

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton.

Sheet 33.

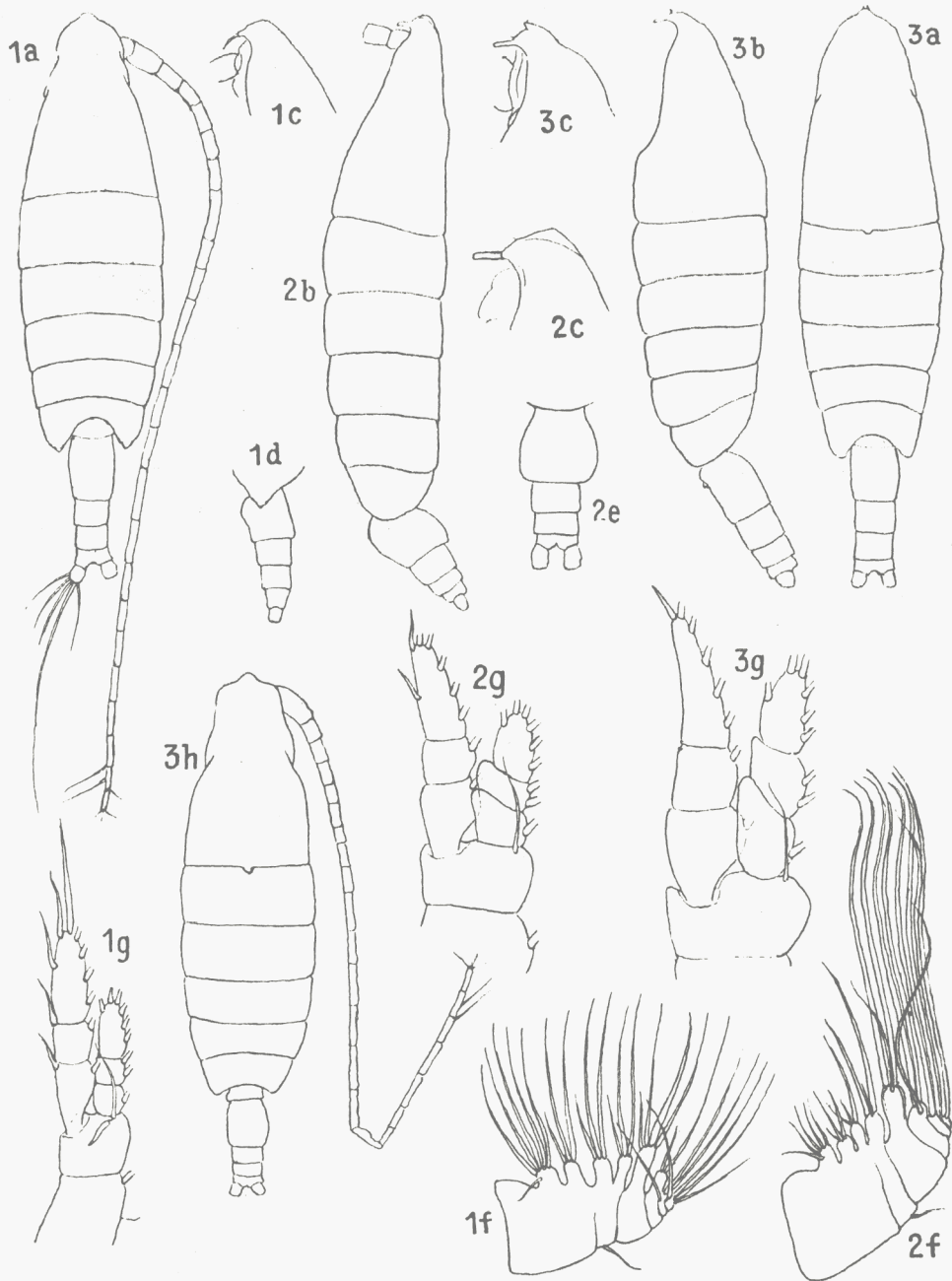
COPEPODA

SUB-ORDER: CALANOIDA

Family: Megacalanidae

(By G. P. Farran †,
revised by W. Vervoort)

1951.



