

**Zooplankton**  
Sheet 87

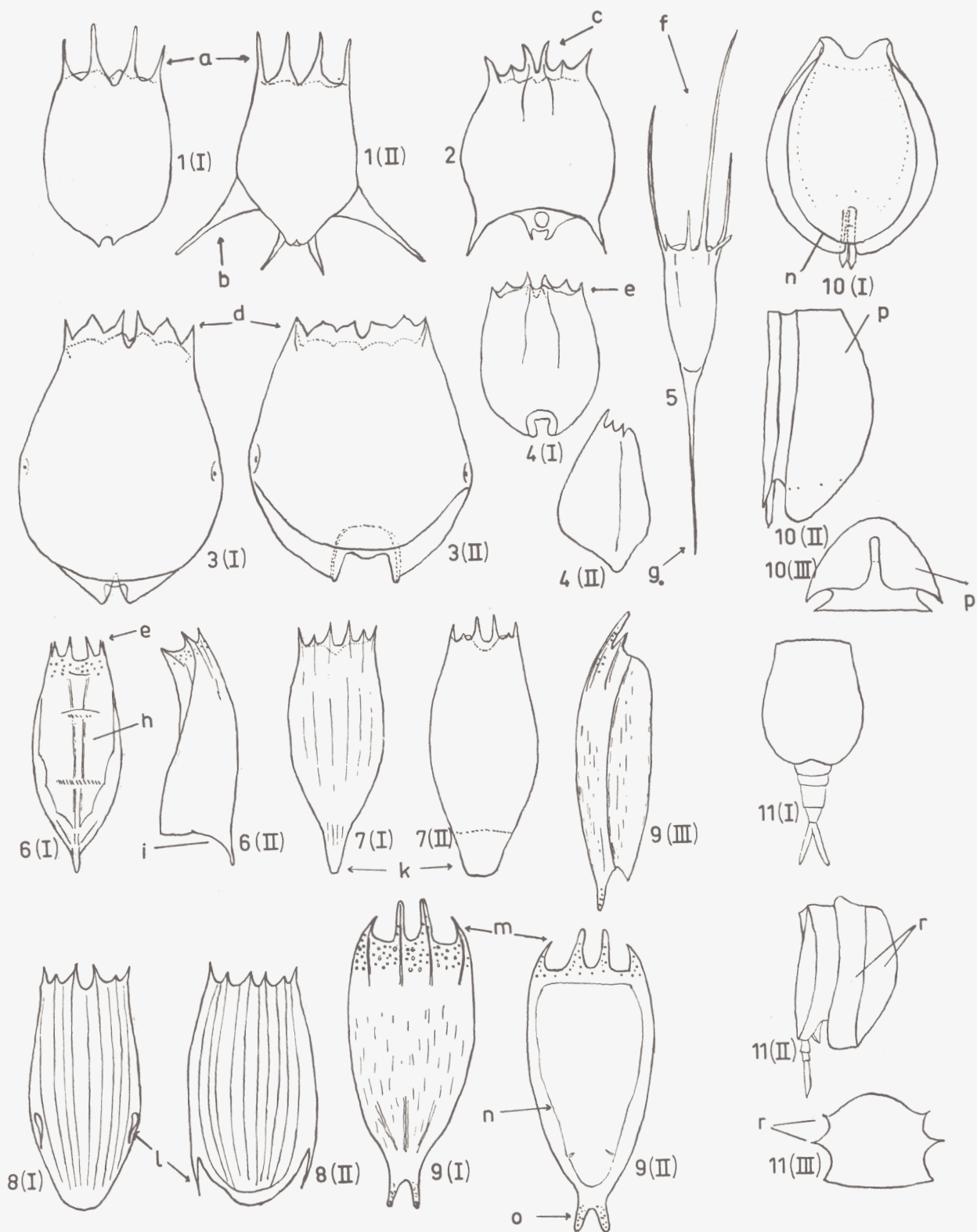
**ROTATORIA IV**  
**ORDER: MONOGONONTA**  
**SUB-ORDER: PLOIMA**

**Family: Brachionidae (cont.)**

**Genera: BRACHIONUS**  
**KELICOTTIA**  
**ARGONOTHOLCA**  
**NOTHOLCA**  
**PSEUDONOTHOLCA**  
**EUCLANIS**  
**TRIPLEUCLANIS**

(By Bruno Berzins)

**1960**



### Genus *Brachionus* Pallas 1766

Body flattened dorso-ventrally. Dorsal and ventral plates of lorica completely fused laterally. Anterior dorsal edge of lorica with six or four spines; anterior ventral margin with central sinus, with or without spines. Posterior margin with or without spines. Foot annulate, with two toes. Mastax malleate.

