

Identification of the species of rotifers with thin loricas requires examination of the structure of the mastax. The individual parts are made distinguishable by using Javel water, a 10% solution of KOH saturated with chlorine, or more rarely a strong soda solution.

KEY TO ORDERS AND FAMILIES OF THE CLASS EUROTATORIA (PHYLUM ROTIFERA)

- 1(4) Mastax malleate (Pl. I, Figs. 5-6) (Brachionidae) or malleate-like (Proalidae). Uncus plates with several teeth. Manubria with three clearly expressed chambers. Rami with well developed chambers, narrowing anteriorly. Fulcrum short or long. **order Transversiramida, families Brachionidae and Proalidae**

- 2(3) Body with hard integument (lorica). Mastax malleate **family Brachionidae**

- 3(2) Body with more or less soft integument. Mastax malleate-like **family Proalidae**

Body elongate, spindle-like. Foot long or short with two toes. Mastax very small with elements of malleate and virgate (long manubria) forms (see illustrations p. 12). Body elongate, spindle-shaped, thin. Foot very long, about ¼ of the total length with two telescoping-retracting articles. Pedal glands very long, extending into body. Toes lanceolate. Rami asymmetrical, broadly triangular, short, with one or two blunt teeth on the inner edge. Fulcrum short. Unci with four to five club-like teeth. Manubria long, thin, and bent at ends. **genus Proales, *P. reinhardti* (Ehrenberg, 1834) (Pl. III, Figs. 1-6; Pl. VII)**

Synonymy: *Furcularia reinhardti* Ehrenberg, 1834.

Length 200-380 µm, toes 20-28 µm, mastax 30-45 µm, rami 9-12 µm, fulcrum 6 µm, unci 12-14 µm, manubria 24-25 µm.

Length of males 150-155 µm (De Smet 1996).

Panoceanic. Barents and Laptev seas.

- 4(1) Mastax virgate or forcipate (see illustrations p. 10)

- 5(6) Mastax virgate. Unci plate-like. Fulcrum and manubria long. Muscular hypopharyngeal cord well developed. Some trophi are asymmetrical (*Trichocerca*). **order Saeptiramida, families Synchaetidae and Trichocercidae**

- 6(5). Mastax forcipate. Unci club-shaped with one developed tooth. Rami large, chelate-shaped, with or without teeth on the inner edges. Fulcrum often laminate. A small intramalleal plate is commonly present between the unci and manubrium **order Antrorsiramida, family Dicranophoridae**

KEY TO GENERA AND SPECIES OF THE FAMILY BRACHIONIDAE (ORDER TRANSVERSIRAMIDA)

- 1(2) Body lorica wide or like elongate oval. Anterior dorsal edge of lorica with six pairs of ventrally bent spines, with largest spines in middle. Posterior and lateral edges more or less rounded, always lacking spines. Surface of lorica with sculpturing. A medial, longitudinal keel runs from the anterior frontal facet, transecting three transverse ribs. Posterior edge with three lateral facets. Alveoli sculpturing more or less expressed **genus Keratella, *K. cruciformis* (Thompson, 1892) (Pl. II, Figs. 1-3)**

Synonymy: *Anuraea cruciformis* Thompson, 1892.

Atlantic widespread boreal Arctic.

Typical form (length of lorica 128-203 µm, width 83-155 µm, ratio of length to width of lorica 1.4) found in brackish water with 23-30 ppt salinity. Found in the plankton of the White, Barents, and Laptev seas.

K. cruciformis wirketissi Kutikova, 1970 (length of lorica 164-174 µm, width 94-102 µm; ratio of length to width of lorica about 1.8) found in the coastal waters of the southeastern Laptev Sea.

K. cruciformis eichwaldi (Levander, 1894) (length of lorica 138-168 µm, width 83-105 µm; ratio of length to width 1.5), known from the White Sea and estuarine arctic waters, as with the typical form.

- 2(1) Lorica of body elongate. Anterior dorsal edge of lorica with four to six nearly triangular spines. Posterior and lateral edges of lorica round, sometimes with spines. Surface of lorica with longitudinal cutting, furrows, or alveoli-like sculpturing **genus Notholca**

KEY TO THE GENUS NOTHOLCA

- 1(2) Lateral edges of lorica lacking spines. Anterior edge of lorica with four spines. Dorsal plate of lorica with small, undulating, longitudinal furrows, transitioning toward anterior and posterior edges to alveoli. Posterior edge of lorica narrow, with two fork-like spines ***N. japonica* (Marukawa) (Pl. II, Figs. 4-6)**

Synonymies: *Pseudonotholca japonica* Marukawa, 1928.

Notholca quadrispinata Myers, 1936.

Lorica length 176-235 µm, width 55-91 µm, length of anterior dorsal spines: middle 22-30 µm, lateral 18-24 µm. Widespread boreal Arctic. In plankton of the White, Barents, and Laptev seas.

- 2(1) Lateral edges of lorica with spines. Anterior edge of lorica with six spines. Dorsal plate of lorica with even longitudinal cutting. Posterior edge of lorica round, lacking spines ***N. bipalium* (Mueller, 1786) (Pl. II, Fig. 7)**

Synonymies: *Brachionus bipalium* Mueller, 1786; *Anuraea biremis* Ehrenberg, 1832.

Length of lorica 191-250 µm, width of lorica 100-200 µm. Panoceanic. In White Sea plankton.

KEY TO FAMILIES, GENERA, AND SPECIES OF THE ORDER SAEPTIRAMIDA

- 1(2) Body elongate, often spindle-shaped, covered with a fairly rigid integument. More or less developed folds and two sharp spines present on head. Foot short with one long (about ½ the body length), spine-like toe. . . . **family Trichocercidae, genus *Trichocerca*, *T. marina* (Daday, 1890) (Pl. II, Figs. 8-13)**