(Særtryk af Vidensk. Meddel. fra den naturh. Foren. Bd. 64).

Report on the Malacostraca collected by the "Tjalfe"-Expedition, under the direction of cand. mag. Ad. S. Jensen, especially at W. Greenland.

By

K. Stephensen.

During the fisheries-investigations carried out by Mr. Ad. S. Jensen in the Greenland seas, especially at S. W. Greenland, with the "Tjalfe" in the summers 1908 and 1909, a considerable material of Crustaceans was collected. Especially bathypelagic species and larvæ of such species are richly represented in the collection, this expedition standing foremost among those, by which such material has been brought to light. It was, however, by no means the whole material of Crustaceans, which was preserved, particularly of the more common species, the main object of the expedition being fisheries-investigations, not a general survey of the marine fauna.

The material contains in all 84 species and 6 species of larvæ. The following species are new to science.

Cleonardo microdactylus. (No. 57).

Eusirus Tjalfiensis. (No. 67).

Munneurycope Tjalfiensis. (No. 80).

Holophryxus Acanthephyræ. (No. 84).

Besides these the following species are new to Greenland:

Longithorax fuscus H. J. Hansen.

Scina sp.

Cyphocaris anonyx Boeck.

Metacyphocaris Helgæ Tattersall.

Katius obesus Chevreux.

Amphitopsis longicaudata Boeck.

Acanthoniscus typhlops G. O. Sars.

Janthe laciniata G. O. Sars.

Holophryxus Richardi Koehler.

A summary and discussion of the new localities in connection with those previously known I have given recently in the Report on the Malacostraca, Pycnogonida and some Entomostraca collected by the Danmark-Expedition to North-East Greenland, in "Meddelelser om Grønland", vol. 45, 1912.

Some of the stations from the Davis-Strait having great interest, a complete list is given here of all the species brought home from these stations.

St. 322. 60° 07′ N, 48° 26′ W, 3—5—1909. 2000 m. wire out.

Acanthephyra purpurea ca. 15 spec.
Parapasiphae sulcatifrons 2 spec.
Gennadas elegans 7 spec.
Sergestes arcticus 4 spec.
Thysanopoda acutifrons 30 spec.
Meganyctiphanes norvegicus 7 spec.
Thysanoessa longicaudata many spec. (ca. 15 cm.[3])
Eucopia unguiculata 5 spec.
Gnathophausia zoea 2 spec.
Boreomysis microps 7 spec.
Longithorax fuscus 1 spec.
Hyperia medusarum 1 spec.
Euthemisto compressa 6 spec.
Cyphocaris anonyx 5 spec.
Katius obesus 2 spec.
Metacyphocaris Helgæ 6 spec.
Munneurycope Tjalfiensis 1 spec.
Holophryxus Acanthephyræ 1 spec.

St. 333. 63° 18′ N, 54° 55′ W, 7—5—1909. depth 1300 m., 1530 m. wire out.

Acanthephyra purpurea 12 spec.
Parapasiphae sulcatifrons 4 spec.
Gennadas elegans ca. 15 spec.
Sergestes arcticus 1 spec.
Eucopia unguiculata ca. 25 spec.
Gnathophausia zoea 5 spec.
Boreomysis microps ca. 20 spec.
Cyphocaris anonyx 2 spec.
Katius obesus 2 spec.
Metacyphocaris Helgæ 5 spec.
Lanceola serrata 1 spec.

St. 338. 64° 01′ N, 55° 30′ W, 8—5—1909. depth 1185 m. 1500 m. wire out.

Acanthephyra purpurea 11 spec.
Parapasiphae sulcatifrons 5 spec.
Gennadas elegans 13 spec.
Boreomysis microps ca. 20 spec.
Scina sp. 1 spec.
Cyphocaris anonyx 2 spec.
Katius obesus 1 spec.
Metacyphocaris Helgæ 2 spec.

St. 336. 64° 06′ N, 55° 18′ W, 8—5—1909. depth 1040—1100 m., 1200 m. wire out.

Acanthephyra purpurea 10 spec.
Parapasiphae sulcatifrons 6 spec.
Gennadas elegans ca. 25 spec.
Sergestes arcticus 1 spec.
Thysanoessa longicaudata 1 spec.
Eucopia unguiculata 6 spec.
Gnathophausia zoea 7 spec.
Boreomysis microps ca. 25 spec.
Cyphocaris anonyx 2 spec.
Cleonardo microdactylus 2 spec.

Decapoda.

1. **Chionoecetes Opilio** O. Fabr.

Cancer Phalangium O. Fabricius, Fauna Groenlandica, 1780, No. 214, p. 234.
— *Opilio* O. Fabricius, Kgl. Danske Vid. Selsk. Skrifter, Nye Samling, vol. 3, 1788, p. 181, 1 Pl.
Chionoecetes Opilio Kröyer, Naturh. Tidsskrift, vol. 2, 1838, p. 249.
* — — Kröyer, Crust., in Gaimard, Voyage en Scand., 1846 (1849?), Pl. 1.
— — M. Rathbun, Proc. U. S. Nat. Mus., vol. 16, 1893, p. 74, Pl. 4, fig. 5—7.
— — A. M. Edwards & Bouvier, Rés. des Camp. Sc. "Hirondelle", Monaco, vol. 7, 1894, p. 16.
— — H. J. Hansen, "Ingolf" 1908, p. 12.
— *phalangium* H. J. Hansen, V. Grönland 1887, p. 28.

(St. 109) 66° 44′ N, 56° 08′ W, ca. 175 fath. 5—7—1908. 3 spec.
(St. 107) 68° 20′ N, 54° 03′ W, 220—280 fath. 9—7—1908. 1 spec. (the carapace 93 mm. × 93 mm.)

In Disko Bay and in Umanak Fjord considerable numbers of this crab were taken in deep water (140—260 fms.), the largest specimen measuring 30 inches between the tips of the longest legs.

2. **Hyas coarctatus** Leach.

Hyas coarctatus Leach, Transact. Linn. Soc., London, vol. 11, 1815, p. 329.
— — Cuvier, Règne animal, Edit. acc. de planches grav., Crust., Pl. 32, fig. 3.
* — — Brandt, Middendorffs Sibirische Reise, vol. 2, 1, 1851, p. 81.
* — — Bell, 1853, p. 35, with fig.
— — M. Rathbun, Proc. U. S. Nat. Mus., vol. 16, 1893 p. 69.

Hyas coarctatus H. J. Hansen, „Ingolf" 1908, p. 15.
— — V. Grönland 1877, p. 30.

(St. 465) 62° 58′ N, 50° 52′ W, ca. 25 fath., 21—6—1909. 7 spec.
(St. 419) 65° 09′ N, 53° 33′ W, 29 fath. 6—6—1909. 1 spec.
(St. 100) 66° 44′ N, 56° 08′ W, ca. 175 fath., 5—7—1908. ca. 20 spec.

3. **Lithodes Maja** L.

Cancer Maja Linné, Systema Naturæ, edit. X, 1758, vol. 1, p. 629.
Lithodes arctica Cuvier, Règne animal, Edit. acc. de planches grav., Crust., Pl. 37.
* — *Maja* Bell, 1853, p. 165, with fig.
* — *arctica* Bouvier, Ann. Sc. Nat. Zool., ser. 7, vol. 18, 1891, p. 181, Pl. 11, fig. 7, Pl. 12, fig. 5.
— *Maja* Bouvier, ibid., ser. 8, vol. 1, 1896, p. 24.
— — H. J. Hansen, "Ingolf", 1908, p. 22.
— — — V. Grønland, 1887, p. 31.

(St. 100) 66° 44′ N, 56° 08′ W, ca. 175 fath., 5—7—1908, 1 spec.
Without locality, 1 sp.

4. **Eupagurus pubescens** Kr.

Pagurus pubescens Kröyer, Kgl. Danske Vid. Selsk. naturvid.-math. Afh., vol. 7, 1838, p. 314.
* — — Kröyer, Naturhist. Tidsskrift, vol. 2, 1838, p. 251.
* — — — in Gaimard: Voyage en Scandinav., 1846 (1849?), Pl. 2, fig. 1.
Eupagurus — — *E. Kröyeri* S. J. Smith, Transact. Conn. Acad. vol. 5, 1879. p. 47, 48.
— — A. M. Edwards & Bouvier, Résult. d. Camp. Sc. "Hirondelle", Monaco, vol. 7, 1894, p. 74.
— — H. J. Hansen, "Ingolf", 1908, p. 27.
— — — V. Grönland, 1887, p. 32.

(St. 177) 70° 42′ N, 54° 48′ W, 253 fath. 7—8—1908. 2 spec.

5. **Munida tenuimana** G. O. Sars.

Munida tenuimana G. O. Sars, Vid. Selsk. Forh., Christiania 1871 (1872), p. 247.
— — — Ibid. 1882, No. 18, p. 44, Pl. 1, fig. 6.
* — — Appellöf, Die Decap. Crust., Meeresfauna v. Bergen, Heft 2—3, 1906, p. 139—49, Pl. 2, fig. 2.
* — — H. J. Hansen, "Ingolf" 1908, p. 34, Pl. 2, fig. 4 a, Pl. 3, fig. 1 a.

(St. 429) 63° 54′ N, 53° 15′ W. 988—1400 m. trawl. 8—6—1909. 3 spec.

6. **Munidopsis curvirostra** Whiteaves.

Munidopsis curvirostra Whiteaves, Ann. Journ. Science ser. 3, vol. 8, 1874, p. 212.
— — S. J. Smith, Bull. Mus. Comp. Zool., vol. 10, 1884, p. 21 (no description), Pl. 8, fig. 2, 3, 3 a.
* — *longirostris* A. Milne-Edwards & Bouvier, Exp. Sc. "Travailleur" et "Talisman" Crust. Decap. vol. 1, 1900, p. 314, Pl. 4, fig. 1, Pl. 30, fig. 6—10.
* — *curvirostra* H. J. Hansen, "Ingolf", 1908, p. 36, pl. 3, fig. 2.

(St 337) 64° 05′ N, 55° 20′ W, 1100 m. 8—5—1909. 1 spec.
(St. 408—10) 64° 14′ N. 55° 55′ W, 839 m. 2—6—1909. 3 spec.
(St. 302) 64° 40′ N, 56° 37′ W, 720—775 m. 2—6—1909. 2 spec.

6. **Sclerocrangon boreas** Phipps.

Cancer Boreas Phipps, Voyage towards the North Pole, 1774, p. 190, Pl. 12, fig. 1.
**Crangon* — Kröyer, Naturhist. Tidsskrift vol. 4, 1842, p. 218, Pl. 4, fig. 1—14.
Sclerocrangon Boreas H. J. Hansen, "Ingolf" 1908, p. 47.
— — — V. Grønland, 1887, p. 33.

(St. 371) 66° 44′ N, 56° 16′ W, ca. 150 fm. 20—5—1909. 1 spec. (72 mm.)
(St. 100) 66° 44′ N, 56° 08′ W, ca. 175 fm. 5—7—1908. 1 spec. (73 mm.)

The great depths have some interest, as H. J. Hansen (Ingolf, p. 48) writes: "It was taken at all depths from ca. 5 fm. to 118 fm., but a single occurrence at 200 fm. must . . . be considered as less certain".

8. **Sabinea hystrix** A. Milne-Edwards.

Paracrangon hystrix A. Milne.Edwards, Ann. Sc. Nat., ser. 6, Zool., vol. 11, 1881, p. 6.
**Sabinea princeps* S. J. Smith, Bull. Mus. Comp. Zool., vol. 10, 1882, p. 38, Pl. 8, fig. 1.
— *hystrix*, H. J. Hansen, "Ingolf", 1908, p. 51.

(St. 337) 64° 05′ N, 55° 20′ W, 1100 m. 8—5—1909. 1 spec. (110 mm.)

9. **Nectocrangon lar** Owen.

Crangon lar Owen. Zool. of Capt. Beechey's Voyage, 1839, p. 38, Pl. 28, fig. 1.
**Argis* — Kröyer, Naturh. Tidsskrift, vol. 4, 1842. p. 255, Pl. 5, fig. 45—62.
Nectocrangon lar = *N. dentata* M. Rathbun, Harriman Alaska-Exp., 1904, p. 137 (with figs.) (teste H. J. Hansen, Ingolf).

Nectocrangon lar H. J. Hansen, "Ingolf", 1908, p. 49.
— — — V. Grönland, 1887, p. 37.

(St. 183) 69° 19′ N, 52° 56′ W. 78 fm., 10—8—1908, 1 spec.
(St. 179) 69° 29′ N, 55° 26′ W, 116 fm., 8—8—1908, 1 spec.

10. **Spirontocaris spinus** Sow.

Cancer spinus Sowerby, Brit. Miscellany, 1806, p. 47, Pl. 23.
**Hippolyte Sowerbei* Kröyer, Danske Vid. Selsk. math.-naturvid. Afh., vol. 9, 1842, p. 298, Pl. 2, fig. 45—54.
— *spinus* Hoek, Niederl. Arch f. Zool., Supplbd. I, Crust., 1882, p. 15, Pl. 1, fig. 4—7.
* — — Birula, Ann. Mus. Zool. Acad. Imp. St. Pétersbourg, vol. 1, 1899, p. 30, fig. 1.
Spirontocaris spinus H. J. Hansen, "Ingolf", 1908, p. 58.
— — Kemp, Decap. Ireland, 1908 (1910), p. 103, Pl. 14, fig. 1.
Hippolyte — H. J. Hansen, V. Grønland, 1887, p. 41.

(St. 371) 66° 44′ N, 56° 16′ W, ca. 150 fm. 20—5—1909. 1 spec.

11. **Spirontocaris Gaimardii** H. Milne-Edwards.

Hippolyte Gaimardii H. Milne-Edwards, Hist. Nat. Crust., vol. 2, 1837, p. 378.
* — — + *H. gibba* Kröyer, Kgl. Danske Vid. Selsk. math.-naturv.-Afh., vol. 9, 1842, p. 282, 288, Pl. 1, fig. 21-30. Pl. 2, fig. 31—37.
Eualus obses J. Thallwitz, Decapoden-Studien 1891, p. 23.
Hippolyte Gaimardii Appellöf, Decap. Crust., Meeresfauna v. Bergen, Heft 2—3, 1906, p. 122, Pl. 2, fig. 4.
Spirontocaris — H. J. Hansen, "Ingolf" 1908, p. 56.
Hippolyte — — V. Grönland, 1886, p. 39.

(St. 183) 69° 19′ N, 52° 56′ W, 78 fm. 10—8—1908, 7 spec.
(St. 179) 69° 29′ N, 55° 26′ W, 116 fm. 8—8—1908, 6 spec.

The largest specimen, from St. 179, is 93 mm. long. On one spec. the rostrum is bent upwards about as in *Pandalus propinquus*. All the specimens have a large curved process on the third abdominal segment, except the smallest specimen (44 mm.), which has but an inconsiderable tooth.

12. **Spirontocaris macilenta** Kr.

Hippolyte macilenta Kröyer. Naturh. Tidsskrift vol. 3, 1841, p 574.
* — — — Kgl. Danske Vid. Selsk. math.-naturvid. Afd., vol. 9, 1542, p. 305, Pl. 2, fig. 55—56.

Hippolyte macilenta S. J. Smith, Transact. Conn. Acad. vol. 5, 1879, p. 71.
Spirontocaris — H. J. Hansen, "Ingolf" 1908, p. 60.
Hippolyte — — V. Grønland, p. 43.

(St. 100) 66° 44′ N, 56° 08′ W, ca. 175 fm. 5—7—1908. 1 spec.
(St. 183) 69° 19′ N, 52° 56′ W, 75 fm. 10—8—1908. 7 spec.
(St. 179) 69° 29′ N, 55° 26′ N, 116 fm. 8—8—1908. 5 spec.

The species seems to be very rare at W. Greenland (H. J. Hansen l. c.). 3 of the spec. from St. 179 are infested with *Phryxus abdominalis*, and on one spec. from St. 100 *Bopyroides hippolytes* was found; till now the species was not known as a host for any of these Bopyridæ.

13. **Spirontocaris turgida** Kr.

Hippolyte turgida + *H. Phippsii* Kröyer, Naturh. Tidsskrift vol. 3, 1841, p. 575.
* — — — — Kgl. Danske Vid. Selsk. math.-naturvid. Afh., vol. 9, 1842. p. 308, 314, Pl. 2, fig. 57—58, Pl. 3, fig. 59—68.
— *Phippsii* S. J. Smith, Transact. Conn. Acad., vol. 5, 1879, p. 73.
Spirontocaris turgida H. J. Hansen, "Ingolf" 1908, p. 61.
Hippolyte Phippsii — V. Grønland 1887, p. 43.

(St. 165) 62° 58′ N, 50° 52′ W, ca. 25 fm. 21—6—1909. 3 spec.

On one spec. the Bopyrid *Phryxus abdominalis* was found.

14. **Spirontocaris polaris** Sab.

Alpheus polaris Sabine, Suppl. to the App. of Capt. Parry's Voyage, 1824, p. 238, Pl. 2, fig. 5—8.
**Hippolyte polaris* — *H. borealis* Kröyer, Kgl. Danske Vid. Selsk. math.-naturvid. Afh., vol. 9, 1842. p. 324, 330, Pl. 3, fig. 74—81, Pl. 4, fig. 82.
— — S. J. Smith, Transact. Conn. Acad. vol. 5, 1879, p. 80.
— *Amazo* Pfeffer, Jahrb. wiss. Anst. Hamburg, vol. 3, 1866, p. 36, fig. 6.
Spirontocaris polaris H. J. Hansen, "Ingolf" 1908, p. 63.
Hippolyte — — V. Grønland, 1887, p. 45.

(St. 465) 62° 58′ N, 52° 52′ W, ca. 25 fm. 21—6—1909. ca. 60 spec.
(St. 419) 65° 09′ N, 53° 33′ W, 29 fm. 6—6—1909. 1 spec.
(St. 371) 66° 44′ N, 56° 16′ W, ca. 150 fm. 20—5—1909. 1 spec.

One of the specimens from St. 465 is infested with *Bopyroides hippolytes*.

15. **Pandalus borealis** Kr.

Pandalus borealis Kröyer, Naturh. Tidsskrift vol. 2, 1838, p. 254.
— — — Ibid., Ny Række, vol. 1, 1845, p. 461.
— — — in Gaimard, Voyage en Scand., 1846 (1849?), Crust, Pl. 6, fig. 2.
* — — G. O. Sars, Report on Norw. Fish- and Marine-Invest. vol. 1, 1900, No. 3, p. 31, Pl 9—10.
— — H. J. Hansen, "Ingolf" 1908, p. 70.
— — — V. Grønland, 1887, p. 49.

The Channel outside Nanortalik (ca. 60° N), 6—9—1909. 5 spec., from stomachs of Gadus ogak.
(St. 341) 64° 34′ N, 53° 20′ W, 200 m. wire, 9—5—1909. 9 spec
(St. 183) 69° 19′ N, 52° 56′ W, 78 fm. 10—8—1908. 2 spec.

The specimens from St. 341 have very large eyes.

This shrimp was otherwise taken very often, sometimes in great numbers, as e. g. W. of "Store Hellefiske" bank, where in a depth of 175 fms. many liters were taken in one haul with otter-trawl; the largest specimens measured 15.5 cm. in length (30 cm. with the antennæ).

16. **Pandalus propinquus** G. O. Sars.

Pandalus propinquus G. O. Sars, Forh. Vid. Selsk. Christiania 1869 (1870), p. 148.
— — S. J. Smith, Rep. U. S. Comm. Fish and Fisheries 1885 (1886) Pl. 13, fig. 1.
* — — Calman, Ann. Mag. Nat. Hist. ser. 7, vol. 3, 1899, p. 32, Pl. 1—4, fig. 2.
— — H. J. Hansen, "Ingolf" 1908, p. 72.
— — Kemp, Decap. Natant, Ireland. 1908 (1910), p. 89, Pl. 11, fig. 1—4.

(St. 429) 63° 54′ N, 58° 15′ W, 988—1400 m. trawl. 8—6—1909. 1 spec.

17. **Acanthephyra purpurea** A. Milne-Edwards.

Acanthephyra purpurea A. Milne-Edwards, Comp. Rend. Ac. Sc. Paris, vol. 93, 1881, p. 933.
**Miersia Agassizii* S. J. Smith, Bull. Mus. Comp. Zool. vol. 10, 1882, p. 67, Pl. 11, fig. 5—7, Pl. 12, fig. 1—4.
**Acanthephyra purpurea* Kemp, Fisheries, Ireland, Sci. Invest. 1905 part 1 (1906), p. 4—16, Pl. 1, Pl. 2, fig. 1—3 (ubi Litt. et Syn.).
— — H. J. Hansen, "Ingolf" 1908. p. 75.

Acanthephyra purpurea Kemp, Decap. Natant. Ireland, 1908 (1910) part 1, p. 56.

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909. 15 spec.
(St. 333) 68° 18′ N, 54° 55′ W, 1530 m. wire, 7—5—1909. 12 spec.
(St. 338) 64° 01′ N, 55° 30′ W, 1185 m. wire, 8—5—1908. 11 spec.
(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire, 8—5—1909, 10 spec.

H. J. Hansen (l. c.) mentions the species from 6 stations, but he has only 1 spec. from each stat. Kemp (1908, l. c.) mentions the species from 32 stations (6 of which are from the Danish investigations steamer "Thor"), but he has, as Hansen, from most of the stations only 1 specimen; the largest number from a single stat. is five, and that is but a single occurrence.

One of the specimens from St. 322 is infested with *Holophryxus Acanthephyræ* K. St. (fam. Dajidæ) (No. 84).

18. **Pasiphae tarda** Kr.

Pasiphae tarda Kröyer, Naturh. Tidsskrift. ser. 2, vol. 1, 1844—45, p. 453.
— — — in Gaimard, Voyage en Scandinavie, 1846 (1849) Crust., Pl. 6, fig. 1.
Pasiphae norregica M. Sars, Bidrag til Kundskaben om Kristianiafjordens Fauna. Nyt Magasin f. Naturvid, vol. 15. 1868, p. 282, Pl. 4, Pl. 5, fig. 81, fig. 87—90.
— *tarda* G. O. Sars, Oversigt af Norges Crust., Vid. Selsk. Forhandl., Kristiania, 1882. No. 18, p. 48.
— — H. J. Hansen, "Ingolf" 1908, p. 78.
— — — V. Grønland, 1887, p. 51.
— — Wollebæk, Decap. Crust. 1—2. Bergens Musæums Aarbog 1908, No. 12, p. 72. Pl. 13.
— — K. Stephensen. Revideret Fortegn. over Danmarks marine Arter af Decap., Vid. Meddel. Naturh. Foren. København 1909 (1910) p. 289.
* — — Kemp, Decap. Natant. Ireland 1908 (1910) p. 39—42, Pl. 4. fig. 8—11.
— *princeps* S. J. Smith, Rep. Decap. Crust. "Albatross" East coast U. S., Rep. U. S. Fish Commission 1882 (1884) p. 381. Pl. 5. fig. 2.
— — S. J. Smith, Report on the Decap. Crust. "Albatros" Eastcoast U. S., Rep. U. S. Fish Commission 1885 (1887), p. 609, 612, 613, 617. 619, 682.
— — Kemp, Decap. Natant. Ireland, 1908 (1910) p. 42—47, Pl. 4, fig. 1—7.

