal in length, as, here, largish teeth alternate pretty regularly with others scarcely half their size. Both fingers are prominently distinguished, otherwise, by the peculiar way in which they terminate. The immobile finger runs, thus, out into a very strongly unguiform incurvate sharp point, while the mobile one terminates, on the contrary, in an obtuse tuberculiform swelling (see fig. 1 d).

The palpi (fig. 1 e) are remarkably slender and elongated, and exhibit therefore, as a rule, a very prominent zigzag-shaped curvature. The longitudinal relations of the joints *inter se* differ, too, appreciably, from those in the 2 preceding species. Thus, the 2nd joint is considerably longer than the 3rd, whereas the 2 outer joints are relatively smaller and more slender, about equal in length, and both taken together hardly longer than the 3rd joint. As in the 2 preceding species, those limbs are only beset with very short and scattered hairs.

The false legs in the male (see fig. 1 a) are relatively very slender, and, when fully extended hardly longer than the body. Of the joints, the 5th is the largest, and longer than the terminal part. The marginal spines (fig. 1 f) are narrow lanceolate, and coarsely serrated on the edges.

The ambulatory legs (see fig. 1) are very slender, taper rapidly towards the end, and are well-nigh bare. They are nearly 5 times longer than the body, and have the 2nd tibial joint, relatively, still more elongate than in *N. gracilipes*, and particularly narrow linear in form. The terminal section is scarcely one-fourth as long as the 2nd tibial joint, and has the propodal joint somewhat shorter than the tarsal joint; both joints are narrow linear, and armed on the inner edge with short spines between which are groups of delicate spinules. The terminal claw is considerably shorter than the propodal joint, but appreciably slenderer than in *N. Strömii*. The auxiliary claws are comparatively small, hardly more than one-fourth as long as the claw itself.

The outer egg-masses (see fig. 1 a) are relatively smaller than in the 2 preceding species, are globular in form and present only as a single pair. The ova, on the contrary, are perceptibly larger than in those species.

Occurrence. I have not, as yet, observed this species on the coasts of Norway. The animal was, however, met with on the North-Atlantic Expedition in great abundance at many different places. It is noted from not less than 11 different Stations, viz: Sts. 18, 31, 48, 124, 164, 262, 275, 312, 315, 343, 363. Of these, the 3 first lie in the southernmost part of the ocean tract investigated by the Expedition, partly not far from the Norwegian coast and partly not far from Iceland (St. 48); the 2 following Stations lie in the seas off the coasts of Nordland and Lofoten; the remaining 6 are all located in the northern part of the ocean tract explored, 2 in the Barents' Sea (Sts. 262, 275) and

148 til 743 F. Jeg har endvidere havt Anledning til at undersøge flere Exemplarer fra det kariske Hav, tagne paa 3 forskellige Punkter under Nordenskjöld's Expedition 1875 og 1876; Dybden fra 40—70 F. De af Dr. Hansen undersøgte Exemplarer var ligeledes fra det kariske Hav.

Udbredning. Ifølge skriftlig Meddelelse fra Dr. Hansen, er Arten udbredt til det grønlandske Hav, idet den 1886 af Th. Holm er taget paa $72^{\circ} 40' N.$ Br., $57^{\circ} 15' V.$ L.; Dybden 118 F. Den er saaledes utvivlsomt at betragte som en ægte arktisk Form. Rigtignok er den under Nordhavs-Expeditionen taget saa langt Syd som den 63de Bredegrad; men det er at mærke, at den her kun forekom paa meget betydeligt Dyb i den kolde Area, hvor Forholdene tilnærmelsesvis svarer til dem paa grunderne Vand i den arktiske Zone.

27. *Nymphon macrum*, Wilson.

(Pl. IX, Fig. 2, a—g).

Nymphon macrum, Wilson. Report on the Pycnogonida of New England. United States Commission of Fish and Fisheries, Report for 1878, p. 487, Pl. IV, figs. 21—23.

— G. O. Sars. Pycnogonidea borealia & arctica, No. 27.

Artscharacter. Legemet særdeles spinkelt, med tynde og forlængede Lemmer. Hovedsegmentet omtrent saa langt som de 3 følgende Segmenter tilsammen. Halsen meget smal, Pandedelen stærkt udvidet. Oieknuden noget ophøiet og afstumpet i Enden. Snabelen af Hovedsegmentets Længde, smalt cylindrisk. Saxlemmerne særdeles spinkle, forholdsvis kortere end hos *N. elegans*. Skaffet ret, med nogle længere Borster i den øvre Kant. Haanden af Skaffets Længde, meget smalt, Fingrene længere end Palmen, begge udtinkne i en yderst tynd og stærkt indboiet Spids. Tænderne i Inderkanten af den ubevægelige Finger lange og tynde, af ulige Længde. Folerne overordentlig smækre, 2det Led næsten dobbelt saa langt som 3die, sidste Led kortere og betydelig smalere end 4de, begge tilsammen længere end 3die. De falske Fodder hos Hannen $\frac{1}{4}$ længere end Legemet. 5te Led stærkt forlænget, Randtørnerne bredt lancetformige og regelmæssigt saugtakke i Kanterne. Gangfodderne ualmindelig spinkle og besatte med spredte Haar, næsten 5 Gange længere end Legemet, 2det Lægled stærkt forlænget og overordentlig tyndt, mere end 4 Gange længere end det terminale Afsnit. Fodledet kortere end Tarsalledet, begge tynde og lineære, med smaa haarformige Tørner i Kanterne. Endekloen halvt saa lang som Fodledet, Bikloerne ualmindelig store, $\frac{2}{3}$ saa lange som selve Kloen. De ydre Ægmasser smaa, men med meget store Æg. Legemets Længde 8^{mm} ; Spandvidde 85^{mm} .

the others in the vicinity of Beeren Eiland and Spitzbergen; depth from 148 to 743 fathoms. I have also had an opportunity of examining divers specimens from the Kara Sea, taken in 3 different localities on Nordenskjöld's Expedition, 1875 and 1876; depth from 40 to 70 fathoms. The specimens examined by Dr. Hansen were likewise from the Kara Sea.

Distribution. According to a written communication from Dr. Hansen, the species occurs as far north as the Greenland Sea, Th. Holm having taken it (1886) in lat. $72^{\circ} 40' N.$, long. $57^{\circ} 15' W.$; depth 118 fathoms. The animal must unquestionably, therefore, be regarded as a genuine Arctic form. It was taken, it is true, on the North-Atlantic Expedition as far south as the 63rd parallel of latitude; but it is to be remarked that it occurred there only at a very considerable depth, in the cold area, where the conditions agree approximately with those distinguishing shallower waters in the Arctic Zone.

27. *Nymphon macrum*, Wilson.

(Pl. IX, fig. 2, a—g).

Nymphon macrum, Wilson, Report on the Pycnogonida of New England. United States Commission of Fish and Fisheries, Report for 1878, p. 487, Pl. IV, figs. 21—23.

— G. O. Sars. Pycnogonidea borealia & arctica, No. 27.

Specific Characters. Body exceedingly slender, with thin and elongated limbs. Cephalic segment about as long as the 3 following segments taken together, neck very narrow, frontal part greatly expanded. Oculiferous tubercle somewhat elevated, and blunted at the extremity. Proboscis same length as the cephalic segment, narrow cylindrical. Chelifori exceedingly slender, relatively shorter than in *N. elegans*, scape straight, with a few long setae on the upper edge, hand the length of scape, very narrow, fingers longer than the palm, both drawn out to an exceedingly thin and strongly incurvate point, teeth on the inner edge of the immobile finger long and thin, unequal in length. Palpi remarkably slender, 2nd joint almost twice as long as the 3rd, last joint shorter and considerably more slender than the 4th, both taken together longer than the 3rd. False legs in the male one-fourth longer than the body, 5th joint greatly elongated, marginal spines broad-lanceolate and regularly serrated on the edges. Ambulatory legs uncommonly slim and beset with scattered hairs, almost five times as long as the body, 2nd tibial joint greatly elongated and remarkably thin, more than 4 times longer than the terminal section, propodal joint shorter than the tarsal joint, both thin and linear, with small capilliform spines on the edges, terminal claw half the length of the propodal joint, auxiliary claws uncommonly large, two-thirds of the length of the claw itself. Outer egg-masses small, but with very large ova. Length of body 8^{mm} ; extent 85^{mm} .

Bemærkninger. Denne tidligere alene af Wilson observerede Art slutter sig aabenbart nær til de 3 foregaaende Arter og danner sammen med dem en egen Gruppe af Sl. Nymphon, væsentlig karakteriseret ved de stærkt forlængede Saxlemmer og Følerne. Nærmest synes den at komme *N. elegans* Hansen, men er dog let kjendelig ved den ualmindelig spinkle Form af samtlige Lemmer. Saxlemmernes Haand er saaledes endnu betydelig smalere og navnlig ulig ved den Maade, hvorpaa Fingrene ender. Ogsaa Følerne skiller sig kjendeligt ved et forskjelligt Længdeforhold af de dem sammensættende Led. Endelig er Bikkloernes ualmindelige Størrelse et godt og sikkert Kjendemerke.

Beskrivelse. Legemets Længde er hos de største undersøgte Exemplarer 8^{mm} , med en Spandvidde af 85^{mm} . Arten opnaar saaledes ikke fuldt samme Størrelse som *N. elegans*.

Formen er idethele (se Pl. IX, Fig. 2) ualmindelig spinkel, især hvad Lemmerne angaar. Selve Kroppen (Fig. 2 a) er af den sædvanlige smalt cylindriske Form og har Sidefortsætterne temmelig vidt skilte. Hovedsegmentet er ogsaa hos denne Art af betydelig Størrelse, idet dets Længde er lig de 3 følgende Segmenter tilsammen, og Pandedelen er temmelig stærkt udvidet, omend ikke fuldt saa stærkt som hos de 3 foregaaende Arter. Halsen er kjendelig tyndere og ogsaa noget mere forkenget end hos hine Arter.

Øiekuden (Fig. 2 b) er temmelig stærkt ophøiet, af noget pyramidal Form og afstumpet i Enden. Lindserne er af betydelig Størrelse og elliptisk Form.

Snabelen (se Fig. 2 a) er af regelmæssig cylindrisk Form og omtrent af Hovedsegmentets Længde.

Saxlemmerne (ibid.) udmærker sig ved sin spinkle Form og er, lige udstrakte omtrent af Kroppens Længde ($\div$ Snabelen). Skaftet er smalt cylindrisk og ganske lige, ikke som hos foregaaende Art boiet i Enden, samt bærer i den øvre Kant nær Spidsen nogle temmelig lange og tynde Børster. Haanden, der omtrent er af Skaftets Længde, er særdeles smal og har Fingrene kjendelig længere end Palmen. Begge Fingre er overordentlig tynde og ender med en yderst fin, jævnt indbøiet Spids (se Fig. 2 d); i Inderkanten bærer de talrige spidse Tænder, der navnlig paa den ubevægelige Finger er af betydelig Længde, skjøndt noget ulige i Størrelse.

Følerne (Fig. 2 e) er endnu tyndere end hos foregaaende Art og viser et noget forskjelligt Længdeforhold af Leddene. 2det Led er saaledes her næsten dobbelt saa langt som 3die, og af de 2 ydre Led er det sidste baade kortere og betydelig smalere end næstsidsste; begge disse Led tilsammen er kjendelig længere end 3die.

De falske Fødder udspringer som hos foregaaende Art fra Siderne af Halsen og i nogen Afstand fra de forreste Sidefortsætser (se Fig. 2). De er hos Hannen

Remarks. This animal, previously observed by Wilson alone, has, it is evident, great affinity to the 3 foregoing species, and constitutes along with them a separate group of the genus Nymphon, characterized, in particular, by the exceedingly elongated chelifori and palpi. It seems to approximate closest *N. elegans* Hansen, but yet is, easily distinguished by the remarkably slender form of all its limbs. The hand of the chelifori is, thus, very much narrower, and especially dissimilar in the way in which the fingers terminate. The palpi, too, differ appreciably in the longitudinal proportions of the joints composing them. Finally, the unusual size of the auxiliary claws is a good and reliable distinctive character.

Description. The length of the body in the largest specimens examined is 8^{mm} , with an extent of 85^{mm} . The species, therefore, does not quite attain the size of *N. elegans*.

The form is, on the whole, (see Pl. IX, fig. 2) uncommonly slender, particularly as regards the limbs. The trunk itself (fig. 2 a) is of the usual narrow-cylindrical form, and has the lateral processes rather widely separated. The cephalic segment occurs in this species, too, of considerable size, its length equalling that of the 3 following segments taken together, and the frontal part is a good deal expanded, though not quite so much as in the 3 preceding species. The neck is appreciably thinner, and also somewhat more elongated than in those forms.

The oculiferous tubercle (fig. 2 b) is rather considerably elevated, of a somewhat pyramidal form, and blunted at the extremity. The lenses are large and elliptic in form.

The proboscis (see fig. 2 a) has a regular cylindrical form, and is about same length as the cephalic segment.

The chelifori (ibid.) distinguish themselves by their slender form, and, when fully extended, are about same length as the body (less the proboscis). The scape is narrow-cylindrical and quite straight, not as in the preceding species bent at the extremity, also furnished on the upper edge near the point with a few rather long and slender setæ. The hand, of about the length of the scape, is exceedingly narrow, and has the fingers appreciably longer than the palm. Both fingers are remarkably thin, and terminate in a very fine, evenly incurvated point (see fig. 2 d); on the inner edge they carry numerous sharp teeth, which, more particularly on the immobile finger, are of considerable length though somewhat unequal in size.

The palpi (fig. 2 e) are even thinner than in the preceding species, and shew a somewhat different longitudinal relation in the joints. The 2nd joint is, thus, in this animal, almost twice as long as the 3rd one, and of the 2 outer joints, the last is both shorter and considerably narrower than the penultimate one; both these joints taken together are appreciably longer than the 3rd.

The false legs issue, as in the foregoing species, from the sides of the neck, and at some distance from the foremost of the lateral processes (see fig. 2). In the

(Fig. 2 a) betydelig stærkere forlængede end hos Hunnen, omtrent $\frac{1}{4}$ længere end Legemet og har som sædvanlig 5te Led længst. Endedelen er kortere end dette Led og har Randtørnerne (Fig. 2 f) af bred lancetdannet Form, med en regelmæssig Rad af stærke Sangtakker i hver Kant.

Gangfodderne er (se Fig. 2) ualmindelig spinkle og forlængede, næsten 5 Gange længere end Legemet, og besatte med spredte, temmelig lange Haar. Af Leddene er som sædvanlig 2det Lægled det længste og ganske overordentlig tyndt. Det terminal Afsnit (Fig. 2 g) er neppe $\frac{1}{4}$ saa langt og har Tarsalleddet kjendelig længere end Fodleddet, begge af smal lineær Form og besatte med spredte Smaaborster. Endekloen er neppe mere end halvt saa lang som Fodleddet, men temmelig stærk og tydeligt leformigt tilskjærpet. Bikløerne udmærker sig i høj Grad ved sin betydelige Størrelse, idet de er $\frac{2}{3}$ saa lange som selve Kloen.

De ydre Ægmasser forefindes kun i et enkelt Par og sædvanligvis fæstede omkring de falske Fodders 5te Led. De er (se Fig. 2 a) forholdsvis smaa og af kugle-dannet Form, hvorimod de i dem indeholdte Æg er af ganske ualmindelig Størrelse.

Forekomst. Jeg har fundet denne Art ikke saa sjelden langs vor Vestkyst, og nordlig til Lofoten, paa et Dyb af 40—100 F. Under Nordhavs-Expeditionen toges den enkeltvis paa 2 Stationer, den ene (Stat. 262) Øst af Vardo, den anden (Stat. 290) omtrent midtvejs mellem Finmarken og Beeren Eiland; Dybden fra 148 til 191 F.

Udbredning. Arten er udbredt til Nordamerikas Østkyst, hvor den er taget i Golten ved Maine paa 85—115 F. D. (Wilson). At domme efter denne Udbredning i Forbindelse med dens Forekomst i Havet udenfor Finmarken, maa den utvivlsomt ansees for en oprindelig ark-tisk Form.

28. *Nymphon micronyx*, G. O. Sars.

(Pl. IX, Fig. 3, a—g).

Nymphon micronyx, G. O. Sars. Pycnogonidea borealia & arctica, No. 28.

Artscharacter. Legemet af forholdsvis undersætsig Form. Hovedsegmentet neppe længere end de 2 følgende Segmenter tilsammen; Halsen forholdsvis kort og tyk; Pandedelen kun lidet udvidet. Øieknuden meget lav, afrundet. Snabelen kortere end Hovedsegmentet, cylindrisk. Saxlemmerne forholdsvis smaa. Haanden neppe saa lang som Skafet, af aflang oval Form, Fingrene kortere end Palmen. Følerne korte og tykke, tæt håarede, 2det og 3die Led af ens Størrelse, sidste noget længere end næstsidste; begge tilsammen saa lange som 3die. De falske Fodder hos Hannen noget længere end Legemet. Endedelen

male (fig. 2 a), they are considerably more elongated than in the female, about one-fourth longer than the body, and have, as usual, the 5th joint longest. The terminal part is shorter than that joint, with the marginal spines (fig. 2 f), broad-lanceolate in form and bearing a regular series of strong saw-teeth on either edge.

The ambulatory legs (see fig. 2) are uncommonly slender and elongated, almost 5 times longer than the body, and beset with scattered, rather long hairs. Of the joints, the 2nd tibial joint is, as usual, the longest, and quite remarkably slender. The terminal section (fig. 2 g) is hardly one-fourth as long, and has the tarsal joint appreciably longer than the propodal joint, both narrow-linear in form and beset with scattered minute setæ. The terminal claw is hardly more than half as long as the propodal joint, but rather powerful and distinctly falciformly sharpened. The auxiliary claws prominently distinguish themselves by their considerable size, as they are two-thirds as long as the claw itself.

The outer egg-masses occur as a single pair only, and, in general, affixed round the 5th joint of the false legs. They are relatively small (see fig. 2 a) and globular in form, whereas the ova they contain are of quite a remarkable size.

Occurrence. I have not infrequently met with this species along the West Coast of Norway, and as far north as Lofoten, at a depth of from 40 to 100 fathoms. On the North-Atlantic Expedition solitary specimens were taken at 2 Stations, the one (Stat. 262) east of Vardö, the other (Stat. 290) about midway between Finmark and Beeren Eiland; depth from 148 to 191 fathoms.

Distribution. The species ranges as far as the east coast of North America, where it has been found in the Gulf of Maine at a depth of 85—115 fathoms (Wilson). To judge from this distribution, along with its occurrence off the coast of Finmark, the animal must doubtless be regarded as originally an Arctic form.

28. *Nymphon micronyx*, G. O. Sars.

(Pl. IX, fig. 3, a—g).

Nymphon micronyx, G. O. Sars. Pycnogonidea borealia & arctica, No. 28.

Specific Characters. Body comparatively thickset in form. Cephalic segment hardly longer than the 2 succeeding segments taken together; neck relatively short and thick; frontal part but little expanded. Oeuliferous tubercle very low, rounded. Proboscis shorter than the cephalic segment, cylindric. Chelifori comparatively small, hand hardly as long as the scape, oblongo-oval in form, fingers shorter than the palm. Palpi short and thick, densely hairy, 2nd and 3rd joints of equal size, last joint somewhat longer than the penultimate one; both taken together as long as the 3rd. False legs in the male somewhat longer than the body, terminal part

længere end 5te Led, Randtørnerne bredt lancetformige, med 2 Par stærke Tænder i det basale Parti, Yderdelen med 6 Par Saugtakker. Gangfodderne tæt besatte med korte Haar, forholdsvis mindre forlængede, neppe mere end $3\frac{1}{2}$ Gang længere end Legemet, det terminale Afsnit omtrent halvt saa langt som 2det Lægled, Fodledet betydelig længere end Tarsalledet, temmelig smalt og noget buet, uden tydeligt udprægede Tørner i Inderkanten; Endekloen ualmindelig kort, neppe halvt saa lang som Fodledet; Bikloerne omtrent af Kloens halve Længde. Legemets Længde 3^{mm} ; Spandvidde 22^{mm} .

Bemærkninger. Denne lille Art hører aabenbart til en anden Gruppe af Sl. Nymphon end de 4 sidst beskrevne, og viser i enkelte Henseender (Saxlemmernes og Folernes Form) en vis Lighed med de i Begyndelsen af dette Arbejde opførte Arter, der grupperer sig om *N. gracilis*. Den skiller sig imidlertid kjendelig fra disse ved Fodledets smale Form og Mangelen af de i Inderkanten af samme hos hine Arter fæstede stærke Tørner, i hvilken Henseende den viser større Overensstemmelse med de følgende 3 Arter. Ligeledes afviger Randtørnerne paa de falske Fodder fra den for hine Arter sædvanlige Bygning.

Beskrivelse. Den hører til de mindre Arter af Slægten, da Legemets Længde kun er 3^{mm} , med en Spandvidde af 22^{mm} .

Formen er idethele (se Pl. IX, Fig. 3) temmelig undersætsig, ialfald mere end hos Flerheden af Slægtens Arter. Kroppen (Fig. 3 a) er af den sædvanlige cylindriske Form, med Sidefortsætterne omtrent saa lange som Kroppen er bred og skilte ved tydelige, omend ikke meget brede Mellemrum. Hovedsegmentet er neppe længere end de 2 følgende Segmenter tilsammen og har en temmelig kort og tyk Hals; Pandedelen er kun ganske svagt udvidet.

Oieknuden (Fig. 3 b, 3 a) er særdeles lav og af afrundet Form; Lindserne er vidt adskilte, og Oiepigmentet viser for hver Linse en lignende bægerdannet Form som hos Arterne af Sl. *Cordylochele*.

Snabelen (se Fig. 3 a) er kjendelig kortere end Hovedsegmentet og af regelmæssig cylindrisk Form.

Saxlemmerne (se Fig. 3) er forholdsvis smaa og af en lignende Bygning som hos *N. gracilis* og beslægtede Arter. Haanden (Fig. 3 d) er noget kortere end Skaflet, af aflang oval Form og temmelig tæt naaret, navnlig ved Basis af Fingrene. Disse sidste er kjendelig kortere end Palmen og bevæbnede i Inderkanten med smaa Tænder af ens Udseende; Spidserne er jævnt indadkrummede og krydser hinanden, naar Saxen lukkes.

Følerne (Fig. 3 e) er forholdsvis korte og undersætsige samt tæt haarede, navnlig i Yderkanten. Af Leddene er 2det og 3die omtrent lige store. Sidste Led er af elliptisk Form og noget længere end næstsidste; begge tilsammen omtrent af 3die Leds Længde.

longer than the 5th joint, marginal spines broad-lanceolate, with 2 pairs of strong teeth at the base, outer part with 6 pairs of serrations. Ambulatory legs densely beset with short hairs, relatively less elongated, hardly more than $3\frac{1}{2}$ times longer than the body, terminal section about half as long as the 2nd tibial joint, propodal joint considerably longer than the tarsal joint, rather narrow, and somewhat curved, without distinctly prominent spines on the inner edge; terminal claw uncommonly short, scarcely half as long as the propodal joint; auxiliary claws of about half the length of the claw itself. Length of body 3^{mm} ; extent 22^{mm} .

Remarks. This small species evidently belongs to another group of the genus Nymphon than the 4 last mentioned species, and in some points (for instance in the form of the chelifori and palpi) it shows a certain resemblance to the species described in the first part of the present work as grouping around *N. gracilis*. It is, however, well distinguished from them by the narrow form of the propodal joint, and by the absence of the strong spines occurring in those species on the inner edge of this joint, in which respect it more closely agrees with the 3 succeeding species. Moreover, the structure of the marginal spines on the false legs differs from that usually met with in the first named species.

Description. It belongs to the smaller species of the genus, as the body's length is only 3^{mm} , with an extent of 22^{mm} .

The form is, on the whole, (see Pl. IX, fig. 3) rather thickset, at least, more so than in the bulk of the species of the genus. The trunk (fig. 3 a) has the usual cylindric form, with the lateral processes about as long as the body is broad, and separated by distinct, though not very wide intervals. The cephalic segment is hardly longer than the 2 succeeding segments taken together, and has a rather short and thick neck; the frontal part is but very slightly expanded.

The oculiferous tubercle (fig. 3 b, 3 a) is exceedingly low and rounded in form; the lenses are widely separated, and on each of them the ocular pigment exhibits a calyx-shaped form, as in the species of the genus *Cordylochele*.

The proboscis (see fig. 3 a) is appreciably shorter than the cephalic segment and is regular cylindric in form.

The chelifori (see fig. 3) are comparatively small, and similar in structure to those of *N. gracilis* and related species. The hand (fig. 3 d) is somewhat shorter than the scape, oblongo-oval in form, and rather densely hirsute, in particular at the base of the fingers. The latter are appreciably shorter than the palm, and are armed on the inner edge with small teeth of uniform appearance; the points are evenly incurvated, and cross each other when the chela closes.

The palpi (fig. 3 e) are comparatively short and thickset, and also densely hairy, particularly on the outer edge. Of the joints, the 2nd and 3rd have about the same size. The last joint is elliptic in form, and somewhat longer than the penultimate one; both taken together are about the length of the 3rd joint.

De falske Fodder hos Hannen (se Fig. 3 a) er næsten $\frac{1}{3}$ længere end Legemet og har som sædvanlig 5te Led længst, men kjendelig kortere end Endedelen. Randtørnerne (Fig. 3 f) er af lancetdannet Form og har i det basale Parti 2 Par stærke Sidetænder, medens Yderdelen er regelmæssigt saugtakket, med 6 Takker til hver Side.

Gangfodderne (se Fig. 3) er mindre forlængede end hos de fleste øvrige Arter, idet de neppe er mere end $3\frac{1}{2}$ Gang længere end Legemet. De er heller ikke saa stærkt afsmalnende mod Enden og viser i sin hele Længde en temmelig tæt Besætning af korte og fine Haar. Af Leddene er vistnok ogsaa her 2det Lægled det længste, men er dog neppe dobbelt saa langt som det terminale Afsnit og kun lidet længere end Laarledet. Tarsalledet er forholdsvis kort, hvorimod Fodledet er temmelig forlænget, noget krummet, og meget smalt, uden iniefaldende Tørner i Inderkanten. Endekloen er ualmindelig kort, kun lidet mere end $\frac{1}{3}$ saa lang som Fodledet, men temmelig kraftig. Bikloerne er vel udviklede og næsten halvt saa lange som selve Kloen.

Ingen af de undersøgte Exemplarer havde ydre Ægmasser, om de end havde Udseendet af at være fuldt udviklede.

Forekomst. Et Par Exemplarer af denne Art fandtes i den mig til Undersøgelse overladte Samling af Pycnogonider, indsamlede under Nordenskjöld's Expedition 1875 og 76. De var begge fra Strædet Matotschinscharr; Dybden 2—15 F.

29. *Nymphon longimanum*, G. O. Sars.

(Pl. X, Fig. 1, a—f).

Nymphon longimanum, G. O. Sars, Pycnogonidea borealia & arctica, No. 29.

Artsecharacter. Legemet spinklere end hos foregaaende Art. Hovedsegmentet omtrent saa langt som de 3 følgende Segmenter tilsammen, med tydelig, skjondt ikke meget forlænget Hals, og kun meget lidet udvidet Pandedel. Oieknuden temmelig lav, afkuttet i Enden og forsynet med fremspringende Sidehjørner. Snabelen kortere end Hovedsegmentet, cylindrisk. Saxlemmerne smaa og svage. Haanden betydelig kortere end Skaffet, forholdsvis smal og tæt haaret; Fingrene af Palmens Længde, med stærkt indboiede Spidser. Følerne forholdsvis korte og tæt haarede, 2det og 3die Led af ens Størrelse; sidste kun lidet længere end næstsidste og begge tilsammen af 3die Leds Længde. De falske Fodder kun lidet længere end Legemet, Randtørnerne meget smale, dolkformige, kort saugtakkede i Kanterne. Gangfodderne besatte med spredte fine Haar, temmelig forlængede, noget mere end 4 Gange længere end Legemet, 2det Lægled af smal lineær Form, omtrent $2\frac{1}{2}$ Gang

The false legs in the male (see fig. 3 a) are almost one-third longer than the body, with the 5th joint, as usual, longest, but appreciably shorter than the terminal part. The marginal spines (fig. 3 f) are lanceolate in form, and have in the basal part 2 pairs of strong lateral teeth, while the outer part is regularly serrate, with 6 denticles on either side.

The ambulatory legs (see fig. 3) are less elongated than in most of the other species, being hardly upwards of $3\frac{1}{2}$ times longer than the body. Nor do they taper so rapidly towards the extremity, and they exhibit throughout their entire length a rather dense covering of short and delicate hairs. Of the joints, the 2nd tibial joint is here, also, certainly the longest, though hardly twice as long as the terminal section and but little longer than the femoral joint. The tarsal joint is relatively short, whereas the propodal joint is rather elongated, somewhat curved, and very narrow, without prominent spines on the inner edge. The terminal claw is uncommonly short, only little more than one-third as long as the propodal joint, but rather powerful. The auxiliary claws are well developed and almost half as long as the claw itself.

None of the specimens examined had outer egg-masses, even though they were fully developed, to judge from their appearance.

Oecurrence. Two examples of this species were found among the Pycnogonids collected on Nordenskjöld's Expedition, 1875 and 76, and sent me for examination. They were both from the Matotschinsharr Strait; depth 2—15 fathoms.

29. *Nymphon longimanum*, G. O. Sars.

(Pl. X, fig. 1, a—f).

Nymphon longimanum, G. O. Sars, Pycnogonidea borealia & arctica, No. 29.

Specific Characters. Body more slender than in the preceding species. Cephalic segment about as long as the 3 following segments taken together, with the neck distinct, though not very elongated, and the frontal part but very little expanded. Oculiferous tubercle rather low, truncated at the extremity, and furnished with projecting lateral corners. Proboscis shorter than the cephalic segment, cylindric. Chelifori small and feeble, hand considerably shorter than the scape, comparatively narrow, and densely hairy; the fingers same length as palm, with strongly incurvated points. The palpi relatively short and densely hirsute, 2nd and 3rd joints of equal size; the last but little longer than the penultimate one, and both taken together equal in length to the 3rd. False legs but little longer than the body, marginal spines very slender, dagger-shaped, shortly-serrated on the edges. Ambulatory legs beset with scattered delicate hairs, rather elongate, a trifle more than 4 times as long

længere end det terminale Afsnit. Tarsalledet forholdsvis kort. Fodledet derimod ualmindelig stort, næsten $\frac{1}{2}$ Gang længere end Tarsalledet og noget fortykket paa Midten. Inderkanten bevæbnet med en tæt Rad af tynde Torner; Endekloen omtrent halvt saa lang som Fodledet, temmelig kraftig; Bikloerne overordentlig smaa og rudimentære. Legemets Længde $5\frac{1}{2}^{mm}$; Spandvidde 48^{mm} .

Bemærkninger. Denne Art er især udmærket ved Forholdet af det terminale Afsnit paa Gangfodderne og navnlig ved Fodledets stærke Udvikling, hvad der har givet Anledning til Artsbenævnelsen.¹ Ligeledes er den rudimentære Beskaffenhed af Bikloerne særdeles karakteristisk. I sin almindelige Habitus viser den nogen Lighed med de med *N. grossipes* beslægtede Former, men synes dog i visse anatomiske Character at slutte sig nærmere til de 2 følgende Arter.

Beskrivelse. Det eneste foreliggende Exemplar, der synes at være en Hun, har en Længde af $5\frac{1}{2}^{mm}$, med en Spandvidde af 48^{mm} . Den horer saaledes til de middelstore Arter.

Legemets Form er (se Pl. X, Fig. 1), om ikke ualmindelig spinkel, saa dog kjendelig smækrere end hos foregaaende Art, navnlig hvad de forskellige Lemmer angaar. Selve Kroppen (Fig. 1 a) er af sædvanligt Udseende, med Sidefortsatserne temmelig lange og skilte ved tydelige, skjøndt ikke meget brede Mellenrum. Hovedsegmentet er omtrent saa langt som de 3 følgende Segmenter tilsammen og har en tydelig og temmelig smal Hals; Pandedelen er kun ganske svagt udvidet og neppe bredere end Kroppen paa Midten.

Øieknuden (Fig. 1 b) er ikke meget ophøiet og viser, forfra eller bagfra seet, 2 stærkt fremspringende Sidehjørner, hvorved Enden faar Udseendet af at være noget udrandet i Midten. Lindserne er ikke meget store og ligger noget nærmere Enden end Basis af Øieknuden.

Snabelen (se Fig. 1 a) er af regelmæssig cylindrisk Form og kjendelig kortere end Hovedsegmentet.

Saxlemmerne (ibid.) er forholdsvis meget smaa og svagt byggede. Skaftet er smalt cylindrisk og mod Enden temmelig tæt haaret. Haanden (Fig. 1 c) er betydelig kortere end Skaftet og ligeledes ualmindelig smal, samt tæt haaret, navnlig ved Basis af Fingrene. Disse sidste er omtrent af Palmens Længde og, som hos foregaaende Art, forsynede i Inderkanten med smaa ensudviklede Tænder, og med skarpe indkrummede Spidser.

as the body, 2nd tibial joint narrow linear in form, about two and a half times as long as the terminal section, tarsal joint comparatively short, propodal joint, on the contrary, uncommonly large, almost a half longer than the tarsal joint and somewhat tumefacted in the middle, inner edge armed with a dense series of thin spines, terminal claw about half as long as the propodal joint, rather powerful; auxiliary claws remarkably small and rudimentary. Length of body $5\frac{1}{2}^{mm}$; extent 48^{mm} .

Remarks. This species is especially distinguished by the relations in the terminal part of the ambulatory legs, and, in particular, by the great development of the propodal joint, which has suggested the specific designation.¹ Moreover, the rudimentary nature of the auxiliary claws is especially characteristic. In its general habitus it exhibits some resemblance to the, with *N. grossipes* related forms, but seems, however, in certain anatomical characters, to have more in common with the 2 following species.

Description. The only specimen before me, apparently a female, has a length of $5\frac{1}{2}^{mm}$, with an extent of 48^{mm} . It belongs therefore to the middle-sized species.

The body (see Pl. X, fig. 1), though not perhaps exceptionally slender, is at least appreciably slimmer than in the preceding species, more especially as regards the different limbs. The trunk itself (fig. 1 a) has the usual appearance, with the lateral processes rather long, and separated by distinct, though not very wide intervals. The cephalic segment is about as long as the 3 following segments taken together, and has a distinct and rather narrow neck. The frontal part is but very slightly expanded and hardly broader than the trunk in the middle.

The oculiferous tubercle (fig. 1 b) is not very elevated, and exhibits, viewed anteriorly or posteriorly, 2 strongly projecting lateral corners, which gives to the extremity the appearance of being somewhat emarginate in the middle. The lenses are not very large and lie somewhat nearer the extremity than the base of the oculiferous tubercle.

The proboscis (see fig. 1 a) is regular cylindric in form and appreciably shorter than the cephalic segment.

The chelifori (ibid.) are comparatively very small and feeble in structure. The scape is narrow-cylindric and, towards the extremity, rather densely hirsute. The hand (fig. 1 c) is considerably shorter than the scape and likewise exceedingly narrow, also densely hairy, especially at the base of the fingers. The latter are about as long as the palm, and, as in the preceding species, are provided on the inner edge with small, uniformly developed teeth, and with sharp incurvated points.

¹ Denne er forsaavidt maaske noget uheldigt valgt, som man nu ialmindelighed ved Haanden forstaar det ydre Parti af Saxlemmerne. Jeg har imidlertid ikke troet at burde forandre den en Gang foreslaaede Artsbetegnelse.

¹ Perhaps not the most appropriate one, the „hand“ being now generally taken to signify the outer part of the chelifori. Meanwhile I have not seen fit to change the specific appellation originally proposed.

Folerne (Fig. 1 d) har nogen Lighed med samme hos foregaaende Art. men synes lidt spinklere. Forholdet af Leddene er omtrent som hos hin Art, alene med den Forskel, at sidste Led synes noget mindre og smalere.

De falske Fødder er kun lidet længere end Legemet, hvorved dog er at bemærke, at det undersøgte Exemplar synes at være en Hun. Randtørnerne (Fig. 1 e) er ualmindelig tynde, dolkformige og ensformigt saugtaktede i Kanterne, uden nogen særlig store basale Sidetænder.

Gangfødderne (se Fig. 1) er temmelig stærkt forlængede, idet de er over 4 Gange længere end Legemet. De er dog ikke af nogen ualmindelig Spinkelhed og afsmalnes kun ganske svagt mod Enden; i sin hele Længde er de besatte med meget fine, spredte Haar. Af Leddene er 2det Læglid som sædvanlig det længste og omtrent $2\frac{1}{2}$ Gang længere end det terminale Afsnit. Dette sidste (Fig. 1 f) forholder sig i flere Henseender eiendommeligt. Tarsalleddet er saaledes forholdsvis usædvanlig kort, medens Følleddet udmærker sig ved en betydelig Udvikling. Det er nemlig næsten $\frac{1}{2}$ Gang til saa langt som Tarsalleddet og har Inderkanten noget udbuet samt bevæbnet med en tæt Rad af temmelig lange, skjøndt tynde Tørner. Endekloen er omtrent halvt saa lang som dette Led og temmelig kraftig, med en eiendommelig hornbrun Skygning ved Basis. Derimod er Bikloerne saa yderst smaa og rudimentære, at de meget let vil kunne oversees, uden Tilhjælp af stærke Forstørrelser.

Forekomst. Det ovenbeskrevne Exemplar blev under Nordenskjöld's Expedition taget i det kariske Hav paa et Dyb af 60 F.

The palpi (fig. 1 d) have some resemblance to those in the preceding species, but appear to be a little more slender. The relations between the joints are about the same as in that species, with this difference only, that the last joint seems to be somewhat smaller and more slender.

The false legs are but little longer than the body, in relation to which it is to be noted, however, that the specimen examined seems to be a female. The marginal spines (fig. 1 e) are remarkably slender, dagger-shaped, and uniformly-serrate on the edges, without any particularly large lateral teeth at the base.

The ambulatory legs (see fig. 1) are a good deal elongated, as they are more than 4 times longer than the body. They are not, however, exceptionally slender, and taper but very slightly towards the extremity; they are beset throughout their entire length with very delicate scattered hairs. Of the joints, the 2nd tibial joint is, as usual, the longest, about two and a half times longer than the terminal section. The latter (fig. 1 f) is in many respects peculiar. Thus, the tarsal joint is uncommonly short, whereas the propodal joint distinguishes itself by a considerable development, being almost half as long again as the tarsal joint, with the inner edge somewhat arcuate and armed with a dense series of rather long, though slender spines. The terminal claw is about half as long as that joint, and rather powerful, with a peculiar horny-brown tint at the base. The auxiliary claws, on the contrary, are so very minute and rudimentary, as to admit of being easily overlooked without the aid of a strong magnifier.

Occurrence. The specimen above described was taken on Nordenskjöld's Expedition in the Kara Sea, at a depth of 60 fathoms.

30. *Nymphon serratum*, G. O. Sars.

(Pl. X, Fig. 2, a—h).

Nymphon serratum, G. O. Sars, Crustacea & Pycnogonida nova etc. No. 50.

— — Hoek, Pycnogonida „Willem Barents“ l. c., p. 16, Pl. I, fig. 21—28, Pl. II, fig. 29.

— — Hansen, Karahavets Pycnogonider, p. 7, Tab. XVIII, Fig. 2, a—c.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 30.

Artscharacter. Legemet noget smækkert, med temmelig store vel skilte Sidefortsætter og 3 tilspidsede dorsale Fremspring. Hovedsegmentet omtrent saa langt som de 3 følgende Segmenter tilsammen, Halsen af middelmaadig Længde, Pandedelen kun lidet udvidet. Øieknuden noget ophøiet, stump konisk, med Lindserne af middelmaadig Størrelse. Snabelen af Hovedsegmentets Længde. Saxlemmerne ualmindelig smaa, Skaftet smalt cylindrisk, lige fortilstrakt, Haanden neppe mere end halvt saa lang, med Fingrene kortere end Palmen og stærkt indkrummede i

30. *Nymphon serratum*, G. O. Sars.

(Pl. X, fig. 2, a—h).

Nymphon serratum, G. O. Sars, Crustacea & Pycnogonida nova etc. No. 50.

— — Hoek, Pycnogonida „Willem Barents“ l. c., p. 16, Pl. I, figs. 21—28, Pl. II, fig. 29.

— — Hansen, Karahavets Pycnogonider, p. 7, Tab. XVIII, fig. 2, a—c.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 30.

Specific Character. Body somewhat slender, with rather large, well separated lateral processes and 3 acuminate dorsal projections. Cephalic segment about as long as the 3 following segments taken together, neck of moderate length, frontal part but little expanded. Oculiferous tubercle somewhat elevated, obtuse-conic, with the lenses of moderate size. Proboscis the length of the cephalic segment. Cheliferi remarkably small, scape narrow-cylindric, extended straight forward, hand hardly more than half as long, with the fingers shorter than the palm and strongly

Spidsen. Folerne smale, kort haarede, 2det Led betydelig længere, men smalere end 3die; dette noget længere end de 2 ydre Led tilsammen; sidste Led meget lidet, ovalt. De falske Fødder hos Hannen omtrent $\frac{1}{4}$ længere end Legemet. Endedelen saa lang som 5te Led, Randtørnerne forholdsvis smaa, smalt lancetformige og grovt saugtakkede i Kanterne. Gangfødderne stærkt forlængede, næsten 5 Gange længere end Legemet, men temmelig robuste og kun lidet afsmalnende mod Enden. 2det Lægled mere end 3 Gange længere end det terminale Afsnit, Tarsal- og Fodled omtrent af ens Længde, begge ualmindelig kraftige, det sidste med 6—8 stærke Tørner i Inderkanten; Endekloen omtrent halvt saa lang som Fodledet, temmelig stærk; Bikloerne vel udviklede, næsten halvt saa lange som Kloen. Legemets Længde 12^{mm} ; Spandvidde 117^{mm} .

Bemærkninger. Den mest iøjnefaldende Character for nærværende Art er de eiendommelige Fremspring paa Kroppens Rygside, hvortil intet Spor findes hos nogen anden bekjendt Art af Slægten. Ogsaa i flere andre Henseender skiller den sig kjendeligt fra de i det foregaaende beskrevne Arter, hvorimod den i sine anatomiske Detailler idethele slutter sig meget nær til følgende Art.

Beskrivelse. Legemets Længde naar op til 12^{mm} med en Spandvidde af 117^{mm} , og den horer saaledes til de største Arter af Slægten.

Formen maa (se Pl. X, Fig. 2) vistnok idethele kaldes smækker, men dog paa langt nær ikke i den Grad som hos enkelte af de i det foregaaende omtalte Arter, og navnlig har Gangfødderne, omend af betydelig Længde, et umiskjendelig robust Præg. Selve Kroppen viser, set ovenfra (Fig. 2 a), den sædvanlige cylindriske Form, og har Sidefortsætterne temmelig store og tykke samt skilte ved vel markerede Mellemrum. Sees Kroppen fra Siden (Fig. 2 b), fremtræder imidlertid en for nærværende Art meget udmærkende Character, idet ethvert af de 3 forreste Segmenter bagtil sees at hæve sig til et temmelig høit, skarpt tilspidset og noget bagudrettet Fremspring. Ryggen faar herved et eiendommeligt, ligesom saugtakket Udseende; deraf Artsbetegnelsen. Hovedsegmentet er omtrent saa langt som de 3 følgende Segmenter tilsammen og har en vel markeret, skjøndt ikke meget forlænget Hals; Pandedelen er kun meget lidet udvidet og neppe synderlig bredere end de midterste Kropssegmenter.

Oieknuden (Fig. 2 c) er noget ophøiet, af stump konisk Form og lidt bagudrettet, med Lindsene af middelmaadig Størrelse og beliggende omtrent ved Midten af Oieknudens Hoide.

Snabelen (se Fig. b) er forholdsvis stor og tyk, omtrent af Hovedsegmentets Længde, og af den sædvanlige cylindriske Form, dog lidt afsmalnende i sit ydre Parti.

ineurvate at the points. Palpi narrow, short-ciliate, 2nd joint considerably longer, but narrower than the 3rd; the latter somewhat longer than the 2 outer joints taken together; last joint very small, oval. False legs in the male about one-fourth longer than the body, terminal part as long as the 5th joint, marginal spines comparatively small, narrow-lanceolate, and coarsely serrated on the edges. Ambulatory legs much elongated, almost 5 times longer than the body but rather robust, and tapering but slightly towards the end, 2nd tibial joint more than 3 times longer than the terminal section, tarsal and propodal joints about same length, both uncommonly powerful, the latter with 6—8 strong spines on the inner edge; terminal claw about half as long as the propodal joint, rather powerful; auxiliary claws well developed, almost half as long as the claw itself. Length of body 12^{mm} ; extent 117^{mm} .

Remarks. The most conspicuous character of the present species is, the peculiar projections on the dorsal surface of the body, of which not a trace is observed in any of the other known species of the genus. Also in several other respects it is perceptibly distinguished from all the previously described species, whereas, in its anatomical details it approximates, on the whole, very closely to the following form.

Description. The length of the body reaches as much as 12^{mm} , with an extent of 117^{mm} , and the animal pertains, therefore, to the largest species of the genus.

The form (Pl. X, fig. 2) must certainly, on the whole, be described as slender, though not nearly to the extent characterising divers of the species described above; in particular, the ambulatory legs, though of considerable length, exhibit an unmistakeably robust appearance. The trunk itself, when viewed from above (fig. 2 a), exhibits the usual cylindrical form, and has the lateral processes rather large and thick, as well as separated by well marked intervals. On viewing the trunk from the side (fig. 2 b), however, a character prominently distinctive of this species appears, as each of the 3 foremost segments, behind, are seen to rise into a rather high, sharply acuminate and somewhat posteriorly directed projection. The back thus acquires a peculiar, as it were, serrated appearance; hence the specific designation. The cephalic segment is about as long as the 3 following segments taken together, and has a well marked, though not very elongated neck; the frontal part is but very little expanded and hardly at all broader than the medial segments of the trunk.

The oculiferous tubercle (fig. 2 c) is somewhat elevated, of obtuse conical form, and directed a little backwards, with the lenses of moderate size and placed about mid-way up the tubercle.

The proboscis (fig. 2 b) is comparatively large and thick, about as long as the cephalic segment and of the usual cylindrical form, though tapering slightly in its outer part.

Saxlemmerne (se Fig. 2 a, 2 b) er ualmindelig smaa og svagtbyggede, med Skaffet smalt cylindrisk og næsten dobbelt saa langt som Haanden. Denne sidste (Fig. 2 d) er neppe bredere end Skaffet, og har Palmen noget nær cylindrisk samt temmelig sparsomt besat med korte Haar. Fingrene er noget kortere end Palmen, stærkt krummede i Enden, og i Inderkanten bevæbnede med et ikke meget betydeligt Antal af forholdsvis smaa, ensformigt udviklede Sidetænder.

Folerne (Fig. 2 e) overgaar kun lidet Saxlemmerne i Længde og er som disse kun forsynede med meget smaa Haar. Af Leddene er det 2det længst, men adskilligt smalere end 3die, der er lidt længere end de 2 yderste Led sammen. Sidste Led er ualmindelig lidet og af oval Form.

De falske Fødder hos Hannen (se Fig. 2 b) er omtrent $\frac{1}{4}$ længere end Legemet og temmelig kraftigt byggede. Af Leddene er 5te som sædvanlig størst, men neppe længere end Endedelen (Fig. 2 f). Randtørnerne (Fig. 2 g) er forholdsvis smaa, smalt lancetformige og grovt saugtakkede i Kanterne.

Gangfødderne (se Fig. 2) er vistnok meget stærkt forlængede, idet de, lige udstrakte, næsten er 5 Gange længere end Legemet, men har desuagtet et temmelig robust Udseende og afsmalnes kun meget ubetydeligt mod Enden. For det blotte Øie synes de ganske nøgne, men ved tilstrækkelig Forstørrelse viser de sig tæt besatte i sin hele Længde med overordentlig smaa Haar. Af Leddene er Laarledet og 1ste Lægled næsten af ens Længde, medens 2det Lægled er betydelig længere, dog neppe mere end 3 Gange saa langt som det terminale Afsnit. De 2 Led, der sammensætter dette Afsnit (Fig. 2 h), er begge kraftigt udviklede og omtrent af ens Længde. Fodledet har i Inderkanten, foruden de fine Haar, der overalt beklæder disse Led, 6—7 stærke Tørner. Endekloen er neppe mere end halvt saa lang som Fodledet, men temmelig kraftig og noget leformigt tilskjærpet. Bikløerne er vel udviklede, næsten af Endekloens halve Længde.

Ingen af de under Nordh. Expeditionen indsamlede Exemplarer havde ydre Ægmasser. Dr. Hansen har imidlertid undersøgt ægbærende Individuer og beskriver Ægmasserne som forholdsvis store, af mere eller mindre kugledannet Form, og indeholdende talrige meget smaa Æg.

Forekomst. 3 Exemplarer af denne eiendommelige Art blev under Nordh. Expeditionens sidste Togt tagne i Havet mellem Beeren Eiland og Spitzbergen (Stat. 315 og 337) paa et Dyb af 146—180 Farn. Ved Norges Kyster er den hidtil ikke observeret.

Udbredning. Arten er udbredt til Barents Soen (Hoek), det kariske Hav (Hansen) og Davisstrædet (den samme), og er saaledes utvivlsomt at betragte som en ægte arktisk Form.

The chelifori (fig. 2 a, 2 b) are remarkably small and feeble in structure, with the scape narrow cylindric and well-nigh twice as long as the hand. The latter (fig. 2 d) is scarcely broader than the scape, and has the palm very nearly cylindric and rather sparingly beset with short hairs. The fingers are somewhat shorter than the palm, strongly bent at the tips, and armed on the inner edge with a not very considerable number comparatively small lateral teeth, uniform in development.

The palpi (fig. 2 e) exceed the chelifori but little in length, and are, like those limbs, provided only with very delicate hairs. Of the joints, the 2nd is the longest, but considerably narrower than the 3rd, which is a little longer than the 2 outermost joints taken together. The last joint is remarkably small and oval in form.

The false legs in the male (see fig. 2 b) are about one-fourth longer than the body and rather powerful in structure. Of the joints, the 5th is as usual the largest, but scarcely longer than the terminal part (fig. 2 f). The marginal spines (fig. 2 g) are comparatively small, narrow-lanceolate and coarsely serrate on the edges.

The ambulatory legs (see fig. 2) are indeed very much elongated, measuring, when fully extended, nearly 5 times the length of the body, but have, nevertheless, a rather robust appearance and taper but very slightly towards the extremity. To the naked eye they appear to be quite bare, but when sufficiently magnified they are found to be densely beset throughout their entire length with exceedingly minute hairs. Of the joints, the femoral joint and the 1st tibial joint are almost equal in length, whereas the 2nd tibial joint is considerably longer, though hardly more than 3 times as long as the terminal section. The 2 joints which compose this section (fig. 2 h) are both powerfully developed, and about equal in length. The propodal joint bears on the inner edge, besides the delicate bristles with which these joints are everywhere covered, 6 or 7 strong spines. The terminal claw is hardly more than half as long as the propodal joint, but rather powerful and somewhat falciformly sharpened. The auxiliary claws are well developed, almost half the length of the terminal claw.

None of the specimens collected on the North-Atlantic Expedition had outer egg-masses. Dr. Hansen has, however, examined ovigerous individuals, and describes the egg-masses as comparatively large, more or less globular in form, and containing numerous very minute ova.

Occurrence. The 3 examples of this peculiar species were taken on the last cruise of the North-Atlantic Expedition, in the ocean between Beeren Eiland and Spitzbergen (Stats. 315, 337), at a depth of 146—180 fathoms. On the coasts of Norway the animal has not hitherto been observed.

Distribution. The range of the species extends to Barents' Sea (Hoek), the Kara Sea (Hansen), and Davis' Straits (same author), and hence the animal must unquestionably be regarded as a true Arctic form.

31. *Nymphon megalops*, G. O. Sars.

(Pl. X, Fig. 3, a—g).

Nymphon megalops, Prodrom. descript. Crust. & Pycnog. etc. No. 7.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 31.

Artscharacter. Meget lig foregaaende Art, men Ryggen glat, uden dorsale Fremspring. Øieknuden meget stor og tyk, stump konisk, med ualmindelig stærkt udviklede Lindser. Snabelen af Hovedsegmentets Længde, cylindrisk. Saxlemmerne smaa, noget lig samme hos foregaaende Art, men med Haanden forholdsvis lidt større og Fingrene kortere end Palmen, den bevægelige med et tydeligt Indtryk fortil ved Basis. Følerne noget kraftigere end hos foregaaende Art, 2det Led længst, sidste aflangt ovalt, kortere end næstsidste. De falske Fodder ikke meget længere end Legemet, 5te Led kortere end Endedelen; Randtornerne forholdsvis smaa, rundtakkede i Kanterne. Gangfodderne stærkt forlængede, omtrent 5 Gange længere end Legemet, temmelig kraftigt byggede, 2det Lægled mere end 4 Gange længere end det terminale Afsnit. Tarsalledet og Fodledet omtrent af ens Længde, men noget spinklere end hos foregaaende Art, det sidste med omtrent 6 Torner i det ydre Parti af Inderkanten; Endekloen forholdsvis kort, neppe halvt saa lang som Fodledet; Bikloerne vel udviklede, omtrent $\frac{1}{3}$ saa lange som Endekloen. Legemets Længde 13^{mm} ; Spandvidde 140^{mm} .

Bemærkninger. Denne Art staar særdeles nær foregaaende, men er dog meget let kjendelig fra samme ved den fuldstændige Mangel af de for hin Art saa karakteristiske dorsale Fremspring. Ligeledes er Øieknuden kjendelig større og Lindserne af ualmindelig Udvikling, hvad der har givet Anledning til Artsbenævnelsen.

Beskrivelse. Legemets Længde hos de største erholdte Exemplarer er 13^{mm} , med en Spandvidde af 140^{mm} , og denne Art opnaar saaledes en endnu betydeligere Størrelse end foregaaende.

Kropformen er (se Pl. X, Fig. 3) idethele temmelig lig samme hos foregaaende Art; dog maaske lidt slankere. Selve Kroppen (Fig. 3 a, 3 b) er oventil ganske glat, uden Spor af nogen dorsale Fremspring, og har Sidefortsætterne af betydelig Størrelse samt skilte ved tydelige, skjøndt ikke meget brede Mellemrum. Hovedsegmentet er omtrent saa langt som de 3 følgende Segmenter tilsammen og har en tydeligt markeret Hals, der er kjendelig smalere end hos foregaaende Art; Pandedelen synes forholdsvis lidt stærkere udvidet end hos denne Art.

Øieknuden (se Fig. 3 a, 3 b) er særdeles stor og tyk, næsten pyramideformig, og lige opadrettet; forfra eller bagfra seet (Fig. 3 e), viser Enden sig noget afstumpet,

31. *Nymphon megalops*, G. O. Sars.

