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REPORT

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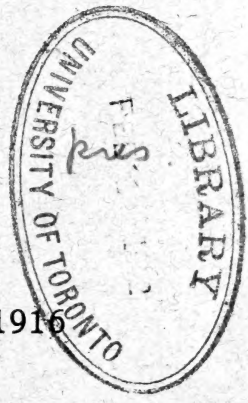
CANADIAN ARCTIC EXPEDITION 1913-18

VOLUME VIII: MOLLUSKS, ECHINODERMS,
COELENTERATES, ETC.

PART E: ROTATORIA

By H. K. HARRING

SOUTHERN PARTY—1913-1916



OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1921

Issued December 31, 1921.



Report of the Canadian Arctic Expedition, 1913-18.

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The Rotatoria of the Canadian Arctic Expedition, 1913-1918.

By H. K. HARRING,

Custodian of Rotatoria, U. S. National Museum.

When the Canadian Arctic Expedition was organized with Mr. James Murray as oceanographer and marine biologist, all students of the rotifers looked forward to a considerable increase of our knowledge of the group and hoped for a repetition of his success in the Antarctic as biologist of the Shackleton Expedition. These expectations were frustrated through his death following the loss of the *Karluk* and the career of an enthusiastic naturalist and tireless worker was brought to an untimely end. No other member of the expedition was able to make special collections of rotifers, but the general plankton collections made by the marine biologist of the southern party, Mr. Frits Johansen, contained a considerable number of rotifers, which were assigned to the writer for a report. Some collections made by Mr. J. M. Jessup while serving on the Alaskan Boundary Survey have been included, as they belong to the same faunal area and add somewhat to our scanty knowledge of the distribution of the Rotatoria in the Arctic. Virtually all that we know on this subject is to be found in Bergendal's *Zur Rotatorienfauna Grönlands* (1892), and the value of this is somewhat minimized by his unfamiliarity with the group prior to his visit to Greenland.

While the species reported on here are not very numerous, 64 in all, they furnish additional, even if superfluous, evidence that climate is not directly a factor in rotifer distribution. Four new species are described, among which a pelagic *Synchaeta* is of special interest, as it is an addition to the extremely small number of rotifers known to exist in the open ocean in water of normal salinity. The total absence of the genus *Brachionus*, so abundant elsewhere, is noteworthy; Bergendal mentions two species of this genus from Greenland, but his notes on these forms make it somewhat doubtful whether he really found any Brachinoids.

I am indebted to Mr. Frank J. Myers, of the American Museum of Natural History, New York City, for drawing the plates accompanying this report.

ORDER PLOIMA.

FAMILY NOTOMMATIDÆ.

Notommata copeus Ehrenberg.

A few specimens of this species were collected by Jessup in lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

Notommata cyrtopus Gosse.

Several specimens occurred in a collection from a pond near new Rampart House, at the International Boundary and Porcupine river, made by Jessup on June 12, 1911.

Proales sordida Gosse.

A few specimens in a collection made by Johansen among mosses and algæ from a pond at Chantry island, Bernard harbor, Dolphin and Union strait, on June 17, 1916.

Diaschiza forficata (Ehrenberg).

Diaschiza caeca DIXON-NUTTALL and FREEMAN, Journ. Royal Micr. Soc., 1903, p. 134, pl. 4, fig. 11.

Abundant in a collection made by Johansen from a pond on the ridge at Bernard harbour, on July 3, 1916.

Diaschiza gracilis (Ehrenberg).

Common among algae growing on stones in river bed at Bernard harbour, August 16, 1915; abundant in ponds on the ridge at Bernard harbour, July 3, 1916. Both collections were made by Johansen.

Diaschiza gibba (Ehrenberg).

In a collection made by Johansen from ponds on the ridge at Bernard harbour, July 3, 1916, rare. In Jessup's collections from a muskeg lake, 28 miles north of New Rampart House, June 25, 1911, rare; lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911, few; lakes along the International Boundary, 48 miles north of New Rampart House, July 7, 1911, few; pools at Fort Yukon, May 24, 1912, rare.

Dicranophorus forcipatus (Müller).

Diglena forcipata HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 50, pl. 19, fig. 2.

Collected by Johansen among algae growing on stones in the river bed at Bernard harbour, August 16, 1915, few; by Jessup from lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911, few. The trophi of these Arctic specimens have only five large, relatively blunt, teeth in each ramus, while the typical form has eleven or twelve. It is possible that they may represent an undescribed species; the partly contracted material was not in such a condition as to make this clear.

Encentrum algente, new species.

Plate I, figs. 1, 2.

The body is elongate and very slender, almost vermiform; the integument is soft and flexible and the animal highly contractile.