(St. 15) 58° 08′ N, 39° 24′ W. 500 m. wire, 26—5—1908. 2 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m., 1300 m. wire, 23—6—1908. 1 spec.
(St. 429) 63° 54′ N, 53° 15′ W, 988—1400 m. 8—6—1909. 1 spec.
(St. 407—08) 64° 14′ N, 55° 55′ W, 839 m. clay. 2—6—1909. 1 spec.

Kemp (l. c. 1908 (1910) p. 42—43) has given a synopsis of the characteristics of *P. tarda* Krøyer and *P. princeps* S. J. Smith. Krøyer has published his description in Danish, and it seems that owing to this foreigners have not been able to read his description; otherwise Smith would probably not have founded *P. princeps* as a new species. In order to show the great agreement in the descriptions of Krøyer and Smith, I have made the following synopsis of the most important characters.

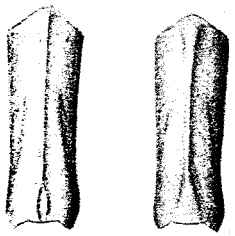
P. tarda Krøyer. (Naturhist. Tidsskrift, ser. 2, vol. 1, 1844—45, p. 453 seq.)	*P. princeps* S. J. Smith. (Report U. S. Fish Commission for 1882 (1884), p. 381 seq.)
1. "The carapace, which is about 1/3 of total length or half as long as the pleon including telson, is very much compressed". (From Krøyer's fig. in Gaimard: Voyage en Scandinavie, the carapace is seen to be 39 mm., abdomen excluding telson 59 mm.).	1. The pleon exclusive of the telson is about one half longer than the carapace". (Carapace 75 mm., pleon excluding the telson 112 mm.).
2. "On the dorsum of the carapace is seen a sharp, but smooth carina, which goes about to the hinder edge of the carapace, terminating anteriorly in a little, mucronate and very much compressed rostrum, that .... projects a little the anterior edge of the carapace".	2. "The dorsum of the carapax is rounded except for about a third of the length anteriorly, where it rises into a carina terminating in a short, mucronate and obliquely upturned rostrum overhanging, but projecting scarcely as far forwards as the front itself, which is prominent though rounded in outline as seen from above".

3. "The antennal scale is large ...., lengthened ovate (more than 3 times as long as the breadth), apically rounded, without spines[1])" (the length is (in the fig. in Gaimard: Voyage) 17 mm., the breadth 4 mm.).	3. Antennal scale is .... scarcely a third as broad as long, and the outer edge arcuate and terminating in an acutely triangular lamellar tooth" (scale: length 29 mm.) breadth 8.8 mm.).
4. "The abdomen is provided along the whole middle line of the dorsum with a very conspicuous carina."	4. "The second, third, fourth and fifth somites are dorsally carinate, the fourth and fifth most conspicuously. The sixth somite is .... compressed, but scarcely carinated dorsally".
5. (Telson) "The tip is strongly cut into a sharp angle".	5. (Telson) "The tip (is) divided by a narrow sinus".
6. (Second pair of pereiopods). "The second joint has on the lower edge towards the end 3 spines" (about the third joint Krøyer says nothing).	6. "The second pair (of pereiopods) are armed with a few small spines along the lower edge of the propodus, and the lower distal angle of the carpus is produced into a sharp spine, but are otherwise nearly like the first pair ... (smooth, naked and unarmed").

[1]) About this G. O. Sars writes (Christiania Vid. Selsk. Forh. 1882, No. 18, Oversigt af Norges Crustaceer, p. 48) (in translation from Norwegian): "I have had opportunity myself to examine the type-specimen of Krøyer in the Copenhagen-Museum and have convinced myself that the spine in the antennal plate originally has been present, but has accidentally been broken in the present specimen". — At the present moment (1912) we have in the Zoological Museum in København (Copenhagen) only the mentioned specimen from the time of Krøyer, provided with the following note (in the hand writing of J. C. Schiødte), "*Pasiphae tarda* Kr. Sydl. Grønland: Jørgensen Kr." Unquestionably it is this specimen, about which Krøyer writes (l. c., 1844—45: the foot-note p. 455) "in one of the specimens the carina anteriorly had an incision, that made, so to speak, two humps: but this seems to be caused by an accidental damage".

As it may be seen the agreement is very close. The differences are not greater, than that they may be ascribed to individual variations (we must remember, that Krøyer had but two specimens, Smith even but one specimen).

The Zoological Museum in Copenhagen has a very large material, towards 1000 specimens of *P. tarda* Kr., of which the greater part has been captured in the Skagerak. To convince myself, that there were no specimens of *P. princeps* Smith in the material, that hitherto (by H. J. Hansen in "Ingolf" 1908 and by myself in "Vid. Meddel. Naturh. Foren." Kbhvn. 1909) has been determined as *P. tarda* Kr., I have examined each of the specimens, but the result has been quite different from what might be expected, as will be seen from the following.



P. t. *P. p.*

Fig. 1. Dorsal view of the 6th abdominal segment of *Pasiphae tarda* and *Pasiphae princeps.*

Kemp is right, that a great part of the specimens may be referred to one of the two principal forms; but as my investigations have shown, they are combined with numerous intermediate links.

Rostrum varies so much, that it can not be used as a distinguishing character. The best characters are, according to my investigations, the sixth abdominal segment, the antennal plate and the spines of the basis of the second pereiopod; but these spines are not to be found in specimens smaller than 25—40 mm., and even in larger specimens their number is varying. G. O. Sars says (l. c. 1882, p. 48) "the number of spines in the two first pairs of pereiopods is a characteristic too inconstant to be considered as a real specific characteristic". Nevertheless we may in most cases use the characteristic of Kemp (l. c. 1908 (1910) p. 42—43) to separate the two "species" (specimens more than 30—40 mm. long).

Besides I have found a characteristic, that I have not seen

described anywhere in the literature, viz. the carina in the sixth abdominal segment. This carina goes in the specimens, that from the antennal plate and the second pereiopod are to be ascribed to *P. tarda*, just to the hind edge of the segment (fig. 1), but is in the hinder part divided into two almost parallel carines; in *P. princeps* the hinder part of the segment is simply compressed without any carina (fig. 1).

That the proportion in the length of antennal plate, carapace and abdomen cannot be used, appears from the following measurements; the specimens are determined from the shape of antennal plate, carapace and sixth abdominal segment) (the measurement are in mm.)

P. tarda

Locality	Total length	Antennal plate	Carapace	Abdomen excl. telson
Skagerak	83	12	25	46
—	70	10	21	40
—	79	12	24	44
—	68	9.5	20	30
—	101	14	33	65
62° 49′ N, 18° 46′ W.	73	11	23	42

P. princeps.

Locality	Total length	Antennal plate	Carapace	Abdomen excl. telson
S. Greenland (Krøyer's type—specimen of *P. tarda*!)	108	imperfect	38	58
67° 19′ N, 15° 52′ W.	60	10	19	33
65° 28′ N, 27° 29′ W.	90	13	25	48

Even the form of the antennal plate may cause some difficulty. Thus I have seen one, otherwise somewhat typical *P. tarda* from the Skagerak, whose right antennal plate is as in *P. princeps*, whilst the left has the same form as in *P. tarda* (Kemp l. c., 1908 (1910), pl. 4, fig. 9); but from the measurements (antennal plate 10,5, carapace 23, abdomen excl. telson 38) it might be determined as *P. princeps*.

Of *P. norvegica* M. Sars, that in all essentials is like Kemp's description of *P. tarda*, G. O. Sars writes: (l. c. 1882, p. 49) "there is no doubt that the species *P. norvegica* described by my father... is identic with the species of Krøyer". That upon the whole the single specimens determined by Krøyer as *P. tarda* suit the description of *P. princeps*, is evident from the agreement of the descriptions of Krøyer and Smith, and as the two "species" are combined with intermediate links, we must unquestionably obliterate *P. princeps* Smith as species and take the name but as syn. of *P. tarda* Krøyer.

19. **Parapasiphae sulcatifrons** S. J. Smidt.

Parapasiphae sulcatifrons S. J. Smith, Rep. Comm. Fish and Fishery for 1882, (1884) p. 384 Pl. 5, fig. 4, Pl. 6, fig. 1—7
— — H. J. Hansen, "Ingolf" 1908, p. 79.
* — — Kemp, 1908 (1910), p. 47, Pl. 5.

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m., wire, 3—5—1909. 2 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1905. 5 spec.
(St. 338) 64° 01′ N, 55° 30 W, 1185 m., 1400—1500 m. wire, 8—5—1909. 5 spec.
(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire, 8—5—1909. 6 spec.
(St. 348) 64° 35′ N, 56° 18′ W, 900 m. wire, 11—5—1909. 4 spec.

New to W. Greenland. The largest specimen is from St. 333 and is 71 mm. long.

20. **Gennadas elegans** S. J. Smith.

Amalopenæus elegans S. J. Smith, Bull. Mus. Comp. Zool. vol. 10, 1882, No. 1, p. 87, Pl. 14, fig. 8—14, Pl. 15, fig. 1—15.
**Gennadas* — Bouvier, Rés. Comp. Sc., Monaco, fasc. 33, (Pénéides), 1908, p. 25 (distrib.), p. 28 (key to the species of the genus) p. 35 (Syn. and litt.).
— — Bouvier, Bull. Mus. Océan. Monaco, No. 80, 1906.
Amalopenæus — Calman, Ann. Mag. Nat. Hist. ser. 7, vol. 11, 1903, p. 416.
Gennadas — H. J. Hansen, "Ingolf" 1908, p. 81.
**Amalopenæus* — Kemp, 1908 (1910), p. 14, Pl. 1.
— — H. J. Hansen, V. Grønland 1887, p. 52.

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 7 spec.
(St. 434) 62° 58′ N, 54° 15′ W, 1660 m., 1500—1200 m. wire, 9—6—1909, 7 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1909, 15 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m., 1000 m. wire, 23—6—1908, 1 spec.
(St. 338) 64° 01′ N, 55° 30′ W, 1185 m., 1400—1500 m. wire, 8—5—1909, 13 spec.
(St. 336) 64° 06′ N. 55° 18′ W, 1200 m. wire, 8—5—1909, ca. 25 spec.
(St. 408) 64° 14′ N. 55° 55′ W, 889 m. (trawl), 2—6—1909, 1 spec.
(St. 348) 64° 35′ N, 56° 18′ W, 900 m. wire, 11—5—1909, 6 spec.

It is very interesting, that the "Tjalfe" has taken so many specimens at each station; in "Ingolf" H. J. Hansen mentions but one specimen from each station; only at 2 stations were taken 2 specimens. The material from the "Tjalfe" thus fully confirms, what Bouvier says (Bull. Inst. Océanogr., Monaco, No. 97, 1907, p. 47—46): "le Gennadas élégans est l'espèce la plus commune du genre: il fut considéré comme une espèce rarissime aussi longtemps qu'on se borna aux pêches sur le fond; mais, depuis l'emploi du filet vertical, surtout de celui a grande ouverture, il apparâit très commun et doit être considéré comme un des éléments les plus caractéristiques de la faune bathypélagique dans nos régions. En Méditerranée, près des îles Baléares, et au centre de l'Atlantique, dans les régions des Sargasses, certains coups de filet nous donnèrent jusqu'à trente spécimens de ce joli Pénéide. Au-dessus de 1000 mètres, on ne rencontre guère que les larves de l'espèce; au dessous apparaissent les adultes qui, d'ailleurs, ne semblent jamais se tenir sur le fond".

21. **Sergestes arcticus** Kr.

Sergestes arcticus Krøyer, Kgl. Danske Vid. Selsk. Skrifter, 5. Række, naturvid.-math. Afd., vol. 4, 1859, p. 240, Pl. 3, fig. 7, Pl. 5, fig. 16.
— — H. J. Hansen, "Ingolf" 1908, p. 82 (ubi litt. et syn.).
* — — Wasserloos, Zur Kenntnis d. Metamorphose von Serg. arct., Zool. Anzeiger, vol. 33, 1908, p. 327, with figs.
* Kemp, 1908 (1910), p. 30, Pl. 3, fig. 13—19.
— — H. J. Hansen, V. Grønland 1887, p. 52.

1. the stage *Sergestes Rinkii.*

(St. 1 a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, many spec. (1 cm.³)
(St. 1 b) — — surface — — (3 cm.³)

2. adults.

(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, 15 spec.
(St. 1 a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, 1 spec.
(St. 321) 60° 07′ N, 48° 26′ W, 600 m. wire, 3—5—1909, 10 spec.
(St. 322) — — 2000 m. wire, — 4 spec.
(St. 434) 62° 53′ N, 54° 15′ W, 1660 m., 1500—1200 m. wire, 9—6—1909, 1 spec.
(St. 30 a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, 15 spec.
(St. 30 b) — — 70 m. wire, — 2 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1909, 1 spec.
(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire, 8—5—1909, 1 spec.
(St. 346) 64° 22′ N, 56° 00′ W, 800—400 wire, 10—5—1909, 1 spec.

The material states, that the species lives at W. Greenland; hitherto its occurrence there was doubtful (Kröyer).

The specimen from st. 346 in infested with *Holophryxus Richardi* Koehler (fam. Dajidæ) (No. 83).

Euphausiacea.

22. **Thysanopoda acutifrons** Holt & Tatt.

Thysanopoda pectinata H. J. Hansen, Bull. Mus. Océanogr., Monaco No. 30, 1905, p. 16, fig. 12.
— *acutifrons* Holt & Tattersall, Rep. Sea and Inland Fisheries, Ireland, 1902—03 (1905), pt. 2, app. No. IV, p. 102, 134.
— — H. J. Hansen, Bull. Mus. Océanogr. Monaco, No. 42, 1905, p. 22.
* — — Holt & Tattersal, Fisheries, Ireland, Sc. Invest., 1904, pt. 5 (1906), p. 8, Pl. 1.
— — H. J. Hansen, "Ingolf" 1908, p. 84.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 6, fig. 4—5.
? — *microphthalma* Ortmann, Plankton-Exp., vol. 2, G. b. 1893, p. 9.
non — *pectinata* Ortmann, ibid., p. 10.

(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, ca. 40 spec.
(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, ca. 30 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m., 1000 m. wire, 23—6—1908, 1 spec.

New to W. Greenland.

23. **Meganyctiphanes norvegica** M. Sars.

Thysanopoda norvegica M. Sars, Forh. Skand. Naturforskermøde 1856 (1857), p. 169.
Nyctiphanes — G. O. Sars, Forh. Vid. Selsk. Christiania 1883, p. 24.
**Meganyctiphanes norvegica* Holt & Tattersall, Rep. Sea and Inland Fisheries, Ireland, 1902—03, pt. 2, No. IV, (1905), p. 105, 135, Pl. 16.
— — H. J. Hansen, "Ingolf" 1908, p. 85.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 8, fig. 8—9.
Nyctiphanes — Zimmer, Fauna arctica, vol. 3, 1904, p. 419.

(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, ca. 35 spec.
(St. 9) 58° 33′ N, 35° 55′ W, 600 m. wire, 17—5—1908, ca. 15 spec.
(St. 3) 58° 39′ N, 30° 50′ W, surface, 14—5—1908, 3 spec.
(St. 303) 59° 28′ N, 33° 05′ W, surface, 26—4—1909, 1 spec.
(St. 1 a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, 2 spec.
(St. 321) 60° 07′ N, 48° 26′ W, 600 m. wire, 3—5—1909, 10 spec.
(St. 322) — — 2000 m. wire, — 7 spec.
(St. 302) 60° 10′ N, 28° 13′ W, surface, 25—4—1909, ca. 20 spec.

24. **Thysanoessa inermis** Kr.

= **Rhoda inermis** Kr. + **Thysanoessa neglecta** Kr.

(See H. J. Hansen, The genera and species of the order Euphausiacea, with account of remarkable variation. Bull. Inst. Océanogr., Monaco, No. 210, 1911, p. 8—13, 38).

A. Forma Rhoda inermis.

Thysanopoda inermis Kröyer in Gaimard, Voyage en Scand., Crust. 1846 (1849?), Pl. 7, fig. 2.
**Euphausia* — G. O. Sars, Forh. Vid. Selsk. Christiania 1882, No. 18, p. 9, 51, Pl. 1, fig. 15.
Boreophausia — G. O. Sars, Norske Nordhavs-Exp., Crust., 1886, p. 13.
Rhoda — Stebbing, Ann. Mag. Nat. Hist., ser. 7, vol. 5, 1900, p. 10.
— — Zimmer, Fauna arctica, vol. 3, 1904, p. 420.
— — H. J. Hansen, "Ingolf" 1908, p. 86.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 11, fig. 11—12.
Boreophausia — H. J. Hansen, V. Grönland 1887, p. 53.

(St. 423) 65° 03′ N, 54° 16′ W, 120, 100 and 80 m. wire, 7—6—1909, 1 spec.

B. Forma Thysanoessa neglecta Kr.

Thysanopoda neglecta Krøyer, in Gaimard: Voyage en Scand., Crust., 1846 (1849?) Pl. 7, fig. 3.
**Thysanoessa borealis* G. O. Sars, Forh. Vid. Selsk., Christiania 1882, No. 18, p. 9, 52 Pl. 1, fig. 16—18.
— *neglecta* Zimmer, Fauna arctica, vol. 3, 1904, p. 423.
— — H. J. Hansen, "Ingolf" 1908, p. 89.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 19, fig. 28—29.
— — H. J. Hansen, V. Grønland 1887, p. 54.

(St. 9) 58° 33′ N, 35° 55′ W, 600 m. wire, 17—5—1908, 1 spec.

25. **Thysanoessa longicaudata** Kr.

Thysanopoda longicaudata Krøyer, in Gaimard: Voyage en Scandinavie, Crust., 1846 (1849?), Pl. 8, fig. 1.
**Thysanoessa tenera* G. O. Sars, Forh. Vid. Selsk. Christiania 1882, No. 18, p. 9, 53, Pl. 1, fig. 19—20.
— *longicaudata* Zimmer, Fauna arctica, vol. 3, 1904, p. 424.
* — — Holt & Tattersall, Rep. Sea and Inland Fisheries, Ireland, 1902—03 (1905), pt. 2, App. No. 2, p. 107, 138, Pl. 15.
— — H. J. Hansen, "Ingolf" 1908, p. 88.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 20, fig. 30—31.
— — H. J. Hansen, V. Grønland 1887, p. 54.

(St. 11) 57° 41′ N, 35° 28′ W, surface, 20—5—1908, 2 spec.
(St. 281) 57° 51′ N, 43° 57′ W. 500 m. wire, 29—9—1908, 15 spec.
(St. 285) 57° 51′ N, 43° 48′ W, 1000 m. wire, 29—9—1908, 15 spec.
(St. 286) 57° 59′ N, 41° 21′ W, 80—200 m. wire, 30—9—1908, ca. 35 spec.
(St. 23) 58° 01′ N, 51° 36′ W, surface, 1—6—1908, 3 spec.
(St. 13) 58° 08′ N, 39° 10′ W. 40 m. wire, 26—5—1908, many spec. (ca. 30 cm.³).
(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, many spec. (ca. 150 cm.³).
(St. 278) 58° 16′ N, 47° 12′ W, 200—80 m. wire, 28—9—1908, 20 spec.
(St. 308) 58° 20′ N, 41° 12′ W, 1000 m. wire, 28—4—1909, 20 spec.
(St. 5) 58° 23′ N, 34° 41′ W, surface, 16—5—1908, 2 spec.
(St. 6) 58° 24′ N, 34° 53′ W, surface, 16—5—1908, 10 spec.
(St. 292) 58° 24′ N, 30° 35′ W, 500 m. wire, 3—10—1908, many spec. (ca. 4 cm.³).
(St. 7) 58° 33′ N, 35° 49′ W, 150 m. wire, 17—5—1908, ca. 100 cm.³
(St. 9) 58° 33′ N, 35° 55′ W, 600 m. wire, 17—5—1908, ca. 100 cm.³
(St. 313) 58° 38′ N, 46° 13′ W, surface, 29—4—1909, ca. 35 spec.

(St. 2) 58° 40′ N, 30° 40′ W, surface, 14—5—1908, ca. 35 spec.
(St. 19a) 58° 41 N, 49° 44′ W, 100 m. wire, 31—5—1908, 15 spec.
(St. 19b) — — 200 m. wire, — 15 spec.
(St. 316) 58° 59′ N, 50° 28′ W, 500 m. wire, 1—5—1909, 35 spec.
(St. 276) 59° 18′ N, 51° 00′ W, 80 m. wire, 27—9—1908, 15 spec.
(St. 1 a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, many sp. (30 cm.³).
(St. 1 b) — — surface, — many sp. (5 cm.³).
(St. 298) 59° 41′ N, 25° 02′ W, 500 m. wire, 6—10—1908, 1 spec.
(St. 321) 60° 07′ N, 48° 26′ W, 600 m. wire, 3—5—1909, many sp. (50 cm.³).
(St. 322) — — 2000 m. wire, — many sp. (15 cm.³).
(St. 326) 62° 05′ N, 53° 41′ W, 100 m. wire, 6—5—1909, many sp. (15 cm.³).
(St. 270) 62° 21′ N, 51° 31′ W, 84 fath., 80 m. wire, 24—9—1908, 10 spec.
(St. 329) 62° 36′ N, 54° 12′ W, pelagic townet, 6—5—1909, 3 spec.
(St. 330) — — surface, 6—5—1909, many spec. (30 cm.³).
(St. 30 a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, many sp. (10 cm.³).
(St. 30 b) — — 70 m. wire, — many sp. (100 cm.³).
(St. 433) 63° 05′ N, 54° 21′ W, 80—120 m. wire, 9—6—1909, 20 spec.
(St. 31 a & c) 63° 11′ N, 56° 23′ W, pelagic townet, 7—6—1908, 40 spec.
(St. 33 b) 63° 25′ N, 54° 34′ W, 200 m. wire, 8—6—1908, many (3 cm.³).
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m. 1000 wire, 23—6—1908, 3 spec.
(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m.. 1200 m. wire, 8—5—1909, 1 spec.
(St. 405) 64° 25′ N, 56° 12′ W, 100 m. wire, 2—6—1909, many (3 cm.³).
(St. 42) 65° 03′ N, 54° 16′ W, 80, 100, 120 m. wire, 7—6—1909, many (4 cm.³).
(St. 196 d) 68° 40′ N, 53° 12′ W, 350 m. wire, 17—8—1908 many spec. (4 cm.³).