(Pl. X, fig. 3, a—g).

Nymphon megalops, G. O. Sars, Prodromus descript. Crust. & Pycnog. etc. No. 7.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 31.

Specific Characters. Very like the preceding species, but the back smooth, without dorsal projections. Oculiferous tubercle very large and thick, obtusely conical, with the lenses remarkably well developed. Proboscis same length as the cephalic segment, cylindric. Chelifori small, somewhat resembling those of the preceding species but with the hand, relatively, a little larger and the fingers shorter than the palm, the mobile one having anteriorly at the base a distinct indenture. Palpi somewhat stronger than in the preceding species, 2nd joint the longest, last one oblongo-oval, shorter than the penultimate one. False legs not much longer than the body, 5th joint shorter than the terminal part; marginal spines comparatively small, obtusely serrate on the edges. Ambulatory legs greatly elongated, about 5 times longer than the body, rather powerful in structure, 2nd tibial joint more than 4 times longer than the terminal section, the tarsal and propodal joints about equal in length, but somewhat more slender than in the preceding species, the latter with about 6 spines on the distal part of the inner edge; terminal claw comparatively short, hardly half the length of the propodal joint; auxiliary claws well developed, about one-third as long as the terminal claw. Length of body 13^{mm} ; extent 140^{mm} .

Remarks. This form approximates very closely indeed the preceding species, but is, however, readily recognized by the total absence of the dorsal projections so characteristic of that form. Moreover the oculiferous tubercle is appreciably larger, and the lenses remarkably strong in development, a feature which has suggested the specific designation.

Description. The body, in the largest examples obtained, has a length of 13^{mm} , with an extent of 140^{mm} ; hence this species attains a still more considerable size than the preceding one.

The form of the body (see Pl. X, fig. 3) is, on the whole, very similar to that of the preceding species, but possibly a little more slender. The trunk itself (fig. 3 a, 3 b) is, superiorly, quite smooth, without a trace of any dorsal projection, and has the lateral processes of considerable size and separated from each other by distinct, though not very wide intervals. The cephalic segment is about as long as the 3 following segments taken together, and has a distinctly defined neck, which is appreciably narrower than in the preceding species; the frontal part would seem to be relatively a little more expanded than in that form.

The oculiferous tubercle (see fig. 3 a, 3 b) is exceedingly large and thick, almost pyramidal, and directed straight upwards; viewed anteriorly or posteriorly (fig. 3 e).

men uden tydeligt fremtrædende Sidehjørner. Lindserne er ualmindelig store, elliptiske og beliggende nærmere Basis end Spidsen af Øieknuden.

Snabelen (se Fig. 3 a, 3 b) er af betydelig Størrelse, fuldkommen saa lang som Hovedsegmentet og betydelig tykkere end dettes Halsdel. Formen er den sædvanlige cylindriske.

Saxlemmerne (ibid.) er, som hos foregaaende Art, temmelig smaa og svage. Skaftet er smalt cylindrisk og næsten lige fortilstrakt, med det ydre Parti lidt fortykket og tæt besat med korte Haar. Haanden (Fig. 3 d) er betydelig kortere end Skaftet, men forholdsvis lidt kraftigere udviklet end hos foregaaende Art. Palmen er kjendelig længere end Fingrene, og de sidste ikke fuldt saa stærkt indboiede i Spidsen som hos *N. serratum*. Den bevægelige Finger har ved Basis fortil et temmelig stærkt Indtryk og er ligesom den ubevægelige i Inderkanten bevæbnet med en Rad af temmelig stærke, ensformigt udviklede Tænder.

Folerne (Fig. 3 e) viser en Bygning meget nær overensstemmende med samme hos foregaaende Art. De synes dog forholdsvis lidt kraftigere udviklede og har de ydre Led noget større, skjøndt tilsammentagne neppe længere end 3dje. Ogsaa her er sidste Led kortere end næstsiste og af aflang oval Form.

De falske Fødder (se Fig. 3 b) er kun lidet længere end Legemet og har Endedelen kjendelig større end 5te Led. Randtornerne (Fig. 3 f) er forholdsvis smaa og noget ulige udviklede, med Kanterne utydeligt saugtaktede.

Gangfødderne (se Fig. 3) er stærkt forlængede, omtrent 5 Gange længere end Legemet, og noget mindre robuste end hos foregaaende Art; de er som hos denne tæt besatte med overordentlig smaa Haar, der dog først kommer tilsyne ved en temmelig stærk Forstørrelse. 2det Lægled er kjendelig smalere end hos *N. serratum* og mere end 4 Gange længere end det terminale Afsnit. Dette sidste (Fig. 3 g) synes ligeledes noget mindre robust end hos hin Art og har Tarsalledet og Fodledet omtrent af ens Længde, begge af lineær Form og forsynede med en tydelig Kjol langs Siderne. Fodledet har i Inderkanten omtrent 6 Torner, der dog kun indtager den ydre Halvpart af Leddet. Endekloen er forholdsvis kort, neppe halvt saa lang som Fodledet, men temmelig kraftig og noget tilskjærpet i Kanterne. Bikløerne er vel udviklede og omtrent $\frac{1}{3}$ saa lange som selve Kloen.

Om de ydre Ægmasser kan intet siges, da ingen af de erholdte Exemplarer var ægbærende.

Forekomst. Denne anselige Art toges under Nordhavs-Expeditionen paa 4 langt fra hinanden beliggende Stationer. Af disse ligger en (Stat. 31) i Havet udenfor

the extremity appears somewhat obtusely blunted, but without any distinct, prominent lateral corners. The lenses are exceedingly large, elliptic, and located nearer to the base than to the point of the tubercle.

The proboscis (see fig. 3 a, 3 b) is of considerable size, quite as long as the cephalic segment, and a good deal thicker than its cervical part. It has the usual cylindrical form.

The chelifori (see fig. 3 a, 3 b) are, as in the preceding species, rather small and feeble. The scape is narrow cylindric, and directed well-nigh straight forwards, with the outer part a little tumefacted and densely beset with short hairs. The hand (fig. 3 d) is considerably shorter than the scape, but has a somewhat, relatively, more powerful development than in the preceding species. The palm is appreciably longer than the fingers, and the latter are not quite so incurvate at the tips as in *N. serratum*. The mobile finger has at the base, anteriorly, a rather deep indenture, and is, like the immobile one, armed on the inner edge with a row of rather strong, uniformly developed teeth.

The palpi (fig. 3 e) exhibit a structure very nearly in correspondence with that of the preceding species. They would seem, however, to be a little more powerfully developed, and have the outer joints somewhat larger, though taken together hardly longer than the 3rd one. Here, too, the last joint is shorter than the penultimate one and oblong-oval in form.

The false legs (see fig. 3 b) are but little longer than the body, and have the terminal part appreciably larger than the 5th joint. The marginal spines (fig. 3 f) are comparatively small and somewhat unequally developed, with the edges indistinctly serrated.

The ambulatory legs (see fig. 3) are very much elongated, about 5 times longer than the body, and somewhat less robust than in the preceding species; as in that species, they are densely beset with exceedingly small hairs, not perceptible however till brought out by a rather powerful magnifier. The 2nd tibial joint is appreciably narrower than in *N. serratum*, and more than 4 times longer than the terminal section. The latter (fig. 3 g) would likewise seem to be somewhat less robust than in that species, with the tarsal and propodal joints about equal in length, both linear in form and provided with a distinct carina along the sides. The propodal joint bears on the inner edge about 6 spines, which occupy, however, only the outer half of the joint. The terminal claw is comparatively short, scarcely half as long as the propodal joint, but rather powerful and somewhat sharpened on the edges. The auxiliary claws are well developed and about one-third as long as the claw itself.

Respecting the outer egg-masses, there is nothing whatever to state, as none of the specimens obtained were ovigerous.

Occurrence. This large-sized species was taken on the North-Atlantic Expedition at 4 widely distant Stations. Of these, one (Stat. 31) lay off the Storeggen bank,

Storeggen, en anden (Stat. 48) Øst af Island, en 3die (Stat. 200) NV. af Finmarken, en 4de (Stat. 343) SV af Spitzbergen; Dybden fra 299 til 743 Favne. Alle Stationer tilhører den kolde Area, og Arten maa derfor utvivlsomt ansees som en ægte arktisk Form.

Udbredning. Skjøndt Arten ikke af nogen af de senere Forskere er bleven noteret, kan jeg dog for den endnu opgive en anden Lokalitet, udenfor det under Nordhavs-Expeditionen undersøgte Havstrøg. Jeg har nemlig ganske nylig gennem Dr. Hansen havt til Undersøgelse nogle Pycnogonider for det grønlandske Hav, hvoriblandt ogsaa fandtes et ganske ungt Exmplar af nærværende Art. Exemplaret blev taget paa $65^{\circ} 39' N.$ B. og $28^{\circ} 25' V.$ L. fra et Dyb af 553 Favne; Sten og Skjæl. Arten har saaledes en temmelig vid Udbredning i de arktiske Have.

Gen. 2. **Chætonymphon**, G. O. Sars. 1888.

Nymphon, autorum (ex parte).

Slægtscharacter. Legemet sædvanligvis undersætsigt og mere eller mindre tæt haarbesat oventil. Hovedsegmentet af betydelig Størrelse, med forholdsvis kort Hals og stærkt udvidet Pandedel. Halsegmentet forlænget, konisk tillobende i Enden. Øieknuden mere eller mindre ophøiet, med tydelige Linsler, sædvanlig beliggende nær Spidsen. Snabelen stor, cylindrisk. Saxlemmerne tæt haarede. Haanden kortere end Skaftet, Fingrene smale og forlængede, stærkt krummede i Spidsen og i Inderkanten bevæbnede med tynde, ens udviklede Tænder. Følerne korte og undersætsige, tæt haarede. De falske Fødder hos Hannen temmelig ulig samme hos Hunnen, med 5te Led stærkt udvidet i sit ydre Parti og her tæt børstebesat, Randtornerne saugtakke. Endekloen kamformig tandet. Gangfodderne mindre forlængede end hos *Nymphon*, mere eller mindre stærkt haarede. Laarledet hos Hunnen stærkt opsvulmet, hos Hannen forsynet i Inderkanten med en Række af stumpe Knuder; Tarsalledet kort, Fodledet kraftigt udviklet med stærke Torner i Inderkanten, Endekloen mere eller mindre forlænget, med tydelige Bikhøer. Larven forsynet ved Udklækningen med Anlæg til 2 Par Gangfodder.

Bemærkninger. Jeg har fundet det rigtigt at opstille nærværende Slægt til Optagelse af en Del tidligere til Slægt *Nymphon* henførte Arter, der baade i den almindelige Habitus og i visse anatomiske Detailler, endelig ogsaa i Udviklingen skiller sig kjendeligt fra de typiske *Nymphoner*. Som Type for Slægten kan opstilles den i de arktiske Have saa almindelig udbredte *N. hirtipes* Bell. Meget nær til denne slutter sig de 2 Arter, *N. spinosum* Goodsir og *N. tenellum* G. O. Sars; noget mere afvigende, skjøndt aabenbart tilhørende samme Slægtstype, er paa den

another (Stat. 48) east of Iceland, a third (Stat. 200) north-west of Finmark, and the fourth (Stat. 343) south-west of Spitzbergen; depth from 299 to 743 fathoms. The Stations are all located in the cold area, and the species must, therefore, unquestionably be regarded as a true Arctic form.

Distribution. Though the species has not been recorded by any of the later naturalists, I can yet give another locality for it outside the ocean-tract explored on the North-Atlantic Expedition. I have quite lately had sent me by Dr. Hansen for examination, several Pycnogonids from the Greenland Sea, among which there was a quite young specimen of the present species. The example in question was taken in lat. $65^{\circ} 39' N.$, long. $28^{\circ} 25' W.$, at a depth of 553 fathoms; bottom stones and shells. The species has thus a rather wide distribution in the Arctic Seas.

Gen. 2. **Chætonymphon**, G. O. Sars. 1888.

Nymphon, autorum (ex parte).

Generic Characters. Body usually thickset, more or less densely setous above. Cephalic segment of considerable size, with comparatively short neck and frontal part much expanded. Caudal segment elongate, tapering conically at the extremity. Oculiferous tubercle more or less elevated, with distinct lenses, usually near the point. Proboscis large, cylindric. Chelifori densely hairy, hand shorter than the scape, fingers narrow and elongated, exceedingly bent at the tips and armed on the inner edge with thin, uniformly developed teeth. Palpi short and thickset, densely setous. False legs in the male rather unlike those of the female, with the 5th joint much expanded in its outer part, and there densely beset with setæ, marginal spines serrated, terminal claw pectinated. Ambulatory legs less elongated than in *Nymphon*, more or less prominently setous, femoral joint much swollen in the female, in the male furnished on the inner edge with a series of blunted nodules; tarsal joint short, propodal joint powerfully developed, with strong spines on the inner edge, terminal claw more or less elongated, with distinct auxiliary claws. The larva on being hatched appears with traces of 2 pairs of ambulatory legs.

Remarks. I have seen fit to establish the present genus in order to include divers species previously referred to the genus *Nymphon*, which, both in their general habitus and in certain anatomical details as well as, also, in development, differ appreciably from the typical *Nymphons*. As type of the genus may be taken *N. hirtipes* Bell, so generally met with throughout the Arctic Seas. Very closely to this form, do the 2 species, *N. spinosum* Goodsir and *N. tenellum* G. O. Sars ally themselves; somewhat more divergent, though evidently of the same generic type, are, on the one

ene Side *N. hirtum* Krøyer, paa den anden *N. macronyx* G. O. Sars. Af exotiske Former hører *N. brevicaudatum* Miers (hispidum Hoek) fra Kerguelen ubetinget til samme Slægt. Antallet af Arter bliver saaledes for Tiden ikke mindre end 5.

32. *Chætonymphon hirtum*, (Krøyer).

(Pl. XI, Fig. 1, a—g).

Nymphon hirtum, Chr. Fabricius, Entom. systematica IV, p. 417.

— — Krøyer, Nat. Tidsskrift, ny Række, Bd. 1, p. 113.

— — Gaimard's Voyage en Scandinavie, Pl. 36, fig. 3, a—g.

Nymphon pallenoide, G. O. Sars, Crust. & Pycnog. nova etc., No. 49.

Nymphon hirtum, Hansen, Kara Havets Pycnogonider, p. 7, Note.

Chætonymphon hirtum, G. O. Sars, Pycnogonidea borealia & arctica, No. 32.

Artscharacter. Legemet af undersætsig Form, fint laaddent oventil, med Sidefortsætterne tæt sammentrængte og kortere end Kroppens Brede. Hovedsegmentet omtrent saa langt som de 3 følgende Segmenter tilsammen, Halsen særdeles kort og tyk, Pandedelen temmelig bred, Halsesegmentet noget opadrettet. Øieknuden forholdsvis lav, stumpet tilrundet. Snabelen kortere end Hovedsegmentet. Saxlemmerne smaa, tæt og kort haarede, Haanden betydelig kortere end Skaffet, med Palmen jævnt bred og længere end Fingrene, der med samme danner en udpræget Vinkel. Folerne ualmindelig smaa, 2det Led storst, sidste Led afrundet ovalt, neppe kortere end næstsidste. De falske Fodder omtrent af Legemets Længde, Randtørnerne smaa, noget krummede og utydeligt saugtakkede. Gangfodderne kort laadne overalt, ualmindelig robuste, noget sammentrykte, neppe 3 Gange længere end Legemet, 2det Lægled jævnt bredt, omtrent $2\frac{1}{2}$ Gange længere end det terminale Afsnit, Tarsalledet ligesaa bredt som langt, Fodledet omtrent 3 Gange saa langt, noget opsvulmet i sit basale Parti, med en Rad af circa 8 stærke, udad i Længde tiltagende Tørner i Inderkanten; Endekloen halvt saa lang som Fodledet, stærkt krummet; Bikloerne vel udviklede, af Endekloens halve Længde. Legemets Længde 6^{mm} ; Spandvidde 33^{mm} .

Bemærkninger. At den her omhandlede Form er identisk med den af Krøyer under ovenstaaende Navn beskrevne og afbildede Art, antager jeg for givet, og dette bekræftes ogsaa ved den nylig af Dr. Hansen meddelte, temmelig ndforlige Diagnose. Derimod holder jeg det for meget tvivlsomt, hvorvidt Krøyer's og Fabricius's Art er den samme, og maa fremdeles fastholde, at der er vel saa

hand, *N. hirtum* Krøyer, and on the other, *N. macronyx* G. O. Sars. Of exotic forms, *N. brevicaudatum* Miers (hispidum Hoek), from Kerguelen, belongs unquestionably to the same genus. The number of species amounts therefore, at present, to not less than 5.

32. *Chætonymphon hirtum*, (Krøyer).

(Pl. XI, fig. 1, a—g).

Nymphon hirtum, Chr. Fabricius, Entom. systematica IV, p. 417.

— — Krøyer, Nat. Tidsskrift. ny Række, Bd. 1, p. 113.

— — Gaimard's Voyage en Scandinavie. Pl. 36, fig. 3, a—g.

Nymphon pallenoide, G. O. Sars, Crust. & Pycnog. nova etc. No. 49.

Nymphon hirtum, Hansen, Kara Havets Pycnogonider, p. 7 Note.

Chætonymphon hirtum, G. O. Sars, Pycnogonidea borealia & arctica, No. 32.

Specific Characters. Body thickset in form, delicately pubescent above, with the lateral processes closely crowded together and shorter than the trunk is broad. Cephalic segment about as long as the 3 following segments taken together, neck exceedingly short and thick, frontal part rather broad, caudal segment directed somewhat upwards. Oculiferous tubercle comparatively low, obtusely rounded. Proboscis shorter than the cephalic segment. Chelitori small, densely and shortly hispid, hand considerably shorter than the scape, with the palm uniformly broad, and longer than the fingers, which make with the former a prominent angle. Palpi remarkably small, 2nd joint largest, last joint rounded oval, hardly shorter than the penultimate one. False legs about the length of the body, marginal spines small, somewhat bent and indistinctly serrated. Ambulatory legs everywhere shortly hispid, uncommonly robust, somewhat compressed, scarcely 3 times longer than the body, 2nd tibial joint uniformly broad, about two and a half times longer than the terminal section, tarsal joint as broad as long, propodal joint about 3 times as long, somewhat swollen in its basal part, with a row of about 8 strong spines on the inner edge, increasing in length outwards; terminal claw half as long as the propodal joint, strongly bent; auxiliary claws well developed, half the length of the terminal claw. Length of body 6^{mm} ; extent 33^{mm} .

Remarks. That the form treated of here, is identical with the species described and figured by Krøyer under the above name, I assume to be certain, and the rather full diagnosis lately given by Dr. Hansen tends to establish this. On the other hand, I regard it to be highly doubtful whether Krøyer's and Fabricius's species is the same form, and must still maintain, that there is quite as

megen Sandsynlighed for, at denne sidste er identisk med følgende Art. Da man i Almindelighed synes at være kommen overens om at godkjende Kroyers Bestemmelser, bliver det imidlertid bedst, for at undgaa Forvirring, at lade nærværende Art beholde det af Kroyer paa den anvendte Navn, og opføre følgende Art under den af Bell foreslaaede Artsbenævnelse. Arten er let kjendelig ved sin ualmindelig undersætsige Kropsform og den tætte Beklædning af meget smaa ensformige udviklede Haar; fremdeles ved Saxlemmernes Bygning.

Beskrivelse. Det eneste foreliggende Exemplar, der synes at være en paa det nærmeste fuldt udviklet Hun, har en Længde af ikke fuldt 6^{mm}, med en Spandvidde af 33^{mm}. Det af Dr. Hansen undersøgte Individ var omtrent af samme Størrelse.

Formen er (se Pl. XI, Fig. 1) ualmindelig undersætsig og minder noget om samme hos visse Pallenider, navnlig af Sl. *Cordylochele*, hvad der gav Anledning til den af mig først for Arten foreslaaede Benævnelse „pallenoide“. Kroppen selv (Fig. 1 a, 1 b) er forholdsvis meget bred, tykkest paa Midten, og har Segmenterne skarpt afsatte fra hinanden samt oventil, navnlig henimod deres bagre Kant, tæt besatte med korte Haar. Sidefortsatserne er tæt sammentrængte og kun skilte ved yderst smale, spaltformige Mellemrum; de er noget kortere end Legemets Brede paa Midten, temmelig tykke, kølleformige og oventil ligeledes tæt haarede. Hovedsegmentet er af betydelig Størrelse, omtrent saa langt som de 3 følgende Segmenter tilsammen, og har en særdeles kort og tyk Hals; Pandedelen udvides successivt mod Enden og er som sædvanlig oventil noget rendelformigt fordybet efter Midten, med Sidedelene ligesom opsvulmede og tæt haarede. Halsesegmentet er forholdsvis stort og noget skjævt opadrettet, med Enden stumpt tilrundet.

Øieknuden (se Fig. 1 a, 1 b), der er beliggende nærmere den bagre end den forreste Kant af Hovedsegmentet, er temmelig lav og stumpt afrundet i Enden. Lindserne er forholdsvis store, noget skjævtstillede og beliggende omtrent ved Midten af Øieknudens Høide.

Snabelen (se Fig. 1 b) er meget kort, paa langt nær ikke af Hovedsegmentets Længde, noget skraat nedadrettet og konisk tillobende, med but Ende.

Saxlemmerne (ibid.) er ualmindelig smaa, men af undersætsig Bygning og overalt kort haarede. Haanden (Fig. 1 c) er betydelig kortere end Skaftet og har Palmen forholdsvis tyk og næsten af ens Brede overalt. Fingrene, der med Palmen danner en meget udpræget Vinkel, er kortere end denne og begge langs Inderkanten bevæbnede med forholdsvis smaa, ens udviklede Tænder. Den bevægelige Finger er betydelig længere end den ubevægelige og jævnt krummet. Enderne af begge Fingre er skarpt tilspidsede og noget, skjønt ikke meget indbøjede.

Folerne (Fig. 1 d) er ligeledes ualmindelig smaa og

great, if not greater probability, that the latter is identical with the following species. Meanwhile, as there seems to be a general accord to recognize Kröyer's determinations, it will be preferable, to avoid confusion, to let the present species retain the name applied to it by Kröyer, and establish the following species under the specific designation proposed by Bell. The species is easily recognized by the remarkably thickset form of its body, and the dense covering of very small, uniformly developed hairs and, further, by the structure of the chelifori.

Description. The only specimen before me, which seems to be an almost fully developed female, has a length of not quite 6^{mm}, with an extent of 33^{mm}. The individual examined by Dr. Hansen was of about the same size.

The form (see Pl. XI, fig. 1) is uncommonly thickset and bears some resemblance to that of certain Pallenidæ, particularly of the genus *Cordylochele*, hence the specific designation first proposed by me „pallenoide“. The trunk itself (fig. 1 a, 1 b) is comparatively very broad, thickest in the middle, and has the segments sharply defined one from the other, and superiorly, in particular towards their posterior edge, densely beset with short hairs. The lateral processes are closely crowded and only separated by exceedingly narrow, fissured intervals; they are somewhat shorter than the body is broad in the middle, rather thick, clavi-form, and likewise densely hairy on the dorsal side. The cephalic segment is of considerable size, about as long as the 3 following segments taken together, and has an exceedingly short and thick neck; the frontal part becomes successively expanded towards the extremity, and is superiorly, as usual, somewhat canaliculated along the middle, with the lateral parts, as it were, swollen and densely hairy. The caudal segment is relatively large, and is directed somewhat obliquely upwards, with the extremity obtusely rounded.

The oculiferous tubercle (see fig. 1 a, 1 b) is placed nearer to the posterior than to the anterior edge of the cephalic segment, and is rather low, and rounded off obtusely at the extremity. The lenses are comparatively large, somewhat obliquely placed, and located about midway up the tubercle.

The proboscis (see fig. 1 b) is very short, not nearly the length of the cephalic segment, directed somewhat obliquely downwards and tapers, conically, to a blunt extremity.

The chelifori (ibid.) are unusually small but thickset in structure, and everywhere shortly pubescent. The hand (fig. 1 c) is considerably shorter than the scape, and has the palm relatively thick, and almost uniform in breadth throughout. The fingers, which form with the palm a very prominent angle, are shorter than it, and both are armed with comparatively small, uniformly developed teeth. The mobile finger is considerably longer than the immobile one and evenly curved. The tips of both fingers are sharply pointed, and a little, though not very incurvate.

The palpi (fig. 1 d) are likewise exceedingly small,

ligesom Saxlemmerne tæt haarede, navnlig i det ydre Parti. Af Leddene er 2det størst. De 2 ydre Led er begge yderst smaa og omtrent af ens Længde, det sidste af afrundet oval Form.

De falske Fodder (Fig. 1 e) er neppe længere end Legemet og har 4de og 5te Led omtrent af ens Udseende og Længde, hvorved er at mærke, at det undersøgte Exemplar er en Hun. Randtornerne er forholdsvis smaa og stærkt krummede, med meget smaa Sidetænder. Paa sidste Led (Fig. 1 f) er der 8 saadanne Torner, successivt tiltagende i Længde mod Spidsen. Endekloen (ibid.) er næsten lige og har 7 smaa Sidetænder.

Gangfodderne (se Fig. 1) er ualmindelig robuste, noget sammentrykte og overalt tæt laadne af korte, ensformigt udviklede Haar. De er neppe 3 Gange længere end Legemet og kun lidet afsmalnende mod Enden. Dog er Laarledet betydelig bredere end de øvrige. 2det Lægleled er næsten overalt af ens Bredde og omtrent $2\frac{1}{2}$ Gang længere end det terminale Afsnit. Tarsalledet (se Fig. 1 g) er meget kort, neppe længere end bredt, og danner indad en afrundet, med fine Torner besat Lap. Fodledet er næsten 3 Gange saa langt, noget opsvulmet i sit basale Parti og her i Inderkanten bevæbnet med en Række af circa 8, udad i Længde tiltagende Torner. Endekloen er forholdsvis kort, neppe mere end halvt saa lang som Fodledet, men særdeles kraftig og stærkt krummet. Bikkloerne er vel udviklede, omtrent halvt saa lange som Endekloen.

Farven var paa det undersøgte Exemplar ensformig graahvid, halvt gjennemsigtig.

Forekomst. Det ovenfor beskrevne Exemplar toges under Nordhavs-Expeditionens sidste Togt i Saltstrømmen, ved Indlobet til Saltenfjord, paa et Dyb af 80—90 Favne mellem Hydroider. Paa andre Steder af vor Kyst har jeg ikke truffet den.

Udbredning. Arten er udbredt til Island, hvortil saavel Krøyer's Typeexemplar som det nylig af Dr. Hansen omtalte Individ var. Paa andre Localiteter er den hidtil ikke med Sikkerhed observeret. Thi Angivelserne herom beror ganske sikkert paa en Forveksling med følgende Art.

33. *Chætonymphon hirtipes* (Bell).

(Pl. XI, Fig. 2, a—k).

Nymphon hirtipes, Bell, Belcher's Last of the Arctic Voyages. Crust. p. 403, Pl. 35, Fig. 3.

Nymphon hirtum, G. O. Sars, Prodröm. descript. Crust. & Pycnogon. p. 365.

Nymphon hirtipes, Wilson, Trans. Conn. Acad. Vol. V, p. 22, Pl. V, figs. 2—3, Pl. VI, fig. 2, a—k.

and, like the chelifori, densely hairy, particularly in the outer part. Of the joints, the 2nd is the largest. The 2 outer joints are both very small and about equal in length; the terminal one having a rounded oval form.

The false legs (fig. 1 e) are hardly longer than the body, and have the 4th and 5th joints about uniform in length and appearance; but it is to be noted that the specimen examined was a female. The marginal spines are comparatively small and strongly curved, with very minute lateral teeth. On the last joint (fig. 1 f) 8 of these spines occur, increasing successively in length towards the point. The terminal claw (ibid.) is well-nigh straight and has 7 small lateral teeth.

The ambulatory legs (see fig. 1) are uncommonly robust, somewhat compressed, and everywhere densely hispid with short, uniformly developed hairs. They are hardly 3 times longer than the body, and taper but little towards the extremity. The femoral joint, however, is considerably broader than the others. The 2nd tibial joint is almost uniform in breadth throughout, and about two and a half times as long as the terminal section. The tarsal joint (see fig. 1 g) is very short, scarcely longer than it is broad, and forms inwards a rounded lobe beset with delicate spines. The propodal joint is almost 3 times as long, a little swollen in its basal part and armed there, on the inner edge, with a series of about 8 spines increasing in length outwards. The terminal claw is comparatively short, scarcely more than half the length of the propodal joint, but exceedingly powerful and strongly curved. The auxiliary claws are well developed, about half as long as the terminal claw.

In the specimen examined the colour was a uniform greyish white, semi-translucent.

Occurrence. The specimen described above was taken on the North-Atlantic Expedition's last cruise in Saltstrømmen, at the mouth of the Saltenfjord, at a depth of 80—90 fathoms, among Hydroids. In other localities of the Norwegian coast I have not met with the animal.

Distribution. The range of this species extends to Iceland, whence both Krøyer's typical specimen and the individual lately spoken of by Dr. Hansen were obtained. Elsewhere it has not as yet been observed with certainty, as all statements to that effect assuredly rest on its being confounded with the following species.

33. *Chætonymphon hirtipes* (Bell).

(Pl. XI, fig. 2, a—k).

Nymphon hirtipes, Bell, Belcher's Last of the Arctic Voyages. Crust. p. 403, Pl. 35, fig. 3.

Nymphon hirtum, G. O. Sars, Prodröm, descript. Crust. & Pycnogon., p. 365.

Nymphon hirtipes, Wilson, Trans. Conn. Acad., Vol. V, p. 22, Pl. V, figs. 2—3, Pl. VI, fig. 2, a—k.

Nymphon hirtum, Idem, U. S. Commission Fish & Fisheries, Rep. f. 1878, p. 495, Pl. VII, fig. 38—41.

Nymphon hirtipes, Hoek, Pycnog. Willem Barents l. c., p. 6, Pl. I, fig. 1—8.

— — Hansen, Kara Havets Pycnogonider, p. 5.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 33.

Artscharacter. Legemet undersætsigt, oventil kort haaret, med Sidefortsætterne tæt sammentrængte. Hovedsegmentet omtrent saa langt som de 3 følgende Segmenter tilsammen, Halsen kort og tyk, Pandedelen stærkt udvidet. Halesegmentet horizontalt, forlænget, tenformigt. Øieknuden stærkt ophøiet, meget smal, næsten cylindrisk, skraat bagudrettet, Lindserne forholdsvis smaa og beliggende nær Spidsen. Snabelen af Hovedsegmentets Længde, cylindrisk-konisk. Saxlemmerne betydelig større end hos foregaaende Art og tæt haarede; Skaftet smalt cylindrisk, noget tykere i Enden; Haanden lidt kortere end Skaftet, noget sammentrykt, Palmen successivt udvidet mod Enden og omtrent af Fingrenes Længde, disse stærkt krummede i Spidsen, Tænderne i Inderkanten længere og tyndere end hos foregaaende Art. Følterne omtrent af Saxlemmernes Længde tæt besatte med temmelig lange Haar, 2det Led længst, de 2 ydre Led betydelig smalere end 3die og tilsammen noget længere end dette, sidste Led aflangt elliptisk, kortere end næstsidsste. De falske Fødder omtrent af Legemets Længde, 5te Led hos Hannen stærkt udvidet i det ydre Parti og her besat med talrige lange Borster; Randtornerne bredt lancetformige, utydeligt crenulerede i Kanterne. Gangfodderne omtrent $3\frac{1}{2}$ Gang længere end Legemet, noget afsmalnende mod Enden og tæt besatte med temmelig lange og stærke Haar, Laarledet hos Hunnen stærkt opsvulmet, hos Hannen i Inderkanten fint crenuleret, 2det Læglid tydeligt afsmalnende, omtrent 3 Gange længere end det terminale Afsnit; Tarsalledet længere end bredt, Fodledet noget mere end dobbelt saa langt, successivt afsmalnende mod Enden og i Inderkanten bevæbnet med 4—5 tynde Torner; Endekloen betydelig længere og smalere end hos foregaaende Art; Bikloerne meget smaa. De ydre Ægmasser meget store, uregelmæssigt kugleformige, med talrige Æg. Legemets Længde $11\frac{1}{2}^{mm}$; Spandvidde 70^{mm} .

Bemærkninger. Denne Art kan nærmest betragtes som Type for Slægten, da den i sig paa den mest udprægede Maade forener de for samme karakteristiske Eienommeligheder. De allertleste af de under Benævnelsen *Nymphon hirtum* af andre Forskere anførte Former refererer sig utvivlsomt til denne og ikke til den Kröyerske Art. Begge er let at adskille, saavel ved Beskaffenheden af Haarbedækningen som ved Øieknuden og Lemmernes Bygning.

Beskrivelse. Legemets Længde hos de største af mig undersøgte Individuer gaa op til $11\frac{1}{2}^{mm}$, med en Spandvidde af 70^{mm} . Hammerne synes som Regel at være noget mindre end Hunnerne.

Nymphon hirtum, Idem, U. S. Commission Fish & Fisheries, Rep. for 1878, p. 495, Pl. VII, figs. 38—41.

Nymphon hirtipes, Hoek, Pycnog. Willem Barents, l. c., p. 6, Pl. I, figs. 1—8.

— — Hansen, Kara Havets Pycnogonider, p. 5.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 33.

Specific Characters. Body thickset, shortly hirsute above, with the lateral processes closely crowded. Cephalic segment about as long as the 3 following segments taken together, neck short and thick, frontal part much expanded. Caudal segment horizontal, elongated, fusiform. Oculiferous tubercle elevated, very narrow, almost cylindric, directed obliquely backwards, lenses relatively small and placed near the point. Proboscis the length of the cephalic segment, conico-cylindric. Chelifori considerably larger than in the preceding species and densely setous; scape narrow-cylindric, somewhat thicker at the extremity; hand somewhat shorter than scape, slightly compressed, palm successively expanded towards the extremity and of about the length of the fingers, the latter strongly curved at the tips, teeth on the inner edge longer and thinner than in the preceding species. Palpi about the length of the chelifori, densely beset with rather long hairs, 2nd joint longest, the 2 outer joints considerably narrower than the 3rd, and, taken together, somewhat longer than it, last joint oblongo-elliptic, shorter than the penultimate one. False legs about as long as the body, 5th joint in male greatly expanded in the outer part, and beset there with numerous long setæ, marginal spines broad-lanceolate, indistinctly crenulated on the edges. Ambulatory legs about $3\frac{1}{2}$ times longer than the body, tapering a little towards the extremity and densely beset with rather long and stiff bristles, femoral joint in female greatly swollen, in male delicately crenulated on the inner edge, 2nd tibial joint preceptibly tapering, about 3 times longer than the terminal section; tarsal joint longer than broad, propodal joint somewhat more than twice as long, tapering successively towards the extremity and armed on the inner edge with 4 or 5 slender spines; terminal claw considerably longer and narrower than in the preceding species; auxiliary claws very small. The outer egg-masses very large, irregularly globular, with numerous ova. Length of body $11\frac{1}{2}^{mm}$; extent 70^{mm} .

Remarks. This species may be chiefly regarded as the type of the genus, as it unites in itself, in the most distinct manner, the characters peculiar to the genus. Most of the forms recorded by other naturalists under the designation *Nymphon hirtum*, refer unquestionably to this and not to the Kröyer species. They are both easily distinguished, alike by the nature of the setous covering, the oculiferous tubercle and the structure of the limbs.

Description. The length of the body in the largest of the individuals I have examined reaches $11\frac{1}{2}^{mm}$, the extent 70^{mm} . The males seem, as a rule, to be somewhat smaller than the females.

Legemets Form (se Pl. XI, Fig. 2) er ogsaa hos denne Art meget undersætsig, skjøndt maaske noget mindre end hos foregaaende Art, navnlig hvad Lemmerne angaar. Selve Kroppen (Fig. 2 a, 2 b) er tyk og svær, med Segmenterne meget skarpt sondrede fra hinanden og, ligesom hos foregaaende Art, kort haarede paa Rygsiden. Sidefortsætterne, der kun er skilte ved meget smale, spaltformige Mellemrum, er meget tykke, kortere end Kroppens Brede paa Midten og oventil tæt haarede. Hovedsegmentet er omtrent saa langt som de 3 følgende Segmenter tilsammen og har Halsen kort og tyk, Pandedelen dobbelt saa bred og meget udpræget rendeformigt fordybet oventil efter Midten. Halesegmentet er horizontalt og af smal tendannet Form.

Oieknuden er stærkt ophøiet, af smal cylindrisk Form, og viser sig, naar Dyret sees fra Siden (Fig. 2 b), skraat bagudrettet og noget skjævt afkuttet i Enden. Forfra eller bagfra seet (Fig. 2 c), synes den ganske jævnt at afsmalnes mod Enden, der er stumpt tilspidset og til hver Side forsynet med et lidet vinkelformigt Fremspring. Linserne er forholdsvis smaa, noget skraatstillede og beliggende nær Enden af Oieknuden.

Snabelen (se Fig. 2 b) er af betydelig Størrelse, fuldkommen saa lang som Hovedsegmentet og af cylindrisk Form, med but tilrundet Ende.

Saxlemmerne (se Fig. 2 a, 2 b) er forholdsvis større end hos foregaaende Art og ogsaa af noget smækrere Form. Skaftet er smalt cylindrisk, lidt tykkere i Enden og tæt haaret. Haanden (Fig. 2 d), der er noget sammentrykt fra Siderne, opnaar neppe Skaftets Længde og er ligeledes tæt besat med Haar, der navnlig ved Basis af den ubevægelige Finger er temmelig lange og stærke. Palmen er stærkt indknebet ved Basis og tiltager successivt i Brede udad, hvorved den næsten faar en trekantet Form. Fingrene danner ogsaa her med Palmen en tydelig Vinkel og er forholdsvis betydelig længere og smalere end hos foregaaende Art, uden dog synderligt at overgaa Palmen i Længde; de ender begge med skarpe indbøjede Spidser og har langs Inderkanten en Rad af temmelig lange og tynde, ens udviklede Tænder.

Følerne (Fig. 2 e) er, lige udstrakte, omtrent af Saxlemmernes Længde og, navnlig i sit ydre Parti, tæt besatte med forholdsvis lange Haar. Af Leddene er ogsaa her det 2det størst. De 2 ydre Led er betydelig smalere end 3die og tilsammentagne noget længere end dette. Sidste Led er af aflang oval Form og kjendelig kortere end næstsidste.

De falske Fødder er hos Hunnen (Fig. 2 f) af sædvanligt Udseende, med 5te Led omtrent af samme Størrelse som 4de og Endedelen paa det nærmeste saa lang som disse 2 Led tilsammen. Hos Hannen er disse Lemmer

The body (see Pl. XI, fig. 2) is also in this species very thickset, though possibly somewhat less so than in the preceding one, particularly as regards the limbs. The trunk itself (fig. 2 a, 2 b) is thick and massive with the segments sharply defined from each other, and, as in the preceding species, short-hairy on the dorsal side. The lateral processes, which are only separated by exceedingly narrow, fissure-like intervals, are very thick, shorter than the body is broad in the middle, and densely hairy above. The cephalic segment is about as long as the 3 following segments taken together, and has the neck short and thick; the frontal part twice as broad, and, dorsally, very prominently canaliculiformly grooved along the middle. The caudal segment is horizontal and of a narrow, fusiform shape.

The oculiferous tubercle is exceedingly elevated, of a narrow cylindrical form, and appears, on viewing the animal laterally (fig. 2 b), to slant backwards and be somewhat obtusely truncated at the extremity. Viewed anteriorly or posteriorly (fig. 2 c), it seems to taper quite evenly to the extremity, which is obtusely acuminate and furnished on either side with a small angular projection. The lenses are comparatively small, somewhat obliquely placed, and located near the end of the tubercle.

The proboscis (see fig. 2 b) is of considerable size, fully as long as the cephalic segment and cylindrical in form, with a blunt rounded extremity.

The chelifori (see fig. 2 a, 2 b) are relatively larger than in the preceding species, and also of a somewhat more slender form. The scape is narrow-cylindric, a little thicker at the extremity, and densely setous. The hand (fig. 2 d), which is slightly compressed from the sides, hardly attains the length of the scape, and is, likewise, densely beset with hairs, which, in particular at the base of the immobile finger, are rather long and stiff. The palm is a good deal constricted at the base, and increases successively in breadth outwards, thus acquiring a well-nigh triangular form. The fingers form in this animal, too, along with the palm, a distinct angle, and are relatively a good deal longer and narrower than in the preceding species, without, however, much exceeding the palm in length; they both terminate in sharp incurvate points and bear along the inner edge a series of rather long and thin, uniformly developed teeth.

The palpi (fig. 2 e) are, when fully extended, about the same length as the chelifori, and are, especially in their outer part, densely beset with comparatively long hairs. Of the joints, the 2nd is here, too, the largest. The 2 outer joints are considerably narrower than the 3rd and, taken together, also somewhat longer than it. The last joint is oblong-oval in form and appreciably shorter than the penultimate one.

The false legs exhibit in the female (fig. 2 f) the usual appearance, with the 5th joint of about the same size as the 4th, and the terminal part very nearly as long as those 2 joints taken together. In the male, these

(se Fig. 2 b, 2 g) kjendelig kraftigere udviklede og navnlig 5te Led af betydelig Størrelse, noget krummet og i sit ydre Parti forsynet med en stærk Opsvulmning besat med lange og tætte Borster. Ogsaa Endedelens 1ste Led er forholdsvis større og bredere end hos Hunnen. Randtornerne (Fig. 2 h) er hos begge Kjøen bredt lancetformige og utydeligt crenulerede i Kanterne, med det yderste Parti glat. Endekloen er fint tandet i den ene Kant.

Gangfodderne (se Fig. 2) viser ogsaa hos denne Art en temmelig robust Bygning, men afsmalnes kjendelig mere mod Enden og er besatte med længere og stærkere Haar. De er omtrent $3\frac{1}{2}$ Gang længere end Legemet og har Laarledet hos Hunnen meget bredt og noget sammentrykt fra Siderne, hos Hannen (Fig. 2 k) betydelig smalere og i den indre Kant forsynet med en Rad af talrige (omkring 14) smaa Knuder, der giver denne Kant et fint crenuleret Udseende. 2det Lægled er omtrent 3 Gange længere end det terminale Afsnit og afsmalnes temmelig stærkt mod Enden. Tarsalledet (se Fig. 2 i) er noget længere end bredt og danner ikke nogen tydelig Lap indad. Fodledet er mere end dobbelt saa langt og afsmalnes successivt mod Enden. I den indre Kant har dette Led 4—5 tynde Torner, der dog kun indtager den indre Halvpart af Ledet, og hvoraf de yderste er af betydelig Længde. Endekloen er forholdsvis længere og tyndere end hos foregaaende Art og noget leformigt tilskjærpet. Derimod er Bikkloerne yderst smaa.

De ydre Ægmasser (se Fig. 2 b), der altid kun er tilstede i et enkelt Par, er af betydelig Størrelse og uregelmæssig kugledannede, med talrige Æg af middels Størrelse og, paa Grund af det gjensidige Tryk, mere eller mindre kantet Form.

Dyrets Farve er ialmindelighed skidden graa, gaaende over i det brunlige. Ofte er imidlertid Legemet saa tæt besat med fremmede Dele, at Farven er vanskelig at bestemme. Ikke sjelden har jeg til Fodderne fundet fæstet Bryozoe, Annelideror, Hydroider og andre Pseudoparasiter.

Forekomst. Ved vore Kyster har jeg kun observeret denne Art i den arktiske Region, hvor den imidlertid paa sine Steder, f. Ex. ved Vadsø, er temmelig hyppig paa 50—100 F. D. Under Nordhavs-Expeditionen toges den paa ikke mindre end 12 forskellige Stationer. Af disse ligger en (St. 48) Ø af Island, en anden (St. 223) S af Jan Mayen, 6 Stationer (St. 262, 267, 270, 273, 275, 290) i Havet N og Ø af Finmarken, endelig 4 Stationer (St. 326, 336, 338, 363) i Havet om Spitzbergen; Dybden fra 70 til 299 F. Ogsaa fra det kariske Hav har jeg havt Anledning til at undersøge talrige Exemplarer, indsamlede under Nordenskjöld's Expedition.

Udbredning. Arten synes at have en vid Udbredning i de arktiske Have. Foruden de ovenomtalte Steder, er den observeret ved arktisk Nordamerika (Bell), Grøn-

limbs (see fig. 2 b, 2 g) are appreciably more powerfully developed, the 5th joint in particular being of considerable size, somewhat curved, and furnished in its outer part with a prominent tumefaction beset with long and dense bristles. Also the 1st joint of the terminal part is relatively larger and broader than in the female. The marginal spines (fig. 2 h) are, in both sexes, broad-lanceolate and indistinctly crenulated on the edges, with the outermost part smooth. The terminal claw has one of the edges finely dentate.

The ambulatory legs (see fig. 2) exhibit, also, in this species a rather robust structure, but taper appreciably more towards the extremity, and are beset with longer and stiffer hairs. They are about $3\frac{1}{2}$ times longer than the body and have the femoral joint in the female very broad and somewhat compressed from the sides, in the male (fig. 2 k) a good deal narrower, and furnished on the inner edge with a series of numerous (about 14) small nodules, which gives to this edge a delicately crenulated appearance. The 2nd tibial joint is about 3 times longer than the terminal section, and tapers rather abruptly towards the end. The tarsal joint (see fig. 2 i) is somewhat longer than broad, and does not form a distinct lobe inwards. The propodal joint is more than twice as long, and tapers successively towards the end. On its inner edge this joint has 4 or 5 slender spines, which occupy, however, only the inner half of the joint, and of which the outermost are of considerable length. The terminal claw is relatively longer and thinner than in the preceding species, and somewhat falciformly sharpened. The auxiliary claws, on the other hand, are exceedingly small.

The outer egg-masses (see fig. 2 b), present always as a single pair, are of considerable size and irregularly globiform, with numerous ova of moderate size and, owing to the reciprocal pressure, more or less angular.

The colour of the animal is generally a dirty grey, bordering on brownish. Very often, however, the body is so coated with foreign substances as to render the colour difficult to determine. Not infrequently I have found attached to the legs, Bryozoa, the tubes of Annelids, Hydroids, and other pseudo-parasites.

Occurrence. On the coasts of Norway I have only observed this species in the Arctic region, where however, in some localities, it is rather common at a depth of 50—100 fathoms. On the North Atlantic Expedition it was taken at as many as 12 different Stations, viz: 1 (St. 48) east of Iceland, 1 (St. 223) south of Jan Mayen, 6 (St. 262, 267, 270, 273, 275, 290) in the sea north and east of Finmark, and finally 4 (Sts. 326, 336, 338, 363) in the sea round Spitzbergen; depth from 70 to 299 fathoms. Also from the Kara Sea I have had opportunity of examining numerous specimens collected on Nordenskjöld's Expedition.

Distribution. The species seems to be widely distributed throughout the Arctic Seas. Besides in the above-mentioned localities, it is recorded from Arctic

land (Miers). Østkysten af Nordamerika (Wilson). Davisstrædet (Hansen) og det sibiriske Ishav (Stuxberg) og er saaledes ifølge sin Forekomst en udpræget arktisk og circumpolar Form.

34. *Chætonymphon spinosum*. (Goodsir).

(Pl. XI. Fig. 3, a—i).

Nymphon spinosum. Goodsir, Edinburgh New Phil. Journal, Vol. 32, p. 139, Pl. III, Fig. 3.

— — — Idem, Ann. Nat. Hist. Vol. 14, p. 3, Pl. I, Fig. 17, 18.

Chætonymphon spinosum, G. O. Sars, Pycnogonidea borealia & arctica, No. 34.

Artscharacter. Legemet noget mindre undersætsigt end hos foregaaende Art, med Sidefortsætterne mere tydeligt skilte og Rygsiden af Segmenterne besatte med lange og stærke bagud krummede Børster. Hovedsegmentet omtrent som hos *Ch. hirtipes*, men med noget smalere Hals. Øieknuden stærkt ophøiet, opsvulmet i Enden; Lindserne større end hos foregaaende Art. Snabelen lidt kortere end Hovedsegmentet, cylindrisk. Saxlemmerne lig samme hos *Ch. hirtipes*, men med kortere Palm og betydelig længere og tyndere Fingre. Følerne spinklere og mindre tæt børstebesatte end hos denne Art. De falske Fodder hos Hannen mindre robuste, med 5te Led kortere og mere sparsomt børstebesat; Randtornerne lancetformige og i sin hele Længde tydeligt saugtakkede. Gaugfodderne neppe mere end 3 Gange længere end Legemet, noget mindre robuste end hos de 2 foregaaende Arter og rundt om tæt besatte med ualmindelig lange og stive Børster, 2det Læglied omtrent $2\frac{1}{2}$ Gang længere end det terminale Afsnit. Tarsalledet smalere end hos foregaaende Art, Fodledet over dobbelt saa langt som Tarsalledet, smalt lineært, med talrige Torner af ulige Længde langs hele Inderkanten; Endekloen noget mere end halvt saa lang som Fodledet, Bikløerne vel udviklede, af Kloens halve Længde. Ægmasserne mindre end hos *Ch. hirtipes*, med faa og meget store Æg. Farven graa, med brunligt gjenemskinnende Tarmsystem. Legemets Længde $8\frac{1}{2}^{mm}$; Spandvidde 51^{mm} .

Bemærkninger. Nærværende Art, der af enkelte senere Forskere synes at være forvexlet med foregaaende, staar denne vistnok meget nær, men er ved noiere Undersøgelse let og sikkert at adskille, saavel ved den ualmindelig stærke Børstebesætning som ved Øieknudens Form, samt Saxlemmernes og Gaugfoddernes Bygning. At den er identisk med Goodsir's Art finder jeg ganske utvivlsomt, baade paa Grund af Overensstemmelser i Beskrivelsen og fordi den har en mere sydlig Udbredning end de øvrige Arter af Slægten.

North America (Bell). Greenland (Miers), the East Coast of North America (Wilson). Davis Straits (Hansen), and the Siberian Polar Sea (Stuxberg), and is therefore, according to its occurrence, a prominent Arctic and circumpolar form.

34. *Chætonymphon spinosum*. (Goodsir).

(Pl. XI, fig. 3, a—i).

Nymphon spinosum. Goodsir, Edinburgh New Phil. Journal, Vol. 32, p. 139, Pl. III, fig. 3.

— — — Idem, Ann. Nat. Hist. Vol. 14, p. 3, Pl. I, figs. 17, 18.

Chætonymphon spinosum, G. O. Sars, Pycnogonidea borealia & arctica, No. 34.

Specific Characters. Body somewhat less thickset than in the preceding species, with the lateral processes more distinctly defined, and the dorsal side of the segments beset with long and prominently backwards curved bristles. Cephalic segment about as in *Ch. hirtipes*, but with somewhat narrower neck. Oculiferous tubercle exceedingly elevated, swollen at the extremity; lenses larger than in the preceding species. Proboscis a trifle shorter than the cephalic segment, cylindric. Chelifori as in *Ch. hirtipes*, but with shorter palm and considerably longer and thinner fingers. Palpi more slender and less densely setous than in that species. False legs in male less robust, with the 5th joint shorter and more sparingly beset with bristles; marginal spines lanceolate, and distinctly serrate throughout the whole of their length. Ambulatory legs scarcely more than 3 times longer than the body, a little less robust than in the 2 preceding species, and beset all round with remarkably long and stiff bristles. 2nd tibial joint about $2\frac{1}{2}$ times longer than the terminal section, tarsal joint narrower than in the preceding species, propodal joint more than twice as long as the tarsal joint, narrow-linear, with numerous spines of unequal length along the whole of the inner edge; terminal claw a little more than half as long as the propodal joint, auxiliary claws well developed, half the length of the claw. Egg-masses smaller than in *Ch. hirtipes*, with few and very large ova. Colour grey, with brownish intestinal system shining through. Length of body $8\frac{1}{2}^{mm}$; extent 51^{mm} .

Remarks. The present species, confounded apparently by certain later naturalists with the preceding one, does indeed approximate that form very closely, but, on further examination, is easily and surely distinguished, both by the remarkably strong setous covering as well as by the form of the oculiferous tubercle, and the structure of the chelifori and ambulatory legs. That the form is identical with Goodsir's species, I regard as quite indubitable, both from agreements in description and because it has a more southerly distribution than the other species of the genus.

Beskrivelse. Legemets Længde er omkring $8\frac{1}{2}^{mm}$, med en Spandvidde af 51^{mm} , og denne Art staar saaledes i Størrelse tilbage for *Ch. hirtipes*.

Den almindelige Habitus (se Pl. XI, Fig. 3) er meget lig samme hos *Ch. hirtipes*; dog synes baade Kroppen og Lemmerne idethele at være noget mindre robust byggede, og Sidefortsætterne videre adskilte. Hovedsegmentet og de 2 følgende Segmenter er (se Fig. 3 b) oventil i sit bagre Parti besatte med ualmindelig lange og stive bagudboiede Haar, og ogsaa paa Hovedsegmentets Pandedel og paa Sidefortsætternes ovre Side er Haarene kjendelig stærkere end hos foregaaende Art. Formen af Hovedsegmentet er omtrent som hos *Ch. hirtipes*, med den Forskel, at Halsen er noget tyndere (se Fig. 3 a), og Halsesegmentet har en lignende smal tendannet Form som hos denne Art.

Øieknuden (Fig. 3 c) skiller sig derimod kjendelig i sin Form fra samme hos foregaaende Art. Den er forholdsvis større og har det ydre Parti tydeligt fortykket, ligesom opblæst, med Enden stumpt afrundet og forsynet med 2 meget smaa knudeformige Fremspring. Lindserne er af betydelig Størrelse og, som hos foregaaende Art, beliggende nærmere Spidsen end Basis af Øieknuden.

Snabelen (se Fig. 3 b) synes forholdsvis noget kortere og tykkere end hos *Ch. hirtipes*, men viser forøvrigt et meget lignende Udseende.

Saxlemmerne (se Fig. 3 b) ligner ved første Øiekast særdeles meget samme hos den typiske Art. Ved nøiere Undersøgelse viser imidlertid Haanden (Fig. 3 d) meget vel udprægede Differentser. Den er idethele svagere bygget og har Palmen betydelig kortere i Forhold til Fingrene, samt i Inderkanten forsynet med en tydelig Indbugtning. Fingrene er næsten dobbelt saa lange som Palmen, meget tynde og stærkt krummede, gaaende ud i sylskarpe hinanden krydsende Spidser. Tænderne i Inderkanten synes ligeledes tyndere og længere end hos foregaaende Art.

Følerne (Fig. 3 e) viser et lignende Længdeforhold af de dem sammensættende Led som hos *Ch. hirtipes*, men er forholdsvis noget spinklere og skiller sig desuden ved en mindre tæt Borstebesætning.