The head is small and cylindric, its diameter somewhat less than that of the abdomen, from which it is separated by a slight constriction at the level of the gastric glands. The abdomen is cylindric nearly its entire length; posteriorly it is slightly reduced at its junction with the foot, which has two joints of nearly equal length. The toes are short, about one twentieth of the entire length, blade-shaped and slightly decurved, with slender, acute points.

The corona is terminal; the lateral, marginal cilia are somewhat longer than the rest and form rudimentary auricles. The dorsal antenna is a small, ciliated pit in the normal position; the lateral antennae are on the posterior fourth of the abdomen.

The trophi are forcipate and of a rather unusual type. The rami are of the normal lyrate form, terminating in a strong, pointed tooth; on the inner edge, about mid-length, there is an additional fairly large, pointed tooth. The fulcrum is unusually well developed, its length being fully equal to the length of the rami. The unci are aberrant; a single, short and robust tooth, hinged to the ramus at mid-length on a knob-like epiphysis, appears to represent the uncus proper; it is connected to the manubrium through a rather slender bar, enlarged at the posterior end, and nearly as long as the tooth itself. The

manubria are long and strongly curved, so that their posterior ends meet in the median line. The bar intervening between the uncus and manubrium is probably only a local sclerification of the walls of the mastax, developed in response to a specialization of the typical forcipate trophi. A very similar structure is found in *Encentrum ricciæ* Haring; comparison may be made with *Encentrum* (= *Diglena*) *hofsteni* de Beauchamp, which shows a simpler stage of the same development. The unci and the supplementary piece are no doubt closely joined to the rami, the several pieces moving together virtually as a unit.

The oesophagus is long and slender. The gastric glands are elongate oval and fairly large; they open into the stomach very close to the junction with the oesophagus. There is no constriction between the stomach and intestine. The ovary is fairly large and of somewhat irregular outline. A small bladder is present. The foot glands are pyriform and rather small; no mucus reservoir is present.

The ganglion is elongate saccate; no retrocerebral organ or eyespots are present.

Total length 360 μ ; toes, 22^u; trophi, 52 μ .

This species was found in abundance in a collection made by Johansen among algae in a brackish lagoon west of Martin point, on the arctic shore of Alaska, on July 28, 1914.

FAMILY BRACHIONIDÆ.

Platyias quadricornis (Ehrenberg).

Nôteus quadricornis HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 121, pl. 28, fig. 5.

A few specimens occurred in a collection from lakes on Old Crow river flats, 60 miles north of New Rampart House, visited by Jessup on July 11, 1911.

Keratella quadrata (Müller).

Anuraea aculeata HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 123, pl. 29 fig. 4.

This species is widely distributed in the Arctic; it was found in the following localities: among algae in a brackish lagoon west of Martin point, arctic Alaska, July 28, 1914; in freshwater plankton from the lake south of Bernard harbour, November 28, 1915; May 6 and 7, May 21, and June 12, 1916; all collections were made by Johansen. In Jessup's material it occurred in a small pool near the International Boundary line, lat. 69° 20' N., long. 141° W., July 23, 1912, and in a slough of Old Crow river, near New Rampart House.

Keratella cochlearis (Gosse).

Anuraea cochlearis HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 124, pl. 29, fig. 7.

Not common in the Arctic; a few specimens were collected by Johansen in the lake south of Bernard harbour, May 21 and June 12, 1916; by Jessup in a pool near the Boundary line, lat. 69° 20' N., July 23, 1912, and in a slough of Old Crow river, near New Rampart House, August 7, 1912.

Notholca striata (Müller).

This is the most abundant and widely distributed rotifer in the Arctic; it was collected by Johansen in a brackish lagoon at Martin point, Alaska, July 28, 1914; in the river-bed at Bernard harbour, August 16, 1915; ponds

on the ridge at Bernard Harbour, July 3, 1916; by Jessup in a pool at White Horse, Yukon Territory, June 11, 1911; pond near New Rampart House, International Boundary and Porcupine river, June 12, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911; lakes on Old Crow river flats, 55 miles north of New Rampart House, July 10, 1911; lakes on Old Crow river flats, 60 miles north of New Rampart House, July 11, 1911; small muddy pool near the Boundary line, 25 miles north of New Rampart House, July 17, 1911; pools at Fort Yukon, May 24, 1912; slough of Old Crow river, near New Rampart House, August 7, 1912.

Notholca longispina (Kellicott).

Collected by Johansen in a brackish lagoon west of Martin point, arctic Alaska, July 28, 1914; abundant in the lake south of Bernard harbour, November 28, 1915; February 15, May 21 and June 12, 1916.

FAMILY EUCHLANIDÆ.

Mytilina ventralis (Ehrenberg).

Salpina macracantha HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 84, pl. 22, fig. 6.

In Jessup's collections from a pond near New Rampart House, at the International Boundary and Porcupine river, June 12, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911; lake 48 miles north of New Rampart House, July 7, 1911.