26. **Rhoda Raschii** M. Sars.

Thysanopoda Raschii M. Sars, Forh. Vid. Selsk. Christiania, 1863, p. 83.
**Euphausia* — G. O. Sars, ibid. 1882, No. 18, p. 9, 51.
Boreophausia — Norman, Rep. Fish. Board Scotl., vol. 4, 1886, p. 156.
Rhoda — Zimmer, Fauna arctica vol. 3, 1904, p. 421.
— — H. J. Hansen, "Ingolf" 1908, p. 87.
**Boreophausia* — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 11 (fig.).
Thysanopoda — Vanhöffen, 1897, vol. 2, Pl. 1, fig. 1, p. 381 (nomen nudum) (coloured fig.)
Boreophausia — H. J. Hansen, V. Grønland 1887, p. 53.

(St. 11) 57° 41′ N, 35° 28′ W, surface 20—5—1908, 1 spec.
(St. 297) 59° 10′ N, 27° 44′ W, pelagic townet, 4—10—1908, 3 spec.
(St. 329) 62° 36′ N, 54° 12′ W, pelagic townet, 6— —1909, 1 spec.
(St. 30 a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, 1 spec.
(St. 341) 64° 34′ N, 53° 20′ W, 200 m. wire, 9—5—1909, 0a. 50 spec.
(St. 196 d) 68° 40′ N, 53° 12′ W, 350 m. wire, 17—8—1908, 4 spec.
Tassiusak at Egedesminde, from the stomach of Gadus ogac, 12—8—1908, many spec. (40 ccm.)
(St. 171) 70° 41′ N, 52° 07′ W, 386 fath., 800 m. wire, 6—8—1908, 1 spec.
(St. 172) 70° 42′ N, 52° 14′ W, 450 m. wire, 6—8—1908, 8 spec.

27. **Nematoscelis megalops** G. O. Sars.

Nematoscelis megalops G. O. Sars, Forh. Vid. Selsk. Christiania for 1888, No. 7, p. 27.
* — — — Challenger Report, vol. 13, pt. 37, p. 127, Pl. 23, fig. 5—10, Pl. 24.
— — H. J. Hansen, Bull. Mus. Océanogr., Monaco, No. 30, 1905, p. 27.
— — Zimmer, Fauna arctica, vol. 3, 1904, p. 425.
— — H. J. Hansen, "Ingolf" 1908, p. 90.
— — — Siboga-Schizop., 1910, p 106.

(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, 3 spec.
(St. 9) 58° 33′ N, 35° 55′ W, 600 m. wire, 17—5—1908, 1 spec.
(St. 1a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, 9 spec. (2 ♀♀ with ova).

As recorded above 2 of the specimens from St. 1 a carry their ova. In "On propagation and early development of Euphausiidæ" in "Archiv for Mathematik og Naturvidenskab", vol. 20, 1898, No. 11, p. 9, G. O. Sars mentions but 4 species carrying their ovisacs, viz. *Nyctiphanes Couchii* (see also Holt & Tattersall, Schizop. from the N. E. Atlantic Slope, Ann. Rep. Fish. Ireland, 1902—03, No. 4 (1905) p. 104, Pl. 17, fig. 2), *N. australis*, *Nematoscelis microps* and *Stylecheiron carinatum*. Sars says "it is .... very probable, that these cases are quite exceptional, and that in the far greater number of Euphausiidæ the ova are at once ejected into the water". I have from the literature not been able to find later additions to Sars' list.

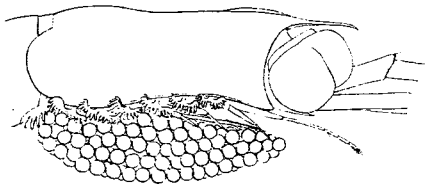


Fig. 2. *Nematoscelis megalops* with ovisac.

Nematoscelis megalops carries, as is shown by the figure (fig. 2), its ova in an ovisac pointed in front; seen from below it seems to be

composed of two parallel ovisacs and has about the same form as from the side, and it has about the same length as the carapace. The ova are (in alcohol) yellow, the diameter is 0,45 mm.

Mysidacea

28. **Gnathophausia zoea** Will.-Suhm.

Gnathophausia zoea Willemoes-Suhm, Nature, vol. 8, 1873, p. 401 fig. 1.
— — — Transact. Linn. Soc., ser. 2, vol. 1, 1875, p. 32, Pl. 9, fig. 2—15.
* — — G. O. Sars, Challenger Report, Zool., vol. 13, pt. 37, 1885, p. 44, Pl. 6, fig. 6—10.
* — *Willemoesii* G. O. Sars, ibid., p. 38, Pl. 5, fig. 1—6.
— *zoea* Zimmer, Nordisches Plankton, vol. 6, 1909, p. 34. (with figs).
— — H. J. Hansen., "Ingolf" 1908, p. 93.
— — — Siboga-Schizop., 1910, p. 17.

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 2 spec.
(St. 434) 62° 58′ N, 54° 15′ W, 1660 m., 1500—1200 m. wire, 9—6—1909, 12 spec.
(St. 32) 63° 16′ N, 55° 52′ W, surface, (at night) 8—6—1908, 1 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1530 m. wire, 7—5—1909, 5 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m. 1000 m. wire, 23—6—1908, 9 spec.
(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire, 8—5—1909, 7 spec.
(St. 344) 64° 22′ N, 55° 48′ W, 1040 m., 1200 m. wire, 10—5—1909, 4 spec.

The largest specimen is from St. 322 and is 70 mm. exclusive of the rostrum (which is broken). In "Ingolf" H. J. Hansen mentions the species from 9 localities; but he has from no station more than 1 specimen.

29. **Eucopia unguiculata** Will.-Suhm.

Charalaspis unguiculata Willemoes-Suhm. Transact. Linn. Soc., ser. 2, vol. 1. 1875, p. 37, Pl. 8.
(partim) *Eucopia australis* G. O. Sars. Challenger Report, Zool., vol. 13, pt. 37, 1885, p. 55, Pl. 9—10.
* — *unguiculata* H. J. Hansen, Bull. Mus. Monaco, No. 42, 1905, p. 3.
— — — "Ingolf" 1908, p. 95.
— — Zimmer. Nordisches Plankton, vol. 6, 1909, p. 37, fig. 59—60.
— — H. J. Hansen. Siboga-Schizop, 1910, p. 20.

non *Eucopia australis* Dana, U. S. Expl. Exp., Crust., vol. 1, 1852, p. 609, p. 40, fig. 10 (teste Zimmer, l. c.)

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 5 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1909, ca. 25 spec.
(St. 336) 64° 06″ N, 55° 18′ W, 1040—1000 m., 1200 m. wire, 8—5—1909, 6 spec.

In "Ingolf" H. J. Hansen mentions but a single specimen from the Davis-Straits (61° 50′ N, 56° 21′ W, 1435 fm.).

30. **Boreomysis tridens** G. O. Sars.

Boreomysis tridens G. O. Sars, Vid. Selsk. Forh., Christiania, 1869 (1870), p. 153.
* — — — Monografi Norges Mysider, III, 1879, p. 17, Pl. 14.
— — H. J. Hansen, "Ingolf" 1908, p. 100.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 59, fig. 91—94.

(St. 402) 64° 40′ N, 56° 37′ W, 720—775 m., trawl, 2—6—1909, 10 spec.

32. **Boreomysis nobilis** G. O. Sars.

Boreomysis nobilis G. O. Sars, Archiv f. Math. og Naturv., vol. 4, 1879, p. 428.
**Boreomysis nobilis* G. O. Sars, Norske Nordhavs-Exp., Crust., 1885, p. 54, Pl. 5, fig. 22-28.
— — Ohlin, 1901, p. 70, fig. 3.
— — Zimmer, Fauna arctica, vol. 9, 1904, p. 432.
— — H. J. Hansen, Ingolf 1908, p. 101.
— — Zimmer, Nordisches Plankton, vol. 6, 1909, p. 56, fig. 83—86.
— — H. J. Hansen, V. Grønland 1887, p. 214.

(St. 431) 63° 24′ N, 53° 10′ W, 892 m. trawl, 9—6—1909, 2 spec.
(St. 337) 64° 05′ N, 52° 20′ W, 1100 m., trawl, 8—5—1909, 1 spec.
(St. 407—08) 64° 14′ N, 55° 55′ W, 839 m, clay, trawl, 2—6—1909, 10 spec.
(St. 125) 69° 17′ N, 52° 14′ W, 550 m wire, 16—7—1908, many spec. (100 cm³).
(St. 171) 70° 41′ N, 52° 07′ W, 386 fath., 800 m wire, 6—8—1908, many spec. (100 cm³).

32. **Boreomysis microps** G. O. Sars.

Boreomysis microps G. O. Sars, Forh. Vid. Selsk. Christiania for 1883, No. 7, p. 35.

**Boreomysis nobilis* G. O. Sars, Challenger-Report. Zool., vol. 13, pt. 37, 1885, p. 185, Pl. 33, fig. 7—10.
— *subpellucida* H. J. Hansen, Bull. Mus. Océanogr., Monaco, No. 30, 1905, p. 8, fig. 5—8.
— *microps*, Zimmer, Fauna arctica, vol. 3, 1904, p. 431.
— — — Nordisches Plankton. vol. 6, 1909, p. 55, fig. 79—82.
— — H. J. Hansen, Ingolf 1908. p. 103.

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 7 spec.
(St. 434) 62° 53′ N, 54° 15′ W, 1660 m.. 1500—1200 m. wire, 9—6—1909, 10 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m.. 1530 m. wire, 7—5—1909, 20 spec.
(St. 338) 64° 01′ N, 55° 30′ W. 1185 m., 1400—1500 m. wire, 8—5—1909, 20 spec.
(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire. 8—5—1909. 25 spec.
(St. 346) 64° 22′ N, 56° 00′ W, 800—400 m. wire, 10—5—1909, 25 spec.
(St. 348) 64° 35′ N, 56° 18′ W, 900 m. wire, 11—5—1909, ca. 20 spec.

New to W. Greenland.

33. **Longithorax fuscus** H. J. Hansen.

**Longithorax fuscus* H. J. Hansen, Ingolf 1908, p. 103, Pl. 5, fig. 1.
— — Zimmer, Nordisches Plankton vol. 6, 1909, p. 125, fig. 240—43.

(St. 322) 60° 07′ N, 48° 26′ W. 2000 m. wire, 3—5—1909. 1 spec. (2,17 mm., very imperfect).

New to Greenland. — Only 4 specimens of this species are known, viz, besides the specimen from the "Tjalfe", 3 from the following localities: 61° 30′ N, 17° 08′ W, 1800 m. wire (S. of Iceland) (H. J. Hansen "Ingolf"), 49° 27′ N, 13° 33′ W, 2600 m., 2800 m. wire (H. J. Hansen, ibid.), and 50° 59′ W, 11° 52′ W, 900—1064 fms., temp. 15,4° C. (W. of Ireland) (Tattersall, Fisheries, Ireland, Sci. Invest., 1911 p. 52).

34. **Meterythrops robusta** S. I. Smith.

Meterythrops robusta S. I. Smith, Transact. Conn. Acad, vol. 5, 1879, p. 93, Pl. 12, fig. 1—2.
**Parerythrops* — G. O. Sars, Monografi Norges Mysider, III, 1879, p. 98, Pl. 39.
— — Zimmer, Fauna arctica, vol. 3, 1904, p. 445.

Meterythrops robusta Zimmer, Nordisches Plankton. vol. 6, 1909, p. 85, fig. 168—72.
— — H. J. Hansen, Ingolf 1908, p. 106.
non — — Holt & Tattersall, Rep. Sea and Inland Fisheries, 1902—03 (1903), pt. 2, App. No. 4 (is *Parerythrops obesa*, see H. J. Hansen l. c., p. 107, *Meterythrops robusta*).

(St. 196 d) 68° 40′ N, 53° 12′ W, 410 m., 350 m. wire, 17—8—1908, 1 spec.

35. **Mysis oculata** O. Fabr.

Cancer oculatus O. Fabricius, Fauna Groenlandica, 1780, p. 245.
— — — Kgl. Danske Vid. Selsk. Skrifter, Ny Samling, vol. 1, 1781, p. 565, fig. 2.
Mysis oculata Krøyer in Gaimard, Voyage en Scandinavie, Crust., 1846 (1849?) Pl. 8, fig. 2—3.
— — — Naturhist., Tidsskrift, 3. Række, vol. 1, 1861, p. 13.
* — — G. O. Sars, Monografi Norges Mysider, III, 1879, p. 69, Pl. 31.
— — Zimmer, Fauna arctica, vol. 3, 1904, p. 461.
— — — Nordisches Plankton, vol. 6, 1909, p. 160, fig. 348—54.
— — H. J. Hansen, Ingolf, 1908, p. 114.
— — — V. Grønland 1887, p. 214.

Vaskebugten close by Ritenbenk, from the stomach of Gadus callarias, 29—7—1908, many spec. (ca. 15 cm.³).

Cumacea.

36. **Diastylis Goodsirii Bell.**

Alauna Goodsirii Bell, in Belcher. Last of the arctic voyages, vol. 2, 1855, p. 403, Pl. 34, fig. 2.
**Diastylis* — H. J. Hansen, Dijmphna—Togtets zool.-botan. Udbytte, 1887, p. 241, Pl. 22, fig. 5, Pl. 23, fig. 1.
— — Zimmer, Fauna arctica, vol. 1, 1900, p. 422.
* — — G. O. Sars, Account, vol. 3, Cumac., 1900, p. 54, Pl. 41.
— — H. J. Hansen, V. Grønland 1887, p. 206.

(St. 369) 66° 45′ N, 56° 30′ W, ca. 200 fath., trawl, 20—5—1909, ca. 20 spec.

37. **Diastylis spinulosa** Heller.

Diastylis spinulosa Heller, Denkschr. d. K. Akad. d. Wiss., Wien, Math. naturwiss. Cl., vol. 35, 1878, p. 28, Pl. 1, fig. 5.
— — Hoeck, Niederl. Arch. f. Zool., Supplbd. 1, 1882, p. 25.
— *nodosa* G. O. Sars, Norske Nordhavs-Exp., Crust. 1885, p. 61, Pl. 7, fig. 1—4.

**Diastylis spinulosa* G. O. Sars, Account vol. 3, Cumac., 1900, p. 55, Pl. 42.
— — Zimmer, Fauna arctica vol. 1, 1900, p. 225.
— — H. J. Hansen, V. Grønland 1887, p. 205.

(St. 369) 66° 45′ N, 56° 30′ W, ca. 200 fath., trawl, 20—5—1909, 4 spec.

Amphipoda.

38. **Scina sp.**

(St. 338) 64° 01′ N, 55° 30′ W, 1185 m., 1400—1500 m. wire, 8—5—1909, 1 spec., very imperfect.

The genus is new to Greenland.

Genus Lanceola.

Key to the species: Stebbing in Biscayan Plankton, part 2, Amphip. & Cladocera, Transact. Linn. Soc., London, 1904, ser. 2, Zool., vol. 10, part. 2, p. 29.

39. **Lanceola serrata** Bovallius.

Lanceola serrata Bovallius. On some forgotten genera among Amphip. Crust., Bihang Kgl. Svenska Vet. Akad. Handl. vol. 10, 1885, No. 14, p. 7.
— — — Arctic and Antarctic Hyperids, Vega-Expeditionens vet. Iaktt., vol. 4, 1887, p. 554.
* — — — Amphip. Hyper. part I. 1. Kgl. Svenska Vet. Akad. Handl., vol. 21, 1887, No. 5, p. 34, Pl 5, fig. 2—13.

(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1909, 1 spec.
(St. 344) 64° 22′ N, 55° 48′ W, 1040 m., 1200 m. wire, 10—5—1909, 1 spec.

? 40. **Lanceola Sayana** Bovallius.

Lanceola Sayana Bovallius. On some forgotten genera among the Amph. Crust., Bihang Kgl. Svenska Vet. Akad. Handl., vol. 10, 1885, No. 14, p. 7, Pl. 1, fig. 1.
* — — Bovallius, Kgl. Svenska Vet. Akad. Handl., vol. 21, No. 5, 1887, p. 30, Pl. 4, Pl. 5, fig. 1.
— — Chevreux, Amphip. de l'«Hirondelle». Rés. Camp. Sci. fasc. 16, Monaco, 1900, p. 134, Pl. 14, fig. 10 (Coloured fig.).
— — Vosseler, Amphip. d. Plankton-Exp. I, Hyperiiden 1. Mitt. Konigl. Natur-Kabinet, Stuttgart, No. 17, 1901, p. 127.

Lanceola sayana Stebbing, Biscayan Plankton, Amphip. and Cladoc. Transact. Linn. Soc. London, Zool., vol. 10, pt. 2, 1904, p. 29—30.

(St. 434) 62° 53′ N, 54° 15′ W, 1660 m., 1500—1200 m. wire, 9—6—1909. 1 spec.

I am not quite sure that the determination is right, the specimen being somewhat imperfect; but, if it is, as I believe, *L. Sayana*, the species is new to Greenland.

Lanceola sp.

(St. 1b) 59° 25′ N, 22° 56′ W, surface, 12—5—1908, 2 spec.
(St. 434) 62° 53′ N, 54° 15′ W, 1660 m., 1500—1200 m. wire, 9—6—1909. 1 spec.

I have not been able to determine these 3 specimens, partly because they seem to me to be not full-grown, partly because they are somewhat imperfect.

41. **Hyperia medusarum** O. Fr. Müller.

Cancer medusarum O. Fr. Müller, Zool. Dan. Prodromus, 1776, No. 2355, p. 196.
Hyperia spinipes Boeck, Skandinav. og Arkt. Amphip, 1873—76, p. 81. Pl. 2, fig. 2.
— *medusarum* Bovallius, Arctic and Antarctic Hyperids, Vega-Expeditionens vetenskap. Iaktt. vol. 4, 1887, p. 560, Pl. 42, fig. 26—33.
— — G. O. Sars, Account, vol. 1, Amphip., 1895, p. 7, Pl. 3, fig. 2.
— — H. J. Hansen, V. Grønland 1887, p. 86.

(St. 11) 57° 41′ N, 35° 28′ W, surface, 20—5—1908, 2 spec.
(St. 285) 57° 51′ N, 43° 48′ W, 1000 m. wire, 29—9—1908, 1 spec.
(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, 3 spec.
(St. 6) 58° 24′ N, 34° 53′ W, surface, 16—5—1908, 3 spec.
(St. 312) 58° 38′ N, 46° 13′ W, pelagic townet, 29—4—1909, 1 spec.
(St. 313) — — surface — 1 spec.
(St. 9) 58° 33′ N, 35° 55′ W, 600 m. wire, 17—5—1908, 5 spec.
(St. 19b) 58° 41′ N, 49° 44′ W, 200 m. wire, 31—5—1908, 1 spec.
(St. 1a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, 3 spec.
(St. 1b) — — surface — 2 spec.
(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 1 spec.
(St. 270) 62° 21′ N, 51° 31′ W, 84 fath., 80 m. wire, 24—9—1908, 1 spec.
(St. 329) 62° 36′ N, 54° 12′ W, pelagic townet, 6—5—1909, 4 spec.

(St. 434) 62° 53′ N, 54° 15′ W, 1660 m., 1500—1200 m. wire, 9—6—1909, 1 spec.
(St. 423) 65° 03′ N, 54° 16′ W, 80, 100, 120 m. wire, 7—6—1909, 1 spec.
(St. 30a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, 4 spec.
(St. 30b) — — 70 m. wire — 1 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1000 m. wire, 23—6—1908, 1 spec.

From the literature we cannot see, if the species hitherto has been taken at W. Greenland; in V. Grønland 1887 H. J. Hansen mentions it from Greenland without special locality, and Bovallius (l. c.) mentions it but from "coasts of Greenland".

42. **Hyperoche Krøyeri** Bovallius.

Metoecus Medusarum Krøyer, Grønlands Amfipoder, Kgl. Danske Vid. Selsk. math.-naturvid. Afhandl., vol. 7, 1838, p. 288. Pl. 3, fig. 15.
Tauria — Boeck, Skand. og Arktiske Amphipoder, 1873—76, p. 82.
Hyperoche Krøyeri — *H. Lütkenii* Bovallius, Arct. and Antarct. Hyperids. Vega-Expeditionens vet. Iaktt., vol. 4, 1887, p. 564, p. 565, Pl. 44, fig. 63-71.
— *Krøyeri* G. O. Sars, Account, vol. 1, Amphip, 1895, p. 9, Pl. 4.
— *medusarum* H. J. Hansen, V. Grønland 1887, p. 58.

(St. 11) 57° 41′ N, 35° 28′ W, surface, 20—5—1908, 2 spec.
(St. 23) 58° 01′ N, 51° 36′ W, surface, 1—6—1908, 1 spec.
(St. 6) 58° 24′ N, 34° 53′ W, surface, 16—5—1908, 3 spec.
(St. 292) 58° 24′ N, 30° 35′ W, 500 m. wire, 3—10—1908, 3 spec.
(St. 7) 58° 33′ N, 35° 49′ W, 150 m. wire, 17—5—1908, 1 spec.
(St. 1b) 59° 25′ N, 22° 56′ W, surface, 12—5—1908, 9 spec.
(St. 270) 62° 21′ N, 51° 31′ W, 84 fath, 80 m. wire, 24—9—1908, 2 spec.
(St. 229) 64° 20′ N, 53° 03′ W, 80—120 m. wire, 29—8—1908, 7 spec.
(St. 405) 64° 25′ N, 56° 12′ W, 100 m. wire, 2—6—1909, 1 spec.

43. **Parathemisto oblivia** Kr.

Hyperia oblivia Krøyer, Grønlands Amfipoder, Kgl. Danske Vid. Selsk. naturvid.-math. Afh., vol. 7, 1838, p. 296, Pl. 4, fig. 10.
Parathemisto abyssorum Boeck, Crust. Amphip. boreal. et arct., Vid. Selsk. Forh. Christiania, 1870, p. 86.
— *oblivia* G. O. Sars, Oversigt af Norges Crust., ibid., 1882, Nr. 18, p. 10, Pl. 5, fig. 1.
**Parathemisto oblivia* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 10, Pl. 5, fig. 1.
— *abyssorum* — *Hyperia Latreillei* (partim) H. J. Hansen, V. Grønland 1887, p. 59, 56.

