

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

**Zooplankton.**

Sheet 34.

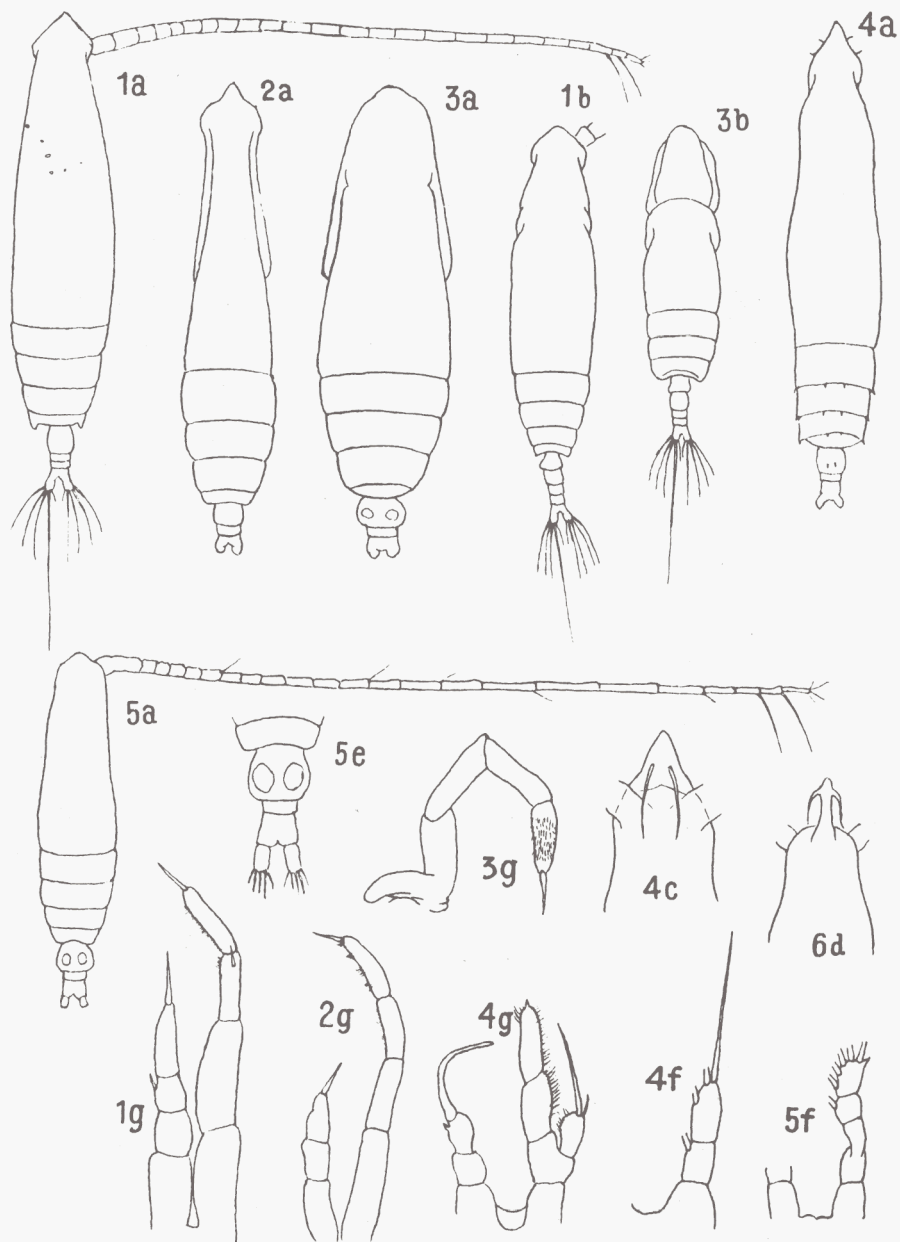
**COPEPODA**

**SUB-ORDER: CALANOIDA**

**Family: Eucalanidae**

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

**1951.**



1, *Eucalanus elongatus* (Atlantic form); 2, *Eucalanus attenuatus*; 3, *Eucalanus crassus*;  
 4, *Rhincalanus nasutus*; 5, *Mecynocera clausii*; 6, *Rhincalanus cornutus*.  
 a, ♀ dorsal; b, ♂ dorsal; c, ♀ head ventral; d, ♀ head dorsal; e, ♀ abdomen dorsal; f, ♀ 5th foot; g, ♂ 5th feet.  
 (Fig. 2a after Sewell; Figs. 3a, 4a, 5a, e, original; remainder after Giesbrecht).