Mytilina mucronata (Müller).

Salpina mucronata HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 83, pl. 22, fig. 1.

A few specimens collected by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911.

Euchlanis dilatata Ehrenberg.

This species does not appear to be common in the Arctic; it was collected by Johansen among algae growing on stones in the river at Bernard harbour, on August 16, 1915, and in a pond at Chantry Island, Bernard harbour, on June 17, 1916; in Jessup's material it occurred in fair numbers in a collection from lakes on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911.

Euchlanis pellucida, new species.

Plate 2, figs. 1-5.

The corona agrees with that of other species of the genus. The body is triradiate in cross section and has a high dorsal keel and broad, lateral, wing-like expansions. The ventral plate is nearly circular, slightly constricted anteriorly at the opening for the head; it is joined directly to the lateral plates without the intervention of a longitudinal sulcus as in other species of the genus. The foot is obscurely two-jointed; two long setae project from the dorsal side of the first foot joint. The toes are long, slender and nearly straight, slightly enlarged posteriorly, and end in rather blunt points; their length is more than one fifth of the length of the body.

The dorsal antenna is very large in diameter and obliquely truncate; it bears a small tuft of sensory setae in a shallow, central depression. The lateral antennae are in the normal position.

The mastax, stomach, intestine, ovary and bladder are normal. The large retrocerebral sac is slightly opaque at the posterior end and without any median notch.

The width of the median and lateral ribs or keels is variable, as shown in figs. 3-5, plate 2. The lateral ribs usually project straight out from the body or slightly downwards; the form with strongly upcurved ribs is not common.

Total length 500-800 μ ; length of lorica, 300-480 μ ; width of lorica, 270-430 μ ; length of toes 90-140 μ .

This species has been known to the writer for some time from many localities in the United States; it was collected by President Birge, of the University of Wisconsin, and Mr. Juday, of the Wisconsin Geological and Natural History Survey, in ponds and bayous of the Mississippi river in southern Louisiana; by Mr. Frank J. Myers, around Atlantic City, New Jersey, and in Polk county, Florida; by Mr. Myers and the writer in sphagnum bogs and ponds throughout Vilas and Oneida counties, Wisconsin. It was common in a collection made by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911. The presence of this species in the Arctic is of no special significance, as the collections listed above show that it is widely distributed; it seems, however, to be limited to regions with very soft, non-calcareous waters, where it often occurs in great abundance.

Euchlanis pellucida looks superficially very much like *E. triquetra*, but it is considerably larger and readily distinguished from the latter by the absence of the lateral sulcus.

***Euchlanis deflexa* Gosse.**

This species, which is ordinarily considered quite rare, was common in Jessup's collections: from a pond near Yukon river, Yukon Territory, May 26, 1911; pool at White Horse, Yukon Territory, June 7, 1911; lakes on Old Crow river flats, 35 miles north of New Rampart House, June 23, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, July 10, 1911; pools at Fort Yukon, May 24, 1912.

***Euchlanis triquetra* Ehrenberg.**

Collected in abundance by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, July 10, 1911; pools at Fort Yukon, May 24, 1912, and in a slough of Old Crow river, near New Rampart House, August 7, 1912.

***Euchlanis eoropha* Gosse.**

A few specimens of this comparatively rare species were collected by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911, and in a small muddy pool 25 miles north of New Rampart House, July 17, 1911.

***Lecane ephestra*, new species.**

Plate 3, figs. 1, 2.

The outline of the lorica is slightly ovate; the anterior margins of the dorsal and ventral plates are coincident and straight. The anterior spines are very short and rather stout. The dorsal plate is broadly elliptic and rounded posteriorly; it is without markings. The ventral plate is considerably narrower

than the dorsal and nearly parallel-sided; the margins are ill-defined and no longitudinal sulci are present. The markings are confined to the central area of the ventral plate; the transverse fold is well marked. The posterior segment of the body is rounded and projects very slightly beyond the dorsal plate.

The first foot joint is narrowest at the posterior end; the second foot joint is large and subsquare; it projects beyond the lorica. The coxal plates are obtusely triangular, with their apices close to the second foot joint. The toes are long and slender; the outer edges are very slightly curved; a small claw is present, excavate on the inner margin.

Total length 125μ ; length of dorsal plate 84μ , width 88μ ; length of ventral plate 90μ , width 60μ ; width of anterior points 54μ ; length of toes including claws 36μ , length of claw 6μ .

Lecane ephestra was collected by Jessup in a muskeg lake, 28 miles north of New Rampart House, on June 25, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; ponds 48 miles north of New Rampart House, on July 7, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911; it has been collected in the United States by Mr. Frank J. Myers around Atlantic City, New Jersey, and by Mr. Myers and the writer in Vilas and Oneida counties, Wisconsin.

Lecane mira Murray.

