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(ANSI and ISO TEST CHART No. 2)
REPORT
OF THE
CANADIAN ARCTIC EXPEDITION
1913-18
VOLUME VII: CRUSTACEA
PART E: AMPHIPODS

By CLARENCE R. SHOFMAKER

OTTAWA
THOMAS MULVEY
PRINTER TO THE KING’S MOST EXCELLENT MAJESTY
1920
Issued Sept. 7th, 1920
The Amphipods of the Canadian Arctic Expedition, 1913-18.

By CLARENCE R. SHOEMAKER

Division of Marine Invertebrates, U. S. National Museum

The marine and freshwater amphipods collected by the naturalist of the southern party of the Canadian Arctic Expedition, Mr. Frits Johansen, are for the most part well-known arctic forms, but one, a species of Synurella, is new to science, this genus now appearing for the first time in American waters.

Kalixus obesus was known from the Atlantic only on the strength of two specimens, until thirty-five were taken off the southwestern coast of Greenland by the Tjalfe Expedition in 1908-9; it appears now for the first time in the Pacific.

The known ranges of several species have been greatly extended by the records in the collection under consideration; the details will be given under the species involved.

The collection contains fifty-three species included in forty-one genera which are distributed among eighteen families; the family Lysianassidae, as would be expected in an arctic collection, is represented by the greatest number of genera, species, and individuals.

An appendix has been added consisting of data based upon specimens from the Neptune and other Canadian expeditions.

The color notes given under some of the species are based upon colored sketches made by Mr. Frits Johansen. The color nomenclature is based upon Ridgway's "Color Standards and Nomenclature."

Order Amphipoda.

Sub-order Gammaridea.

Family LYSIANASSID/E.

1. Anonyx nugax (Phipps).


Station 29f: 70° 13' N., 140° 50' W., April 4, 1914, from stomach of Phoca hispida Schreber, water depth about 30 fathoms: 6 specimens.

Station 43a: Dolphin and Union strait (off Cockburn point), Northwest Territories, September 13, 1913, 50 fathoms, mud with pebbles, but no algae: 2 specimens.

Station 46c: Dolphin and Union strait (off Bernard harbour), Northwest Territories, February 16, 1916, 6 fathoms: 300 specimens.

Station 46g: Dolphin and Union strait (Bernard harbour), Northwest Territories, May 4, 1916; from Eskimos; 7 specimens.

Distribution.—This species is very widely distributed, being found throughout the Arctic, North Atlantic, and North Pacific oceans.

2. Hippomedon holbolli (Krøyer).


Vol. vii—63922-1)
Canadian Arctic Expedition, 1913–18

Station 29f: 70° 13' N., 140° 50' W., April 4, 1914. From stomach of Phoca hispida Schreiber; water depth about 30 fathoms; 30 specimens.

Distribution.—Arctic ocean.

3. Onisimus botkini Birula.


Station 27c: Lagoon-bay at Collinson point, Alaska, September 15, 1913, 0-1 foot water; 1 specimen.

Station 28a: Collinson point, Alaska, July 8, 1914, from stomach of Salvelinus malma Walb.; 7 specimens.

Station 28r: Bay at Collinson Point, Alaska, July 24, 1914; from stomach of Cottus quadricornis L., 3 fragments.

Station 30c: Demarcation point, Alaska, May 10, 1914, 3 fathoms, sandy mud; 200 specimens.

The specimens examined by Birula and by von der Brüggen all came from shallow water in the Kara sea, so it is very interesting to see these very fine specimens from Alaska. As these specimens differ in a few minor details from those collected in the Kara sea, I here add a brief description and a few figures.

![Figure 1. *Onisimus botkini* Birula *♂️.

1. Head and antennae. 2 Maxilla 1. 3 Mandible. 4 2d and 3d abdominal segments and uroscope. 5 Telson, and 2d and 3d uropods.](image-url)
Figure 2. *Onisimus botkinii* Birula ♂.

Head; lateral lobes narrowly rounded. Eyes; pear-shaped, red. Antenna 1: 1st joint about twice as long as 2nd and 3rd combined, slightly produced at the upper, inside, anterior edge, and provided on the upper, inside, posterior end with a few plumose setae, flagellum in $\varphi$, 24 to 30 joints, in $\sigma$, 14 to 18 joints, accessory flagellum, 5-7 joints, of which the first joint is about as long as all the rest combined. Antenna 2 not much longer than 1, ultimate joint slightly shorter than penultimate, flagellum in $\varphi$, 30 to 38 joints, in $\sigma$, 18 to 23 joints.

Side-plate 1 expanded below, the lower anterior corner produced and broadly rounded, the lower edge nearly straight, a slight notch bearing a minute seta at lower posterior corner. Side-plates 2 and 3 with the sides nearly parallel, slightly wider below, the lower edge nearly straight. Side-plate 4 deeply and broadly emarginate behind, the lower part wide and the lower edge nearly straight.

Gnathopod 1. 6th joint about one-third longer than 5th with front edge slightly convex and back edge slightly concave, palm oblique and provided throughout its entire length with a single row of fine, sharp teeth and several spines, dactyl curved, with a single small tooth or spine in the centre of the inside edge, back of this tooth a row of very fine serrations, 4th and 5th joints provided on their under surface with mata of fine setae. Gnathopod 2 as in O. edwardsi or O. plautus, except that 5th and 6th joints are much more setose.

The pereopods are rather short and stout. Third abdominal segment produced at the lower posterior corner into a small rounded lobe which varies much in size.

Telson a little longer than wide, sides convex, posterior border very slightly emarginate and bearing two minute setae.

The largest specimens measure about 19 mm.

4. **Onisimus brevicaudatus** Hansen.

1886. *Onisimus brevicaudatus* HANSEN, Dijmphna-Tofta Ubd., p. 218, pl. 21, f. 7-7e.


Station 29: Lat. 70° 13' N., long. 140° 50' W., April 4, 1914, from stomach of *Phoca hispida* Schreber. Water depth about 30 fathoms. 6 specimens.

The specimens which Hansen described came from the Kara sea.

5. **Onisimus plautus** (Kröyer).