De falske Fødder hos Hannen (se Fig. 3 b, Fig. 3 f) er ligeledes spinklere og har 5te Led mindre kraftigt udviklet, men er i sit ydre Parti paa en lignende Maade udvidet og borstebesat. Randtornerne (Fig. 3 g) er i sin hele Længde tydeligt og regelmæssigt saugtakkede.

Gangfødderne (se Fig. 3) er ikke fuldt 3 Gange længere end Legemet og idethele forholdsvis mindre robuste end hos de 2 foregaaende Arter. De er i hele sin Længde tæt besatte med ualmindelig lange og stive Borster, der navnlig paa de 2 Læglæder er stærkt udviklede og danner en tæt kostformig Bræmme rundt om samme. Laarledet er hos Hannen temmelig stærkt opsvulmet og ualmindelig fyldt med forholdsvis ualmindelig store Ægceller. Hos

Description. The body has a length of about $8\frac{1}{2}^{mm}$, with an extent of 51^{mm} , and this species, therefore, is inferior in size to *Ch. hirtipes*.

The general habitus (see Pl. XI, fig. 3) is very similar to that of *Ch. hirtipes*; yet both the trunk and the limbs would seem altogether to be somewhat less robust in structure, and the lateral processes to be more separated. The cephalic segment and the 2 succeeding segments (see fig. 3 b) are beset above, in their posterior part, with remarkably long and stiff recurvate hairs; and also on the frontal part of the cephalic segment and the upper surface of the lateral processes the hairs are appreciably stouter than in the preceding species. The form of the cephalic segment is about as in *Ch. hirtipes*, with this difference, that the neck is somewhat thinner (see fig. 3 a), and the caudal segment has a similar narrow fusiform shape as in that species.

The oculiferous tubercle (fig. 3 c), on the other hand, is appreciably distinguished in its form from that of the preceding species. It is relatively larger, and has the outer part distinctly thickened, as it were inflated, with the extremity obtusely rounded and furnished with 2 very small tuberculiform projections. The lenses are of considerable size and, as in the preceding species, are placed nearer the point than the base of the tubercle.

The proboscis (see fig. 3 b) would seem to be relatively somewhat shorter and thicker than in *Ch. hirtipes*, but exhibits, otherwise, a very similar appearance.

The chelifori (see fig. 3 b) resemble very closely, at the first glance, those in the typical species. A more careful examination, however, shows the hand (fig. 3 d) to have well-marked differences. It is, on the whole, more feeble in structure, with the palm considerably shorter in proportion to the fingers and the inner edge exhibits a distinct incurvation. The fingers are almost twice as long as the palm, very thin and sharply curved, running out to awl-sharp intercrossing points. The teeth on the inner edge seem also to be thinner and longer than in the preceding species.

The palpi (fig. 3 e) exhibit the same longitudinal relations in the joints composing them as in *Ch. hirtipes*, but are relatively somewhat more slender, and they distinguish themselves, besides, by having the setous covering less dense.

The false legs in the male (see fig. 3 b, 3 f) are also relatively more slender, and have the 5th joint less powerfully developed, but with the outer part in like manner expanded and beset with bristles. The marginal spines (fig. 3 g) are throughout their entire length distinctly and regularly serrated.

The ambulatory legs (see fig. 3) are not quite 3 times longer than the body, and on the whole are relatively less robust than in the 2 preceding species. They are densely beset throughout their entire length with exceedingly long and stiff bristles, which, particularly on the 2 tibial joints, are strongly developed and form round them a dense brush-like fringe. The femoral joint is in the male a good deal swollen, and as a rule filled with comparatively very

Hannen er dette Led (se Fig. 3 i) som sædvanlig betydelig smalere og har i den indre Kant 4—5 afrundede Knuder. 2det Lægled er meget smalt, næsten lineært, og omtrent $2\frac{1}{2}$ Gang længere end det terminale Afsnit. Dette sidste (se Fig. 3 h) skiller sig kjendeligt fra samme hos de 2 foregaaende Arter og er idethale betydelig spinklere. Tarsalledet er mere end dobbelt saa langt som bredt og kun ganske svagt udvidet mod Enden. Fodledet er stærkt forlænget, omtrent $2\frac{1}{2}$ Gang længere end Tarsalledet, meget smalt, lineært, og langs Inderkanten bevæbnet med en Rad af 12—16 temmelig ulige udviklede Torner. Endekloen er noget mere end halvt saa lang som Fodledet og stærkt krummet ved Basis. Bikloerne er, i Modsætning til hvad Tilfældet er hos den typiske Art, vel udviklede og næsten af Kloens halve Længde.

De ydre Ægmasser (se Fig. 3 b) er forholdsvis mindre end hos foregaaende Art, kugleformige, og indeholder et forholdsvis ringe Antal ualmindelig store Æg.

Dyrets Farve er blegt gulagtig, med brunlig gennemskinnende Tarmsystem.

Forekomst. Jeg har taget denne Art af og til ved vor Vestkyst, fra Hoiden af Stavanger til Tjøto i Nordland. Ved Finmarken har jeg derimod ikke observeret den, og heller ikke under Nordhavs-Expeditionen erholdtes denne Art.

Udbredning. Foruden ved Norges Kyster er den alene med Sikkerhed kjendt fra de Britiske Øer (Goodsir). Den har saaledes utvivlsomt en mere sydlig Udbredning end de øvrige Arter af Slægten.

35. *Chætonymphon tenellum*, G. O. Sars.

(Pl. XII, Fig. 1, a—h).

Chætonymphon tenellum, G. O. Sars, Pycnogonidea borealia & arctica, No. 35.

Artscharacter. Legemet forholdsvis betydelig spinklere end hos de 3 foregaaende Arter. Kroppen næsten cylindrisk, oventil kort og fint haaret, med Sidefortsætterne vel adskilte. Hovedsegmentet neppe længere end de 2 følgende Segmenter tilsammen; Halsen kort, Pandedelen successivt udvidet. Halsesegmentet simpelt cylindrisk, stumpt afrundet i Enden. Oieknuden stump konisk, lige opadrettet, med forholdsvis store Lindser. Snablen noget kortere end Hovedsegmentet, horizontal, noget afsmalnende. Saxlemmerne noget lig samme hos *Ch. spinosum*, men med Haanden forholdsvis kortere og Fingrene mindre spinkle. Følerne temmelig forlængede. 2det og 3die Led omtrent af samme Længde, sidste Led neppe kortere end næstsidste og begge tilsammen lig 3die. De falske Fødder hos Hannen temmelig spinkle, 5te Led successivt udvidet mod Enden og her kort haaret; Randtornerne forholdsvis smaa, stumpt lancet-

large egg-cells. In the male, this joint (see fig. 3 i) is, as usual, considerably narrower, and has on the inner edge 4 or 5 rounded nodules. The 2nd tibial joint is very narrow, well-nigh linear, and about $2\frac{1}{2}$ times longer than the terminal section. The latter (see fig. 3 h) is appreciably distinguished from that part in the 2 preceding species, and is, on the whole, considerably more slender. The tarsal joint is more than twice as long as it is broad, and but very slightly expanded towards the extremity. The propodal joint is much elongated, about $2\frac{1}{2}$ times longer than the tarsal joint, very narrow, linear, and armed along the inner edge with a series of 12—16 rather unequally developed spines. The terminal claw is somewhat more than half as long as the propodal joint, and sharply curved at the base. The auxiliary claws, contrary to what occurs in the typical species, are well developed, and almost half the length of the claw itself.

The outer egg-masses (see fig. 3 b) are smaller, relatively, than in the preceding species, globular in form, and contain a comparatively small number of uncommonly large ova.

The colour of the animal is a pale yellow, with brownish intestinal system shining through the skin.

Occurrence. I have now and again taken this species on the West Coast of Norway, from the latitude of Stavanger to Tjøto in Nordland. On the Coast of Finmark I have, on the contrary, not observed it, nor was the animal obtained on the North-Atlantic Expedition.

Distribution. Besides on the Coasts of Norway, the species is only known with certainty from the British Islands (Goodsir). It has thus, unquestionably, a more southerly distribution than the other species of the genus.

35. *Chætonymphon tenellum*, G. O. Sars.

(Pl. XII, fig. 1, a—h).

Chætonymphon tenellum, G. O. Sars, Pycnogonidea borealia & arctica, No. 35.

Specific Characters. Body relatively much more slender than in the 3 preceding species, trunk well-nigh cylindric, short and finely hirsute above, with the lateral processes well separated. Cephalic segment scarcely longer than the 2 following segments taken together; neck short, frontal part successively expanded. Caudal segment simple-cylindric, obtusely rounded at the extremity. Oculiferous tubercle obtuse-conic, pointed straight upwards, with comparatively large lenses. Proboscis somewhat shorter than the cephalic segment, horizontal, slightly tapering. Chelifori somewhat like those of *Ch. spinosum*, but with the hand relatively shorter and the fingers less slender. Palpi rather elongated, 2nd and 3rd joints of about uniform length, last joint scarcely shorter than the penultimate one, and both taken together equalling the 3rd. False legs in the male rather slender, 5th joint

formige, uregelmæssigt crenulerede i Kanterne. Gangfodderne neppe 3 Gange længere end Legemet, temmelig spinkle og tæt haarede. Laarledet hos Hammen med kun 3 Knuder i Inderkanten, det terminale Parti meget smalt, Tarsalledet lineært, Fodledet ikke fuldt dobbelt saa langt, med talrige lange og tynde Torner i Inderkanten; Endekloen omtrent halvt saa lang som Fodledet; Bikloerne vel udviklede. Legemets Længde $6\frac{1}{2}^{mm}$; Spandvidde 34^{mm} .

Bemærkninger. Fra de 3 foregaaende Arter skiller denne sig ved en kjendelig spinklere Kropsform, hvad der har givet Anledning til Artsbetegnelsen. Mest synes den at nærme sig til *Ch. spinosum*, men den smalt cylindriske Krop, Oieknudens Form og flere andre Characterer skiller den bestemt fra samme.

Beskrivelse. Legemets Længde hos den fuldt udviklede Han er kun $6\frac{1}{2}^{mm}$, med en Spandvidde af 34^{mm} , og denne Art er saaledes betydelig mindre end de i det foregaaende omtalte Former.

Legemet er (se Pl. XII, Fig. 1) betydelig spinklere end hos nogen af de ovenfor omtalte Arter, og navnlig er selve Kroppen (se Fig. 1 a, 1 b) kjendelig smalere, næsten cylindrisk, med Sidefortsætterne skilte ved temmelig brede Mellemrum. Paa Rygsiden er Segmenterne besatte med meget smaa, men tætte Haar, og det samme er ogsaa Tilfældet med de temmelig tykke og plumpe Sidefortsætser. Hovedsegmentet er neppe længere end de 2 følgende Segmenter tilsammen og har en tydelig, men kort Hals; Pandedelen udvides ganske successivt mod Enden og er her næsten dobbelt saa bred som Kroppen paa Midten. Halesegmentet er af simpel cylindrisk Form, stumpt afrundet i Enden, og horizontalt.

Oieknuden (Fig. 1 c) er noget mindre ophoiet end hos *Ch. hirtipes* og *Ch. spinosum*, men mere fremragende end hos *Ch. hirtum*. Den er lige opadrettet og af stump konisk Form, uden tydelige knudeformige Fremspring. Lindserne er forholdsvis store, elliptiske og beliggende nærmere Enden end Basis af Oieknuden.

Snabelen (se Fig. 1 a) er kortere end Hovedsegmentet, horizontalt fortilrettet, og kjendelig afsmalnende mod Enden.

Saxlemmerne (ibid.) ligner noget samme hos *Ch. spinosum*, men er noget spinklere og har Haanden (Fig. 1 d) forholdsvis kortere og mindre stærkt vreden. Palmen er forholdsvis større og af temmelig regelmæssig trekantet Form, hvorimod Fingrene er betydelig kortere og mindre stærkt krummede. Tænderne i Inderkanten af Fingrene er lange og tynde, men færre i Antal end hos *Ch. spinosum*.

Følerne (Fig. 1 e) er temmelig stærkt forlængede og, navnlig i sit ydre Parti, tæt haarede. Forholdet af Leddene skiller sig kjendeligt fra samme hos de foregaaende

successivt expanded towards the extremity, and short-hairy there; marginal spines comparatively small, obtusely lanceolate, irregularly crenulated on the edges. Ambulatory legs scarcely 3 times longer than the body, rather slender and densely setous, femoral joint in male with only 3 nodules on the inner edge, terminal part very narrow, tarsal joint linear, propodal joint not quite twice its length, with numerous long and slender spines on the inner edge; terminal claw about half as long as the propodal joint; auxiliary claws well developed. Length of body $6\frac{1}{2}^{mm}$; extent 34^{mm} .

Remarks. From the 3 foregoing species the present differs in its appreciably slimmer body, which feature has suggested the specific designation. It seems to approximate *Ch. spinosum* closest, but the narrow cylindrical trunk, the form of the oculiferous tubercle and several other characters distinguish it clearly from that species.

Description. The length of the body in the fully developed male is only $6\frac{1}{2}^{mm}$, with an extent of 34^{mm} , and this species is accordingly much smaller than the preceding forms.

The body (see Pl. XII, fig. 1) is a good deal slimmer than in any of the species above recorded, and more especially the trunk (see fig. 1 a, 1 b) is appreciably narrower, well-nigh cylindric, with the lateral processes separated by rather wide intervals. On the dorsal side the segments are beset with very short but dense hairs, and that is also the case with the rather thick and clumsy lateral processes. The cephalic segment is hardly longer than the 2 following segments taken together, and has a distinct though short neck; the frontal part expands successively towards the end, and is there almost twice as broad as the trunk in the middle. The caudal segment is of simple cylindric form, obtusely rounded at the extremity, and horizontal.

The oculiferous tubercle (fig. 1 c) is somewhat less elevated than in *Ch. hirtipes* and *Ch. spinosum*, but more prominent than in *Ch. hirtum*. It points straight upwards, and is conico-obtuse in form, without any distinct tuberculiform projections. The lenses are comparatively large, elliptic, and placed nearer the extremity than the base of the tubercle.

The proboscis (see fig. 1 a) is shorter than the cephalic segment, directed horizontally forwards, and tapers appreciably towards the extremity.

The chelifori (ibid.) somewhat resemble those of *Ch. spinosum*, but are a little slenderer, and have the hand (fig. 1 d) relatively shorter and less contorted. The palm is relatively larger and tolerably regularly triangular in form, whereas the fingers are considerably shorter and less sharply curved. The teeth on the inner edge of the fingers are long and thin, but fewer in number than in *Ch. spinosum*.

The palpi (fig. 1 e) are rather greatly elongated, and, particularly in their outer part, densely setous. The proportion between the joints differs appreciably from that in the

Arter, idet her 3die Led er fuldkommen saa langt som 2det, og de 2 sidste Led indbyrdes af ens Længde og tilsammen tagne lig 3die.

De falske Fodder hos Hannen (Fig. 1 f) er, lige udstrakte, omtrent af Legemet's Længde og af en temmelig spinkel Form. 5te Led er stærkt forlænget og udvides ganske successivt mod Enden, uden her at vise en saadan abrupt Opsvulmning som hos de 2 foregaaende Arter. Ligeledes er de til dette Led fæstede Borster af et mere uniformt Udseende og betydelig kortere og finere end hos hine Arter. Randtørnerne paa Endedelen (Fig. 1 g) er forholdsvis smaa, stumpt lancetformige og uregelmæssigt rundtakkede i Kanterne.

Gangfodderne (se Fig. 1) er kjendelig spinklere end hos de 3 foregaaende Arter, hvorved dog er at mærke, at det undersøgte Exemplar er en Han. De er ikke fuldt 3 Gange længere end Legemet og, navnlig i sit ydre Parti, tæt laadne af temmelig lange og stive Haar. Laarledet har i Inderkanten 3 temmelig store, afrundede Knuder, der er indskrænkede til det basale Parti af Leddet. 2det Lægled er af smal lineær Form og omtrent $2\frac{1}{2}$ Gang længere end det terminale Afsnit. Dette sidste (se Fig. 1 h) ligner noget samme hos *Ch. spinosum*, men har Tarsalledet forholdsvis længere. Fodledet er ikke fuldt dobbelt saa langt og tiltager lidt i Tykkelse mod Enden. I Inderkanten har det en Rad af 12—14 tynde Tørner af noget ulige Længde, de i Midten længst. Endekloen er forholdsvis kort, neppe mere end halvt saa lang som Fodledet, men temmelig kraftig og stærkt krummet ved Basis. Bikløerne er som hos *Ch. spinosum* vel udviklede og omtrent halvt saa lange som Kloen.

Ingen af de 2 undersøgte Exemplarer var ægbærende, og om de ydre Ægmassers Form kan saaledes intet anføres.

Forekomst. 2 Exemplarer af denne Art, begge Hanner, toges under Nordhavs-Expeditionens sidste Togt i Havet V. af Finmarken (Stat. 200) paa et Dyb af 620 F. Da Stationen tilhører den kolde Area, er Arten utvivlsomt at betragte som en ægte arktisk Form.

36. *Chætonymphon macronyx*, G. O. Sars.

(Pl. XII, Fig. 2, a—k).

Nymphon macronyx, G. O. Sars, Prodröm. descript. Crust. & Pycnog. p. 365

— — — Hoek, Pycnog. of „Knight Errant“. Report on the Challenger Pycnogonida, p. 95. Pl. XV, fig. 1—7.

— — — Hansen, Kara Havets Pycnogonider, p. 13, Tab. XVIII. Fig. 6, a—c.

preceding species, the 3rd joint being in this animal fully as long as the 2nd, and the 2 last joints uniform in length and taken together equal to the 3rd.

The false legs in the male (fig. 1 f) are, when fully extended, about same length as the body and rather slender in form. The 5th joint is very much elongated, and expands quite gradually towards the end without exhibiting there so abrupt a tumefaction as in the 2 preceding species. Moreover, the bristles affixed to that joint present a more uniform appearance than in those said species. The marginal spines on the terminal part (fig. 1 g) are comparatively small, obtuse-lanceolate, and irregularly serrated on the edges.

The ambulatory legs (see fig. 1) are appreciably more slender than in the 3 preceding species; we must, however, bear in mind that the specimen examined was a male. They are not quite 3 times longer than the body, and, more particularly in their outer part, densely hirsute with rather long and stiff hairs. The femoral joint bears on the inner edge 3 rather large rounded tubercles, confined in position to the basal part of the joint. The 2nd tibial joint is narrow linear in form, and about $2\frac{1}{2}$ times longer than the terminal section. The latter (see fig. 1 h) somewhat resembles that part in *Ch. spinosum*, but has the tarsal joint relatively longer. The propodal joint is not quite twice as long, and increases in thickness towards the extremity. On the inner edge it bears a series of 12—14 slender spines, somewhat unequal in length, those in the middle being longest. The terminal claw is relatively short, scarcely more than half as long as the propodal joint, but rather powerful and sharply curved at the base. The auxiliary claws are well developed, as in *Ch. spinosum*, and about half as long as the main claw.

Neither of the 2 specimens examined was ovigerous, and nothing can be said therefore respecting the form of the outer egg-masses.

Occurrence. Two specimens of this species, both males, were taken on the last cruise of the North-Atlantic Expedition (St. 200), in the sea west of Finmark, at a depth of 620 fathoms. As this Station lies in the cold area, the species must unquestionably be regarded as a true Arctic form.

36. *Chætonymphon macronyx*, G. O. Sars.

(Pl. XII, fig. 2, a—k).

Nymphon macronyx, G. O. Sars, Prodröm. descript. Crust. & Pycnog. p. 365.

— — — Hoek, Pycnog. of „Knight Errant“. Report on the Challenger Pycnogonida, p. 95. Pl. XV, figs. 1—7.

— — — Hansen, Kara Havets Pycnogonider, p. 13, Tab. XVIII, fig. 6, a—c.

Chaetonymphon macronyx, G. O. Sars, Pycnogonidea borealia & arctica, No. 36.

Artscharacter. Legemet smækere end hos de øvrige Arter af Slægten. Kroppen smalt cylindrisk, oventil glat, med vidt adskilte Sidefortsætter. Hovedsegmentet omtrent saa langt som de 2 følgende Segmenter tilsammen, med tydelig markeret Hals; Pandedelen kun lidet udvidet. Halesegmentet cylindrisk, skjævt opadrettet. Øieknuden stærkt opblojet og smal, ved Enden forsynet med 2 divergerende Fremspring. Lindserne af meget ulige Størrelse, det bagre Par betydelig mindre end det forreste og beliggende højere op paa Øieknuden. Snablen af Hovedsegmentets Længde, cylindrisk. Saxlemmerne forholdsvis svage og besatte med lange spredte Haar. Haanden kortere end Skaffet, Fingrene næsten dobbelt saa lange som Palmen, særdeles smale og stærkt krummede i Enden, med tynde og forlængede Tænder i Inderkanten. Følerne spinkle, 2det Led længst, de 2 sidste Led tæt haarede, af ens Længde og tilsammen længere end 3die. De falske Fodder hos Hannen stærkt forlængede, af et lignende Udseende som hos *Ch. tenellum*; Randtørnerne smalt lancetformige, med stump Spids og regelmæssigt sangtakke Kanter. Gangfodderne omtrent 3 Gange længere end Legemet, meget spinkle og besatte med spredte Haar, Laarledet hos Hunnen stærkt opsvulmet i det basale Parti, 2det Lægle særdeles smalt og omtrent dobbelt saa langt som det terminale Afsnit; Fodledet over dobbelt saa langt som Tarsalledet og langs Inderkanten forsynet med en tæt og regelmæssig Rad af tynde Tørner; Endekloen ualmindelig stærkt forlænget, neppe kortere end Fodledet, leformig tilskjæmpet; Bikhøerne yderst smaa og rudimentære. De ydre Ægmasser kugleformige, med faa og store Æg, ofte tilstede i dobbelt Antal paa enhver af de falske Fodder. Legemets Længde $6\frac{1}{2}^{mm}$; Spandvidde 36^{mm} .

Bemærkninger. Af alle Arter synes denne mest at afvige fra den typiske Form, *Ch. hirtipes*; men jeg kan dog ikke et Øieblik betænke mig paa at henføre den til samme Slægtstype. Den eiendommelige Bygning af Saxlemmerne, ligesom ogsaa Forholdet af de 2 ydre Led af Fodderne og den tydelige, skjøndt vistnok mindre udprægede Laaddenhed af Lemmerne, stempler den som en ægte Chaetonymphon. Fra de øvrige Arter er den let kjendelig ved sin forholdsvis meget spinkle Kroppsform og ved den ualmindelige Længde af Endekloen paa Gangfodderne, hvilken sidste Character har givet Anledning til Artsbenævnelsen.

Beskrivelse. Længden af de største Exemplarer gaar op til $6\frac{1}{2}^{mm}$, med en Spandvidde af 36^{mm} , altsaa omtrent som hos *Ch. tenellum*.

Legemets Form (se Pl. XII, Fig. 2) maa, i Sammenligning med samme hos de øvrige Arter af Slægten, kaldes særdeles spinkel, skjøndt den i denne Henseende ikke kan maale sig med flere Arter af Slægten *Nymphon*. Selve Kroppen (Fig. 2 a, 2 b) er af smal cylindrisk Form og har Sidefortsætter af betydelig Længde samt skilte ved brede Mellemrum. Ryggen er glat, uden den sædvanlige

Chaetonymphon macronyx, G. O. Sars, Pycnogonidea borealia & arctica, No. 36.

Specific Characters. Body slimmer than in the other species of the genus, trunk narrow-cylindric, smooth above, with the lateral-processes widely apart. Cephalic segment about as long as the 2 following segments taken together, with distinctly defined neck; frontal part but slightly expanded. Caudal segment cylindric, pointed obliquely upwards. Oculiferous tubercle exceedingly elevated and narrow, furnished at the extremity with 2 diverging projections, the lenses very unequal in size, the posterior pair much smaller than the anterior, and placed higher up the tubercle. Proboscis the length of the cephalic segment, cylindric. Chelifori comparatively feeble and beset with long scattered hairs, hand shorter than scape, fingers almost twice as long as palm, exceedingly narrow and sharply curved at the extremity, with thin and elongated teeth on the inner edge. Palpi slender, 2nd joint longest, the 2 last joints densely hairy, of equal length, and, taken together, longer than the 3rd. False legs in the male very much elongated, similar in appearance to those in *Ch. tenellum*; marginal spines narrow-lanceolate, with obtuse point and regularly serrated edges. Ambulatory legs about 3 times longer than body, very slender, and beset with scattered hairs, femoral joint in the female much swollen in the basal part, 2nd tibial joint exceedingly narrow, and about twice as long as the terminal section; propodal joint more than twice as long as the tarsal joint, and furnished on the inner edge with a dense and regular series of slender spines; terminal claw remarkably elongate, hardly shorter than the propodal joint, falciformly sharpened; auxiliary claws exceedingly small and rudimentary. Outer egg-masses globular, with few and large ova, often present in double number on each of the false legs. Length of body $6\frac{1}{2}^{mm}$; extent 36^{mm} .

Remarks. Of all the species this would seem to deviate most from the typical form, *Ch. hirtipes*; but I do not feel the slightest hesitation in referring it to the same generic type. The peculiar structure of the chelifori, as also the relations of the 2 outer joints of the legs, and the distinct, though certainly less prominent setous character of the limbs, show it to be a true Chaetonymphon. From the other species it is easily recognized, by its relatively very slender body and the remarkable length of the terminal claw on the ambulatory legs, which latter character has suggested the specific designation.

Description. The length of the largest specimens reaches $6\frac{1}{2}^{mm}$, the extent 36^{mm} , about the same therefore as in *Ch. tenellum*.

The body (see Pl. XII, fig. 2), compared with that of the other species of the genus must be termed exceedingly slender, though in that respect it cannot compare with several species of the genus *Nymphon*. The trunk itself (fig. 2 a, 2 b) is narrow-cylindric in form, and has the lateral processes of considerable length and separated by wide intervals. The back is smooth, without the

Haarbesætning, og kun ved Enden af Sidefortsætterne bemærkes nogle meget smaa og fine Haar. Hovedsegmentet er omtrent saa langt som de 2 følgende Segmenter tilsammen og har en tydelig, skjøndt ikke meget lang, cylindrisk Hals; Pandedelen er mindre stærkt udvidet end hos de øvrige Arter, men skarpere afmærket fra Halsen. Halesegmentet er, som hos *Ch. tenellum*, simpelt cylindrisk, men altid skjævt opadrettet.

Oieknuden (Fig. 2 c, 2 d) er stærkt ophøiet, meget smal og lidt bagudrettet; Spidsen er afstumpet og forsynet med 2 divergerende tornformige Fremspring. Lindserne er af meget ulige Størrelse, idet det forreste Par er mere end dobbelt saa stort som det bagerste, der ogsaa ligger betydelig høiere (se Fig. 2 d).

Snabelen (se Fig. 2 a, 2 b) er af betydelig Størrelse, fuldkommen saa lang som Hovedsegmentet, lige fortilstrakt og af regelmæssig cylindrisk Form.

Saxlemmerne (ibid.) er forholdsvis svagere byggede end hos de øvrige Arter, med Skaftet smalt cylindrisk og besat med temmelig lange, men spredte Haar. Haanden (Fig. 2 e) er kjendelig kortere end Skaftet og har, som hos de øvrige Arter, Palmen forholdsvis kort og af triangular Form, med Inderkanten i sit ydre Parti tæt besat med lange og stærke Haar. Fingrene er næsten dobbelt saa lange som Palmen og, navnlig den bevægelige, overordentlig tynde, samt stærkt krummede i Enden. Tænderne i Inderkanten er af samme Beskaffenhed som hos de 2 foregaaende Arter.

Folerne (Fig. 2 f) udmærker sig, ligesom Saxlemmerne, ved sin usædvanlig spinkle Form og er, navnlig mod Enden, tæt haarede. Af Leddene er 2det længst. De 2 ydre Led er indbyrdes omtrent af ens Længde og tilsammen betydelig længere end 3die, begge meget smale.

De falske Fodder hos Hannen (se Fig. 2 b, 2 g) er stærkt forlængede og tynde, forøvrigt i sin Bygning nær overensstemmende med samme hos *Ch. tenellum*. 5te Led er stærkt krummet og ganske successivt fortykket mod Enden samt kun besat med meget korte og fine Borster. Randtørnerne (Fig. 2 i) er meget smale, næsten lineære, med stump Spids og Kanterne regelmæssigt saugtakkede. Endekloen (Fig. 2 h) har 7 Sidetænder.

Gangfodderne (se Fig. 2) er omtrent 3 Gange længere end Legemet, særdeles spinkle og besat i sin hele Længde med temmelig lange men forholdsvis spredte Haar. Hos Hunnen er Laarledet ualmindelig stærkt opblæst i sit basale Parti paa Grund af de indsluttede forholdsvis store Ægceller, medens det ydre Parti har bibeholdt sin oprindelige smale Form. Hos Hannen er hele dette Led særdeles smalt og har Inderkanten ganske svagt buget, men uden tydelige Tuberkler. 2det Lægled er overordentlig tyndt og viser en eiendommelig, næsten Sformig Bøining; det er kun lidt længere end 1ste Lægled, men omtrent dobbelt saa langt som det terminale Afsnit.

usual hairy covering, and only at the extremity of the lateral processes are there observed a few minute and delicate hairs. The cephalic segment is about as long as the 2 following segments taken together, and has a distinct, though not very long, cylindrical neck; the frontal part is less expanded than in the other species, but more distinctly demarcated from the neck. The caudal segment is, like that of *Ch. tenellum*, plain cylindric, but always directed obliquely upwards.

The ocular tubercle (fig. 2 c, 2 d) is strongly prominent, very narrow, and slightly directed backwards; the point is blunted and furnished with 2 divergent aculeiform projections. The lenses are of very different size; the anterior pair being twice the size of the posterior pair, which, also, are placed considerably higher (see fig. 2 d).

The proboscis (see fig. 2 a, 2 b) is of considerable size, quite as long as the cephalic segment, directed straight forward, and of regular cylindric form.

The chelifori (ibid.) are relatively more slender in structure than in the other species, with the scape narrow cylindrical and beset with rather long but scattered setæ. The hand (fig. 2 e) is appreciably shorter than the scape, and has, as in the other species, the palm relatively short and triangular in form, with the inner edge in its outer portion closely beset with long, stiff setæ. The fingers are almost twice as long as the palm, and, especially the mobile one, are extremely slender and greatly curved at the extremity. The teeth on the inner margin are of the same kind as in the 2 preceding species.

The palpi (fig. 2 f), like the chelifori, are distinguished by their unusual slender form, and are, especially at the extremity, densely setous. Of the joints, the 2nd is the longest. The 2 outer joints are, mutually, about equal in length, and are together considerably longer than the 3rd one; both very narrow.

The false legs in the male (see fig. 2 b, 2 g) are greatly elongated and slender in structure; otherwise they almost correspond with the same limbs in *Ch. tenellum*. The 5th joint is greatly bent, quite gradually tumefied towards the extremity, and only beset with very short and fine bristles. The marginal spines (fig. 2 i) are very delicate, almost linear, with blunt point, and the edges regularly serrated. The terminal claw (fig. 2 h) has 7 lateral teeth.

The ambulatory legs (see fig. 2) are about 3 times as long as the body, particularly slender, and beset throughout their entire length with pretty long but, relatively, scattered setæ. In the female, the femoral joint is unusually greatly expanded in its basal portion, by reason of the enclosed relatively large egg-cells, whilst the outer portion maintains its original slender form. In the male, the whole of this joint is particularly slender, and has the inner margin quite faintly curvate, but without distinct tubercles. The 2nd tibial joint is extremely thin and exhibits a peculiar almost S-formed curvature; it is only a little longer than the 1st tibial joint, but nearly twice as long as the terminal section.

Tarsalleddet (se Fig. 2 k) er smalt cylindrisk, eller ganske svagt udvidet mod Enden, og omtrent 3 Gange længere end bredt. Fodledet er stærkt forlænget, over dobbelt saa langt som Tarsalleddet, noget opsvulmet i sit basale Parti, og langs hele Inderkanten forsynet med en tæt og regelmæssig Rad af tynde, ens udviklede Torner. Endekloen er af ganske ualmindelig Længde, neppe kortere end Fodledet, og viser ved Basis en stærk, ligesom knæformig Bøining; dens ydre Parti er næsten lige og af smal ledanet Form, med den indre Kant tilskjærpet. Bikloerne er saa yderst smaa og rudimentære, at de meget let vil kunne oversees.

De ydre Ægmasser (se Fig. 2 b) er af kugledannet Form og indeholder kun et ringe Antal af ualmindelig store Æg. Ofte findes Ægmasserne i dobbelt Antal paa hver af de falske Fodder.

Forekomst. Af nærværende characteristiske Art blev talrige Exemplarer indsamlede under Nordhavs-Expeditionen paa forskellige Punkter af det af os undersøgte Havstrog. Den er saaledes noteret fra ikke mindre end 9 forskellige Stationer, tildels temmelig vidt adskilte fra hinanden. Af disse ligger en (Stat. 18) i Havet mellem Norge og Færoerne, 2 (Stat. 124, 137) længere Nord, udenfor Nordlandskysten, 2 (Stat. 190, 192) N af Vesteraalen, 1 (Stat. 262) Ø af Vardø, 1 (Stat. 286) SV af Beeren Eiland, og endelig 2 (Stat. 343, 362) udenfor Syd- og Nordvestkysten af Spitzbergen; Dybden fra 148 til 870 Favne. Alle Stationer, alene med Undtagelse af St. 262, tilhører den kolde Area. Ogsaa fra det kariske Hav har jeg havt adskillige Exemplarer til Undersøgelse, indsamlede under Nordenskjöld's Expedition. Exemplarerne forekom her, som sædvanlig, paa betydelig ringere Dyb end i Nordhavet.

Udbredning. Arten anfores af Hoek fra Havet om Færoerne („Knight Errant“ Expedition) og af Hansen fra det kariske Hav. Derimod er den hverken kjendt fra Grønland eller Nordamerika's Østkyst. At Arten imidlertid er en ægte arktisk Form, er utvivlsomt.

Gen. 10. **Boreonymphon**, G. O. Sars, 1888.

Slægtscharacter. Legemet tykt og robust, med tæt sammentrængte Sidefortsatser. Hovedsegmentet af betydelig Størrelse, med kort Hals og stærkt fortykket Pandedel. Øieknuden rudimentær, uden Synselementer. Snabelen konisk tilløbende. Saxlemmerne kraftigt udviklede. Haanden med kort Palm og stærkt forlængede glatte, næsten halvcirkelformigt boiede Fingre. Folerne omtrent som hos Nymphon. De falske Fodder lidet forskellige hos de 2 Kjønn, hos Hannen tæt besatte med pigformige, omboiede Borster; Randtornerne simple, uden Saugtakker, Endekloen glat.

The tarsal joint (see fig. 2 k) is narrow cylindric, or quite faintly expanded towards the extremity, and is about 3 times as long as it is broad. The propodal joint is greatly elongated, more than twice as long as the tarsal joint, somewhat tumefied in the basal portion, and is furnished along the whole of the inner margin with a close and regular series of thin, uniformly developed spines. The terminal claw is of quite unusual length, scarcely shorter than the propodal joint, and at the base exhibits a strong, almost geniculate bend; its outer portion is almost straight, and of narrow falciform shape with the inner margin sharpened. The auxiliary claws are so extremely minute and rudimentary that they may easily escape observation.

The external egg-masses (see fig. 2 b) are globular in form, and contain only a small number of unusually large ova. The egg-masses are frequently found in double number on each of the false legs.

Occurrence. Numerous specimens of this characteristic species were collected during the North Atlantic Expedition, at different points of the ocean tracts investigated. It is thus remarked at no less than 9 different stations, to some extent greatly separated from each other. Of these, one (Stat. 18) is situated in the ocean between Norway and the Faroe Islands; 2 (Stat. 124, 137) farther north, off the coast of Nordland; 2 (Stat. 190, 192) north of Vesteraalen; 1 (Stat. 262) east of Vardö; 1 (Stat. 286) southwest of Beeren Island; and, finally, 2 (Stat. 343, 362) off the south and north-west coasts of Spitzbergen; depth 148 to 870 fathoms. All the stations, with the exception of St. 262 only, pertain to the cold area. From the Kara Sea I have also had several specimens for investigation, collected by Nordenskjöld's Expedition. These specimens, were obtained, as usual, at considerably less depth than in the North Atlantic Ocean.

Distribution. The species is remarked by Hoek from the seas around the Faroe Islands („Knight Errant“ Expedition), and by Hansen from the Kara Sea. On the other hand, it is unknown from either Greenland or the east coast of North America. It is, however, indubitable, that the species is a genuine Arctic form.

Gen. 10. **Boreonymphon**, G. O. Sars, 1888.

Generic Characters. Body thick and robust, with closely crowded lateral processes. Cephalic segment of considerable size, with short neck and greatly tumefied frontal part. Ocular tubercle rudimentary, without visual elements. Proboscis running out in coniform. Chelifori powerfully developed; the hand with short palm and greatly elongated, smooth fingers, almost semi-circularly bent. Palpi nearly the same as in Nymphon. False legs somewhat different in the 2 sexes; in the male closely beset with spiniform, recurvate bristles; marginal spines plain

Gangfodderne forlængede, men af robust Bygning. Fodledet længere end Tarsalleddet og uden tydelige Torner i Inderkanten; Endekloen konisk tilspidset, Bikloerne yderst smaa, næsten obsolete. Ungerne forbliver fastklamrede til Hannens Legeme længe efter at Larvelivet er tilendebragt.

Bemærkninger. Jeg har fundet det rigtigt at opstille denne nye Slægt til Optagelse af den i flere Henseender anomale Form *Nymphon robustum* Bell. Slægten, der hidtil kun er repræsenteret af denne ene Art, er især karakteriseret ved den eiendommelige Bygning af Saxlemmerne og ved Beskaffenheden af de falske Fodder, navnlig hvad Randtornerne og Endekloen angaar, tildels ogsaa ved Gangfoddernes Structur. Den eiendommelige Omstændighed, at Ungerne vedbliver at være fastklamrede til Hannens Legeme, selv efter at have opnaaet mere end den halve definitive Storrelse, er ogsaa anført blandt Slægtskarakterne, da noget lignende, saavidt mig bekendt, ikke er fundet hos nogen anden Pycnogonide.

37. *Boreonymphon robustum* (Bell).

(Pl. XII. Fig. 3, a—d).

Nymphon robustum, Bell, Belcher's Last of the Arctic Voyages, Vol. II, p. 409, Pl. XXXV. fig. 4.

Nymphon abyssorum, Norman, i Wyville Thomson's „The Depths of the Sea“, p. 129.

Nymphon hians, Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Oester. Ungar. Nordpol.-Exped., p. 17, Tab. V, Fig. 3—5.

Nymphon robustum, G. O. Sars, Prodrom. descr. Crust. & Pycnogonid. p. 265.

— — Hoek, Pycnog. Will. Barents, p. 20, Pl. II, figs. 35—40.

— — Hoek, Pycnog. of „Knight Errant“, Zool. Chall. Exped. P. X, Vol. III, p. 97.

— — Hansen, Kara-Havets Pycnogonider, p. 4, Tab. XVIII, Fig. 1.

Boreonymphon robustum, G. O. Sars, Pycnogonidea borealia & arctica, No. 37.

Artscharacter. Legemet tykt og robust, med Segmenterne meget skarpt afsatte og noget fremspringende bagtil, Sidefortsætterne massive, næsten kolleformige, kortere end Legemet er bredt paa Midten. Hovedsegmentet længere end de 3 følgende Segmenter tilsammen, Halsen stærkt indkneben, neppe mere end halvt saa bred som Kroppen paa Midten; Pandedelen særdeles stor og massiv, 3 Gange bredere end Halsen, og rendeformigt fordybet efter Midten, med stærkt opsvulmede Sidedele. Halesegmentet horisontalt, cylindrisk, afrundet i Spidsen. Alle Integumenter ru af smaa mikroskopiske Pigge. Øieknuden yderst liden.

without secondary teeth; terminal claw smooth. Ambulatory legs elongated, but robust in structure; Propodal joint longer than tarsal joint, and without distinct aculei on the inner margin; terminal claw conically acuminate; auxiliary claws extremely small, almost obsolete. The young remain firmly adherent to the body of the male long after the larval existence is terminated.

Remarks. I have considered it right to establish this new genus for the adoption of the, in several respects, anomalous form, *Nymphon robustum*, Bell. The genus, which, hitherto, is only represented by that one species, is especially characterized by the peculiar structure of the chelifori and by the nature of the false legs, principally in respect of the marginal spines and the terminal claw, partly also by the structure of the ambulatory legs. The peculiar circumstance that the young continue to remain firmly adherent to the body of the male, even after they have attained more than half the definite size, is also remarked among the generic characters, as a similar relation, so far as I am aware, has not been found in any other Pycnogonid.

37. *Boreonymphon robustum* (Bell).

(Pl. XII, fig. 3, a—d).

Nymphon robustum, Bell, Belcher's Last of the Arctic Voyages, Vol. II, p. 409, Pl. XXXV. fig. 4.

Nymphon abyssorum, Norman, in Wyville Thomson's „The Depths of the Sea“ p. 129.

Nymphon hians, Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Oester. Ungar. Nordpol.-Exped. p. 17, Pl. V, figs. 3—5.

Nymphon robustum, G. O. Sars, Prodrom. descr. Crust. & Pycnogonid. p. 265.

— — Hoek, Pycnog. Will. Barents p. 20, Pl. II, figs. 35—40.

— — Hoek, Pycnog. of „Knight Errant“, Zool. Chall. Exped. P. X, Vol. III, p. 97.

— — Hansen, Karahavets Pycnogonider, p. 4, Pl. XVIII, fig. 1.

Boreonymphon robustum, G. O. Sars, Pycnogonidea borealia & arctica, No. 37.

Specific Characters. Body thick and robust, with the segments very distinctly defined and somewhat prominent posteriorly, lateral processes massive, almost claviform, shorter than the breadth of the body at the middle. Cephalic segment longer than the 3 succeeding segments together; neck greatly constricted, scarcely more than half the breadth of the body at the middle; frontal part particularly large and massive, 3 times as broad as the neck, and canalicularly hollowed along the middle, with strongly swollen lateral parts. Caudal segment horizontal, cylindrical, rounded at the point. Integuments everywhere

fligformig. Snabelen omtrent af Hovedsegmentets Længde, skævt nedadrettet, konisk afsmalnende. Saxlemmerne lige udstrakte omtrent af Kroppens Længde. Skaftet indknebet ved Basis. Haanden lidt kortere end Skaftet. Palmen kort, triangulær, ved Enden besat med pigformige Borster, Fingrene næsten dobbelt saa lange, kloformige, næsten halveirkelformigt krummede. Følerne betydelig kortere end Saxlemmerne, tæt haarede, 2det Led længst, de 3 følgende successivt aftagende i Størrelse, sidste Led meget smalt. De falske Fodder lidt kortere end Legemet, hos Hannen tæt besatte med pigformige Borster, Endedelen betydelig længere end 5te Led, Randtornerne meget smaa, Endekloen tynd. Gangfodderne over 3 Gange længere end Legemet, robuste og kun lidt afsmalnende mod Enden. Hoftelæddene forholdsvis korte og tykke, Laarlæddet ikke meget opsvulmet, 2det Læglædd mere end dobbelt saa langt som det terminale Afsnit. Fodlæddet $\frac{1}{2}$ Gang længere end Tarsallæddet og betydelig smalere, lineært, uden tydelige Torner i Inderkanten; Endekloen omtrent af Tarsallæddets Længde, jævnt krummet og sylformigt tilspidset; Bikløerne overordentlig smaa, næsten obsolete. De ydre Ægmasser kugleformige med talrige Æg. Legemets Længde indtil 22^{mm} , Spandvidde 154^{mm} .

Bemærkninger. Denne Art er for Tiden den eneste Repræsentant for Slægten *Boreonymphon*; thi hverken blandt de talrige af Hoek fra Challenger Expeditionen beskrevne Nymphon-Arter eller blandt de af andre Forskere opførte exotiske Former har jeg fundet nogen Tilnærmelse til den for nærværende Slægt eiendommelige Type. Det bliver derfor ogsaa temmelig vanskeligt at give en præcis Artsdiagnose af nærværende Form, og de her opførte Charakterer er kun foreløbig sammenstillede i Analogi med samme hos Nymphon-Arterne.

Beskrivelse. Den sædvanlige Længde af Legemet synes at være omkring 15^{mm} , med en Spandvidde af 104^{mm} ; men Arten kan undertiden naa en meget betydeligere Størrelse, idet Længden kan gaa op til 22^{mm} og Spandvidden til 154^{mm} . Lignende kjæmpemæssige Exemplarer er ogsaa undersøgte af Hansen fra det kariske Hav.

Legemets Form (se Pl. XII, Fig. 3) er idethele ualmindelig kraftig og robust og retfærdiggjør fuldkommen den for Arten valgte Benævnelse „robustum“. Navnlig gjælder dette selve Kroppen (Fig. 3 a, 3 b), der er overordentlig plump bygget og stærkt fortykket paa Midten. Segmenterne er meget skarpt afsatte fra hinanden og har de bagre Kanter tydeligt fremspringende saavel ovenfor som nedentil, hvorved Conturerne, naar Dyret sees fra Siden (Fig. 3 a), faar et noget sangtakket Udseende. Sidefortsætserne er korte og tykke, næsten kogleformige, og kun adskilte ved meget smaa, spaltformige Mellemrum. Paa sin øvre Side er de, ligesom Kropssegmenterne, røde af yderst smaa mikroskopiske Pigge. Hovedsegmentet er af meget betydelig Størrelse, selv kjendelig længere end de 3 følgende

roughened by small microscopical spines. Ocular tubercle extremely small, lobiform. Proboscis about same length as the cephalic segment, directed obliquely downwards, drawn out conically towards the point. Cheliferi, straightly extended, about same length as the body; scape constricted at the base, hand a little shorter than the scape, palm short, triangular, beset at the extremity with spiniform bristles; fingers nearly twice as long, claw-shaped, almost semi-circularly curvate. Palpi considerably shorter than the cheliferi, densely setous; 2nd joint longest, the 3 succeeding ones diminishing successively in size; last joint very narrow. False legs slightly shorter than the body; in the male densely beset with spiniform bristles; the terminal portion considerably longer than the 5th joint, marginal spines very small, terminal claw slender. Ambulatory legs more than 3 times longer than the body, robust and only narrowing slightly towards the extremity; coxal joints relatively short and thick; femoral joint not much tumefied; 2nd tibial joint more than twice as long as the terminal division, propodal joint one half longer than the tarsal joint and considerably narrower, linear, and without distinct spines on the inner margin, terminal claw about same length as the tarsal joint, uniformly curved, and pointed like an awl; auxiliary claws extremely small, almost obsolete. The outer egg-masses globular, containing numerous ova. Length of the body reaching 22^{mm} . Extent 154^{mm} .

Remarks. This species is, at present, the only representative of the genus *Boreonymphon*; as neither among the numerous Nymphon-species from the Challenger Expedition, described by Hoek, nor among those exotic forms described by other naturalists have I found any approximation to the type peculiar to the genus. It is therefore somewhat difficult to furnish a precise specific diagnosis of the present form, and the characters remarked upon, here, are only temporarily placed together in an analogy to the same characters in the Nymphon-species.

Description. The usual length of the body appears to be about 15^{mm} , with an extent 104^{mm} ; but the species occasionally attains a considerably greater size, as the length may rise to 22^{mm} and the extent to 154^{mm} . Similar gigantic specimens from the Kara Sea have also been investigated by Hansen.

The body (see Pl. XII, fig. 3) is, upon the whole, uncommonly powerful and robust, and completely justifies the designation „robustum“ chosen for the species. This applies especially to the trunk (fig. 3 a, 3 b), which is exceedingly plumply built, and greatly tumefied at the middle. The segments are very distinctly defined from each other, with their posterior edges distinctly prominent both above and below, which, when the animal is viewed laterally, gives to the contours a somewhat serrated appearance. The lateral processes are short and thick, almost claviform, and are only separated by very narrow, fissured intervals. On their upper sides, as well as on the segments of the trunk, they are roughened by extremely minute microscopical spines. The cephalic seg-

Segmenter tilsammen, og har paa Midten en stærk Indknibning, der danner en meget kort, men tydelig Hals. Det ydre Parti, eller Pandedelen, er særdeles stærkt udvidet og massivt, 3 Gange bredere end Halsen og dybt rendeformigt fordybet efter Midten af den øvre Flade, med Sidedelene stærkt opsvulmede. Halesegmentet er horizontalt, af smal cylindrisk Form og stumpt afrundet i Spidsen.

Oieknuden er yderst liden og rudimentær, saa at den let forbisees, og mangler ethvert Spor af Pigment eller Synselementer. Naar Legemet sees fra Siden (Fig. 3 a), tager den sig ud som et lidet konisk tilspidset Fremspring ved Basis af Halsdelen. Forfra eller bagfra set (Fig. 3 c) viser den sig imidlertid at danne en tværstillet, bredt afrundet Flig.

Snabelen (se Fig. 3 a) er omtrent af Hovedsegmentets Længde og noget skjævt nedadrettet. Den afsmalnes successivt mod den stumpt afkappede Spids og faar derved et udpræget konisk Udseende.

Saxlemmerne (se Fig. 3 a, 3 b) er meget kraftigt udviklede og, lige udstrakte, omtrent af Kroppens Længde, naar Snabelen og Halesegmentet fraregnes. Skaftet er af cylindrisk Form, dog kjendelig indknebet nær Basis, og rundt om besat med smaa, pigformige Haar. Haanden (Fig. 3 d) er lidt kortere end Skaftet og udmærker sig fra samme hos de øvrige Nymphonider ved sin eiendommelige Form. Palmen er forholdsvis kort, stærkt indknebet ved Basis og af udpræget trekantet Form. Den er noget opsvulmet paa Midten og paa den ydre Flade besat med lignende pigformige Haar som paa Skaftet, især henad Basis af den ubevægelige Finger. Begge Fingre er meget smale og forlængede, omtrent dobbelt saa lange som Palmen og af udpræget klodannet Form. De mangler ganske de sædvanlige Tænder i Inderkanten og er overordentlig stærkt, næsten halvcirkelformigt krummede, endende i sylskarpe Spidser, der krydser hinanden, naar Saxen lukkes. Selv i dette sidste Tilfælde er der dog altid mellem Fingrene en vid Aabning, hvad der har givet Anledning til den af Heller anvendte Artsbenævnelse „hians“.

Folerne (Fig. 3 e) er betydelig kortere end Saxlemmerne og af et lignende Udseende som hos Sl. Nymphon. De er temmelig tæt besatte med korte Haar, der navnlig i det ydre Parti er meget fine, og har 2det Led længst, de 3 følgende hastigt aftagende i Størrelse. Sidste Led er meget smalt og sammen med næstsidste længere end 3die.

De falske Fodder er hos begge Kjøen omtrent af ens Længde og, lige udstrakte, ikke fuldt saa lange som Legemet (se Fig. 3 a). De er hos Hannen (Fig. 3 f) tæt besatte med eiendommelige pigformige Borster, der for det meste er mere eller mindre stærkt omboiede og noget

ment is of very considerable size, even appreciably longer than the 3 succeeding segments together, and has a strong constriction in the middle, which forms a very short but distinct neck. The outer portion or frontal part, is particularly greatly expanded and massive, 3 times broader than the neck, and deeply, canalicularly hollowed along the middle of the upper surface, with the lateral parts strongly tumefied. The caudal segment is horizontal, narrow cylindric in form, and bluntly rounded at the point.

The ocular tubercle is extremely small and rudimentary, so that it is easily unobserved, and it is deficient in the slightest trace of pigment or visual elements. When the body is viewed laterally (fig. 3 a) the tubercle appears like a small, conically acuminate projection at the base of the cervical portion. Viewed anteriorly or posteriorly (fig. 3 c), it shows itself to be a transversally placed, broad rounded lobe.

The proboscis (see fig. 3 a) is about the length of the cephalic segment, and is somewhat obliquely directed downwards. It becomes gradually narrower towards the bluntly truncated point, and in this way acquires a distinguished conical appearance.

The chelifori (see fig. 3 a, 3 b) are very powerfully developed, and, when straightly extended, are about the length of the body if the proboscis and caudal segment are deducted. The scape is cylindric in form, but appreciably constricted near the base, and is beset roundabout with small spiniform hairs. The hand (fig. 3 d) is a little shorter than the scape, and distinguishes itself from the same feature in the other Nymphonids by its peculiar shape. The palm is relatively short, strongly constricted at the base, and of distinguished trigonal form. It is somewhat tumefied in the middle and, upon the outer surface, is beset with similar spiniform hairs as upon the scape, especially towards the base of the immobile finger. Both fingers are very narrow and elongated, about twice the length of the palm and of distinguished claw-shaped form. They are entirely deficient in the usual teeth on the inner margin, and are extraordinarily strongly bent, almost semi-circularly, terminating in points sharp as awls, which cross each other when the chela is closed. Even in that last case there is always left a wide opening between the fingers, which feature has been the cause of the designation „hians“ being given to it by Heller, as a specific name.

The palpi (fig. 3 e) are considerably shorter than the chelifori, and are similar in appearance to those of the genus Nymphon. They are rather densely beset with short setæ, which, especially in the outer portion, are very delicate; the 2nd joint is the longest, and the 3 succeeding ones diminish rapidly in size. The last joint is very narrow, and, together with the penultimate one, is longer than the 3rd.

The false legs are about equal in length in both sexes, and, straightly extended, are not quite as long as the body (see fig. 3 a). In the male (see fig. 3 f) they are densely beset with peculiar spiniform bristles, which are generally more or less strongly recurvate and somewhat flexuous,

bugtede samt ender i en fint udtrukken Spids (Fig. 3 g). Endepartiet er betydelig længere end 5te Led og har 1ste Led størst samt besat med lignende Borster som de paa foregaaende Led. De paa de 4 ydre Led fæstede Randtørner (se Fig. 3 i) er forholdsvis smaa og ganske simple, uden Spor af Sangtakker, og heller ikke Endekloen (se Fig. 3 h) viser nogen Antydning til de sædvanlige Side-tænder.

