

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton.

Sheet 46.

COPEPODA

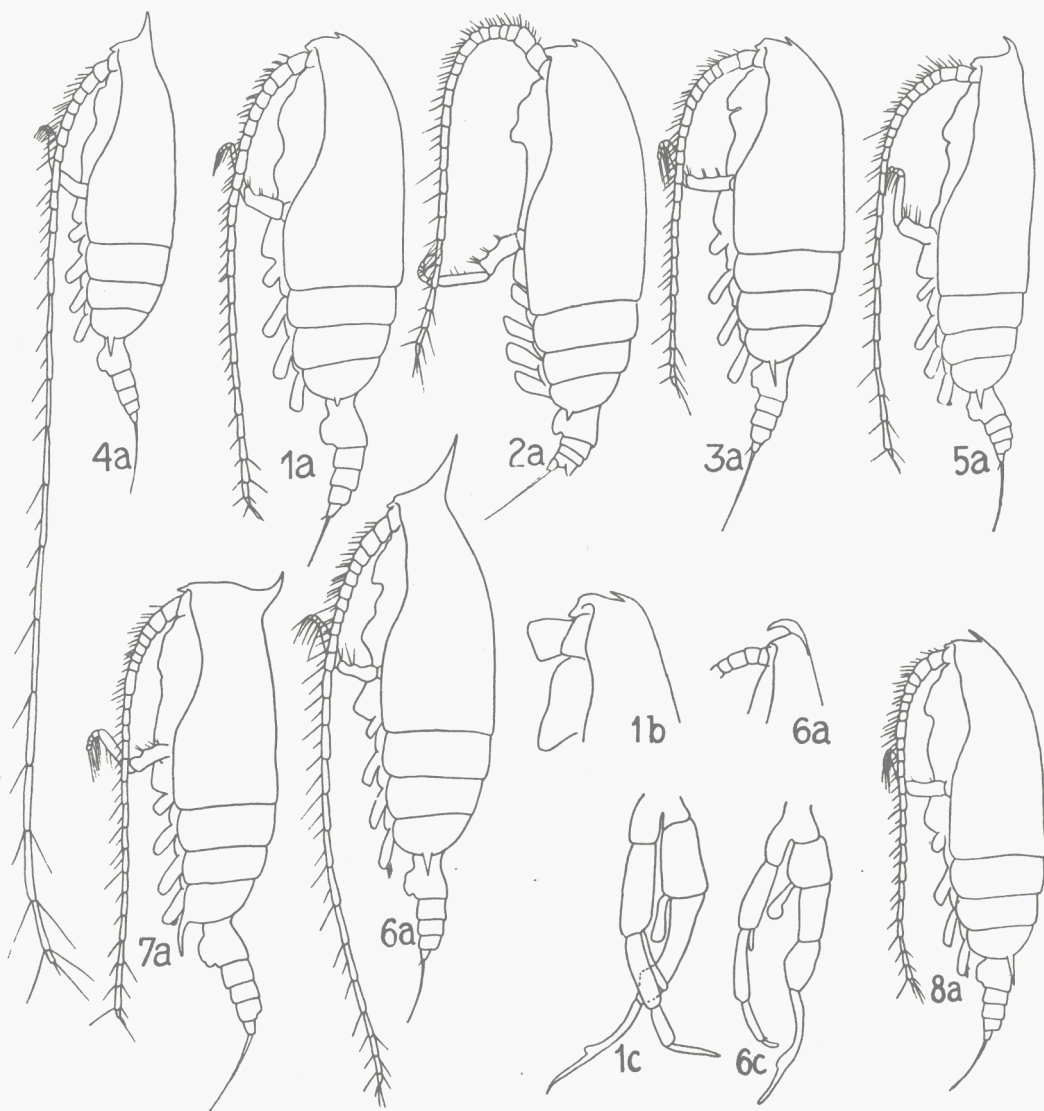
SUB-ORDER: CALANOIDA

Family: Aetideidae

GENUS: GAETANUS

(By W. Vervoort)

1952



1, *Gaetanus kruppii*. 2, *Gaetanus brachyurus*. 3, *Gaetanus armiger*. 4, *Gaetanus miles*.
5, *Gaetanus curvicornis*. 6, *Gaetanus pileatus*. 7, *Gaetanus latifrons*. 8, *Gaetanus minor*.
a, ♀, lateral view; b, ♂, head, lateral view; c, ♂, 5th feet.
(All figures after Sars)

Genus GAETANUS Giesbrecht, 1888

Rather strongly built copepods. Cephalon and 1st thoracic somite as well as 4th and 5th thoracic somites fused. Cephalon with median spine, directed upwards and forwards. Rostrum small, 1-pointed, and occasionally completely absent; the apex may be bifid. Postero-lateral thoracic border produced into acute, backwardly directed spines, only very occasionally rounded.