Cathypna mira MURRAY, Journ. Royal Micr. Soc., 1913, p. 553, pl. 22, fig. 3.

Abundant in a collection made by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911; also in lakes 48 miles north of New Rampart House, July 7, 1911, and two lakes on Old Crow river flats, 55 miles north of New Rampart House, July 10, 1911.

Lecane ligona (Dunlop).

Cathypna ligona DUNLOP, Journ. Quekett Micr. Club, ser. 2, vol. 8, 1901, p. 29, pl. 2, figs. 4-6.

A few specimens of this rare species were collected by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911, and in two lakes on Old Crow river flats, 55 miles north of New Rampart House, July 10, 1911.

Lecane hornemanni (Ehrenberg).

Cathypna hornemanni MURRAY, Journ. Royal Micr. Soc., 1913, p. 349, pl. 16, fig. 26.

Collected by Johansen among algae growing on stones in the river bed at Bernard harbour, August 16, 1915; by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, July 3, 1911.

Lecane jessupi, new species.

Plate, 3 figs. 3, 4.

The outline of the lorica is slightly ovate, truncate posteriorly and the anterior margin cuspidate. The dorsal plate is ovate, rounded posteriorly and slightly narrower than the ventral plate, which is somewhat elliptic. The anterior margin of the dorsal plate is nearly straight; it is slightly convex for the greater portion of its width and excavate at the lateral cusps; the anterior margin of the ventral plate is lunate. There are no markings on either dorsal or ventral plate; the lateral sulci are deep. The lorica is strongly compressed dorso-ventrally.

The posterior segment of the body is roughly trapezoidal in outline and cuspidate at the posterior angles; the margin is convex in the median portion and has a slight concavity at the angles. There is a well marked constriction at the junction of the ventral plate and the posterior segment. The coxal plates are semi-ovate.

The first foot joint is well marked and widest posteriorly; the second foot joint is nearly square. The toes are short, cylindrical for one half their length and end in acute, conical points.

Total length 126 μ , length of lorica 108 μ ; length of dorsal plate 93 μ ; width 93 μ ; width of ventral plate 96 μ ; width of anterior points 58 μ ; length of toes 27 μ .

Lecane jessupi had some resemblance to *L. brachydactyla* (Stenroos), which is shown on plate 3, figs. 5, 6, for comparison. The differences are fairly evident: *L. brachydactyla* has anterior spines and a straight, somewhat flexible dorsal margin, a double-curved ventral margin and the posterior segment is very simple in outline. *L. jessupi* was collected by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; it was not abundant.

Lecane luna (Müller).

Cathypna luna HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 94, pl. 24, fig. 4.

Apparently not common in the Arctic; it was collected by Jessup from two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911, and ponds on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911.

Lecane ungulata (Gosse).

Cathypna minnesotensis MURRAY, Journ. Royal Micr. Soc., 1913, p. 345, pl. 13, fig. 18.

A few specimens in a collection made by Jessup from two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

Lecane clara (Bryce).

Distyla clara BRYCE, Science Gossip, vol. 28, 1892, p. 271, text fig.

Collected by Jessup from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911, and in a slough of Old Crow river, near New Rampart House, on August 7, 1912. Only a few specimens were found in each collection.

Lecane depressa (Bryce).

Distyla depressa BRYCE, Science Gossip, vol. 28, 1892, p. 271, text fig.

Common in a collection made by Johansen among algae growing on stones in the river bed at Bernard harbour, on August 16, 1915. In Jessup's collections from lakes on Old Crow river flats, 35 miles north of New Rampart House, on June 23, 1911; muskeg lake, 28 miles north of New Rampart House, on June 25, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; lakes on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911; small muddy pool, 25 miles north of New Rampart House, on July 17, 1911.

Lecane flexilis (Gosse).

Lecane flexilis HARRING, Proc. U. S. Nat. Mus., vol. 47, 1914, p. 538, pl. 19, figs. 1-3.

Collected by Johansen among algae growing on stones in the river bed at Bernard harbour, on August 16, 1915; in Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911, and lakes on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911.

Monostyla hamata Stokes.

A few specimens in Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911; ponds on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911.

Monostyla bulla Gosse.

This species was found in small numbers in Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

Monostyla closterocerca Schmarda.

Monostyla closterocera MURRAY, Journ. Royal Micr. Soc., 1913, p. 357, pl. 15, fig. 39.

A few specimens in Jessup's collections from lakes on Old Crow river flats, 60 miles north of New Rampart House, July 11, 1911.

Monostyla crenata Harring.

Collected by Jessup in two lakes on Old Crow river flats, 55 miles north of New Rampart House, July 10, 1911; not common.

Monostyla lunaris Ehrenberg.