Gangfodderne (se Fig. 3) er vistnok af betydelig Længde, idet de er over 3 Gange længere end Legemet, men dog idethele temmelig robuste og kun lidet afsmalende mod Enden. De ser for det blotte Øie ganske glatte ud. Ved noiere Undersøgelse med en stærk Lupe viser de sig imidlertid i sin hele Længde tæt besatte med særdeles korte, men stærke, næsten pigformige Haar, der giver dem en noget ru Overflade. De 3 Hofteled er forholdsvis korte og næsten af ens Længde, eller det 2det kun ubetydelig længere end de øvrige. Laarledet er omtrent dobbelt saa langt som Hoftepartiet og udmærker sig ikke hos Hunnen ved nogen paafaldende Opsvulmning, saaledes som hos Arterne af foregaaende Slægt, skjøndt det er noget tykkere end hos Hannen. 2det Lægled afsmalnes ganske svagt mod Enden og er omtrent $2\frac{1}{2}$ Gang længere end det terminale Afsnit. Dette sidste (se Fig. 3 k) er kjendelig smalere og har Tarsalledet af simpel cylindrisk Form. Fodledet er $\frac{1}{2}$ Gang til saa langt og betydelig smalere end Tarsalledet, af lineær Form og mangler tydelige Tørner i Inderkanten, hvorimod det ligesom Tarsalledet er rundt om besat med samme Slags smaa pigformige Haar som paa den øvrige Del af Foden. Endekloen er betydelig kortere end Fodledet, eller omtrent af Tarsalledets Længde, temmelig smal og jævnt krummet, gaaende ud i en sylskarp Spids. Bikloerne synes ved første Øiekast ganske at mangle. Forst ved stærk Forstørrelse (Fig. 3 l) bemærkes paa deres Plads 2 yderst smaa og fine Pigge som et Rudiment af samme.

De ydre Ægmasser (se Fig. 3 a) er af kugledannet Form og indeholder talrige Æg af middels Størrelse. Ofte træffer man disse Masser sammensatte af de udklækkede Larver i alle Udviklingsstadier; ja selv længe efter at Ungerne har tilbagelagt Larvestadiet og opnaaet en meget anselig Størrelse, træffer man dem fastklamrede til Hannens Legeme. Saavel hos Han som Hun er Fodderne og tildels ogsaa Kroppen ofte besat med forskellige pseudoparasitiske Organismer, især Polyzoer.

Forekomst. Af denne karakteristiske Form blev talrige Exemplarer indsamlede under Nordhavs-Expeditionens samtlige 3 Togter. Vi har noteret den fra 5 forskellige Stationer, tildels beliggende i betydelig Afstand fra hverandre. En af disse (Stat. 18) ligger i Havet mellem Færøerne og Norge; en anden (Stat. 48) Øst af Island; en 3die (Stat. 192) Nord af Vesteraalen, de 2 øvrige (Stat. 362 og 363) NV af Spitsbergen; Dybden fra 260

and terminate in a finely drawn out point (fig. 3 g). The terminal division is considerably longer than the 5th joint, and has the 1st joint the largest, and also beset with bristles similar to those on the preceding joint. The marginal spines (see fig. 3 i), secured to the 4 outer joints, are relatively small and quite plain, without trace of secondary teeth; neither does the terminal claw (see fig. 3 h) show any indication of the usual lateral teeth.

The ambulatory legs (see fig. 3) are, indeed, of considerable length, as they are more than 3 times longer than the body but, yet, upon the whole, are robust, and only diminish slightly towards the extremity. To the naked eye they appear quite smooth. Upon closer examination with a powerful magnifier, they, however, appear closely beset throughout their entire length with particularly short but strong, almost spiniform hairs, which gives them a somewhat rough exterior surface. The 3 coxal joints are relatively short and almost equal in length, or the 2nd only slightly longer than the others. The femoral joint is about twice as long as the coxal section, and is not distinguished, in the female, by any remarkable tumefaction like that in the species of the preceding genus, although it is somewhat thicker than in the male. The 2nd tibial joint is quite faintly diminished towards the extremity, and is about $2\frac{1}{2}$ times longer than the terminal division. This last (see fig. 3 k) is appreciably narrower, and has the tarsal joint plain cylindric in form. The propodal joint is $\frac{1}{2}$ as long again, and considerably narrower than the tarsal joint, linear in form, and deficient in distinct spines on the inner margin, while, on the other hand, it, like the tarsal joint, is beset roundabout with the same kind of small spiniform hairs as upon the other part of the leg. The terminal claw is considerably shorter than the propodal joint, or about half the length of the tarsal joint, rather narrow and uniformly curved, terminating in a point sharp as an awl. The auxiliary claws appear at the first glance to be entirely absent. It is only upon powerful magnification that there are observed, in their place, 2 extremely minute and delicate spines as a rudiment of them.

The outer egg-masses (see fig. 3 a) are globular in form and contain numerous ova of medium size. We frequently find those masses composed of the hatched larvæ in all stages of development, indeed, even long after the young have relinquished the larval stage and attained a most respectable size, we find them firmly adherent to the body of the male. Both in the male and the female, the legs, and partly also the body, are often covered with various pseudo-parasitic organisms, especially Polyzoa.

Occurrence. Of this characteristic form numerous specimens were collected during all the 3 cruises of the North Atlantic Expedition. We have remarked it at 5 different stations, separated, partly, by a considerable distance from each other. One of those (Stat. 18) is situated in the ocean between the Faroe Island and Norway; a second (Stat. 48) east of Iceland; a third (Stat. 192) north of Vesteraalen; the 2 others (Stat. 362 and 363) north-west

til 649 F. Navnlig forekom den i ganske enorme Masser paa Stat. 18. Alle Stationer, alene med Undtagelse af Stat. 363, tilhører den kolde Area. Ogsaa fra det kariske Hav har jeg havt ikke faa Exemplarer til Undersøgelse, indsamlede under Nordenskjöld's Expeditioner, og som sædvanlig her paa betydelig grundere Vand end i Nordhavet.

Udbredning. Arten synes at have en vid Udbredning i de arktiske Have. De af Bell undersøgte Exemplarer var fra arktisk Nordamerika, Wellington-Canalen, og af Miers angives den ogsaa fra Discovery-Bugten. Af Heller anføres den fra Frants Joseph Land og af Hoek fra forskellige Stationer i Barents Soen. Under „Lightning“ Expeditionen toges den i Færo-Shetlands-Renden (Wyville Thompson), og under „Knight Errant“-Expeditionen erholdtes denne Art ifølge Hoek saa langt Syd som 60° N. B., men paa meget dybt Vand. Endelig anføres den af Hansen fra det kariske Hav. At Arten er en ægte arktisk Form, synes ifølge dens Forekomst utvivlsomt.

of Spitzbergen; depth from 260 to 649 fathoms. Especially did it present itself in quite enormous quantities at Station 18. All the Stations, with exception of Stat. 363 alone, pertain to the cold area. From the Kara Sea, also, I have had not a few specimens for investigation, collected during Nordenskjöld's Expeditions, and, as usual here, in much shallower depths than in the North Atlantic Ocean.

Distribution. The species appears to have an extensive distribution in the Arctic seas. The specimens investigated by Bell were from Arctic North America, Wellington Channel; and it is also remarked by Miers from Discovery Bay. Heller has remarked it from Frants Joseph's Land, and Hoek from several stations in Barents Sea. On the „Lightning“ Expedition it was taken in the Faroe-Shetland channel (Wyville Thompson), and on the „Knight Errant“ Expedition it was obtained, according to Hoek, as far south as 60° N. lat. but at a very great depth. Finally, it is remarked by Hansen from the Kara Sea. That the species is a genuine Arctic form seems from its occurrence to be indubitable.

Fam. 5. Ammotheidæ.

Legemet sammentrængt, mere eller mindre ufuldkomment segmenteret. Saxlemmerne smaa og rudimentære, i fuldt udviklet Tilstand uden Chela. Følterne vel udviklede, 4—9-leddede. Falske Fodder tilstede hos begge Kjønn, 7—10-leddede, uden Endeklo. Gangfodderne med Blikker. Snabelen tenformig, mere eller mindre bevægeligt forbunden med Hovedsegmentet.

Bemærkninger. Denne Familie indeholder en Del, for det meste meget smaa og undersætsigt byggede Pycnogonider, der især udmærker sig fra de i det foregaaende omtalte Former ved den rudimentære Beskaffenhed af Saxlemmerne og ved Snabelens Bygning, i hvilke Henseender de viser mere Lighed med de til følgende Familie, *Eurycydidæ*, henførte Former. Familien synes at indeholde talrige Slægter, hvoraf dog flere er meget ufuldstændigt karakteriserede. Som utvivlsomt henhørende til nærværende Familie maa jeg betragte følgende Slægter: *Ammothæa*, Leach; *Tanystylum*, Miers; *Pariboea*, Philippi; *Oiceobates*, Hesse; *Oorhynchus*, Hoek; *Clothenia*, Dohrn og *Trygæus*, Dohrn. Ogsaa om adskillige andre opførte Slægter kan det med nogenlunde Sikkerhed siges, at de tilhører nærværende Familie; men hvorvidt de i Virkeligheden er distincte, eller om de falder sammen med nogen af de ovenanførte Slægter, lader sig paa Grund af den ufuldstændige Beskrivelse vanskeligt afgjøre. Saadanne Slægter er: *Böhmia*, Hoek; *Phanodesmus*, Costa; *Pephirodo*, Goodsir; *Platyclus*, Costa; *Lecythorhynchus*, Böhm. Hos os er Familien kun repræsenteret af en enkelt Slægt.

Fam. 5. Ammotheidæ.

The body compact, more or less imperfectly segmented. Cheliferi small and rudimentary, in the fully developed state no chela. Palpi well-developed, 4—9-jointed. False legs present in both sexes, 7—10-jointed, without terminal claw. Ambulatory legs with auxiliary claws. Proboscis fusiform, more or less movably connected to the cephalic segment.

Remarks. This family includes a number of, chiefly very small and stoutly built Pycnogonids, which especially distinguish themselves from the previously mentioned forms by the rudimentary nature of the cheliferi and the structure of the proboscis, in which respects they display a greater resemblance to the forms referred to the following family *Eurycydidæ*. The family appears to include numerous genera, of which, however, several are very imperfectly characterized. I must regard the following genera as indubitably pertaining to the present family: *Ammothæa*, Leach; *Tanystylum*, Miers; *Pariboea*, Philippi; *Oiceobates*, Hesse; *Oorhynchus*, Hoek; *Clothenia*, Dohrn and *Trygæus*, Dohrn. Also in regard to several other genera which have been established, it may with some degree of certainty be said, that they pertain to the present family; but whether they really are distinct, or coincide with any of the above-named genera is difficult to determine owing to the imperfect descriptions supplied. Such genera are: *Böhmia*, Hoek; *Phanodesmus*, Costa; *Pephirodo*, Goodsir; *Platyclus*, Costa; *Lecythorhynchus*, Böhm. In the northern seas the family is only represented by a single genus.

Gen. 11. *Ammonothea*. Leach, 1815.Syn. *Achelia*. Hodge.

Slægtscharacter. Legemet kort og undersætsigt, med tæt sammentrængte Sidefortsætter. Hovedsegmentet massivt, med tydelig Hals og kvadratisk Pandedel. Halesegmentet ikke sondret fra sidste Kropssegment, smalt cylindrisk, horizontalt. Oieknuden nær Forkanten af Hovedsegmentet, stærkt ophøiet med tydelige Lindser. Snabelen skraat nedadrettet, indknebet ved Basis, tenformig. Saxlemmerne hos fuldt udviklede Individer meget smaa, 2-leddede, sidste Led kugleformigt. Følerne af middelmaadig Længde, 8—9-leddede. De falske Fodder forholdsvis korte, inden tydelig Endeklo og med et meget ringe Antal af saugtakke Randtørner. Gangfodderne korte og robuste, ofte piggede; Laarledet meget bredt, med det ydre Hjørne mere eller mindre fremspringende; Tarsalledet særdeles lidet; Fodledet kraftigt udviklet, mere eller mindre krummet og pigget i Inderkanten; Endekloen stærk, Bikkloerne vel udviklede. Kjønsaabningerne hos Hannen beliggende paa Spidsen af et stærkt Fremspring paa 2det Hofted af de 2 hagre Fodpar.

Bemærkninger. Slægten *Ammonothea* blev først opstillet af Leach for en exotisk Art, hos hvem Saxlemmerne endte med en liden, men tydeligt udviklet Chela. I 1864 undersøgte den engelske Naturforsker, Hodge, en Del smaa Pycnogonideer, hvoraf nogle ganske stemmede overens med Leach's Slægt, medens andre, skjøndt forøvrigt temmelig lige, mærkeligt skilte sig derved, at Saxlemmerne ganske manglede Chela. Han saa heri en generisk Forskjel og opstillede derfor for disse sidste Arter sin Slægt *Achelia*. Denne Slægt blev ogsaa af andre Zoologer adopteret, ja af Wilson endog stillet i en ganske anden Familie end Slægten *Ammonothea*. Først Hoek har til fuld Evidens godtgjort, at begge Slægter horer sammen, idet Slægten *Ammonothea* kun grunder sig paa yngre Exemplarer, medens Slægten *Achelia* repræsenterer de fuldt udviklede Individer. En betydelig Reduction af de under begge Slægter opstillede Arter bliver derfor ogsaa nødvendig. Foruden den først opstillede Art, *A. carolinensis*, Leach, og de 2 nedenfor nærmere beskrevne Arter, horer herhen en engelsk Art, *A. longipes*, Hodge, en amerikansk, *A. spinosa*, Stimpson, og 6 middelhavske Arter, nylig characteriserede af Dohrn i hans Pycnogonidewærk.

38. *Ammonothea echinata*. (Hodge).

(Pl. XIII, Fig. 1, a—m).

Achelia echinata, Hodge, Ann. Mag. Nat. Hist. Vol. XIII, 1864, p. 115, Pl. XII, Fig. 7—10.

Ammonothea brevipes, Hodge, ibid. p. 114, Pl. XII, Fig. 1—4 (juv.)

Gen. 11. *Ammonothea*. Leach, 1815.Syn. *Achelia*. Hodge.

Generic Characters. Body short and stout, with closely crowded lateral processes. Cephalic segment massive, with indistinct neck and square frontal part. Caudal segment not separated from the last body-segment, narrow cylindric, horizontal. Ocular tubercle near the front of the cephalic segment, strongly protuberant, with distinct lenses. Proboscis directed obliquely downwards, constricted at the base, fusiform. Chelifori, in fully developed specimens, very small, 2-jointed, last joint globular. Palpi of medium length, 8—9-jointed. False legs relatively short, without distinct terminal claw and with a very small number of serrated marginal spines. Ambulatory legs short and robust, frequently spinous; femoral joint very broad, with the outer corner more or less projecting; tarsal joint particularly small; propodal joint strongly developed, more or less curved and spinous on the inner margin; terminal claw strong, auxiliary claws well developed. The sexual apertures, in the male, situated at the point of a prominent projection on the 2nd coxal joint of the 2 posterior pairs of legs.

Remarks. The genus *Ammonothea* was first established by Leach for the adoption of an exotic species in which the chelifori terminated in a small but distinctly developed chela. In 1864 the English naturalist Hodge investigated a number of small Pycnogonids, of which a few quite corresponded to Leach's genus, while others, although otherwise pretty similar, distinguished themselves notably by the chelifori being quite wanting in chela. He regarded this as a generic difference, and therefore established for those latter species his genus *Achelia*. This genus was also adopted by other zoologists, indeed even placed by Wilson in quite another family than the genus *Ammonothea*. Hoek was the first who completely established that both genera belong to each other, as the genus *Ammonothea* is only based on young specimens, while the genus *Achelia* represents the fully developed individuals. A considerable reduction in the species ranked under both genera became therefore necessary. Besides the first established species, *A. carolinensis*, Leach, and the 2 species more particularly described hereafter, there also pertain to it, an English species *A. longipes*, Hodge, an American one, *A. spinosa*, Stimpson, and 6 Mediterranean species, lately characterized by Dohrn in his work on Pycnogonida.

38. *Ammonothea echinata*. (Hodge).

(Pl. XIII fig. 1, a—m).

Achelia echinata, Hodge, Ann. Mag. Nat. Hist. Vol. XIII, 1864, p. 115, Pl. XII, figs. 7—10.

Ammonothea brevipes, Hodge, ibid. p. 114, Pl. XII, figs. 1—4 (juv.).

Ammonothea fibulifera. Dohrn. Die Pantopoden des Golfes von Neapel. p. 141. Tab. IV. Fig. 1—22.

Ammonothea echinata. Hoek. Archives de Zool. expériment. Vol. IX. p. 508. Pl. XXV. Fig. 14—16.

— — G. O. Sars. Pycnogonidea borealia & arctica, No. 38.

Artscharacter. Legemet tykt og massivt, noget nedtrykt, 2det Kropssegment vel adskilt saavel fra Hovedsegmentet som det følgende Segment; de 2 sidste sammenvoxne. Pandedelens Sidehjørner udtrukne til koniske, fortilrettede Fremspring. Sidefortsætterne tykke, næsten sammenstodende, hver ved Enden oventil forsynet med 2 ens udviklede pigformige Fortsætter endende med en stiv Borste. Oieknuden noget fortilrettet, næsten cylindrisk, Spidsen afstumpet, med et kort mediant Fremspring; Lindserne nær Enden. Snabelen mere end halvt saa lang som det øvrige Legeme. Saxlemmerne neppe halvt saa lange som Snabelen. Skæftet oventil ved Enden gaaende ud i et i Spidsen tvedelt og med 2 Pigge forsynet Fremspring, Endedelen kugleformig. Følerne 8-leddede, temmelig tynde, 2det Led længere end 4de, dette sidste kortere end Endedelen. Gangfodderne neppe dobbelt saa lange som Legemet, kraftigt byggede og delvis besatte med Pigge; de 2 første Hofteled hos Hannen hvert med 4 parvis ordnede pigformige Fortsætter. Laarleddets ydre Hjørne koniskt frempringende, Fodleddet næsten jævnt bredt, stærkt krummet og bevæbnet ved Basis i Inderkanten med 3 stærke Torner; Endekloen omtrent halvt saa lang som Fodleddet, Bikloerne vel udviklede, af Kloens halve Længde. Farven gulagtig. Legemets Længde 2^{mm}; Spandvidde 7^{mm}.

Bemærkninger. At denne Form er Hodge's *Achelia echinata*, anser jeg for sikkert, og rimeligvis hører ogsaa hans *Ammonothea brevipes* herhen som repræsenterende det endnu ikke fuldt udviklede Dyr. Ligeledes kan jeg ikke tvivle paa, at Dohrn's *A. fibulifera* er identisk med den nordiske Form, hvad ogsaa Hoek antager. I Begyndelsen var jeg ogsaa tilhøielig til at henføre den nordamerikanske Form, *A. spinosa* (Stimpson) til denne Art, men finder dog, at domme efter den af Wilson givne Beskrivelse og Figur, at der kan være Grund til at holde begge Former indtil videre ud fra hinanden. Arten er let kjendelig ved sine, især hos Hannen, stærkt piggede Fodder.

Beskrivelse. Længden af Legemet hos fuldt udviklede Individuer af begge Kjøen overstiger neppe 2^{mm}, og den største Spandvidde er omtrent 7^{mm}.

Legemets Form (se Pl. XIII, Fig. 1 og 1 a) er naalmindeleg undersætsig og Fodderne kortere end hos nogen af de i det foregaaende omtalte Former, med Undtagelse af Slægten *Pycnogonum*. Selve Kroppen (Fig. 1 b, 1 c, 1 d) er forholdsvis meget tyk og har Sidefortsætterne saa tæt sammentrængte, at det midtre Parti af Legemet faar Udseende af en oval Skive, hvorfra Lemmerne udstraaler. Midt over Kroppen gaar 2 vel markerede Tværsuturer, hvorved 2det Segment er tydeligt afgrændset saavel fra

Ammonothea fibulifera. Dohrn. Die Pantopoden des Golfes von Neapel. p. 141. Pl. IV. figs. 1—22.

Ammonothea echinata. Hoek. Archives de Zool. expériment. Vol. IX. p. 508. Pl. XXV. figs. 14—16.

— — G. O. Sars. Pycnogonidea borealia & arctica, No. 38.

Specific Characters. Body thick and massive, somewhat depressed, 2nd truncal segment well separated from the cephalic segment as well as from the succeeding one; the two last segments coalesced. The lateral corners of the frontal part drawn out to conical prominences projected forwards. Lateral processes thick, almost contiguous, each furnished at the end, above, with two equally developed spiniform processes terminating in a stiff bristle. Ocular tubercle somewhat anteriorly directed, almost cylindrical, the point blunted, with a short medial prominence; the lenses placed near the extremity. Proboscis more than half as long again as the rest of the body. Cheliferi scarcely half the length of the proboscis, the scape at the tip, above, passing into a bifurcated projection at the point furnished with 2 spines, the terminal portion globular in form. Palpi 8-jointed, rather slender, 2nd joint longer than 4th and the last-named shorter than the terminal part. Ambulatory legs scarcely twice as long as the body, powerfully built and partly beset with spines; the 2 first coxal joints, in the male, each with two spiniform processes arranged in pairs, the outer corner of the femoral joint conically projectant, propodal joint almost uniform in breadth, strongly bent, and, at the base, furnished on the inner margin with 3 strong spines; terminal claw about half the length of the propodal joint, auxiliary claws well developed and half the length of the claws. Colour yellowish. Length of the body 2^{mm}. Extent 7^{mm}.

Remarks. That this form is Hodge's *Achelia echinata* I consider to be certain, and probably his *Ammonothea brevipes* also belongs to it, as representative of the not yet fully developed animal. Neither can I doubt that Dohrn's *A. fibulifera* is identical with the northern form, which Hoek has also supposed. At first I was also disposed to assign the North American form, *A. spinosa* (Stimpson) to this species, but think, however, when judged by the description and illustration given by Wilson, that there may be good reason to keep both forms separate from each other for the present. The species is easily recognizable by its spinous legs, especially in the male.

Description. The length of the body, in fully developed individuals of both sexes, scarcely exceeds 2^{mm} and the greatest extent is about 7^{mm}.

The body (see Pl. XIII, fig. 1 and 1 a) is uncommonly stout, and the legs shorter than in any of the forms we have previously mentioned with exception of the genus *Pycnogonum*. The trunk itself (fig. 1 b, 1 c, 1 d) is relatively very thick, and has the lateral processes so closely crowded that the medial portion of the body acquires the appearance of an oval disc from which the limbs radiate. Across the middle of the body two well-defined transversal sutures pass, causing the 2nd segment to be dis-

Hovedsegmentet som fra den følgende Del af Truncus; forøvrigt er ingen tydelig Segmentering paa Kroppen bemærkelig. Sidefortsætterne er (se Fig. 1 b) temmelig tykke, næsten koldedannede, og har ved Enden oventil 2 ens udviklede pigformige Fortsætter, hver endende med en stiv Borste. Hovedsegmentet indtager ikke fuldt $\frac{1}{3}$ af Kroppens Længde og er næsten jævnt tykt, uden nogen tydelig Hals. Dets forreste Parti, eller Pandedelen, er tvært afkuttet i Enden, med Sidehjørnerne udtrukne i en konisk fortilrettet Fortsæt, forsynet med en liden Borste i Spidsen (se Fig. 1 c). De 2 bagerste Kropssegmenter er fuldstændig sammenvoxne og kun antydede ved de fra dem udgaaende Sidefortsætter, hvoraf det sidste Par som sædvanlig er kortere og mere bagudrettet. Halsesegmentet, der heller ikke er tydeligt afgrændset fra Kroppen, er meget smalt, cylindrisk, og af betydelig Længde, omtrent som Hovedsegmentet, samt horizontalt, endende i en stump Spids.

Oieknuden (se Fig. 1 b, 1 c, 1 e), der er beliggende helt fortil, nær Enden af Pandedelen, er af betydelig Størrelse og stærkt ophøiet. Den er noget forover rettet og af cylindrisk Form, med et ganske kort kegleformigt Fremspring i Midten af den stumpt afrundede Ende. Lindserne er forholdsvis smaa og beliggende helt ved Toppen af Oieknuden.

Snabelen (se Fig. 1 b, 1 c, 1 d) udgaar noget ventralt fra Hovedsegmentets Ende og er meget skarpt afgrændset fra samme, idet der omkring dens Basis findes en fortykket circular Kant (se Fig. 1 d), hvorved paa en Maade en Slags Ledforbindelse kommer istand. Den er af betydelig Størrelse, over halvt saa lang som det øvrige Legeme, og ialmindelighed mere eller mindre skraat nedadrettet. Af Form er den udpræget tendannet, idet den ved Basis har en stærk Indknibning og successivt udvides til henimod Midten, hvorfra den igjen hurtigt afsmalnes mod Enden, som er stumpt tilspidset. Som hos andre Pycnogonideer er den sammensat af 3 Længdesegmenter, hvoraf det uparrede og smaleste indtager Dorsalsiden, de 2 øvrige en Del af Sidefladerne og hele Undersiden, hvor de stoder sammen langs efter Midten (se Fig. 1 d). Mellem Segmenterne findes tætte tværgaaende Muskler, der især i det basale Parti af Snabelen er tydelige. Mundaabningen, der ligger paa Spidsen, er begrændset af 3 tydeligt fremspringende Læber.

Saxlemmerne er hos det voksne Dyr (se Fig. 1 b, 1 c) yderlig smaa og rudimentære, neppe længere end Oieknuden er hoi, og fæstede temmelig nær sammen til den forreste Rand af Hovedsegmentet ovenover Snabelens Basis. Skaftet er (se Fig. 1 f) af koldedannet Form og gaar ved Enden oventil ud i en temmelig stærkt fremspringende, i Spidsen tvekloftet Fortsæt besat med 2 pigformige Borster. Endepartiet, der svarer til Haanden hos andre Pycnogonideer, har kun Formen af et lidet kugleformigt Led, uden nogen Antydning til Fingre. Ved stærk Forstørrelse kan dog

tydeligt demarcateret, both from the cephalic segment as well as the succeeding portion of the trunk; there is, otherwise, no distinct segmentation to be noticed on the body. The lateral processes (see fig. 1 b) are pretty thick, almost clavate, and have at the extremity above 2 equally developed spiniform processes, each terminating in a stiff bristle. The cephalic segment occupies not quite $\frac{1}{3}$ of the length of the body and is almost uniform in thickness, without any distinct neck. Its anterior portion, or the frontal part, is truncated at the extremity, with the lateral corners drawn out to a conical process, directed forwards and furnished with a small bristle at the point (see fig. 1 e). The 2 posterior segments of the trunk are completely coalesced and only indicated by the lateral processes that issue from them, of which the last pair is, as usual, shorter and more posteriorly directed. The caudal segment, which, also, is not distinctly demarcated from the trunk, is very narrow, cylindric, and of considerable length, about the same as the cephalic segment, horizontal, and terminates in a blunt point.

The ocular tubercle (see fig. 1 b, 1 c, 1 e), which is situated quite in front, near the end of the frontal part, is of considerable size and strongly protuberant. It is directed forwards a little and is cylindric in form, with a quite short conical prominence in the middle of the bluntly rounded extremity. The lenses are relatively small, and situated quite at the top of the tubercle.

The proboscis (see fig. 1 b, 1 c, 1 d) issues somewhat ventrally from the end of the cephalic segment, and is very distinctly demarcated from it, as round its base there occurs a thickened circular edge (see fig. 1 d) by which there is, in a manner, formed a kind of articulatory connection. It is of considerable size, more than half as long again as the rest of the body, and, usually, is more or less directed obliquely downwards. In shape it is distinguished fusiform, as at its base it has a strong constriction and is progressively expanded towards the middle, whence it again rapidly diminishes towards the extremity, which is bluntly pointed. As in other Pycnogonids it is composed of 3 longitudinal segments, of which the unpaired and narrowest occupies the dorsal side, the 2 others a portion of the lateral surfaces and the entire under side where they unite along the middle (see fig. 1 d). Between the segments closely placed transversal muscles are found, which are especially distinct in the basal portion of the proboscis. The oral aperture, which is situated at the point, is bordered by 3 distinct protruding lips.

The chelifori are, in the adult animal (see fig. 1 b, 1 c), extremely small and rudimentary, scarcely longer than the ocular tubercle is high, and are secured pretty closely together to the foremost margin of the cephalic segment above the base of the proboscis. The scape is (see fig. 1 f) clavate in form and at the extremity, above, passes into a pretty strongly prominent process, bifurcated at the point and beset with 2 spiniform bristles. The terminal part, which corresponds to the hand in other Pycnogonids, has only the form of a small globular joint.

adskilles et yderst lidet terminalt, med 2 smaa Borster besat Led, der synes at svare til den bevægelige Finger.

Følerne (se Fig. 1 b: — 1 d. 1 g), der er fæstede til en noget fremspringende Afsats paa hver Side af Hovedsegmentet, er vel udviklede og, lige udstrakte, omtrent af Snabelens Længde. De er ialmindelighed stærkt S-formigt boiede og sammensatte af 8 tydeligt begrænsede Led, hvoraf de 4 yderste repræsenterer Endedelen, de 4 øvrige Basaldelen. Af Basaldelens Led er det 1ste og 3die meget korte, de 2 øvrige derimod temmelig forlængede, navnlig 2det, alle besatte med meget smaa og spredte Borster. Endedelen, der altid danner en mere eller mindre tydelig albueformig Vinkel med Basaldelen, er neppe mere end halvt saa lang som denne. Dens 4 Led er næsten af ens Størrelse, eller det 2det ubetydelig længere end de øvrige, og har alle i den ydre Kant en tæt Besætning af Borster. Sidste Led er af oval Form og har 2 af de ved Spidsen fæstede Borster fint cilierede.

De falske Fodder (se Fig. 1 c, 1 d, og 1 h) er fæstede helt ventralt, nedenunder og lidt foran de forreste Sidefortsatser, og er slaæde ind under Kroppen, saa at de neppe er synlige, naar Dyret sees ovenfra. De er ikke af nogen betydelig Størrelse, idet de, lige udstrakte, er adskilligt kortere end Legemet, og bestaar, som hos de fleste øvrige Pycnogonideer, af 10 tydeligt begrænsede Led, hvoraf de 3 første er forholdsvis korte og tykke, medens de 2 følgende Led er stærkere forlængede, navnlig hos Hannen. Endepartiet er forholdsvis lidet udviklet, hos Hannen neppe længere end det foregaaende Led, og har kun et meget lidet Antal af Randtørner, nemlig ialt kun 6, 1 paa hvert af de 4 første Led og 2 paa det yderst lille Endeled; den ene af disse sidste tør dog maaske nærmest svare til Eudekloen hos andre Pycnogonideer. Alle disse Randtørner er tæt og regelmæssigt saugtaktede i begge Kanter (Fig. 1 i).

Gangfødderne (se Fig. 1, 1 a) er forholdsvis korte og robuste, lige udstrakte, ikke engang dobbelt saa lange som Legemet, og besatte med grove pigformige Borster, der delvis er fæstede til Spidsen af mere eller mindre fremspringende koniske Fortsatser. Af Leddene er de 3 Hofteled meget korte, især 1ste og 2det, medens de 3 følgende Led er noget mere forlængede og indbyrdes omtrent af ens Længde. Hos Hannen (se Fig. 1 a, 1 m) er de 2 første Hofteled besatte til hver Side med 2 stærkt fremspringende, koniske Fortsatser, hver endende med en pigformig Børste, og paa de 2 bagerste Fodpar findes desuden paa Undersiden af 2det Hofteled et stumpt koniskt Fremspring af betydelig Størrelse, paa hvis Spids Kjønnsåbningen er beliggende. Hos Hunnen (Fig. 1, 1 k) mangler disse sidste Fremspring ganske, og heller ikke de pigformige Fortsatser paa de 2 første Hofteled er her saa tydelige. Laarledet er hos begge Køn meget bredt og noget sam-

without any indication of fingers. Upon powerful magnification, however, there may be distinguished an extremely small terminal joint beset with 2 small bristles, which appears to correspond to the mobile finger.

The palpi (see fig. 1 b. — 1 d. 1 g), which are secured to a somewhat protruding process on each side of the cephalic segment, are well developed and, straightly extended, are about the length of the proboscis. They are usually strongly bent in S-form and composed of 8 distinctly defined joints, of which the 4 outermost represent the terminal division and the 4 others the basal division. Of the joints of the basal portion the 1st and 3rd are very short, the 2 others, on the contrary, are pretty much elongated, especially the 2nd, and all are beset with very small and scattered bristles. The terminal part, which always forms a more or less distinct elbow-shaped angle with the basal part, is scarcely more than half its length. Its 4 joints are nearly of the same size, or the 2nd inconsiderably longer than the others, and they all have, on the outer margin, a close covering of bristles. The terminal joint is oval in form and 2 of the bristles secured to its point are finely ciliated.

The false legs (see fig. 1 c, 1 d, and 1 h) are secured quite ventrally, below and a little in front of the foremost lateral processes, and are folded in under the trunk, so that they are scarcely visible when the animal is viewed from above. They are not of any considerable size, as they, straightly extended, are considerably shorter than the body and consist, as in most of the other Pycnogonids, of 10 distinctly defined joints, of which the 3 first are relatively short and thick, while the 2 succeeding ones are more elongated, especially in the male. The terminal part is relatively little developed, in the male scarcely longer than the preceding joint, and has but a very small number of marginal spines, only 6 altogether, 1 on each of the 4 first joints and 2 on the extremely small terminal joint; the one of those last may, however, perhaps correspond nearest to the terminal claw in other Pycnogonids. All those marginal spines are closely and regularly serrated on both edges (fig. 1 i).

The ambulatory legs (see fig. 1, 1 a) are relatively short and robust, straightly extended, not even twice the length of the body, and are beset with coarse spiniform bristles, which are partly secured to the point of more or less protuberant, conical processes. Of the joints, the 3 coxal joints are very short, especially the 1st and 2nd, while the 3 succeeding ones are somewhat more elongated, and, mutually, about uniform in length. In the male (see fig. 1 a, 1 m), the 2 first coxal joints are beset on each side with 2 strongly prominent, conical processes, each terminating in a spiniform bristle, and on the 2 posterior pairs of legs, there is, besides, on the under surface of the 2nd coxal joint, a blunt conical protuberance of considerable size, upon whose point the sexual aperture is situated. In the female (fig. 1, 1 k), those last-named protuberances are entirely absent, neither are the spiniform processes of the 2 first coxal joints so distinct here. The femoral joint is

mentrykt, med den indre Kant udbuet og fint cilieret, den ydre Kant forsynet med en tydelig Afsats og gaaende ved Enden ud i en, navnlig hos Hannen stærkt fremspringende konisk Fortsats, begge forsynede med en Del korte, pigformige Borster. 1ste Lægled er noget indknebet ved Basis og successivt udvidet mod Enden og har i Yderkanten flere smaa koniske, med pigformige Borster endende Fremspring, medens Inderkanten er fint cilieret og jævnt udbuet, stærkest hos Hannen. 2det Lægled er adskilligt smalere, med Inderkanten næsten lige, og har i Yderkanten en hel Del grove pigformige Borster, hvoraf især en, fæstet noget forbi Midten, udmærker sig ved betydelig Længde. Det terminale Afsnit er lidt kortere end 2det Lægled og meget bevægeligt forbundet med samme. Dets 1ste Led, eller Tarsalledet, er særdeles lidet, næsten skaalformigt, medens Fodledet er overordentlig kraftigt bygget og noget ligt samme hos *Phorichilidium*. Som hos denne Slægt er det temmelig stærkt krummet, navnlig hos Hannen, omtrent af ens Tykkelse overalt, og i Inderkanten bevæbnet med flere korte Torner, hvoraf de 3 basale udmærker sig ved betydeligere Størrelse. Endekloen er omtrent halvt saa lang som Fodledet, meget kraftig og leformigt krummet. Bikloerne er vel udviklede og omtrent af Kloens halve Længde.

De ydre Ægmasser er af uregelmæssig Form og indeholder talrige temmelig smaa Æg.

Alle Integumenter er særdeles stærkt chitiniserede, navnlig paa Lemmerne, men dog noget gjennemsigtige, saa at Tarmen med dens blindsækformige Forlængelser skinner tydeligt igjennem hos det levende Dyr.

Farven er mere eller mindre intenst gulagtig.

Forekomst. Jeg har truffet denne Form enkeltvis paa flere Punkter ved vor Vestkyst (Espevær, Bekkervig, Korshavn, Kalvaag), hvor den forekom mellem Alger og Bryozoa paa 10—20 F. D.

Udbredning. Arten er aabenbart en mere sydlig Form og er, foruden ved Norges Vestkyst, kjendt fra de britiske Øer (Hodge), Vestkysten af Frankrige og Holland (Hoek) og Middelhavet (Dohrn).

39. *Ammonothea lævis* (Hodge).

(Pl. XIII, Fig. 2, a—m).

Achelia lævis, Hodge, British Pycnogonida, l. c. p. 115, Pl. XIII, Fig. 12.

Artscharacter. Legemet tykt og undersætsigt, med alle Kropssegmenter sammenvoxne. Sidefortsatserne forholdsvis kortere end hos foregaaende Art, hver ved Enden forsynet fortil med en liden børstebærende Fortsats, bagtil

very broad in both sexes and somewhat compressed, with the inner margin bulging and finely ciliated, the outer margin furnished with a distinct projection and passing out at the extremity in a, especially in the male, strongly protuberant conical process, both margins furnished with a number of short spiniform bristles. The 1st tibial joint is somewhat constricted at the base and progressively expanded towards the extremity, and has on the outer margin several small conical projections terminating in spiniform bristles, while the inner margin is finely ciliated and evenly incurvate, strongest in the male. The 2nd tibial joint is considerably narrower, with the inner margin almost straight, and has on the outer margin quite a number of coarse spiniform bristles, of which one especially, secured somewhat beyond the middle, distinguishes itself by its considerable length. The terminal division is a little shorter than the 2nd tibial joint and somewhat movably connected to it. Its 1st joint, or the tarsal joint, is particularly small, almost cupuliform, while the propodal joint is extremely powerfully built, and is somewhat similar to the same joint in *Phorichilidium*. As in that genus, it is pretty strongly curved, especially in the male, about equal in thickness throughout, and armed on the inner margin with several short spines, of which the 3 basal ones are distinguished by considerable size. The terminal claw is about half the length of the propodal joint, very powerful, and falciformly curved. The auxiliary claws are well developed and about half the length of the claws.

The outer egg-masses are irregular in shape, and contain numerous rather small ova.

All the integuments are very strongly chitinised, especially on the limbs, but still somewhat transparent, so that the intestine with its cœcal prolongations is distinctly seen in the living animal.

The colour is more or less intensely yellowish.

Occurrence. I have met with occasional specimens of this form at several places on the West Coast of Norway (Espevær, Bekkervig, Korshavn, Kalvaag) where it occurred among Algae and Bryozoa at a depth of 10—20 fathoms.

Distribution. The species is evidently a more southern form and is, besides from the West Coast of Norway, known from the British Islands (Hodge) the West Coast of France and Holland (Hoek), and the Mediterranean (Dohrn).

39. *Ammonothea lævis* (Hodge).

(Pl. XIII, fig. 2, a—m).

Achelia lævis, Hodge, British Pycnogonida, l. c. p. 115, Pl. XIII, fig. 12.

Specific Characters. Body thick and stout, with all the segments of the trunk coalesced. Lateral processes relatively shorter than in the preceding species, each furnished at the anterior extremity with a small

med et stærkt chitineret knudeformigt Fremspring. Sidehjørnerne af Hovedsegmentet mindre uddragne end hos *A. echinata*. Øieknuden lige opadrettet, pyramidal, endende i en konisk Spids. Lindserne omtrent ved Midten. Snabelen stærkt nedadrettet, neppe mere end halvt saa lang som Legemet. Saxlemmerne noget mere end halvt saa lange som Snabelen, Skaffet kolleformigt, uden nogen tydelig dorsal Fortsats. Endedelen uregelmæssig oval. Folerne 8-leddede, 2det Led kortere end 4de, Endedelen omtrent af dette sidstes Længde. Gangfodderne neppe dobbelt saa lange som Legemet, uden tydelige Pigge, men med spredte Haar, 1ste Hofteled oventil ved Enden forsynet med en knudeformig Fortsats, alle Hofteled hos Hannen temmelig tæt haarede; Fodledet forholdsvis endnu kraftigere end hos foregaaende Art, noget fortykket paa Midten; Endekloen over halvt saa lang som Fodledet. Bikloerne særdeles smaa. Legemets Længde 1.50^{mm} ; Spandvidde 6^{mm} .

Bemærkninger. Jeg antager det for rimeligt, at dette er Hodge's *Achelia larvis*, men Beskrivelsen er altfor ufuldstændig til med fuld Sikkerhed at afgjøre om saa er Tiltældet. Arten er imidlertid i begge Kjon meget let at kjende fra foregaaende, navnlig ved den fuldstændige Sammenvoxning af alle Kropssegmenter, ved Øieknudens Form og Gangfoddernes Mangel af Pigge. Ogsaa i Saxlemmernes og Folernes Bygning er der, som af ovenstaaende Diagnose vil sees, vel udprægede Differentser. Foruden Han og Hun har jeg af denne Art ogsaa havt Anledning til at undersøge ganske unge Individuer med tydeligt cheliforme Saxlemmer.

Beskrivelse. Legemets Længde er hos den fuldt udviklede Hun neppe mere $1\frac{1}{2}^{mm}$, med en Spandvidde af 6^{mm} . Hannen er ubetydelig større.

I ydre Habitus har denne Art (se Pl. XIII, Fig. 2, 2 a) stor Lighed med foregaaende. Kroppen (Fig. 2 b, 2 c) er dog om muligt endnu noget plumpere og i høj Grad udmærket derved, at samtlige Segmenter er fuldstændig sammenvoxne, uden at det mindste Tegn til nogen Tværsuturer kan opdages hverken oventil eller nedentil. Sidefortsatserne er forholdsvis noget kortere end hos foregaaende Art og har ved Enden oventil, som hos denne, 2 Fortsatser; men disse er her meget ulige, idet den forreste er meget liden, tilspidset og paa Toppen forsynet med en kort Borste, medens den bagerste har Formen af en temmelig stor og stærkt chitineret konisk Knude uden terminal Borste. Hovedsegmentet er, som hos foregaaende Art, fortil næsten lige afkuttet, men har Sidehjørnerne betydelig mindre fremspringende. Halsesegmentet er af lignende Udseende som hos *A. echinata*.

Øieknuden (Fig. 2 d) er lige opadrettet, stærkt opøiet og af pyramidal Form, fra Midten af successivt

setiferous process, and posteriorly with a strongly chitinated nodiform protuberance. Lateral corners of the cephalic segment less drawn out than in *A. echinata*. Ocular tubercle directed straightly upwards, pyramidal, terminating in a conical point; the lenses situated nearly in the middle. Proboscis directed strongly downwards, scarcely more than half the length of the body. Chelifori somewhat more than half as long as the proboscis, scape claviform, without any distinct dorsal process, terminal part irregularly oval. Palpi 8-jointed, 2nd joint shorter than the 4th, terminal part about same length as the last-named. Ambulatory legs scarcely twice as long as the body, without distinct spines but with scattered setæ, 1st coxal joint furnished at the end above with a nodiform process, all the coxal joints in the male rather densely setous; propodal joint, relatively still more powerful than in the preceding species, somewhat tumefacted at the middle; the terminal claw more than half as long as the propodal joint, auxiliary claws particularly small. Length of the body 1.50^{mm} ; extent 6^{mm} .

Remarks. I suppose it to be probable that this is Hodge's *Achelia larvis*, but the description is much too incomplete to enable this to be determined with perfect certainty. The species is, however, in both sexes, very easy to distinguish from the preceding one, particularly by the perfect accretion of all the segments of the body, by the form of the ocular tubercle, and the absence of spines on the ambulatory legs. In the structure of the chelifori and palpi also, as will be observed from the above diagnosis, there are marked differences. Besides male and female, I have, also, of this species, had the opportunity of investigating quite young individuals with distinct forecipated chelifori.

Description. The length of the body in the fully developed female is scarcely more than $1\frac{1}{2}^{mm}$ with an extent of 6^{mm} . The male is inconsiderably larger.

In external habit this species has (see Pl. XIII, fig. 2, 2 a) great resemblance to the preceding one. The trunk (fig. 2 b, 2 c) is, however, if possible, still more thick-set, and in an eminent degree remarkable by the fact that all the segments are completely coalesced, without it being possible to observe the least trace of any transversal sutures either above or below. The lateral processes are relatively somewhat shorter than in the preceding species, and, like it, have, at the extremity above, 2 processes, but these are here very unlike, inasmuch that the foremost one is very small, pointed, and at the top furnished with a short bristle, while the posterior one has the shape of a pretty large and strongly chitinated conical nodule without a terminal bristle. The cephalic segment is, as in the preceding species, almost straightly truncated in front, but has the lateral corners considerably less prominent. The caudal segment resembles in appearance that of *A. echinata*.

The ocular tubercle (fig. 2 d) is directed straight upwards, strongly protuberant, and pyramidal in form,

afsmalnende til en konisk Spids. Lindserne har sin Plads omtrent ved Midten af Oieknuden og er noget skraat stillede samt af ulige Størrelse, idet det bagerste Par er kjendelig mindre end det forreste.

Snabelen (se Fig. 2 c) er stærkt nedadrettet og viser en lignende tendannet Form som hos foregaaende Art. Den er imidlertid forholdsvis noget kortere og plumpere, neppe mere end halvt saa lang som den øvrige Del af Legemet.

Saxlemmerne (Fig. 2 e) har ogsaa en noget plumpere Form end hos foregaaende Art og er ogsaa forholdsvis noget større, idet de er mere end halvt saa lange som Snabelen. De er, som alle de øvrige Lemmer, overordentlig stærkt chitiniserede og har Skaftet af kolledannet Form, med 2 korte pigformige Børster ved Enden oventil, men uden tydelig dorsal Fortsats. Haanden er, som hos foregaaende Art, ufuldstændigt udviklet, dannende et forholdsvis lidet Endeled af uregelmæssig oval Form og uden Spor af Fingre.

Folerne (Fig. 2 f) er, lige udstrakte, adskilligt længere end Snabelen og viser en lignende Bygning som hos foregaaende Art. De er imidlertid kjendeligt plumpere og har 4de Led forholdsvis større, omtrent af samme Længde som Endedelen og adskilligt længere end 2det Led.

De falske Fodder hos Hannen (Fig. 2 g) er besatte med korte, omboiede Børster eller Pigge og har det terminale Afsnit meget kort, med Leddene hurtigt aftagende i Størrelse. Randtornerne er forholdsvis svagere udviklede end hos foregaaende Art og færre i Antal.

Gangfodderne er hos Hummen (Fig. 2) af meget kort og undersøetsig Form og neppe længere i Forhold til Legemet end hos foregaaende Art. Hos Hannen (Fig. 2 a) synes de forholdsvis noget spinklere. De mangler hos begge Kjon egentlige Pigge, men er besat hist og her med smaa simple Børster. 1ste Hofteled har ved Enden oventil en lignende konisk Knude som paa Sidefortsatterne, navnlig tydeligt fremtrædende hos Hannen. Hos denne sidste udmærker desuden samtlige Hofteled sig ved en temmelig tæt og regelmæssig Borstebesætning i begge Kanter (se Fig. 2 a), og 2det Hofteled paa de 2 bagerste Par ved et lignende, skjøndt ikke fuldt saa stort Fremspring som hos Hannen af foregaaende Art (se Fig. 2 h). Fodledet (se Fig. 2 i) er overordentlig kraftigt bygget, stærkt krummet og noget fortykket i sit basale Parti; Bevæbningen er forøvrigt en lignende som hos *A. echinata*. Endekloen er mere end halvt saa lang som Fodledet, hvorimod Bikloerne er meget mindre end hos foregaaende Art og neppe $\frac{1}{4}$ saa lang som Kloen.

Farven er omtrent som hos *A. echinata*, skjøndt noget blegere.

Ganske unge Individuer (Fig. 2 k) er mere gennem-

tapering progressively from the middle to a conical point. The lenses are situated at about the middle of the ocular tubercle, and are somewhat obliquely placed as well as unequal in size, in so far, that the posterior pair are appreciably smaller than the anterior ones.

The proboscis (see fig. 2 c) is directed strongly downwards, and exhibits a similar fusiform shape as in the preceding species. It is, however, relatively somewhat shorter and stouter, and scarcely more than half as long as the rest of the body.

The chelifori (fig. 2 e) have also a somewhat stouter form than in the preceding species, and are also relatively somewhat larger, as they are more than half as long as the proboscis. They are, like all the other limbs, extraordinarily strongly chitinised, and have the scape claviform, with 2 short spiniform bristles at the extremity above, but without any distinct dorsal process. The hand is, as in the preceding species, imperfectly developed, forming a relatively small terminal joint of irregular oval form and without trace of fingers.

The palpi (fig. 2 f) are, straightly extended, considerably longer than the proboscis, and resemble in structure those of the preceding species. They are, however, appreciably stouter, and the 4th joint is relatively larger, about the same length as the terminal part and considerably longer than the 2nd joint.

The false legs, in the male, (fig. 2 g) are beset with short, incurvate bristles or spines, and have the terminal division very short, with the joints diminishing rapidly in size. The marginal spines are relatively more faintly developed than in the preceding species, and fewer in number.

The ambulatory legs, in the female (fig. 2), are very short and stout in form, and, in proportion to the body, are scarcely longer than in the preceding species. In the male (fig. 2 a) they appear to be relatively somewhat more slender. In both sexes they are deficient in spines proper, but are here and there beset with small simple bristles. The 1st coxal joint has, at the extremity above, a similar conical nodule as on the lateral processes, which is especially distinctly prominent in the male. In the last-named all the coxal joints further distinguish themselves by a pretty close and regular covering of bristles on both margins (see fig. 2 a), and the 2nd coxal joint of the 2 posterior pairs also by a similar prominence as in the male of the preceding species (see fig. 2 h) though not quite so large. The propodal joint (see fig. 2 i) is extremely powerfully built, strongly bent, and somewhat tumefacted in its basal portion; the armature, otherwise, is like that of *A. echinata*. The terminal claw is more than half as long as the propodal joint while, on the other hand, the auxiliary claws are much less than in the preceding species and scarcely $\frac{1}{4}$ of the length of the claw.

The colour is nearly the same as in *A. echinata*, although somewhat paler.

Quite young individuals (fig. 2 k) are more transparent,

sigtige og har Integumenterne paa langt nær ikke saa stærkt chitiniserede som hos fuldvoxne Dyr. Ogsaa synes Gangfodderne forholdsvis noget kortere. Hvad der imidlertid især udmærker dem, er Beskaffenheden af Saxlemmerne. Disse er nemlig forholdsvis større end hos de voxne Individuer og har Endepartiet udviklet til en fuldstændig Chela, med vel udprægede, skjøndt korte, kloformige Fingre (se Fig. 2 l), hvorved de faar en vis Lighed med samme hos Slægten *Phorichilidium*. Følerne (Fig. 2 m, p) bestaar kun af 6 Led, idet de 3 yderste endnu ikke er sondrede fra hinanden, og de falske Fodder (ibid. 5) danner kun en ganske kort og simpel, hageformigt omboiet Stamme, i hvis Indre dog en begyndende Leddeling lader sig paavise.

Forekomst. Jeg har af denne Art havt Anledning til at undersøge 2 fuldvoxne Exemplarer. Han og Hun, og et Par endnu ikke fuldt udviklede Individuer. De toges alle, ved Christianssund, paa 20—30 F. D. mellem Alger og Bryozoa.

Udbredning. Arten er foruden ved Norges Vestkyst hidtil med Sikkerhed kun observeret ved de britiske Øer af Hodge.

Fam. 6. Eurycydidæ.

Legemet fuldstændig segmenteret; ogsaa Halsesegmentet tydeligt afgrændset. Saxlemmerne mere eller mindre rudimentære, Haanden særdeles liden og ufuldkommen cheliform hos de voxne Dyr. Følerne stærkt forkængede, zigzagformigt boiede, 10-ledede, de 2 første Led meget korte. Falske Fodder tilstede hos begge Kjøen, 10-ledede og forsynede med tydelig Endeklo. Fodderne uden Bikløer. Snabelen bevægligt indledet til et cylindrisk Skæft og mere eller mindre bøiet ind under Legemet.

Bemærkninger. Denne Familie viser vistnok enkelte Characterer tilfælles med foregaaende, men synes mig dog at burde kunne hævdes, da flere distincte Slægter lader sig naturligt gruppere under samme. Det mest fremtrædende Træk ved de herhen hørende Former er utvivlsomt Snabelens eiendommelige Udvikling og anomale Bøining ind under Legemet, hvortil endnu kommer en Del andre Characterer, saasom Halsesegmentets skarpe Begrænsning fra sidste Kropssegment, Følernes stærke Udvikling og Bygningen af de falske Fodder. Foruden de 2 nedenfor nærmere characteriserede Slægter horer herhen Sl. *Barana*, Dohrn og rimeligvis ogsaa Slægterne *Parazetes*, Slater, *Alcinous*, Costa og *Nymphopsis*, Schimkewitsch.

and their integuments are not nearly so strongly chitinized as in the full-grown animal. The ambulatory legs, also, appear to be, relatively, somewhat shorter. That which, however, especially distinguishes them is the nature of the chelifori. These are, relatively, considerably larger than in the adult individuals, and have the terminal part developed to a perfect chela with well marked, although short, claw-shaped fingers (see fig. 2 l), by which they acquire a certain resemblance to those limbs in the genus *Phorichilidium*. The palpi (fig. 2 m, p) consist of only 6 joints, as the 3 outermost ones are not yet separated from each other, and the false legs (ibid. 5) form only a quite short and plain, unieform incurvate stem, in whose interior, however, a rudimentary articulation may be detected.

Occurrence. I have had the opportunity of investigating 2 fully grown specimens of this species, male and female, and a couple of not yet fully developed individuals. They were all taken at Christianssund, at a depth of 20—30 fathoms, among Algae and Bryozoa.

Distribution. Besides on the West Coast of Norway, the species has, hitherto, only been observed, with certainty, off the British Islands by Hodge.

Fam. 6. Eurycididæ.

Body perfectly segmented; caudal segment also distinctly demarcated. Chelifori more or less rudimentary, the hand particularly small and imperfectly cheliform in the adult animal. Palpi greatly elongated, curved in zigzag form, 10-jointed, the 2 first joints very short. False legs present in both sexes, 10-jointed, and furnished with distinct terminal claw. Legs without auxiliary claws. Proboscis movably articulated to a cylindrical scape, and more or less curved in under the body.

Remarks. This family certainly exhibits some characters common also to the preceding one, but yet it appears to me, that it ought to be maintained separate, as several distinct genera may be naturally grouped within it. The most prominent feature in the forms pertaining to it is, undoubtedly, the peculiar development of the proboscis and its anomalous folding in under the body, to which are added several other characters, such as the distinct demarcation of the caudal segment from the last segment of the trunk, the great development of the palpi and the structure of the false legs. Besides the 2 genera more particularly characterized in the sequel, the genus *Barana*, Dohrn belongs to it, and probably also the genera *Parazetes* Slater, *Alcinous*, Costa, and *Nymphopsis*, Schimkewitsch.

Gen. 12. **Eurycyde**, Schödte, 1857.

Syn: Zetes, Kröyer.