(St. 10) 57° 37′ N, 35° 17′ W, surface, 20—5—1908, 3 spec.
(St. 321) 60° 07′ N, 48° 26′ W, 600 m. wire, 3—5—1909, 1 spec.
(St. 30a) 63° 04 N, 56° 32′ W, 500 m. wire, 7—6—1908, 1 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m., 1000 m. wire, 23—6—1908, 1 spec.
(St. 196d) 68° 40′ N, 55° 12′ W, 410 m., 350 m. wire, 17—8—1908, 1 spec.
(St. 125) 69° 17′ N, 52° 14′ W, 550 m. wire, 16—7—1 90 many spec. (5 cm.³)
(St. 171) 70° 41′ N, 52° 07′ W, 386 fath., 800 m. wire, 6—8—1908, 15 spec.
(St. 172) 70° 42′ N, 52° 14′ W, 450 m.wire, 6—8—1908, many spec. (5 cm.³).

44. **Euthemisto compressa** Goës.

Themisto compressa Goës, Crust. Amphip. Spetsberg., Kgl. Svenska Vet. Akad. Forh., 1866, No. 8, p. 533, Pl.41, fig. 34.
Parathemisto — Boeck, Crust. Amphip. boreal. et arctca, Vid. Selsk., Forh., Christiania 1870, p. 7.
**Euthemisto* — G. O. Sars, Account, vol. 1, Amphip., 1895, p. 12. Pl. 5, fig. 2.
(partim) — — H. J. Hansen, V. Grønland 1887, p. 59 (confounded with *E. bispinosa* Boeck).

(St. 10) 57° 37′ N, 35° 17′ W, surface, 20—5—1908, 10 spec.
(St. 11) 57° 41′ N, 35° 28′ W, surface, 20—5—1908, manyspec. (25 cm ³).
(St. 281) 57° 51′ N, 45° 57′ W, 500 m. wire, 29—9—1908, many spec. (20 cm.³).
(St. 285) 57° 51′ N, 45° 48′ W, 1000 m. wire, 29—9—1908, many spec. (25 cm.³)
(St. 286) 57° 59′ N, 41° 21′ W, 80—200 m. wire, 30—9—1908, many spec. (25 cm.³).
(St. 23) 58° 01′ N, 51° 36′ W, surface, 1—6—1908, 9 spec.
(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, many spec. (25 cm.³)
(St. 278) 58° 16′ N, 47° 12′ W, 80—200 m. wire, 28—9—1908, many spec (10 cm.³).
(St. 308) 58° 20′ N, 41° 12′ W, 1000 m. wire, 28—4—1909, 8 spec.
(St. 5) 58° 23′ N, 34° 41′ W, surface, 16—5—1908, 10 spec.
(St. 6) 58° 24′ N, 34° 53′ W, surface, 16—5—1908, many spec. (20 cm.³).
(St. 292) 58° 24′ N, 39° 35′ W, 500 m. wire, 3—10—1908, many spec. (5 cm.³).
(St. 4) 58° 27′ N, 33° 03′ W, surface, 15—5—1908, 10 spec.
(St. 25) 58° 32′ N, 51° 11′ W, surface, 2—6—1908, 1 spec.
(St. 9) 58° 33′ N, 35° 55′ W, 600 m. wire, 17—5—1908, , spec.
(St. 312) 58° 38′ N, 46° 13′ W, pelagic townet, 29—4—1909 1 spec.
(St. 313) — — — surface, — 3 spec.
(St. 2) 58° 40′ N, 30° 40′ W, surface, 14—5—1908, many spec. (10 cm.³).
(St. 19b) 58° 41′ N, 49° 44′ W, 200 m. wire, 31—5—1908, 2 spec.
(St. 316) 58° 59′ N, 50° 28′ W, 500 m. wire, 1—5—1909, many spec. (5 cm.³).

(St. 1a) 59° 25′ N, 22° 56′ W, 175 m. wire, 12—5—1908, many spec. (10 cm.³).
(St. 1b) — — surface, — — —
(St. 303) 59° 28′ N, 33° 05′ W, pelagic townet, 26—4—1909, 8 spec.
(St. 298) 59° 41′ N, 25° 02′ W, 500 m. wire, 6—10—1908, 3 spec.
(St. 321) 60° 07′ N, 48° 26′ W, 600 m. wire, 3—5—1909, 15 spec.
(St. 322) — — 2000 m. wire, — 2 spec.
(St. 301) 60° 10′ N, 28° 13′ W, pelagic townet, 25—4—1909, 3 spec.
(St. 326) 62° 05′ N, 53° 41′ W, 100 m. wire, 6—5—1909, 2 spec.
(St. 329) 62° 36′ N, 54° 12′ W, pelagic townet, 6—5—1909, 12 spec.
(St. 330) — — surface, — 2 spec.
(St. 29) 62° 45′ N, 57° 11′ W, surface, 7—6—1908, 2 spec.
(St. 30a) 63° 04′ N, 56° 32′ W, 500 m.wire, 7—6—1908, many spec. (25 cm.³).
(St. 30b) — — 70 m. wire, — — —
(St. 31a) 63° 11′ N, 56° 28′ W, pelagic townet, 7—6—1908, 1 spec.
(St. 33b) 63° 25′ N, 54° 34′ W, 200 m. wire, 8—6—1908, 6 spec.
(St. 37b) 63° 47′ N, 52° 12′ W, 100 m. wire, 9—6—1908, 1 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1000 m. wire, 23—6—1908, 7 spec.
(St. 229) 64° 20′ N, 53° 03′ W, 80—120 m. wire, 29—8—1908, many spec. (10 cm.³).
(St. 423) 65° 09′ N, 54° 16 W, 80, 100, 120 m. wire, 7—6—1909, 1 spec.

45. **Euthemisto bispinosa** Boeck.

Themisto bispinosa Boeck, Crust. Amphip. boreal. et arctica, Vid. Selsk. Forh., Christiania, 1870, p. 8.
**Euthemisto* — G. O. Sars, Account. vol. 2. Amphip., 1895, p. 14, Pl. 6. fig. 2.
(partim) — *compressa* H. J. Hansen, V. Grønland 1887, p. 59 (*E. bispinosa* Boeck and *E. compressa* Goës are confounded).

(St. 23) 58° 01′ N, 51° 36′ W, surface, 1—6—1908, many spec. (12 cm.³).
(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, many spec. (7 cm.³).
(St. 278) 58° 16′ N, 47° 12′ W, 80—200 m. wire, 28—9—1908, 2 spec.
(St. 308) 58° 20′ N, 41° 12′ W, 1000 m. wire, 28—4—1909, 2 spec.
(St. 25) 58° 32′ N, 51° 11′ W, surface, 2—6—1908, 5 spec.
(St. 313) 58° 38′ N, 46° 13′ W, 29—4—1909, 6 spec.
(St. 19a) 58° 41′ N, 49° 44′ W, 100 m. wire, 31—5—1908, 4 spec.
(St. 19b) — — 200 m. wire. — —
(St. 316) 58° 59′ N, 50° 28′ W, 500 m. wire, 1—5—1909, 9 spec.
(St. 276) 59° 18′ N, 51° 00′ W, 80 m. wire, 27—9—1908, many spec. (15 cm.³).
(St. 298) 59° 41′ N, 25° 02′ W, 500 m. wire, 6—10—1908, 3 spec.
(St. 270) 62° 21′ N, 51° 31′ W, 84 fath., 80 m. wire, 24—9—1908, many spec. (5 cm.³).

(St. 329) 62° 36′ N, 54° 12′ W, pelagic townet, 6—5—1909, 3 spec.
(St. 330) 62° 36′ N, 54° 12′ W, surflace, 6—5—1909, 3 spec.
(St. 29) 62° 45′ N, 57° 11′ W, surflace, 7—6—1908, 10 spec.
(St. 30a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, many spec. (30 cm.³).
(St. 30b) — — 70 m. wire, — 2 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m., 1000 m. wire, 23—6—1908, 1 spec.
(St. 229) 64° 20′ N, 53° 03′ W, 80—120 m. wire, 29—8—1908, 8 spec.

46. **Euthemisto libellula** Mandt.

Gammarus Libellula Mandt, Observat. in hist. nat. et anat. compar. in itinere Groenl. factæ, 1822, p. 32.
Themisto arctica + *T. crassicornis* Krøyer, Grønlands Amfipoder, Kgl. Danske Vid. Selsk. naturv. math. Afh., vol. 7, 1838, p. 291, Pl. 4, fig. 16, p. 295, Pl. 4, fig. 17.
— *libellula* Boeck, Skand. og Arkt. Amphip., 1873—76, p. 88.
Euthemisto — + *E. Nordenskiöldii* Bovallius, Arct. and. Antarct. Hyp., Vega Exp. vet. Iakttt., vol. 4, 1887, p. 569, Pl. 46, fig. 90—96, p. 570, Pl. 47, fig. 104—10.
* — — G. O. Sars. Account, vol. 1, Amphip., 1895, p. 13, Pl. 6, fig. 1.
— — H. J. Hansen, V. Grønland 1887, p. 60.

(St. 25) 59° 32′ N, 51° 11′ W, surflace, 2—6—1908, 5 spec.
(St. 7) 58° 33′ N, 35° 49′ W, 150 m. wire, 17—5—1908, 1 spec.
(St. 312) 58° 38′ N, 46° 13′ W, pelagic townet, 29—4—1909, 1 spec.
(St. 321) 60° 07′ N, 48° 26′ W, 600 m. wire, 3—5—1909, 2 spec.
The channel at Nanorfalik, from stomachs of Gadus, 6—9—1909, 7 spec.
(St. 521) 61° 42′ N, 49° 46′ W, 260 m., 100 m. wire, 9—7—1909, 15 spec.
(St. 329) 62° 36′ N, 54° 12′ W, pelagic townet, 6—5—1909, many, very little spec. (1 cm.³).
(St. 29) 62° 45′ N, 57° 11′ W, 7—6—1908, 10 spec.
(St. 30a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, 2 spec.
(St. 30b) — — 70 m. wire, — 8 spec.
(St. 31a / St. 31c) 63° 11′ N, 56° 23′ W, pelagic townet, 7—6—1908, 5 spec.
(St. 37b) 63° 47′ N, 52° 12′ W, 100 m. wire, 9—6—1908, 4 spec.
(St. 76) 63° 49′ N, 53° 27′ W, 1300 m., 1000 m. wire, 23—6—1908, 1 spec.
(St. 69) 63° 53′ N, 53° 28′ W, 600 m., surface, 22—6—1908, many spec. (3 cm.³).
(St. 405) 64° 25′ N, 56° 12′ W, 100 m. wire, 2—6—1909, many, very little spec. (1 cm.³).
(St. 423) 65° 03′ N, 54° 16′ W, 80—100—120 m. wire, 7—6—1909, many spec. (15 cm.³).
(St. 196d) 68° 40′ N, 53° 12′ W, 410 m., 359 m. wire, 17—8—1908, many spec. (150 cm.³).
(St. 125) 69° 17′ N, 52° 14′ W, 550 m. wire, 16—7—1908, many spec. (75 cm.³).

(St. 124) 69° 17′ N, 52° 14′ W, 150 m. wire, 16.—7.—1908, many spec. (5 cm.³).
(St. 171) 70° 41′ N, 52° 07′ W, 386 fath., 800 m. wire, 6—8—1908, many spec. (10 cm.³).
(St. 172) 70° 42′ N, 52° 14′ W, 450 m. wire, 6—8—1908, many spec. (15 cm.³).

In "V. Grønland" 1887 H. J. Hansen mentions the species only from 5 localities (ca. 64°—77° 40′ N).

47. **Socarnes Vahlii** Kr.

Lysianassa Vahlii Krøyer, Grønlands Amfipoder, Kgl. Danske Vid. Selsk. naturvid. math. Afh., vol. 7, 1838, p. 283.
Anonyx — — in Gaimard: Voyage en Scand., Crust. 1846 (1849?) Pl. 14, fig. 1.
**Socarnes* — G. O. Sars. Account. vol. 1. Amphip., p. 45, Pl. 16, fig. 2.
— — Stebbing. Tierreich. p. 57 (ubi litt.).
— — H. J. Hansen, V. Grønland 1887, p. 62.

St. 465) 62° 58′ N, 50° 52′ W, 25 fath., 80 m. wire, 21—6—1909, 2 spec.

48. **Hippomedon abyssi** Goës.

**Lysianassa abyssi* Goës. Crust. Amphip. Spetsberg., Öfvers. Akad. Förhandl., vol. 22, 1866, p. 519, Pl. 37, fig. 5.
Paratryphosites — Stebbing, Tierreich, p. 43 (ubi litt.).
Hippomedon — H. J. Hansen, V. Grønland 1887, p. 66.

St. 118) 69° 17′ N, 52° 50′ W, clay-bottom, ca. 225 fath., trawl., 15—7—1908, 7 spec.

49. **Cyphocaris anonyx** Boeck.

Cyphocaris anonyx Boeck, Crust. Amphip. boreal. et arctica, Forh. Vid. Selsk., Christiania, 1870, p. 104.
— — Skand. og arkt. Amphip., 1873—76, p. 141, Pl 6, fig. 1.
* — *micronyx* Stebbing, Challenger Report, vol. 29, 1888, p. 656, Pl. 16.
— — Chevreux, Amphip. . . . del'Hirondelle, Result. Camp. sc., fasc. 14, Monaco 1900, p. 164, Pl. 14, fig. 11 (coloured fig.).
— *anonyx* Stebbing, Tierreich, p. 29.
— — H. J. Hansen, V. Grønland 1887, p. 66.

(St 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 5 spec.
(St. 434) 62° 53′ N, 54° 15′ W, 1200—1500 m. wire, 9—6—1909, 2 spec.
(St. 30a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, 1 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1909, 2 spec.
(St. 338) 64° 01′ N, 55° 30′ W, 1185 m., 1400—1500 m. wire, 8—5—1909, 2 spec.

(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire, 8—5—1909, 2 spec.
(St. 346) 64° 22′ N, 56° 00′ W, 400—800 m. wire, 10—5—1909, 2 spec.
(St. 348) 64° 35′ N, 56° 18′ W, 900 m. wire, 11—5—1909, 1 spec.

New to W. Greenland. In V. Grønland 1887 H. J. Hansen mentions the species from 30 miles S. O. to Cap Farewell, 300 fath., but not from W. Greenland.

50. **Metacyphocaris Helgæ** Tattersall.

Metacyphocaris Helgæ Tattersall, Pelagic Amphipoda of the Irish Atlantic slope. Fisheries, Ireland, Sci. Invest., 1905, pt. IV (1906), p. 29, Pl. 3, fig. 1, Pl. 4, fig. 1—14.

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 6 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1530 m. wire, 1300 m., 7—5—1909, 5 spec.
(St. 338) 64° 01′ N, 55° 30′ W, 1185 m., 1400—1500 m. wire, 8—5—1909, 2 spec.

New to Greenland. Tattersall (l. c.) mentions 17 spec. from 4 localities at W. Ireland.

51. **Aristias tumidus** Kr.

Anonyx tumidus Kröyer, in Gaimard, Voyage en Scand., Crust., 1846 (1849?) Pl. 16, fig. 2.
— — — Karcin. Bidrag, Naturhist. Tidsskrift, Ny Række, vol. 2, 1846, p. 16, 40.
**Aristias* — G. O. Sars, Account, vol. 1, Amphip, 1895, p. 49, Pl. 18, fig. 1.
— — Stebbing, Tierreich, p. 49 (ubi litt.)
— — H. J. Hansen, V. Grönland 1887, p. 67.
non *Aristias tumidus* Bruzelius, Kgl. Svenska Vet.-Akad. Handl., n. ser., vol. 3, 1859, no. 1, p. 41.

(St. 465) 62° 58′ N, 50° 52′ W, ca. 25 fath., 21—6—1909, 1 spec.

52. **Alibrotus littoralis** Kr.

Anonyx littoralis Kröyer, in Gaimard: Voyage en Scand., Crust., 1846 (1849?) Pl. 13, fig. 1.
— *litoralis* Kröyer, Karcin. Bidrag, Naturh. Tidsskrift, Ny Række, vol. 1, 1845, p. 621; vol. 2, 1846, p. 36.
**Alibrotus littoralis* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 102 Pl. 35, fig. 2.
Pseudalibratus litoralis Stebbing, Tierreich, p. 33.
Onisimus — H. J. Hansen, V. Grönland, 1887, p. 73.

Kangerdluarsuk (61° 50′ N), from stomachs of herrings, 28—6—1909, many spec. (15 cm.²).

53. **Katius obesus** Chevreux.

**Katius obesus* Chevreux, Description d'un Amphipode (Katius obesus nov. gen. et sp.) Bull. Mus. Océanogr., Monaco, No. 35, 1905 (with figs.)
— — Tattersall, Pelagic Amphipoda of the Irish Atlantic slope, Fisheries, Ireland, Sci. invest., 1905, pt. 4 (1906), p. 29.

(St. 15) 58° 08′ N, 39° 24′ W, 500 m. wire, 26—5—1908, 22 spec.
(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1905, 2 spec.
(St. 434) 62° 53′ N, 54° 15′ W, 1600 m., 1200—1500 m. wire, 9—6—1909, 7 spec.
(St. 333) 63° 18′ N, 54° 55′ W, 1300 m., 1530 m. wire, 7—5—1909, 2 spec.
(St. 338) 64° 01′ N, 55° 30′ W, 1185 m., 1400—1500 m. wire, 8—5—1909, 1 spec.
(St. 410) 64° 14′ N, 55° 55′ W, 839 m., trawl, 3—6—1909, 1 spec.

New to Greenland.

Most of the specimens from the "Tjalfe" measure 25 mm. (the specimen of Chevreux is 12 mm.), and where the colour is preserved it is bright scarlet. Hitherto but two specimens of the species were known, viz., from 36° 17′ N, 28° 53′ W, 3410 m., 0—3000 m. wire 1 spec. (Chevreux l. c.,), and 50 miles N. to W. of Eagle Island, Co. Mayo, 1200 fath., 1 spec. (Tattersall l. c.).

54. **Pontoporeia femorata** Kr.

Pontoporeia femorata Kröyer, Nye nordiske Sl. og Arter af Amfip., Naturh. Tidsskrift, vol. 4, 1842, p. 153.
— — in Gaimard, Voyage en Scand., Crust., 1846 (1849?) Pl. 23, fig. 2.
* G. O. Sars, Account, vol. 1, Amphip. 1895, p. 123, Pl. 41, fig. 1.
Stebbing, Tierreich, p. 128 (ubi. litt.)
H. J. Hansen, V. Grönland 1887, p. 80.

(St. 118) 69° 17′ N, 52° 50′ W, clay-bottom, ca. 225 fath., trawl, 15—7—1908, 1 spec.

55. **Stegocephalus inflatus** Kr.

Stegocephalus inflatus Kröyer, Nye nordiske Sl. og Arter af Amfip., Naturh. Tidsskrift, vol 4, 1842, p. 150.
— — Kröyer, in Gaimard, Voyage en Scand., Crust., 1846 (1849?) Pl. 20, fig. 2.
* G. O. Sars, Account, vol. 1, Amphip, 1895, p. 198, Pl. 69.

Stegocephalus inflatus Stebbing, Tierreich, p. 91 (ubi litt.)
— — H. J. Hansen, V. Grønland 1887, p. 87.

(St. 397) 66° 42′ N, 56° 12′ W, 130 fath., trawl, 31—5—109, 1 spec.
(St. 370) 66° 45′ N, 56° 23′ W, ca. 175 fath., trawl, 20—5—1909, 1 spec.
(St. 177) 70° 42′ N, 54° 48′ W, 253 fath., trawl, 7—8—1908, 1 spec.

The spec. from St. 397 is 37 mm., the two other are but a little smaller.

56. **Metopa pollexiana** Sp. Bate.

Montagua pollexiana Sp. Bate, Rep. Brit. Ass. f. the Adv. of Sc., 1855. p. 57 (nomen nudum).
**Metopa* — G. O. Sars, Account, vol. 1, Amphip., 1895, p. 269. Pl. 95.
— *norvegica* Stebbing, Tierreich, p. 177 (ubi litt).
— *pollexiana* H. J. Hansen, V. Grönland 1887, p. 92, Pl. 3, fig. 5.

(St. 52) Kugssukfjord (Godthaabsfjord). 156 fath., trawl, 15—6—1608. ca. 25 spec.

57. **Cleonardo microdactylus** n. sp. (fig. 3—4).

(St. 336) 64° 06′ N, 55° 18′ W, 1040—1100 m., 1200 m. wire, 8—5—1909. 2 spec., ♀.

Upon the whole we know 6 species of the genus *Cleonardo*, viz. *C.* (*Tritropis*) *appendiculatus* G. O. Sars (Norske Nordhavs-Exp. Crust. I, 1885, p. 194, Pl. 16, fig. 3). *C. longipes* Stebbing (Challenger Report, Zool., vol. 29, p. 959, Pl. 86), *C. Neuvillei*, *C. longirostris*, *C. spinicornis* and *C. biscayensis* Chevreux (Bull. Inst. Océanogr. Monaco, No. 121, 1908, p. 1—12 (all the four species). fig. 1—6). Knowledge of the species is very defective, for they are bathypelagic and known in but single specimens; of most of the species we know but one sex.

As I have given figs. of all the appendages (except the pleopoda) I shall give but a very short description.

Length 7 mm.