Abundant and widely distributed in the Arctic. It was collected by Johansen among algae growing on stones in the river bed at Bernard harbour, on August 16, 1915; by Jessup in a muskeg lake, 28 miles north of New Rampart House, on June 25, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; lakes 48 miles north of New Rampart House, on July 7, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911; ponds on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911; small muddy pool, 25 miles north of New Rampart House, on July 17, 1911; slough of Old Crow river, near New Rampart House, on August 7, 1912.

Monostyla cornuta (Müller).

A few specimens collected by Johansen in the lake south of Bernard harbour, on May 21, 1916; by Jessup in a pond near New Rampart House, at the International Boundary and Porcupine River, on June 12, 1911.

Lepadella ovalis (Müller).

Lepadella ovalis HARRING, Proc. U. S. Nat. Mus., vol. 51, 1916, p. 537, pl. 89, figs. 4-10.

Collected in small numbers by Jessup from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911; pools at Fort Yukon, May 24, 1912.

Lepadella patella (Müller).

Lepadella patella HARRING, Proc. U. S. Nat. Mus., vol. 51, 1916, p. 539, pl. 90, figs. 1-12; pl. 91, figs. 1, 2.

This species is widely distributed in the Arctic, but apparently in small numbers; it was collected by Johansen among algae in the river bed at Bernard Harbour, on August 16, 1915; pond at Chantry Island, Bernard harbour, on June 17, 1916; by Jessup in a pond near New Rampart House, at the International Boundary and Porcupine river, on June 12, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; lakes 48 miles north of New Rampart House, on July 7, 1911; ponds on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911; pools at Fort Yukon, on May 24, 1912.

Lepadella acuminata (Ehrenberg).

Lepadella acuminata HARRING, Proc. U. S. Nat. Mus., vol. 51, 1916, p. 546, pl. 92, figs. 4-8.

A few specimens of this species were collected by Jessup in a pond near New Rampart House, at the International Boundary and Porcupine river, on June 12, 1911.

Lepadella ehrenbergii (Perty).

Lepadella ehrenbergii HARRING, Proc. U. S. Nat. Mus., vol. 51, 1916, p. 553, pl. 94, figs. 1-4.

In Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

Colurella colurus (Ehrenberg).

Colurus amblytelus HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 104, pl. 26, fig. 5.

Collected by Johansen in abundance from a brackish lagoon west of Martin point, Alaska, on July 28, 1914; among algae growing on stones in the river bed at Bernard harbour, on August 16, 1915; by Jessup in lakes in Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

Trichotria pocillum (Müller).

Trichotria pocillum HARRING, Bull. 81 U. S. Nat. Mus., 1913, p. 106.

A few specimens collected by Jessup in lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

Trichotria tetractis (Ehrenberg).

Trichotria tetractis HARRING, Bull. 81 U. S. Nat. Mus., 1913, p. 106.

Common in Jessup's collections; pond near New Rampart House, at the International Boundary and Porcupine river, on June 12, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; lakes 48 miles north of New Rampart House, on July 7, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911; ponds on old Crow river flats 60 miles north of New Rampart House, on July 11, 1911; slough of Old Crow river, near New Rampart House, on August 7, 1912.

FAMILY TRICHOCERCIDÆ.

Trichocerca longiseta (Schrank).

Rattulus longiseta JENNINGS, Bull. U. S. Fish Comm., vol. 22 (for 1902), 1903, p. 341, pl. 8, figs. 67-72.

Collected by Jessup in a pond near New Rampart House, at the International Boundary and Porcupine river, on June 12, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

Trichocerca mucosa (Stokes).

Rattulus mucosus JENNINGS, Bull. U. S. Fish Comm., vol. 22 (for 1902), 1903, p. 331, pl. 10, figs. 86-91.

A few specimens in Jessup's collections from a slough of Old Crow river, near New Rampart House, on August 7, 1912.

Trichocerca rattus (Müller).

Rattulus rattus JENNINGS, Bull. U. S. Fish Comm., vol. 22 (for 1902), 1903, p. 333, pl. 11, figs. 100, 101.

Collected by Jessup from lakes 48 miles north of New Rampart House, on July 7, 1911; ponds on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911; small muddy pool, 25 miles north of New Rampart House, on July 17, 1911; it was rare in all of these collections.

Trichocerca cristata Harring.

Rattulus carinatus JENNINGS, Bull. U. S. Fish Comm., vol. 22 (for 1902), 1903, p. 332, pl. 11, figs. 95-97.

A few specimens were collected by Jessup from pools at Fort Yukon, on May 24, 1912.

Trichocerca bicuspes (Pell.).

Rattulus bicuspes JENNINGS, Bull. U. S. Fish Comm., vol. 22 (for 1902), 1903, p. 336, pl. 8, figs. 73-76.

Rare in Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

Trichocerca scipio (Gosse).