Slægtescharacter. Legemet forholdsvis plump, med skarpt afsatte Segmenter og naalmindelig lange Sidefortsætter. Hovedsegmentet med lidet udviklet Pandedel og stærkt udstaaende Halsfortsætter til Fæste for de falske Fødder. Halsesegmentet horizontalt, tenformigt udvidet i sit ydre Parti. Oieknuden meget smal og stærkt ophøiet, med tydeligt udviklede Synselementer. Snabelen af middelmaadig Storrelse og tendannet Form, indledet paa et smalt cylindrisk Skæft og omboiet mod Bugsiden. Saxlemmerne smale og forlængede. Skæftet 2-leddet, Haanden meget liden og hos voksne Individuer uden tydelig Chela. Fødderne stærkt forlængede zigzagformigt boiede, 10-leddede. De falske Fødder af normal Bygning, 10-leddede. Randtørnerne i en dobbelt Rad, saugtakkede, Endekloen tydelig. Gangfødderne spinkle, besatte med stærke Børster. Hofteleddene hos Hunnen opsvulmede, Tarsalleddet meget lidet. Fodleddet forlænget, Endekloen kort, uden Bikkloer.

Bemærkninger. Den af Kröyer foreslaaede Slægtsbenævnelse *Zetes* har ikke kunnet bibeholdes da dette Navn allerede tidligere har været anvendt paa en Midde-Slægt, og er derfor af Prof. Schödte ombyttet med Benævnelsen *Eurycyde*. Slægten er vel characteriseret ved Snabelens og Saxlemmernes Bygning og skiller sig i begge disse Henseender væsentlig saavel fra følgende Slægt som fra den af Dohrn opstillede Slægt *Barana*, skjøndt den forøvrigt viser mange Overensstemmelser med disse Former. Ligeledes kommer den meget nær den af Wl. Schimkewitsch opstillede Slægt *Nymphopsis*, uden imidlertid at kunne forenes med samme. Slægten indeholder saaledes for Tiden kun en Art, nemlig den af Kröyer først beskrevne.

40. **Eurycyde hispida**, (Kröyer).

(Pl. XIV, Fig. 1, a—g).

Zetes hispidus, Kröyer, Bidrag⁷ til Kundskab om Pycnogoniderne, I. c. p. 108.

— — Gaimard's Voyage en Scandinavie, Pl. 38, Fig. 1, a—h.

Eurycyde hispida, Schödte, Nat. Bidrag til en Beskrivelse af Grønland, p. 71.

— — Hansen, Kara-Havets Pycnogonider, I. c. p. 17, Tab. XIX, Fig. 1, a—h.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 40.

Artscharacter. Legemet temmelig undersætsigt, med skarpt afsatte Segmenter; Sidefortsætterne længere end Legemets Brede, kun adskilte ved smale Mellemrum og

Gen. 12. **Eurycyde**, Schödte, 1857.

Syn: Zetes, Kröyer.

Generic Characters. Body relatively plump with sharply defined segments and unusually long lateral processes. Cephalic segment with little developed frontal part, and strongly prominent cervical processes as fastenings for the false legs. Caudal segment horizontal, fusiformly expanded in its outer part. Ocular tubercle very narrow and strongly protuberant, with distinctly developed visual elements. Proboscis of medium size and fusiform, articulated to a narrow cylindrical scape, and curved inwards towards the ventral side. Chelifori narrow and elongated, scape 2-jointed, hand very small and, in adult individuals, without distinct chela. Palpi greatly elongated, curved in zig-zag form, 10-jointed. False legs normal in structure, 10-jointed, marginal spines in a double series, serrated, terminal claw distinct. Ambulatory legs slender, beset with strong bristles, coxal joints in the female swollen, tarsal joint very small, propodal joint elongated, terminal claw short, without auxiliary claws.

Remarks. The generic designation *Zetes*, proposed by Kröyer, has not been maintainable, as that term had already, earlier, been applied to a genus of Mites, and has, therefore, been changed by Prof. Schödte to the name *Eurycyde*. The genus is well characterized by the structure of the proboscis and the chelifori, and is distinguished, materially, in both those respects from the following genus as well as from the genus *Barana* established by Dohrn, although it, otherwise, exhibits much resemblance to those forms. It also approximates pretty closely to the genus *Nymphopsis* established by Wl. Schimkewitsch, without, however, our being able to unite them. The genus contains thus, at present, only one species, viz. that first described by Kröyer.

40. **Eurycyde hispida**, (Kröyer).

(Pl. XIV, fig. 1, a—g).

Zetes hispidus, Kröyer, Bidrag til Kundskab om Pycnogoniderne, I. c. p. 108.

— — Gaimard's Voyage en Scandinavie, Pl. 38, fig. 1, a—h.

Eurycyde hispida, Schödte, Nat. Bidrag til en Beskrivelse af Grønland, p. 71.

— — Hansen, Kara-Havets Pycnogonider, I. c. p. 17, Tab. XIX, fig. 1 a—h.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 40.

Specific Character. Body pretty stout, with sharply defined segments: lateral processes longer than the breadth of the body, only separated by narrow inter-

fiint haarede i Kanterne. Hovedsegmentet stærkt afsmalnende fortil. Pandedelen kun lidet udvidet og stumpet afkuttet i Enden. Halesegmentet horizontalt, omtrent saa langt som de 3 bagerste Kropssegmenter tilsammen og noget bagfor Midten forsynet med en Tværrad af 4—6 stærke Borster. Oieknuden noget foran Midten af Hovedsegmentet, særdeles smal, cylindrisk, lidt fortykket i Enden, Lindserne af middelmaadig Størrelse, nær Spidsen. Snabelens Skaft omtrent af Oieknudens Længde, Endepartiet mere end dobbelt saa langt, tenformigt, den største Brede nærmere Basis. Saxlemmerne længere end Hovedsegmentet og det følgende Segment tilsammen, Skaftets sidste Led længst og, ligesom det foregaaende, oventil besat med stærke, grovt cilierede Borster. Haanden særdeles liden, endende med en tilspidset Fortsats og fortil forsynet med et lidet 2-leddet Appendix. Folgerne, lige udstrakte, omtrent $\frac{1}{2}$ Gang længere end Saxlemmerne, 3die Led længere end de 2 følgende tilsammen, Endedelen omtrent af 5te Leds Længde. De falske Fodder hos Hannen omtrent af Legemets Længde, 4de Led længst, Endedelens Led successivt aftagende i Størrelse, Gangfodderne ikke fuldt dobbelt saa lange som Kroppen, afsmalnende mod Enden og besatte med stærke, grovt cilierede Borster. Laarledet omtrent af Hoftepartiets Længde og hos Hannen forsynet nær Basis med en konisk tilspidset Fortsats, de 2 Læglied indbyrdes af ens Længde, Endepartiet noget kortere, Fodledet smalt og forlænget, noget krummet og fiint haaret i Iderkanten. Endekloen forholdsvis kort. Legemets Længde (uden at regne Snabelen) 2.50^{mm} ; Spandvidde 10^{mm} .

Bemærkninger. Denne Art, den eneste hidtil bekjendte af Slægten, er kjendeligt beskrevet af Kröyer og afbildet i Gaimard's store Værk. Senere er den af Dr. Hansen underkastet en fornyet Undersøgelse, hvorved enkelte interessante Forhold ved dens Bygning er bleven oplyste.

Beskrivelse. Længden af de af mig undersøgte Exemplarer, regnet fra Panderanden til Enden af Halesegmentet, overstiger ikke $2\frac{1}{2}^{mm}$, og Spandvidden er omtrent 10^{mm} . Dr. Hansen opgiver Længden af et ualmindelig stort Exemplar til 4.9^{mm} , hvorved dog ogsaa Snabelen er medtaget i lige fortilstrakt Stilling.

Legemets Form (se Pl. XIV, Fig. 1) maa idethele siges at være temmelig undersætsig, skjøndt paa langt nær ikke i den Grad som hos Arterne af foregaaende Slægt, og navnlig er Lemmerne betydelig spinklere. Selve Kroppen (Fig. 1 a, 1 b) er forholdsvis plump bygget og har alle Segmenter meget skarpt afsatte fra hinanden. Ved første Oiekast synes den at være ganske nøgen, men ved stærk Forstørrelse viser det sig, at den overalt er tæt laadden af overordentlig smaa og fine Haar, der ogsaa fortsætter sig ud paa Snabelen. Sidefortsatserne er ualmin-

vals and finely setous on the margins. Cephalic segment diminishing greatly anteriorly, the frontal part only little expanded and bluntly truncated at the extremity. Caudal segment horizontal, about as long as the 3 posterior segments of the body taken together, and a little behind the middle furnished with a transversal series of 4—6 strong bristles. Ocular tubercle somewhat in front of the middle of the cephalic segment, particularly narrow, cylindric, slightly tumefacted at the extremity, the lenses of medium size, near the point. Scape of the proboscis about same length as the ocular tubercle, the terminal part more than twice as long as it, fusiform, broadest near the base. Chelifori longer than the cephalic segment and the following one together, the last joint of the scape longest, and, like the preceding one, beset at the top with strong, coarsely ciliated bristles, hand particularly small, terminating in a pointed process and furnished anteriorly with a small 2-jointed appendix. Palpi, straightly extended, about $\frac{1}{2}$ longer than the chelifori, 3rd joint longer than the 2 succeeding ones together, the terminal part about the length of the 5th joint. False legs in the male about same length as the body, the 4th joint longest, the joint of the terminal part diminishing successively in size. Ambulatory legs not quite twice as long as the trunk, tapering towards the extremity and beset with strong, coarsely ciliated bristles, femoral joint about same length as the coxal part and, in the male, furnished near the base with a conically pointed process, the 2 tibial joints, mutually, of equal length, terminal part somewhat shorter, propodal joint narrow and elongated, somewhat bent and finely setous on the inner margin, terminal claw relatively short. Length of the body (exclusive of the proboscis) 2.50^{mm} . Extent 10^{mm} .

Remarks. This species, the only one of the genus hitherto known, has been recognisably described by Kröyer, and figured in Gaimard's great work. Subsequently it has been subjected to a renewed investigation by Dr. Hansen, which has elucidated a few interesting features in respect of its structure.

Description. The length of the specimens examined by the author, measured from the margin of the frontal part to the extremity of the caudal segment, does not exceed $2\frac{1}{2}^{mm}$ and the extent is about 10^{mm} . Dr. Hansen states the length of an unusually large specimen as 4.9^{mm} in which, however, the proboscis, in a straight anteriorly extended condition, is also included.

The body (see Pl. XIV, fig. 1) must be said to be, altogether, pretty stout, although not nearly to the same degree as in the species of the preceding genus, and the limbs are, in particular, slenderer. The trunk itself (fig. 1 a, 1 b) is relatively plumply built, and has all the segments very sharply demarcated from each other. At the first glance it appears to be quite bare, but upon powerful enlargement it appears everywhere finely shaggy, with extremely minute and delicate hairs, which are also continued out upon the proboscis. The lateral processes

delig store, kjendelig længere end Kroppen er bred, og kun adskilte ved smale Mellemrum. De er noget fortykkede i Enden og langs Kanterne fint haarede. Hovedsegmentet er omtrent saa langt som de 3 følgende Segmenter tilsammen og afsmalnes kjendeligt fortil, idet Pandedelen kun er meget svagt udvidet. I nogen Afstand fra de forreste Sidefortsatser ndgaar fra Halsdelen til hver Side et temmelig stort, smalt afrundet Fremspring, hvortil de falske Fodder er indleddede. Halsesegmentet (Fig. 1 g) er, uligt hvad Tilfældet er hos de fleste øvrige Pycnogonideer, meget skarpt afsat fra sidste Kropssegment, med hvilket det synes at være bevægeligt articuleret. Det er forholdsvis smalt, men af betydelig Længde, omtrent lig de 3 bagerste Kropssegmenter tilsammen, og horizontalt bagudrettet. Af Form er det smalt tendannet, stærkt indknebet ved Basis og successivt indvidet til bag Midten, hvor det danner en noget vinkelformig Bøining; det er her forsynet med en Tværrad af 4—6 stærke, divergerende Børster, hvoraf de 2 staar tæt sammen paa Rygsiden. Denne Tværrad af Børster i Forbindelse med den eiendommelige Bøining paa dette Sted giver ved første Øiekast Indtrykket af en Segmentering, og Krøyer har ogsaa feilagtigt beskrevet Halsesegmentet som bestaaende af 2 Led.

Øieknuden (se Fig. 1 b, 1 c), der har sin Plads lidt foran Midten af Hovedsegmentet, er stærkt ophøiet, noget foroverrettet, og af meget smal cylindrisk Form. Toppen er noget fortykket og ender i en stump Spids samt har til hver Side et lidet tandformigt Fremspring. Lindserne er vel udviklede, af middels Størrelse, og beliggende lige ved Enden af Øieknuden.

Snabelen (Fig. 1 d) er af en meget eiendommelig Bygning. Den bestaar nemlig af to skarpt afsatte og med hinanden bevægeligt forbundne Dele, et smalt cylindrisk, lige fortilrettet Skæft, omtrent af Hovedsegmentets halve Længde, og et stærkt opsvulmet, tentformigt Endeparti, der ialmindelighed er boiet ind under Kroppen. Naar begge Dele er udstrakte i samme Plan (se Fig. 1 a) er Snabelens Længde omtrent lig de 4 egentlige Kropssegmenter tilsammen. Af de to ovennævnte Dele er det egentlig kun Endepartiet, der svarer til Snabelen hos andre Pycnogonideer.

Saxlemmerne (Fig. 1 e) maa vistnok, som hos de til foregaaende Familie hørende Former, siges at være rudimentære, forsaavidt som de hos fuldt udviklede Individuer mangler en egentlig Chela, men de er dog af ikke ubetydelig Længde, idet de er mere end halvt saa lange som Legemet. De er forholdsvis meget smale, næsten lige fortilstrakte, og bestaar af 3 tydeligt begrænsede Led. Af disse tilhører de 2 første åabenbart Skæftet, som saaledes, afvigende fra hvad Tilfældet pleier at være hos Pycnogonideerne, er 2-leddet. 1ste Led er noget kortere og betydelig tykkere end 2det, der er af smal lineær Form; begge er paa den øvre Side forsynede med stærke,

are unusually large, appreciably longer than the trunk is broad, and are only separated by narrow intervals. They are somewhat tumefacted at the extremity and finely setous along the margins. The cephalic segment is about as long as the 3 succeeding segments taken together, and tapers appreciably in front, as the frontal part is only very faintly expanded. At some distance from the foremost lateral processes, a pretty large, narrow, rounded prominence, to which the false legs are articulated, issues on each side from the cervical part. The caudal segment (fig. 1 g) is, unlike the case in other Pycnogonids, very sharply demarcated from the last segment of the trunk, with which it seems to be flexibly articulated. It is relatively narrow but of considerable length, about equal to the 3 posterior segments of the trunk taken together, and is directed horizontally backwards. In shape it is narrow fusiform, strongly constricted at the base and successively expanded till behind the middle, where it forms a somewhat angular bend; it is here furnished with a transversal series of 4—6 strong, divergent bristles, of which 2 stand close together on the dorsal side. This transversal series of bristles in conjunction with the peculiar bend at this part gives, at the first glance, the impression of a segmentation, and Krøyer has also erroneously described the caudal segment as consisting of 2 joints.

The ocular tubercle (see fig. 1 b, 1 c), which is situated a little in front of the middle of the cephalic segment, is strongly protuberant, directed somewhat forward, and very narrow cylindric in form. The top is somewhat tumefacted and terminates in a blunt point, and on each side has a small dentiform prominence. The lenses are well developed, of medium size, and are situated quite at the extremity of the ocular tubercle.

The proboscis (fig. 1 d) is very peculiar in structure. It consists, namely, of 2 sharply defined parts flexibly connected to each other, a narrow, cylindrical scape directed straight forward, about half the length of the cephalic segment, and a strongly swollen, fusiform terminal part, which is usually folded in under the trunk. When both portions are extended in the same plane (see fig. 1 a) the length of the proboscis is about equal to that of the 4 segments proper of the trunk, taken together. Of the 2 above-named portions, it is really only the terminal part that corresponds to the proboscis in other Pycnogonids.

The chelifori (fig. 1 e) must certainly, as in the forms pertaining to the preceding families, be said to be rudimentary, in so far that they in fully developed individuals have no real chela, but, still, they are of no inconsiderable length as they are more than half as long as the body. They are relatively very narrow, extended almost straight forward, and consist of 3 distinctly demarcated joints. Of these the 2 first evidently pertain to the scape, which thus, differing from what is usually the case in the Pycnogonids, is 2-jointed. The 1st joint is somewhat shorter and considerably thicker than the 2nd, which is narrow linear in form; both are furnished on the upper side with

grovt cilierede Borster, 4 paa 1ste og 9 paa 2det Led, ordnede i 2 alternerende Rader. Sidste Led (Fig. 1 f), der forestiller Haanden, er særdeles lidet og ender i en konisk tilspidset Fortsats, hvis ydre Parti er afgrændset ved en Tværsutur. I nogen Afstand fra denne Fortsats er til Ledets forreste Side fæstet et yderst lidet 2-leddet Appendix, der ifølge sin Stilling maa betragtes som et Rudiment af den bevægelige Finger, ligesom den ovenomtalte koniske Fortsats synes at repræsentere den ubevægelige Finger. Hos yngre Individuer er, som først af Dr. Hansen paavist, Haanden udviklet til en fuldstændig, skjønt forholdsvis meget liden Chela, med kloformige, i Enden stærkt krummede Fingre (se Fig. 1 g, 1 h), hver med et Par Smaatænder i Inderkanten.

Folerne (Fig. 1 i) er mere end $\frac{1}{2}$ Gang længere end Saxlemmerne og bæres ialmindelighed stærkt S-formigt eller rettere zigzag-formigt boiede. De er af spinkel Form, hist og her besatte med grove Borster og sammensatte af 10 vel begrænsede Led, hvoraf det 3die er længst. De 2 første Led er meget korte og ogsaa 4de Led forholdsvis lidet, hvorimod 5te Led er af betydelig Størrelse, skjønt mindre end 3die. De 5 øvrige Led forestiller Endedelen og er alle forholdsvis korte, dog 2det noget længere end de øvrige. Som hos Slægten *Ammonothea* er de i Inderkanten besatte med fine og tætte Borster.

De falske Fodder (se Fig. 1 b, 1 k) er temmelig stærkt forlængede, lige udstrakte omtrent af Legemets Længde, og viser idethele en fuldkommen normal Bygning. De bestaar af 10 vel begrænsede Led, hvoraf 4de og 5te som sædvanlig er længst. Hos Hannen er 4de Led noget længere end 5te og begge besatte med fine ombøiede Borster. Endedelen er ikke fuldt dobbelt saa lang som 5te Led og har Leddene successivt aftagende i Størrelse. De 4 yderste er i den indre Kant bevæbnede med en dobbelt Rad af grovt saugtakkede Torner (se Fig. 1 m, 1 n). Endekloen (se Fig. 1 m) er tydeligt udviklet, skjønt forholdsvis kort og ganske glat.

Gangfodderne (se Fig. 1, 1 o) er ikke fuldt dobbelt saa lange som Legemet, naar Snabelen fraregnes, og af temmelig spinkel Form, samt successivt afsmalnende fra Basis til Enden. De er besatte med stærke, delvis grovt cilierede Borster, der er boiede i forskellige Retninger og giver dem et laaddent Udseende. Hoftelæddene er navnlig hos Hunnen stærkt opsvulmede, da Ovarierne, uligt hvad Tilfældet pleier at være, er indskrænkede til dette Parti, uden at strække sig ind i Laarledet. Dette sidste Led er derfor hos begge Kjøn meget smalt, af lineær Form, og skiller sig kun hos Hannen ved Tilstedeværelsen nær Basis af et konisk tilspidset Fremspring (se Fig. 1 o). De 2 Lægled er begge omtrent af samme Længde som Laarledet, men kjendelig smalere, navnlig det sidste. Endepartiet (se Fig. 1 p) er noget kortere end 2det Lægled og har Tarsalledet særdeles lidet, hvorimod Fodledet er temmelig forlænget, ganske svagt krummet og lidt fortykket i sit basale Parti. Begge Led er tæt besatte med korte

strong, coarsely ciliated bristles, 4 on the 1st and 9 on the 2nd joint, arranged in 2 alternating series. The last joint, (fig. 1 f) which represents the hand, is particularly small, and terminates in a conically pointed process whose outer portion is defined by a transversal suture. At some distance from this process an extremely small 2-jointed appendix is secured to the foremost side of the joint, which, from its situation, must be regarded as a rudiment of the mobile finger, just as the above mentioned process appears to represent the immobile finger. In young individuals, as first shewn by Dr. Hansen, the hand is developed to a perfect, although relatively very small chela with claw-shaped fingers strongly bent at the end (see fig. 1 g, 1 h), each with a couple of small teeth on the inner margin.

The palpi (fig. 1 i) are more than one half longer than the chelifori, and are usually carried curved in strong S-form or, more correctly speaking, zig-zag form. They are slender in structure and beset here and there with coarse bristles, and composed of 10 well defined joints, of which the 3rd is the longest. The 2 first joints are very short, and the 4th joint is, also, relatively small, whilst the 5th joint is of considerable size although a good deal smaller than the 3rd one. The other 5 joints represent the terminal part and are all relatively short, still the 2nd is somewhat longer than the others. They are, as in the genus *Ammonothea*, beset on the inner edge with fine, close-set bristles.

The false legs (see fig. 1 b, 1 k) are rather greatly elongated, straightly extended about same length as the body, and altogether exhibit a perfectly normal structure. They consist of 10 well marked joints, of which the 4th and 5th are, as usual, the longest. In the male the 4th joint is somewhat longer than the 5th, and both are beset with fine recurved bristles. The terminal part is not quite twice as long as the 5th joint, and the joints diminish successively in size. The 4 outermost ones are armed on the inner margin with a double series of coarse, serrated spines (see fig. 1 m, 1 n). The terminal claw (see fig. 1 m) is distinctly developed, although relatively short and quite smooth.

The ambulatory legs (see fig. 1, 1 o) are not quite twice as long as the body when the proboscis is excluded, pretty slender in form, and diminish progressively from the base to the extremity. They are beset with strong, to some extent coarsely ciliated bristles, which are bent in various directions and impart a hirsute appearance to them. The coxal joints, especially in the female, are greatly tumefied, as the ovaries, unlike what is usually the case, are confined to that part without extending themselves into the femoral joint. The last-named joint is, therefore, in both sexes, very narrow, linear in form, and is only distinguished in the male by the presence near the base of a conically pointed prominence (see fig. 1 o). The 2 tibial joints are both about same length as the femoral joint, but appreciably narrower, especially the last one. The terminal part (see fig. 1 p) is somewhat shorter than the 2nd tibial joint and the tarsal joint is particularly small, while the propodal joint is pretty much elongated,

Haar, hvorimod egentlige Randtorner mangler. Endekloen er forholdsvis kort, neppe mere end $\frac{1}{3}$ saa lang som Fodledet, og uden Spor af Bikloer.

De ydre Ægmasser (se Fig. 1 b), der ialmindelighed er fæstede til de falske Fodders 4de Led, er uregelmæssig kugledannede og indeholder et begrænset Antal af middestoré Æg, omgivne af en fælles tynd Membran.

Legemets Farve er mere eller mindre tydelig gulagtig, med mørkebrunt gennemskinnende Tarmsystem. Men som oftest er Dyret saa tæt besat med Mudder og andre fremmede Dele, at Farven er meget vanskelig at erkjende.

Forekomst. Jeg har observeret denne eiendommelige Pycnogonide ganske enkeltvis paa forskellige Punkter af vor Kyst, nemlig ved Christiansund, ved Valdersund nordenom Trondhjemstjorden, og ved Kvalo paa Nordlandskysten; Dybden 50—100 Favne. Under Nordhavs Expeditionen toges et enkelt Exemplar i Havet mellem Finnmarken og Beeren Eiland (Stat. 290) paa et Dyb af 191 Favne. Desuden har jeg havt Anledning til at undersøge et enkelt Exemplar, taget under Nordenskjöld's Expedition i det Kariske Hav.

Udbredning. Arten er først af Krøyer beskrevet fra Grønland og senere af Jarzynsky anført fra den murmanske Kyst, samt af Dr. Hansen fra det Kariske Hav. Den maa ifølge denne sin Forekomst utvivlsomt ansees for en ægte arktisk Form.

quite faintly bent, and a little tumefacted in its basal part. Both joints are closely beset with short hairs, whilst, on the other hand, real marginal spines are absent. The terminal claw is relatively short, scarcely more than $\frac{1}{3}$ as long as the propodal joint, and without trace of auxiliary claws.

The outer egg-masses (see fig. 1 b), which are usually secured to the 4th joint of the false legs, are irregularly globular in form, and contain a limited number of medium-sized ova enveloped in a thin common membrane.

The colour of the body is more or less distinct yellowish, with dark brown, transparent intestinal system. But most commonly the animal is so densely covered with mud and other foreign substances that the colour is very difficult to detect.

Occurrence. I have observed this peculiar Pycnogonid quite occasionally, at 3 different places on the Norwegian coast viz. at Christiansund, at Valdersund north of the Trondhjem Fiord, and at Kvalö on the coast of Nordland; depth 50—100 fathoms. On the North Atlantic Expedition a single specimen was taken in the ocean between Finnmark and Beeren Island (Stat. 290) at a depth of 191 fathoms. I have had an opportunity, besides, of examining a single specimen taken in the Kara Sea, on Nordenskjöld's Expedition.

Distribution. The species is first described by Krøyer from Greenland, and subsequently recorded by Jarzynsky from the Murman Coast, also by Dr. Hansen from the Kara Sea. It must, according to that occurrence, be indubitably regarded as a genuine Arctic form.

Gen. 13. **Ascorhynchus**, G. O. Sars. 1876.

Slægtscharacter. Legemet smalt og forlænget, med skarpt afsatte Segmenter og vidt adskilte Sidefortsatser. Hovedsegmentet med forlænget Hals og kolførmigt udvidet Pandedel; Halsfortsatserne utydelige. Halsesegmentet særdeles smalt, cylindrisk. Øieknuden af forskjellig Form, ialmindelighed uden Synselementer. Snabelen af betydelig Størrelse, næsten pæreformig og mere eller mindre indboiet under Legemet, Skaftet meget kort. Saxlemmerne særdeles smaa, Skaftet 1-leddet (eller 2-leddet), Haanden hos fuldvoxne Individuer rudimentær, af triangulær Form. Følerne stærkt forlængede, af en lignende Bygning som hos foregaaende Slægt. De falske Fodder 10-leddede, Endedelens 1ste Led stærkt forlænget, Randtornerne i flere Rækker, saugtakkede. Gangfodderne af middelmaadig Længde, meget spinkle, fint haarede eller glatte. 2det Høfteled hos Hunnen stærkt opblæst, Laarledet hos Hannen med en afrundet Knude ved Basis, Tarsalleddet kort eller maadeligt forlænget, Fodledet lineært, ikke krummet, Endekloen forlænget, uden Bikloer. De ydre Ægmasser forholdsvis smaa, Æggene faa og af be-

Gen. 13. **Ascorhynchus**, G. O. Sars. 1876.

Generic Characters. Body narrow and elongated, with sharply defined segments and widely separated lateral processes. Cephalic segment with elongated neck and claviformly expanded frontal part; the cervical processes indistinct. Caudal segment particularly narrow, cylindrical. Ocular tubercle of variable form, usually without visual elements. Proboscis of considerable size, almost piriform, and more or less folded in under the body, scape very short. Chelifori particularly small, scape single-jointed (or 2-jointed), hand in full-grown individuals, rudimentary, triangular in form. Palpi greatly elongated, of similar structure as in the preceding genus. False legs 10-jointed, 1st joint of the terminal part greatly elongated, marginal spines in several series, serrated. Ambulatory legs of medium length, very slender, finely setous or smooth, 2nd coxal joint in female, greatly expanded, femoral joint in male with a rounded nodule at the base, tarsal joint short, or only slightly elongated, propodal joint linear, not bent, terminal claw elongated, without auxiliary claws. The outer egg-masses relatively small, the ova few in

tydelig Størrelse, ikke omgivne af nogen fælles Membran.

Bemærkninger. Denne Slægt staar vistnok meget nær foregaaende, men synes mig dog at burde opretholdes, da flere Arter i den nyere Tid er opdagede, der viser lignende Forskjelligheder fra Slægten *Eurycyde* som den typiske Art. Af disse Forskjelligheder kan fremhæves den smale forlængede Form af Legemet. Snabelens enorme Udvikling og Mangel af noget tydeligt Skæft. Saxlemmernes Structur, endelig de falske Fødders Bevæbning og Halesegmentets Form. Den af Dohrn opstillede Slægt *Barana* synes i visse Henseender at komme nærværende Type endnu nærmere end foregaaende Slægt, og navnlig viser den ene af Arterne, *B. castelli*, i sin ydre Habitus en umiskjendelig Lighed med Arterne af Slægten *Ascorhynchus*, medens den anden Art, *B. arenosa* i denne Henseende mere minder om Slægten *Eurycyde*. Der er imidlertid visse Forhold, der synes at skille begge disse Arter saavel fra Slægten *Eurycyde* som *Ascorhynchus* og som taler imod at forene dem med nogen af disse Slægter. Foruden den nedenfor nærmere beskrevne Art hører herhen 3 af Hoek fra Challenger Expeditionen beskrevne Arter, og en af Böhm under Benævnelsen *Gnamptorhynchus ramipes* opført Form fra Japan henføres af Hoek ligeledes til denne Slægt. Arternes Antal bliver saaledes for Tiden ikke mindre end 5 ialt.

number and of considerable size, not enveloped by any common membrane.

Remarks. This genus certainly approximates to the preceding one pretty closely, but it appears to me, however, that it should be maintained, as several species have been discovered in later years which exhibit similar divergencies from the genus *Eurycyde* as the typical species. Of these divergencies may be accentuated, the narrow elongated form of the body, the enormous development of the proboscis and the absence of any distinct scape, the structure of the chelifori and, finally, the armature of the false legs and the form of the caudal segment. The genus *Barana*, established by Dohrn, appears, in some respects, to approach the present type still closer than the preceding genus; and the one of the species *B. castelli*, especially, shows in its external habit an unmistakable resemblance to the species of the genus *Ascorhynchus*, whilst the second species, *B. arenosa*, reminds in this respect more of the genus *Eurycyde*. There are, however, certain features that appear to separate both those species from the genus *Eurycyde* as well as *Ascorhynchus*, and which forbid their union with any of those genera. Besides the species more particularly described hereafter, 3 species from the Challenger Expedition, described by Hoek, pertain to it, and a form from Japan described by Böhm, under the appellation *Gnamptorhynchus ramipes*, has also been referred by Hoek to this genus. The number of the species is thus, at present, not less than 5 altogether.

41. *Ascorhynchus abyssii*, G. O. Sars.

(Pl. XIV, Fig. 2. a—t).

Ascorhynchus abyssii, G. O. Sars, Prodrömus descript. Crust. & Pycnog. etc., No. 8.

— — G. O. Sars, Pycnogonidea borealia & arctica No. 41.

Artscharacter. Legemet smalt cylindrisk, med forholdsvis korte og vidt adskilte Sidefortsatser. De 3 forreste Segmenter med den bagre Del ophoiet og gaaende ud i en opadrettet tilspidset Fortsats; en lignende men noget mindre Fortsats ved Enden af enhver af Sidefortsatserne. Hovedsegmentet noget længere end de 2 følgende Segmenter tilsammen; Pandedelen successivt udvidet mod Enden, som er tvært afkuttet. Halesegmentet meget smalt, noget nedadkrummet. Øieknuden helt fortil, stumpt afrundet i Enden, med et kort tandformigt Fremspring til hver Side og uden Spor af Synselementer; Snabelen af særdeles betydelig Størrelse, saa lang som de 3 forreste Segmenter tilsammen, stærkt fortykket paa Midten, næsten pæreformig og omslaet under Bugen. Saxlemmerne omtrent halvt saa lange som Hovedsegmentet, Skæftet enledet, Haanden hos fuldt udviklede Individer særdeles liden, triangulær, med en kort tandet Knude som Rudiment af

41. *Ascorhynchus abyssii*, G. O. Sars.

(Pl. XIV, fig. 2. a—t).

Ascorhynchus abyssii, G. O. Sars, Prodrömus descript. Crust. & Pycnog. etc. No. 8.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 41.

Specific Characters. Body narrow cylindrical, with relatively short and widely separated lateral processes. The 3 foremost segments with the posterior part elevated, and continued into a pointed process directed upwards; a similar but somewhat smaller process at the extremity of each of the lateral processes. Cephalic segment somewhat longer than the 2 succeeding segments together; frontal part successively expanded towards the extremity, which is abruptly truncated. Caudal segment very narrow, somewhat bent downwards. Ocular tubercle quite in front, bluntly rounded at the end, with a short dentiform prominence on each side and without trace of visual elements. Proboscis of particularly great size, as long as the 3 anterior segments together, strongly tumefacted at the middle, almost piriform and folded under the belly. Chelifori about half as long as the cephalic segment, scape single-jointed, hand, in fully

den bevægelige Finger. Folerne, lige udstrakte, næsten 5 Gange længere end Saxlemmerne, 5te Led kun lidet kortere end 3die. Endedelen ikke fuldt saa lang, dens 2det Led længst. De falske Fodder hos Hannen længere end Kroppen. Endedelens 1ste Led næsten saa langt som de øvrige tilsammen. Gangfodderne omtrent dobbelt saa lange som Legemet, tæt besatte med korte Haar, Tarsalledet meget kort, Fodledet hos Hannen lineært, med korte Torner i Inderkanten, hos Hannen bredere og mere sammentrykt samt bevæbnet med en Rad af 16—18 betydelig stærkere Torner, Endekloen hos Hannen halvt saa lang som Fodledet, hos Hannen betydelig større. Legemets Længde uden Snabelen 7^{mm} ; Spandvidde 32^{mm} .

Bemærkninger. Nærværende Art maa, som den først opdagede, betragtes som Typen for Slægten. Den er vel adskilt fra de 3 af Hoek fra Challenger Expeditionen beskrevne Former ved de korte Sidefortsatser, Oieknudens Form og Stilling, den enorme Udvikling af Snabelen, de tæt haarede Gangfodder og Forholdet af disses 2 sidste Led.

Beskrivelse. Formen er (se Pl. XIV, Fig. 2) forholdsvis meget spinkel, saavel hvad Kroppen som Lemmerne angaar. Selve Kroppen (Fig. 2 a, 2 b, 2 c) er af smal cylindrisk Form og, ovenfra eller nedenfra seet, næsten overalt af ens Brede. Seet fra Siden (Fig. 2 c) viser den sig noget bredere paa Midten og mere eller mindre krummet. Segmenterne er meget skarpt afsatte fra hinanden, og den bagre Rand paa de 3 forreste er tydeligt hævet oventil; umiddelbart foran Randen har ethvert af disse Segmenter et lige opadrettet tilspidset Fremspring. Sidefortsatserne er adskilte ved brede Mellemrum og ikke af nogen betydelig Længde, idet de neppe overgaar Legemets Brede. Enhver af dem har oventil ved Enden et kort tandformigt Fremspring og er i Kanterne besatte med korte Haar. Selve Kroppen er derimod saagodtsom nogen, eller kun forsynet med yderst smaa, mikroskopiske Torner. Hovedsegmentet er af betydelig Størrelse, adskilligt længere end de 2 følgende Segmenter tilsammen, og har en temmelig lang cylindrisk Hals, der ved Basis til hver Side viser en ganske svag Udbugtning til Fæste for de falske Fodder, hvorimod egentlige Halsfortsatser mangler. Pandedelen udvides ganske successivt mod Enden, som er temmelig bred og tvært afkuttet. Halesegmentet (Fig. 2 t), der som hos foregaaende Slægt er tydeligt articuleret til sidste Kropssegment, er særdeles smalt, cylindrisk eller kun ganske svagt fortykket i sit ydre Parti, og noget nedadkrummet (se Fig. 2 c). Det er kun forsynet med meget smaa, spredte Haar og viser i Enden en tydelig spaltformig Analaabning.

Oieknuden (se Fig. 2 a, 2 b) er, uligt hvad Tilfældet er med de af Hoek beskrevne Arter, beliggende helt fortil

developed individuals, particularly small, triangular, with a short dentate nodule as a rudiment of the mobile finger. Palpi, straightly extended, almost 5 times longer than the chelifori, 5th joint only a little shorter than the 3rd, terminal part not quite so long, 2nd joint longest. False legs in male longer than the trunk, 1st joint of the terminal part almost as long as all the others together. Ambulatory legs about twice as long as the body, closely beset with short setæ, tarsal joint very short, propodal joint in female linear, with short spines on the inner margin, in the male broader and more compressed and armed with a series of 16—18 considerably stronger spines; terminal claw in female half the length of the propodal joint; in male considerably larger. Length of the body, exclusive of the proboscis, 7^{mm} ; extent 32^{mm} .

Remarks. The present species must, as the first discovered, be regarded as the type of the genus. It is well distinguished from the 3 forms from the Challenger Expedition described by Hoek, by the short lateral processes, the form and position of the ocular tubercle, the enormous development of the proboscis, the densely setous ambulatory legs and the relations of their 2 terminal joints.

Description. The form (see Pl. XIV, fig. 2) is relatively very slender, both as regards the trunk and the limbs. The trunk itself (fig. 2 a, 2 b, 2 c) is narrow cylindric in form, and, viewed either superiorly or inferiorly, it is almost everywhere uniform in breadth. Viewed laterally (fig. 2 c) it shows itself to be somewhat broader at the middle and more or less bent. The segments are very sharply defined from each other, and the posterior margin on the 3 foremost ones is distinctly raised above; immediately in front of the margin each of those segments has a pointed prominence directed straight upwards. The lateral processes are separated by broad intervals and are not of any considerable length, as they scarcely exceed the breadth of the body. Each of them has above, at the extremity, a short dentiform prominence and is beset with short setæ on the edges. The trunk itself is, on the other hand, almost quite bare, or only furnished with extremely minute microscopical spines. The cephalic segment is of considerable size, considerably longer than the 2 succeeding segments together, and has a pretty long cylindrical neck which, at the base, on each side, shews a quite faint bulging for the attachment of the false legs, whereas real cervical processes are wanting. The frontal part is quite progressively expanded towards the extremity, which is pretty broad and abruptly truncated. The caudal segment (fig. 2 t), which, as in the preceding genus, is distinctly articulated to the last segment of the trunk, is particularly narrow, cylindrical, or only quite faintly tumefacted in its exterior portion and somewhat bent downwards (see fig. 2 c). It is only furnished with very small, scattered setæ, and exhibits at the extremity a distinct fissured anal aperture.

The ocular tubercle (see fig. 2 a, 2 b) is, unlike what is the case in the species described by Hoek, situated quite

og har Formen af en stump Forhøining, uden Spor af Pigment eller Linsler. Forfra eller bagfra seet (Fig. 2 d) viser den sig jævnt afrundet i Enden, med et lidet tandformigt Fremspring til hver Side.

Snabelen (se Fig. 2 c) er af særdeles betydelig Størrelse, omtrent saa lang som de 3 første Segmenter tilsammen, og er altid stærkt omboiet mod Bugsiden. Den er, som hos foregaaende Slægt, bevægeligt articuleret til et fra Hovedsegmentet fortil udgaaende Skaft; men dette Skaft (se Fig. 2 b) er her særdeles kort og kan derfor let forbi-sees. Snabelen er stærkt indknebet ved Basis og udvidet paa Midten, næsten af pæredannet Form, og har en svag Indsnoring i sit basale Parti, medens det terminale Parti jævnt afsmalnes mod den stump afkattede Spids. I Tvær-snit er Snabelen (se Fig. 2 f) næsten trekantet, idet det dorsale Længdesegment er stærkt, næsten tagformigt hvælvet, medens de 2 Sidesegmenter støder sammen ventralt i samme Plan. Mundaabningen (se Fig. 2 e) er begrændset af 3 distincte Læber, hver med et lidet knudeformigt Fremspring i Midten.

Saxlemmerne (se Fig. 2 a, 2 b, 2 c, Fig. 2 g) er meget smaa og rudimentære, neppe halvt saa lange som Hovedsegmentet, med hvilket de synes at være ubevægeligt forbundne. Skaftet er enleddet, cylindrisk og ganske svagt krummet, samt, foruden de overalt paa Kroppen forekom-mende mikroskopiske Smaatorner, besat med en Del tem-melig smaa og simple Børster. Haanden (Fig. 2 h) er yderst liden, af triangulær Form og ender med et indad-rettet stumpt Hjørne. Fortil har den en uregelmæssigt tandet Knude, der er forbundet med Haanden ved et tynd-hudet Parti og forestiller et Rudiment af den bevægelige Finger. Hos yngre Individer, der dog paa det nærmeste har opnaaet sin definitive Størrelse er Haanden (se Fig. 2 i, 2 k), som hos foregaaende Slægt, fuldkommen cheli-form, med stærkt krummede, kloformige Fingre, uden Side-tænder.

Folerne (se Fig. 2 a—c, Fig. 2 l) er af meget be-tydelig Længde, idet de, lige udstrakte, næsten er saa lange som hele Legemet, naar Snabelen fraregnes. I sin Bygning stemmer de forøvrigt temmelig noie overens med samme hos foregaaende Slægt og er, som hos denne, tyde-ligt 10-leddede og stærkt zigzag-formigt boiede. Af Led-dene er ogsaa her de 2 første meget korte, hvorimod 2det og 5te Led er stærkt forlængede og indbyrdes næsten af ens Længde. Endedelen er omtrent saa lang som 4de Led og har 2det Led betydelig længere end de øvrige.

De falske Fodder (se Fig. 2 c, Fig. 2 m) er stærkt forlængede og spinkle, lige udstrakte vel saa lange som Legemet, naar Snabelen fraregnes, og bestaar af 10 vel begrænsede Led. Hos Hannen (Fig. 2 c) er 4de og 5te Led noget bredere end hos Hunnen (Fig. 2 m) og besatte med omboiede tornformige Børster. Endedelen (se Fig. 2 n) er næsten saa lang som de 2 foregaaende Led til-sammen og har 1ste Led stærkt forlænget. Tornerne paa de følgende Led (Fig. 2 o) viser et lignende Udseende som

anteriorly and has the form of a blunt prominence, without trace of pigment or lenses. Viewed anteriorly or posteriorly, (fig. d) it shews itself to be evenly rounded at the end, with a small dentiform prominence on each side.

The proboscis (see fig. 2 c) is of particularly large size, about as long as the 3 first segments together, and is always strongly incurvated towards the ventral side. It is, as in the preceding genus, flexibly articulated to a scape issuing from the front of the cephalic segment; but this scape (see fig. 2 b) is here particularly short and may therefore be easily unobserved. The proboscis is greatly constricted at the base and expanded at the middle, almost piriform, and has a faint constriction in its basal portion, whilst the terminal portion tapers evenly towards the bluntly truncated point. In transversal sections the proboscis (see fig. 2 f) is almost trigonal, as the dorsal longitudinal segment is strongly, almost roof-like, arcuate, whilst the 2 lateral segments unite ventrally in the same plane. The oral aperture (see fig. 2 e) is bordered by 3 distinct lips, each with a small nodular prominence in the middle.

The chelifori (see fig. 2 a, 2 b, 2 c, fig. 2 g) are very small and rudimentary, scarcely half as long as the cephalic segment, with which they appear to be immobily connected. The scape is single-jointed, cylindrical, and quite faintly bent, and is, also, beset with, besides the microscopical spines that are everywhere present on the trunk, a number of pretty small and simple bristles. The hand (fig. 2 h) is extremely small, triangular in form, and terminates in a blunt corner directed inwards. Anteriorly it has an irregularly dentated nodule which is connected to the hand by a membranous part and represents a rudi-ment of the mobile finger. In young individuals which have, however, attained, approximately, their definite size, the hand is (see fig. 2 i, 2 k), as in the preceding genus, perfectly cheliform, with strongly bent claw-shaped fingers, without lateral teeth.

The palpi (see fig. 2 a—c, fig. 2 l) are of very con-siderable length, as they, straightly extended, are, exclud-ing the proboscis, almost as long as the entire body. In their structure they correspond otherwise, pretty closely with the same organs in the preceding genus, and are, as in it, distinctly 10-jointed, and strongly bent in zig-zag form. Of the joints the 2 first are also here very short, while the 2nd and 5th joints are greatly elongated and are mutually about uniform in length. The terminal part is about as long as the 4th joint and has the 2nd joint considerably longer than the others.

The false legs (see fig. 2 c, fig. 2 m) are strongly elongated and slender, straightly extended, rather longer than the body when the proboscis is deducted, and consist of 10 well marked joints. In the male (fig. 2 c) the 4th and 5th joints are somewhat broader than in the female (fig. 2 m), and are beset with recurvate aculeiform bristles. The terminal part (see fig. 2 n) is almost as long as the 2 preceding joints taken together, and has the 1st joint greatly elongated. The spines on the succeeding joints

hos foregaaende Art. men er talrigere og ordnede i flere Rader; de i den inderste Rad — de egentlige Randtorner — er dog betydelig større end de i de øvrige.

Gangfodderne (se Fig. 2) er af spinkel Form, omtrent dobbelt saa lange som Legemet (uden Snabelen), og tæt besatte med fine, ensformigt udviklede Haar. Hos Hunnen er 2det Hofteléd særdeles stærkt, næsten blæreformigt opblæst og fyldt med store Ægceller, medens dette Léd hos Hannen (se Fig. 2 p) er smalt og af lineær Form; hos begge Kjøen er det mere end dobbelt saa langt som de 2 øvrige Hofteléd tilsammen. Laarlédet er omtrent af Hoftepartiets Længde og hos begge Kjøen af smal lineær Form; hos Hannen har det nær Basis en stumpt afrundet Knude (Fig. 2 q), som ganske mangler hos Hunnen. Af de 2 Lægled er det 2det noget længere end det 1ste og omtrent af Laarlédets Længde, begge meget smale, lineære. Endepartiet (Fig. 2 r, 2 s) er omtrent halvt saa langt som 2det Lægled og har Tarsallédet meget kort, medens Fodlédet er temmelig stærkt forlænget og næsten lige.

De til de falske Fødder hos Hannen fæstede Æg er (se Fig. 2 c) forholdsvis meget store, kugleformige, og faa i Antal, neppe over 8—12 Stykker. De er enkeltvis grupperede omkring 4de Léd, uden at være omgivne af nogen fælles Omhyllingsmembran.

Legemet er i levende Tilstand af hvidagtig Farve og temmelig gjennemsigtigt, saa at flere af de indre Dele skinner mere eller mindre tydeligt igjennem Integumenterne. Saaledes er, naar Legemet sees nedenfra (Fig. 2 b) den hele Buggangliekjæde meget iøjnefaldende. Den bestaar af 5 vel adskilte Ganglier, hvoraf det forreste er af temmelig smal og forlænget Form. De fra Ganglierne udgaaende Hovednerver er ligeledes tydelig at forfølge.

Forekomst. Af denne karakteristiske Form blev under Expeditionen talrige Exemplarer indsamlede, navnlig i stor Mængde paa de paa Bundskraben fæstede Svabberter. Arten er observeret paa ikke mindre end 5 forskellige Stationer, spredte omkring i det af os bereiste Havstrøg fra den 63de til den 78de Bredegrad. Af Stationerne ligger 2 (St. 35 og 53) i Havet mellem Norge paa den ene Side og Færøerne og Island paa den anden, en 3die (St. 205) NV af Lofoten, de 2 øvrige (St. 303 og 353) længere Nord i Havet mellem Spitzbergen og Beeren Eiland paa den ene Side og Grønland og Jan Mayen paa den anden. Dybden fra 1081 til 1539 Fath. Alle Stationer tilhører den kolde Area.

Udbredning. Da denne Form hidtil ikke er observeret af andre Forskere, kan om dens Udbredning for Tiden kun siges, at den synes at være indskrænket til den dybe, med iskoldt Vand paa Bunden fyldte Indsænkning i Nordhavet, der ligger vesten om de store Havbanker og disses Fortsættelse mod Nord forbi Beeren Eiland og Spitzbergen. Østenfor den 13de Længdegrad er den hidtil ikke observeret.

(fig. 2 o) exhibit a similar appearance as in the preceding species, but are more numerous and arranged in several series; those in the innermost series — the real marginal species — are, however, considerably larger than the others.

The ambulatory legs (see fig. 2) are slender in form, about twice as long as the body (excluding the proboscis), and are closely beset with fine, uniformly developed setæ. In the female the 2nd coxal joint is very much, almost vesicularly inflated, and is filled with large ovi-cells, whilst the same joint in the male (se fig. 2 p) is narrow and linear in form; in both sexes it is twice as long as the 2 other coxal joints taken together. The femoral joint is about the length of the coxal part, and in both sexes is narrow linear in form; it has, in the male, near the base, a bluntly rounded nodule (fig. 2 q), which is quite absent in the female. Of the 2 tibial joints the 2nd is somewhat longer than the 1st one, and about the length of the femoral joint, both very narrow, linear. The terminal part (fig. 2 r, 2 s) is about half the length of the 2nd tibial joint and has the tarsal joint very short, while the propodal joint is pretty strongly elongated and almost straight.

The ova attached to the false legs in the male (see fig. 2 c) are relatively very large, globular in shape, and few in number, scarcely more than 8—12. They are grouped singly, round the 4th joint, without being enveloped in any common enclosing membrane.

The body is, in the live state, of whitish colour and pretty transparent, so that several of the internal organs appear more or less distinctly visible through the integuments. Thus, when the body is viewed from below (fig. 2 b), the entire chain of ventral ganglia is very prominent. It consists of 5 well separated ganglia, of which the foremost is of rather narrow and elongate form. The chief nerves issuing from the ganglia may also be distinctly traced.

Occurrence. Numerous specimens of this characteristic form were collected during the expedition, especially attached in great numbers to the swabs secured to the dredge. The species was observed at not less than 5 different stations scattered about in the tracts of the ocean cruised in, from the 63rd to the 78th parallels of latitude. Of the stations, 2 (St. 35 and 53) are situated in the ocean between Norway on the one side and the Faeroe Islands and Iceland on the other; a 3rd (St. 205) to the N. W. of Lofoten; the 2 others (St. 303 and 353) farther north, in the ocean between Spitzbergen and Beeren Eiland on the one side and Greenland and Jan Mayen on the other. Depth from 1081 to 1539 fathoms. All the stations pertain to the cold area.

Distribution. As this form has not, hitherto, been observed by other naturalists, it can, for the present, only be said of its distribution, that it appears to be confined to the deep basin filled at the bottom with ice-cold water that exists in the North Sea, situated to the west of the great ocean banks and their continuation northwards past Beeren Island and Spitzbergen. To the east of the 13th degree of longitude it has not hitherto been observed.

Fam. 7. Pasithoidæ.

Kroppen usegmenteret, med kort Pandedel. Snabelen ualmindelig stor, ikke bevægeligt forbunden med Kroppen. Saxlemmer ganske manglende hos det fuldt udviklede Dyr. Folere og falske Fodder vel udviklede, begge 10-leddede og fæstede tæt sammen ind under Pandedelen.

Bemærkninger. Den Slægt, hvorefter nærværende Familie er benævnt, *Pasithoë* Goodsir, er vistnok endnu kun meget ufuldstændigt kjendt, men synes mig dog ved den fuldstændige Mangel af Saxlemmer og de vel udviklede Folere at maatte stilles nærmest ved Slægten *Colossendeis*, Jarzynsky, og sammen med denne at danne en egen Familie, der aabenbart slutter sig temmelig nær til de 2 foregaaende Familier.

Gen. 14. *Colossendeis*, Jarzynsky. 1870.

Slægtscharacter. Legemet robust eller smækkert, med forholdsvis korte Sidefortsatser og liden Pandedel, uden Hals. Halsesegmentet meget smalt og skarpt begrænset fra Kroppen. Oieknuden tilspidset, uden tydelige Oie. Snabelen af anselig Størrelse, Enden afstumpet, 3-lappet, ikke afsmalnende. Folerne smække, uden tydelige Haar. De falske Fodder stærkt forlængede, 4de og 6te Led længst, de 4 sidste bevæbnede med flere Rækker af sammentrykte Torner. Endekloen tydelig. Gangfodderne stærkt forlængede, de 3 Hoftelid korte og at ens Udseende, Endepartiet smalt, cylindrisk, Tarsalleddet længere end Fodleddet, det sidste simpelt, uden Torner i Inderkanten, Endekloen sylformig, uden Bikloer.

Bemærkninger. Nærværende Slægt er opstillet af den russiske Zoolog Jarzynsky for den af Sabine som *Phorichilus proboscideus* beskrevne kolossale arktiske Pycnogonide. Hertil kunde jeg i Aaret 1876 foie en meget distinct ny Art fra Nordhavs-Expeditionen, *C. angusta*, og i sit Arbejde over Challenger Expeditionens Pycnogonideer har Hoek opført ikke mindre end 9 forskellige herhen hørende Arter, hovedsagligt fra det syd-atlantiske Hav, hvoraf en, *C. gigas*, opnaar en end mere kolossal Størrelse end dens Slægtning i Norden. For Tiden kjender man saaledes ialt ikke mindre end 11 til denne Slægt hørende Arter. Som Slægtsnavnet antyder, er det især den enorme Udvikling af Snabelen, der giver disse Dyr sit særegne Præg. Fra Slægten *Pasithoë* er de herhen hørende Arter desuden let kjendelige ved sine stærkt forlængede Gangfodder og ved den simple Bygning af disses Endeparti.

Fam. 7. Pasithoidæ.

Trunk unsegmented, with short frontal part. Proboscis uncommonly large, not flexibly connected to the trunk. Chelifori quite absent in the fully developed animal. Palpi and false legs well developed, both 10-jointed and secured close together in below the frontal part.

Remarks. The genus, from which the present family is named, *Pasithoë*, Goodsir, is certainly, as yet, only very imperfectly known, but, still, it appears to me, from the perfect absence of chelifori and the well developed palpi, that it must be placed next to the genus *Colossendeis*, Jarzynsky, and along with it form a family by itself, which evidently approximates very closely to the 2 preceding families.

Gen. 14. *Colossendeis*, Jarzynsky. 1870.

Generic Characters. Body robust or slender, with relatively short lateral processes and small frontal part, no neck. Caudal segment very narrow and sharply defined from the trunk. Ocular tubercle pointed, without distinct eyes. Proboscis of respectable size, the extremity blunted, tri-lobate, not tapered. Palpi slender, without distinct setæ. False legs greatly elongated, the 4th and 6th joints longest, the 4 last armed with several series of crowded spines, terminal claw distinct. Ambulatory legs greatly elongated, the 3 coxal joints short, and similar in appearance, terminal part narrow, cylindrical, tarsal joint longer than the propodal joint, the last-named plain, without spines on the inner margin, terminal claw awl-shaped, without auxiliary claw.

Remarks. The present genus was established by the Russian Zoologist, Jarzynsky, to include the colossal Arctic Pycnogonid described by Sabine as *Phorichilus proboscideus*. To this form I was able, in 1876, to add a very distinct new species *C. angusta* from the North Atlantic Expedition, and Hoek has, in his work upon the Pycnogonids of the „Challenger“ Expedition, described no less than 9 different species pertaining to the same genus, principally from the South Atlantic Ocean, of which one *C. gigas* attains a still more colossal size than its relative in the North. At present, therefore, we are acquainted with not less than 11 species pertaining to this genus. As the generic designation indicates, it is the enormous development of the proboscis especially, that imparts to those animals their special character. The species of this genus are, besides, easily distinguished from the genus *Pasithoë*, by their greatly elongated ambulatory legs and by the simple structure of the terminal part of the latter.