♂ unknown. — ♀: The head with rostrum a little shorter than the first segment; this is somewhat longer than the following ones. The eyes are distinct, rather large and uncoloured. The side-plates 1—4 rounded below. Pereion is inflated, the back rounded

and the segments 1—2 have a distinct, but low dorsal carina as in *C. appendiculatus*; the postero-lateral corners on these 3 segments acutely produced. Telson has about the same form as in the other species (unknown in *C. appendiculatus*). The antennæ

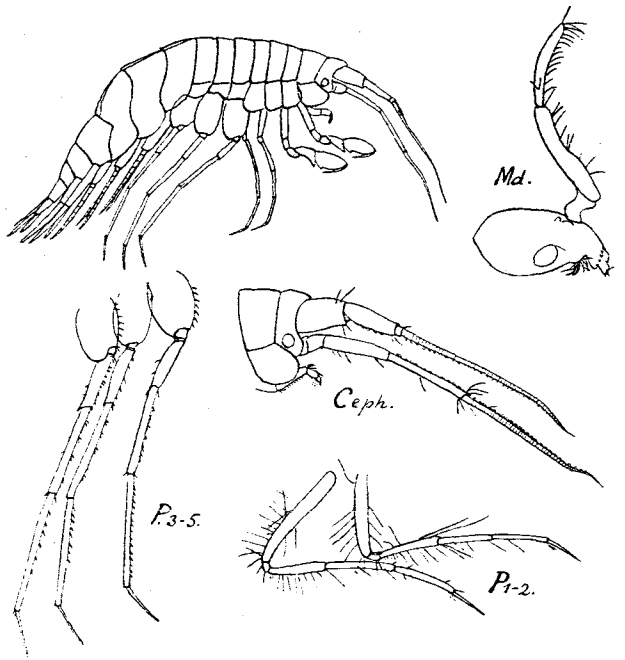


Fig. 3. *Cleonardo microdactylus*.

are about half as long as the body; ant. 1 a little shorter than ant. 2. In antenna 1 the first joint is stout about as in *C. longipes*; the second joint is of equal length, but much narrower; the third very short. In antenna 2 the ultimate joint in the peduncle is a little shorter and narrower than the penultimate; flagellum

a little shorter than the peduncle. The form of the oral parts may be seen from the figs. In the two gnathopoda the 5th joint has about the same form as in *C. longipes*. Pereiopoda 1—5 have the usual form, but in p. 3—5 the dactylus is not half as long

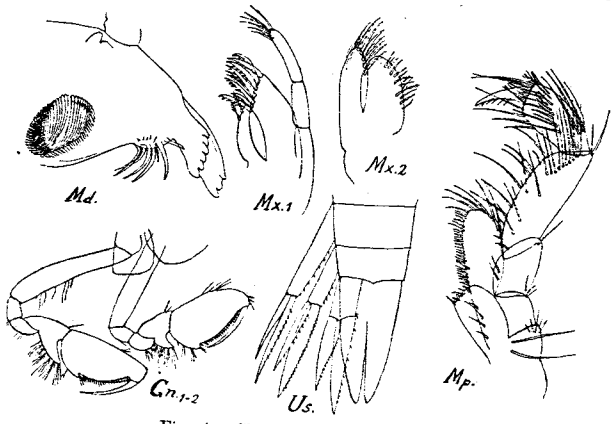


Fig. 4. *Cleonardo microdactylus.*

as the 6th joint; in the other species the dactylus always is at least half as long as the 6th joint, in some of the specimens somewhat longer. The pleopoda have the usual form. The form and length of the uropoda may be seen from the fig.

58. **Paramphithoë pulchella** Kr.

Amphitoe pulchella Krøyer, in Gaimard, Voyage en Scand., Crust. 1846 (1849?) Pl. 10, fig. 2.
**Paramphithoe pulchella* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 346, Pl. 122, fig. 1.
Neopleustes pulchellus Stebbing, Tierreich, p. 312 (ubi litt.).
Paramphithoe pulchella H. J. Hansen, V. Grønland 1887, p. 119, Pl. 5, fig. 2.

(St. 40c) 63° 48′ N, 52° 23′ W, 194 m., trawl, 10—6—1908, 1 spec.

59. **Paramphithoë bicuspis** Kr.

Amphithoe bicuspis Krøyer, Grønlands Amfipoder, Kgl. Danske Vid. Selsk. math. naturvid. Afh., vol. 7, 1838, p. 273, Pl. 2, fig. 10.

**Paramphitoe bicuspis* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 349, Pl. 123, fig. 1.
Neopleustes — Stebbing, Tierreich, p. 313 (ubi litt.).
Paramphithoe — H. J. Hansen, V. Grønland 1887, p. 122.

(St. 465) 62° 58′ N, 56° 52′ W, 25 fath., 21—6—1909, 10 spec.

60. **Epimeria loricata** G. O. Sars.

Epimeria loricata G. O. Sars, Crust. et Pycnog. nova, Archiv f. Mat. og Naturvid., vol. 4, 1879, p. 450.
* — — — Account, vol. 1, Amphip., 1895, p. 368, Pl. 129, fig. 3.
— — Stebbing, Tierreich, p. 322 (ubi litt.).
— — H. J. Hansen, V. Grønland 1887, p. 126.

(St. 431) 63° 24′ N, 53° 10′ W, 892 m., trawl, 9—6—1909, 1 spec.
(St. 396) 66° 41′ N, 56° 17′ W, 150 fath., trawl, 31—5—1909, 1 spec.
(St. 397) 66° 42′ N, 56° 12′ W, 130 fath., trawl, 31—5—1909, 1 spec.

The largest specimen (St. 397) is 38 mm. long.

61. **Acanthonotosoma inflatum** Kr.

Acanthonotus inflatus Krøyer, Nye nord. Slægt. og Arter af Amfip, Naturh. Tidsskrift vol. 4, 1842, p. 161.
**Vertumnus* Goës, Crust. Amphip. Spetsberg., Öfvers. Kgl. Svenska Vet. Akad. Förh., 1866, p. 523, Pl. 38, fig. 11.
Acanthonotozoma inflatum Stebbing, Tierreich, p. 219.
Acanthonotosoma — H. J. Hansen, V. Grønland 1887, p. 127.

(St. 143) Outside the Mudderbugt (Disco) 128 fath., trawl, 22—7—1908, 1 spec.

62. **Acanthonotosoma serratum** O. Fabr.

Oniscus serratus O. Fabricius, Fauna Groenlandica, 1780, p. 262, No. 237.
**Acanthonotosoma serratum* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 374, Pl. 131, fig. 1.
Acanthonotozoma — Stebbing, Tierreich, p. 218.
Acanthonotosoma H. J. Hansen, V. Grønland 1887, p. 127.

(St. 465) 62° 58′ N, 56° 52′ W, 25 fath., 21—6—1909, 1 spec.

63. **Acanthozone cuspidata** Lepechin.

Oniscus cuspidatus Lepechin, Tres Onisc. spec. descript., Acta Acad. Scient. Imp. Petrop., 1778, pars 1, p. 247, Pl. 8, fig. 3.

**Acanthozone cuspidata* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 370, Pl. 130.
?Paramphithoe hystrix Stebbing, Tierreich, p. 325 (ubi litt.).
Acanthozone cuspidata H. J. Hansen, V. Grønland 1887, p. 128.

(St. 143) Outside the Mudderbugt (Disco), 128 fath., trawl, 22—7—1908, ca. 20 spec.

64. **Parapleustes latipes** M. Sars.

Amphithoe latipes M. Sars, Oversigt ov. Norges Arkt. Krebsdyr, Forhandl. Vid. Selsk. Christiania 1858 (1859), p. 139.
**Parapleustes latipes* G. O. Sars, Account, vol. 1, Amphip., 1895, p. 360, Pl. 127.
Sympleustes — Stebbing, Tierreich, p. 317 (ubi litt.).
Amphitopsis — H. J. Hansen, V. Grønland 1887, p. 135, Pl. 5, fig. 4,

(St. 367) 66° 22′ N, 57° 16′ W, 686 m., dredge, 19—5—1909, 1 spec.

65. **Syrrhoe crenulata** Goës.

Syrrhoe crenulata Goës, Crust. Amphip. Spetsberg., Öfvers. Kgl. Svenska Vet. Akad. Förhandl., 1866, p. 527, Pl. 40, fig. 25.
" — — G. O. Sars, Account, vol. 1, Amphip. 1895, p. 390. Pl. 136.
— — Stebbing, Tierreich, p. 282 (ubi litt.).
— — H. J. Hansen, V. Grønland 1887, p. 103.

(St. 465) 62° 58′ N, 50° 52′ W, 25 fath., 21—6—1909, 3 spec.

66. **Pardalisca cuspidata** Kr. (non Buchholz).

Pardalisca cuspidata Krøyer, Nye nord. Sl. og Arter af Amfip., Nat. Tidsskrift, vol. 4, 1842, p. 153.
* — — G. O. Sars, Account, vol. 1, Amphip., 1895, p. 403, Pl. 141, Pl. 142, fig. 1.
— Stebbing, Tierreich, p. 223 (ubi litt.).
? — — H. J. Hansen, V. Grønland 1887, p. 143.
non — — Buchholz, Zweite Deutsche Nordpolarfahrt, vol. 2, Crust. 1874, p. 306, Pl. 1, fig. 3, Pl. 2, fig. 1 (= P. abyssi Boeck, teste Stebbing, Tierreich, p. 222).

(St. 465) 62° 58′ N, 50° 52′ W, 25 fath., 21—5—1909, 2 spec.

67. **Eusirus Tjalfiensis n. sp.**

(St. 171) 70° 41′ N, 52° 07′ W, 386 fath., 800 m. wire, 6—8—1908, 1 spec.

At the mentioned locality the "Tjalfe" has taken one specimen, unfortunately rather defective, of a new species of the genus *Eusirus*.

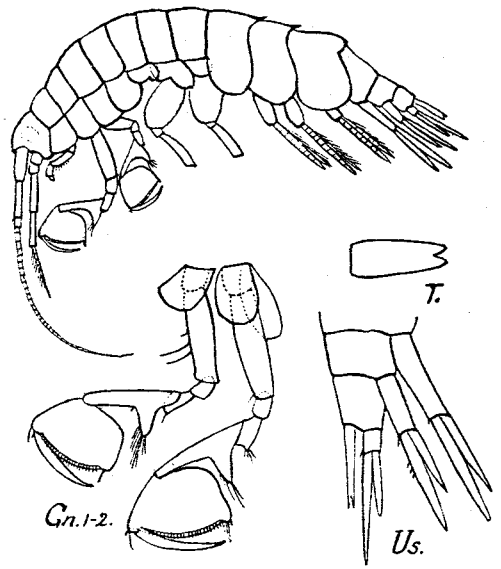


Fig. 5. *Eusirus Tjalfiensis.*

Total length 8 mm.

Of the known species of the genus it is most like *E. cuspidatus* Kr., but it differs chiefly in the following regards. The eyes are almost quite invisible. The pereion segment 7 has no tooth in the dorsal line, and the pleon segments 1 and 2 are evenly rounded on the hinder lateral corners. The convex lateral margin of the posterior edge of the pleon segment 3 seems to have some single small teeth. The telson is most like that in *E. Holmi* H. J. Hansen. The gnathopoda 1—2 are long and slender, about as in *E. Holmi*. The pereiopoda 1—3 are quite lost; the pereiopoda 4—5 are only partly preserved. The specimen seems to be a ♂; at all events it has no marsupial plates.

As may be seen the description is very imperfect, for only one specimen was brought home, and this single specimen was very defective, as is said above; but in the figures I have given all details to be seen without dissection.

68. **Eusirus Holmii** H. J. Hansen.

**Eusirus Holmii* H. J. Hansen, Dijmphna-Togtets zool.-botan. Udbytte. 1887, p. 224, Pl. 22, fig. 1.
— — Stebbing, Tierreich, p. 342 (ubi litt.).

(St. 363) 66° 21′ N, 57° 04′ W, 680 m., 800 m. wire, 18—5—1909, 1 spec.
(St. 171) 70° 41′ N, 52° 07′ W, 386 fath., 800 m. wire, 6—8—1908, 1 spec.

New to W. Greenland; but the species has been taken at E. Greenland (70° 32′ N, 8° 11′ V, 470 fath. (H. J. Hansen, Meddel. om Grønland, vol. 19, 1895, p. 128); this locality is not mentioned in Stebbing, Tierreich).

69. **Apherusa glacialis** H. J. Hansen.

**Amphitopsis glacialis* H. J. Hansen, V. Grønland 1887, p. 137, Pl. 5, fig. 6.
Apherusa — Stebbing, Tierreich, p. 307 (ubi litt.).

(St. 324) 60° 07′ N, 48° 26′ W, pelagic townet, 3—5—1909, 1 spec.
(St. 321) — — 600 m. wire, — 4 spec.
(St. 465) 62° 58′ N, 50° 52′ W, ca. 25 fath., 21—6—1909, 1 spec.

Like the specimens of H. J. Hansen those from "Tjalfe" are also very imperfect: all have some legs or the antennæ broken.

70. **Amphitopsis longicaudata** Boeck.

Amphitopsis longicaudata Boeck, Forh. Skand. Naturforsker-Møde, 1861, p. 663.
* — — G. O. Sars, Account, vol. 1, Amphip. 1895, p. 456, Pl. 161.
— — Stebbing, Tierreich, p. 289 (ubi litt.).

(St. 143) Outside the Mudderbugt (Disco), 128 fath., trawl, 22—7—1908. ca. 35 spec.

New to Greenland.

71. **Gammarus locusta** L.

Cancer locusta Linné, Fauna Suecica, Edit. altera, 1761, p. 405, No. 2042.
**Gammarus locusta* G. O. Sars, Account, vol. 1, Amphip. 1895, p. 499, Pl. 1, Pl. 176, fig. 1.
— — Stebbing, Tierreich, p. 476 (ubi litt.).
— — H. J. Hansen, V. Grønland 1887, p. 144.

(St. 23) 58° 01′ N, 51° 36′ W, surface, 1—6—1908, 1 spec.
(St. 521) 61° 42′ N, 49° 46′ W, 260 m., 100 m. wire, 9—7—1909, 3 spec.
(St. 434) 62° 53′ N, 54° 15′ W, 1660 m., 1200—1500 m. wire, 9—6—1909, 1 spec.
(St. 30a) 63° 04′ N, 56° 32′ W, 500 m. wire, 7—6—1908, 1 spec.
(St. 30b) — — 70 m. wire, — 1 spec.
(St. 433) 63° 05′ N, 54° 21′ W, 120—180 m. wire, 9—6—1909, 8 spec.
(St. 425) 64° 24′ N, 53° 05′ W, 80—120 m. wire, 8—6—1909, 5 spec.
(St. 423) 65° 08′ N, 54° 16′ W, 80—100—120 m. wire, 7—6—1909, 1 spec.

The localities from the "Tjalfe" show that this species can live pelagically at a much greater distance from the coast, than has been known hitherto. G. O. Sars (l. c., p. 500) writes „.... this species is .... met with in the littoral and sublittoral regions. It also occasionally descends to greater depths, at least to 50 fathoms, and in some places occurs in great abundance among decaying algæ, accumulated on the bottom...". H. J. Hansen says (l. c., p. 145) „a couple of times it has been taken in the Davis-Strait in the surface" (without locality), but he believes that ordinarily it lives on the bottom at 0—5 fath.; he is of the opinion that localities on 60, 100 or 200 fathoms are not certain.

?72. **Haploops setosa** Boeck.

Haploops setosa Boeck, Crust. Amphip. bor. et arct., Forh. Vid. Selsk. Christiania 1870 (1871), p. 228.
* — G. O. Sars, Account vol. 1, Amphip., 1895, p. 194, Pl. 68, fig. 1.
— — Stebbing, Tierreich, p. 117 (ubi litt.).
— — H. J. Hansen, V. Grønland 1887, p. 153.

(St. 367) 66° 22′ N, 57° 16′ W, 686 m., dredge, 19—5—1909, 1 spec.

My determination is not sure, because the specimen is somewhat imperfect and has lost the setæ of the dorsal surface.

73. **Unciola crassipes** H. J. Hansen.

**Unciola crassipes* H. J. Hansen, V. Grønland 1887, p. 165, Pl. 6, fig. 6.
— — Stebbing, Tierreich, p. 679.

(St. 367) 66° 22′ N, 57° 16′ W, 686 m., dredge, 19—5—1909, 2 spec.

Isopoda.

74. **Calathura brachiata** Stimps.

Anthura brachiata Stimpson, Marine Invertebr. Grand Manan; Smithson. Contrib. to Knowl., vol. 6, 1854, p. 43.
**Calathura* — G. O. Sars, Account vol. 2, Isop., 1900, p. 46, Pl. 19, fig. 2.
— *branchiata* Richardson, Isop. of N. Am., Bull. U. S. Nat. Mus, No. 54, 1905, p. 72, (ubi litt.), fig. 56—57.
— *brachiata* H. J. Hansen, V. Grønland 1887, p. 181.

(St. 367) 66° 22′ N, 57° 16′ W, 686 m., dredge, 19—5—1909, 6 spec.

75. **Æga psora** L.

Oniscus psora Linné, Systema Naturæ, edit. X, vol. 1, 1758, p. 636.
**Æga* — G. O. Sars, Account vol. 2, Isop., 1900, p. 59, Pl. 24.
— — Richardson, Isop. af N. Am., Bull. U. S. Nat. Mus., No. 54, 1905, p. 168 (ubi litt.), fig. 148.
— — H. J. Hansen, V. Grønland 1887, p. 183.

(St. 396) 66° 41′ N, 56° 17′ W, 150 fath., trawl, 31—5—1909, 2 spec.
(St. 397) 66° 42′ N, 56° 12′ W, 130 fath., trawl, 31—5—1909, 6 spec.

All the specimens were taken free-living on the bottom.

76. **Æga ventrosa** M. Sars.

Æga ventrosa M. Sars, Vid. Selsk. Forh., Christiania, 1859, p. 154.
*** — — G. O. Sars, Account vol. 2, Isop., 1900, p. 64, Pl. 26, fig. 3.
— — Richardson, Isop. of N. Am., Bull. U. S. Nat. Mus. No. 54, 1905, p. 187 (ubi litt.), fig. 173—74.
— *Nordenskiöldii*, H. J. Hansen, V. Grønland 1887, p. 184.

(St. 397) 66° 42′ N, 56° 12′ W, 130 fath., trawl, 31—5—1909, 1 spec. (free-living).

77. **Arcturus Baffini** Sabine.

Idotea Baffini Sabine, Suppl. to the App. to Capt. Parry's Voyage, 1824, p. 228, Pl. 1, fig. 4—6.
**Arcturus* — G. O. Sars, Norske Nordhavs-Exp., Crust., 1885, p. 97, Pl. 9, fig. 1—21.
— — Richardson, Isop. of N. Am., Bull. U. S. Nat. Mus. No. 54, 1905, p. 337 (ubi litt.), fig. 367—68.
— — H. J. Hansen, V. Grønland 1887, p. 188.

(St. 100) 66° 44′ N, 56° 08′ W, ca. 175 fath., trawl, 5—7—1908, 1 spec.

(St. 107) 68° 20′ N, 54° 03′ W, 220—280 fath., trawl, 9—7—1908, 4 spec.
(St. 199) 68° 28′ N, 54° 47′ W, 184—245 fath., trawl, 18—8—1908, 2 spec.

The two largest specimens (St. 107) are 55 mm. (body) + 68 mm. (ant.) and 45 mm. + 78 mm.; the specimen from St. 100 measures 47 mm. + 70 mm.

78. **Acanthoniscus typhlops** G. O. Sars.

**Acanthoniscus typhlops* G. O. Sars, Norske Nordhavs-Exp., Crust. 1885, p. 119, Pl. 10, fig. 27—30.

(St. 431) 63° 24′ N, 53° 10′ W, 892 m., trawl, 9—6—1909, 1 spec.

New to Greenland. Hitherto it was known only from W. of Lofoten, 68° 21′ N, 10° 40′ E, 457 fath., ÷ 0,7° C. (Sars, l. c.).

79. **Janthe laciniata** G. O. Sars.

Janthe laciniata G. O. Sars, Vid. Selsk. Forh., Christiania 1872, p. 92.
*** — — — Account vol. 2. Isop., 1900, p. 101, Pl. 41.

(St. 431) 63° 24′ N, 53° 10′ W, 892 m., trawl. 9—6—1909, 1 spec.
(St. 369) 66° 45′ N, 56° 30′ W, ca. 200 fath., trawl. 20—5—1909, 1 spec.

New to Greenland.

80. **Munneurycope Tjalfiensis**, n. gen. n. sp. (figs. 6—8).

(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 1 spec. (♂).

The specimen is very like *Munnopsis (?) Murrayi* Walker (Ann. Mag. Mat. Hist. ser. 7, vol. 12. 1903, p. 227, Pl. 18, figs. 1—6; Tattersall, Isop., Fisheries, Ireland, Sci. Invest. 1904 pt. 2 (1905), p. 24,73, Pl. 5, fig. 8, and Tattersall, Nordisches Plankton vol. 6, Lief. 14, 1911, p. 190, figs. 8—14); but though it is very imperfect, not only the larger part of antennæ and pereiopoda being lost, but also otherwise being damaged, it is yet certain that it is another species.

Both species differ from *Munnopsis typica* G. O. Sars (Sars: Account vol. 2, 1900, Isop., p. 133, Pl. 57—58) in the somewhat regular lanceolate outline, the hinder part of the body being not

suddenly narrower than the first segments. In regard to the mandibles (figs. 7—8) the specimen from the "Tjalfe" is very like *Munnopsis longicornis* H. J. Hansen (Ergebnisse d. Plankton-Exp., vol. 2 G c, Isop., Cumac. und Stomatop., 1895, p. 8, Pl. 2, fig. 1—1d), whilst the mandibles in *M. typica* are quite different from these.

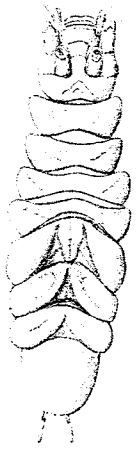


Fig. 6. *Munneurycope Tjalfiensis.*

Walker gives no fig. of the mandibles of *M. Murrayi* (Tattersall has a fig.: Fisheries, Ireland, Sci. Invest. 1904 pt. 2, (1905) Pl. 5, fig. 8); but he writes (l. c. 1903 p. 228) „mandibles with a prominent molar expansion and divided cutting edge as in *M. longicornis* Hansen; palp very large and prominent, with a lamellar terminal joint. As G. O. Sars has pointed out, *Munnopsis longicornis* Hansen differs in the structure of the mandibles from the generic description, as does the present species" (*M. Murrayi*).

The sculpture of the dorsal surface is very like that in *M. Murrayi;* the few differences may be seen from the fig. (fig. 6). Of ant. 1 the mutual length of the joints is quite another than in *M. typica*, 4th and 5th joints being longer than the others. Also the flagellum is different, 1st joint being very short and the second very long; the other joints (only 6 are preserved) are about 4 times longer than their diameter. Of ant. 2 only two joints of the stem are preserved; they are of about equal length. Labrum is very prominent, has the usual form and 3 cross-furrows. The oral parts agree very well with those in *M. longicornis* and *M. Murrayi*, whilst the mandibles as mentioned are very different from those in *M. typica*. Of the 4 pairs of ambulatory legs only some single joints are preserved. Of the natatory legs the 4 first joints are preserved; the 4th joint has the same form as in *M. Murrayi* and is a little broader than in *M. longicornis*, but much broader than

in *M. typica*. The uropoda (fig. 7, U.) are half as long as the caudal segment; the second joint 4 times as long as the first.