Rattulus scipio JENNINGS, Bull. U. S. Fish Comm., vol. 22 (for 1902), 1903, p. 322, pl. 5, figs. 50-52, pl. 13, figs. 111, 112.

Collected by Jessup from a muskeg lake, 38 miles north of New Rampart House, on June 25, 1911.

Diurella porcellus (Gosse).

Collected by Johansen among algae growing on stones in the river bed at Bernard harbour, on August 16, 1915; by Jessup from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

Diurella tenuior (Gosse).

In Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

Diurella collaris (Rousselet).

Collected by Jessup from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

Diurella cavia (Gosse).

A few specimens in Jessup's collections from a pond near New Rampart House, at the International Boundary and Porcupine river, on June 12, 1911.

FAMILY SYNCHÆTIDÆ.

Synchaeta oblonga Ehrenberg.

Abundant in collections made from the lake at Bernard harbour by Johansen on May 6 and 7, 1916; same lake south of Bernard harbour, May 21, 1916.

Synchaeta johanseni, new species.

Plate 1, fig. 3.

The body is fairly slender, bell-shaped and very transparent. Its greatest width, about mid-length, is one third of the total length. The foot is well marked off from the body, large at the base and tapers gradually to the very small toes; its length is one fourth of the length of the body. The head is triangular and the auricles powerful; on the median line, between the anterior pair of tactile bristles, there is a tubular sensory organ as in *S. vorax* Rousselet. The dorsal antenna is in the normal position; the lateral antennae are near the posterior end of the body and well towards the ventral side; they are slender tubules, armed with a minute tuft of setae. The foot glands are very small. The form and position of the eyespot could not be made out from the preserved material.

Total length 350 μ ; width of body at mid-length 120 μ ; length of foot 70 μ ; length of toes 7 μ .

This species occurred in large numbers in a surface collection made by F. Johansen on August 23, 1914, at station 36, off Cape Lyon, in Amundsen gulf.

Synchaeta johanseni is closely related to *S. vorax* Rousselet, from which it differs in the more slender body, longer and stouter foot, very small foot glands and minute toes, as well as in the position of the lateral antennae. Its presence in Amundsen Gulf is of the greatest interest, as up to the present only two species of rotifers, *Synchaeta atlantica* and *Trichocerca* (= *Rattulus*) *henseni*, are known from oceanic waters; these were both found by Zelinka in the collections of the German Plankton Expedition from the Atlantic ocean, south of Iceland. While it would perhaps be incorrect to call Amundsen Gulf an ocean, the conditions where the collection was made are oceanic, at least as far as salinity and absence of admixture of fresh water are concerned; there are no rivers of any considerable volume discharging near Cape Lyon, and Mr. Johansen informs me that few of the rivers flowing into the Arctic ocean carry much water in the summer. How to account for the presence of this rotifer at a single station and its absence everywhere else is a problem for which no solution can be offered; it may be noted that the collection contained virtually no other zoöplankton, and it is possible that the absence of enemies may be an important factor in the maintenance of this rotifer in such a circumscribed area.

Filinia longiseta (Ehrenberg).

Triarthra longiseta HUDSON and GOSSE, Rotifera, 1886, vol. 2, p. 6, pl. 13, fig. 6.

Collected by Johansen in a brackish lagoon west of Martin point, Alaska, on July 28, 1914; lake south of Bernard harbour, November 28, 1915; on May 6, 7, and June 12, 1916.

FAMILY PLOESOMATIDÆ.

Ploesoma lenticulare Herrick.

A few specimens in Jessup's collections from lakes on Old Crow river flats, 40' miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

FAMILY TESTUDINELLIDÆ.

Testudinella patina (Hermann).

In Jessup's collections from pools at White Horse, Yukon Territory, on June 7 and 11, 1911; lakes on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911; pools at Fort Yukon, on May 24, 1912.

Testudinella parva (Ternetz).

Collected by Jessup from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911.

ORDER FLOSCULARIACEA

FAMILY CONOCHILIDÆ.

Conochilus hippocrepis (Schrank).

Conochilus volvox HUDSON and GOSSE, Rotifera, 1886, vol. 1, p. 89, pl. 8, fig. 3.

Abundant in Jessup's collections; lakes on Old Crow river flats, 35 miles north of New Rampart House, on June 23, 1911; muskeg lake, 28 miles north of New Rampart House, on June 25, 1911; lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911; lakes 48 miles north of New Rampart House, on July 7, 1911; two lakes on Old Crow river flats, 55 miles north of New Rampart House, on July 10, 1911; ponds on Old Crow river flats, 60 miles north of New Rampart House, on July 11, 1911.

Conochilus unicornis (Rousselet).

A few specimens in Jessup's collections from lakes on Old Crow river flats, 40 miles north of New Rampart House, on July 3, 1911.

ORDER BDELLOIDA.

FAMILY PHILODINIDÆ.