Station 46C: Dolphin and Union strait, Northwest Territories (off Bernard Harbour), pelagic, over 38 feet water; February 19, 1916; 3 specimens.

*Distribution.*—Arctic ocean, North Atlantic, and North sea, Skagerrak (Bohuslän).

6. **Orchomenella groenlandica** (Hansen).

1887. *Anonyx groenlandicus* HANSEN, Vid. Meddel., ser. 4, vol. 9, p. 72, pl. 2, f. 5-5g.


Station 41: Bernard harbour, Northwest Territories (outer harbour), July 20, 1915. 5 fathoms, sandy mud with algae; 1 specimen.

*Distribution.*—Arctic ocean, East Greenland, Finland.
7. **Orchomenella minuta** (Krøyer).

1900. *Orchomenella minuta* Stebbing, Tierreich, Amph. 1, p. 82, and synonymy.

Station 37: Bernard harbour, North-West Territories, September 1, 1914, pelagic, over 2 fathoms of water; 2 specimens.

Station 46: Dolphin and Union strait, North-West Territories, February 19, 1916, pelagic, over 38 feet of water (off Bernard harbour), 1 specimen.

**Distribution.**—Arctic Ocean, North Atlantic, North Sea, Greenland.

8. **Pseudalibrotus glacialis** G. O. Sars.


Station 280: Collinson point, Alaska, July 8, 1914, from stomach of *Salvelinus malma* Walb.; 2 specimens.

Station 57a: Cape Smyth (point Barrow), Alaska, August 8, 1916, pelagic, over 1 fathom of water; 1 specimen.

The specimens described by Sars were obtained north of Franz Josef Land in 1894. The present specimens, coming from Alaska, indicate a wide distribution for the species.

9. **Pseudalibrotus litoralis** (Krøyer).


Station 27h: Lagoon-bay at Collinson point, Alaska, September 18, 1913, 0-1 foot of water; 1 specimen.

Station 280: Collinson point, Alaska, July 8, 1914, from stomach of *Salvelinus malma* Walb.; 10 specimens.

Stations 37r, u: Bernard harbour, North-West Territories, October 16-20, 1915, over 1 fathom of water; 37 specimens.

Station 40m: Bernard harbour, North-West Territories, June 25, 1915, from stomach of *Xema sabini* (J. Sabine); 2 specimens.

Station 41g: Bernard harbour, North-West Territories (outer harbour), August 1, 1915, surface; 2 specimens.

Station 41u: Bernard harbour, North-West Territories, end of August, 1915, from stomach of *Salvelinus malma* Walb.; 44 specimens.

Station 42h: Bay at Bernard harbour, North-West Territories, September 22, 1915, beach water; 12 specimens.

Station 46h: Dolphin and Union strait (Bernard harbour), North-West Territories, May 4, 1916, from Eskimos; 20 specimens.

Station 61a: South of Armstrong point, Victoria island, Prince of Wales strait, North-West Territories, October, 1915, J. Hadley collector; 200 specimens.

**Distribution.**—A very abundant species found throughout the Arctic ocean.

10. **Pseudalibrotus nansenii** G. O. Sars.


Station 57a: Cape Smyth (point Barrow), Alaska, August 8, 1916, pelagic, over 1 fathom of water; 1 specimen.

The specimens described by Sars were collected by the Norwegian North Polar Expedition in 1894 and 1896 north of the New Siberian islands, and farther to
the west. The discovery of this specimen at point Barrow extends the range of this species considerably to the east.

Juvenile specimens of some form of *Pseudalohrotus* were obtained at Station 40v, 506 (both in Dolphin and Union strait), and 56c, (Harrison bay, Alaska), but any specific identification of such specimens would be very doubtful.

11. *Socarnes bidenticulatus* (Bate).

1835. *Gammarus naupis* J. C. Ross, in Ross's Second voyage, Appendix, p. 87.
1913. *Socarnes bidenticulatus* STEPHENSEN, Account Crust. etc. collected by Dr. V. Nordmann in Summer 1911 from West Greenland, p. 65.

Station 42u: Bernard harbour, Northwest Territories, October 22, 1915, from stomach of *Eriphycus barbatus* (Erxleben); 5 specimens.
*Distribution.*—Arctic ocean, east and west coast of Greenland.


Station 29f: Lat. 70° 13' N., long. 140° 50' W., April 4, 1914, from stomach of *Phoca hispida* Schreber, over about 30 fathoms; 4 specimens.

Station 42u: Bernard harbour, Northwest Territories, October 22, 1915, from stomach of *Eriphycus barbatus* (Erxleben); 1 specimen.

Station 43a: Dolphin and Union strait (off Cockburn point), Northwest Territories, September 13, 1915, over about 50 fathoms of water, mud with pebbles, but no alga; 2 specimens.


*Distribution.*—Arctic ocean, north Atlantic, North sea, France.


1905. *Katius obsesus* CHEVREUX, Description d'un Amphipode (*Katius obsesus* nov. gen. et sp.) Bull. Mus. Oceanogr. Monaco, No. 35, 1913 (with figs.).

Station 8a: Lat. 55° 13' N., long. 140° 21' W., June 26, 1913, surface; 1 specimen.

This species is represented by a single badly preserved specimen which differs only slightly from Chevreux’s figure. His specimen was 12 mm. long, while those obtained on the *Tjalf* Expedition were 25 mm. The present specimen measures about 5 mm. which indicate that it is quite immature. The presence of a double row of calcareous on each antenna would seem to indicate a male. Chevreux’s specimen apparently did not have the calcareous, but he was not certain that it was a male. The eyes in our specimen are not present, as nearly all of the internal organs have disappeared, leaving the interior entirely empty. The 3rd uropods have the rami much narrower and the inner ramus proportionately shorter than in Chevreux’s figure. The type specimen was obtained off the Azores, in water 0-3000 meters depth; the specimen obtained by the *Helga* came from the west coast of Ireland, 1200 fathoms, and the specimens collected by the *Tjalf* Expedition were from the southern coast of Green-
Amphipods

land, in water 500-2000 meters depth. The discovery of this specimen in the North Pacific upon the surface greatly extends its range, both geographically and bathymetrically.