1. *Brachionus calyciflorus* Pallas 1766. Total length 200—400  $\mu$ , width 130—300  $\mu$ .  
Lorica rather flexible, oval, not separated into a dorsal and ventral plate. Anterior dorsal margin with four, broad-based spines of variable length. Posterior spines usually absent; present only on some varieties.  
Freshwater species, but encountered in estuaries.
2. *Brachionus quadridentatus brevispinus* (Ehrenberg) 1832. Total length 200—350  $\mu$ , width 135—200  $\mu$ .  
Lorica firm, divided into a dorsal and a ventral plate, dorso-ventrally flattened. Occipital margin with six spines, the middle pair longest, curving outward; lateral longer than intermediates. Lorica terminates posteriorly in two lateral spines, usually short in this sub-species.  
Freshwater species, but encountered in estuaries.
3. *Brachionus plicatilis* Mueller 1786. Total length 180—250  $\mu$ , width 140—200  $\mu$ .  
Lorica not firm, oval, not sharply separated into a dorsal and ventral plate. Anterior dorsal margin with six, broad-based, saw-tooth spines. Ventral margin separated into four lobes or very broad and blunt spines. Lorica posteriorly rounded, without spines.  
Brackish or saltwater species, usually in littoral regions.
4. *Brachionus urceolaris urceolaris* Mueller 1773. Total length 190—270  $\mu$ , width 140—210  $\mu$ .  
Lorica firm, divided into a dorsal and ventral plate. Anterior dorsal margin with six sharp pointed spines; medians longest, laterals and intermediates about equal in length. Ventral margin undulate. Posterior spines absent. Lorica with a pattern of wavy lines; pointed posteriorly in lateral view.  
Freshwater species, and also littoral near estuaries.

### Genus *Kellicottia* Ahlstrom 1938

The firm lorica is triangular in outline; one or more very long spines on anterior margin; only one very long spine posteriorly.

5. *Kellicottia longispina* (Kellicott) 1879. Total length 400—1100  $\mu$ .  
With one very long, 2 intermediate, and 3 short frontal spines; one long spine posteriorly. Variable with seasons.  
Freshwater species; in estuaries and in inner parts of Baltic.

### Genus *Argonotholca* Gillard 1948

One species.

6. *Argonotholca foliacea* (Ehrenberg) 1838. Total length 140—180  $\mu$ .  
Body dorso-ventrally flattened. Lorica divided into a dorsal and a ventral plate, bound together with a flexible membrane. The dorsal plate is firm, tapered to one terminal spine; with central longitudinal ridge and two cross ridges. Frontal with six pointed spines.  
Freshwater species, occasionally in estuaries.

### Genus *Notholca* Gosse 1886

Lorica of two spoon-like plates united laterally; with six spines in front. Dorsal surface striated longitudinally.

7. *Notholca acuminata* (Ehrenberg) 1832. Total length 135—300  $\mu$ .  
Lorica slightly produced behind into a more or less long, spoon-shaped point.  
Freshwater species, often found in brackish water, especially near the border of the Baltic and North Sea. Littoral.
8. *Notholca striata* (Mueller) 1786. Total length 190—250  $\mu$ .  
Lorica ovate or more elongate, rounded behind. With rather strong striae on dorsal plate. Two lateral mobile setae on the posterior part of lorica, rather stout but short.  
Marine species, especially in the littoral zone. Planktonic close to the bottom.

---

Fig. 1 (I—II), *Brachionus calyciflorus* (II = f. *amphiceros*). 2, *B. quadridentatus brevispinus*.  
3 (I—II), *B. plicatilis*. 4 (I—II), *B. urceolaris urceolaris* (II = lateral). 5, *Kellicottia longispina*.  
6 (I—II), *Argonotholca foliacea* (II = lateral). 7 (I—II), *Notholca acuminata*. 8 (I—II), *N. striata*.  
9 (I—III), *Pseudonotholca japonica* (I = dorsal, II = ventral, III = lateral).  
10 (I—III), *Euchlanis dilatata dilatata* (I = ventral, II = lateral, III = cross section).  
11 (I—III), *Tripleuchlanis plicata* (I = dorsal, II = lateral, III = cross section).  
(After various authors.)

a = 4 long and soft anterior spines, b = posterior appendices, c = long, or very long median spines, d = dorsal 6, ventral 4 blunt anterior spines, e = 6 pointed anterior spines, f = 3 long, or very long anterior spines, g = 1 very long posterior spine, h = lorica ridged, i = membrane between both parts of lorica, k = lorica posteriorly prolonged; rounded or pointed, l = lateral appendices, m = 4 stout anterior spines, n = ventral lorica, o = 2 posterior spines, p = simple dorsal lorica, r = double dorsal lorica.