## Family EUCALANIDAE

Body elongate, more or less transparent. Cephalon with two filiform rostral appendages, fused with or separate from 1st thoracic somite. Abdomen 3-segmented or — in some species — 4-segmented; anal segment separate from or fused with furca. 1st feet with 2- or 3-jointed exopods and 1- or 2-jointed endopods. 2nd to 4th feet with both rami 3-jointed; 3rd joints of exopods each with 3 spines on outer edge and 5 setae on inner edge. Female with 5th feet absent or composed of a single ramus, found on each side, which may have as much as 5 joints. Males of some species with rudimentary endopods on 5th feet; usually these are uniramous.

### Genus EUCALANUS Dana, 1853

Females with 3- or 4-segmented abdomen, last (anal) segment fused with furca. 1st feet each with 3-jointed exopods and 2-jointed endopods. 5th feet absent in female. Males with reduced oral parts; 5th feet uniramous, not natatory, sometimes present on one side of body only.

1. *E. elongatus* (Dana, 1849). Head triangular. Female with 5th thoracic segment terminating into blunt points (in Atlantic form!), genital segment longer than broad, abdomen 4-segmented. Oceanic, surface to deep water.
2. *E. attenuatus* (Dana, 1849). Body slender. Female with triangular head, constricted near the base of 1st antennae. Abdomen 3-segmented, genital segment as wide as long. Male

with triangular or rounded head, with distinct constriction. Oceanic, surface to deep water.

3. *E. crassus* Giesbrecht, 1888. Head rounded, body robust. Females with haired body, abdomen very short, 3-segmented, genital segment much wider than long, onion-shaped. Furca slightly asymmetrical. Oceanic, surface to deep water.

### Genus RHINCALANUS Dana, 1853

Females with 3-segmented abdomen, anal segment fused with furca. Frontal part of cephalon much produced; cephalon fused with 1st thoracic somite. 1st feet each with 2-jointed exopod and endopod. 5th feet not natatory, uniramous on both sides, 3-jointed. Male with left 5th foot biramous, right 5th foot uniramous.

4. *R. nasutus* Giesbrecht, 1888. Female with much produced, triangular head, which completely hides the rostral filaments.

Oceanic, surface to deep water.

*R. cornutus* (Dana, 1849), is at once distinguished by the curious, anchor-shaped head in both sexes. It has not yet been recorded in the area under consideration, but may possibly occur (Fig. 6).

### Genus MECYNOCERA I. C. Thompson, 1888

Cephalon separate from 1st thoracic somite. Females with short, 3-segmented abdomen, anal segment and furca separate. 1st feet each with 3-jointed exopod and 1-jointed endopod. 5th feet uniramous, 5-jointed on both sides. Males unknown.

5. *M. clausii* I. C. Thompson, 1888. Genital segment in female globular, 1st antennae over twice as long as body. Oceanic epiplankton.

Species	Length in mm.	Head	Abdomen in female	Genital segment in female	Genital segment and furca in female	1st antennae	5th feet in male
<i>E. elongatus</i>	♀ 4.4—6.5 ♂ 3.6—5.0	triangular	4-segmented	longer than wide	fused	as long as or slightly longer than body	both rami 4-jointed, right shorter than left
<i>E. attenuatus</i>	♀ 3.5—6.0 ♂ 3.0—4.3	triangular, constricted	3-segmented	as long as wide	fused	as long as or slightly longer than body	right 3-jointed, shorter than 4-jointed left
<i>E. crassus</i>	♀ 2.9—4.0 ♂ 2.7—3.5	rounded	3-segmented	wider than long, onion-shaped	fused	as long as body	right absent, left 4-jointed
<i>R. nasutus</i>	♀ 3.8—5.4 ♂ 3.5—5.0	triangular	3-segmented	as wide as long	fused	as long as body	right uniramous, 3-jointed; left 2-jointed endopod, longer than 1-jointed exopod
<i>M. clausii</i>	♀ 0.75—1.2 ♂ ?	rounded	3-segmented	as wide as long, globular	separate	over twice as long as body	unknown