1, *Megacalanus princeps*; 2, *Bathycalanus princeps*; 3, *Bathycalanus bradyi*.
a, ♀ dorsal; b, ♀ lateral; c, ♀ head lateral; d, ♀ abdomen lateral; e, ♀ abdomen dorsal;
f, ♀ 2nd maxilla (hairs and serration of setae omitted); g, ♀ 1st foot; h, ♂ dorsal.
(Fig. 2g, after Wolfenden; Figs. 1f, g, 2b, c, e, f, after Sars; remainder original.)

Family MEGACALANIDAE

Big and strongly built copepods. Cephalon and 1st thoracic somite separate or fused; 4th and 5th thoracic somites separate or fused. 1st feet each with 3-jointed endopods and 3-, rarely 2-jointed exopods. 2nd to 5th feet with both rami 3-jointed. 3rd joints of exopods of 2nd to 4th feet each with 3 spines on outer edge and 5 setae on inner edge; terminal spines serrate. Male with right 1st antenna slightly modified as a grasping organ. 5th feet differing only slightly from preceding feet. All known species are bathypelagic and belong to the oceanic deep water fauna.

Genus MEGACALANUS Wolfenden, 1904

Rostrum composed of two sharp, slightly tapering spines. 1st feet with reflexed hook on each 2nd basal joint (absent in certain varieties!). Setae on the 2nd maxillae of moderate length, sparsely ciliated.

1. *M. princeps* Wolfenden, 1904. 1st antennae twice as long as the cephalothorax.

Genus BATHYCALANUS G. O. Sars, 1905

Rostrum composed of two stout, sausage-shaped, not tapered processes, placed on a conspicuous thickened base in front of cephalon. Setae on 2nd maxillae very long, curved at the tips, each provided with dense row of hairs on inner margin forming a ribbon-like lamina.

2. *B. princeps* (Brady, 1883). Female with low antero-dorsal crest on cephalon, rostrum stout. Genital segment large, swollen dorsally and laterally. 1st antennae reach beyond furca by about 4 joints. Male without crest.
3. *B. bradyi* (Wolfenden, 1905). Thickened base on cephalon anteriorly with a pair of sharp points. Rostrum more slender than in *B. princeps*. Exopods of 1st feet in female 3-jointed and without outer edge spines except at tips of 3rd joints. Male with cephalon as in female; exopods of 1st feet 3-jointed.
4. *B. richardi* G. O. Sars, 1905, which has 2-jointed exopods on the 1st feet in the female, is apparently otherwise identical with *B. bradyi*.

Genus BRADYCALANUS A. Scott, 1909

Resembles *Megacalanus*, but setae on the terminal parts of the 2nd maxillae scythe-like and densely ciliated. 2nd endopodal joints of the 1st maxillae each with single seta (4 are present in *Megacalanus*). No hooked spine on the 2nd basal joints of the 1st feet.

5. *B. sarsi* (Farran, 1939). Female with 1st antennae reaching beyond furca by at least 5 joints. Posterior thoracic margin rounded. Male unknown.

| Species | Length in mm. | Rostrum | Proportions cephalothorax and abdomen | 1st antennae | Exopods 1st feet | Remarks |
|------------------------------|----------------------------|-----------------------------|---------------------------------------|----------------------------|---|--|
| <i>Megacalanus princeps</i> | ♀ 8.75—11.5 ♂ 7.9—10.1 | 2 tapering acute spines | 2.7 : 1 | twice length cephalothorax | 3-jointed | hooked spine on 2nd basal joints of 1st feet |
| <i>Bathycalanus princeps</i> | ♀ 10.0—12.0 ♂ 11.0 | 2 sausage-shaped appendages | 4 : 1 | slightly longer than body | 3-jointed | low cephalic crest |
| <i>B. bradyi</i> | ♀ 10.0—12.0 ♂ 10.0—12.0 | 2 sausage-shaped appendages | 3 : 1 | slightly longer than body | 3-jointed, no outer edge spines except on 3rd joint | two small points in front of cephalon |
| <i>B. richardi</i> | ♀ 9.0—11.2 ♂ 7.80—8.20 | 2 sausage-shaped appendages | 3 : 1 | slightly longer than body | 2-jointed, no outer edge spines except on the 2nd joint | two small points in front of cephalon |
| <i>Bradycalanus sarsi</i> | ♀ 11—12 ♂ ? | 2 tapering acute points | 3 : 1 | 1½ × as long as body | 3-jointed | setae on 2nd maxillae scythe-like; 2nd endopodal joints of 1st maxillae each with single seta. |

References to Descriptions and Figures.