♀. 1st antennae 24-jointed, 8th and 9th joints fused, basal portions usually directed forwards. 1st basal joints of maxillipeds with lamellae on external borders. Exopods of 1st feet 2- or 3-jointed, endopods 1-jointed. Exopods of 2nd to 4th feet 3-jointed, endopods of 2nd feet 1- or 2-jointed, of the 3rd and 4th feet 3-jointed. Postero-lateral aspects of 1st basal joints of 4th feet each with a transverse row of stiff, hairlike spinules. Genital segment of abdomen with distinct genital swelling.

♂. 1st antennae with reduced number of joints, basal parts thickened and beset with club-shaped appendages. Oral parts reduced. Cephalic spine of reduced length. 1st to 4th feet as in female, no spinules or hairs on 1st basal joints of the 4th feet. 5th feet biramose on both sides, elongated; right foot more or less prehensile; endopods short, 1-jointed, exopods elongated, 2—3 jointed.

1. *Gaetanus kruppii* Giesbrecht, 1903. ♀ 3.6—5.7 mm., ♂ 3.7—5.6 mm.

♀. Body robust, rostrum small, 1-pointed. Cephalic spine short, curved. Points on lateral thoracic border small, of slightly variable length, covering a small portion of genital segment, distinctly curved outwards, less than $\frac{1}{3}$ the length of 1st basal joint of 4th foot. Abdomen $\frac{1}{3}$ the length of cephalothorax, genital segment distinctly longer than wide, with a huge genital tubercle. 1st antennae reaching anal segment or slightly shorter. Lamellae on 1st basal joints of maxillipeds distinct. Exopods of 1st feet 3-jointed, each with 2 spines on outer edge. 1st basal joints of 4th feet each with a row of fine, hairlike tubes.

♂. Body slightly less robust. Cephalic spine more prominent than in female, rostrum rather strong, apex bifid. Spines on lateral thoracic border of reduced length. Abdomen $\frac{1}{3}$ the length of cephalothorax, anal segment very small. 1st antennae with thickened basal portions, beset with sensory appendages, reaching middle of abdomen. Oral parts reduced; no lamellae on 1st basal joints of maxillipeds. No hairs on 1st basal joints of 4th feet. 5th feet biramose on both sides; endopods 1-jointed, short; left exopod 3-jointed, joints rather short; right exopod 2-jointed, apical portion of distal joint spiniform.

Deep water of the Atlantic.

2. *Gaetanus brachyurus* G. O. Sars, 1907. ♀ 6.4 mm., ♂ unknown. General appearance as *G. kruppii*, but body notably bigger and stronger. Cephalic spine small, curved, rather massive. Points on lateral thoracic border small, in dorsal aspect distinctly curved inwards, reaching about to middle of genital segment. Abdomen short, $\frac{1}{4}$ — $\frac{1}{5}$ the length of cephalothorax. Genital segment big, almost as long as broad, genital tubercle huge. Anal segment with prominent anal flap. 1st antennae about as long as body. 1st feet with distinctly 3-jointed exopods, each segment bearing a spine. Deep water of the Atlantic.

3. *Gaetanus armiger* Giesbrecht, 1888. ♀ 3.2—4.4 mm., ♂ unknown. Not unlike *G. kruppii*, but smaller. Cephalic spine very small, curved. Rostrum small, indistinctly bifid at apex. Spines on lateral thoracic border long and directed backwards, reaching to middle of genital segment, or slightly longer. Abdomen $\frac{1}{3}$ the length of cephalothorax, genital swelling of genital segment small. 1st antennae reaching middle of abdomen. Lamellae on 1st basal joints of maxillipeds small, only just visible. Bristles on 1st basal joints of 4th feet fine, hairlike. (Wolfenden (1904) proposed the separation of the Atlantic form of *G. armiger* from Pacific representatives as *G. atlanticus*, on account of the differently shaped tubes on 1st basal joints of 4th feet and greater size of the Atlantic form.)