42. *Colossendeis proboscidea* (Sab.)

(Pl. XV, Fig. 1, a—d).

Phorichilus proboscideus, Sabine, Suppl. to the Append. of Capt. Parry's Voyage, p. CCXXVI.

Colossendeis borealis, Jarzynsky, Præm. Cat. Pycnogon., Ann. de la Société des Naturalistes de St. Petersburg.

Colossendeis proboscidea, G. O. Sars, Prodröm. descript. Crust. et Pycnog., etc. p. 368.

Anomorhynchus Smithii, Miers, Ann. Mag. Nat. Hist. 1881, p. 50, Pl. VII, Fig. 6—8.

Colossendeis proboscidea, Hoek, Pycnog. Wil. Brarents, l. c. p. 22, Pl. II, Fig. 41—42.

Colossendeis gigantea, Stuxberg, Vega-Expeditionens vetensk. iakttagelser, Bd. I, p. 708.

Colossendeis proboscidea, Hansen, Karahavets Pycnogonider, p. 20.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 42.

Artscharacter. Kroppen kort og undersætsig, aflang oval, bredest paa Midten, med tæt sammentrængte Sidefortsætter. Pandedelen triangular, neppe bredere end Kroppen paa Midten. Halesegmentet meget smalt, cylindrisk, nedadkrummet. Snabelen af enorm Størrelse, mere end dobbelt saa lang og i sit ydre Parti næsten dobbelt saa tyk som Kroppen, noget buet og successivt udvidet mod Enden, næsten kolleformig. Oieknuden lige opadrettet, konisk tilspidset. Følernes 3 ydre Led successivt aftagende i Størrelse og tilsammen længere end 7de Led. De falske Fodder, lige udstrakte, længere end Legemet, 4de Led kortere end 6te. Gangfodderne forholdsvis robuste, omtrent dobbelt saa lange som Legemet, Tarsalledet betydelig længere og tykkere end Fodledet, Endekloen kortere end dette sidste Led. Farven gulrod. Legemets Længde 50^{mm}. Spandvidde 225^{mm}.

Bemærkninger. Denne gigantiske Form, der danner Typen for Slægten, skiller sig fra alle de øvrige bekendte Arter ved den ualmindelig korte og sammentrængte Kropsform og ved Snabelens excessive Størrelse og eiendommelige kolledannede Form. Ogsaa hvad Fodderne angaar har den et ubetinget mere robust Præg end de øvrige Arter.

Beskrivelse. Det foreliggende Exemplar, der synes at være en fuldt udviklet Hun, har en Længde fra Spidsen af Snabelen til Enden af Halesegmentet af fulde 50^{mm}, og en Spandvidde mellem de udstrakte Gangfodder af ikke mindre end 225^{mm}. Den er saaledes ubetinget den største af alle vore nordiske Pycnogonideer.

Formen maa (se Pl. XV, Fig. 1) idetheletaget siges at være temmelig robust, navnlig hvad selve Kroppen angaar. Denne sidste er (se ogsaa Fig. 1 a, 1 b) af aflang Form, med jævnt convex Rygside og noget affladet Bugside, samt uden det mindste Spor af nogen Segmentation. Sidefortsætterne, der er kortere end Kroppens Brede paa Midten, er saa tæt sammentrængte, at der knapt er nogen bemærkelige Mellemrum mellem dem, og den centrale Del

42. *Colossendeis proboscidea* (Sab.)

(Pl. XV, fig. 1, a—d).

Phorichilus proboscideus, Sabine, Suppl. to the Append. of Capt. Parry's Voyage, p. CCXXVI.

Colossendeis borealis, Jarzynsky, Præm. Cat. Pycnogon., Ann. de la Société des Naturalistes de St. Petersburg.

Colossendeis proboscidea, G. O. Sars, Prodröm. descript. Crust. et Pycnogon. &c. p. 368.

Anomorhynchus Smithii, Miers, Ann. Mag. Nat. Hist. 1881, p. 50, Pl. VII, figs. 6—8.

Colossendeis proboscidea, Hoek, Pycnog. Wil. Brarents, l. c. p. 22, Pl. II, figs. 41—42.

Colossendeis gigantea, Stuxberg, Vega-Expeditionens Vetensk. iakttagelser. Bd. I, p. 708.

Colossendeis proboscidea, Hansen, Karahavets Pycnogonider, p. 20.

— — G. O. Sars, Pycnogonidea borealia & arctica, No. 42.

Specific Characters. Trunk short and stout, oblongo-oval, broadest at the middle, with closely crowded lateral processes. Frontal part triangular, scarcely broader than the trunk at the middle. Caudal segment very narrow cylindrical, bent downwards. Proboscis of enormous size, more than twice as long and in its outer part almost twice as thick as the trunk, somewhat arcuate, gradually expanded towards the extremity, almost claviform. Ocular tubercle directed straight upwards, conically pointed. The 3 outer joints of the palpi diminishing successively in size, and together longer than the 7th joint. False legs, straightly extended, longer than the body, 4th joint shorter than the 6th one. Ambulatory legs relatively robust, about twice as long as the body, tarsal joint considerably longer and thicker than the propodal joint, terminal claw shorter than that last-named joint. Colour yellow-red. Length of the body 50^{mm}. Extent 225^{mm}.

Remarks. This gigantic form, which forms the type of the genus, distinguishes itself from all the other known species, by its uncommonly short and compact trunk, and by the excessive size of the proboscis and its peculiar clavate form. Also in respect of the legs it has a distinctly more robust character than the other species.

Description. The specimen before us, which appears to be a fully developed female, has a length from the point of the proboscis to the extremity of the caudal segment, of quite 50^{mm} and an extent between the extended ambulatory legs, of not less than 225^{mm}. It is, thus, indubitably the largest of all our northern Pycnogonids.

The form (see Pl. XV, fig. 1) must be said to be, on the whole, pretty robust, especially as regards the trunk. This last is (see also figs. 1 a, 1 b) oblongo-oval in form, with an even convex dorsal side and somewhat flattened ventral side, and without the least trace of segmentation. The lateral processes, which are shorter than the breadth of the trunk at the middle, are so closely crowded, that there is scarcely any noticeable interval

af Legemet antager derfor Formen af en oval Skive. Fortil danner Kroppen en kort, triangulær Pandedel, der med hele sin Brede forbinder sig med Snabelen, og ved en stærk Indknibning afgrænses sig fra det bagenfor liggende, fodbærende Parti af Kroppen. Om nogen virkelig Hals kan der imidlertid neppe være Tale. Halesegmentet er skarpt afsat fra Kroppen og noget nedadboiet. Det er mere end halvt saa lang som Kroppen og særdeles smalt, næsten cylindrisk, dog ganske lidt fortykket mod Enden, som er stumpt tilrundet.

Snabelen (se Fig. 1, 1 a og 1 b) er af aldeles enorm Størrelse, næsten dobbelt saa lang som det øvrige Legeme og betydelig tykkere end dette i sit ydre Parti. Den udgår i horizontal Retning fra Enden af Pandedelen, men viser en meget tydelig ventral Bøining (se Fig. 1 b). Af Form er den næsten kollapsedet, idet den successivt udvides mod Enden, med den øvre Flade stærkt convex, den nedre mere afladet. Enden er stumpt afkuttet og viser 3 afrundede Lapper, svarende til de 3 Længdesegmenter, hvoraf den er sammensat. Af disse Lapper er den øverste mest fremragende, og alle 3 begrænses i Midten den trekantede Mundaabning. Denne sidste (se Fig. 1 c) dækkes for en Del af 3 fra hvert af Længdesegmenterne indad fremspringende triangulære Læber af membranøs Beskaffenhed, hvis tilspidsede Ender næsten mødes i Midten.

Oieknuden (se Fig. 1 b) har Formen af en lige opadrettet konisk tilspidset Forhøining, uden Spor af Pigment eller Synselementer.

Af Saxlemmer er ikke det mindste Rudiment at opdage.

Følerne (se Fig. 1, 1 a og 1 b), der udspringer noget ventralt fra den forreste Del af Pandepartiet, er af betydelig Størrelse, idet de, lige udstrakte, næsten er af Legemets Længde. Af Form er de smalt cylindriske, noget S-formigt bøiede og kun besatte i sit yderste Parti med yderst korte pigformige Haar. Leddene viser et lignende indbyrdes Forhold som hos de til foregaaende Familie hørende Former, idet de 2 første er meget korte og tykke, 3die og 5te stærkt forlængede, medens det mellem begge liggende 4de Led er forholdsvis af ringe Størrelse. Af de 5 ydre Led er 2det længst, og de 3 sidste aftager successivt i Størrelse.

De falske Fodder (se Fig. 1 a, 1 b) er fæstede tæt bag Følerne og hver indleddede paa en fremspringende Knude. De er stærkt forlængede og tynde, selv betydelig længere end det hele Legeme, og ialmindelighed stærkt albueformigt bøiede. Antallet af Led er det samme som paa Følerne, nemlig 10, hvoraf de 3 første som sædvanlig er meget korte, 4de og 5te derimod stærkt forlængede, især det sidste. De 4 yderste Led er ganske korte, indbyrdes omtrent af ens Størrelse, og i Inderkanten bevaenede med flere Rækker af korte, sammentrykte Torner.

between them, and the central part of the body, therefore, assumes the shape of an oval disc. Anteriorly the trunk forms a short triangular frontal part, which is, in its entire breadth, connected to the proboscis, and is marked off by a strong constriction from the pediferous part of the body situated behind. There can scarcely, however, be any mention of a real neck. The caudal segment is sharply defined from the trunk, and somewhat bent downwards. It is more than half as long as the trunk and particularly narrow, almost cylindrical, although slightly tumefacted towards the extremity, which is bluntly rounded.

The proboscis (see fig. 1, 1 a and 1 b) is of quite an enormous size, almost twice as long as the rest of the body, and considerably thicker than it in its outer portion. It issues in a horizontal direction from the end of the frontal part, but exhibits a very distinct ventral curvature (see fig. 1 b). In shape it is almost claviform, as it is gradually expanded towards the extremity, with the upper surface strongly convex and the lower one more flattened. The extremity is obtusely truncated, and exhibits 3 rounded lobes, corresponding to the 3 longitudinal segments of which it is composed. Of those lobes the uppermost one is the most prominent, and all the 3 border in the middle the trigonal oral aperture. This last (see fig. 1 c) is partially covered by 3 triangular lips of membranous nature projecting inwards from each of the longitudinal segments whose pointed extremities almost meet each other in the centre.

The ocular tubercle (see fig. 1 b) has the form of a conically pointed prominence, directed straightly upwards, without trace of pigment or visual elements.

Not the least rudiment of cheliferi can be discovered.

The palpi (see fig. 1, 1 a and 1 b), which issue somewhat ventrally from the anterior part of the frontal portion, are of considerable size, as they, straightly extended, are almost the length of the body. In form they are narrow cylindrical, somewhat S-formly bent, and only in their outermost part beset with extremely short, spiniform setæ. The joints exhibit a similar mutual relation as in the forms pertaining to the preceding family, as the 2 ones are very short and thick, the 3rd and 5th greatly elongated, whilst the 4th joint, lying between them both, is relatively of small size. Of the 5 outer joints the 2nd is the longest, and the 3 last ones diminish successively in size.

The false legs (see fig. 1 a, 1 b) are attached close behind the palpi, and each is articulated to a prominent nodule. They are greatly elongated and thin, even considerably longer than the entire body, and usually strongly bent in elbow-shape. The number of joints is the same as in the palpi, namely 10, of which the 3 first ones are, as usual, very short, the 4th and 5th, on the contrary, greatly elongated, especially the last-named. The 4 outermost joints are quite short, about equal in size mutually, and armed on the inner margin with several series of

Endekloen er tydeligt udviklet, skjøndt ikke af nogen betydelig Længde og ganske glat.

Gangfodderne (se Fig. 1) er omtrent dobbelt saa lange som Legemet og idethele af temmelig kraftig Bygning, kun lidet afsmalnende mod Enden. De 3 Hofteled er korte og tykke, næsten terningformige og omtrent af ens Størrelse. Laarledet er omtrent 3 Gange saa langt som Hoftepartiet og kun lidet opsvulmet. De 2 Lægled er betydelig kortere og ikke meget forskellige indbyrdes, begge simpelt cylindriske. Endepartiet (Fig. 1 d) er noget kortere end sidste Lægled og betydelig smalere. Af dets 2 Led er det 1ste (Tarsalledet) betydelig større end Fodledet og begge ganske simple, uden anden Bevæbning end de samme smaa mikroskopiske Torner, der ogsaa bedækker den øvrige Del af Fodderne. Endekloen er adskiligt kortere end Fodledet, fuldkommen lige og sylformigt tilspidset. Af Bikloer er der intet Spor at opdage.

Farven er hos det levende Dyr gulrød, noget mere intens ved Enden af Leddene.

Forekomst. Det ovenfor beskrevne Individ toges under Expeditionens 1ste Togt i Havet V af Storeggen (Stat. 18) paa et Dyb af 412 Favne.

Udbredning. Arten synes at have en vid Udbredning i de arktiske Have. Den blev først beskrevet af Sabine fra Polarhavet mellem Grønland og Nordamerika og er senere noteret af Jarzynsky fra den murmanske Kyst, af Hoek fra flere Punkter i Barentsøen samt fra Færo-Shellands-Renden (Triton's Expedition), af Miers fra Frantz Josephs Land, af Hansen fra det kariske Hav og fra Nord-Grønland; endelig af Stuxberg fra det sibiriske Ishav. Ifølge denne Udbredning maa Arten siges at være circumpolar, og skjøndt den er observeret saa langt Syd som til den 60de Bredegrad, er den ntvivlsomt at betragte som en ægte arktisk Form, da hine sydlige Stationer alle tilhører den kolde Area.

short, compressed spines. The terminal claw is distinctly developed, although not of any considerable length, and quite smooth.

The ambulatory legs (see fig. 1) are about twice as long as the body and altogether of pretty powerful structure, only little tapered towards the extremity. The 3 coxal joints are short and thick, almost quadrate, and about equal in size. The femoral joint is about 3 times as long as the coxal part and only little tumefied. The 2 tibial joints are considerably shorter and not very different from each other, both plain cylindric. The terminal part (fig. 1 d) is somewhat shorter than the last tibial joint and considerably narrower. Of its 2 joints the 1st one (the tarsal joint) is considerably larger than the propodal joint, and both are quite plain, without any other armature than the same small microscopical spines as also cover the remaining portion of the legs. The terminal claw is considerably shorter than the propodal joint, perfectly straight, and pointed like an awl. No trace of auxiliary claws can be discovered.

The colour in the living animal is yellow-red, somewhat more intense at the extremity of the joints.

Occurrence. The individual described in the foregoing was taken on the 1st cruise of the Expedition, in the ocean W. of the Storeggen bank (Stat. 18) at a depth of 412 fathoms.

Distribution. The species seems to have a wide distribution in the Arctic seas. It was first described by Sabine from the Polar Sea between Greenland and North America, and is subsequently recorded by Jarzynsky from the Murman coast, by Hoek from several points in the Barents Sea and from the Faroe—Shetland Channel (Triton's Expedition), by Miers from Frantz Josephs Land, by Hansen from the Kara Sea and from North Greenland, and finally, by Stuxberg from the Siberian Polar Sea. According to that distribution, the species must be said to be circumpolar, and although it has been observed as far south as the 60th parallel of latitude, it must, indubitably, be considered as a genuine Arctic form, as those southern stations all pertain to the cold area.

43. *Colossendeis angusta*, G. O. Sars.

(Pl. X, Fig. 2, a—f).

Colossendeis angusta, G. O. Sars, Prodröm. descript. Crust. & Pycnog. etc. p. 368.

— — Wilson, Bull. Mus. Comp. Zool. VIII, p. 243, Pl. III, Fig. 8 & 13.

— — Hoek, Pycnogon. Færoe Channel during the Cruise of „Triton“, Trans. Roy. Soc. Edinburgh, Vol. XXXII, Part I. p. 5, Pl. 1, Fig. 8.

— — Hansen, Kara-Havets Pycnogonider, p. 21.

43. *Colossendeis angusta*, G. O. Sars.

(Pl. X, fig. 2, a—f).

Colossendeis angusta, G. O. Sars, Prodröm. descript. Crust. & Pycnog. &c. p. 368.

— — Wilson, Bull. Mus. comp. Zool. VIII, p. 243, Pl. III, figs. 8 & 13.

— — Hoek, Pycnogon. Faroe Channel during the Cruise of „Triton“, Trans. Roy. Soc. Edinburgh, Vol. XXXII, Part I, p. 5, Pl. I, fig. 8.

— — Hansen, Kara Havets Pycnogonider p. 21.

Colossendeis angusta, G. O. Sars, Pycnogonidea borealia & arctica, No. 43.

Artscharacter. Legemet meget smalt, lineært, med forholdsvis korte og vidt adskilte Sidefortsatser; Pandedelen noget udvidet, triangulær. Halesegmentet smalt cylindrisk, $\frac{1}{3}$ saa langt som Kroppen. Snabelen lige fortløbet, neppe bredere, men noget længere end Kroppen, cylindrisk, lidt fortykket paa Midten. Øieknuden stærkt opblojet, dannende et konisk tilspidset, noget foroverbøjet Fremspring. Følerne stærkt forlængede, 3de Led størst, 8de Led særdeles kort, skjævt afskaaret i Enden, de 2 ydre Led omtrent af ens Længde. De falske Fødder, lige udstrakte, $\frac{1}{2}$ Gang længere end Legemet, 4de og 6te Led af ens Længde. Gangfodderne særdeles spinkle og forlængede, næsten 3 Gange længere end Legemet, det indbyrdes Forhold af Leddene omtrent som hos foregaaende Art; dog Forskjellen mellem Tarsal- og Fodledet mindre, og Endekloen betydelig længere. Farven tagstensrod. Legemets Længde 19^{mm}; Spandvidde 123^{mm}.

Bemærkninger. Nærværende Art er let kjendelig fra foregaaende ved den langt smærkere Kropsform, den smale cylindriske Snabel og de vidt adskilte Sidefortsatser. Derimod kommer den saa særdeles nær en af Hoek fra Challenger-Expeditionen beskrevet Form, *C. gracilis*, at jeg vilde have været tilbøielig til at identificere begge med hinanden, hvis ikke denne sidste Forms Forekomst (i det antarktiske Hav) ganske synes at maatte forbyde en saadan Identification.

Beskrivelse. De under Expeditionen tagne Exemplarer har alle omtrent en Længde af 19^{mm} og en Spandvidde af 123^{mm}. Denne Form opnaar saaledes en ret anseelig Størrelse, skjøndt den i saa Henseende staar langt tilbage for foregaaende Art.

Legemets Form er (se Pl. XV, Fig. 2), i Modsætning til hvad Tilfældet er hos foregaaende Art, særdeles spinkel, baade hvad selve Kroppen og Lemmerne angaar. Da Integumenterne er af betydelig Fasthed, faar det hele Legeme ved Siden af sin spinkle Form ogsaa en eiendommelig Stivhed i alle Dele.

Selve Kroppen (Fig. 2 a, 2 b, 2 c) er af smal cylindrisk Form, fuldkommen lige, og, som hos foregaaende Art, uden ethvert Spor af Segmentering. Sidefortsatserne er forholdsvis korte, neppe længere end Kroppen er bred, men — ligeledes ganske i Modsætning til hvad Tilfældet er hos *C. proboscidea* — skilte ved meget brede Mellemrum. Pandedelen er ganske kort, af triangulær Form og noget bredere end den øvrige Krop; uden imidlertid at være skilt fra samme ved nogen egentlig Hals. Halesegmentet, der som hos foregaaende Art er skarpt afsat fra Kroppen, er særdeles smalt, horizontalt bagudrettet og af cylindrisk Form, eller ganske lidt fortykket i sit ydre Parti.

Kroppens Overflade er ganske glat, uden Spor af Haar eller Torner. Under Mikroskopet viser de læder-

Colossendeis angusta, G. O. Sars, Pycnogonidea borealia & arctica, No. 43.

Specific Characters. Body very narrow, linear, with relatively short and widely separated lateral processes; frontal part somewhat expanded, triangular. Caudal segment narrow, cylindrical, $\frac{1}{3}$ of the length of the trunk. Proboscis directed straight forward, scarcely broader, but somewhat longer than the trunk, cylindrical, slightly tumefacted at the middle. Ocular tubercle strongly protuberant, forming a conical acute prominence bent somewhat forward. Palpi greatly elongated, the 3rd joint largest, the 8th joint particularly short, obliquely truncated at the extremity, the 2 outer joints about equal in length. False legs, straightly extended, $\frac{1}{2}$ longer than the body, the 4th and 6th joints equal in length. Ambulatory legs particularly slender and elongated, almost 3 times longer than the body, the mutual relations of the joints about the same as in the preceding species; but the difference between the tarsal and propodal joints is less and the terminal claw is considerably longer. Colour brick-red. Length of the body 19^{mm}. Extent 123^{mm}.

Remarks. The present species is easily distinguished from the preceding one, by its far more slender shape of body, the narrow cylindrical proboscis and the widely separated lateral processes. On the other hand, it approximates so very closely to *C. gracilis*, a form described by Hoek from the Challenger Expedition, that I would have been disposed to identify them with each other if the occurrence of the last-named form (in the Antarctic Ocean) did not appear to forbid such an identification.

Description. The specimens obtained during the Expedition have all a length of about 19^{mm} and an extent of 123^{mm}. This form attains, thus, quite a respectable size, although, in this respect, it falls far behind the preceding species.

The shape of the body (see Pl. XV, fig. 2) is, in opposition to what is the case in the preceding species, particularly slender, both as regards the trunk and the limbs. As the integuments have a considerable consistency the entire body obtains, in addition to its slender form, also, a peculiar rigidity in all its parts.

The trunk itself (fig. 2 a, 2 b, 2 c) is narrow, cylindric in form, perfectly straight and, as in the preceding species, is without the slightest trace of segmentation. The lateral processes are relatively short, scarcely longer than the trunk is broad, but — also quite in opposition to what is the case in *C. proboscidea* — separated by very broad interspaces. The frontal part is quite short, triangular in form, and somewhat broader than the rest of the trunk, without, however, being separated from it by any real neck. The caudal segment which, as in the preceding species, is sharply defined from the trunk, is particularly narrow, horizontally directed backwards and cylindric in form, or quite slightly tumefacted in its outer portion.

The surface of the trunk is quite smooth, without trace of setæ or aculei. Under the microscope the coriace-

agtige Integumenter sig forsynede med talrige smaa ellipsoide Legemer (se Fig. 2 d).

Oieknuden har Formen af et hoit, koniskt tilspidset og lidt foroverboiet Fremspring (se Fig. 2 c), der, som hos foregaaende Art, mangler ethvert Spor af Pigment eller Synselementer.

Snabelen (se Fig. 2 a, 2 b, 2 c) er vel saa lang som den øvrige Del af Legemet, naar Halesegmentet fraregnes, og lige fortilstrakt, noiagtig i Kroppens Axe. Den er af smal cylindrisk Form, neppe bredere end Kroppen, og har paa Midten en svag men tydelig Opsvulning. Spidsen er noget skraat afstumpet, med den øvre Læbedel skydende noget udover de 2 øvrige (se Fig. 2 b). Selve Mundaabningen har et lignende Udseende som hos foregaaende Art.

Af Saxlemmer var hos ingen af de indsamlede Exemplarer nogetssomhelst Spor at opdage. Det maa imidlertid her anmærkes, at Hoek hos 3 af de 8 under Triton's Expedition indsamlede Exemplarer fandt tydeligt udviklede og temmelig stærkt forlængede, skjøndt overordentlig tynde Saxlemmer, og at efter samme Forsker disse Lemmer ogsaa var tilstede hos et Exemplar af den næstaaende Art, *C. gracilis*. Rimeligvis har ingen af disse saaledes ndrustedede Exemplarer været fuldt udviklede. Det er imidlertid hoist mærkværdigt, at disse Lemmer, der er fælles for alle Pycnogonideer i Larvelivet, her bibeholdes og udvikles videre lige til Dyret paa det nærmeste er udvoxet, for saa ganske at forsvinde. Hvorvidt dette gjælder blot de 2 her nævnte Arter eller samtlige Arter af Slægten, er endnu ikke tilstrækkelig oplyst.

Følerne (se Fig. 2 a, 2 b, 2 c) er i alt væsentligt af en lignende Beskaffenhed som hos foregaaende Art og, lige udstrakte, næsten $\frac{1}{2}$ Gang længere end Snabelen. Leddenes indbyrdes Længdeforhold stemmer ogsaa idethele temmelig vel overens med samme hos hin Art, naar undtages de 3 sidste Led. Af disse er nemlig (se Fig. 2 e) det 1ste Led ualmindelig kort, næsten skaalformigt, og skraat afskaaret i Enden, dannende nedad en afrundet fremspringende Lap, medens de 2 øvrige er af sædvanlig Form og indbyrdes næsten af ens Størrelse, eller det sidste lidt længere og smalere end næstsidste.

De falske Fødder (se Fig. 2 a) er spinkle og forlængede, lige udstrakte betydelig længere end det hele Legeme, og stemmer idethele i sin Bygning temmelig noie overens med samme hos foregaaende Art. 4de Led før dog her forholdsvis noget større og neppe kortere end 5te.

Gangfødderne (se Fig. 2) udmærker sig ligeledes ved sin overordentlig spinkle og forlængede Form, idet de, lige udstrakte, er mere end 3 Gange længere end Legemet. I Henseende til det indbyrdes Længdeforhold af Leddene er der imidlertid kun liden Forskjel mellem de 2 Arter, naar alene undtages, at de 2 sidste Led (se Fig. 2 f) er af

ous integuments show themselves to be furnished with numerous small ellipsoidal bodies (see fig. 2 d).

The ocular tubercle has the form of a high conically pointed prominence bent slightly forward (see fig. 2 c), which, as in the preceding species, is deficient in the slightest trace of pigment or visual elements.

The proboscis (see fig. 2 a, 2 b, 2 c) is fully as long as the rest of the body, when the caudal segment is deducted, and, directed straight forward, lies exactly in the axis of the trunk. It is narrow, cylindric in form, scarcely broader than the trunk, and at the middle has a faint but distinct tumefaction. The point is somewhat obliquely truncated, with the superior labial part projecting a little beyond the 2 others (see fig. 2 b). The oral aperture itself is similar in appearance to that of the preceding species.

Of chelifori, there was not in any of the specimens obtained a trace discoverable. It must be noted here, however, that Hoek, in 3 out of the 8 specimens collected during the „Triton's“ Expedition, observed distinctly developed and pretty greatly elongated, although extremely thin chelifori, and that according to the same naturalist those limbs were also present in a specimen of the closely related species *C. gracilis*. Probably none of the specimens thus equipped have been fully developed. It is, however, highly remarkable that those limbs, which are common to all Pycnogonids in the larval state, are here maintained and further developed until the animal is almost fully grown, and then quite disappear. Whether this is the case only with the 2 species named here, or affects all species of the genus, is not yet sufficiently elucidated.

The palpi (see figs. 2 a, 2 b, 2 c) are, in all essential respects, similar in character to those of the preceding species and, straightly extended, almost $\frac{1}{2}$ longer than the proboscis. The mutual longitudinal relations of the joints correspond, upon the whole, pretty well with the same in that species, with the exception of the 3 last joints. Of these the 1st (see fig. 2 e), especially, is uncommonly short, almost cupuliform, and obliquely truncated at the extremity, forming downwards a rounded prominent lobe, while the 2 others are of the usual form, and mutually about equal in size, or the ultimate one perhaps a little longer and narrower than the penultimate one.

The false legs (see fig. 2 a) are slender and elongate, straightly extended considerably longer than the entire body, and correspond in their structure, upon the whole, pretty closely with the same features in the preceding species. The 4th joint is, however, relatively, somewhat larger and scarcely shorter than the 5th.

The ambulatory legs (see fig. 2) distinguish themselves, also, by their extremely slender and elongate form, as they, straightly extended, are more than 3 times longer than the body. In regard to the mutual longitudinal relations of the joints, there is, however, only little divergency between the 2 species, with the exception, only, that the

ens Længde og at Endekloen er forholdsvis betydelig stærkere forlænget.

Hos det levende Dyr er saavel Legemet som Lemmerne af en intensiv tagstensrød Farve. Denne Farve forsvinder dog meget hurtigt paa de i Spiritus opbevarede Exemplarer, hvis Legeme derfor ogsaa bliver mere gjenemsigtigt, saa at flere af de indre Dele mere eller mindre tydeligt skinner igennem Integumenterne. Sees Legemet fra Bugsiden (Fig. 2 b), bemærkes saaledes med stor Tydelighed den hele Buggangliekjæde tilligemed de fra samme udgaaende Hovednerver. Som hos Slægten *Ascorhynchus*, bestaar denne af 5 vel adskilte Ganglier, hvoraf dog de 2 sidste er forbundne med saa korte Commissurer, at de begge synes at tilhøre Kroppens næstsidste Segment.

Forekomst. Af denne characteristiske Form blev under Nordhavs-Expeditionen 7 Exemplarer indsamlede, alle fuldvoxne og næsten af ens Størrelse. Exemplarerne toges paa 3 forskellige, temmelig vidt adskilte Stationer. Af disse ligger den 1ste (Stat. 31) udenfor Storeggen, den 2den (Stat. 137) i Havet V af Lofoten, og den 3die (Stat. 312) NV af Beeren Eiland; Dybden fra 417 til 658 Favne. Alle 3 Stationer tilhører den kolde Area.

Udbredning. Arten er i den nyere Tid observeret af forskellige Naturforskere og paa flere vidt adskilte Lokalteter, saaledes udenfor Nordamerikas Østkyst (Wilson), i Færo—Shetlands-Renden (Hoek) og i det kariske Hav (Hansen). Skjondt den ved Nordamerikas Østkyst ifølge Wilson er observeret saa langt Syd som mellem den 38de og 40de Bredegrad, er den dog utvivlsomt, ligesom foregaaende Art, at anse for en ægte arktisk Form.

Tillæg.

Bidrag til Pycnogonideernes Systematik.

Under Udarbeidelsen af denne Afhandling har det mere og mere stillet sig for mig som ønskeligt at faa gjort et Forsøg paa at foretage en mere consequent gennemført systematisk Inddeling af de talrige hidtil kjendte Pycnogonideer. Da det synes, at alle Forskere for Tiden er enige i, at disse Dyr hverken kan henføres til Crustaceerne eller Arachniderne, men maa danne en Classe for sig, kan man heller ikke længere lade sig noie med at fordele de forskellige Slægter paa forskellige Familier, men maa ogsaa se om muligt at faa grupperet Familierne under større Afdelinger, eller Ordener. At et saadant Forsøg hidtil ikke er gjort, har sin naturlige Grund deri,

2 last joints (see fig. 2 f) are equal in length, and that the terminal claw is, relatively, considerably more elongated.

In the living animal, the body, as well as the limbs, has an intense brick-red colour. This colour disappears, however, very rapidly, in the specimens preserved in alcohol, their bodies therefore become more transparent, so that several of the internal organs appear more or less distinctly visible through the integuments. If the body is viewed from the ventral side (fig. 2 b) there may thus be observed with great distinctness, the entire ventral ganglial chain as well as the chief nerves issuing from the same. As in the genus *Ascorhynchus*, it consists of 5, well separated ganglia, of which the 2 last are, however, connected by so short commissures that they both appear to pertain to the penultimate segment of the trunk.

Occurrence. Of this characteristic form 7 specimens were collected during the North Atlantic Expedition, all fully grown and nearly equal in size. The specimens were taken at 3 different, pretty widely separated stations. Of these the 1st (Stat. 31) lies outside the Storeggen bank, the 2nd (Stat. 137) in the ocean W of Lofoten, and the 3rd (Stat. 312) N, W of Beeren Island; depth from 417 to 658 fathoms. All 3 stations pertain to the cold area.

Distribution. The species has, in later times, been observed by several naturalists and in several well separated localities; thus, off the East Coast of North America (Wilson), in the Faroe—Shetland Channel (Hoek) and in the Kara Sea (Hansen). Although it has been, according to Wilson, observed on the East Coast of North America as far south as between the 38th and 40th parallels of latitude; it must yet, indubitably, like the preceding species, be regarded as a genuine Arctic form.

Appendix.

Contribution to the systematic Classification of the Pycnogonids.

In the preparation of this Memoir, the desirability of making a more logically instituted systematic arrangement of the numerous, hitherto known Pycnogonids, has obtruded itself more and more strongly upon me. As it appears that all naturalists are at present unanimous in considering that those animals can neither be referred to the Crustaceans nor the Arachnideans, but must form a class by themselves, we cannot, either, be satisfied longer with distributing the different genera over different families, but must also endeavour, if possible, to group the families in larger divisions, or orders. That such an attempt has not been made, hitherto, arises, naturally, from the fact,

at kun et meget begrændset Antal Familier har været opstillet; ja det er egentlig først i den allernyeste Tid at der overhovedet har været Tale om nogen Sondring mellem forskellige Familier inden denne Dyrgruppe. Ved Bearbejdelsen af de nordiske Pycnogonideer har jeg fundet det nødvendigt noiere at præcisere ikke blot Slægterne, men ogsaa Familiene, og har idethele, som det vil sees, taget disse sidste i en betydelig snævrere Begrændsning end af andre Forskere gjort. Folgen heraf er, at deres Tal er bleven betydelig forøget. Medens Hoek, i sine nyeste Arbejder over disse Dyr, kun opstiller 4 Familier, er deres Tal i nærværende Arbejde fordoblet; ja jeg finder nu hertil at maatte føie endnu en ny Familie, idet Slægten *Phorichilus* synes mig ved nærmere Overveelse neppe at kunne forenes med Sl. *Pycnogonum* i en og samme Familie, men bør danne Typen for en særskilt saadan, *Phorichilide*. Antallet af Familier, i den Begrændsning hvori jeg her tager dem, bliver altsaa ialt ikke mindre end 9. De er i nærværende Arbejde opførte i en bestemt Rækkefølge, hvorved jeg har villet antyde den større eller mindre Grad af Affinitet, de viser indbyrdes. Jeg finder imidlertid nu at burde forsøge endnu mere bestemt at fastsætte dette indbyrdes Forhold mellem Familiene ved at gruppere dem under 3 større Afdelinger. Som Distinctionscharacter har jeg herved hovedsageligt benyttet Forholdet af Saxlemmerne. Hos en Gruppe af Pycnogonideer mangler disse (ligesom ogsaa Følerne) fuldstændigt, naar undtages i Larvetilstanden; hos en anden Gruppe er de derimod vel udviklede gennem hele Dyrets Levetid; hos en tredje Gruppe endelig er disse Lemmer vistnok i Regelen tilstede i Ungdommen (altsaa ikke blot i Larvetilstanden), hvorimod de i den fuldt udviklede Tilstand enten reduceres til unyttige Appendices eller ganske og aldeles forsvinder. Herefter faar vi altsaa 3 store Afdelinger eller Ordener, hvorunder alle bekjendte Pycnogonideer lader sig indordne. De i det foregaaende nærmere omtalte nordiske Pycnogonide-Slægter lader sig ifølge ovenstaaende Inddeling sammenstille paa følgende Maade:

Ordo I.

Achelata.

- Fam. 1. *Pycnogonidae*.
 Gen. 1. *Pycnogonum*.
 Fam. 2. *Phorichilidae*
 Gen. 2. *Phoxichilus*.

Ordo II.

Euchelata.

- Fam. 1. *Phorichilidiidae*.
 Gen. 1. *Phoxichilidium*.
 „ 2. *Anoplodactylus*.

that only a very limited number of families has been established; indeed, it is only first in quite late times that there has been any mention at all of a separation between the different families included in this animal group. In the treatment of the northern Pycnogonids I have found it necessary to define more minutely, not only the genera but also the families, and have, as will be seen, taken those last in, altogether, a considerably narrower limitation than other naturalists have done. Their number has, consequently, been considerably increased. While Hoek, in his latest work on those animals, only establishes 4 families, their number has been doubled in the present work; indeed I now find it necessary to add to this yet another, new family, inasmuch that the genus *Phoxichilus* appears, to me, on closer consideration, to be scarcely alliable with the genus *Pycnogonum* in one and the same family, but ought to form the type of a separate one, *Phorichilide*. The number of families, within the limitation in which I here take them, becomes consequently, altogether, not less than 9. They are in the present work arranged in a definite consecutive order, by which I have desired to indicate the greater or lesser degree of affinity they mutually show among themselves. I think, however, now, that I ought to attempt to still more definitely establish the mutual relations between the families, by grouping them in 3 large divisions. As distinctive characters I have, in doing so, principally adopted the relations of the chelifori. In one group of Pycnogonids these are entirely wanting (as well as also the palpi) except in the larval state; in a second group, they are, on the other hand, well developed throughout the entire existence of the animal; finally, in a third group, those limbs are certainly, as a rule, present in the young stages (not only in the larval state therefore) but, on the contrary, they, in the fully developed condition, become either reduced to useless appendices, or quite, and absolutely, disappear. According to this, therefore, we obtain 3 great divisions or orders, within which all the known Pycnogonids permit themselves to be arranged. The northern genera of Pycnogonids, spoken of in the foregoing, permit themselves, according to the above-mentioned arrangement, to be ranked in the following manner:

Order I.

Achelata.

- Fam. 1. *Pycnogonidae*.
 Gen. 1. *Pycnogonum*.
 Fam. 2. *Phorichilidae*.
 Gen. 2. *Phoxichilus*.

Order II.

Euchelata.

- Fam. 1. *Phorichilidiidae*.
 Gen. 1. *Phoxichilidium*.
 „ 2. *Anoplodactylus*.

- Fam. 2. *Pallenidae*.
 Gen. 3. Pallene.
 „ 4. Pseudopallene.
 „ 5. Cordylochele.
- Fam. 3. *Nymphonidae*.
 Gen. 6. Nymphon.
 „ 7. Chætonymphon.
 „ 8. Boreonymphon.

Ordo III.

Cryptochelata.

- Fam. 1. *Ammotheidae*.
 Gen. 1. Ammothea.
- Fam. 2. *Eurycydidae*.
 Gen. 2. Eurycyde.
 „ 3. Ascorhynchus.
- Fam. 3. *Pasithoidæ*.
 Gen. 4. Colossendeis.

- Fam. 2. *Pallenidae*.
 Gen. 3. Pallene.
 „ 4. Pseudopallene.
 „ 5. Cordylochele.
- Fam. 3. *Nymphonidae*.
 Gen. 6. Nymphon.
 „ 7. Chætonymphon.
 „ 8. Boreonymphon.

Order III.

Cryptochelata.

- Fam. 1. *Ammotheidae*.
 Gen. 1. Ammothea.
- Fam. 2. *Eurycydidae*.
 Gen. 2. Eurycyde.
 „ 3. Ascorhynchus.
- Fam. 3. *Pasithoidæ*.
 Gen. 4. Colossendeis.

Forklaring af Plancherne.

Pl. I.

Pycnogonum littorale (Ström).

(Fig. 1, a—i).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 a. Legemet af samme (uden Fodderne), seet fra høire Side.
 „ 1 b. Øieknuden, ovenfra seet.
 „ 1 c. En Gangfod.
 „ 1 d. Det ydre Parti af samme, stærkere forstørret.
 „ 1 e. Sidste Kropssegment tilligemed Halesegmentet, ovenfra seet.
 „ 1 f. Legemet (uden Gangfodder) af en fuldvoxen Han, seet nedenfra.
 „ 1 g. En af de falske Fodder af samme Exemplar.
 „ 1 h. Et Stykke af Inderkanten af næstsidste Led, med tilhørende Randtørner, stærkt forstørret.
 „ 1 i. Ægmasse fra Bugen af en Han.

Pycnogonum crassirostre, n. sp.

(Fig. 2, a—h).

- Fig. 2. Fuldvoxen Hun, ovenfra seet.
 „ 2 a. Samme fra høire Side.
 „ 2 b. Øieknuden, ovenfra seet.
 „ 2 c. Den forreste Del af Legemet af en fuldvoxen Han, seet nedenfra.
 „ 2 d. En af de falske Fodder af samme Exemplar.
 „ 2 e. Endepartiet af samme, stærkere forstørret.
 „ 2 f. En Gangfod.
 „ 2 g. Det ydre Parti af samme, stærkere forstørret.
 „ 2 h. Sidste Kropssegment tilligemed Halesegmentet, seet ovenfra.

Phoxichilus spinosus (Mont.)

(Fig. 3, a—g).

- Fig. 3. Fuldvoxen Hun, ovenfra seet.

Explanation of the Plates.

Pl. I.

Pycnogonum littorale (Ström).

(Fig. 1, a—i).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 a. Body of same (without legs), dextral aspect.
 „ 1 b. Ocular tubercle, superior aspect.
 „ 1 c. An ambulatory leg.
 „ 1 d. Outer part of same, greatly magnified.
 „ 1 e. Last segment of the trunk, with the caudal segment, dorsal aspect.
 „ 1 f. Body (without ambulatory legs) of an adult male, ventral aspect.
 „ 1 g. One of the false legs of the same specimen.
 „ 1 h. A portion of the inner margin of the penultimate joint, with pertaining marginal spines, greatly magnified.
 „ 1 i. Egg-mass from the belly of a male.

Pycnogonum crassirostre, n. sp.

(Fig. 2, a—h).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 a. The same, dextral aspect.
 „ 2 b. Ocular tubercle, superior aspect.
 „ 2 c. The foremost part of the body of an adult male, ventral aspect.
 „ 2 d. One of the false legs of the same specimen.
 „ 2 e. Terminal part of the same, greatly magnified.
 „ 2 f. An ambulatory leg.
 „ 2 g. The outer portion of same, greatly magnified.
 „ 2 h. Last segment of the trunk, with the caudal segment, dorsal aspect.

Phoxichilus spinosus (Mont.)

(Fig. 3, a—g).

- Fig. 3. Adult female, dorsal aspect.

- Fig. 3 *a*. Legemet af samme (uden Fodder), seet nedefra.
 „ 3 *b*. Det ydre Parti af en Gangfod.
 „ 3 *c*. Legemet (uden Gangfodder) af en fuldvoxen Han.
 „ 3 *d*. Samme, seet fra hoire Side.
 „ 3 *e*. Oieknuden, seet fra Siden.
 „ 3 *f*. En af de falske Fodder hos Hannen.
 „ 3 *g*. Halesegmentet, ovenfra seet.

Pl. II.

Phoxichilidium femoratum (Rathke).

(Fig. 1, a—g).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 *a*. Legemet (uden Gangfodder) af en ægbærende Han, seet fra hoire Side.
 „ 1 *b*. Samme, seet nedefra (den hoire falske Fod er udeladt).
 „ 1 *c*. Oieknuden, seet fra Siden.
 „ 1 *d*. En af Saxlemmerne.
 „ 1 *e*. Saxen, stærkere forstørret.
 „ 1 *f*. En af de falske Fodder hos Hannen.
 „ 1 *g*. Det ydre Parti af en Gangfod.

Anoplodactylus petiolatus (Kröyer).

(Fig. 2, a—l).

- Fig. 2. Fuldvoxen Hun, seet ovenfra.
 „ 2 *a*. Legemet af samme (uden Gangfodder), seet ovenfra og noget stærkere forstørret.
 „ 2 *b*. Legemet (uden Gangfodder) af en ægbærende Han, seet fra hoire Side.
 „ 2 *c*. Oieknuden, seet bagfra.
 „ 2 *d*. En af Saxlemmerne.
 „ 2 *e*. Det ydre Parti af samme, stærkere forstørret.
 „ 2 *f*. En af de falske Fodder hos Hannen.
 „ 2 *g*. Endepartiet af samme, stærkere forstørret.
 „ 2 *h*. Det ydre Parti af en Gangfod.
 „ 2 *i*. En Gangfod af sidste Par hos Hannen.
 „ 2 *k*. Et Stykke af Laarledets Yderkant, med den tubformige Munding af Kitkjærtelen.
 „ 2 *l*. Halesegmentet, seet ovenfra.

Anoplodactylus typhlops, n. sp.

(Fig. 3, a—e).

- Fig. 3. Fuldvoxen Hun, seet ovenfra.

- Fig. 3 *a*. Body of the same (without legs) inferior aspect.
 „ 3 *b*. The outer portion of an ambulatory leg.
 „ 3 *c*. Body (without ambulatory legs) of an adult male.
 „ 3 *d*. The same, dextral aspect.
 „ 3 *e*. Ocular tubercle, lateral aspect.
 „ 3 *f*. One of the false legs in the male.
 „ 3 *g*. Caudal segment, superior aspect.

Pl. II.

Phoxichilidium femoratum (Rathke).

(Fig. 1, a—g).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 *a*. Body (without ambulatory legs) of an ovigerous male, dextral aspect.
 „ 1 *b*. The same, ventral aspect (the right false leg is omitted).
 „ 1 *c*. Ocular tubercle, lateral aspect.
 „ 1 *d*. One of the chelifori.
 „ 1 *e*. The chela, greatly magnified.
 „ 1 *f*. One of the false legs in the male.
 „ 1 *g*. The outer part of an ambulatory leg.

Anoplodactylus petiolatus (Kröyer).

(Fig. 2, a—l).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 *a*. Body of the same (without ambulatory legs), dorsal aspect, a little more magnified.
 „ 2 *b*. Body (without ambulatory legs) of an ovigerous male, dextral aspect.
 „ 2 *c*. Ocular tubercle, posterior aspect.
 „ 2 *d*. One of the chelifori.
 „ 2 *e*. Outer part of the same, greatly magnified.
 „ 2 *f*. One of the false legs in the male.
 „ 2 *g*. Terminal part of the same, greatly magnified.
 „ 2 *h*. Outer part of an ambulatory leg.
 „ 2 *i*. An ambulatory leg of the last pair in the male.
 „ 2 *k*. A portion of the outer margin of the femoral joint, with the tubular aperture of the agglutinative gland.
 „ 2 *l*. Caudal segment, dorsal aspect.

Anoplodactylus typhlops, n. sp.

(Fig. 3, a—e).

- Fig. 3. Adult female, dorsal aspect.

- Fig. 3 a. Legemet (uden Gangfodder) af samme, seet fra
hoire Side.
.. 3 b. Den forreste Del af Legemet, seet ovenfra.
.. 3 c. Legemet, seet nedefra.
.. 3 d. Endepartiet af en af Saxlemmerne.
.. 3 e. Den ydre Del af en Gangfod.

Pl. III.

Pallene brevirostris, Johnst.

(Fig. 1, a—h).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
.. 1 a. Legemet (uden Gangfodder) af en ægbærende
Han, seet nedefra.
.. 1 b. Samme fra venstre Side.
.. 1 c. Venstre Chela, seet fra Ydersiden.
.. 1 d. Endepartiet af en af de falske Fodder hos
Hammen.
.. 1 e. Sidste Led af samme, stærkere forstørret.
.. 1 f. Laarledet af en fuldvoxen Hun, med de i dets
indre sig udviklende Æg.
.. 1 g. Det ydre Parti af en Gangfod.
.. 1 h. Halesegmentet, seet ovenfra.

Pallene producta, n. sp.

(Fig. 2, a—d).

- Fig. 2. Fuldvoxen ægbærende Han, seet ovenfra.
.. 2 a. Legemet (uden Gangfodder), seet fra hoire Side.
.. 2 b. Øieknuden, seet fra Siden.
.. 2 c. Venstre Chela, seet fra den indre Side.
.. 2 d. Det ydre Parti af en Gangfod.

Pseudopallene circularis, (Goodsir).

(Fig. 3, a—h).

- Fig. 3. Fuldvoxen Hun, seet ovenfra.
.. 3 a. Legemet (uden Gangfodder) af en fuldvoxen
Han, seet fra hoire Side.
.. 3 b. Samme, ovenfra seet.
.. 3 c. Hoire Chela, seet fra Ydersiden.
.. 3 d. Endepartiet af en af de falske Fodder hos
Hammen.
.. 3 e. En af Randtørnerne paa samme, stærkt for-
størret.
.. 3 f. En af Gangfodderne hos Hammen.
.. 3 g. Halesegmentet, seet ovenfra.
.. 3 h. Den forreste Del af Legemet hos et ganske
ungt Individ, seet ovenfra.

- Fig. 3 a. Body (without ambulatory legs) of same, dextral
aspect.

- .. 3 b. Anterior part of the body, dorsal aspect.
.. 3 c. The body, ventral aspect.
.. 3 d. Terminal part of one of the chelifori.
.. 3 e. The outer part of an ambulatory leg.

Pl. III.

Pallene brevirostris, Johnst.

(Fig. 1, a—h).

- Fig. 1. Adult female, dorsal aspect.
.. 1 a. Body (without ambulatory legs) of an ovigerous
male, ventral aspect.
.. 1 b. The same, sinistral aspect.
.. 1 c. Left chela, exterior aspect.
.. 1 d. Terminal part of one of the false legs in the
male.
.. 1 e. Terminal joint of the same, greatly magnified.
.. 1 f. Femoral joint of an adult female, with the ova
in process of development in its interior.
.. 1 g. Outer part of an ambulatory leg.
.. 1 h. Caudal segment, superior aspect.

Pallene producta, n. sp.

(Fig. 2, a—d).

- Fig. 2. Adult ovigerous male, dorsal aspect.
.. 2 a. The body (without ambulatory legs), dextral
aspect.
.. 2 b. Ocular tubercle, lateral aspect.
.. 2 c. Left chela, interior aspect.
.. 2 d. Outer part of an ambulatory leg.

Pseudopallene circularis, (Goodsir).

(Fig. 3, a—h).

- Fig. 3. Adult female, dorsal aspect.
.. 3 a. Body (without ambulatory legs) of an adult male,
dextral aspect.
.. 3 b. The same, superior aspect.
.. 3 c. Right chela, exterior aspect.
.. 3 d. Terminal part of one of the false legs in the
male.
.. 3 e. One of the marginal spines of the same, greatly
magnified.
.. 3 f. One of the ambulatory legs in the male.
.. 3 g. Caudal segment, dorsal aspect.
.. 3 h. Anterior part of the body of a perfectly young
individual (dorsal aspect).

Pseudopallene spinipes, (Kröyer).

(Fig. 4, a—g).

- Fig. 4. Fuldvoxen, ægbærende Han, seet ovenfra.
 „ 4 a. Legemet (uden Gangfodder) af en fuldvoxen Hun, seet fra hoire Side.
 „ 4 b. Samme, seet fra Bugsiden.
 „ 4 c. Enden af Snabelen, med den terminale Børstkrands.
 „ 4 d. Hoire Chela, seet fra Ydersiden.
 „ 4 e. Enden af en af de falske Fodder.
 „ 4 f. Det ydre Parti af en Gangfod.
 „ 4 g. Den forreste Del af Legemet hos et ganske ungt Individ, seet fra Bugsiden.

Pl. IV.

Cordylochele malleolata, G. O. Sars.

(Fig. 1, a—k).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 a. Den forreste Del af Legemet af samme, seet ovenfra.
 „ 1 b. Legemet (uden Gangfodder) af en fuldvoxen Hun, seet fra Bugsiden.
 „ 1 c. Samme, seet fra hoire Side.
 „ 1 d. Snabelen, seet fra Bugsiden.
 „ 1 e. Øieknuden, ovenfra seet.
 „ 1 f. Venstre Chela, seet fra Indersiden.
 „ 1 g. Endepartiet af en af de falske Fodder hos Hannen.
 „ 1 h. 3 af Randtornerne fra samme, stærkt forstørrede.
 „ 1 i. Den ydre Del af en Gangfod.
 „ 1 k. Halesegmentet, ovenfra seet.

Cordylochele longicollis, n. sp.

(Fig. 2, a—g).

- Fig. 2. Fuldvoxen Hun, seet ovenfra.
 „ 2 a. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet fra venstre Side.
 „ 2 b. Samme, ovenfra seet.
 „ 2 c. Øieknuden, seet ovenfra.
 „ 2 d. Venstre Chela, seet fra Indersiden.
 „ 2 e. Endepartiet af en af de falske Fodder hos Hannen.
 „ 2 f. 5 Randtorner fra samme, stærkt forstørrede.
 „ 2 g. Den ydre Del af en Gangfod.

Pseudopallene spinipes, (Kröyer).

(Fig. 4, a—g).

- Fig. 4. Adult ovigerous male, dorsal aspect.
 „ 4 a. Body (without ambulatory legs) of an adult female, dextral aspect.
 „ 4 b. The same, ventral aspect.
 „ 4 c. Extremity of the proboscis, with the terminal wreath of bristles.
 „ 4 d. Right chela, exterior aspect.
 „ 4 e. Extremity of one of the false legs.
 „ 4 f. Outer part of an ambulatory leg.
 „ 4 g. Anterior part of the body in a quite young individual, ventral aspect.

Pl. IV.

Cordylochele malleolata, G. O. Sars.

(Fig. 1, a—k).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 a. Anterior part of the body of same, dorsal aspect.
 „ 1 b. Body (without ambulatory legs) of an adult male, ventral aspect.
 „ 1 c. The same, dextral aspect.
 „ 1 d. Proboscis, ventral aspect.
 „ 1 e. Ocular tubercle, superior aspect.
 „ 1 f. Left chela, interior aspect.
 „ 1 g. Terminal part of one of the false legs in the male.
 „ 1 h. 3 of the marginal spines of the same, greatly magnified.
 „ 1 i. Outer part of an ambulatory leg.
 „ 1 k. Caudal segment, dorsal aspect.

Cordylochele longicollis, n. sp.

(Fig. 2, a—g).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 a. Body (without ambulatory legs) of an adult ovigerous male, sinistral aspect.
 „ 2 b. The same, dorsal aspect.
 „ 2 c. Ocular tubercle, superior aspect.
 „ 2 d. Left chela, interior aspect.
 „ 2 e. Terminal part of one of the false legs in the male.
 „ 2 f. 5 marginal spines of the same, greatly magnified.
 „ 2 g. Outer part of an ambulatory leg.

Cordylochele brevicollis, n. sp.

(Fig. 3, a—g).

- Fig. 3. Fuldvoxen Hun. seet ovenfra.
 „ 3 a. Legemet af samme (uden Fodder), seet fra Bug-
 siden.
 „ 3 b. Oieknuden, ovenfra seet.
 „ 3 c. Høire Chela, seet fra Indersiden.
 „ 3 d. En af de falske Fodder hos Hannen.
 „ 3 e. En af de falske Fodder hos Hunnen.
 „ 3 f. 3 Randtørner fra samme, stærkt forstørrede.
 „ 3 g. Den ydre Del af en Gangfod.

Pl. V.**Nymphon gracile, Leach.**

(Fig. 1, a—h).