Lenght 8 mm. The colour is (in alcohol) black-brown, except the caudal segment, which has no colour and is pellucid.

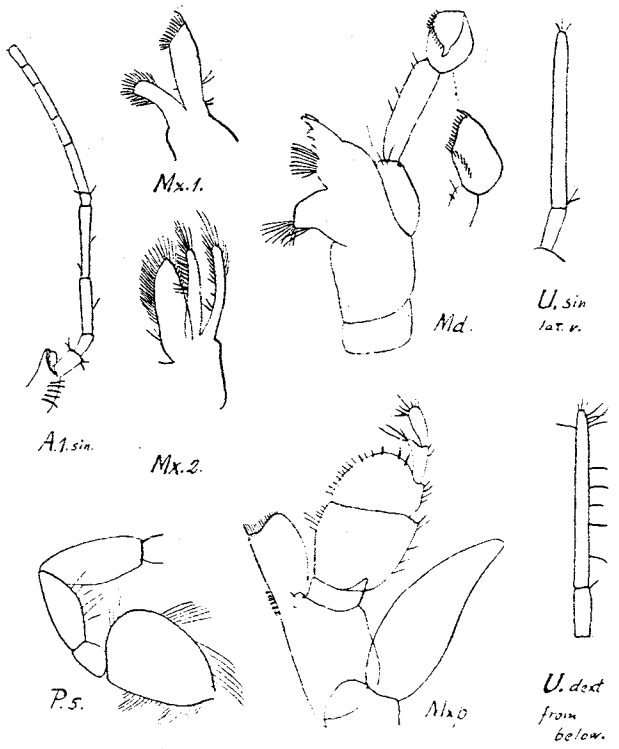


Fig. 7. *Munneurycope Tjalfiensis.*

Though *M. Tjalfiensis* is known but from a single, very imperfect specimen, it may be seen, that it is very closely allied to *M. longicornis*, *M. Murrayi* and a third species not mentioned above, viz. *M. oceanica* Tattersall (Fisheries, Ireland, Sci. Invest. 1904,

pt. 2, (1905) p. 23, 72, Pl. 5, figs. 1—7, and Tattersall, Nordisches Plankton vol. 6, Lief. 14, 1911, p. 187, figs. 1—7), whilst it is very different from *M. typica*. The form of the body, the mandibles and the natatory legs which (probably) have the same form as in the genus *Eurycope*, are such essential differences from *Munnopsis*, that it seems to me necessary to establish a separate genus for it, for which I propose the generic name *Munneurycope*. This genus besides comprises the 3 species *M. longicornis* H. J. Hansen, *M. Murrayi* Walker, and *M. oceanica* Tattersall. I cannot agree with Tattersall who is of opinion (l. c. 1904 (1905), p. 24) that all these species belong to the genus *Munnopsis* G. O. Sars. How the relationship is to the 3 species of F. Beddard in Challenger Report, Isopoda, cannot be decided; but it must be taken for granted that Sars is right, when he says (Account, vol. 2, Isopoda 1900, p. 133) „it is, however, somewhat questionable, if all these species are actually referable to the present genus" (viz. *Munnopsis*).

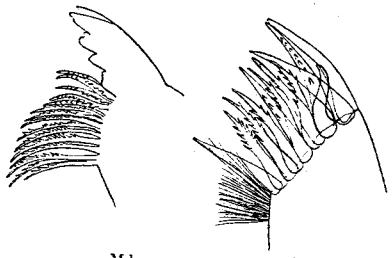


Fig. 8. *Munneurycope Tjalfiensis*.
Cutting edge of Md. and Mx. 1.

81. **Phryxus abdominalis** Kr.

Bopyrus abdominalis Krøyer, Naturhist. Tidsskrift, vol. 3, 1840, p. 102-12, 289-99, Pl. 1-2.
— — — in Gaimard, Voyage en Scand., Crust., 1846 (1849?), Pl. 29, fig. 1.
**Phryxus* — G. O. Sars, Account vol. 2, Isop., 1900, p. 215, Pl. 90-91.
— — Richardson, Isop. of N. Am., Bull. U. S. Nat. Museum, No. 54, 1905, p. 500 (ubi litt.), fig. 550-52.
— — H. J. Hansen, V. Grønland 1887, p. 196.

(St. 465) 62° 58′ N, 50° 52′ W, ca. 25 fath., 21—6—1909, 1 spec. in Spirontocaris turgida.
(St. 179) 69° 29′ N, 55° 26′ W, 116 fath., trawl, 8—8—1908, 3 spec. in Spirontocaris macilenta.

The species was hitherto not known from *Spiront. macilenta;* Sars (l. c.) mentions as hosts 8 other species of gen. *Spirontocaris* and 3 species of gen. *Pandalus*.

82. **Bopyroides hippolytes** Kr.

Bopyrus Hippolytes Krøyer, Grønlands Amfipoder, Kgl. Danske Vid. Selsk. naturvid.-math. Afh., vol. 7, 1838, p. 306, Pl. 4, fig. 22.
— — — in Gaimard, Voyage en Scand., Crust. 1846 (1849?) Pl. 28, fig. 2.
**Bopyroides* — G. O. Sars, Account vol. 2, Isop., 1900, p. 199, Pl. 84, fig. 2.
— — Richardson, Isop. of N. Am., Bull. U. S. Nat. Mus. No. 54, 1905, p. 567 (ubi litt.), fig. 628-37.
Gyge — H. J. Hansen, V. Grønland 1887, p. 197.

(St. 465) 62° 58′ N, 50° 52′ W, ca. 25 fath., 21—6—1909, 1 spec. on Spirontocaris polaris.
(St. 100) 66° 44′ N, 56° 08′ W, ca. 175 fath., 5—7—1908, 1 spec. on Spirontocaris macilenta.

This species like *Phryxus abdominalis* was hitherto not known from *Spiront. macilenta*; Sars (l. c.) mentions as hosts 3 other species of gen. *Spirontocaris*.

Fam. Dajidæ.

The characters for the family see G. O. Sars, Account vol. 2, Isop. 1900, p. 221.

A synopsis of the genera (partly also of the species) is given in Stebbing, A history of Crustacea, Recent Malacostraca, The international scientific series, vol. 74, 1893, p. 398—400. — A short synopsis (with litt.) is given by H. Richardson in Proc. U. S. Nat. Mus. vol. 33, 1908, p. 689 and (without litt.) by Koehler in Bull. Inst. Océangr. Monaco, No. 196, 1911, p. 31—34.

Synopsis of the species (the genera are in chronological order).

1. *Dajus Mysidis* Krøyer, in Gaimard, Voyage en Scand., Crust. 1846 (1849?), Pl. 28, fig. 1—2, Pl. 29, fig. 1.
* — — G. O. Sars, Account vol. 2, Isopoda 1900, Pl. 223, Pl. 93—94.
— — Richardson, Monograph of Isop. N. Am., Bull. U. S. Nat. Mus. No. 54, 1905, p. 573 (ubi litt.), fig. 638.
In the marsupium of *Mysis oculata* or *M. mixta;* arctic, length 4 mm.

2. *Dajus Siriellæ* G. O. Sars, Challenger Report, Zool. vol. 13, 1885, Schizop., p. 220—21, Pl. 38, fig. 12—14. »Attached to the ventral face of the trunk posteriorly on a few specimens of *Siriella Thomsoni* Milne Edwards, both males and females, in the latter lying partly within the marsupial pouch, as was also the case with *Dajus Mysidis*.«

3. *Aspidophryxus peltatus* G. O. Sars, Oversigt af Norges Crust. I, Vid. Selsk. Forhandl., Christiania 1882, p. 72, Pl. 2, fig. 12—15.
* — — G. O. Sars, Account vol. 2, Isop. 1900, p. 228, Pl. 96.
— — Tattersall, Fisheries, Ireland, Sci. Invest. 1904, pt. 1 (1905), p. 76, 82.
— — — Nordisches Plankton, vol. 6, 1911 (Lief. 14), p. 244, fig. 139—44, p. 290, fig. 283—87.
— *Sarsii* Giard & Bonnier, Epicarides de la fam. des Dajidæ. Bull. Scient. France et Belgique, 1889, p. 266.
Length 3 mm. On the carapace of *Erythrops* or (seldom) *Mysidopsis didelphys* or *Parerythrops obesa*. Norway (Sars), Scotland (Scott), Ireland (Tattersall). Dr. Th. Mortensen has taken the species on *Erythrops (pygmæa?)*, Kristineberg zool. St. (Gulmarfjord, Bohuslän), 60 m., 11—1—1910.

4. *Aspidophryxus frontalis* Bonnier, in Koehler: Isop. nouveaux de la fam. des Dajides. Bull. Inst. Océanogr. No. 196, Monaco 1911, p. 2—10, fig. 1—7. — The larva: Tattersall: Nordisches Plankton, vol. 6, 1911 (Lief. 14), p. 291, fig. 288—93.
Length 1.4 m. On rostrum of *Siriella norvegica*. 34° N, 8° 10′ W, surface.

5. *Notophryxus ovoides* G. O. Sars, Oversigt af Norges Crust. I, Vid. Selsk. Forh., Christiania, 1882, p. 71, Pl. 2, fig. 9—11.
* — — G. O. Sars, Account vol. 2, Isop. 1900, p. 226, Pl. 95.
— — Tattersall, Nordisches Plankton, vol. 6 (Lief. 14), 1911, p. 252, fig. 156—61, p. 266, fig. 192.
Length 3.5 mm., on the abdomen of *Amblyops abbreviata*, Norway.

6. *Notophryxus lateralis* G. O. Sars, Challenger Report, Zool., vol. 13, 1885, Schizopoda, p. 220, Pl. 38, fig. 9—10. On the gills of *Nematoscelis megalops*, South Atlantic.

7. **Notophryxus clypeatus* G. O. Sars, Norske Nordhavs-Exp., Crust. I, 1885, p. 137, Pl. 11, fig. 30—33.
Leptophryxus clypeatus G. O. Sars, Crust. et Pycnog. nova, Prodromus, Archiv f. Mathemat. og Naturvid., Kristiania 1879, p. 436. Length 5 mm.; on the dorsal surface of the carapace of *Pseudomma roseum*, W. Norway (63° 10′ N, 5° 0′ E, 763 m.).
? *Notophryxus sp. (N. clypeatus* G. O. Sars?) Tattersall, Isop., Fisheries, Ireland, Sci. Invest. 1904, pt. 2 (1905), p. 76. On *Pseudomma roseum*, S. W. Ireland.

8. **Notophryxus globularis* G. O. Sars, Challenger Report, Zool., vol. 13, Schizopoda, p. 220, Pl. 38, fig. 11.
— — Tattersall, Nordisches Plankton, vol. 6, 1911 (Lief. 14), p. 255, fig. 164.
On the dorsal surface of the carapace of *Thysanoëssa gregaria*, North Pacific.

9. **Heterophryxus appendiculatus* G. O. Sars, Challenger Report, Zool. vol. 13, Schizop., 1885, p. 220, Pl. 38, fig. 8.
**H. app.* Tattersall, Isop., Fisheries, Ireland, Sci. Invest. 1904, pt. 2, (1905), p. 77, Pl. 11, fig. 1—4.
H. app. Tattersall, Nordisches Plankton, vol. 6, Lief. 14, 1911, p. 247, fig. 146—49.
On *Euphausia pellucida* (and *E. Mülleri?*). Cape Verde-Isles (Sars), Mediterranean (Lo-Bianco), Bay of Biscay (Fowler), W. Ireland (47° 14′ N, 7° 58′ W, Tattersall).

10. *Branchiophryxus nyctiphanæ* Caullery, Zool. Anzeiger vol. 20, 1897, p. 88, fig. 1—2. — A short report in Journ. Royal Microsc. Soc. London 1897, pt. 3, p. 294.
Length 1,4—2 mm. On the gills of *Meganyctiphanes norvegica*. Golfe de Gascogne.

11. *Branchiophryxus Caulleryi* Koehler, Isop. nouveaux de la fam. des Dajides, Bull. Inst. Océanogr. Monaco, No. 196, 1911, p. 26—30, fig. 18—21.
Length 0.72 mm. On gills of *Stylocheiron longicorne*.

12. *Prodajus lobiancoi* Bonnier, in Lo Bianco: Le pesche abissali esseguite de F. A. Krupp col yacht Puritan nelle adiacente di Capri ed in altre località del Mediterraneo. Mitt. Zool. Stat. Neapel, vol. 16, 1903, p. 269 (no fig.).
Pr. lob. Bonnier, Comptes Rendus Séances Acad., Paris, vol. 136, 1903, p. 103 (no fig.).

Prodajus lobiancoi Tattersall, Nordisches Plankton, vol. 6, Lief. 14, 1911, p. 249.
Length 2 mm. In the marsupium(?) of *Gastrosaccus Normani*, Mediterranean.

13. **Prodajus ostendensis* Gilson, Bull. sc. France et Belgique, tome 43, 1909, p. 19—92, Pl. 1—2.
**P. ost.* H. J. Hansen, Vid. Medd. Nat. Foren. Kbhv. 1909 (1910), p. 221—24, Pl. 3, fig. 3, Pl. 4, Pl. 5, fig. 1.
P. ost. Tattersall, Nordisches Plankton, vol. 6, Lief. 14, 1911, p. 250, fig. 150—55, p. 265, fig. 190—91.
Length 3,5 mm. In the marsupium of *Gastrosaccus spinifer*, North Sea.

14. *Zonophryxus retrodens* Richardson, U. S. Fish Commission Bull., 1903, p. 51—52, fig. 4—5.
Length 11,5 mm. Hawaiian Islands. Host unknown.

15. *Zonophryxus trilobus* Richardson, Department of commerce and labor, Bureau of fisheries: document No. 736, Washington 1910, p. 41, fig. 39.
Length 14 mm. Philippine Islands. Host unknown.

16. *Zonophryxus Grimaldii* Koehler, Bull. Inst. Océanogr. Monaco, No. 196, 1911, p. 16—22, fig. 13—14.
Length 16 mm. (immature). 36° 14′ N, 8° 06′ W. Host *Heterocarpus Grimaldii?*

17. **Holophryxus alaskensis* Richardson, U. S. Fish Commission, Bull. vol. 24, 1904 (1905), p. 220—21, fig. 8—10.
H. al. Richardson. Monogr. Isop. N. Am., Bull. U. S. Nat. Mus. No. 54, 1905. p. 576, fig. 639—41.
Length 10 mm. Alaska. Host unknown.

18. **Holophryxus Giardi* Richardson, Proc. U. S. Nat. Mus., vol. 33, 1908, p. 690—92, fig. 1—3.
H. G. Richardson, Proc. U. S. Nat. Mus. vol. 37, 1909 (1910), p. 123.
— — — Department of commerce and labor, Bureau fisheries, document No. 736, Washington 1910, p. 41.
Length 30 mm. On the dorsal surface of the carapace of *Gennadas borealis*. Bering Island, Philippine Islands.

19. **Holophryxus californiensis* Richardson, Proc. U. S. Nat. Mus. vol. 33. 1908, p. 692—94, fig. 4—5.
H. cal. Richardson, Proc. U. S. Nat. Mus. vol. 37, 1909 (1910), p. 123.
Length ca. 20 mm. (?) On the dorsal surface of *Pasiphæa pacifica*. California.

20. *Holophryxus Richardi* Koehler, Bull. Inst. Océanogr. Monaco, No. 196, 1911, p. 23—26, fig. 15—17; — see also No. 83-a., p. 108.
Holophryxus sp. (H. Richardi Koehler?) see No. 83-b., p. 109.

21. *Holophryxus Acanthephyræ* n. sp., see Nr. 84, p. 112.

22. *Arthrophryxus beringianus* Richardson, Proc. U. S. Nat. Mus. vol. 33, 1908, p. 694—96, fig. 6—7.
Length 14 mm. On *Eucopia australis*. Bering Island.

23. *Colophryxus novangliæ* Richardson, Proc. U. S. Nat. Mus. vol. 34, 1908, p. 391—92, fig. 1—3.
Length 5 mm. Long Island. Host unknown.

24. *Prophryxus alascensis* Richardson, Proc. U. S. Nat. Mus. vol. 37, 1909 (1910), p. 124, fig. 47—48.
Length 2,3 mm. Alaska. Host unknown (a Schizopod?).

25. *Allophryxus ruber* Koehler, Bull. Inst. Océanogr. Monaco, No. 196, 1911, p. 10—16, fig. 8—12.
Length 6,5 mm. 43° 04′ N, 19° 42′ W, 0—1500 m.; 46° 31′ 20″ N, 5° 13′ W, 0—1750 m. Host unknown.

The male is known in the following species.

Dajus mysidis.
Notophryxus ovoides.
Aspidophryxus peltatus
— *frontalis*
Heterophryxus appendiculatus
Branchiophryxus nyctiphanæ (no fig.)
— *Caulleryi*
Prodajus ostendensis
Zonophryxus retrodens
Holophryxus californiensis
Arthrophryxus beringianus
Colophryxus novangliæ
Allophryxus ruber

The larva is known in the following species.

Dajus Mysidis
Notophryxus ovoides
Aspidophryxus peltatus
— *frontalis*
Branchiophryxus nyctiphanæ (no fig.)
— *Caulleryi*
Prodajus ostendensis
Holophryxus Acanthephyræ (see p. 115, fig. 19—21.)

Besides these H. J. Hansen in Ergebnisse d. Plankton-Exp. d. Humboldt-Stiftung, vol. 2, G, c, 1895, p. 22—27 and p. 45—46, Pl. 2, figs. 3—6, Pl. 3, figs. 1—2, has described 6 larvæ of unknown species and states that Dr. v. Schab has two not-described larvæ from the Guinea-coast.

83a. **Holophryxus Richardi** Koehler (figs. 9—10).

Holophryxus Richardi Koehler, Isop. nouveaux de la fam. des Dajides provenant des campagnes de la „Princesse Alice", Bull. Inst. Océanogr. Monaco, No. 196, 1911, p. 23—26, figs. 15—17.

(St. 363) 66° 21′ N, 57° 04′ W, 680 m., 800 m. wire, 18—5—1909. 1 ♀

At the station mentioned above the „Tjalfe" has taken a specimen of *Holophryxus Richardi*. The specimen from the „Tjalfe" is about 2½ times longer than that of Koehler (l. c.) viz. 9 mm. long and 4 mm. broad. Though on account of the difference in size there are

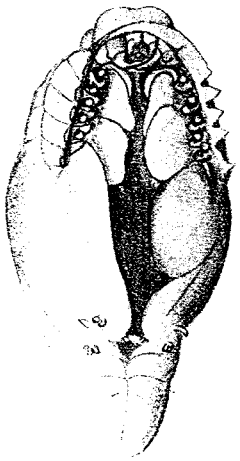


Fig. 9.
Holophryxus Richardi.
Ventral view.

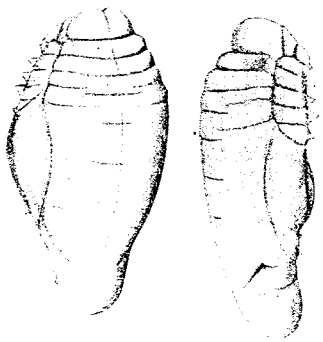


Fig. 10.
Holophryxus Richardi.
Dorsal view (a little from the left) and lateral view (from the rigth).

great differences, it is evident that the two specimens belong to the same species, as may especially be concluded from the form of the appendages on the 5th pair of incubatory plates (oostégites). A detailed description I find superfluous, as all, that I have been able to see, may be seen from my figs; and a close examination was impossible, as I had but one single specimen; for this reason I cannot render a nearer account of the antennæ and the oral parts.

1st antenna seems to have 2 joints. Also 2nd antenna seems to be two-jointed, but is much bigger; on the 1st joint a little bud-like process may be seen. The oral parts are not visible, not even the tip of the mandibles, which generally project a little. There are 5 pairs of incubatory plates; but what seems to be the third pair is the 4th, the third pair being concealed by the 4th. The 5th pair have in the hind part a crest, on the left plate with 8, on the right plate with 6 teeth; such crests are also to be found in the other specimens of the genus *Holophryxus* from the „Tjalfe" (No. 83b and 84), but are not described in any other species. The left incubatory plate of 5th pair is, as shown in the fig., divided into two lappets, which seems to be caused by accidental molestation.

The colour is (in alcohol) pale yellow.

Neither the male nor ova were found.

The host is unknown. A specimen of *Eusirus Holmii* (No. 68) is the sole Crustacean brought home from this station, and though it was not probable that a Dajid should be a parasite on an Amphipod, I have closely examined this specimen, but it has no traces showing that it has been the host of the parasite. But from the journal it may be seen, that at the stat. mentioned were taken a Mysid (probably *Boreomysis microps*), *Gennadas elegans* and *Sergestes arcticus*; all these animals not being preserved I have not been able to find the host; for the rest see the next species, No. 83b!

83b. **Holophryxus sp.** (**H. Richardi** Koehler?) (figs. 11—14 [13 partly]).

(St. 346) 64° 22′ N, 56° 00′ W, 400—800 m. wire, 10—5—1909. 1 ♀ on Sergestes arcticus.

From this stat. the „Tjalfe" has brought home a *Holophryxus*, 14 mm. long, 5,5 mm. broad. The form is the same as in the other species of the genus, but somewhat more lengthened.

Articulation of the antennæ is not visible; but the tip of the mandibles may be seen to project a little. Only 3 pairs

of incubatory plates are visible, viz. 2nd, 4th and 5th pairs; close to the hind edge of the 5th pair a pair of little acuminated appendages are to be seen, and on the hind edge of the right plate (but not on the left) a little bud-like prominence may further be seen. Each of the crests on the 5th pair of plates seems to have 12 teeth. The 5th pair of plates are very large and contiguous in the middle line; this I cannot understand otherwise than that the animal is mature, though it has no ova. — Ova or ♂ were not found.

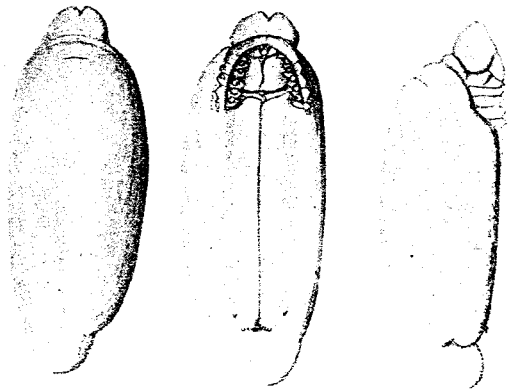


Fig. 11. *Holophryxus (Richardi?).*
Dorsal, ventral and lateral view.

The colour is (in alcohol) pale-yellow.