Family STEGOCEPHALIDÆ.


Station 42u: Bernard harbour, Northwest Territories, October 22, 1915, from stomach of Eriynuthus barbatus (Erxleben); 1 specimen.

Distribution.—Arctic ocean.

15. Stegocephalus inflatus Kröyer.


Station 29: Lat. 70° 13' N., long. 140° 55' W., April 4, 1914, from stomach of Phoca hispida Schreber, about 30 fathoms; 6 specimens.

Station 42u: Bernard harbour, Northwest Territories, October 22, 1915, from stomach of Eriynuthus barbatus (Erxleben); 10 specimens.

Station 43a: Dolphin and Union strait (off Cockburn point), Northwest Territories, September 13, 1915, 100 meters; sandy mud with pebbles but no algae; 1 specimen.

Distribution.—Arctic Ocean; north Atlantic (west-Norway, Shetland Isles, Nova Scotia, Labrador, Massachusetts); north Pacific (Japan, sea of Okhotsk); Bering Sea.

Family AMPELISCIDÆ.


Station 43a: Dolphin and Union strait (off Cockburn point), Northwest Territories, September 13, 1915, about 50 fathoms, mud with pebbles but no algae; 1 specimen.

Distribution.—Arctic ocean, north Atlantic, North and South Pacific, Bay of Biscay, Anvers Island (about Lat. 64° S. Long. 64° W.)

17. Haploops tubicola Lilljeborg.


67929-2

Station 43b: Dolphin and Union strait (off Stapyton bay), Northwest Territories, September 14, 1915, 25-30 fathoms, sandy mud with pebbles but no algae; 1 specimen.

*Distribution.*—Arctic ocean, North Atlantic, North Pacific.

**Family HAUSTORIIDÆ.**


Station 27a: Collinson point, Alaska, September 20, 1913, pelagic, over about 1 foot of water (9-inch ice); 2 specimens.

Station 28a: Collinson point, Alaska, July 8, 1914, from stomach of *Salvelinus malma* Walb.; 5 specimens.

*Distribution.*—Fresh-water lakes (Norway, Sweden, Russia, North America); Baltic, Kattegat, Kara sea, North Atlantic (France).


Station 37j: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over about 2 fathoms of water; 1 specimen.

Station 41u: Bernard harbour, Northwest Territories, end of August, 1915, from stomach of *Salvelinus malma* Walb.; 2 specimens.

*Distribution.*—Arctic ocean, North Atlantic, Baltic.


Station 48b: Banks peninsula, Bathurst inlet, Northwest Territories, May 18, 1916, from stomach of *Gadus* sp.; 1 specimen.

*Distribution.*—Arctic ocean, North Atlantic, Greenland, West Norway?

**Family ACANTHONOTOZOMATIDÆ.**


Station 28d: Collinson point, Alaska, October 18, 1913, about 1 fathom; 1 specimen.

Station 28e: Collinson point, Alaska, October 19, 1913, pelagic, over about 1 fathom; 1 specimen.

*Distribution.*—Arctic ocean, Greenland.
Amphipods

Family OEDICEROTIDÆ.

22. Acanthostephia malmgreni (Goës).


Station 43b: Dolphin and Union strait, Northwest Territories (off Stapylton bay), September 14, 1915, 25-30 fathoms; sandy mud with pebbles, but no algae; 1 specimen.

Distribution.—Arctic ocean, Greenland.

23. Acanthostephia pulchra Miers.


Station 25a: Off Cooper island (point Barrow), Alaska, pelagic, over 0-2 fathoms, August 27, 1913; 5 specimens.

Station 27s: Collinson point, Alaska, October 3, 1913, about 3 fathoms; 1 specimen.

Station 28a: Collinson point, Alaska, July 8, 1914, from stomach of Salvelinus malm Walb.; 13 specimens.

Station 41c: Bernard harbour, Northwest Territories, July 28, 1915, a.-out 5 fathoms, sandy mud with alge; 3 specimens.

Station 41u: Bernard harbour, Northwest Territories, end of August, 1915, from stomach of Salvelinus malm Walb.; 2 specimens.

Station 59a: Off Cape Kellett, Banks island, Northwest Territories, September 7, 1914, 5-6 fathoms, sand with alge; G. H. Wilkins, collector; 2 specimens.

Color.—Entire animal light grayish vinaceous with the body segments each transversely barred with dark purple-drab, joints of peduncles of antennæ transversely barred with dark purple-drab.

Distribution.—Arctic ocean (Franz Josef land, Siberia).


Station 27s: Collinson point, Alaska, October 3, 1913, about 3 fathoms, mud with alge; 1 specimen.

Station 28a: Collinson point, Alaska, July 8, 1914, from stomach of Salvelinus malm Walb.; 1 specimen.

Distribution.—Arctic ocean, Greenland.

25. Arrhis phyllonyx (M. Sars).


Station 43b: Dolphin and Union strait (off Stapylton bay), Northwest Territories, September 14, 1915, 25-30 fathoms, sandy mud with pebbles, but no algae; 1 specimen.

Distribution.—Arctic ocean, North Atlantic, North sea, Greenland, Iceland, Norway.
26. Monoculodes longirostris (Goës).


Station 37j: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over 2 fathoms water; 1 specimen.

Distribution.—Arctic ocean (Spitzbergen, Finmark, Tromsø), Kattégat.

27. Monoculodes schneideri G. O. Sars.

1906. Monoculodes schneideri STEBBING, Tierreich, Amph., vol. 1, p. 263.

Station 57a: Cape Smyth (point Barrow), Alaska, August 8, 1916, pelagic, over 1 fathom water; 2 specimens.

Distribution.—Arctic ocean (Tromsø). One immature specimen of some form of Monoculodes was obtained at station 41n (Bernard harbour).

28. Monoculopsis longicornis (Boeck).


Station 41n: Bernard harbour, Northwest Territories, (inner harbour), August 9, 1915, surface; 2 specimens.

Distribution.—Arctic ocean, North Atlantic, North sea, Greenland.