Deep water of Northern Atlantic.

4. *Gaetanus miles* Giesbrecht, 1888. ♀ 3.20—4.35 mm., ♂ unknown. Cephalon with very characteristic, forwardly directed,

strong spine. Rostrum small. Points on lateral thoracic border strong, reaching about to middle of genital segment. Abdomen $\frac{1}{4}$ the length of cephalothorax. 1st antennae about twice as long as whole animal. Lamellae on 1st basal joints of maxillipeds distinct. 1st basal joints of 4th feet each with a row of 5—6 rather strong spinules along internal margin.

Deep water of the Atlantic.

5. *Gaetanus curvicornis* G. O. Sars, 1905. ♀ 3.7 mm., ♂ unknown. Cephalon with rather strong but short spine, curved forwards and continued backwardly as a small carina. Spines on lateral thoracic border strong, slightly diverging, reaching a small distance beyond middle of genital segment. 1st antennae reaching anal segment. Abdomen short, $\frac{1}{4}$ the length of cephalothorax. Lamellae on 1st basal joints of maxillipeds distinct, rounded, not invaginated. 1st feet with 3-jointed exopods, each with 3 spines on outer edge. Endopods of 2nd feet 2-jointed. 1st basal joints of 4th feet each with about 12 spiniform, rather long hairs, arranged in one row.

Deep water of the Atlantic and Arctic.

6. *Gaetanus pileatus* Farran, 1903. ♀ 5.3—6.2 mm., ♂ 4.7 mm.¹⁾

♀. Body very robust, cephalic spine huge, pointing forwards, giving the head in lateral aspect a characteristic appearance. Spine bluntly pointed, thickened at base. Rostrum small. Spines on lateral thoracic border strong, slightly divergent, reaching beyond middle of genital segment. Abdomen short, $\frac{1}{3}$ the length of cephalothorax. 1st antennae long, reaching beyond furca by 7 or 8 joints, i.e., $1\frac{1}{2}$ times as long as cephalothorax. Exopods of 1st feet 2-jointed, each with 2 spines on outer edge. 1st basal joints of 4th feet each with a row of about 20 lamelliform bristles.

♂. Body more slender than in female. Cephalic spine curved forwards. Spines on lateral thoracic border of reduced length, small. 1st antennae with some of the joints coalescent, slightly longer than cephalothorax. Oral parts reduced. 1st basal joints of 4th feet without spinules or hairs. 5th feet with slightly swollen basal joints, endopods 1-jointed, small on left side, club-shaped on right side; left exopod 3-jointed, joints of reduced length; right exopod 2-jointed, distal joint with spiniform apex. Deep water of temperate and northern Atlantic.

7. *Gaetanus latifrons* G. O. Sars, 1905. ♀ 4.8—5.4 mm., ♂ unknown. Body of characteristic appearance. Cephalic spine

¹⁾ This species is sometimes considered as a synonym of *Gaetanus caudani* Canu, 1896, described by that author from an immature specimen captured in the Bay of Biscay. The specimen had a 3-jointed exopod of the 1st foot, as contrasted to similar stages of *G. pileatus*, which invariably have 2-jointed exopods on the 1st feet.

placed backwards, curved, pointing backwards and upwards, thickened at the base. Frontal part of cephalon flattened, rostrum small. Spines on lateral thoracic border slender, widely separated, reaching beyond middle of genital segment, slightly divergent. Genital somite swollen laterally, genital tubercle big. Abdomen about $\frac{1}{3}$ the length of cephalothorax. 1st antennae reaching about to middle of abdomen. Exopods of 1st feet 3-jointed, 1st joints each with spine on outer edge. 1st basal joints of 4th feet each with about 15 flattened, tube-like hairs.

Deep water of the Atlantic.

3. *Gaetanus minor* Farran, 1905. ♀ 1.75—2.40 mm., ♂ un-

known. Body small and slender, cephalic spine small and of reduced length, slightly curved. Spines on lateral thoracic border fine, pointing straightly backwards, reaching almost to end of genital segment. Abdomen $\frac{1}{4}$ the length of cephalothorax. 1st antennae slightly longer than cephalothorax. 1st basal joints of maxillipeds with distinct lamellae which are not invaginated. Exopods of 1st feet 2-jointed, each with 2 spines on outer edge. 1st basal joints of 4th feet each with row of fine bristles.

