

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

**Zooplankton**  
Sheet 71

**CUMACEA**  
**Key to Families and**  
**References**  
(By N. S. Jones)  
**1957**

Geographical limits of area considered:

20°W.—80°E.

80°N.—Cap Finisterre

No species of the Cumacea is known to be truly planktonic, most of their lives being spent on the sea bottom. Many species from shallow water, however, become pelagic at certain times, usually during the night, when the adult males especially leave the bottom and swim upwards. They may then be caught in tow-nets and in traps containing a submerged light of low intensity (F a g e, 1933; S h e a r d, 1941). Where they are attracted to a light it is usually found that males greatly exceed females in number, and the species caught most abundantly are those with well developed eyes, particularly species of the Bodotriidae and the genera *Nannastacus*, *Cumella*, and *Pseudocuma*. In tow-nets used without illumination the disparity between the sexes of those captured is less apparent (H a l e, 1952). It is not known whether there is any vertical migration among the species inhabiting deep water, and not all the species from shallow water have been caught above the bottom; however, since this may be merely a consequence of neglect of the group, all species for which records exist of capture in depths of less than 50 m. within the area dealt with are included in the keys.

### Distinction between the Sexes:

♀ second antenna rudimentary; no pleopods.

♂ adult. Second antenna well developed with long flagellum; pleopods present except in Nannastacidae. More thoracic exopodites except in Bodotriidae. Shape and sculpturing of carapace frequently different from ♀. Immature ♂ resembles ♀ but second antenna shows increasing segmentation with age.

### Key to the Families:

(Applicable only to the species known to occur within the area)

1. No independent telson (Fig. 5) ..... 2  
Telson present, at least in the form of a semicircular plate (Fig. 6) ..... 4
2. Mandibles normal (Fig. 7); male with 0 or 5 pairs of pleopods ..... 3  
Mandibles broadly truncated at the base (Fig. 8); male with 2 pairs of pleopods (Fig. 9) ..... 2. LEUCONIDAE
3. Male with 5 pairs of pleopods (Fig. 11); in the female exopodites are present on only the first peraeopods or on peraeopods 1—3 ..... 1. BODOTRIIDAE  
Male with 0 pleopods (Fig. 10); in the female exopodites are present on peraeopods 1—2 ..... 3. NANNASTACIDAE
4. The inner ramus of the uropod with only 1 joint; the telson small without spines (Fig. 6) ..... 5  
The inner ramus of the uropod with 2 or 3 joints; the telson well developed with lateral and apical spines ..... 6
5. 5 pairs of pleopods in the male and exopodites on peraeopods 1—2 ..... [CERATOCUMIDAE]\*  
3 pairs of pleopods in the male and exopodites on peraeopods 1—4 ..... 5. PSEUDOCUMIDAE
6. Telson with the anus opening at its base and with 3 or more apical spines (Fig. 12); male with 0 or 3 pairs of pleopods ..... 4. LAMPROPIDAE  
Telson with a preanal and a postanal portion and with 2 apical spines (Fig. 13); male with 2 pairs of pleopods ..... 6. DIASTYLIDAE

\*) The only species known in the family occurs in deep water.

## References for Identification and General Works

- Fage, L. 1951. Cumacés. Faune de France, **54**: 1—136 (Key, bibliography).  
 Sars, G. O. 1879. Arch. f. Math. og Naturv., **3—4**: 1—196.  
 — 1900. Crustacea of Norway, **3**, Cumacea, pp. 1—115.  
 Stebbing, T. R. R. 1913. Cumacea. Das Tierreich, Lief. 39: 1—210 (Key, synonymy).  
 Zimmer, C. 1926. K. svenska Vetensk. Akad. Handl. (3), **3**: 1—88.  
 Zimmer, C. 1927. Cumacea, in: Kükenthal & Krumbach, Handb. Zool., **3** (1): 646—92.  
 — 1930. Mitt. zool. Mus. Berlin, **16**: 583—658 (Key to ♂♂ of Diastylidae).  
 — 1933. Cumacea. Tierwelt N.- u. Ostsee, Teil Xg, pp. 70—120 (Key).  
 — 1941. Cumacea, in: Bronns Klassen und Ordnungen des Tierreichs, **5** (4): 1—122 (Bibliography and general account).