- Fig. 1. Fuldvoxen Hun. seet ovenfra.
 „ 1 a. Legemet af samme (uden Gangfodder), seet fra
 høire Side.
 „ 1 b. Samme, seet ovenfra.
 „ 1 c. Oieknuden, forfra seet.
 „ 1 d. Høire Chela, seet fra Ydersiden.
 „ 1 e. En af Følerne.
 „ 1 f. Endepartiet af en af de falske Fodder.
 „ 1 g. En Randtørn, stærkt forstørret.
 „ 1 h. Den ydre Del af en Gangfod.

Nymphon rubrum, Hodge.

(Fig. 2, a—k).

- Fig. 2. Fuldvoxen, ægbærende Han, seet ovenfra.
 „ 2 a. Legemet af samme (uden Gangfodder), seet fra
 høire Side.
 „ 2 b. Samme, ovenfra seet.
 „ 2 c. Oieknuden, forfra seet.
 „ 2 d. Venstre Chela, seet fra Indersiden.
 „ 2 e. En af Følerne.
 „ 2 f. En af de falske Fodder.
 „ 2 g. Endedelen af samme, stærkere forstørret.
 „ 2 h. En Randtørn, stærkt forstørret.
 „ 2 i. Den ydre Del af en Gangfod.
 „ 2 k. En af de tykke lancetformige Borster paa Gang-
 fodderne, stærkt forstørret.

Nymphon brevitarse, Kröyer.

(Fig. 3, a—g).

- Fig. 3. Fuldvoxen, ægbærende Han, seet ovenfra.
 „ 3 a. Legemet af samme (uden Fodder), seet fra Bug-
 siden.

Cordylochele brevicollis, n. sp.

(Fig. 3, a—g).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 a. Body of the same (without legs), ventral aspect.
 „ 3 b. Ocular tubercle, superior aspect.
 „ 3 c. Right chela, interior aspect.
 „ 3 d. One of the false legs in the male.
 „ 3 e. One of the false legs in the female.
 „ 3 f. 3 marginal spines of the same, greatly magnified.
 „ 3 g. Outer part of an ambulatory leg.

Pl. V.**Nymphon gracile, Leach.**

(Fig. 1, a—h).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 a. Body of the same (without ambulatory legs)
 dextral aspect.
 „ 1 b. The same, dorsal aspect.
 „ 1 c. Ocular tubercle, anterior aspect.
 „ 1 d. Right chela, exterior aspect.
 „ 1 e. One of the palpi.
 „ 1 f. Terminal part of one of the false legs.
 „ 1 g. A marginal spine, greatly magnified.
 „ 1 h. Outer part of an ambulatory leg.

Nymphon rubrum, Hodge.

(Fig. 2, a—k).

- Fig. 2. Adult, ovigerous male, dorsal aspect.
 „ 2 a. Body of the same (without ambulatory legs),
 dextral aspect.
 „ 2 b. The same, dorsal aspect.
 „ 2 c. Ocular tubercle, anterior aspect.
 „ 2 d. Left chela, interior aspect.
 „ 2 e. One of the palpi.
 „ 2 f. One of the false legs.
 „ 2 g. Terminal part of same, greatly magnified.
 „ 2 h. A marginal spine, greatly magnified.
 „ 2 i. Outer part of an ambulatory leg.
 „ 2 k. One of the thick lanceolate bristles of the am-
 bulatory legs, greatly magnified.

Nymphon brevitarse, Kröyer.

(Fig. 3, a—g).

- Fig. 3. Adult, ovigerous male, dorsal aspect.
 „ 3 a. Body of the same (without legs), ventral
 aspect.

- Fig. 3 *b*. Øieknuden, forfra seet.
 „ 3 *c*. Venstre Chela, seet fra Indersiden.
 „ 3 *d*. En af Følerne.
 „ 3 *e*. En af de falske Fodder, med tilhørende Ægmasse.
 „ 3 *f*. En Randtorn, stærkt forstørret.
 „ 3 *g*. Den ydre Del af en Gangfod.

Pl. VI.

Nymphon glaciale. Lilljeborg.

(Fig. 1, a—g).

- Fig. 1. Fuldvoxen, ægbærende Han, seet ovenfra.
 „ 1 *a*. Legemet af samme (uden Fodder), seet ovenfra.
 „ 1 *b*. Samme, seet fra venstre Side.
 „ 1 *c*. Øieknuden, forfra seet.
 „ 1 *d*. Venstre Chela, seet fra Indersiden.
 „ 1 *e*. En af Følerne.
 „ 1 *f*. En Randtorn fra de falske Fodder, stærkt forstørret.
 „ 1 *g*. Den ydre Del af en Gangfod.

Nymphon grossipes, (Fabr.)

(Fig. 2, a—i).

- Fig. 2. Fuldvoxen, ægbærende Han, seet ovenfra.
 „ 2 *a*. Legemet af samme (uden Gangfodder), seet fra venstre Side.
 „ 2 *b*. Samme, seet ovenfra.
 „ 2 *c*. Øieknuden, forfra seet.
 „ 2 *d*. Venstre Chela, seet fra Ydersiden.
 „ 2 *e*. En af Følerne.
 „ 2 *f*. En Randtorn fra de falske Fodder, stærkt forstørret.
 „ 2 *g*. Den ydre Del af en Gangfod.
 „ 2 *h*. Den ydre Del af en Gangfod hos et andet Individ, med ualmindelig kort Tarsalled.
 „ 2 *i*. Halesegmentet, ovenfra seet.

Nymphon mixtum, Kröyer.

(Fig. 3, a—i).

- Fig. 3. Fuldvoxen Hun, seet ovenfra.
 „ 3 *a*. Legemet (uden Gangfodder) af en fuldvoxen Han, seet fra venstre Side.
 „ 3 *b*. Samme, seet fra Bogsiden.
 „ 3 *c*. Øieknuden, forfra seet.
 „ 3 *d*. Venstre Chela, seet fra Indersiden.
 „ 3 *e*. En af Følerne.

- Fig. 3 *b*. Ocular tubercle, anterior aspect.
 „ 3 *c*. Left chela, interior aspect.
 „ 3 *d*. One of the palpi.
 „ 3 *e*. One of the false legs, with the adherent egg-mass.
 „ 3 *f*. A marginal spine, greatly magnified.
 „ 3 *g*. Outer part of an ambulatory leg.

Pl. VI.

Nymphon glaciale, Lilljeborg.

(Fig. 1, a—g).

- Fig. 1. Adult, ovigerous male, dorsal aspect.
 „ 1 *a*. Body of the same (without legs), dorsal aspect.
 „ 1 *b*. The same, sinistral aspect.
 „ 1 *c*. Ocular tubercle, anterior aspect.
 „ 1 *d*. Left chela, interior aspect.
 „ 1 *e*. One of the palpi.
 „ 1 *f*. A marginal spine of the false legs, greatly magnified.
 „ 1 *g*. Outer part of an ambulatory leg.

Nymphon grossipes, Fabr.

(Fig. 2, a—i).

- Fig. 2. Adult, ovigerous male, dorsal aspect.
 „ 2 *a*. Body of the same (without ambulatory legs), sinistral aspect.
 „ 2 *b*. The same, dorsal aspect.
 „ 2 *c*. Ocular tubercle, anterior aspect.
 „ 2 *d*. Left chela, exterior aspect.
 „ 2 *e*. One of the palpi.
 „ 2 *f*. A marginal spine of the false legs, greatly magnified.
 „ 2 *g*. Outer part of an ambulatory leg.
 „ 2 *h*. Outer part of an ambulatory leg from another individual, with unusually short tarsal joint.
 „ 2 *i*. Caudal segment, dorsal aspect.

Nymphon mixtum, Kröyer.

(Fig. 3, a—i).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of an adult male, sinistral aspect.
 „ 3 *b*. The same, ventral aspect.
 „ 3 *c*. Ocular tubercle, anterior aspect.
 „ 3 *d*. Left chela, interior aspect.
 „ 3 *e*. One of the palpi.

- Fig. 3 *f*. Endedelen af en af de falske Fodder.
 „ 3 *g*. 4 Randtørner, stærkt forstorrede.
 „ 3 *h*. Den ydre Del af en Gangfod.
 „ 3 *i*. Den ydre Del af en Gangfod hos et andet Individ med kortere Tarsalled.

Pl. VII.

Nymphon microrhynchum, n. sp.

(Fig. 1. a—g).

- Fig. 1. Hun. seet ovenfra.
 „ 1 *a*. Legemet af samme (uden Gangfodder), ovenfra seet.
 „ 1 *b*. Samme. seet fra hoire Side.
 „ 1 *c*. Oieknuden. forfra seet.
 „ 1 *d*. Hoire Chela, seet fra Ydersiden.
 „ 1 *e*. En af Følerne.
 „ 1 *f*. En Randtørn fra de falske Fodder. stærkt forstorret.
 „ 1 *g*. Den ydre Del af en Gangfod.

Nymphon Sluiteri, Hoek.

(Fig. 2. a—g).

- Fig. 2. Fuldvoxen Hun. seet ovenfra.
 „ 2 *a*. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet ovenfra.
 „ 2 *b*. Samme. seet fra venstre Side.
 „ 2 *c*. Oieknuden. forfra seet.
 „ 2 *d*. Venstre Chela. seet fra Ydersiden.
 „ 2 *e*. En af Følerne.
 „ 2 *f*. En Randtørn fra de falske Fodder, stærkt forstorret.
 „ 2 *g*. Den ydre Del af en Gangfod.

Nymphon longitarse, Kröyer.

(Fig. 3. a—h).

- Fig. 3. Fuldvoxen Hun. seet ovenfra.
 „ 3 *a*. Legemet. (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet ovenfra.
 „ 3 *b*. Samme. seet fra hoire Side.
 „ 3 *c*. Oieknuden. forfra seet.
 „ 3 *d*. Hoire Chela, seet fra Indersiden.
 „ 3 *e*. En af Følerne.
 „ 3 *f*. Endedelen af en af de falske Fodder.
 „ 3 *g*. 2 Randtørner, stærkt forstorrede.
 „ 3 *h*. Den ydre Del af en Gangfod.

- Fig. 3 *f*. Terminal part of one of the false legs.
 „ 3 *g*. 4 marginal spines, greatly magnified.
 „ 3 *h*. Outer part of an ambulatory leg.
 „ 3 *i*. Outer part of an ambulatory leg from another individual, with shorter tarsal joint.

Pl. VII.

Nymphon microrhynchum, n. sp.

(Fig. 1. a—g).

- Fig. 1. Female, dorsal aspect.
 „ 1 *a*. Body of the same (without ambulatory legs), dorsal aspect.
 „ 1 *b*. The same, dextral aspect.
 „ 1 *c*. Ocular tubercle, anterior aspect.
 „ 1 *d*. Right chela, exterior aspect.
 „ 1 *e*. One of the palpi.
 „ 1 *f*. A marginal spine of the false legs, greatly magnified.
 „ 1 *g*. Outer part of an ambulatory leg.

Nymphon Sluiteri, Hoek.

(Fig. 2. a—g).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 *a*. Body (without ambulatory legs) of an adult ovigerous male, dorsal aspect.
 „ 2 *b*. The same, sinistral aspect.
 „ 2 *c*. Ocular tubercle, anterior aspect.
 „ 2 *d*. Left chela, exterior aspect.
 „ 2 *e*. One of the palpi.
 „ 2 *f*. A marginal spine of the false legs, greatly magnified.
 „ 2 *g*. Outer part of an ambulatory leg.

Nymphon longitarse, Kröyer.

(Fig. 3. a—h).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of an adult ovigerous male, dorsal aspect.
 „ 3 *b*. The same, dextral aspect.
 „ 3 *c*. Ocular tubercle, anterior aspect.
 „ 3 *d*. Right chela, interior aspect.
 „ 3 *e*. One of the palpi.
 „ 3 *f*. Terminal part of one of the false legs.
 „ 3 *g*. 2 marginal spines, greatly magnified.
 „ 3 *h*. Outer part of an ambulatory leg.

Pl. VIII.

Nymphon leptocheles, n. sp.

(Fig. 1, a—i).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 *a*. Legemet (uden Gangfodder) af en fuldvoxen Han, ovenfra seet.
 „ 1 *b*. Samme, seet fra hoire Side.
 „ 1 *c*. Oieknuden, forfra seet.
 „ 1 *d*. Venstre Chela, seet fra Ydersiden.
 „ 1 *e*. Den ydre Del af samme, stærkere forstorret.
 „ 1 *f*. En af Følerne.
 „ 1 *g*. Endedelen af en af de falske Fodder hos Hannen.
 „ 1 *h*. 2 Randtørner, stærkt forstorrede.
 „ 1 *i*. Den ydre Del af en Gangfod.

Nymphon Strömii, Krøyer.

(Fig. 2, a—k).

- Fig. 2. Fuldvoxen, ægbærende Han, seet ovenfra.
 „ 2 *a*. Legemet (uden Gangfodder), seet ovenfra.
 „ 2 *b*. Samme, seet fra venstre Side.
 „ 2 *c*. Oieknuden, forfra seet.
 „ 2 *d*. Hoire Chela, seet fra Ydersiden.
 „ 2 *e*. Enderne af de 2 Fingre, stærkere forstorrede.
 „ 2 *f*. En af Følerne.
 „ 2 *g*. En Randtørn fra de falske Fodder, stærkt forstorret.
 „ 2 *h*. En anden Randtørn, med mindre tydelige Side-tænder.
 „ 2 *i*. Den ydre Del af en Gangfod.
 „ 2 *k*. Spidsen af Fodledet tilligemed Endekloen, stærkere forstorret.

Nymphon gracilipes, Heller.

(Fig. 3, a—g).

- Fig. 3. Fuldvoxen Hun, seet ovenfra.
 „ 3 *a*. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet fra hoire Side.
 „ 3 *b*. Oieknuden, forfra seet.
 „ 3 *c*. Hoire Chela, seet fra Ydersiden.
 „ 3 *d*. Enderne af Fingrene, stærkere forstorrede.
 „ 3 *e*. En af Følerne.
 „ 3 *f*. 3 Randtørner fra de falske Fodder, stærkt forstorrede.
 „ 3 *g*. Den ydre Del af en Gangfod.

Pl. VIII.

Nymphon leptocheles, n. sp.

(Fig. 1, a—i).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 *a*. Body (without ambulatory legs) of an adult male, dorsal aspect.
 „ 1 *b*. The same dextral aspect.
 „ 1 *c*. Ocular tubercle, anterior aspect.
 „ 1 *d*. Left chela, exterior aspect.
 „ 1 *e*. Outer part of the same, greatly magnified.
 „ 1 *f*. One of the palpi.
 „ 1 *g*. Terminal part of one of the false legs in the male.
 „ 1 *h*. Two marginal spines greatly magnified.
 „ 1 *i*. Outer part of an ambulatory leg.

Nymphon Strömii, Krøyer.

(Fig. 2, a—k).

- Fig. 2. Adult, ovigerous male, dorsal aspect.
 „ 2 *a*. Body (without ambulatory legs) dorsal aspect.
 „ 2 *b*. The same, sinistral aspect.
 „ 2 *c*. Ocular tubercle, anterior aspect.
 „ 2 *d*. Right chela, exterior aspect.
 „ 2 *e*. Extremities of the 2 fingers, greatly magnified.
 „ 2 *f*. One of the palpi.
 „ 2 *g*. A marginal spine of the false legs, greatly magnified.
 „ 2 *h*. Another marginal spine, with somewhat indistinct lateral teeth.
 „ 2 *i*. Outer part of an ambulatory leg.
 „ 2 *k*. Extremity of the propodal joint along with the terminal claw, greatly magnified.

Nymphon gracilipes, Heller.

(Fig. 3, a—g).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of an adult ovigerous male, dextral aspect.
 „ 3 *b*. Ocular tubercle, anterior aspect.
 „ 3 *c*. Right chela, exterior aspect.
 „ 3 *d*. Extremities of the fingers, greatly magnified.
 „ 3 *e*. One of the palpi.
 „ 3 *f*. Three marginal spines of the false legs, greatly magnified.
 „ 3 *g*. Outer part of an ambulatory leg.

Pl. IX.

Nymphon elegans, Hansen.

(Fig. 1, a—g).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 *a*. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet fra hoire Side.
 „ 1 *b*. Oieknuden, forfra seet.
 „ 1 *c*. Venstre Chela, seet fra Ydersiden.
 „ 1 *d*. Enderne af Fingrene, stærkere forstorrede.
 „ 1 *e*. En af Folerne.
 „ 1 *f*. 2 Randtorner fra de falske Fodder, stærkt forstorrede.
 „ 1 *g*. Den ydre Del af en Gangfod.

Nymphon macrum, Wilson.

(Fig. 2, a—g).

- Fig. 2. Fuldvoxen Hun, seet ovenfra.
 „ 2 *a*. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet fra venstre Side.
 „ 2 *b*. Oieknuden, forfra seet.
 „ 2 *c*. Hoire Chela, seet fra Ydersiden.
 „ 2 *d*. Fingrene, stærkere forstorrede.
 „ 2 *e*. En af Folerne.
 „ 2 *f*. 3 Randtorner fra de falske Fodder, stærkt forstorrede.
 „ 2 *g*. Den ydre Del af en Gangfod.

Nymphon micronyx, n. sp.

(Fig. 3, a—g).

- Fig. 3. Fuldvoxen Hun, seet ovenfra.
 „ 3 *a*. Legemet (uden Gangfodder) af en Han, seet fra Bugsiden.
 „ 3 *b*. Oieknuden, seet ovenfra.
 „ 3 *c*. Samme, forfra seet.
 „ 3 *d*. Venstre Chela, seet fra Indersiden.
 „ 3 *e*. En af Folerne.
 „ 3 *f*. 2 Randtorner fra de falske Fodder, stærkt forstorrede.
 „ 3 *g*. Den ydre Del af en Gangfod.

Pl. X.

Nymphon longimanum, n. sp.

(Fig. 1, a—f).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 *a*. Legemet af samme (uden Fodder), seet ovenfra.
 „ 1 *b*. Oieknuden, forfra seet.

Pl. IX.

Nymphon elegans, Hansen.

(Fig. 1, a—g).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 *a*. Body (without ambulatory legs) of an adult ovigerous male, dextral aspect.
 „ 1 *b*. Ocular tubercle, anterior aspect.
 „ 1 *c*. Left chela, exterior aspect.
 „ 1 *d*. Extremities of the fingers, greatly magnified.
 „ 1 *e*. One of the palpi.
 „ 1 *f*. Two marginal spines of the false legs, greatly magnified.
 „ 1 *g*. Outer part of an ambulatory leg.

Nymphon macrum, Wilson.

(Fig. 2, a—g).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 *a*. Body (without ambulatory legs) of an adult, ovigerous male, sinistral aspect.
 „ 2 *b*. Ocular tubercle, anterior aspect.
 „ 2 *c*. Right chela, exterior aspect.
 „ 2 *d*. The fingers, greatly magnified.
 „ 2 *e*. One of the palpi.
 „ 2 *f*. Three marginal spines of the false legs, greatly magnified.
 „ 2 *g*. Outer part of an ambulatory leg.

Nymphon micronyx, n. sp.

(Fig. 3, a—g).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of a male, ventral aspect.
 „ 3 *b*. Ocular tubercle, superior aspect.
 „ 3 *c*. The same, anterior aspect.
 „ 3 *d*. Left chela, interior aspect.
 „ 3 *e*. One of the palpi.
 „ 3 *f*. Two marginal spines of the false legs, greatly magnified.
 „ 3 *g*. Outer part of an ambulatory leg.

Pl. X.

Nymphon longimanum, n. sp.

(Fig. 1, a—f).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 *a*. Body of the same (without legs) dorsal aspect.
 „ 1 *b*. Ocular tubercle, anterior aspect.

- Fig. 1 *c*. Venstre Chela, seet fra Ydersiden.
 „ 1 *d*. En af Følerne.
 „ 1 *e*. 2 Randtørner fra de falske Fodder, stærkt for-
 storrede.
 „ 1 *f*. Den ydre Del af en Gangfod.

Nymphon serratum G. O. Sars.

(Fig. 2. a—h).

- Fig. 2. Fuldvoxen Hun. seet ovenfra.
 „ 2 *a*. Legemet (uden Gangfodder) af en fuldvoxen
 Han. seet ovenfra.
 „ 2 *b*. Samme, seet fra venstre Side.
 „ 2 *c*. Oieknuden, forfra seet.
 „ 2 *d*. Høire Chela, seet fra Ydersiden.
 „ 2 *e*. En af Følerne.
 „ 2 *f*. Endedelen af en af de falske Fodder.
 „ 2 *g*. En Randtørn, stærkt forstorret.
 „ 2 *h*. Den ydre Del af en Gangfod.

Nymphon megalops, G. O. Sars.

(Fig. 3. a—g).

- Fig. 3. Fuldvoxen Hun. seet ovenfra.
 „ 3 *a*. Legemet (uden Gangfodder) af en fuldvoxen
 Han, seet ovenfra.
 „ 3 *b*. Samme, seet fra venstre Side.
 „ 3 *c*. Oieknuden, forfra seet.
 „ 3 *d*. Venstre Chela, seet fra Indersiden.
 „ 3 *e*. En af Følerne.
 „ 3 *f*. 4 Randtørner fra de falske Fodder, stærkt for-
 storrede.
 „ 3 *g*. Den ydre Del af en Gangfod.

Pl. XI.

Chætonymphon hirtum. (Fabr.)

(Fig. 1, a—g).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 *a*. Legemet (uden Gangfodder), seet ovenfra.
 „ 1 *b*. Samme, seet fra venstre Side.
 „ 1 *c*. Venstre Chela, seet fra Ydersiden.
 „ 1 *d*. En af Følerne.
 „ 1 *e*. En af de falske Fodder.
 „ 1 *f*. Det ydre Led af samme, tilligemed Endekloen,
 stærkere forstorret.
 „ 1 *g*. Den ydre Del af en Gangfod.

- Fig. 1 *c*. Left chela, exterior aspect.
 „ 1 *d*. One of the palpi.
 „ 1 *e*. Two marginal spines of the false legs, greatly
 magnified.
 „ 1 *f*. Outer part of an ambulatory leg.

Nymphon serratum G. O. Sars.

(Fig. 2. a—h).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 *a*. Body (without ambulatory legs), of an adult male,
 dorsal aspect.
 „ 2 *b*. The same, sinistral aspect.
 „ 2 *c*. Ocular tubercle, anterior aspect.
 „ 2 *d*. Right chela, exterior aspect.
 „ 2 *e*. One of the palpi.
 „ 2 *f*. Terminal part of one of the false legs.
 „ 2 *g*. A marginal spine, greatly magnified.
 „ 2 *h*. Outer part of an ambulatory leg.

Nymphon megalops, G. O. Sars.

(Fig. 3. a—g).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of an adult male,
 dorsal aspect.
 „ 3 *b*. The same, sinistral aspect.
 „ 3 *c*. Ocular tubercle, anterior aspect.
 „ 3 *d*. Left chela, interior aspect.
 „ 3 *e*. One of the palpi.
 „ 3 *f*. Four marginal spines of the false legs, greatly
 magnified.
 „ 3 *g*. Outer part of an ambulatory leg.

Pl. XI.

Chætonymphon hirtum. (Fabr.)

(Fig. 1. a—g).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 *a*. Body (without ambulatory legs) dorsal aspect.
 „ 1 *b*. The same, sinistral aspect.
 „ 1 *c*. Left chela, exterior aspect.
 „ 1 *d*. One of the palpi.
 „ 1 *e*. One of the false legs.
 „ 1 *f*. Outer joint of same along with the terminal
 claw, greatly magnified.
 „ 1 *g*. Outer part of an ambulatory leg.

Chætonymphon hirtipes (Bell).

(Fig. 2, a—k).

- Fig. 2. Fulldvoxen Hun, seet ovenfra.
 „ 2 *a*. Legemet (uden Gangfodder) af en fulldvoxen, ægbærende Han, seet ovenfra.
 „ 2 *b*. Samme, seet fra høire Side.
 „ 2 *c*. Oieknuden, forfra seet.
 „ 2 *d*. Venstre Chela, seet fra Ydersiden.
 „ 2 *e*. En af Følerne.
 „ 2 *f*. En af de falske Fodder hos Hunnen.
 „ 2 *g*. En af de falske Fodder hos Hannen.
 „ 2 *h*. 2 Randtorner, stærkt forstørrede.
 „ 2 *i*. Den ydre Del af en Gangfod.
 „ 2 *k*. Det basale Parti af en Gangfod hos Hannen.

Chætonymphon spinosum (Goodsir).

(Fig. 3, a—i).

- Fig. 3. Fulldvoxen Hun, seet ovenfra.
 „ 3 *a*. Legemet (uden Gangfodder) af en fulldvoxen, Han, seet ovenfra.
 „ 3 *b*. Samme, seet fra venstre Side.
 „ 3 *c*. Oieknuden, forfra seet.
 „ 3 *d*. Høire Chela, seet fra Ydersiden.
 „ 3 *e*. En af Følerne.
 „ 3 *f*. En af de falske Fodder hos Hannen.
 „ 3 *g*. 3 Randtorner, stærkt forstørrede.
 „ 3 *h*. Den ydre Del af en Gangfod.
 „ 3 *i*. Den basale Del af en Gangfod hos Hannen.

Pl. XII.

Chætonymphon tenellum, n. sp.

(Fig. 1, a—h).

- Fig. 1. Fulldvoxen Han, seet ovenfra.
 „ 1 *a*. Legemet (uden Gangfodder), seet fra venstre Side.
 „ 1 *b*. Samme, seet ovenfra.
 „ 1 *c*. Oieknuden, forfra seet.
 „ 1 *d*. Høire Chela, seet fra Ydersiden.
 „ 1 *e*. En af Følerne.
 „ 1 *f*. En af de falske Fodder.
 „ 1 *g*. 3 Randtorner, stærkt forstørrede.
 „ 1 *h*. Den ydre Del af en Gangfod.

Chætonymphon macronyx, G. O. Sars.

(Fig. 2, a—k).

- Fig. 2. Fulldvoxen Hun, seet ovenfra.

Chætonymphon hirtipes (Bell).

(Fig. 2, a—k).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 *a*. Body (without ambulatory legs) of an adult ovigerous male, dorsal aspect.
 „ 2 *b*. The same, dextral aspect.
 „ 2 *c*. Ocular tubercle, anterior aspect.
 „ 2 *d*. Left chela, exterior aspect.
 „ 2 *e*. One of the palpi.
 „ 2 *f*. One of the false legs of the female.
 „ 2 *g*. One of the false legs of the male.
 „ 2 *h*. Two marginal spines, greatly magnified.
 „ 2 *i*. Outer part of an ambulatory leg.
 „ 2 *k*. Basal part of an ambulatory leg in the male.

Chætonymphon spinosum (Goodsir).

(Fig. 3, a—i).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of an adult ovigerous male, dorsal aspect.
 „ 3 *b*. The same, sinistral aspect.
 „ 3 *c*. Ocular tubercle, anterior aspect.
 „ 3 *d*. Right chela, exterior aspect.
 „ 3 *e*. One of the palpi.
 „ 3 *f*. One of the false legs in the male.
 „ 3 *g*. Three marginal spines, greatly magnified.
 „ 3 *h*. Outer part of an ambulatory leg.
 „ 3 *i*. Basal part of an ambulatory leg of the male.

Pl. XII.

Chætonymphon tenellum, n. sp.

(Fig. 1, a—h).

- Fig. 1. Adult male, dorsal aspect.
 „ 1 *a*. Body (without ambulatory legs) sinistral aspect.
 „ 1 *b*. The same, dorsal aspect.
 „ 1 *c*. Ocular tubercle, anterior aspect.
 „ 1 *d*. Right chela, exterior aspect.
 „ 1 *e*. One of the palpi.
 „ 1 *f*. One of the false legs.
 „ 1 *g*. Three marginal spines, greatly magnified.
 „ 1 *h*. Outer part of an ambulatory leg.

Chætonymphon macronyx, G. O. Sars.

(Fig. 2, a—k).

- Fig. 2. Adult female, dorsal aspect.

- Fig. 2 *a*. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet ovenfra.
 „ 2 *b*. Samme, seet fra venstre Side.
 „ 2 *c*. Oieknuden, forfra seet.
 „ 2 *d*. Samme, seet fra venstre Side.
 „ 2 *e*. Venstre Chela, seet fra Ydersiden.
 „ 2 *f*. En af Følerne.
 „ 2 *g*. En af de falske Fodder hos Hannen.
 „ 2 *h*. Endekloen af samme, stærkt forstorret.
 „ 2 *i*. Tre Randtorner, ligeledes stærkt forstorrede.
 „ 2 *k*. Den ydre Del af en Gangfod.

Boreonymphon robustum (Bell).

(Fig. 3, a—l).

- Fig. 3. Fuldvoxen Hun, seet ovenfra.
 „ 3 *a*. Legemet (uden Gangfodder) af en fuldvoxen, ægbærende Han, seet fra hoire Side.
 „ 3 *b*. Samme, seet ovenfra.
 „ 3 *c*. Oieknuden, forfra seet.
 „ 3 *d*. Hoire Chela, seet fra Ydersiden.
 „ 3 *e*. En af Følerne.
 „ 3 *f*. En af de falske Fodder hos Hannen.
 „ 3 *g*. Fire af de eiendommelige tilbageboide Borster, stærkt forstorrede.
 „ 3 *h*. Spidsen af en af de falske Fodder, med Endekloen.
 „ 3 *i*. Nogle af Randtornerne, stærkt forstorrede.
 „ 3 *k*. Den ydre Del af en Gangfod.
 „ 3 *l*. Basis af Endekloen, med de rudimentære Bikloer, stærkt forstorret.

Pl. XIII.

Ammonothea echinata, (Hodge).

(Fig. 1, a—m).

- Fig. 1. Fuldvoxen Hun, seet ovenfra.
 „ 1 *a*. Fuldvoxen Han, ovenfra seet.
 „ 1 *b*. Legemet af samme (uden Gangfodder), seet ovenfra.
 „ 1 *c*. Samme, seet fra hoire Side.
 „ 1 *d*. Samme, seet nedenfra.
 „ 1 *e*. Oieknuden, bagfra seet, tilligemed det venstre Hjørne af Pandedelen.
 „ 1 *f*. En af de rudimentære Saxlemmer.
 „ 1 *g*. En af Følerne.
 „ 1 *h*. En af de falske Fodder hos Hannen.
 „ 1 *i*. En Randtorn, stærkt forstorret.
 „ 1 *k*. En af Gangfodderne hos Hannen.
 „ 1 *l*. Den ydre Del af samme, stærkere forstorret.
 „ 1 *m*. En Gangfod af sidste Par hos Hannen.

- Fig. 2 *a*. Body (without ambulatory legs) of an adult ovigerous male, dorsal aspect.
 „ 2 *b*. The same, sinistral aspect.
 „ 2 *c*. Ocular tubercle, anterior aspect.
 „ 2 *d*. The same, sinistral aspect.
 „ 2 *e*. Left chela, exterior aspect.
 „ 2 *f*. One of the palpi.
 „ 2 *g*. One of the false legs of the male.
 „ 2 *h*. Terminal claw of the same, greatly magnified.
 „ 2 *i*. Three marginal spines, also greatly magnified.
 „ 2 *k*. Outer part of an ambulatory leg.

Boreonymphon robustum (Bell).

(Fig. 3, a—l).

- Fig. 3. Adult female, dorsal aspect.
 „ 3 *a*. Body (without ambulatory legs) of an adult ovigerous male, dextral aspect.
 „ 3 *b*. The same, dorsal aspect.
 „ 3 *c*. Ocular tubercle, anterior aspect.
 „ 3 *d*. Right chela, exterior aspect.
 „ 3 *e*. One of the palpi.
 „ 3 *f*. One of the false legs in the male.
 „ 3 *g*. Four of the peculiar recurvate bristles, greatly magnified.
 „ 3 *h*. Extremity of one of the false legs, with the terminal claw.
 „ 3 *i*. A few of the marginal spines, greatly magnified.
 „ 3 *k*. Outer part of an ambulatory leg.
 „ 3 *l*. Base of the terminal claw, with the rudimentary auxiliary claws, greatly magnified.

Pl. XIII.

Ammonothea echinata, (Hodge).

(Fig. 1, a—m).

- Fig. 1. Adult female, dorsal aspect.
 „ 1 *a*. Adult male, dorsal aspect.
 „ 1 *b*. Body of the same (without ambulatory legs) dorsal aspect.
 „ 1 *c*. The same, dextral aspect.
 „ 1 *d*. The same, ventral aspect.
 „ 1 *e*. Ocular tubercle, posterior aspect, along with the left corner of the frontal part.
 „ 1 *f*. One of the rudimentary chelifori.
 „ 1 *g*. One of the palpi.
 „ 1 *h*. One of the false legs of the female.
 „ 1 *i*. A marginal spine, greatly magnified.
 „ 1 *k*. One of the ambulatory legs in the female.
 „ 1 *l*. Outer part of the same, greatly magnified.
 „ 1 *m*. An ambulatory leg of the last pair in the male.

***Ammothoa lævis* (Hodge).**

(Fig. 2, a—m).

- Fig. 2. Fuldvoxen Hun. seet ovenfra.
 „ 2 a. Fuldvoxen Han. seet ovenfra.
 „ 2 b. Legemet af Hunnen (uden Gangfodder). seet ovenfra.
 „ 2 c. Samme. seet fra hoire Side.
 „ 2 d. Oieknuden, bagfra seet.
 „ 2 e. En af de rudimentære Saxlemmer.
 „ 2 f. En af Følerne.
 „ 2 g. En af de falske Fodder.
 „ 2 h. En Gangfod af sidste Par hos Hannen.
 „ 2 i. Den ydre Del af samme, stærkere forstorret.
 „ 2 k. Ungt Exemplar, ovenfra seet.
 „ 2 l. Saxlemmerne af samme Exemplar.
 „ 2 m. Hoire Føler (p) og hoire falske Fod (s) af samme.

Pl. XIV.***Eurycyde hispida*. (Kröyer).**

(Fig. 1, a—q).

- Fig. 1. Fuldvoxen, ægbærende Han. seet ovenfra.
 „ 1 a. Legemet af samme (uden Gangfodder). seet ovenfra, med fortilstrakt Snabel.
 „ 1 b. Samme, seet fra venstre Side.
 „ 1 c. Oieknuden, bagfra seet.
 „ 1 d. Snabelen, seet fra venstre Side.
 „ 1 e. En af de rudimentære Saxlemmer.
 „ 1 f. Endepartiet af samme, stærkere forstorret.
 „ 1 g. En af Saxlemmerne hos et ungt Exemplar med vel udviklet Chela.
 „ 1 h. Chela'en stærkere forstorret.
 „ 1 i. En af Følerne hos et fuldvoxent Individ.
 „ 1 k. En af de falske Fodder hos Hannen.
 „ 1 l. En af de eiendommelige tilbageboiede Torner, stærkt forstorret.
 „ 1 m. Enden af en af de falske Fodder.
 „ 1 n. Et Stykke af Inderkanten af sidste Led, med 4 sagtakke Torner, stærkt forstorret.
 „ 1 o. En af Gangfodderne hos Hannen.
 „ 1 p. Den ydre Del af samme, stærkere forstorret.
 „ 1 q. Halesegmentet, seet ovenfra.

***Ascorhynchus abyssi*, G. O. Sars.**

(Fig. 2, a—t).

- Fig. 2. Fuldvoxen Hun. seet ovenfra.
 „ 2 a. Legemet (uden Gangfodder) af en fuldvoxen Han, seet ovenfra.

***Ammothoa lævis* (Hodge).**

(Fig. 2, a—m).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 a. Adult male, dorsal aspect.
 „ 2 b. Body of the female (without ambulatory legs) dorsal aspect.
 „ 2 c. The same, dextral aspect.
 „ 2 d. Ocular tubercle, posterior aspect.
 „ 2 e. One of the rudimentary chelifori.
 „ 2 f. One of the palpi.
 „ 2 g. One of the false legs.
 „ 2 h. An ambulatory leg of the last pair in the male.
 „ 2 i. Outer part of same, greatly magnified.
 „ 2 k. Young specimen, dorsal aspect.
 „ 2 l. Chelifori of the same specimen.
 „ 2 m. Right palpus (p) and right false leg (s) of the same.

Pl. XIV.***Eurycyde hispida*, (Kröyer).**

(Fig. 1, a—q).

- Fig. 1. Adult ovigerous male, dorsal aspect.
 „ 1 a. Body of the same (without ambulatory legs) dorsal aspect, with proboscis directed forward.
 „ 1 b. The same, sinistral aspect.
 „ 1 c. Ocular tubercle, posterior aspect.
 „ 1 d. Proboscis, sinistral aspect.
 „ 1 e. One of the rudimentary chelifori.
 „ 1 f. Terminal part of the same, greatly magnified.
 „ 1 g. One of the chelifori in a young specimen with well developed chela.
 „ 1 h. The chela, greatly magnified.
 „ 1 i. One of the palpi in an adult individual.
 „ 1 k. One of the false legs in the male.
 „ 1 l. One of the peculiar recurved spines, greatly magnified.
 „ 1 m. Extremity of one of the false legs.
 „ 1 n. A portion of the inner margin of the final joint, with 4 serrated spines, greatly magnified.
 „ 1 o. One of the ambulatory legs in the male.
 „ 1 p. Outer part of the same, greatly magnified.
 „ 1 q. Caudal segment, dorsal aspect.

***Ascorhynchus abyssi*, G. O. Sars.**

(Fig. 2, a—t).

- Fig. 2. Adult female, dorsal aspect.
 „ 2 a. Body (without ambulatory legs) of an adult male, dorsal aspect.

Fig. 2 *b*. Samme, seet fra Bugsiden (Snabelen og de falske Fødder er udeladt).

- „ 2 *c*. Samme af en ægbærende Han, seet fra høire Side.
- „ 2 *d*. Øieknuden, forfra seet.
- „ 2 *e*. Enden af Snabelen, med Mundaabningen.
- „ 2 *f*. Gjennemsnit af Snabelen paa Midten.
- „ 2 *g*. En af de rudimentære Saxlemmer.
- „ 2 *h*. Endedelen af samme, stærkere forstorret.
- „ 2 *i*. En af Saxlemmerne hos et ungt Individ, med fuldstændig Chela.
- „ 2 *k*. Chela'en, stærkere forstorret.
- „ 2 *l*. En af Følerne hos et fuldvoxent Exemplar.
- „ 2 *m*. En af de falske Fødder hos Hunnen.
- „ 2 *n*. Endepartiet af samme, stærkere forstorret.
- „ 2 *o*. Tre af Randtornerne, stærkt forstorrede.
- „ 2 *p*. En Fod af sidste Par hos Hannen.
- „ 2 *q*. Det knudeformige Fremspring ved Basis af Laarledet, stærkere forstorret.
- „ 2 *r*. Den ydre Del af en Gangfod hos Hunnen.
- „ 2 *s*. Den ydre Del af en Gangfod hos Hannen.
- „ 2 *t*. Halesegmentet, nedefra seet.

Fig. 2 *b*. The same, ventral aspect (the proboscis and the false legs are omitted).

- „ 2 *c*. The same of an ovigerous male, dextral aspect.
- „ 2 *d*. Ocular tubercle, anterior aspect.
- „ 2 *e*. Extremity of the proboscis, with the oral aperture.
- „ 2 *f*. Section of the proboscis at the middle.
- „ 2 *g*. One of the rudimentary chelifori.
- „ 2 *h*. Terminal part of the same, greatly magnified.
- „ 2 *i*. One of the chelifori in a young individual, with perfect chela.
- „ 2 *k*. The chela, greatly magnified.
- „ 2 *l*. One of the palpi in an adult specimen.
- „ 2 *m*. One of the false legs in the female.
- „ 2 *n*. Terminal part of the same, greatly magnified.
- „ 2 *o*. Three of the marginal spines, greatly magnified.
- „ 2 *p*. A leg of the last pair in the male.
- „ 2 *q*. The nodular prominence at the base of the femoral joint, greatly magnified.
- „ 2 *r*. Outer part of an ambulatory leg in the female.
- „ 2 *s*. Outer part of an ambulatory leg in the male.
- „ 2 *t*. Caudal segment, ventral aspect.

Pl. XV.

Colossendeis proboscidea (Sab.)

(Fig. 1, a—d).

Fig. 1. Fuldvoxen Hun, seet ovenfra; naturlig Størrelse.

- „ 1 *a*. Legemet (med Basis af Gangfodderne), seet fra Bugsiden.
- „ 1 *b*. Samme, seet fra høire Side.
- „ 1 *c*. Enden af Snabelen, med Mundaabningen, forfra seet.
- „ 1 *d*. Den ydre Del af en Gangfod.

Colossendeis angusta, G. O. Sars.

(Fig. 2, a—f).

Fig. 2. Fuldvoxen Han (?), seet ovenfra.

- „ 2 *a*. Legemet (uden Gangfodder), seet ovenfra.
- „ 2 *b*. Samme, seet fra Bugsiden.
- „ 2 *c*. Samme, seet fra høire Side.
- „ 2 *d*. Et Stykke af Huden, med de indleirede Smaalegemer, stærkt forstorret.
- „ 2 *e*. Den ydre Del af en Føler.
- „ 2 *f*. Den ydre Del af en Gangfod.

Pl. XV.

Colossendeis proboscidea (Sab.)

(Fig. 1, a—d).

Fig. 1. Adult female, dorsal aspect, natural size.

- „ 1 *a*. Body (with the base of the ambulatory legs) ventral aspect.
- „ 1 *b*. The same, dextral aspect.
- „ 1 *c*. Extremity of the proboscis, with the oral aperture, anterior aspect.
- „ 1 *d*. Outer part of an ambulatory leg.

Colossendeis angusta, G. O. Sars.

(Fig. 2, a—f).

Fig. 2. Adult male (?) dorsal aspect.

- „ 2 *a*. Body (without ambulatory legs) dorsal aspect.
- „ 2 *b*. The same, ventral aspect.
- „ 2 *c*. The same, dextral aspect.
- „ 2 *d*. A portion of the integument, with the small entrenched bodies, greatly magnified.
- „ 2 *e*. Outer portion of a palpus.
- „ 2 *f*. Outer portion of an ambulatory leg.

Zoologiske Stationer.
(*Zoological Stations.*)

Station No.	Datum. (Date.)	Nordlig Bredde.		Længde fra Greenwich.		Dybde. (Depth.)		Bundens Tempe- ratur. (Temperature at Bottom.) C.	Bunden.	Bottom.	Apparat. (Apparatus.) S. Skrabe. (Dredge.) T. Trawl. S. Svabere. (Swabs.)
		(North Latitude.)	(Longitude.)	Engl. Favne. (Fathoms.)	Meter. (Metres.)	C.					
1876											
1	Juni 3	61 ⁰ 13'	6 ⁰ 36'	E.	650	1189	6.06	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	Morkegraat 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	Blødt Ler.	Soft Clay.	T.	
(Romsdalsfjord).											
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.	
175	Juli 2	69 17	14 35	E.	415	759	3.0	Ler. Smaasten.	Clay. Pebbles.	S.	
176	(July) 3	69 18	14 33	E.	536	980	—0.2	Ler.	Clay.	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	Sandholdigt 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	Brant 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.	

Station No.	Datum. (Date.)	Nordlig Bredde. (North Latitude.)	Længde fra Greenwich. (Longitude)	Dybde. (Depth.)		Bundens Tempe- ratur. (Temperature at Bottom.)	Bunden.	Bottom.	Apparat. (Apparatus.) S. Skrabe. (Dredge.) T. Trawl. S. Svabere. (Swabs.)
				Engl. Favne. (Fathoms.)	Meter. (Metres.)				
253 ^b	Aug. 17	Saltstrømmen.		90	165		Sten.	Stones.	S.
	1878.								
255	Juni 19	68° 12'	15° 40' E.	341	624	6.°5 ¹	Ler.	Clay.	S.
		(Vestfjord).							
257	(June) 21	70 4	23 2 E.	160	293	3. 9	Ler.	Clay.	S.
		(Altentfjord).							
258	" 21	70 13	23 3 E.	230	421	4. 0	Ler.	Clay.	T.
		(Altentfjord).							
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	73 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.
333	" 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.
"		Magdalene Bay.		37	68	—0. 2	Ler.	Clay.	T.
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.
		(Istfjord).							
374	" 22	78 16	15 33 E.	60	110	0. 7	Ler.	Clay.	T.
		(Advent Bay).							

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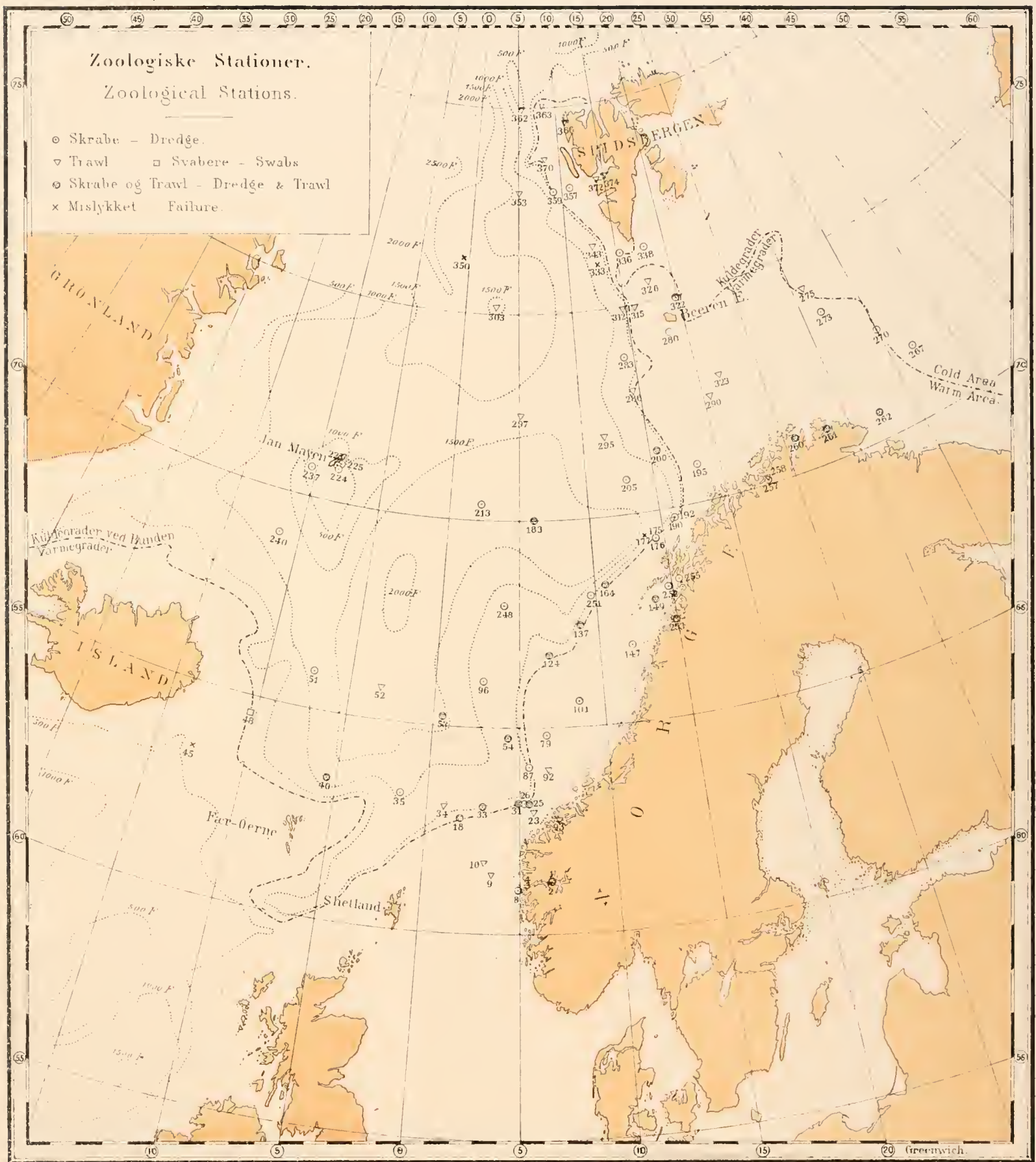
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<i>mutilatum</i>	25
<i>petiolatum</i>	26
<i>pygmæum</i>	26
<i>virescens</i>	25
<i>Phorichilus</i>	6, 15, 144
<i>charybdaeus</i>	16
<i>inermis</i>	15, 16
<i>laevis</i>	15, 16
<i>meridionalis</i>	16
<i>proboscideus</i>	137, 138
<i>spinosus</i>	15
<i>vulgaris</i>	15, 16
<i>Platyceclus</i>	119
<i>Pseudopallene</i>	38, 45, 145
<i>circularis</i>	38, 43
<i>discoidea</i>	39
<i>hispida</i>	39
<i>intermedia</i>	39
<i>spinipes</i>	42
<i>Pycnogonidae</i>	6, 144
<i>Pycnogonum</i>	6, 144
<i>bakenarum</i>	7
<i>crassirostre</i>	12
<i>grossipes</i>	65, 66
<i>littorale</i>	7
<i>nodosum</i>	7
<i>pelagicum</i>	7
<i>pusillum</i>	7
<i>spinipes</i>	42
<i>Rhynchothorax</i>	6
<i>mediteraneus</i>	4
<i>Tanystylum</i>	119
<i>Trygaeus</i>	119
<i>Zetes</i>	128
<i>hispidus</i>	128

Zoologiske Stationer.

Zoological Stations.

- Skrabe - Dredge.
- ▽ Trawl □ Svabere - Swabs
- ⊙ Skrabe og Trawl - Dredge & Trawl
- × Mislykket Failure.



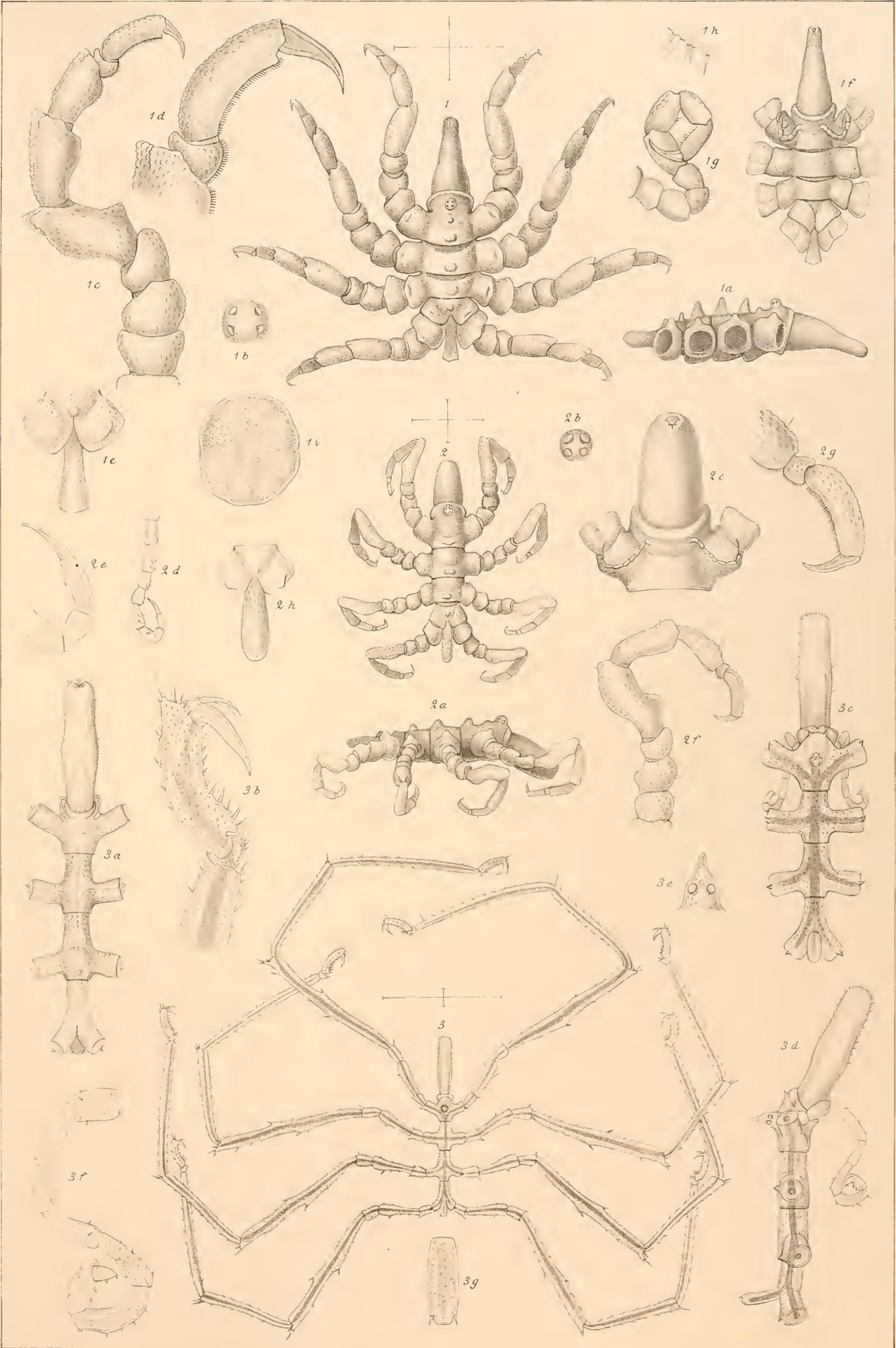


Fig. 1, a-i, PYCNOGONUM LITTORALE, (Ström). Fig. 2, a-h, PYCNOGONUM CRASSIROSTRE, n. sp.
Fig. 3, a-g, PHOXICHILUS SPINOSUS, (Mont)

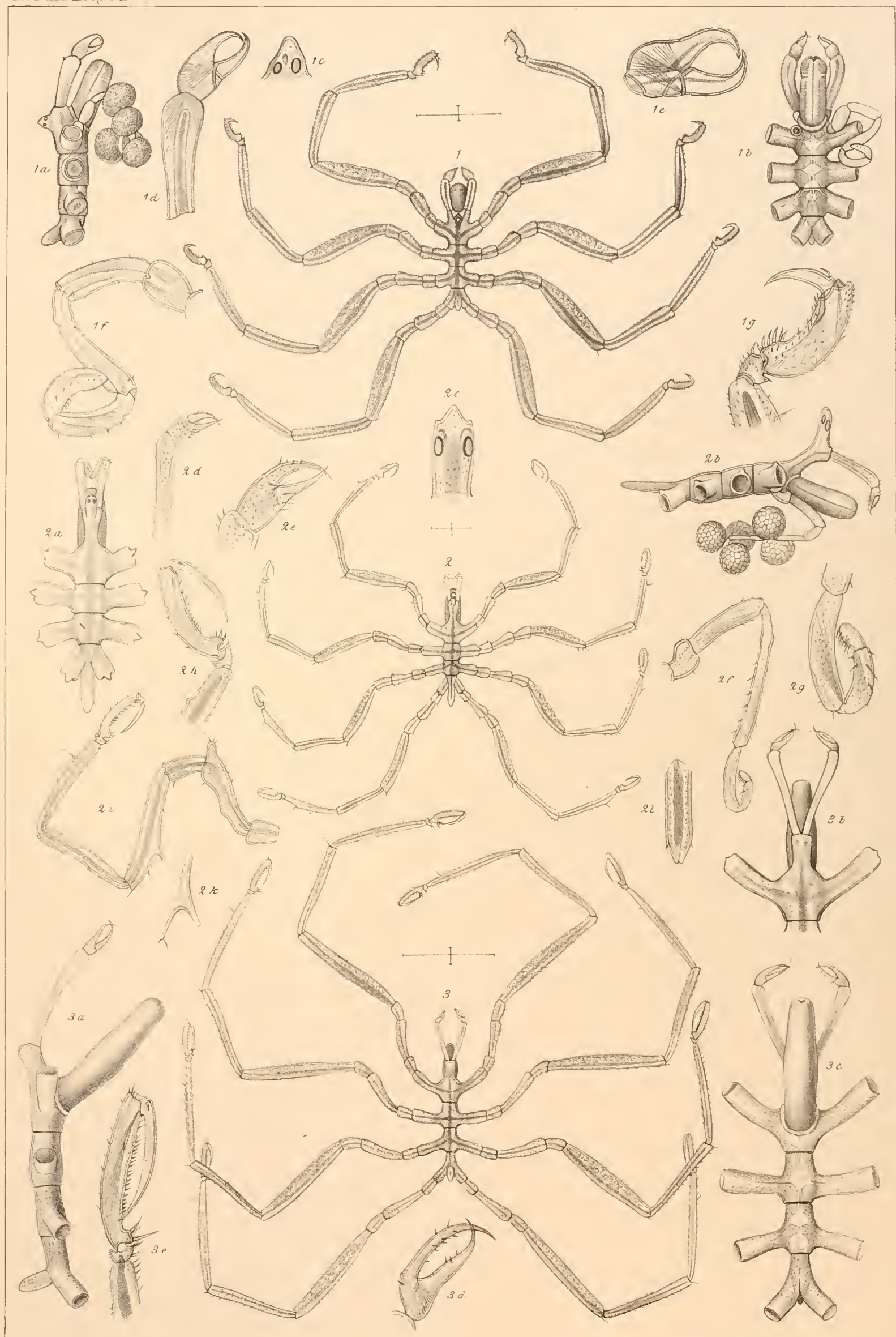


Fig 1, a-g, PHOXICHILIDIUM FEMORATUM, (Rathke). Fig 2, a-l, ANOPLODACTYLUS PETIOLATUS, (Kröyer).
Fig 3, a-e, ANOPLODACTYLUS TYPHLOPS, n.sp.