Moderately deep water of Atlantic, occasionally — during the night — in epiplankton.

Species	Length in mm.	Cephalic spine	Points at postero-lateral thoracic border	Length of abdomen as part of cephalothorax	Length of 1st antennae	Exopods of 1st feet, No. of spines on outer edge	Spines on 1st basal joints of 4th feet	Remarks
<i>G. kruppil</i>	♀ 3.6—5.7 ♂ 3.7—5.6	short, curved	small, slightly curved downwards	$\frac{1}{3}$	as long as body	3-jointed, 2 outer	row of fine, hairlike tubes	
<i>G. brachyurus</i>	♀ 6.4	short, curved, rather massive	small, curved inwards	$\frac{1}{4}$ — $\frac{1}{5}$	as long as body	3-jointed, 3 outer	—	♂ unknown
<i>G. armiger</i>	♀ 3.2—4.4	short, curved	long and straight, $\frac{1}{2}$ the length of genital somite	$\frac{1}{3}$	reaching middle of abdomen	3-jointed, 2 outer	1 row of fine hairlike tubes	♂ unknown
<i>G. miles</i>	♀ 3.2—4.35	strong, forwardly directed	long and strong, $\frac{1}{2}$ the length of genital somite	$\frac{1}{4}$	2×total body length	2-jointed, 2 outer	5—6 rather strong spines	♂ unknown
<i>G. curvicornis</i>	♀ 3.7	strong and short, strongly curved	strong, slightly diverging, reaching middle of genital somite	$\frac{1}{4}$	as long as body	3-jointed, 3 outer	12 spiniform, long hairs	♂ unknown
<i>G. pileatus</i>	♀ 5.3—6.2 ♂ 4.7	huge, pointing forwards	strong, slightly diverging, reaching middle of genital somite	$\frac{1}{3}$	$1\frac{1}{2}$ × as long as body	2-jointed, 2 outer	20 lamelliform bristles	
<i>G. latifrons</i>	♀ 4.8—5.4	long, obliquely backwardly directed, curved	slender, widely separated, reaching beyond middle of genital somite	$\frac{1}{3}$	reaching middle of abdomen	3-jointed, 3 outer	15 flattened, tubelike hairs	♂ unknown
<i>G. minor</i>	♀ 1.75—2.4	small, slightly curved	fine, pointing backwards, reaching end of genital somite	$\frac{1}{4}$	slightly longer than cephalothorax	2-jointed, 2 outer	row of fine bristles	♂ unknown

References to Descriptions and Figures.