1. *M. princeps*: Wolfenden, 1904, Pl. 9, Figs. 1, 2; 1905, Pl. 1, Figs. 1—6 (as *M. bradyi* in emended copy); 1911, Pl. 22, Figs. 1—11, Textfig. 8. Van Breemen, 1908, Fig. 9 (as *M. longicornis*). A. Scott, 1909, Pl. 1, Figs. 12—18. With, 1915, Pl. 1, Fig. 3, Textfig. 8. Sars, 1924—25, Pls. 1, 2 (as *M. longicornis*). Sewell, 1929, Fig. 2. Rose, 1933, Fig. 14. Farran, 1939. Vervoort, 1946, Fig. 4.
2. *B. princeps*: Brady, 1883, Pl. 4, Figs. 3—7 (as *Calanus princeps*). Giesbrecht & Schmeil, 1898 (as *C. princeps*). Wolfenden, 1906, Pl. 8, Figs. 1—5 (as *Heterocalanus medius*). With, 1915, Pl. 1, Fig. 2, Textfig. 7 (as *Macrocalanus princeps*). Sars, 1924—25, Pl. 5, Figs. 7—15 (as *B. rigidus*). Rose, 1929, Pl. 1, Fig. 1 (as *B. rigidus*). Farran, 1939. Vervoort, 1946.
3. *B. bradyi*: Wolfenden, 1905, Pl. 1, Figs. 7—9 (as *Megacalanus bradyi* in emended copy as *M. princeps*); 1911, Pl. 23, Figs. 1—7, Textfig. 2 (as *Buthycalanus maximus*). Farran, 1939. Vervoort, 1946.
4. *B. richardi*: Wolfenden, 1911, Pl. 23, Fig. 8. Sars, 1924—25, Pl. 4, Pl. 5, Figs. 1—6. Rose, 1933, Fig. 16. Farran, 1939. Vervoort, 1946.
5. *B. sarsi*: Sars, 1924—25, Pl. 3 (as *Megacalanus princeps*). Wilson, 1932, Fig. 12; 1936 (as *M. princeps*). Rose, 1933, Fig. 15 (as *M. princeps*). Jespersen, 1934 (as *M. princeps*). Farran, 1939 (as *M. sarsi*). Vervoort, 1946 (as *M. sarsi*).

Distribution

Species

| | |
|-------------------------------------|---------------|
| Gulf of Bothnia | — |
| Gulf of Finland | — |
| Baltic proper | — |
| Belt Sea | — |
| Kattegat | — |
| Skagerak | — |
| Northern North Sea | — |
| Southern North Sea | — |
| English Channel (eastern) | — |
| English Channel (western) | — |
| Bristol Channel and Irish Sea | — |
| South and West Ireland | 1, 2, 3 |
| North-eastern Atlantic | 1, 2, 3, 4, 5 |
| Faroe Shetland Area | 2 |
| Faroe Iceland Area | 1, 2, 3 |
| Norwegian Sea | — |
| Barents Sea | — |

References to Work on Biology.

- Brady (1883) 2. Van Breemen (1908) 1, 2. Catalogue (1909) 1, 2. Farran (1908) 1, 2; (1926) 1. Jespersen (1934) 1, 2, 3, 4, 5; (1940) 1, 2. Lysholm & Nordgaard (1921) 1. Lysholm, Nordgaard & Wiborg (1945) 1, 2, 4. Paulsen (1909) 1. Rose (1929) 2; (1933) 1, 4, 5. Sars (1924—25) 1, 2, 4, 5. A. Scott (1909) 1. Sewell (1929) 1; (1947) 1, 3. Vervoort (1946) 1, 4. Wilson (1932) 5; (1936) 1, 2, 4, 5; (1942) 1, 2. With (1915) 1, 2. Wolfenden (1904) 1, 4; (1905) 1, 3; (1906) 2, 3; (1911) 1, 2, 3.

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- 1911. Deutsche Südpolar Exped., Vol. 12 (Zool., Vol. 4).