

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton.

Sheet 37.

COPEPODA

SUB-ORDER: CALANOIDA

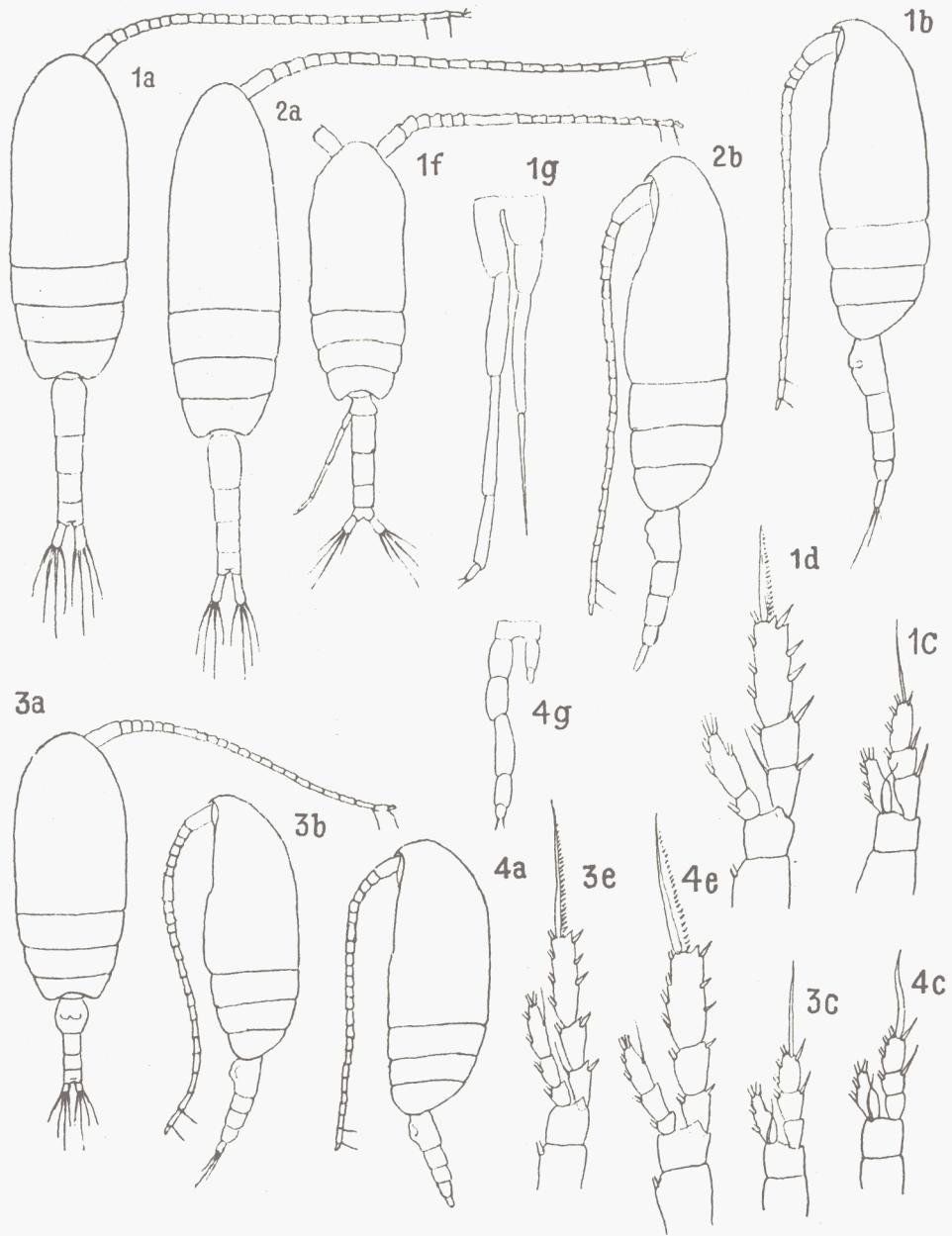
Family: Pseudocalanidae

GENERA: PSEUDOCALANUS

MICROCALANUS

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

1951.



1, *Pseudocalanus minutus elongatus*; 2, *Pseudocalanus minutus gracilis*;
3, *Microcalanus pygmaeus pygmaeus*; 4, *Microcalanus pygmaeus pusillus*.
a, ♀ dorsal; b, ♀ lateral; c, 1st foot; d, 2nd foot; e, 3rd foot; f, ♂ dorsal; g, ♂ 5th feet.
(All figures after Sars).