1. *G. kruppii*: Giesbrecht, 1903, Pl. 7, Fig. 8, Pl. 8, Fig. 29; Wolfenden, 1903 (as *G. major*); 1904, Pl. 9, Figs. 7, 8 (as *G. major*); Esterly, 1906, Pl. 9, Fig. 5, Pl. 14, Fig. 90 (as *G. clarus*); van Breemen, 1908, Fig. 45 (as *G. major*), Fig. 47; A. Scott, 1909, Pl. 9, Figs. 9—15, Pl. 10, Figs. 1—9; With, 1915, Pl. 3, Fig. 3, Textfig. 25; Sars, 1924—25, Pl. 18, Figs. 5—8; Wilson, 1932, Fig. 32; Rose, 1933, Fig. 68; Sewell, 1947, Fig. 10.
2. *G. brachyurus*: Sars, 1907; 1924—25, Pl. 18, Figs. 9, 10.
3. *G. armiger*: Giesbrecht, 1892, Pl. 14, Figs. 19, 20, 22, 23, 26, 28, 29, Pl. 36, Figs. 2, 4, 5; T. Scott, 1894, Pl. 8, Figs. 16—27 (as *Aetideus armiger*); Giesbrecht & Schmeil, 1898; van Breemen, 1908, Fig. 44; A. Scott, 1909, Pl. 8, Figs. 16—22; Sars, 1924—25, Pl. 18, Figs. 1, 2; Davis, 1949, Figs. 30—32.
4. *G. miles*: Giesbrecht, 1892, Pl. 14, Figs. 21, 24, 25, 27, 30, Pl. 36, Figs. 1, 3; Giesbrecht & Schmeil, 1898; Thompson, 1903, Pl. 1, Figs. 3—5; van Breemen, 1908, Fig. 42; A. Scott, 1909, Pl. 8, Figs. 1—8; Esterly, 1911, Pl. 26, Fig. 3, Pl. 28, Figs. 38, 43, Pl. 30, Figs. 73, 84; With, 1915, Pl. 3, Fig. 7; Sars, 1924—25, Pl. 17, Fig. 1; Wilson, 1932, Fig. 31; Rose, 1933, Fig. 69.
5. *G. curvicornis*: Sars, 1905; 1924—25, Pl. 17, Fig. 2; Rose, 1933, Fig. 70; Sewell, 1947, Fig. 12.
6. *G. pileatus*: Farran, 1903, Pl. 17, Figs. 1—11; Wolfenden, 1904, Pl. 9, Figs. 20—22 (as *G. caudani*); Esterly, 1906, Pl. 9, Fig. 3, Pl. 12, Fig. 54, Pl. 13, Fig. 76 (as *G. unicornis*); van Breemen, 1908, Fig. 48 (as *G. caudani*); A. Scott, 1909, Pl. 8, Figs. 9—15 (as *G. caudani*); With, 1915, Pl. 3, Fig. 6, Textfig. 26; Sars, 1924—25, Pl. 17, Figs. 3—6; Sewell, 1929, Fig. 40; Rose, 1933, Fig. 71.
7. *G. latifrons*: Sars, 1905; Farran, 1905, Pl. 6, Figs. 1—12 (as *G. holti*); Wolfenden, 1905a, Pl. 3, Fig. 13 (as *G. longispinus*); van Breemen, 1908, Fig. 43; A. Scott, 1909, Pl. 10, Figs. 10—17; With, 1915, Pl. 3, Fig. 5, Textfig. 27; Sars, 1924—25, Pl. 17, Figs. 7—9; Rose, 1933, Fig. 72.
8. *Gaetanus minor*: Farran, 1905, Pl. 5, Figs. 1—11; van Breemen, 1908, Fig. 46; A. Scott, 1909, Pl. 9, Figs. 1—8; Wolfenden, 1911, Fig. 20; With, 1915, Pl. 3, Fig. 4; Sars, 1924—25, Pl. 18, Figs. 3, 4; Rose, 1933, Fig. 73; Tanaka, 1937, Fig. 8.

Distribution Species

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

References to work on Biology.

Bigelow (1926) 4; Bigelow & Leslie (1930) 6; van Breemen (1908) 1, 3, 4, 6, 7, 8; Catalogue, etc. (1906, 1909, 1916) 3, 4, 7, 8; Cleve (1904) 3, 4; Esterly (1906) 1, 6; (1911) 4; (1912) 1, 4, 6; Farran (1903) 6; (1905) 1, 6, 7, 8; (1908) 1, 4, 6, 7, 8; (1920) 6, 8; (1926) 1, 4, 6, 7, 8; (1929) 8; (1936) 4, 6, 8; Fowler (1903) 1; Giesbrecht (1892) 3, 4; (1895) 4; (1903) 1; Jespersen (1934) 1, 2, 5, 8; (1940) 1, 2, 3, 6, 8; Lysholm & Nordgaard (1921) 1, 6, 7; Lysholm, Nordgaard & Wiborg (1945) 1, 4, 6, 7, 8; Massutí Alzamora (1940) 1; (1942) 1; Norman (1903) 3, 4; Paulsen (1909) 1, 3, 6; Rose (1929) 1, 4, 7; (1933) 1, 4, 5, 6, 7, 8; Sars (1912) 1, 3, 4, 6, 7, 8; (1924—25) 1, 2, 3, 4, 5, 6, 7, 8; A. Scott (1909) 1, 3, 4, 6, 7, 8; T. Scott (1894) 3; Sewell (1929) 1, 3, 4, 6, 7, 8; (1947) 1, 4, 5, 7, 8; Störmer (1929) 1, 6; Tanaka (1937) 8; Wilson (1932) 1, 4; (1936) 3, 4, 6, 7; (1942) 1, 3, 4, 7, 8; With (1915) 1, 4, 6, 7, 8; Wolfenden (1904) 1, 3, 6; (1908) 1, 5, 6, 7; (1911) 1, 4, 6, 7, 8.

References

see Sheet No. 41.