**Genus Pseudonotholca Marukawa 1928**

One species.

9. *Pseudonotholca japonica* Marukawa 1928. Total length 220—250  $\mu$ .  
Body dorso-ventrally flattened. Dorsal lorica larger than ventral, with four spines in front and ending posteriorly in two spines. A membranous cuticule joins ventral and dorsal plates together.  
Oceanic, planktonic species.

**Genus Euchlanis Ehrenberg 1832**

Dorsal plate with the median portion arched; ventral plate nearly flat and usually smaller. Foot with two or three segments. Toes rather long, nearly swordlike. Many species, but only a few are found in brackish water, particularly the following species.

10. *Euchlanis dilatata dilatata* Ehrenberg 1832. Total length 200—270  $\mu$ .  
Lorica broadly oval; dorsal plate depressed in front and arched behind. Ventral plate flat, entirely rounded behind.  
Freshwater species, found in estuaries.

**Genus Tripleuchlanis Myers 1930**

One species.

11. *Tripleuchlanis plicata* (Levander) 1894. Total length 240—290  $\mu$ .  
Dorsal and ventral plates nearly equal, with a doubly folded cuticule joining them together. Foot with three segments. Toes short. In brackish water.

References to Descriptions and Figures

1. *B. calyciflorus* (syn. *pala*): Remane, 1929, p. 110, Fig. 102; Ahlstrom, 1940, p. 150, Pl. 3; Figs. 1—9, Pl. 20, Figs. 7—8; Gillard, 1948, p. 198, Pl. 4, Fig. 4; Voigt, 1957, p. 145, Pl. 19.
2. *B. quadridentatus brevispina*: Remane, 1929, p. 109, Fig. 99 (as *capsuliflorus*); Ahlstrom, 1940, p. 165, Pl. 12, Fig. 5; Gillard, 1948, p. 203; Voigt, 1957, p. 142, Pl. 21, Fig. 2.
3. *B. plicatilis*: Lauterborn, 1905, p. 34, Fig. 11 (as *muelleri*); Remane, 1929, p. 110, Fig. 66; Ahlstrom, 1940, p. 149, Pl. 2, Figs. 1—9; Voigt, 1957, p. 149, Pl. 22, Fig. 1.
4. *B. u. urceolaris*: Ahlstrom, 1940, p. 171, Pl. 16, Figs. 1—11; Gillard, 1948, p. 205, Pl. 4, Fig. 2; Voigt, 1957, p. 148, Pl. 19, Figs. 1, 11, 14, 16.
5. *K. longispina*: Hudson & Gosse, 1886, Vol. 2, p. 125, Pl. 28, Fig. 6; Gillard, 1948, p. 192, Pl. 2, Fig. 12; Voigt, 1957, p. 188, Pl. 23, Fig. 18, Pl. 27, Fig. 15.
6. *A. foliacea*: Weber, 1898, p. 725, Pl. 25, Figs. 19—21; Levander, 1905, p. 25, Pl. 2, Fig. 38; Remane, 1929, p. 99, Fig. 80; Gillard, 1948, p. 191, Pl. 2, Fig. 9; Voigt, 1957, p. 187, Pl. 23, Fig. 29.
7. *N. acuminata*: Levander, 1894, p. 63, Pl. 3, Figs. 43, 45; Lie-Pettersen, 1905, p. 43, Pl. 2, Fig. 16 (as *labis*); Lauterborn, 1905, p. 31, Fig. 17; Carlin, 1943, p. 66, Figs. 9 a—n; Remane, 1929, p. 99, Fig. 82; Gillard, 1948, p. 185, Pl. 2, Fig. 8; Voigt, 1957, p. 191, Pl. 23, Fig. 27.
8. *N. striata*: Mueller, 1786, p. 332, Pl. 47, Figs. 1—3; Mueller, 1786, p. 336, Pl. 48, Figs. 3—5 (as *bipalium*); Ehrenberg, 1838, p. 505, Pl. 62, Fig. 6 (as *biremis*); Eichwald, 1852, p. 531, Pl. 6, Fig. 18 (as *baltica*); Lie-Pettersen, 1905, p. 43, Pl. 2, Figs. 13 & 18 (as *spinifera*); Pl. 2, Fig. 17 (as *labis*); p. 42, Pl. 2, Figs. 14—15 (as *striata*); Levander 1894, p. 65, Pl. 3, Fig. 42 (as *biremis*); Remane, 1929, p. 99, Figs. 81—82 (as *bipalium*); Carlin, 1943, p. 64, Fig. 9, o; Gillard, 1948, p. 188, Pl. 2, Fig. 7; Oye, 1931, p. 1, Figs. 1—3 (as *biremis*).
9. *P. japonica*: Marukawa, 1928, p. 3, Pl. 1, Figs. 12—13; Schultz & Wulff, 1929, p. 333, Fig. 14; Myers, 1936, p. 432, Pl. 3, Fig. 9 (as *quadrispinata*); Berzins, 1951, p. 6, Figs. 2—4.
10. *E. d. dilatata*: Hudson & Gosse, 1886, Vol. 2, p. 90, Pl. 23, Fig. 5; Weber, 1898, p. 575, Pl. 21, Figs. 19—22; Myers, 1930, p. 361, Pl. 10, Figs. 1—3, Pl. 11, Figs. 1—8; Remane, 1929, p. 117, Fig. 118; Voigt, 1957, p. 172, Pl. 28, Fig. 2.
11. *T. plicata*: Levander, 1894, p. 48, Pl. 2, Figs. 26—28; Myers, 1930, p. 379, Pl. 22, Figs. 1—4; Remane, 1929, p. 117, Fig. 119; Voigt, 1957, p. 165, Pl. 29, Fig. 11, Pl. 30, Fig. 6.