### References to Descriptions and Figures.

1. *E. elongatus*: Giesbrecht, 1892, Pl. 11, Figs. 2, 7, 12, 20, 25, 32, 36, Pl. 35, Figs. 1, 2, 13, 23, 24. T. Scott, 1894, Pl. 1, Figs. 15—23 (as *E. spinipes*). Giesbrecht & Schmeil, 1898. Wolfenden, 1904, Pl. 9, Figs. 3, 4 (as *E. atlanticus*). Esterly, 1905, Fig. 6 (Pacific form!). Van Breemen,

1908, Figs. 10, 11 (as *E. elongatus* and *E. atlanticus*). With, 1915, Pl. 1, Fig. 5, Textfig. 9. Candéias, 1926, Pl. 2, Figs. 1, 2 (as *E. atlanticus*). Sewell, 1929, Fig. 13. Wilson, 1932, Fig. 15. Vervoort, 1946.

<p>2. <i>E. attenuatus</i>: Giesbrecht, 1892, Pl. 3, Fig. 1, Pl. 11, Figs. 1, 5, 11, 13, 16, 18, 24, 27, 31, 40, Pl. 35, Figs. 3, 6, 17, 25, 34, 37. Giesbrecht &amp; Schmeil, 1898. Esterly, 1905, Fig. 7. Van Breemen, 1908, Fig. 12. Candéias, 1926, Pl. 2, Figs. 3—6 (as <i>Eucalanus</i> sp.?). Wilson, 1932, Fig. 16. Vervoort, 1946. Sewell, 1947, Figs. 6, 7.</p> <p>3. <i>E. crassus</i>: Giesbrecht, 1892, Pl. 11, Figs. 8, 10, 15, 17, 21, 22, 29, 33, 35, 38, Pl. 35, Figs. 4, 20, 26—28. Giesbrecht &amp; Schmeil, 1898. Esterly, 1905, Fig. 8. Van Breemen, 1908, Fig. 13. With, 1915, Pl. 1, Fig. 7, Text-fig. 11. Rose, 1933, Fig. 19. Vervoort, 1946.</p> <p>4. <i>R. nasutus</i>: Giesbrecht, 1892, Pl. 3, Fig. 6, Pl. 9, Figs. 6, 14, Pl. 12, Figs. 9—12, 14, 16, 17, Pl. 35, Figs. 46, 47, 49. Giesbrecht &amp; Schmeil, 1898. Sars, 1901—03, Pls. 6, 7. Esterly, 1905, Fig. 10. Van Breemen, 1908, Fig. 14. With, 1915, Pl. 1, Fig. 4. Schmaus, 1916, Figs. 15—24. Schmaus &amp; Lehnhofer, 1927, Figs. 3, 15—19, 21, 26. Sewell, 1929, Fig. 19a. Wilson, 1932, Fig. 18. Rose, 1933, Fig. 22. Gurney, 1934, Figs. 1, 2. Vervoort, 1946.</p> <p>5. <i>M. clausii</i>: Thompson, 1888, Pl. 1, Figs. 1—4. Giesbrecht, 1892, Pl. 5, Fig. 1, Pl. 11, Figs. 43—45, Pl. 35, Figs. 21, 22. T. Scott, 1894, Pl. 1, Figs. 27—34, Pl. 2, Figs. 7—10. Giesbrecht &amp; Schmeil, 1898. Van Breemen, 1908, Fig. 16. Wilson, 1932, Fig. 20. Rose, 1933, Fig. 24.</p>	<table border="0"> <thead> <tr> <th style="text-align: left;">Distribution</th> <th style="text-align: left;">Species</th> </tr> </thead> <tbody> <tr><td>Gulf of Bothnia .....</td><td>—</td></tr> <tr><td>Gulf of Finland .....</td><td>—</td></tr> <tr><td>Baltic proper .....</td><td>—</td></tr> <tr><td>Belt Sea .....</td><td>—</td></tr> <tr><td>Kattegat .....</td><td>—</td></tr> <tr><td>Skagerak .....</td><td>—</td></tr> <tr><td>Northern North Sea .....</td><td>1, 4</td></tr> <tr><td>Southern North Sea .....</td><td>—</td></tr> <tr><td>English Channel (eastern) .....</td><td>—</td></tr> <tr><td>English Channel (western) .....</td><td>—</td></tr> <tr><td>Bristol Channel and Irish Sea .....</td><td>—</td></tr> <tr><td>South and West Ireland .....</td><td>1, 2, 3, 4</td></tr> <tr><td>North-eastern Atlantic .....</td><td>1, (2), 3, 4, 5</td></tr> <tr><td>Faroe Shetland Area .....</td><td>—</td></tr> <tr><td>Faroe Iceland Area .....</td><td>1, 4</td></tr> <tr><td>Norwegian Sea .....</td><td>1, 4</td></tr> <tr><td>Barents Sea .....</td><td>(4)</td></tr> </tbody> </table>	Distribution	Species	Gulf of Bothnia .....	—	Gulf of Finland .....	—	Baltic proper .....	—	Belt Sea .....	—	Kattegat .....	—	Skagerak .....	—	Northern North Sea .....	1, 4	Southern North Sea .....	—	English Channel (eastern) .....	—	English Channel (western) .....	—	Bristol Channel and Irish Sea .....	—	South and West Ireland .....	1, 2, 3, 4	North-eastern Atlantic .....	1, (2), 3, 4, 5	Faroe Shetland Area .....	—	Faroe Iceland Area .....	1, 4	Norwegian Sea .....	1, 4	Barents Sea .....	(4)
Distribution	Species																																				
Gulf of Bothnia .....	—																																				
Gulf of Finland .....	—																																				
Baltic proper .....	—																																				
Belt Sea .....	—																																				
Kattegat .....	—																																				
Skagerak .....	—																																				
Northern North Sea .....	1, 4																																				
Southern North Sea .....	—																																				
English Channel (eastern) .....	—																																				
English Channel (western) .....	—																																				
Bristol Channel and Irish Sea .....	—																																				
South and West Ireland .....	1, 2, 3, 4																																				
North-eastern Atlantic .....	1, (2), 3, 4, 5																																				
Faroe Shetland Area .....	—																																				
Faroe Iceland Area .....	1, 4																																				
Norwegian Sea .....	1, 4																																				
Barents Sea .....	(4)																																				