29. Paroedicerus lyneus (M. Sars).


Station 27s: Collinson point, Alaska, October 3, 1913, 3 fathoms, mud with algae; 1 specimen.

Station 28o: Collinson point, Alaska, July 8, 1914, from stomach of Salvelinus malma Walb.; 2 specimens.

Distribution.—Arctic ocean (Greenland, Iceland, Spitzbergen, Murman coast, Siberian Polar sea, Labrador, Finland).

Family CALLIOPIIDÆ.


1887. Apherusa glacialis HANSEN, Vid. Meddel. ser. 4, vol. 9, p. 137, pl. 5, f. 6-6c.

Station 25b, c: Off Cooper island, (point Barrow), Alaska, August 27, 1913, surface; 1 specimen.
Station 41r: Beach at Bernard harbour, Northwest Territories, August 14, 1915; 2 specimens.
Station 50a: Harrison bay, Alaska, August 6, 1916, surface; 1 specimen.
Station 57a: Cape Smyth (point Barrow), Alaska, August 8, 1916, pelagic, over 1 fathom of water; 3 specimens.

Distribution.—Arctic ocean, Greenland.

31. **Apherusa megalops** (Buchholz).


Station 37j: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over 2 fathoms of water; 2 specimens.
Station 41: Bernard harbour, Northwest Territories (outer harbour), July 20, 1915, 5 fathoms; 1 specimen.

This is not the *Apherusa megalops* described by G. O. Sars in 1882 from Norway, but the species described by R. Buchholz in 1874 as *Paramphithoe megalops* from Northeast Greenland. Heretofore this species has not been recorded outside of Greenland.

32. **Callopius levisculus** (Krøyer).


Station 7a: Lat. 55° 42' N., long. 136° 20' W., June 25, 1913, surface (among floating algae); 3 specimens.
Station 13a, b, c: Lat. 54° 30' N., long. 159° 42' W., July 1, 1913, surface; 1 specimen.
Station 13g, h: Lat. 54° 30' N., long. 159° 42' W., July 1, 1913, surface; 2 specimens.
Station 14: Lat. 54° 23' N., long. 164° 45' W., July 2, 1913, surface; 1 specimen.


33. **Callopius rathkii** (Zaddach).


Station 41r: Bernard harbour, Northwest Territories (inner harbour), August 24, 1915, surface; 1 specimen.

Distribution.—Arctic ocean, North Atlantic, North sea, and Skagerrak, Norway, France, Great Britain.

34. **Halirages nilssonii** Ohlin.


Station 41: Bernard harbour, Northwest Territories (outer harbour), July 20, 1915, 5 fathoms, sandy mud with algae; 3 specimens.

This species was first obtained from Baffin bay in 1894 by the Peary Auxiliary Expedition. The present specimens from Bernard harbour make the second record, and extend the range considerably to the west.
Family ATYLIDÆ.

35. Atylus carinatus (Fabricius).


Station 206: Grantley harbour (port Clarence), Alaska, July 30, 1913, 2-3 fathoms, sandy mud with many algae; 5 specimens.
Station 209: Port Clarence, Alaska, August 4, 1913, 2-3 fathoms, mud with many algae, 2 specimens.
Station 27: Collinson point, Alaska, October 2, 1913, pelagic, over 1 fathom water; 3 specimens.
Station 278: Collinson point, Alaska, October 3, 1913, 3 fathoms, mud with algae; 5 specimens.
Station 28d: Collinson point, Alaska, October 18, 1913, pelagic; 2 specimens.
Station 28: Collinson point, Alaska, October 21, 1913, pelagic, over 1 fathom water; 1 specimen.
Station 288: Collinson point, Alaska, October 25, 1913, ½ fathom, sand with algae; 2 specimens.

Station 40u: Bernard harbour, Northwest Territories, July 6-8, 1915, from stomach of Erignathus barbatus (Erdeben); 1 specimen.
Station 41: Bernard harbour, Northwest Territories (outer harbour), July 20, 1915, 5 fathoms, sandy mud with many algae; 21 specimens.

Color.—Entire animal tawny-olive with a sepia spot on the lower part of the body segments, carina marked in front with sepia, second joint of peduncle of the first and second antennae darker than the rest.

Distribution.—Arctic ocean (widely distributed).

Family EUSIRIDÆ.

36. Rhachotropis aculeata (Lepechin).


Station 29: Lat. 70° 13' N., long. 140° 50' W., April 4, 1914, from stomach of Phoca hispida (Schreber), 30 fathoms; 1 specimen.

Distribution.—Arctic ocean (widely distributed, circumpolar).

A fragment of some species of Rhachotropis was collected at station 28f. Collinson point, Alaska.

37. Rozinante fragilis (Goës).


Station 27: Collinson point, Alaska, October 3, 1913, 3 fathoms, mud with algae. (Bottom and pelagic); 2 specimens.
Station 28: Collinson point, Alaska, October 21, 1913, pelagic, over 1 fathom of water; 2 specimens.

Distribution.—Arctic ocean (Greenland, Spitzbergen, Barents sea).
Amphipods

Family PONTOGENEIIDÆ.

38. Pontogeneia inermis (Krøyer).

1839. Amphithoe crenulata Krøyer, ibid., p. 278, pl. 3, f. 12 a–g.

Station 37: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over 2 fathoms water; 1 specimen.

Distribution.—Arctic ocean, North Atlantic, North Pacific, North sea, Greenland, West Norway, Siberia.

Family GAMMARIDÆ.

39. Gammaracanthus loricatus (Sabine).


Station 28: Collinson point, Alaska, October 14, 1913, sandy mud with scattered algae; 1 fathom; 1 specimen.

Station 29: Lat. 70° 13’ N., long. 140° 50’ W., April 4, 1914, water depth 30 fathoms, from stomach of Phoca hispida Schreber; 2 specimens.
Station 28: Collinson point, Alaska, July 8, 1914, from stomach of Salvelinus malma Walb.; 2 specimens.

Station 37i: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over 2 fathoms water; 4 specimens.

Station 37r: Bernard harbour, Northwest Territories, October 16-20, 1914, pelagic, over 1 fathom of water; 1 specimen.