Rotaria neptunia (Ehrenberg).

Actinurus neptunius HUDSON and GOSSE, Rotifera, 1886, vol. 1, p. 108, pl. 10, fig. 6.

Collected by Jessup in a small, muddy pool, 25 miles north of New Rampart House, on July 17, 1911.

Rotaria rotatoria (Pallas).

Rotifer vulgaris HUDSON and GOSSE, Rotifera, 1886, vol. 1, p. 104, pl. 10, fig. 2.

Collected in great numbers by Johansen in a pond at Bernard harbour, on June 16, 1915.

Rotaria macrura (Ehrenberg).

Rotifer macrurus HUDSON and GOSSE, Rotifera, 1886, vol. 1, p. 107, pl. 10, fig. 4.

Very abundant in Johansen's collections from a tundra-swamp at Bernard harbour, on July 15, 1915, and May 9, 1916.

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PLATE I.

- Fig. 1. *Encentrum algente*, lateral view. x170
 2. *Encentrum algente*, trophi, ventral view.
 3. *Synchaeta johanseni*, dorsal view. x170.

PLATE I

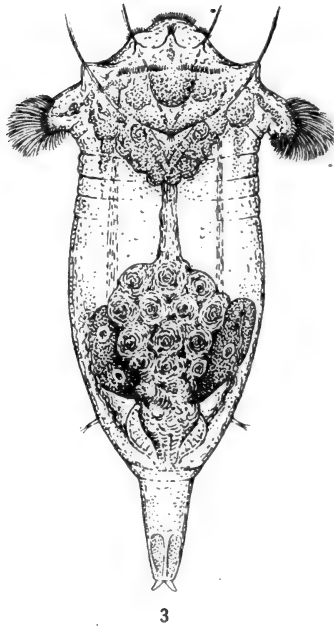
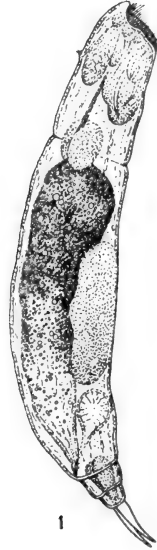
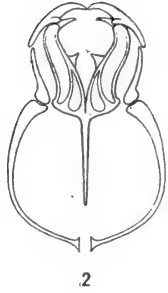


PLATE II.

- Fig. 1. *Euchlanis pellucida*, dorsal view. x130.
2. *Euchlanis pellucida*, lateral view.
3. *Euchlanis pellucida*, variety A, cross section.
4. *Euchlanis pellucida*, variety B, cross section.
5. *Euchlanis pellucida*, variety C, cross section.

PLATE II.

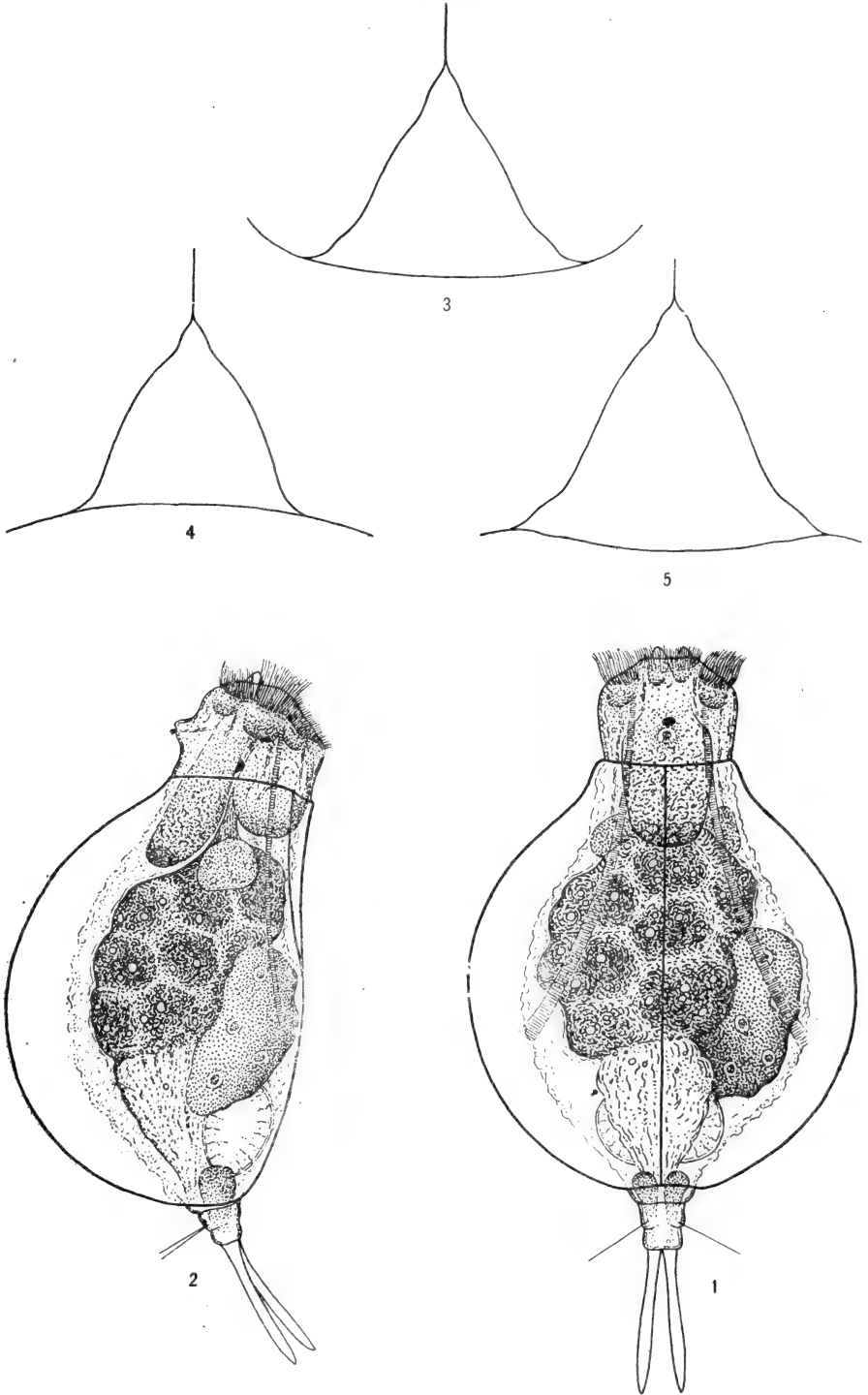
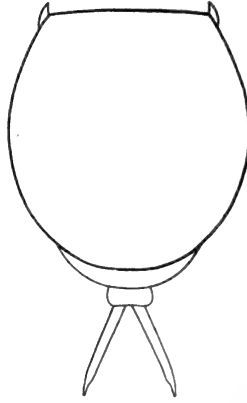