#### References to Work on Biology.

- |  |   |
|--|---|
| <p>Bigelow (1926) 1, 2, 4. Bigelow &amp; Sears (1939) 1, 2, 4. Van Breemen (1908) 1, 2, 3, 4, 5. Candéias (1926) 1, 3, 4. Catalogue, etc. (1906, 1909, 1916) 1, 3, 4. Cleve (1900, 1902) 1, 4, 5. Esterly (1911) 1. Farran (1908) 1, 2, 3, 4; (1910) 4; (1911) 1, 3, 4; (1926) 1, 3, 4, 5. Gibbons (1936) 1, 4. Giesbrecht (1892) 1, 2, 3, 4, 5. Gurney (1934) 4. Jespersen (1934) 1, 4. Johnson (1937) 1; (1938) 1. Lysholm &amp; Nord-</p> | <p>gaard (1921) 1, 4. Lysholm, Nordgaard &amp; Wiborg (1945) 1, 2, 3, 4, 5. Rae &amp; Rees (1947) 4. Rose (1929) 1, 2, 4, 5. Sars (1901—03) 4; (1924—25) 1, 2, 3, 4, 5. Schmaus (1916) 4. Schmaus &amp; Lehnhofer (1927) 4. Sewell (1929) 1, 2, 3, 4, 5; (1947) 1, 2, 3, 4. Sømme (1929) 4. Steuer &amp; Hentschel (1937) 4. Vervoort (1946) 1, 2, 3, 4. With (1915) 1, 3, 4.</p> |
|--|---|