Station 40u: Bernard harbour, Northwest Territories, July 6-8, 1915, from stomach of Erignathus barbatus (Erxleben); 1 specimen.

Station 41: Bernard harbour, Northwest Territories (outer harbour), July 20, 1915, sandy mud with many algae, 5 fathoms; 3 specimens.

_Distribution._—Arctic Ocean (Greenland, Spitsbergen, Franz Josef land, Nova Zembla, Siberia.)

40. _Gammarus limnaeus_ Smith.


Station 28h: Warm creek, tributary to Saddlerocheit river, about 25 miles inland from Camden bay, Alaska, November 6-7, 1913; 30 specimens.

Station 40g: Bernard harbour, Northwest Territories, lake or creek, from stomach of _Cristivomer namaycew_ Walb., June 28, 1915; 17 specimens.

Station 40n1: Lake, inland at Bernard harbour, Northwest Territories, June 23, 1915, pelagic, over 4 meters of water, ice 2 meters; 11 specimens.

Station 40n2: Pond at Bernard harbour, Northwest Territories, July 16, 1915, pelagic; 3 specimens.

Station 42r: Lake at Bernard harbour, Northwest Territories, October 2, 1915, from stomach of _Salvelinus marstoni_ Garm.; 5 specimens.

Station 42v: Lake at Bernard harbour, Northwest Territories, December, 1915, from stomach of _Salvelinus marstoni_ Garm.; 7 specimens.

Station 50g: Lake at Bernard harbour, Northwest Territories, April, 1906, from stomach of _Cristivomer namaycew_ Walb.; 4 specimens.

Station 54h: Pond on north side of east end of Herschel island, Yukon Territory, August 1, 1916; 28 specimens.

This Amphipod has been found throughout the northeastern and western parts of the United States, and these records now from Bernard harbour and Alaska indicate that it inhabits the fresh-waters of the United States, Canada, and Alaska.

41. _Gammarus locusta_ (Linné).


Station 20b, c: Grantley harbour (port Clarence), Alaska, July 30, 1913, 2-3 fathoms, sandy mud with many algae; 2 specimens.

Station 20h: Port Clarence, Alaska, August 4, 1913, 2-3 fathoms, attached to floating algae; 3 specimens.

Station 27a: Collinson point, Alaska, September 5, 1913, sandy mud with scattered lichen, from stomach of _Cottus quadricornis_ L.; 2 specimens.

Station 27c: Lagoon-bay at Collinson point, Alaska, September 15, 1913, 0-1 foot water; 1 specimen.
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Station 27h: Lagoon-bay at Collinson point, Alaska, 0-1 foot water, September 18, 1913; 15 specimens.
Station 27o: Collinson point, Alaska, September 20, 1913, pelagic, over 1 foot of water (9-inch ice); 1 specimen.
Station 28c: Collinson point, Alaska, October 14, 1913, 1 fathom, sandy mud with scattered algae; 35 specimens.
Station 28b: Beach at Collinson point, Alaska, June, 1914; 2 specimens.
Station 28o: Collinson point, Alaska, from stomach of Salvelinus malma Walb., July 8, 1914; 14 specimens.
Station 28r: Bay at Collinson point, Alaska, July 24, 1914; from stomach of Cottus quadricornis L. 2 fragments.
Station 37a: Bernard harbour, Northwest Territories, August 24, 1914, from stomach of Erignathus barbatus (Erxleben); 5 specimens.
Station 37j: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over 2 fathoms water; 1 specimen.
Station 37r u: Bernard harbour, Northwest Territories, October 16-20, 1914, pelagic, over 1 fathom water; 6 specimens.
Station 40d: Dolphin and Union strait (Bernard harbour), Northwest Territories, June 8, 1915. Pelagic over 9 fathoms; 1 specimen.
Station 40h: Dolphin and Union strait (Bernard harbour), Northwest Territories, June 25, 1915, pelagic, over 2 fathoms water; 5 specimens.
Station 40m: Bernard harbour, Northwest Territories, June 25, 1915, from stomach of Xema sabini (J. Sabine); 1 specimen.
Station 40p: Bernard harbour, Northwest Territories, July 1, 1915, pelagic, in littoral region; 20 specimens.
Station 40o: Bernard harbour, Northwest Territories, July 6-8, 1915, from stomach of Erignathus barbatus (Erxleben), F.; 4 specimens.
Station 48h: Banks peninsula, Bathurst inlet, Northwest Territories, May 18, 1916, from stomach of Gadus sp.; 10 specimens.
Station 50d: Young point, Northwest Territories (Dolphin and Union strait), July 21, 1916, among loose algae, in littoral region; 6 specimens.

Color.—Entire animal maize yellow, eyes brown blue, legs and antennae banded with light russet vinaceous, each of the body segments with a dark transverse dorsal band, the last two thoracic and the abdominal segments marked on their lower portions with scarlet.

Distribution.—Arctic ocean, North Atlantic, North Pacific.

Immature species of Gammarus were obtained at station 40r, 41g, (both Dolphin and Union strait), and 56a (Harrison Bay, Alaska).

42. Synurella johanseni, new species.

Type specimen: Catalogue No. 1380; paratypes, Nos. 1381-3. Victoria Memorial Museum, Ottawa, Canada.
Station 20i: Pond in the tundra at Teller, Alaska, August 6, 1913; 21 specimens.
Station 20j: Brackish pond at Teller, Alaska, August 3, 1913; 1 specimen (juvenile).

Description.—Body rather stout, not much compressed. Head with front edge broadly rounded. Eyes rather small, irregular oval, composed of few elements, brownish black.

Pleon segments 1 and 2 with posterior lateral corners slightly produced; segment 3, with posterior lateral corners evenly rounded or with a very slight production of the lower posterior margin. Posterior edge of pleon segment 3 with shallow notch bearing a minute seta just above the lower margin.

Antenna 1 is about half as long as the body: the joints of the peduncle becoming consecutively shorter; 1st joint much the stoutest; flagellum of about

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12 joints; accessory flagellum 2-jointed, but not as long as the 1st joint of primary.