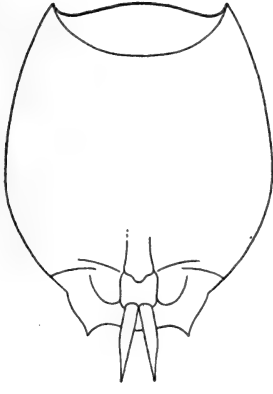
PLATE III.

- Fig. 1. *Lecane ephestra*, dorsal view. x300.
2. *Lecane ephestra*, ventral view.
3. *Lecane jessupi*, dorsal view. x300.
4. *Lecane jessupi*, ventral view.
5. *Lecane brachydactyla*, dorsal view. x300.
6. *Lecane brachydactyla*, ventral view.

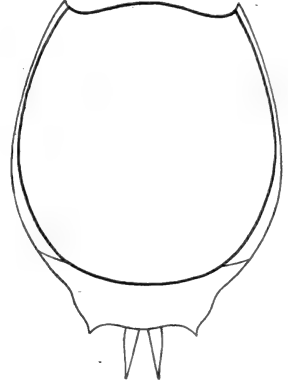
PLATE III.



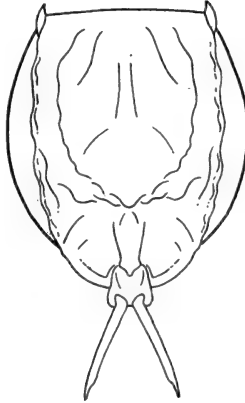
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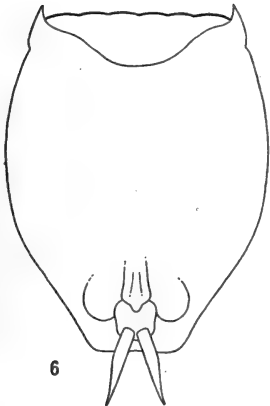
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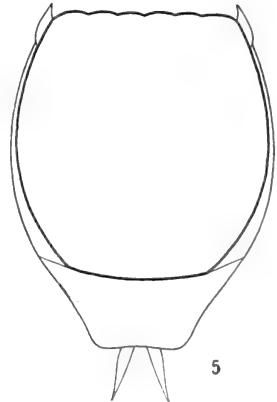
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PLATE IV.

Fig. 1. Temporary pools in swamp, fed from snow drifts. Bernard harbour, Northwest Territories, July 2, 1915. Photo by F. Johansen.

Fig. 2. Valley of Firth river, Alaska-Yukon boundary, showing ponds and flood plain ice. Photograph by International Boundary survey, 141st Meridian, 1912.

PLATE IV.



Fig. 1.



Fig. 2.

Report of the Canadian Arctic Expedition, 1913-18.

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