#### References.

- |  |   |
|--|---|
| <p>Bigelow, H. B., 1926. Bull. U.S. Fish. Comm., Vol. 40, Pt. 2.</p> <p>Bigelow, H. B. &amp; M. Sears, 1930. Mem. Mus. Comp. Zool. Harv. Coll., Vol. 54, No. 4.</p> <p>Breemen, P. J. van, 1908. Nordisches Plankton, Vol. 4, Pt. 8.</p> <p>Candéias, A., 1926. Bull. Soc. Portug. Sci. Nat., Vol. 10, No. 3.</p> <p>Catalogue des espèces, etc. Publ. Circ., Cons. Perm. Internat. Explor. Mer, No. 33 (1906), No. 48 (1909), No. 70 (1916).</p> <p>Cleve, P. T., 1900. The Seasonal Distribution of Atlantic Plankton Organisms.</p> <p>— 1902. Additional Notes on the Seasonal Distribution of Atlantic Plankton Organisms.</p> <p>Esterly, C. O., 1905. Univ. Calif. Publ. Zool., Vol. 2, No. 4.</p> <p>— 1911. Univ. Calif. Publ. Zool., Vol. 8.</p> <p>— 1911a. Int. Rev. Hydrobiol. u. Hydrogr., Vol. 4.</p> <p>Farran, G. P., 1908. Fish., Ireland, Sci. Invest., 1906, Pt. 2.</p> <p>— 1910. Bull. Trimestriel, 1902—08. Cons. Perm. Internat. Explor. Mer, Résumé, etc., Vol. 1.</p> <p>— 1911. idem, Vol. 2.</p> <p>— 1920. Publ. Circonst. Cons. Perm. Internat. Explor. Mer, No. 73.</p> <p>— 1926. J. Linn. Soc., Lond., Zool., Vol. 36.</p> <p>Gibbons, S. G., 1936. Ann. Mag. Nat. Hist. (10), Vol. 18.</p> <p>Giesbrecht, W., 1892. Fauna u. Flora Golf. Neapel, Vol. 19.</p> <p>Giesbrecht, W. &amp; O. Schmeil, 1898. Das Tierreich, Vol. 6, Copepoda, 1, Gymnoplea.</p> | <p>Gurney, R., 1934. Discovery Repts., Vol. 9.</p> <p>Jespersen, P., 1934. Medd. Grønland, Vol. 79, No. 10.</p> <p>Johnson, M. W., 1934. Trans. Amer. Micr. Soc., Vol. 56.</p> <p>— 1938. Bull. Scripps Inst. Oceanogr., Techn. Ser., Vol. 4, No. 6.</p> <p>Lysholm, B. &amp; O. Nordgaard, 1921. Bergens Mus. Aarb., 1918—19, No. 2.</p> <p>Lysholm, B., O. Nordgaard &amp; K. F. Wiborg, 1945. Rep. Sci. Res. "Michael Sars" Exped., 1910, Vol. 5, No. 7.</p> <p>Rae, K. M. &amp; C. B. Rees, 1947. Hull Bull. Mar. Ecol., Vol. 2, No. 11.</p> <p>Rose, M., 1929. Rés. Camp. Sci. Monaco, Vol. 78.</p> <p>— 1933. Faune de France, Vol. 26.</p> <p>Sars, G. O., 1901—03. An Account of the Crustacea of Norway, etc., Vol. 4.</p> <p>— 1924—25. Rés. Camp. Sci. Monaco, Vol. 69, Plates (1924) and Text (1925).</p> <p>Schmaus, H. P., 1916. Zool. Anz., Vol. 48.</p> <p>Schmaus, H. P. &amp; K. Lehnhofer, 1927. Wiss. Ergebn. Valdivia, Vol. 23.</p> <p>Scott, T., 1894. Trans. Linn. Soc., Lond., Zool. (2), Vol. 6.</p> <p>Sewell, R. B. S., 1929. Mem. Indian Mus., Vol. 10, Pt. 1.</p> <p>— 1947. Sci. Rep. John Murray Exped., 1933—34, Vol. 8, No. 1.</p> <p>Sømme, J. D., 1929. Journ. du Conseil, Vol. 4.</p> <p>Steuer, A. &amp; E. Hentschel, 1937. Wiss. Ergebn. Deutsche Atl. Exped. "Meteor", Vol. 12, Pt. 2.</p> <p>Thompson, I. C., 1888. J. Linn. Soc., London, Vol. 20.</p> <p>Vervoort, W., 1946. Temmincka, Vol. 8 (1949, issued separately 1946).</p> <p>Wilson, C. B., 1932. Bull. U.S. Nat. Mus., Vol. 158.</p> <p>With, C., 1915. Danish Ingolf Exped., Vol. 3, Pt. 4.</p> |
|--|---|