Antenna 2 with 4th joint of peduncle longest; flagellum 6-jointed, and about as long as the 4th joint of peduncle.

Side-plates 1-3 about as deep as their segments, with sides parallel and lower edges evenly rounded and provided with setae. Side-plate 4 deepest, with upper half of posterior border rather deeply emarginate, and lower border and lower half of posterior border provided with setae.

Mandible; 3rd joint of palp a little shorter than 2nd, armed at apex with 4 or 5 long bristles and at the upper part of the front edge with a row of fine bristles; front edge of 2nd joint with 5 or 6 long bristles. Molar projecting considerably from surface of mandible, and provided on inner edge of grinding surface with a very finely pinnate seta which is as long as the molar; on edge opposite seta is a group of minute spines; grinding surface covered with fine, sharp teeth. Maxilla 1; inner plate with 6 or 7 plumose setae; outer plate with 7 stout spines, some of which are notched; palp with row of spines at apex, below which are scattered setules. Maxilla 2; inner plate with seta on apex and on inner margin; outer plates with setae at apex. Maxillipeds; inner plates with notched spines at apex; outer plates with spines at apex and on inner edges. Lower lip normal.
Figure 5. *Synurella johanneni*, n. sp.

1 Gnathopod 1, left, inside view. 2 Notched spine of palm. 3 Gnathopod 2, left, inside view. 4 Side-plate 4
Figure 6. *Synurella johansenii*, n. sp.

1 Peracopod 2. 2 2nd and 3rd abdominal segments. 3 3rd abdominal segment showing slight production of lower posterior corner. 4 Uropod 1. 5 Uropod 2. 6 Telson and 3rd uropods. 7 3rd uropod.
Gnathopods short and strong. Gnathopod 1; joints 3-6 about as broad as long; 6th joint with sides parallel; palm nearly transverse, slightly convex and provided with a double row of notched spines and a few bristles. Dactyl reaching to end of palm. Gnathopod 2; 6th joint longer than broad and slightly widening distally; palm oblique, evenly convex and provided with a double row of notched spines and a few bristles; dactyl reaching to end of palm.

Peracopods slender; 1st and 2nd shorter than rest; 4th longest, proportionately longer in♂; 3rd, 4th, and 5th peracopods with 2nd joint moderately expanded and bearing shallow serrations on posterior border; dactyls each bearing a setule on the inner edge near extremity.

Gnathopod 2, and peracopods 1-3 each provided with a single, lamellar branchia; peracopods 4 and 5 each provided with two cylindrical branchiae; pleon segment 1 in♀ with a single, small, cylindrical branchia on each side.

Uropod 1 longest; peduncle a little longer than the subequal rami. Uropod 2 with peduncle as long as the subequal rami. Uropod 3 and telson in their normal position project at right angles to the urosome; uropod 3 in this position not reaching end of telson; peduncle broad and flat, and the single ramus small and triangular with 2 stout spines on outer margin; no spines on peduncle.

Telson as broad as long; the slightly convex sides somewhat converging; end emarginate, depression reaching about one-third length of telson; lobes each provided at apex with 4 or 5 stout spines.

Length.—6 mm.

Remarks.—To the middle of the ventral surface of each of the 2nd, 3rd and 4th thoracic segments is attached an elongated, papilliform process about half the length of the branchiae. Appendages probably of a similar nature were first observed and described by G. O. Sars in 1867 in the fresh water species Gammaracanthus lacustris Sars and Pontoporeia affinis Lindström. S. I. Smith in 1874 also observed them in a species of Pontoporeia from the Great Lakes. These appendages, the function of which is not known, have apparently been observed only in fresh water species.

This is the first appearance of the genus Synurella in America; the two other species of the genus having been found in Germany and Russia. The closely related genus Boruta was discovered in Hungary so that in all probability these genera will be found to occur throughout Russia, Siberia and northern North America.

43. Weyprechta pinguis (Kröyer).


Station 41e: Bernard harbour, Northwest Territories (outer harbour), July 28, 1915, 5 fathoms, sandy mud with many algae; 1 specimen.
Station 41u: Bernard harbour, Northwest Territories, end of August, 1915, from stomach of Salvelinus malma Walb.; 16 specimens.


Distribution.—Arctic ocean (circumpolar).
Family PHOTIDÆ.

44. *Protomedia fasciata* Kröyer.


Station 436: Dolphin and Union strait (off Stapylton bay), Northwest Territories, 25-30 fathoms, sandy mud with pebbles, but no algae; 1 specimen.

Distribution.—Arctic ocean, North Atlantic, North sea, Skagerrak, Kattegat, Greenland, Spitzbergen, Iceland, Finmark (Norway), Sweden, Denmark.

Family AMPITHOIDÆ.

45. *Ampithoe rubricata* (Montagu).


Station 14: Lat. 54° 23' N., long. 164° 45' W., July 2, 1913, surface; 1 specimen.

Station 20b, c: Grantley harbour (port Clarence), Alaska, July 30, 1913, 2-3 fathoms, sandy mud with algae; 1 specimen.

Distribution.—North Atlantic, with adjoining seas (Europe).

These records greatly extend the range of this species northward and westward.

An immature specimen of some species of *Ampithoe* was obtained at Station 20a, Grantley harbour, Alaska.

Family ISCHYROCERIDÆ.*

46. *Ischyrocerus anguipes* Kröyer.


Station 37j: Bernard harbour, Northwest Territories, September 1, 1914, pelagic, over 2 fathoms of water; 6 specimens.

Station 41a: Bernard harbour, Northwest Territories (inner harbour), August 24, 1915, surface; 1 specimen.

Station 41a: Bernard harbour, Northwest Territories, end of August, 1915, from stomach of *Salvelinus malma* Walb.; 1 specimen.

Station 42a: Bernard harbour, Northwest Territories (Dolphin and Union strait), December 12, 1915 (midnight), 0-3 fathoms; 1 specimen.

Distribution.—Arctic ocean (widely distributed), North Atlantic, North sea, Norway, West Baltic.

Family COROPHIIDÆ.

47. *Corophium bonelli* M.-Edw.