The appendages on the 5th pair of incubatory plates I apprehend as showing that this specimen is the fully grown female of *H. Richardi*, and this I base on the following. (For the sake of convenience I call Koehler's specimen stage 1, the two others (from the „Tjalfe" St. 363 and 346) stage 2 and 3).

1. The cephalon projects in stage 3 still more than in stage 2, stage 1 has in front of the cephalon a broad projecting part, formed partly by the first pair of coxal plates. In stage 2 the cephalon only projects a little beyond the projecting part. In stage 3 the cephalon is more distinctly bilobate than in stage 2; in stage 1 the cephalon is rounded without any trace of a furrow.

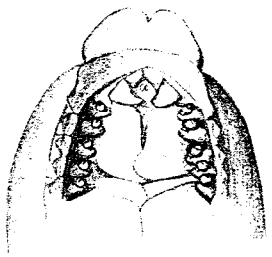


Fig. 12. *Holophryxus (Richardi?).*
The oral area.

2. The size of the specimens is enlarged (stage 1 3,7 mm. long, stage 2 9 mm., stage 3 14 mm.), but the relative breadth is diminished (stage 1 2:3,7 mm. = 1 : 1,85; stage 2 4 : 9 mm. = 1 : 2,25; stage 3 14 : 5,5 mm. = 1 : 2,55).

3. Each species of Dajidæ has, as far as we know, only one single species as host (excluding *Dajus Mysidis*), and here the host probably in all 3 cases was *Sergestes arcticus*. Stage 1 was taken 33° 41′ N, 36° 55′ W, 0—2500 m., thus in the territory of distribution of *Sergestes arcticus* (see H. J. Hansen, Ingolf 1908, p. 82); stage 2 was taken together with *Sergestes*, and stage 3 was found fixed to *Sergestes*.

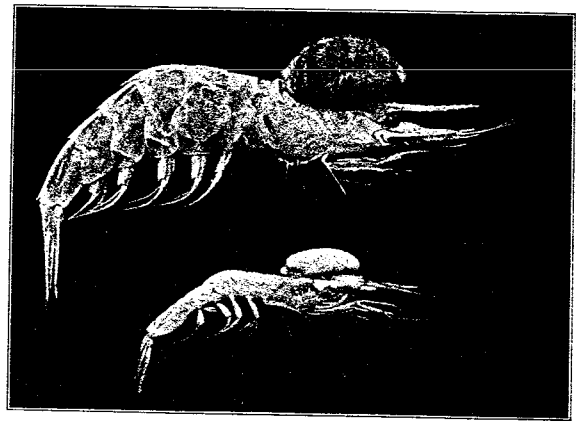


Fig. 13. *Holophryxus Acanthephyræ* on *Acanthephyra purpurea* (above) and *Holophryxus (Richardi?)* on *Sergestes arcticus* (below).

The 3 specimens giving thus together a very distinct series of development, I think there is no doubt that they all belong to the same species.

The relation to the host is not mentioned for any Dajid; the authors only mention the place, where the parasite is fixed. The specimen from the „Tjalfe“ St. 346 was, as shown in figs. 13—14, fixed on the hind part of the dorsal surface of the carapace of the *Sergestes* with the cephalon turned towards the abdomen of the host, just as H. Richardson has figured *Holophryxus Giardi* and *H. californiensis*. The carapace of the *Sergestes* has dark holes from the mouth and pereiopoda of the parasite (see fig. 14); also it may be seen, that the *Holophryxus* has removed its legs 2 or 3 times (together with its growth?).

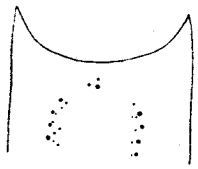


Fig. 14.
Hindpart of the carapace of *Sergestes arcticus* with the marks of the mouth and pereiopoda of *Holophryxus (Richardi?)*.

As the parasite is fixed quite superficially to the host, some very interesting questions arise. Does the parasite only live as long as the time between two castings of the skin of the host? Does it prevent the host from casting the skin? — To answer these questions is quite impossible at the present moment.

84. **Holophryxus Acanthephyræ** n. sp. (fig. 13 [partly], 15—21).
(St. 322) 60° 07′ N, 48° 26′ W, 2000 m. wire, 3—5—1909, 1 spec. (♀) on Acanthephyra purpurea.

As I have had but one single specimen, a closer examination and dissection was not possible; therefore the following description can not give all details.

Length 22 mm., breadth 12,5 mm.

The specimen is very like *H. californiensis* from California (H. Richardson, Proc. U. S. Nat. Mus. vol. 33, 1908, p. 692—94, figs. 4—5). From Miss Richardson's very short description and her indistinct photographic fig. it cannot with security be determined, that the specimen from the „Tjalfe“ is not *H. californiensis*, and moreover I have no male. But the circumstance, that the host belongs to quite another genus *(H. calif.* lives on *Pasiphæa pacifica)*, and that the locality besides is W. of America, seems to me to prove, that the specimen from the „Tjalfe“ is a new species.

The form is ovate and somewhat skew, the left side being a little longer than the right. The cephalon cannot be seen from below; it is very small and has a little longitudinal furrow, but is not really bilobated; at each side of the cephalon there is a little rounded prominence. On the dorsal surface of the thorax just behind the cephalon 2 transversal furrows are visible; otherwise there is no trace of segmentation of the thorax (seen dorsally) exclusive of the existence of 4 longitudinal streaks on the dorsal surface, somewhat recalling the segmentation of the abdomen in the Paguridæ. The abdomen projects from the thorax as in the other species. The coxal plates are the sole true trace of segmentation. There are 5 pairs of coxal plates corresponding with the 5 pairs of pereiopods; the 4 first pairs are separated from the thorax by a seam, and the two plates of the first pair are connected by a frontal margin lying under the cephalon and forming the anterior boundary

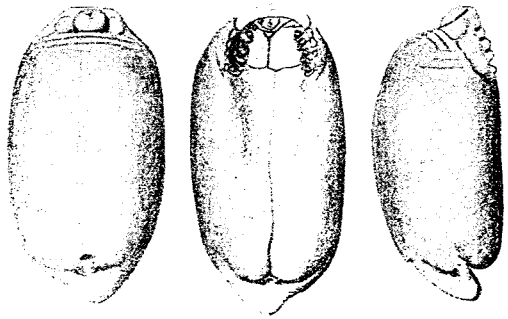


Fig. 15.
Holophryxus Acanthephyræ. Dorsal, ventral and lateral view.

of the oral area. There are very slight seams between the coxal plates exclusive of those between the two last pairs; the fifth pair are very small.

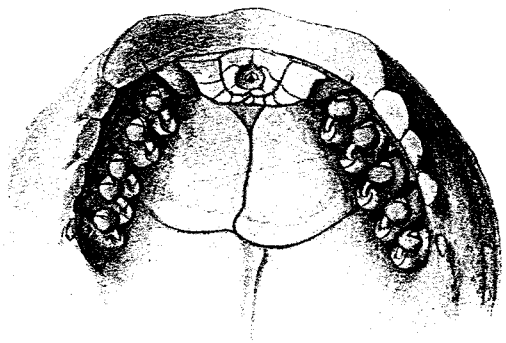


Fig. 16. *Holophryxus Acanthephyræ.* The oral area.

The ventral surface is, exclusive of the hindpart, somewhat concave. The oral area with the pereiopods is rather small and about semicircular. The antennæ seem to be articulated, the first

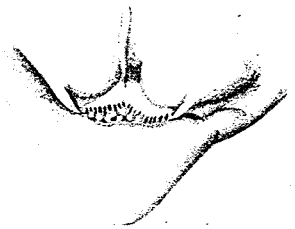


Fig. 17. *Holophryxus Acanthephyræ.*
Hind part from below.

pair in 3, the second pair in 5 joints; but it is not excluded that the apparent articulation is in reality simple folds. Between the antennæ the tip of the mandibles is visible. The gnathopod lies

between antenna 2 and the first pereiopod and is quite unarticulated. The 5 pairs of pereiopods have about the same form as those in *Zonophryxus Grimaldii* (Koehler, Bull. Inst. Océanogr., Monaco No. 196, 1911, fig. 13, p. 17); they seem to have but 5 joints, and the 4th joint is quite globular. Only two pairs of incubatory plates are visible, and it has been impossible without dissection to examine if there are more plates. The hind-plates have the usual crest, each with about 14 teeth; inside the teeth some embryos are visible. The abdomen has no traces either of segmentation or of pleopods or uropods.

The colour is (in alcohol) reddish brown spotted with yellow.

The specimen was fixed to the host (see fig. 13) quite as *Holophryxus* sp. (No. 83 b), but somewhat obliquely towards the right side of the host; there was a large spot as trace of the mouth of the parasite, and it may be seen, that this has changed its place 4—5 times.

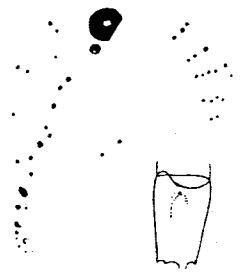


Fig. 18.
Holophryxus Acanthephyræ.
The marks of the mouth and pereiopoda, and the carapace of *Acanthephyra* with these marks.

No male was found.

The space within the incubatory plates is quite filled with embryos. These are pale-yellow, 0,2 mm. long. On account of the colour a closer examination of the larvæ was impossible without special preparation. But Prof. H. F. Jungersen who has a great experience in preparatory-methods, has kindly prepared for me some specimens with potash and pyrogallic acid; for this I owe him my best thanks, for otherwise I would not have been able to give good figures with all details.

The larvæ are very like partly those of *Dajus Mysidis* (G. O. Sars, Account vol. 2, Pl. 94, larva), partly those of *Clypeoniscus Meinertii* (Giard et Bonnier, Bull. Scientifique France et Belgique, vol. 25, 1893. p. 421; Richardson, Monograph of Isopoda N.-America,

Bull. U. S. Nat.-Mus., No. 54, 1905, figs. p. 580). The body is curved ventrally and consists of cephalon and 12 segments. There is no trace of an eye. The 1st antenna is small, short, bud-like,

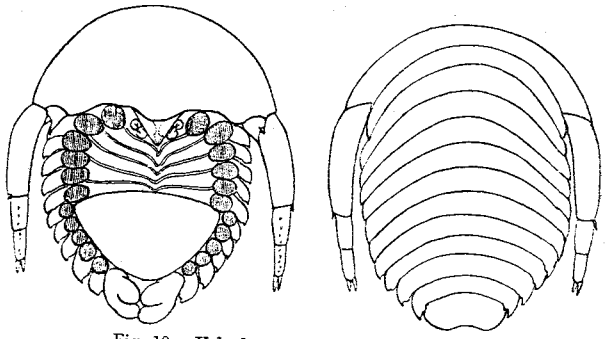


Fig. 19. *Holophryxus Acanthephyræ*, larva.
Ventral and dorsal view. The pereiopoda and pleopoda are removed (the shaded parts).

apically acuminated and with a spine on the outerside. 2nd antenna is about as long as the body, three-articulated, and has some small spines (see the fig.). Through the oral cone the mandibles are visible. At each side of the oral cone a gnathopod is seen of about the same form as the pereiopoda of the adult animal. Gnathopoda of this form are to be found in the Cryptoniscian-stages of the Dajidæ, but they are never found in other larvæ of Dajidæ of the stage figured; this does not prove that they do not exist in the other known larvæ, but they are, even with the excellent preparation made by

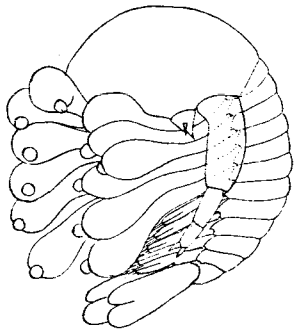


Fig. 20. *Holophryxus Acanthephyræ*, larva. Lateral view a little from below.

Prof. Jungersen, very difffcult to see. — The ventral surface has 6 lamellæ (one for each of the 6 pairs of pereiopoda) and a large scutum (on the abdomen). The pereiopoda are thick and apparently immobile; on the innerside close to the tip they have a little bud-like process. When made transparent the pereiopoda of the next larval stage are to be seen through the skin, and within the bud-like process a claw is seen, quite as in the adult animal (fig. 21). There are 5 pairs of cleft pleopoda; they have a constriction about midway and are perhaps 2-articulated; but the articulation is not distinct. They have rather long natatory setæ. The uropoda are cleft, unarticulated and have no setæ.

Fig. 21. *Holophryxus Acanthephyræ*, larva. A pereiopod.

It has been found unnecessary to give a longer description, all details being seen from the figs.

Larvæ of a Decapod (Pandalus propinquus?) (figs. 22—31).

(St. 30b) 63° 04′ N, 56° 32′ W, 70 m. wire, 7—6—1908, ca. 15 spec. (1. and 2. stage).
(St. 37b) 63° 47′ N, 52° 12′ W, 100 m. wire, 9—6—1908, 2 spec. (2. stage).
(St. 229) 64° 20′ N, 53° 03′ W, 120, 100 and 80 m. wire, 29—8—1908, ca. 10 spec. (5. stage).
(St. 423) 65° 03′ N, 54° 16′ W, 120, 100 and 80 m. wire, 7—6—1909, ca. 60 spec. (25 spec. 2. stage, 35 spec. 3. stage).
(St. 196d) 68° 40′ N, 53° 12′ W, 350 m. wire, 17—8—1908, ca. 40 spec. (4. stage).
(St. 124) 69° 17′ N, 52° 14′ W, 150 m. wire, 16—7—1908, ca. 25 spec. (2. and 3. stage).

1. st (known) larval stage (figs. 22—30, st. I).

The total length 7 mm.

The body is very slender. The carapace inclusive of the rostrum is about one third as long as the total length. Rostrum is half as long as the carapace; it is slender and spiniform, without any denticles. In the middle of the dorsal surface of the carapace there is a little blunt prominence: the antero-lateral corners are apically pointed. The posterior division of the body has 6 seg-

ments and gradually tapers distally. The abdominal segments have no dentition exclusive of telson. Telson has the usual form and

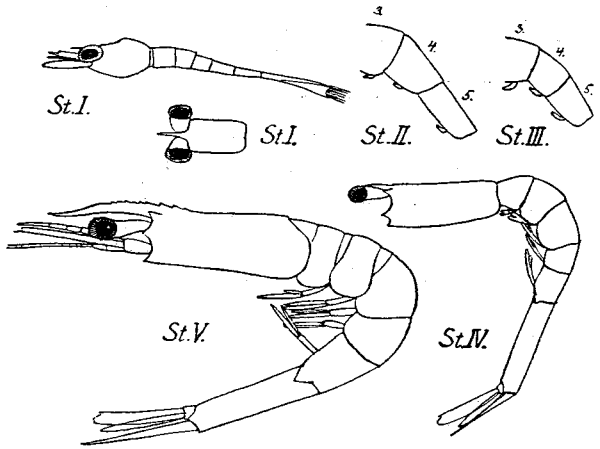


Fig. 22. The larva of *Pandalus propinquus (?)* stage 1—5.

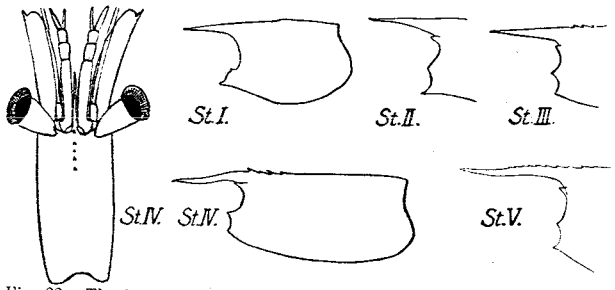


Fig. 23. The larva of *Pandalus propinquus (?):* carapace of stage 1—5.

is deeply emarginated at the hind edge with the usual 7 pairs of spines; all the spines are somewhat broken apically. Through the skin the incipient formation of the uropoda may be seen.

The eyes are somewhat applanated; they surpass somewhat the sides of the carapace.

All the appendages exclusive of the pleopoda and uropoda are present. The 1st and 2nd antennæ have about the same form as in the 1st larval stage of *Pandalus borealis* (G. O. Sars: Account of the postembryonal development of *Pandalus borealis* . . . .; Report

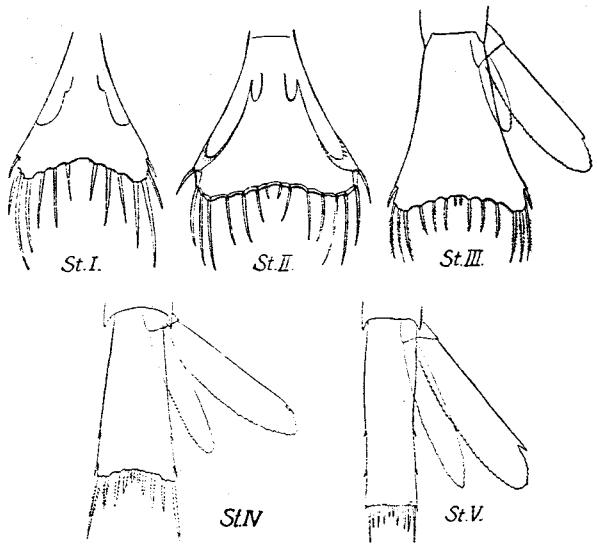


Fig. 24. The larva of *Pandalus propinquus (?):* telson and uropoda of stage 1—5.

on Norwegian Fishery- and Marine-Investigations, vol. 1, 1900, No. 3, Pl. 1, figs. 3—4); the most important difference is that the stem of 1st antenna has a little joint apically. Also the mandibles and the maxillæ have about the same form (Sars l. c., Pl. 1, figs. 6—7); through the skin the mandibles and 2nd maxillæ of the next stage may be seen. The same agreement will be found in regard to 1st and 2nd maxilliped (Sars l. c. figs. 10—12); but 3rd maxilliped has the usual form and is not dilated as in *Pandalus borealis* (Sars l. c. fig. 12); besides it has 7 joints. (1. stage

of *P. borealis* has but 4 joints). The greatest difference, however, obtains in regard to the pereiopods. All the pereiopods are rather

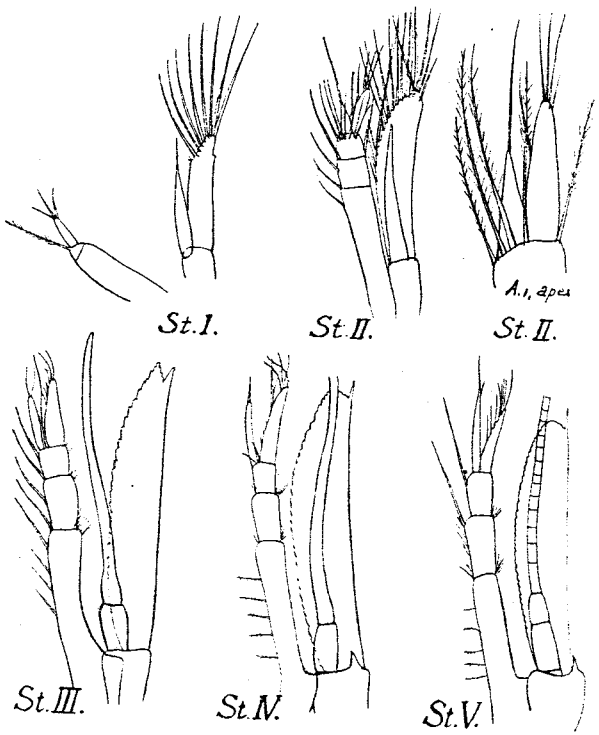


Fig. 25. The larva of *Pandalus propinquus (?)*: antenna 1—2 of stage 1—5.

large; 1st to 3d pairs are deeply cleft, 4th and 5th pairs have only the endopodite.

Pandalus borealis has no known larval stage totally corresponding with the 1st stage of the larva from the "Tjalfe"; stage 2 (Sars l. c. Pl. 2, figs. 1—3) is the best corresponding, but it has

no traces of 3rd to 5th pereiopod, and 2nd pereiopod is but a little, bud-like body.

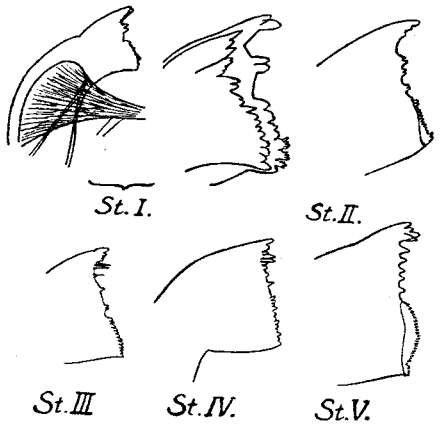


Fig. 26. The larva of *Pandalus propinquus (?)*: the mandible of stage 1—5.

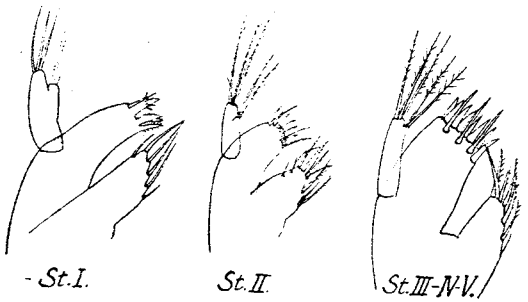


Fig. 27. The larva of *Pandalus propinquus (?)*: 1. max. of stage 1—5.

2nd (known) larval stage (figs. 22—30, st. II).

Total length 9 mm.

The carapace has obtained one supra-ocular tooth. Through the larval skin the incipient formation of the articulation between the

6th abdominal segment and the telson may be seen as also the now cleft uropoda. The telson has now 8 pairs of spines.

The 1st antenna has acquired 3 joints in the stem. The oral parts are about as in the 1st stage; but 1st—3rd pereiopod have now all the usual 7 joints (in the 1st stage they are un-

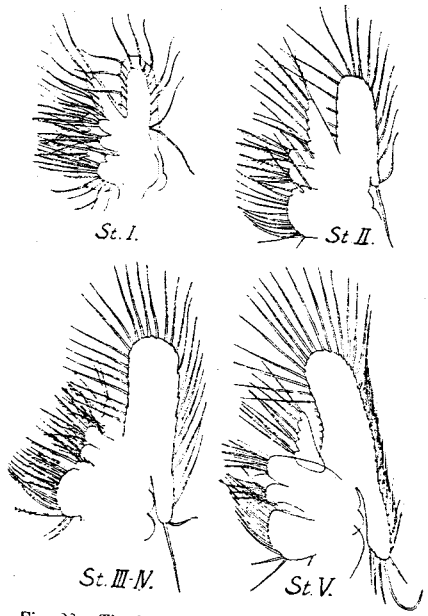


Fig. 28. The larva of *Pandalus propinquus (?)*: 2. max. of stage 1—5.

articulated), and their exopodites have 9 pairs of setæ. Also 4th and 5th pereiopod are articulated; but the 5th pair has but 6 joints, and the articulation is very indistinct. The pleopods are little uncleft appendages.