Distribution

Species

Gulf of Bothnia .....	5, 6, 7
Gulf of Finland .....	1, 2, 3, 5, 6, 7, 8, 10, 11
Gulf of Riga .....	3, 7, 8, 11
Baltic proper .....	3, 4, 6, 7, 8
Belt Sea .....	2, 3, 7, 8
Kattegat .....	3, 7, 8
Skagerak .....	7, 8
Northern North Sea .....	3, 7, 8
Southern North Sea .....	(1), (2), 3, (4), 7, 8
English Channel, western .....	8
English Channel, eastern .....	—
Bristol Channel and Irish Sea ..	1, 2, 3, 4, 7, 8
South and West Ireland .....	3, 7, 8
Atlantic .....	—
Faroe-Shetland, Faroe-Iceland areas .....	—
Norwegian Sea .....	7, 8, 9
Barents Sea .....	7, 8, 9

References to Work on Biology

Carlin, 1943; Gillard, 1948; Levander, 1894; Lie-Pettersen, 1905; Oye, 1931; Purasjoki, 1947; Wesenberg-Lund, 1930; Zelinka, 1907.

## References

- Ahlstrom, E. H., 1940. Bull. Amer. Mus. nat. Hist., 77: 143—84.
- Berzins, B., 1943. Fol. zool. hydrobiol., 12: 218—44.
- Berzins, B., 1951. Univ. Bergen Årb., naturv. rk., 6: 11 pp.
- Carlin, B., 1943. Medd. Lunds Univ. Limnol. Inst., 5: 255 pp.
- Eichwald, E., 1852. Bull. Soc. Imp. Nat., Moscou, 25: 388—536.
- Ehrenberg, C. G., 1838. *Infusionsthierchen als vollkommene Organismen.*
- Gillard, A. A. M., 1948. Natuurw. Tijdschr., 30: 159—218.
- Hudson & Gosse, 1886. *Rotifera or Wheel-animalcula.*
- Lauterborn, R., 1905. Nord. Plankton, Lief. 10, 42 pp.
- Levander, K. M., 1894. Acta Soc. Fauna Flora Fenn., 12 (3): 72 pp.
- Levander, K. M., 1905. Festschr. Palmén, Nr. 11.
- Lie-Pettersen, J. O., 1905. Bergens Mus. Aarb., 10: 44 pp.
- Marukawa, H., 1928. Annot. ocean. Res. Imp. Fish. Inst., 2.
- Mueller, O. F., 1786. *Animalcula Infusoria fluvialitia et marina.*
- Myers, F. J., 1930. Trans. Wiscons. Acad. Sci., 25: 353—413.
- Myers, F. J., 1936. Trans. micr. Soc., 55: 428—52.
- Oye, P. van, 1931. Bull. Mus. roy. Hist. nat. Belg., 7 (5).
- Purasjoki, K. J., 1947. Finnl. hydrogr.-biol. Unters., 11: 50 + 40 pp.
- Remane, A., 1929. *Tierwelt der Nord- und Ostsee.* Lief. 7, e.
- Schultz, B., & Wulff, A., 1929. Ber. dtsch. wiss. Komm. Meeresf., N. F., 4: 333—34.
- Voigt, M., 1957. *Rotatoria. Rädertiere Mitteleuropas.*
- Weber, E. F., 1898. Rev. Suisse Zool., 5: 263—785.
- Wesenberg-Lund, 1930. K. Dan. Vidensk. Selsk. Skr., Natur., Afd. 9, Rk. 11 (1): 230 pp.
- Zelinka, C., 1907. Ergebn. Plankt. Exped., 2: 82 pp.