Station 20b, c: Grantley harbour (port Clarence), Alaska, July 30, 1913, 2-3 fathoms, sandy mud with many algae; 5 specimens.

Five specimens (1 male and 4 females) which appear to be *Corophium bonelli* were taken at Grantley harbour, Alaska. The females agree quite

* I have used the family name Ischyroceridae rather than Fusidae as the latter was created by Fieber in 1866 for a family of Hemiptera.
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closely with Sars's figure. As the male has not been described, I give here a description of the specimen taken on this expedition.

Head with rostrum long and spear-shaped; lateral lobes short, apically rounded. Eyes dark, not very prominent.

Antenna 1 reaching about middle of 5th joint of antenna 2; 1st joint of peduncle not very thick, flattened dorsally and armed below with one terminal spine and one near center; 2nd joint thinner and a little shorter, 3rd joint a little thicker than 2nd and not quite half as long; flagellum about \( \frac{3}{4} \) length of peduncle and composed of 7 joints. Antenna 2; 2nd joint reaching very little beyond lateral lobes of head; 3rd joint equal in length to 2nd; 4th joint thickened and equal in length to 5th joint plus flagellum; lower distal corner of 4th joint produced into a strong, forward-pointing tooth above which is a much shorter one; 5th joint slender and slightly curved, inner distal edge produced into a blunt rounded lobe; no tooth on under side of 5th joint; flagellum composed of 3 joints, the last very short, bearing 2 curved spines and several setae.

Gnathopods, pereopods, uropods, and telson as in female.

Length.—4 mm.

Distribution.—North Atlantic, North sea, Skagerrak, and English channel, Norway, West France.

The present record marks a considerable western extension of the range of this species.

Family PODOCERIDÆ.

48. Dulichia porrecta (Bate).


Station 57a: Cape Smyth (point Barrow), Alaska, August 8, 1916, pelagic, over 1 fathom water; 1 specimen.

Distribution.—Arctic ocean, North Atlantic, North sea, West Greenland, Iceland, Lofoten island, South and West Norway, Danish waters, Shetlands.

Sub-order CAPRELLIDEA.

Family CAPRELLIDÆ.

49. Caprella drepanochir Mayer.

1903. C. drepanochir MAYER, Siboga-Expedit., vol. XXXIV, p. 100, pl. 4, f. 11.

Station 20g: Port Clarence, Alaska, August 4, 1913, 2-3 fathoms, mud with many algae; 7 specimens.

Station 20h: Port Clarence, Alaska, August 4, 1913, surface (attached to floating algae); 20 specimens.

Distribution.—Collected between China and Mouth of Amur river, Vladivostok, Bering island, Chamisso harbour, and Eschscholtz bay, Alaska.

Sub-order HYPERIIDÆ.

Family HYPERIIDÆ.

50. Euthemisto libellula (Mandt).


Station 29f: Lat. 70° 13' N., long. 140° 50' W., April 4, 1914, water depth about 30 fathoms, from stomach of Phoca hispida Schreber; 8 specimens.
Station 41 a: Bernard harbour, Northwest Territories, end of August, 1915, from stomach of Salvelinus malma Walb.; 30 specimens.
Station 42 a: Bay at Bernard harbour, Northwest Territories, September 22, 1915, beachwater; 5 specimens.
Station 43 b: Dolphin and Union strait (off Stanyton bay), Northwest Territories, September 14, 1915, 25-30 fathoms, sandy mud with pebbles, but no algae; 7 specimens.
Station 66 a: Latitude about 73° 50' N., long. 150° 15' W., August 31, 1918: surface; S. Storkerson, collector; 3 specimens.
Station 66 b: Latitude about 73° 50' N., long. 147° W., September 17, 1918; surface; S. Storkerson, collector; 6 specimens.

**Distribution.** Arctic ocean, Greenland, Spitzbergen, Nova Scotia, Norway, Nova Zembla.

51. *Hyperia galba* (Montagu)


Station 9 a: Lat. 55° 2' N., long. 144° W., June 27, 1913, surface; 2 specimens.
Station 27 h: Lagoon-bay at Collinson point, Alaska, September 18, 1913, 0-1 foot of water; 1 specimen.
Station 27 m: Collinson point, Alaska, September 19, 1913, pelagic, over 1 foot of water (9-inch ice); 1 specimen.
Station 27 u: Collinson point, Alaska, October 5, 1913, pelagic, over 1 fathom of water; 1 specimen.
Station 27 y: Lagoon at Collinson point, Alaska, October 8, 1913, pelagic, over 2 feet of water; 1 specimen.
Station 30 a: Lat. 69° 41' N., long. 141° 11' W., May 4, 1915, pelagic, over 3 fathoms of water; 1 specimen.

**Color.**—Animal translucent with dark vinaceous-drab markings, eyes very large and black, thorax with broad, dark vinaceous-drab band on side, second and third abdominal segments with dark vinaceous-drab dorsal spots; distal ends of the second joints of the gnathopods and first, second and third peraeopods marked with vinaceous-drab; peduncles of the pleopods also marked with vinaceous-drab.

**Distribution.**—Atlantic coast of France and Britain, Baltic, Arctic ocean, Greenland, Spitzbergen, Nova Zembla, Kara sea, Murman coast.

52. *Hyperoche kroeyeri* Bovallius.


Station 27 h: Lagoon-bay at Collinson point, Alaska, September 18, 1913, 0-1 foot of water; 1 specimen.
Station 27 m: Collinson point, Alaska, September 19, 1913, pelagic, over 1 foot of water (9-inch ice); 12 specimens.
Station 27 u: Collinson point, Alaska, September 20, 1913, pelagic, over 1 foot of water (9-inch ice); 6 specimens.
Station 57 a: Cape Smyth (Point Barrow), Alaska, August 8, 1916, pelagic, over 1 fathom of water; 4 specimens.

**Colour.**—Central areas of eyes duck green. Dorsal parts of the body segments apricot orange. Sides of body, sideplates, gnathopods, peraeopods, pleopods, uropods and telson splotted with apricot orange. Rest of animal translucent.
Mr. Johansen states that this species was found symbiotic in a large etenophage.