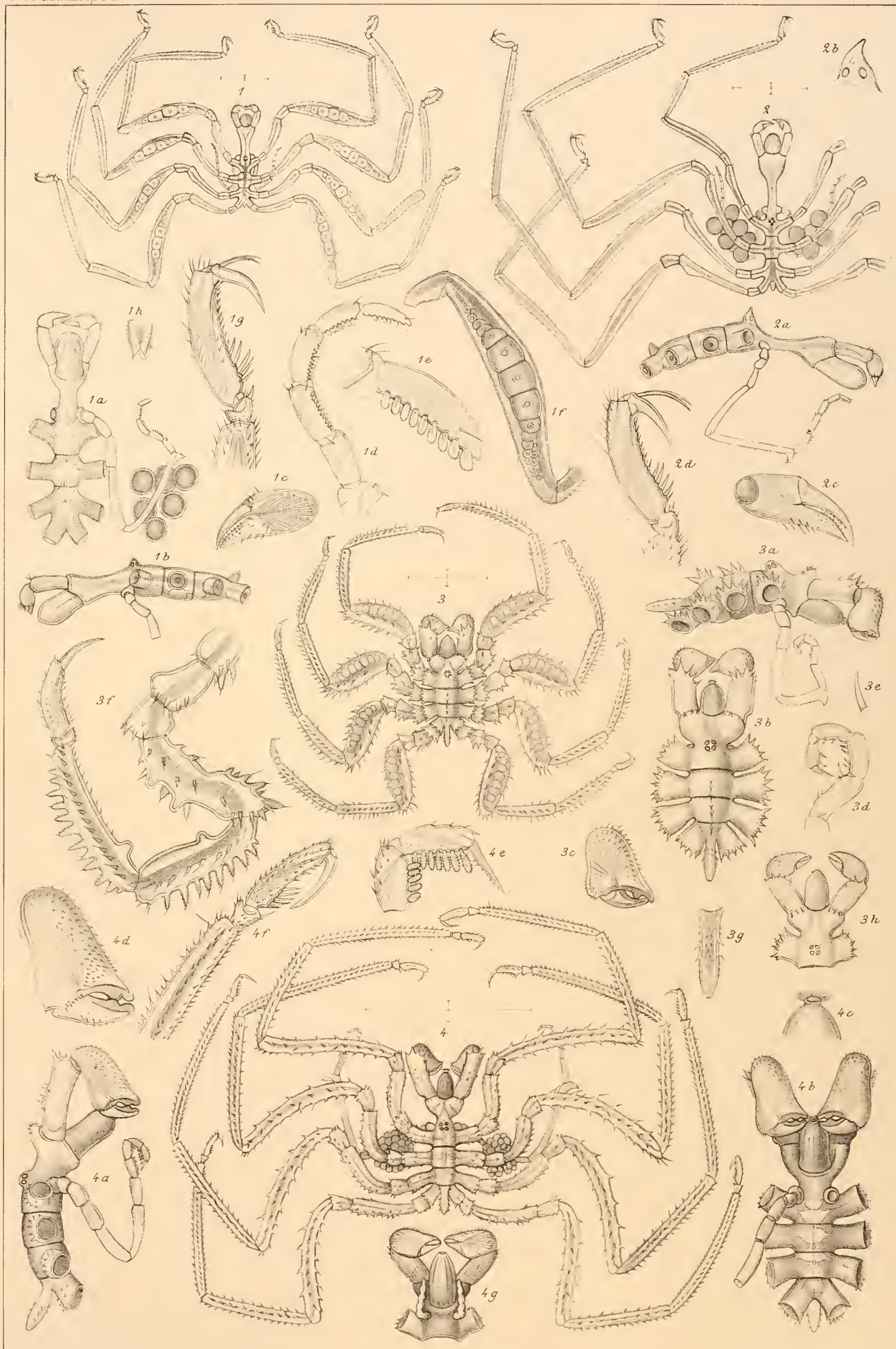
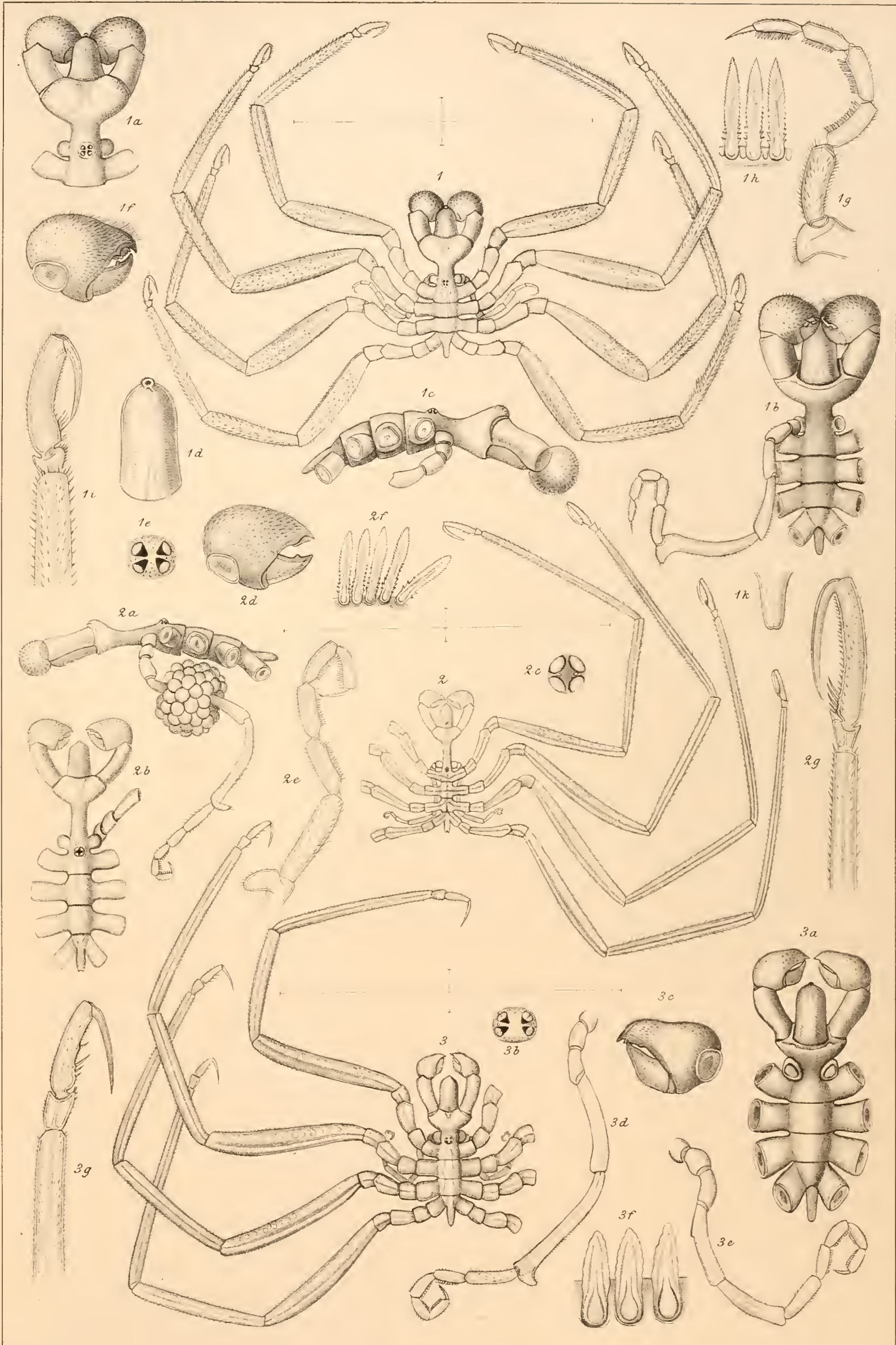


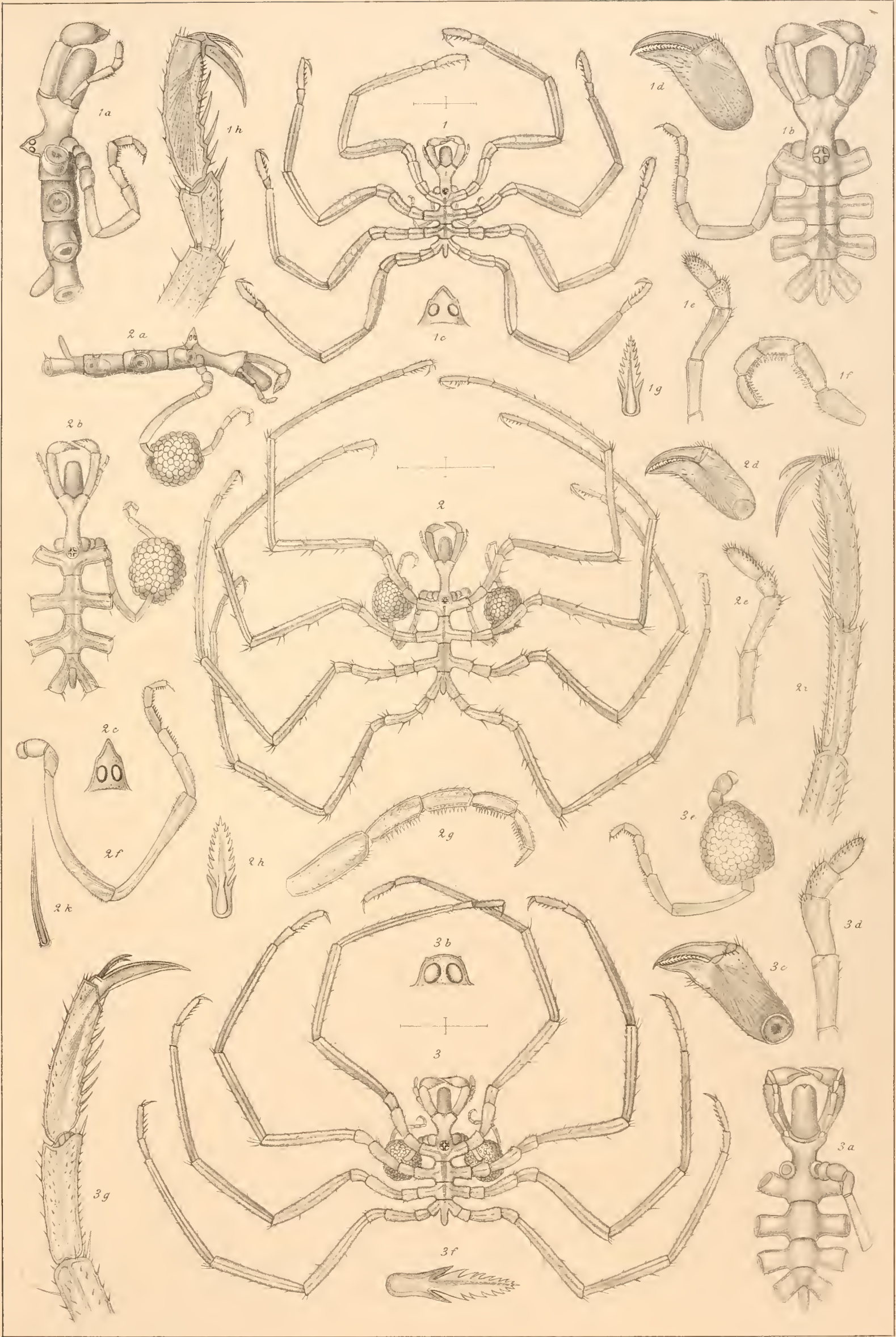
Fig. 1, a-h, PALLENE BREVIROSTRIS, JOHNST. Fig. 2, a-d, PALLENE PRODUCTA, n.sp.
Fig. 3, a-h, PSEUDOPALLENE CIRCULARIS, (Goodsir). Fig. 4, a-g, PSEUDOPALLENE SPINIPES, (Fabr.)



G O. Sars del

Lith W Schlachter, Stockholm

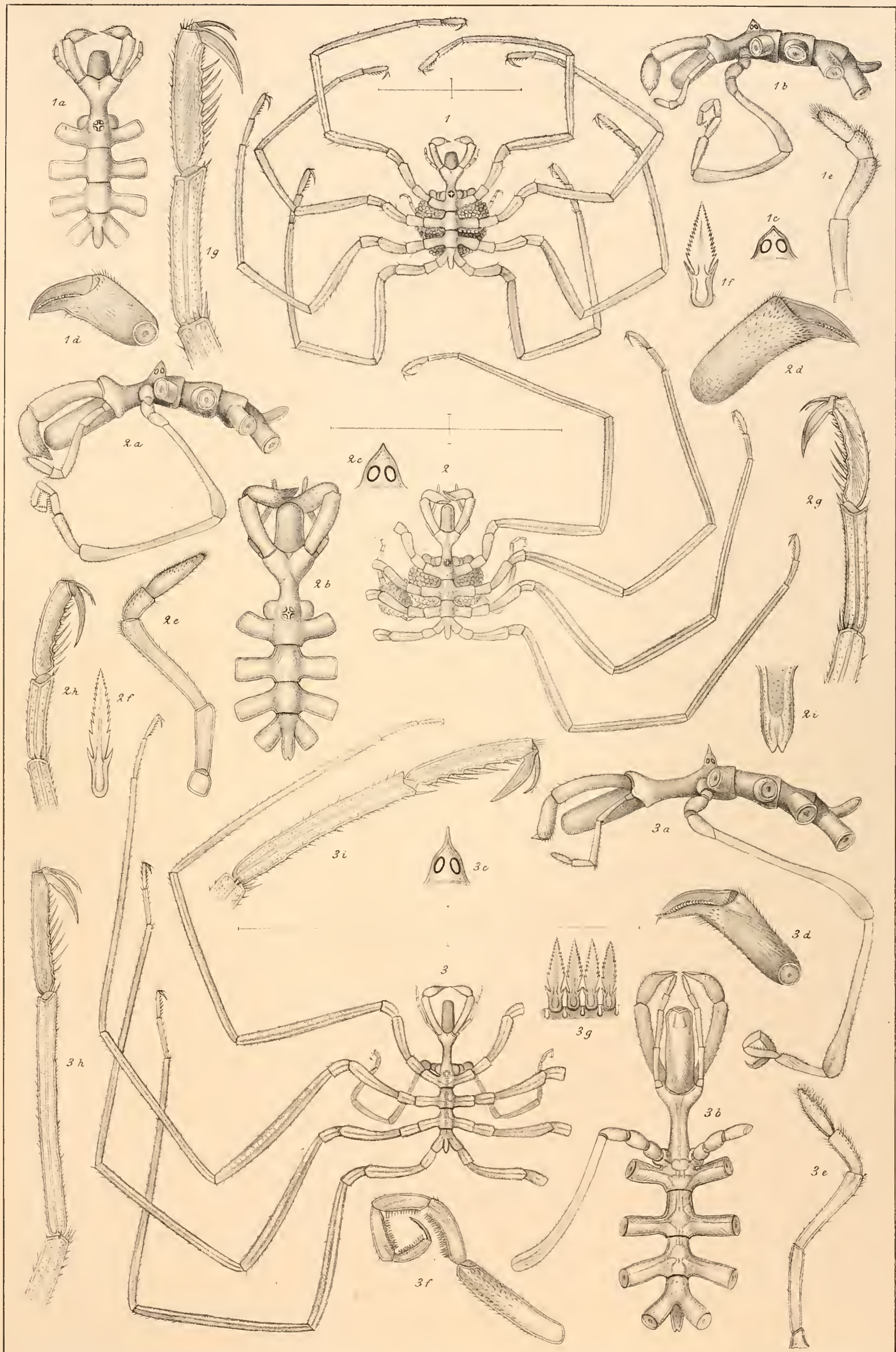
Fig. 1, a-k, *CORDYLOCHELE MALLEOLATA*, G.O. Sars. Fig. 2, a-g, *CORDYLOCHELE LONGICOLLIS*, n. sp.
Fig. 3, a-g, *CORDYLOCHELE BREVICOLLIS*, n. sp.



C O Sars, del.

Lith W Schlachter Stockholm

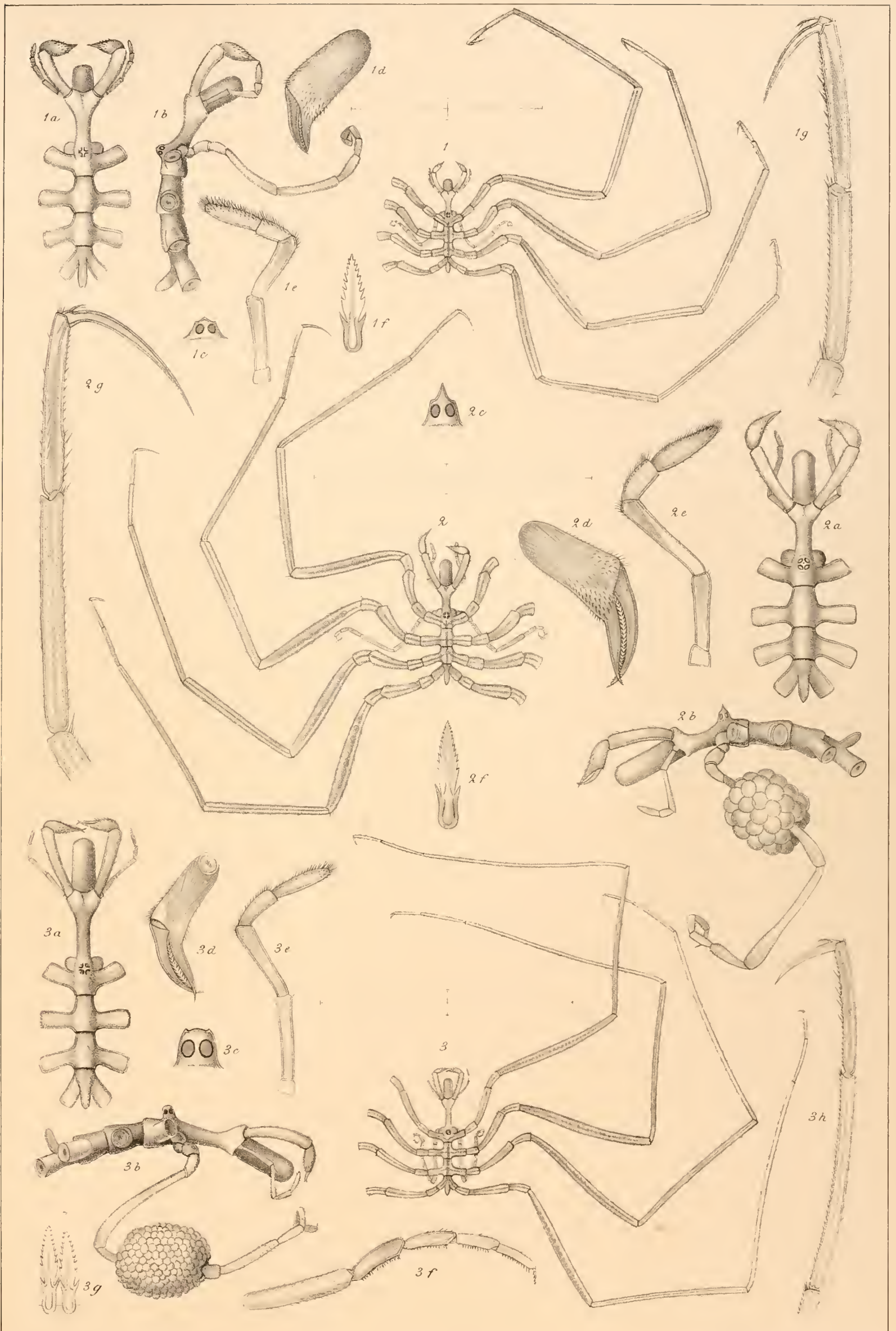
Fig.1,a-h, NYMPHON GRACILE, Leach. Fig. 2, a-k, NYMPHON RUBRUM, Hodge.
Fig.3,a-g, NYMPHON BREVITARSE, Kröyer.



G. O. Sars, del.

Lith. W. Schlachter, Stockholm.

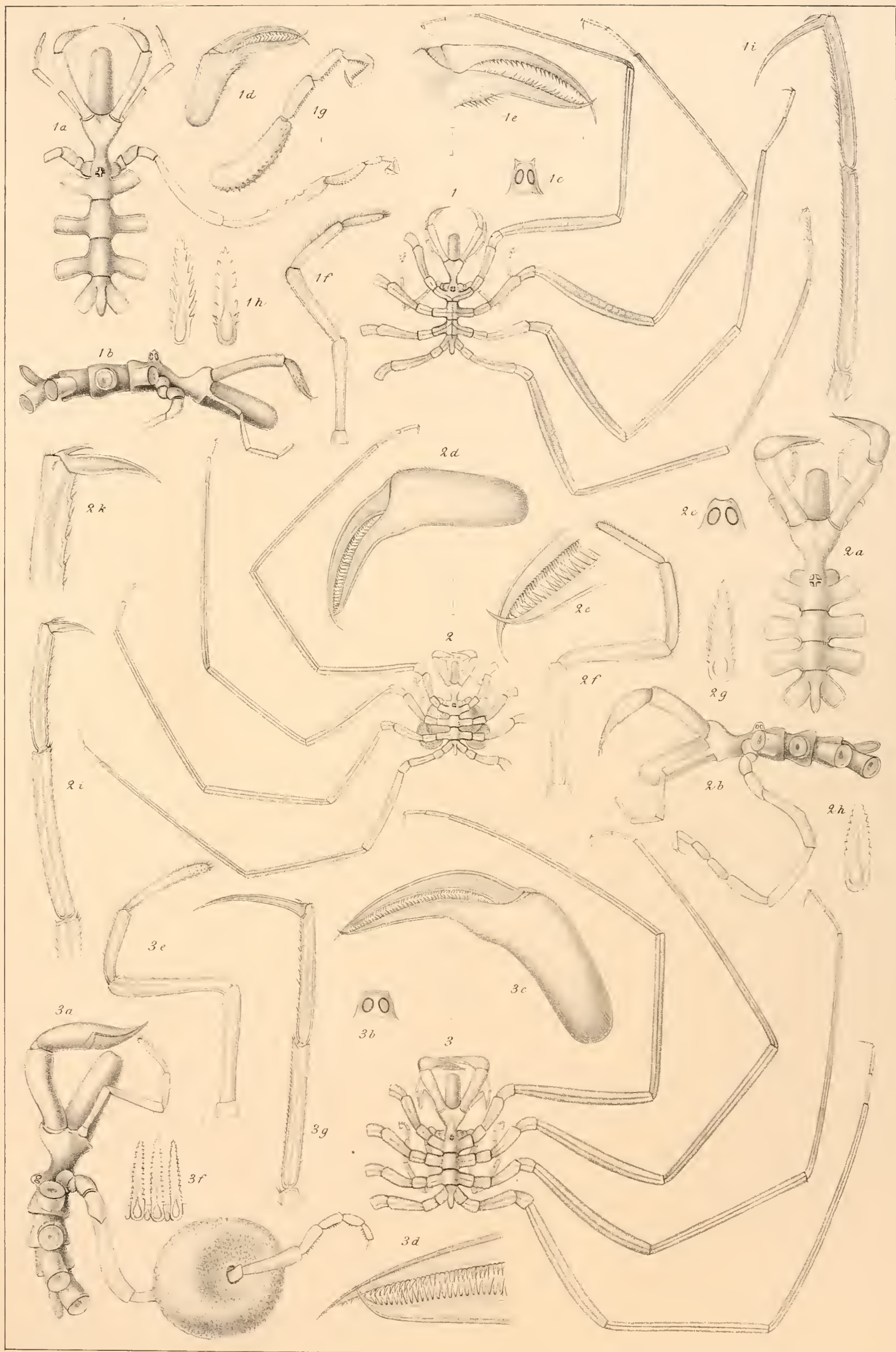
Fig. 1, a-g, NYMPHON GLACIALE, Lilljeb. Fig. 2, a-i, NYMPHON GROSSIPES (Fabr.)
Fig. 3, a-i, NYMPHON MIXTUM, Kröyer.



G. O. Sars del.

Lith W Schlachter, Stockholm

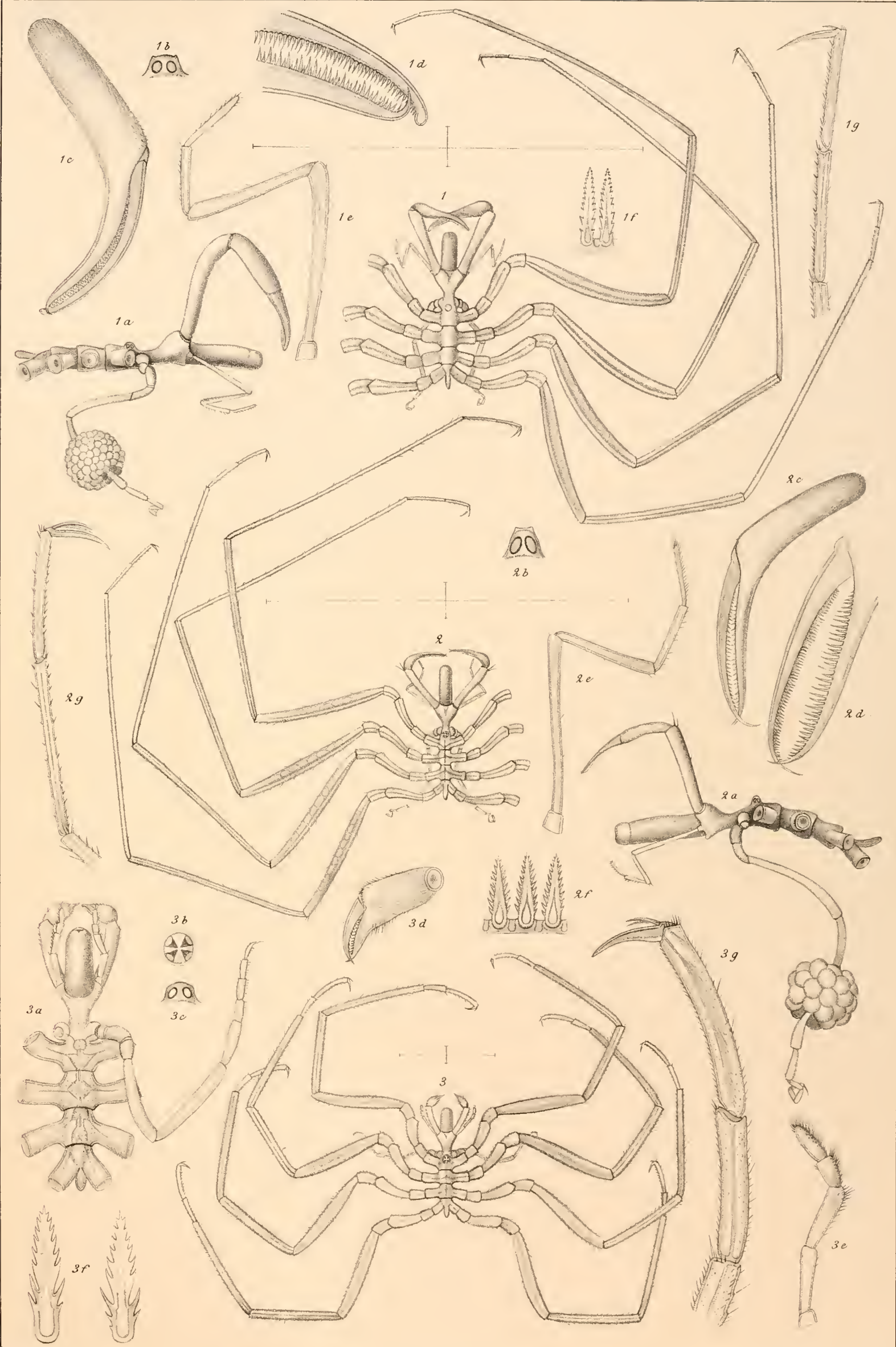
Fig. 1, a-g, NYMPHON MICRORHYNCHUM, n. sp. Fig. 2, a-g, NYMPHON SLUITERI, Hoek.
Fig. 3, a-h, NYMPHON LONGITARSE, Kröyer.



G O Sars del

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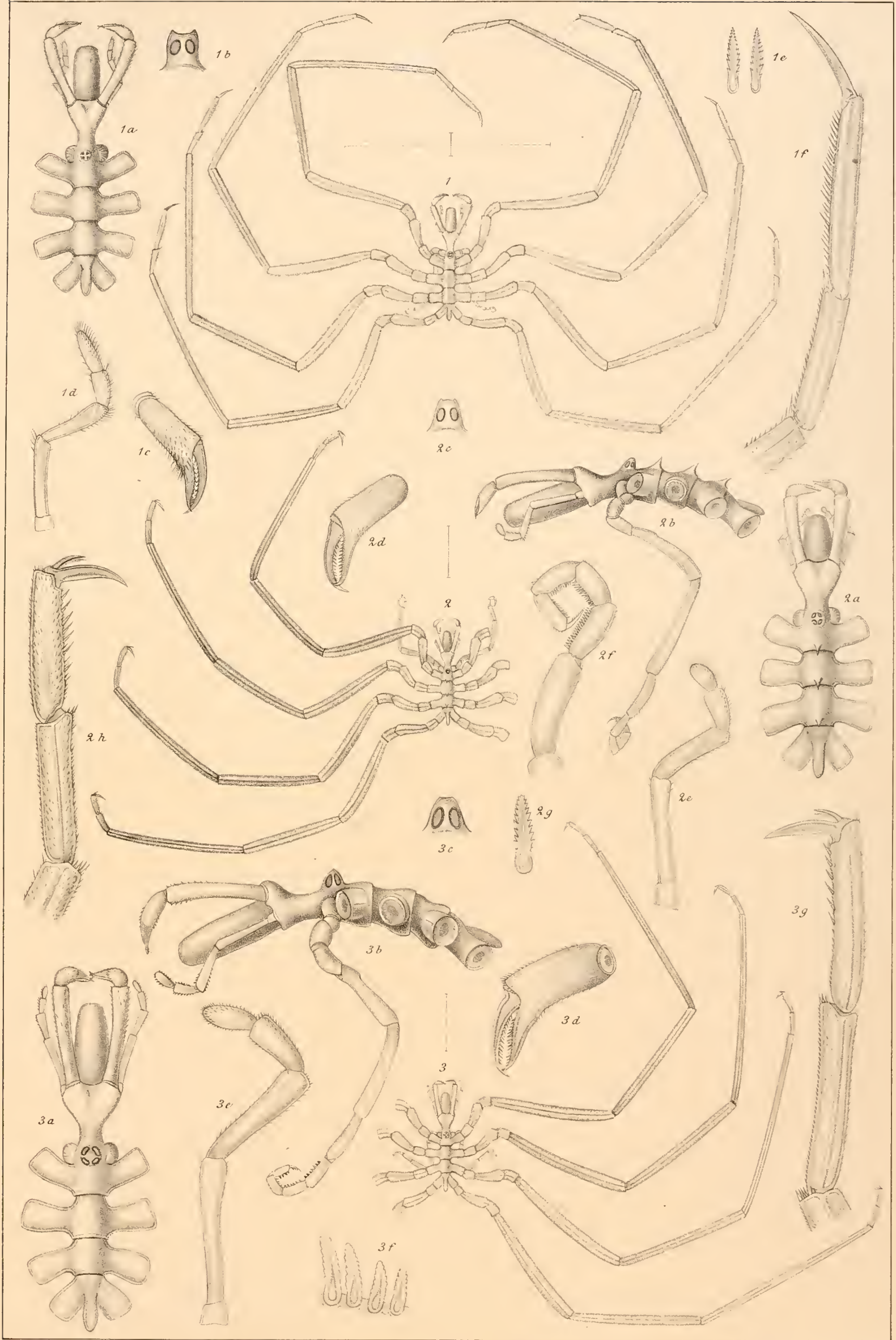
Fig. 1, a-i, NYMPHON LEPTOCHELES, n. sp. Fig. 2, a-k, NYMPHON STRÖMII, Kröyer.
Fig. 3, a-g, NYMPHON GRACILIPES, Hellen.



G O Sars del.

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Fig.1, a-g, NYMPHON ELEGANS, Hansen. Fig.2, a-g, NYMPHON MACRUM, Wilson.
Fig.3, a-g, NYMPHON MICRONYX, n. sp.



G O Sars del

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Fig.1,a-f, NYMPHON LONGIMANUM, n.sp. Fig.2,a-h, NYMPHON SERRATUM, G.O Sars
Fig.3,a-g, NYMPHON MEGALOPS, G.O.Sars.

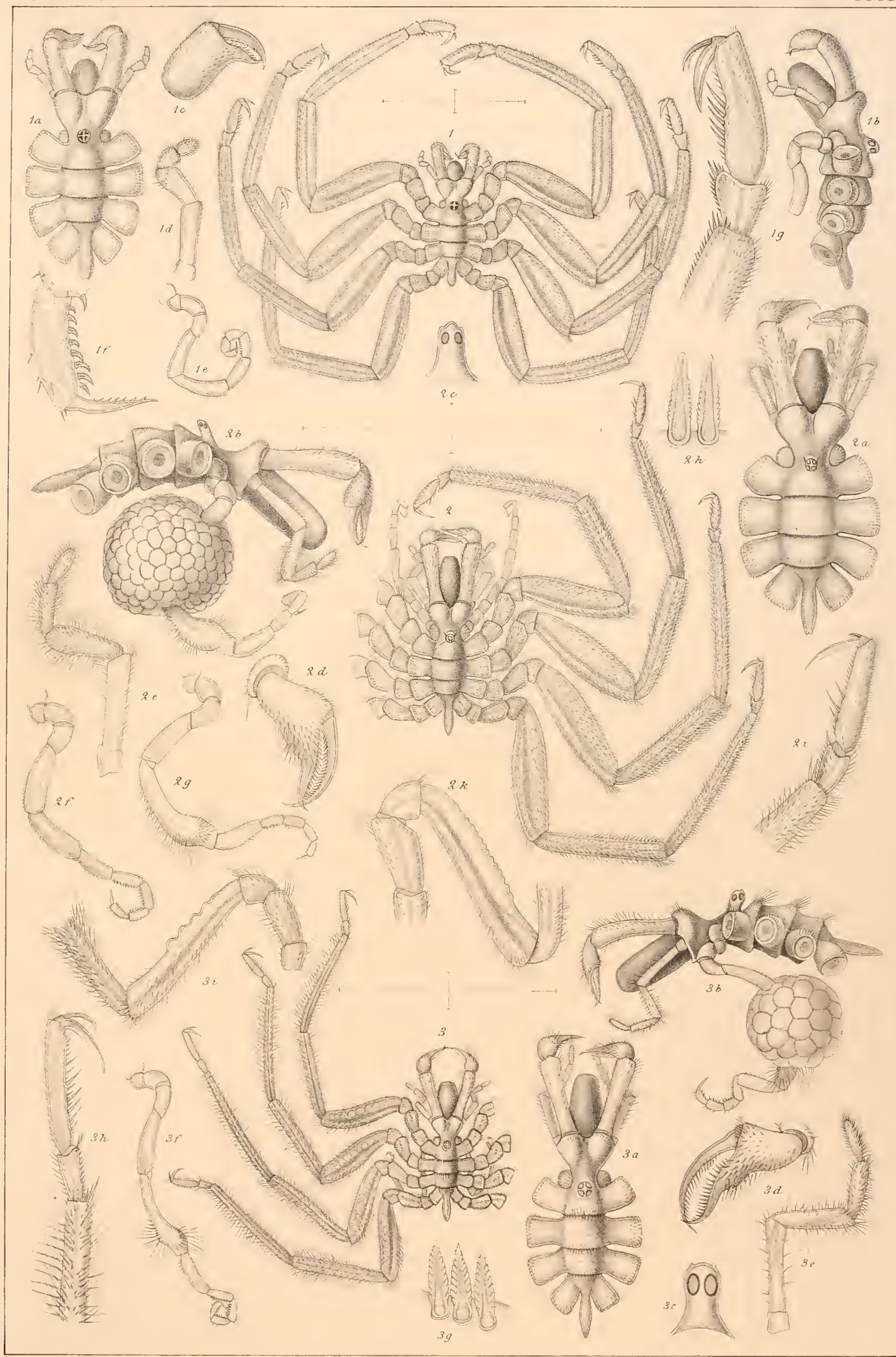
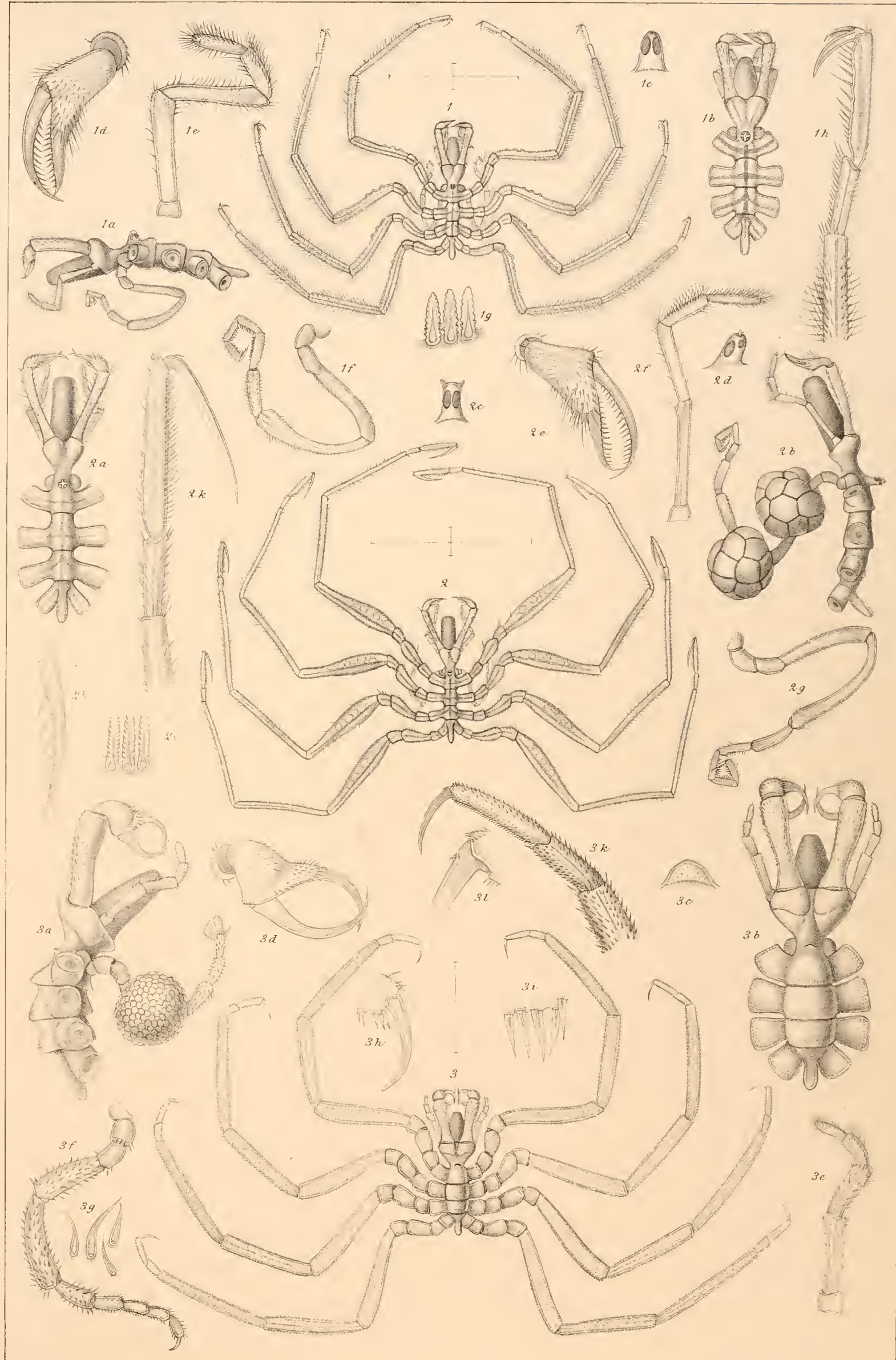


Fig. 1, a-g, CHATONYMPHON HIRTUM Fabr. (Kröyer). Fig. 2, a-k, CHATONYMPHON HIRTIPES, (Bell).
Fig. 3, a-i, CHATONYMPHON SPINOSUM, (Goodsir).

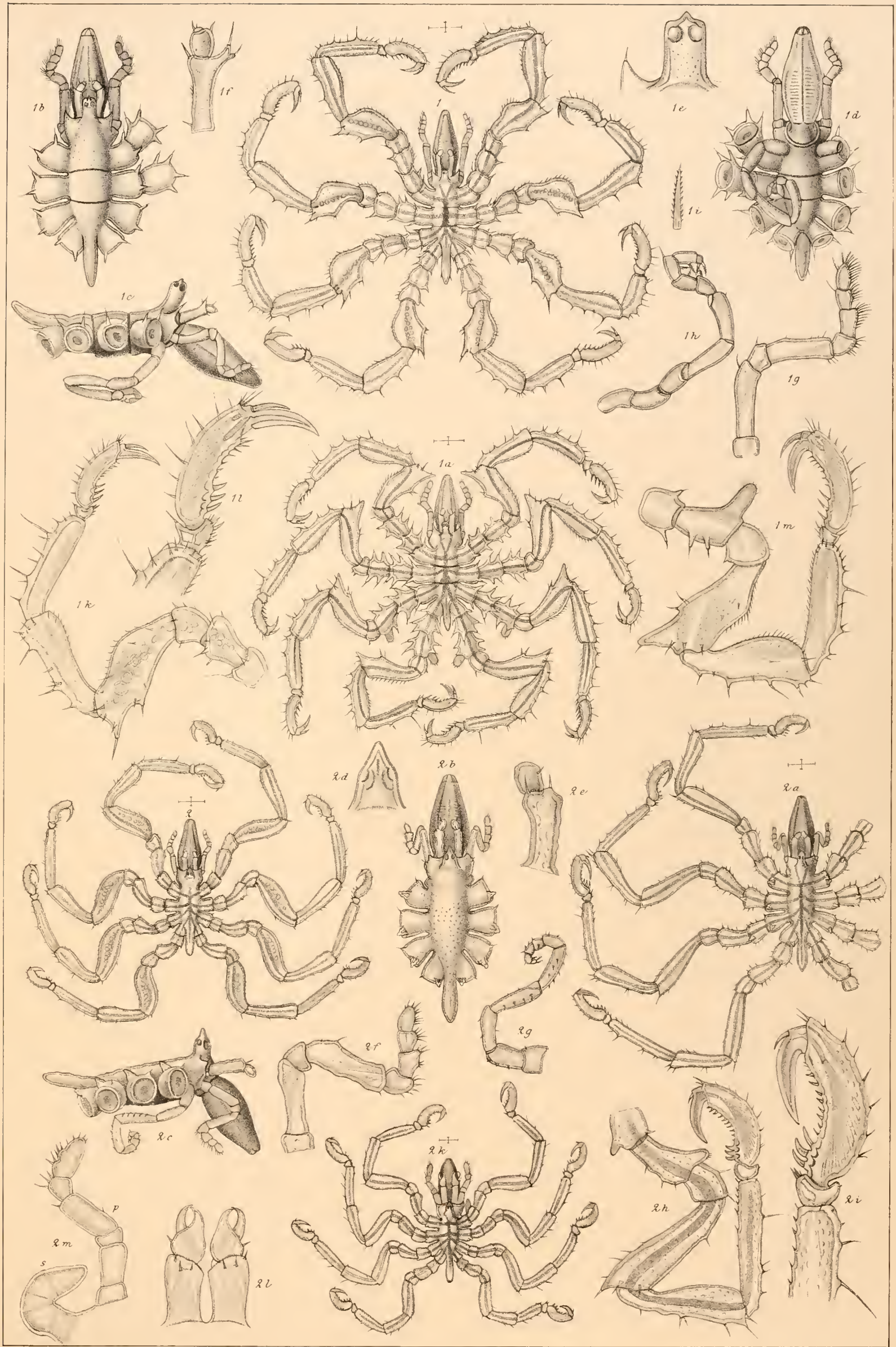


G. O. Sars del

Lith W. Schlachter, Stockholm

Fig. 1, a-h, *CHATONYMPHON TENELLUM*, n.sp. Fig. 2, a-k, *CHATONYMPHON MACRONYX*, G. O. Sars.

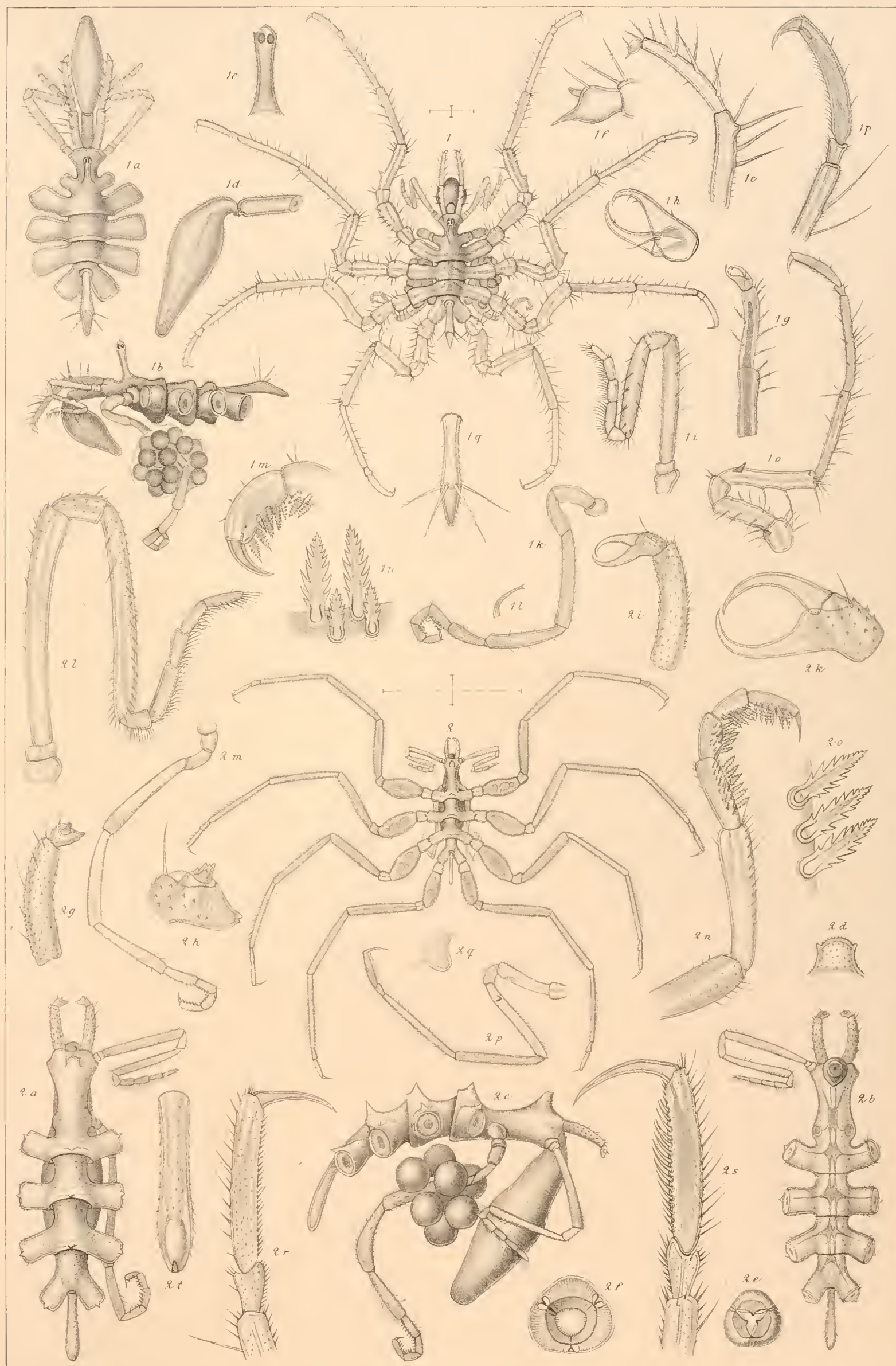
Fig. 3, a-l, *BOREONYMPHON ROBUSTUM*, (Bell).



G. O. Sars del

Lith W. Schlachter, Stockholm

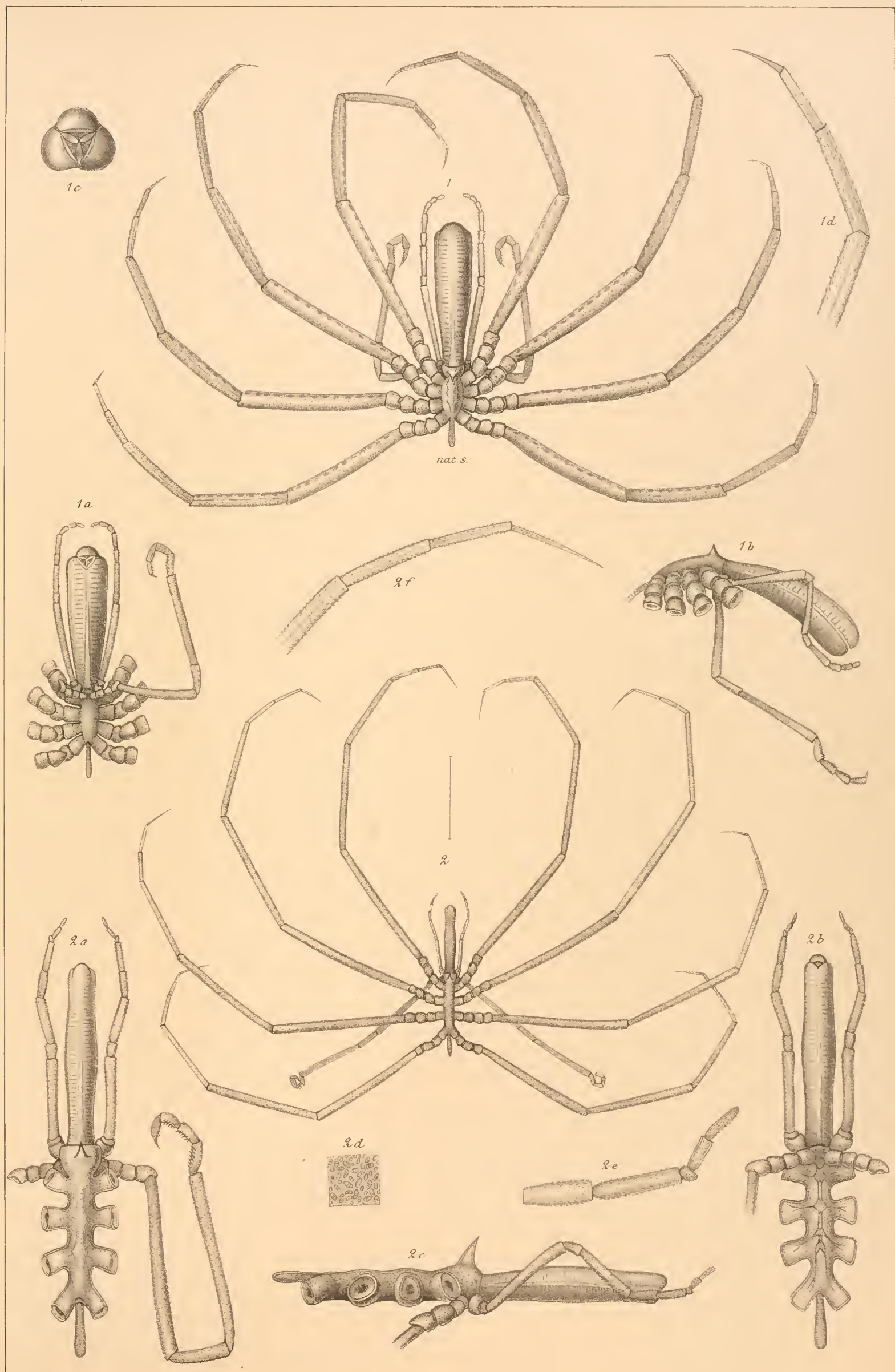
Fig. 1, a-m, AMMOTHEA ECHINATA, (Hodge).
Fig. 2, a-m, AMMOTHEA LAEVIS, (Hodge).



G. O. Sars del.

Lith W Schlachter, Stockholm

Fig. 1, a-q, EURYCYDE HISPIDA, (Kröyer).
Fig. 2, a-t, ASCORHYNCHUS ABYSSI, G. O. Sars.



G.O Sars del.

Lith W. Schlachter, Stockholm

Fig. 1, a-d, COLOSSENDEIS PROBOSCIDEA, (Sab.). Fig. 2, a-f, COLOSSENDEIS ANGUSTA, G.O. Sars.