## Original Descriptions

- Bacescu, M. 1950. Anal. Acad. Rep. Pop. române, Ser. Geol., Geogr., Biol., **3**: 424—61.  
 — 1956. Vie et Milieu, **7**: 357—65.  
 Bate, S. 1856a. Ann. Mag. nat. Hist., Ser. 2, **17**: 449—65.  
 — 1j56b. Ann. Mag. nat. Hist., Ser. 2, **18**: 187.  
 — 1858. In Kinahan: Nat. Hist. Rev., **5**: 202—05.  
 — 1859. Ann. Mag. nat. Hist., Ser. 3, **3**: 273—74.  
 Bell, T. 1855. In Belcher: Last of the Arctic voyages in search of Sir J. Franklin, **2**. London.  
 v. Beneden, V. J. 1861. Mém. Acad. Sci. Belg., **33**: 1—174.  
 Boeck, A. 1864. Forh. Vidensk. Selsk. Krist., 1863, pp. 189—90.  
 Calman, W. T. 1905. Sci. Invest. Fish. Bd. Ire., 1904 (1): 3—52.  
 — 1907. Bull. Mus. Hist. nat. Paris, 1907, pp. 116—23.  
 — 1912. Proc. U. S. nat. Mus., **41**: 602—76.  
 Dohrn, A. 1869. Jena Z. Naturw., **5**: 1—28.  
 Fischer, P. 1872. In Berchon, de Folin, Périer: Les Fonds de la Mer, **2**. Paris.  
 Goodsir, H. 1843. Edinb. new philos. J., **34**: 119—80.  
 Heller, C. 1875. Denkschr. Akad. Wiss. Wien, **35**: 25—47.  
 Kröyer, H. 1841. Naturh. Tidsskr., **3**: 503—34.  
 — 1846. Naturh. Tidsskr., **2** (2): 123—211.  
 Lepechin, I. 1780. Acta Acad. Petrop. 1778, pp. 247—50.  
 Lilljeborg, W. 1855. Öfvers. Vetensk. Akad. Förh. Stockh., **12**: 117—38.  
 Montagu, G. 1804. Trans. Linn. Soc. London, **7**: 61—85.  
 Norman, A. M. 1863. Trans. Tyneside Club, **5**: 263—80.  
 — 1867. Rep. Brit. Ass., **36**: 193—206.  
 — 1869. Rep. Brit. Ass., **38**: 247—336.  
 — 1879. Ann. Mag. nat. Hist., Ser. 5, **3**: 54—73.  
 Sars, G. O. 1863. Nyt Mag. Naturv., **12**: 193—252.  
 — 1865. Forh. Vidensk. Selsk. Krist., 1864, pp. 128—208.  
 — 1869. Nyt Mag. Naturv., **16**: 305—62.  
 Zimmer, C. 1900. Fauna arct., Jena, **1**: 409—44.

## Biology and Distribution

- Björck, W. 1915. Acta Univ. Lund, Afd. 2, **11** (2): 1—98.  
 Bonnier, J. 1896. Ann. Univ. Lyon, **26**: 527—689.  
 Calman, W. T. 1910. Bull. Mus. Hist. nat. Paris, **16**: 180—82.  
 Dennell, R. 1934. Trans. roy. Soc. Edinb., **58**: 125—42.  
 Dixon, A. Y. 1944. J. mar. biol. Ass. U. K., **26**: 61—71.  
 Ehrenbaum, E. 1897. Wiss. Meeresunters., **2** (2): 403—35.  
 Fage, L. 1923. C. R. Ass. franç. Av. Sci., **47**: 1—5.  
 — 1929. Résult. Camp. sci. Monaco, **77**: 1—51.  
 — 1933. Arch. Zool. exp. gén., **76**: 105—248.  
 — 1944. Arch. Zool. exp. gén., **83**: 112—21.  
 — 1945. Arch. Zool. exp. gén., **84**: 165—224.  
 Forsman, B. 1938. Zool. Bidr. Uppsala, **18**: 1—162.  
 Foxon, G. E. H. 1936. Ann. Mag. nat. Hist., Ser. 10, **17**: 377—92.  
 Gilson, G. 1906. Mém. Soc. ent. Belg., **12**: 1—20.  
 — 1913. Bull. trimestr. Cons. Explor. Mer, **3**: 557—600.  
 Hale, H. M. 1944. Trans. roy. Soc. S. Aust., **68**: 225—85.  
 — 1952. Trans. roy. Soc. S. Aust., **76**: 70—76.  
 Hansen, H. J. 1886. Dijnphna Udbytte, pp. 183—286. Copenhagen.  
 — 1920. Crustacea Malacostraca IV. Danish Ingolf Exp., **3**: 1—86.  
 Jorgensen, O. M. 1923. Rep. mar. Lab. Cullercoats 1922/23, pp. 112—32.  
 Krüger, K. 1939. Kieler Meeresforsch., **3**: 374—402.  
 Norman, A. M. 1902. Ann. Mag. nat. Hist., Ser. 7, **10**: 472—86.  
 — and Brady, G. S. 1909. Trans. nat. Hist. Soc. Northumb., **3**: 252—417.  
 Prakken, R. 1936. Flor. Faun. Zuiderzee, Suppl., pp. 126—28. Den Helder.  
 Russell, F. S. 1931. J. mar. biol. Ass. U. K., **17**: 767—84.  
 Sars, G. O. 1885. Norw. N. Atlantic Exp., Crust., **1**: 18—24.  
 Schneider, J. 1891. Tromsø Mus. Aarsh., **7**: 47—134.  
 Scott, T. 1901. Rep. Fish. Bd. Scot., **19**: 273.  
 — 1912. Sci. Invest. Fish. Bd. Scot., 1911, pp. 1—7.  
 Sheard, K. 1941. Rec. S. Aust. Mus., **7**: 11—14.  
 Stappers, L. 1908. Arch. Zool. exp. gén., **8**: 97—104.  
 Stephensen, K. 1929. Zool. Faeroes, **26**: 1—10. Copenhagen.  
 — 1938. Zool. Iceland, **3** (29): 1—24. Copenhagen & Reykjavik.  
 Le Sueur, R. F. 1955. Bull. Soc. jersiaise, **16**: 319—22.  
 Tattersall, W. M. 1912. Proc. roy. Irish Acad., **31**, Pt. 41, pp. 1—10.  
 Walker, A. O. 1888. Proc. Lpool biol. Soc., **2**: 171—81.  
 Wells, A. L. 1938. J. anim. Ecol., **7**: 105—24.  
 Zimmer, C. 1932. S. B. Ges. naturf. Fr. Berl., 1932, pp. 326—47.  
 — 1940. Arch. Naturgesch., **9** (2): 224—313.  
 — 1942. Zool. Anz., **139**: 190—200.