**Distribution.**—Arctic ocean, Greenland, Labrador, Spitzbergen, White sea, Siberian polar sea.

53. *Parathemisto obliquia* (Krøyer).


Station 13g, h: Lat. 54° 30' N. long. 159° 42' W., July 1, 1913, surface; 1 specimen.

Station 14: Lat. 54° 23' N, long. 164° 45' W., July 2, 1913, surface; 2 specimens.

Station 21c: Lat. 68° 48' N., long. 163° 10' W., August 16, 1913, surface; 2 specimens.

Station 27q: Collinson point, Alaska, September 26, 1913, pelagic, over 1 fathom of water; 1 specimen.


About 50 immature *Hyperia*s were collected at station 18a, c, e, lat. 62° N., long. 167° 30' W., at the surface.
APPENDIX.

Additional data for the report upon the Amphipods of the Canadian Arctic Expedition, based upon specimens from the Neptune and other Canadian Expeditions.

BY CLARENCE R. SHOEMAKER.

Family LYSIANASSIDÆ.

1. Anonyx nux (Phipps).

Cumberland gulf, Northwest Territories, September 4, 1904, from stomach of Cottus (Myoxocephalus) groenlandicus Bean, Neptune expedition; 6 specimens. Cape Fullerton, west side Hudson bay, Neptune expedition, 1903-4; 6 specimens.

Hudson bay or strait, 1897? Diana expedition; 7 specimens.

Winter harbour, Melville island, Northwest Territories, Arctic expedition, 1909; 1 specimen.

Near mouth of Puvungnituk river, east side of Hudson bay, Northwest Territories, 1898: A. P. Low, collector; 2 specimens.

2. Onisimus edwardisi (Kröyer).


Cape Fullerton, west side of Hudson bay, Neptune expedition, 1903-4; 5 specimens.

Distribution.—Arctic ocean, North Atlantic and North sea, West Norway.

3. Orchestomenella pinguis (Boeck).

1906. Orchestomenella pinguis Steppling, Das Tierreich, Amph. I, p. 82, and synonymy.

Cape Fullerton, west side Hudson bay, Neptune expedition, 1903-4; 3 specimens.

Distribution.—Arctic ocean, North Atlantic, North sea and Skagerrak, Siberia, South and West Norway, Malangen fjord, Finland, Mediterranean.

4. Socarnes bidenticulatus (Bate).

Winter harbour, Melville island, Northwest Territories, Arctic Expedition. May 13, 1909; 1 specimen.

Winter harbour, Melville island, Northwest Territories, 7 fathoms. May 28, 1909. Arctic Expedition; 2 specimens.
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Family AMPELISCIDÆ.

5. Ampelisca eschrichtii Kröyer.

Port Burwell, Ungava, July 28, 1904, Neptune expedition, 1903-4; 6 specimens.


Port Burwell, Ungava, July 28, 1904, Neptune expedition, 1903-4; 1 specimen.

The poor condition of this specimen does not warrant a specific identification.

Family ACANTHONOTOZOMATIDÆ.

7. Acanthonotozoma serratum (Fabricius).

Port Burwell, Ungava, July 28, 1904, Neptune expedition; 2 specimens.


Family OEDICEROTIDÆ.

8. Paroediceros lyncus (M. Sars).

Port Burwell, Ungava, July 28, 1904, Neptune expedition; 1 specimen.

Family PONTOGENEIDÆ.

9. Pontogeneia inermis (Kröyer).

Cape Fullerton, west side Hudson bay, Neptune expedition, 1903-4; 1 specimen.

Family ATYLIDÆ.

10. Atylus carinatus (Fabricius).

Winter harbour, Melville island, Northwest Territories, Arctic expedition, 1907-9; 3 specimens.

Winter harbour, Melville island, Northwest Territories, Arctic expedition, May, 1909; 1 specimen.

Winter harbour, Melville island, Northwest Territories, Arctic expedition, 7 fathoms, May 28, 1909; 1 specimen.

Family EUSIRIDÆ.

11. Rhachotropis aculeata (Lepechin).

Family **GAMMARIDÆ**.


Wakeham bay, south side of Hudson strait, Ungava, September, 1904. *Neptune* expedition; 13 specimens.


Winter harbour, Melville island, Northwest Territories, *Arctic* expedition; 1 specimen.
Winter harbour, Melville island, Northwest Territories, May, 1909?, *Arctic* expedition; 1 specimen.

Family **ISCHYROCERIDÆ**.


Cape Fullerton, west side of Hudson bay, Northwest Territories, *Neptune* expedition, May 27, 1904 (Beach?); 1 specimen.

Family **HYPERIIDÆ**.

15. *Euthemisto compressa* (Goës).

1912. *Euthemisto compressa* Stepenhensen, Meddel. fra den naturh. Foren., vol. 64, p. 84.

Black Tickle, Labrador, beginning of September, 1903, pelagic, *Neptune* expedition; 1 specimen.

*Distribution.*—Arctic ocean, Davis strait, east coast of Greenland, New England coast, Norwegian coast.


Cumberland gulf, east of Blacklead island, (Baffin island), September 4, 1904, *Neptune* expedition, from stomach of *Cottus (Myxocephalus) groenlandicus* Bean; 2 specimens.

**Additional Note.**

Some of the Amphipod Crustaceans collected by the *Neptune* Expedition, 1903-04, were sent to Prof. G. O. Sars, Christiania, Norway, for identification and are published (p. 368) in the report of the Department of Marine and Fisheries, Ottawa, Canada, 1905 (1906).

As these specimens are still in Christiania they have not been examined at the United States National Museum, Washington, nor included in the report above.
Amphipods

Professor Sars’s determinations follow:

*Anonyx rugax* (Phipps), Fullerton, Northwest Territories.
*Pseudalibrobus littoralis* (Krøyer), Fullerton, Northwest Territories.
*Ischyrocerus angipes* (Krøyer), juv., Fullerton, Northwest Territories.
*Amphidromus eschrichti* Krøyer, Port Burwell, Ungava.
*Euthenius libellula* (Mandt), North Somerset, Northwest Territories.
*Gammarius locusta* (Linn.), Wakeham bay, Ungava.

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