3rd (known) larval stage (figs. 22—30, st. III).

Total length 10 mm.

In the fore-part of the middle-line of the carapace there are 3 little teeth; but they are not to be found in all the specimens. 1st antenna is unaltered, but flagellum in 2nd antenna is longer than the squama, though this is considerably increased in length, and the peduncular part (of the flagellum) is well defined, but has only a single joint; the terminal part is still unarticulated. The oral parts are about unaltered. The pereiopods are somewhat lengthened; 2nd pair are now cheliform, and 5th pair have 7 distinct joints. Abdomen has 7 joints, and the uropoda are free.

4th (known) stage (figs. 22—31, st. IV).

Total length 12 mm.

The carapace has 4 teeth in the middle line. The 5th abdominal segment has a little tooth at each side of the hind edge. The telson is very much altered; it is in the distal part not much broader than in the forepart, and it has but 7 pairs of spines, the 2 pairs of which are placed at the side-edge.

The antennæ and the oral parts are about as in the preceding stage; but in 2nd maxilla the exopodite is much more developed, especially its hinder lappet. The exopodites of the pereiopoda have 10 pairs of setæ, and the pereiopoda are somewhat lengthened in comparison with the preceding stage. The pleopoda are now cleft, but have a trace of articulation. The endopodites of the uropoda are about as long as the exopodites.

5th (known) stage (figs. 22—31, st. V).

Total length 19 mm.

The rostrum has 11 teeth, 1 of which is but a little from the tip and 3—4 on the carapace. The telson is about linear, has 8 pairs of spines, and is not emarginate at the tip.

In the 2nd antenna the peduncular part of the flagellum has 2 joints, and the flagellum itself is unarticulated, but is somewhat damaged in all the specimens. The oral parts are about as in the preceding stage. The pereiopoda are still more lengthened than in the 4th stage, and the 4th—5th pairs are very like the

same legs in the 1st postlarval stage in *Pandalus borealis* (Sars l. c., Pl. 1, fig. 1). The pleopoda are now articulated.

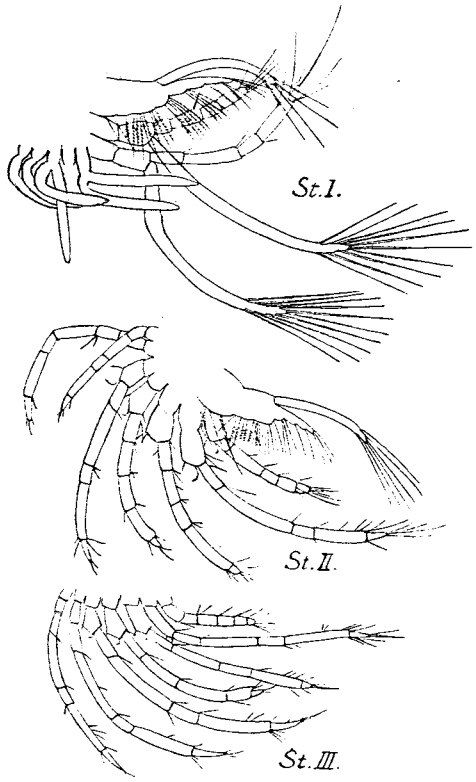


Fig. 29. The larva of *Pandalus propinquus (?)*: maxillipedes and pereiopoda of stage 1—3 (in st. 2—3 the exopodites are not drawn with exception of that in mxp. 1).

As may be seen, it is evident, that all the larvæ belong to one species.

From the rostrum and the 1st—2nd pereiopoda in the last

stage it may be concluded, that this species must belong to the fam. *Pandalidæ*, and this fam. has in the Greenland seas but 3

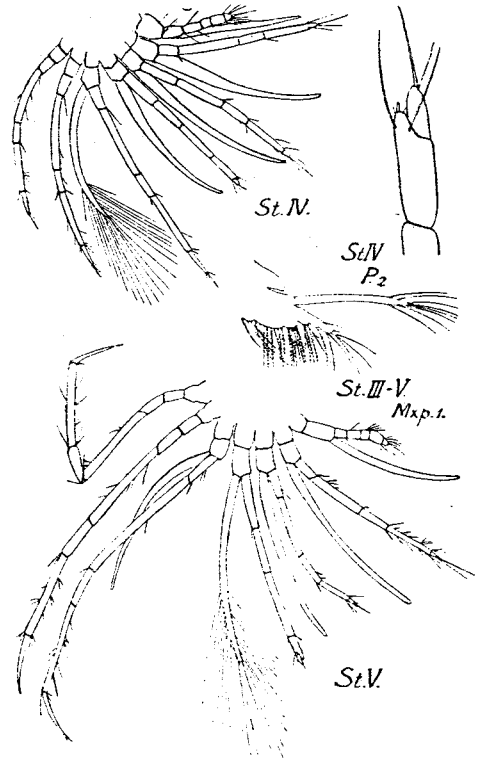


Fig. 30. The larva of *Pandalus propinquus (?)*: maxillipedes and pereiopoda of stage 4—5.

species, viz. *Pandalus borealis*, *P. Montagui* and *P. propinquus*. The development of the two first-named species is described by G. O. Sars (l. c.); but the development of *P. propinquus* is quite unknown. When compared with the figs. given by Sars the agree-

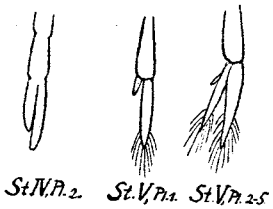


Fig. 31.
The larva of *Pandalus propinquus (?)*: Pleopods of st. 4—5.

ment with the larvæ from the "Tjalfe" is very distinct; the most important discrepancy is that the larvæ from the "Tjalfe" have no exopodite on the 4th pereiopod; *P. borealis* has this exopodite, but from Sars' description it seems, that *P. Montagui* and *P. (Pandalina) brevirostris* never acquire it. As, besides, *P. propinquus* has been taken in the deeper parts of the Davis Strait (by the "Ingolf" and the "Tjalfe"), it seems very probable that the larvæ must belong to this species.

Mysis-stage of a Decapod (Spirontocaris sp.!) (fig. 32).

(St. 465) 62° 58′ N, 50° 52′ W, 25 fath., 21—6—1909, 5 spec.

In "Report on the Malacostraca, Pycnogonida and some Entomostraca collected by the Danmark Expedition to North-East Green-

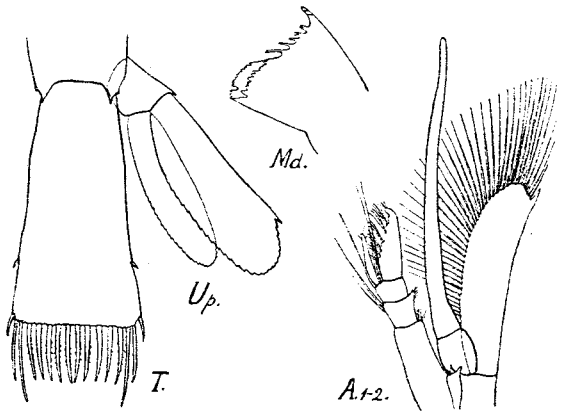


Fig. 32. Larva of *Spirontocaris sp. (?)*.

land", in „Meddelelser om Grønland", vol. 45, 1912, p. 522, Pl. 43, figs. 31—39, I have described a larva taken in Danmarks Havn (ca. 77° N, E. Greenland), 0—20 m., 19—9—1907.

Unfortunately the Danmark Expedition has taken but a single, badly preserved specimen. The specimens from the "Tjalfe" are better preserved and show, that the telson has a little spine at the hind corner. There is a little difference in regard to the mandibles, and the flagellum in the 2nd antenna has no trace of articulation; in all other regards the specimens from the "Tjalfe" fully correspond with that from the Danmark-Expedition. In the specimen figured the uropoda are somewhat shorter than the telson; in the other specimens they have the same length as the telson.

Brachyurid larva, 1st Zoea (fig. 33).

(St. 19a) 58° 41′ N, 49° 44′ W, 100 m. wire, 31—5—1908, 1 spec.
(St. 465) 62° 58′ N, 50° 52′ W, 25 fath., 21—6—1909, many spec. (1 cm.³).
(St. 464) The mouth of the Fiskenæsfjord, 80 m. wire, 21—6—1909, many spec. (50 cm.³).
(St. 30b) 63° 04′ N, 56° 32′ W, 70 m. wire, 7—6—1908, ca. 25 spec.
(St. 37b) 63° 47′ N, 52° 12′ W, 100 m. wire, 9—6—1908. many spec. (5 cm.³).
(St. 196d) 68° 40′ N, 53° 12′ W, 410 m., 350 m. wire, 17—8—1908, 1 spec.
(St. 124) 69° 17′ N, 52° 14′ W, 150 m. wire, 16—7—1908, many spec. (1 cm.³).
(St. 125) — — 550 m. wire, — 1 spec.

At the localities mentioned above the 1st Zoeastage of a crab was taken. The larvæ are in some points very like the larva of *Hyas araneus* (Williamson, Rep. on larval and later stages of certain decapod Crustacea: Fisheries, Scotland, Sci. Invest. 1909, 1. (Decbr. 1910), p. 13—15, Pl. 1, figs. 1—2; Pl. 5, figs. 70—78. 80—81). In other points they are very like the 1st Zoea of *Cancer pagurus* (J. Pearson, Cancer; Transact. Liverpool Biol. Soc., vol. 22, 1908 p. 461, Pl. 13, figs. 85—87): the appendages are in about the same stage of development, and the telson has about the same form and the same number of spines: but the lateral spines of the carapace of the larvæ from the "Tjalfe" are longer, and on the abdominal segments there are lateral spines as in the larvæ of

Hyas araneus (see above) and as in the last zoea-stage of the American species *Cancer irroratus* (S. I. Smith, Metamorph. of lobster and other crust.; U. S. Commission of Fish and Fisheries 1871—72 (1873), p. 530, Pl. 8, fig. 37). Smith does not give

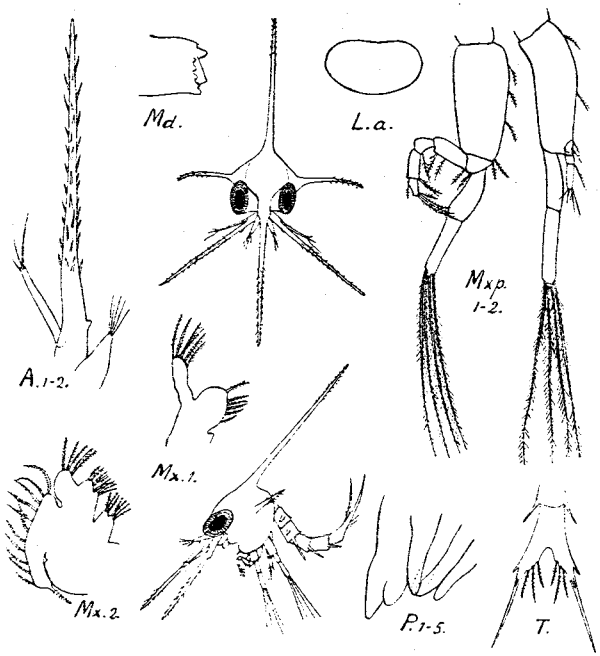


Fig. 33. *Brachyurid*-larva (L. a. = labrum).

any detailed description or fig. of the 1st Zoea; but the existence of a pair of dorsal spines on the 5th abdominal segment in his fig. seems to be the sole discrepancy not due to the difference in age. —

Description of the larva.

The length between the tips of the rostrum and of the dorsal spine 2 mm. The rostrum is about twice as long as the carapace

without spines; the dorsal spine is somewhat longer than the rostrum and about twice as long as the lateral spines. All the 4 spines on the carapace are almost straight and are in the distal part furnished with setæ. The carapace is somewhat globular; at the forepart of the under-edge there is at each side a rather deep incision behind which 4 setæ are fixed. The eyes are very large and have black pigment; nowhere else is pigment to be seen.

Antenna 1 is an unarticulated conical appendage with 5 (?) long setæ; but the number of these is difficult to determine as they most frequently lie close to one another. Antenna 2 is unarticulated; the exopodite is between 3 and 4 times as long as the endopodite, which has 3 setæ on the tip. A little distally to the place where the endopodite is fixed. but on the other side, the exopodite has a little prominence; for the rest it is furnished with small setæ like those on the spines of the carapace. The labrum has the usual form. The mandibles have no palp; the form of the mastigatory part may be seen from the fig.; but the 4 little rounded teeth are in several of the specimens not to be found. Maxilla 1 has no palp, but has the usual 3 lobes; the 1st lobe, the basal lobe, is rather broad, with 6 short, ciliated setæ; the mastigatory lobe is longer and narrower and has 6 setæ somewhat longer than those of the basal lobe. Maxilla 2 has the usual form with a large exopodite; palp and endopodite have 2 cleft lobes. In the 1st pair of maxillipeds the endopodite has 5 joints; it is a little shorter than the two-articulated exopodite that has 4 long natatory setæ at the tip. Also in the 2nd maxilliped the exopodite has 2 joints and 4 natatory setæ, but the endopodite is short and has but 3 joints. There are no traces of the 3d maxilliped. The pereiopods are short unarticulated appendages; the 1st pair are cleft. Of the pleopoda and uropoda there are no traces, and abdomen has but 6 segments. On the middle of each side of 2nd and 3rd abdominal segment there is a spine that is large and curved and there are long straight lateral spines on the hind edges of 3rd, 4th and 5th abdominal segments. Two little

bristles are placed dorsally on each abdominal segment. The telson has the same number of spines and about the same form as Williamson's fig. of *Hyas araneus* (l. c. fig. 70), but the hook in the hind-edge is narrower, being rounded acute-angled.

Compared with the 1st zoea of *Cancer pagurus* the larva described above differs, besides in regard to the abdominal segments, also in some small details in the appendages. Greater is the agreement with 1st zoea of *Hyas araneus* (Williamson l. c., Pl. 5 fig. 73), especially in regard to the abdomen; but the greatest agreement seems to me to be with the larva of *Cancer irroratus*. If the larvæ from the "Tjalfe" really belong to *Cancer irroratus*, they have a very great interest; for the adult *Cancer irroratus* is never found at Greenland, but lives at the east coast of N. America. Of the mentioned crabs only *Hyas araneus* lives at Greenland.

Larva of Munida Bamffica Penn.

Munida rugosa G. O. Sars, Bidrag til Decapodernes Forvandling II, Archiv f. Mathematik og Naturvidenskab, Christiania 1889, p. 178, Pl. 6.

(St. 292) 58° 24′ N, 30° 35′ W, 500 m. wire, 3—10—1908, 1 spec.

The larva belongs to the stage drawn by Sars (l. c.) fig. 12.

Larvæ of Munida (tenuimana G. O. Sars?) (figs. 33—35).

(St. 281) 57° 51′ N, 43° 57′ W, 500 m. wire, 29—9—1908, 3 spec.
(St. 285) 57° 51′ N, 43° 48′ W, 1000 m. wire, 29—9—1908, 2 spec.
(St. 278) 58° 16′ N, 47° 12′ W, 80—200 m. wire, 28—9—1908, 3 spec.
(St. 292) 58° 24′ N, 30° 35′ W, 500 m. wire, 3—10—1908, 1 spec.

At the stations above the "Tjalfe" has taken some larvæ belonging to a species of *Munida*. Some of the specimens belong to a stage between the stages figured by Sars (*Munida rugosa* l. c. 1889), some of them to a stage corresponding to the older of Sars's larvæ; the younger larvæ have no traces of pleopoda and are 11 mm. long (incl. rostrum), the older 14 mm. As my figures will show, there is in most regards a very good agreement with

Sars' figures; but I have not been able to find the two little teeth on the dorsal surface of the abdominal segments in spite of very close examination. In the specimen figured of the older larva the hinder lateral corners of the carapace reach to the hind-edge

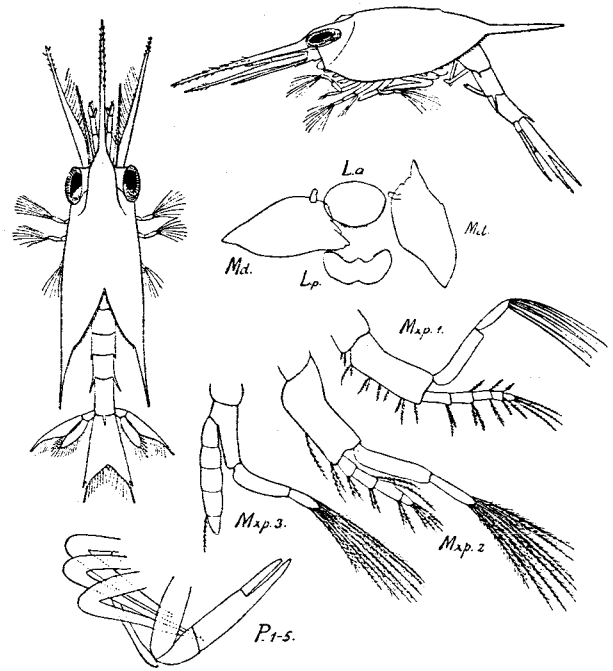


Fig. 33. Larva of *Munida (tenuimana?)*, older stage.

of the 6th abdominal segment; in the other specimens they are as long as in the specimens drawn by Sars. But in all the specimens the exterior spine on the corner of the telson is relatively much longer than in the species described by Sars; as this difference fully corresponds with the specific character in the genus *Galathea* (Sars l. c., p. 174, Pl. 5, fig. 3, 15, 26; — the specific character

in the squama of the genus *Galathea* [Sars l. c., p. 173, Pl. 5, fig, 3, 6, 19] is not to be found in the genus *Munida*, the squama in all stages and in both species having about the same form—), I find reason to believe, that these specimens belong to another species than that described by Sars.

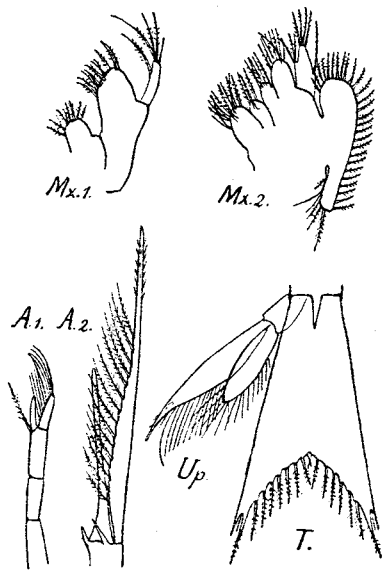


Fig. 34. Larva of *Munida (tenuimana?)* older stage.
The telson has in the specimen figured 7 setæ in the right side of the hook, 8 in the left side.

During a cruise in the summer 1911 has with the Danish Fisheries-investigation-steamer "Thor" in the Skagerak (57° 09′ N, 7° 16′ E, 25 miles NNW. ½ W. to the light house Lodbjerg, 44 m.) Dr. Th. Mortensen collected a large number of larvæ of *Munida*, and about all these larvæ totally correspond with the younger larvæ from the "Tjalfe" (the other larvæ belong to *M. Bamffica*). *M. tenuimana*

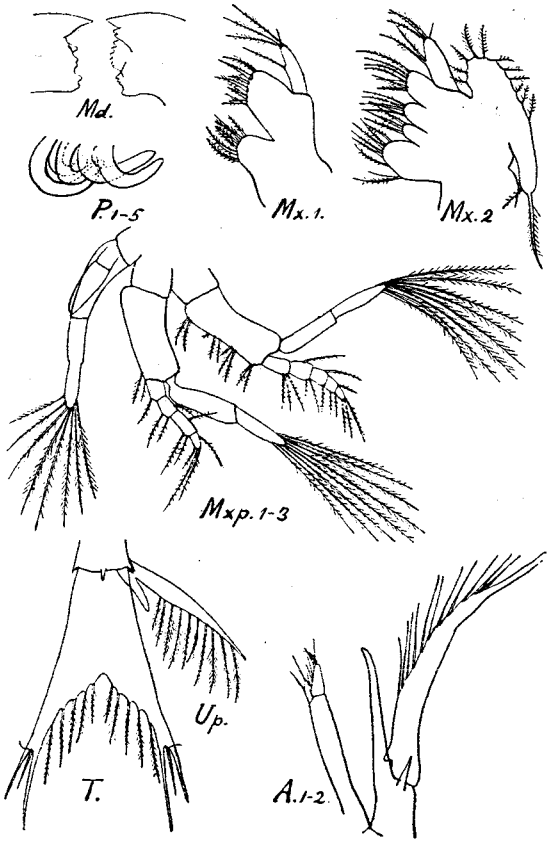


Fig. 35. Larva of *Munida (tenuimana?)* younger stage.
All the figs. are from specimens from the Skagerak except the fig. of A. 1—2 (from a specimen from the "Tjalfe").

being very common in the Skagerak, whilst *M. Bamffica* is seldom (of the latter species the Danish Fisheries-investigation-steamer "Thor" has taken but a single specimen, see my paper: Revideret

Fortegnelse over Danmarks marine Decapoda, Vidensk. Meddel. Naturh. Foren. København 1909 (1910), p. 274), and as we have only the two named species in the Skagerak, I mean, that also the larvæ from the "Tjalfe" belong to *Munida tenuimana*.

Abbreviations of literature.

Bell 1853, = Bell, *British stalk-eyed Crustacea*. 1853.

H. J. Hansen, V. Grønland = H. J. Hansen, *Malacostraca marina Groenlandiæ occidentalis*. Oversigt over det vestlige Grønlands Fauna af malakostrake Havkrebsdyr; Vid. Meddel. Naturh. Foren. Kjbhv. 1887.

H. J. Hansen, Ingolf = H. J. Hansen, *Crustacea Malacostraca* I. The Danish "Ingolf"-Expedition, vol. 3, part 2, 1908.

Kemp, Decap. Ireland, 1908 (1910) = Kemp, *Decapoda Natantia* of the coasts of Ireland. Fisheries, Ireland, Sci. Invest. 1908, I. (1910).

Ohlin 1901 = Ohlin, *Arctic Crustacea* collected during the Swedish arctic exped. 1898—1899, II. Decap., Schizop.; Bihang K. Svenska Vet. Akads. Handl., vol. 27, Afd. 4, 1901.

Stebbing, Tierreich = Stebbing, *Amphipoda I, Gammaridea;* Das Tierreich, Lief. 21, 1906.

All the figures are from drawings by the author except fig. 13 (photograph).

20—5—1912.

KBH. BIANCO LUNO