Family PSEUDOCALANIDAE

Small but strongly built Copepods, resembling *Calanus*. Cephalon and 1st thoracic somite (at least in female) fused; 4th and 5th thoracic somites fused. Abdomen 4-segmented in female, 5-segmented in male. Inner and outer edge setae of furca very short, 4 subequal marginal setae. 1st antennae 24-jointed, in male with a reduced number of joints and with many club-shaped appendages, base thickened. Exopods of 1st—4th feet 3-jointed; endopods of 1st feet 1-jointed, of 2nd 2-jointed and 3rd and 4th 3-jointed. 3rd exopodal joints of 2nd to 4th feet each with 3 spines on outer edge and 4 setae on inner edge. 5th feet absent in female or uniramous and then composed of a reduced number (up to 3) of joints. 5th feet in male uniramous on both sides, usually more or less styliform.

Genus PSEUDOCALANUS Boeck, 1872

Body generally as in *Calanus*, but smaller. Cephalon and 1st thoracic somite, as well as 4th and 5th thoracic somites, fused. Rostrum composed of two slender filaments. Exopods of 1st to 4th feet 3-jointed: endopods of 1st feet 1-, of 2nd feet 2- and of 3rd and 4th feet 3-jointed. Endopods of 1st feet with a total of 5 setae. 3rd exopodal joints of 2nd to 4th feet each with 3 spines on outer edge and 4 setae on inner edge. 5th feet absent in female, but occasionally present in a much reduced form. 5th feet of male uniramous on both sides, elongated, not natatory, without setae. Right 5th foot 4-jointed, left 5-jointed, slightly differing in length.

1. *P. minutus* Kröyer, 1842—45. Three forms, now normally regarded as belonging to this species, have been described:
 - a. *P. m. elongatus* (Boeck, 1864). The common form in temperate and boreal waters.
 - b. *P. m. major* G. O. Sars, 1900. Resembles *P. m. elongatus*, but nearly twice as large. Arctic waters.
 - c. *P. m. gracilis* G. O. Sars, 1903. More slender than *P. m. elongatus*, with more rounded cephalon and longer 1st antennae in female. Arctic waters.

Genus MICROCALANUS G. O. Sars, 1903

Resembles *Pseudocalanus*, but smaller, endopods of 1st feet with a total of 4 setae. Male with uniramous 5th feet, very unequal in length, left 5—6 jointed, right short, 2—3 jointed.

2. *M. pygmaeus* (G. O. Sars, 1900). Two species of *Microcalanus* have been described by Sars, which can best be regarded as forms of a variable *M. pygmaeus*, as is the view adopted here.
 - a. *M. p. pygmaeus* (G. O. Sars, 1900). Female with 1st antennae reaching the end of the furca. Arctic waters.
 - b. *M. p. pusillus* G. O. Sars, 1903. Female with 1st antennae reaching the genital segment. Deep water of Norwegian fjords.

Intermediate forms occur; the form usually met with in boreal waters and which is most widespread resembles *M. p. pusillus* in having short 1st antennae, but the feet are slender, with long, finely denticulate terminal spines as in *M. p. pygmaeus*.

Species	Length in mm.	Cephalon	1st antennae	Furca	Feet	Endopod 1st feet
<i>Pseudocalanus m. elongatus</i>	♀ 1.2—1.6 ♂ 1.1—1.4	narrowly rounded, not produced	reach end genital segment	1×2	normal	5 setae
<i>Pseudocalanus m. major</i>	♀ 2.4 ♂ 1.8	as <i>P. m. elongatus</i> , but nearly twice as large. Furca slightly more elongated				5 setae
<i>Pseudocalanus m. gracilis</i>	♀ 1.65 ♂ 1.15	produced, almost angularly curved	reach 3rd abdominal segment	1×3	notably slender	5 setae
<i>Microcalanus p. pygmaeus</i>	♀ 0.86	broadly rounded	reach end furca or anal segment	1×1	notably slender, terminal spines finely denticulate	4 setae
<i>Microcalanus p. pusillus</i>	♀ 0.7 ♂ 0.7	broadly rounded	reach end genital segment	1×1	normal, terminal spines coarsely denticulate	4 setae

References to Descriptions and Figures.

1. *P. minutus*: Kröyer, 1842—45, Pl. 41, Fig. 4 (as *Calanus minutus*); 1848 (as *Calanus minutus*). Boeck, 1864 (as *Clausia elongata*). Giesbrecht, 1882, Pl. 2, Figs. 14, 17 (as *Lucullus acupes*). Canu, 1892, Pl. 2, Figs. 1—13 (as *Clausia elongata*). Giesbrecht, 1892, Pl. 10, Figs. 22, 31—33 (as *P. elongatus*). Vanhöffen, 1897, Pl. 1, Fig. 6 (as *P. elongatus*). Giesbrecht & Schmeil, 1898 (as *P. elongatus*). Sars, 1900, Pl. 20 (as *P. major*); 1901—03, Pls. 10, 11 (as *P. elongatus*), Suppl. Pl. 1 (as *P. gracilis*). Mrázek, 1902, Figs. 5, 6 (as *P. elongatus*). Oberg, 1906 (as *P. elongatus*). Damas & Koefoed, 1907, Fig. 12 (as *P. elongatus* and *P. gracilis*), Fig. 15 (as *P. major*). Van Breemen, 1908, Fig. 22 (as *P. elongatus*), Fig. 23 (as *P. major*). Kraefft, 1910, Pl. 1, Figs. 13—21 (as *P. elongatus*). Stephensen, 1913, Pls. 4, 5 (as *P. elongatus*). With, 1915, Pl. 1, Fig. 8, Textfigs. 13, 14 (as *P. minutus*). Adler & Jespersen, 1920, Figs. 1—9 (*P. elongatus*). Willey, 1920, Fig. 1 (as *P. elongatus*). Bigelow, 1926, Figs. 83, 84 (as *P. elongatus*). Pesta, 1928, Fig. 18 (as *P. elongatus*). Wilson, 1932, Fig. 25 (as *P. minutus*). Rose, 1933, Fig. 34 (as *P. elongatus*). Davis, 1949, Pl. 2, Figs. 18—22 (as *P. elongatus*).

Distribution

Species

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

2. *M. pygmaeus*: Sars, 1900, Pl. 21 (as *Pseudocalanus pygmaeus*), Pl. 22, Figs. 13, 14 (as *Spinocalanus longicornis* ♂). Sars, 1901—03, Suppl. Pl. 2, Suppl. Pl. 3, Fig. 1 (as *M. pusillus*). Giesbrecht, 1902, Figs. 1—5 (as *Pseudocalanus pygmaeus*). Mrázek, 1902, Pl. 5, Figs. 2—12 (as *Pseudocalanus pygmaeus*). Damas & Koefoed, 1907, Fig. 13 (as *M. pusillus*). Van

Breemen, 1908, Fig. 24 (as *M. pygmaeus*), Fig. 25 (as *M. pusillus*). Wolfenden, 1908, Pl. 2, Fig. 5 (as *M. pusillus*). With, 1915 (as *M. pygmaeus*). Pesta, 1928, Fig. 13 (as *M. pusillus*). Rose, 1933, Fig. 35 (as *M. pygmaeus*), Fig. 36 (as *M. pusillus*). Wilson, 1942, Fig. 55 (as *M. pygmaeus*).

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Adler & Jespersen (1920) 1. Apstein (1906) 1. Bigelow (1926) 1. Bigelow & Sears (1939) 1. Bourne (1889) 1. Van Breemen (1908) 1, 2. Bullen (1908) 1. Bogorov (1939) 1. Candeias (1926) 1. Catalogue, etc. (1906, 1909, 1916) 1, 2. Cleve (1900, 1902) 1. Damas & Koefoed (1907) 1, 2. Delsman (1912) 1. Farran (1903, 1905, 1908) 1; (1910) 1, 2; (1920) 1; (1926) 1, 2; (1936) 1, 2. Jaschnov (1927) 1. Jespersen (1928) 1; (1934) 1, 2; (1934a) 1; (1939, 1939a, 1940) 1, 2. Kraeffft (1910) 1. Linko (1913) 1. Lysholm, Nordgaard & Wiborg (1945) 1, 2. Mrázek (1902) 1, 2. Paulsen (1909) 1, 2. Rae & Rees (1947) 1, 2. Rose (1929) 1. Runnström (1932) 1, 2. Sars (1900, 1901—03, 1924—25) 1, 2. Störmer (1929) 2. Wiborg (1940, 1944) 1, 2. With (1915) 1, 2. Willey (1920) 1. Wilson (1942) 1, 2.

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