

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton

Sheet 133

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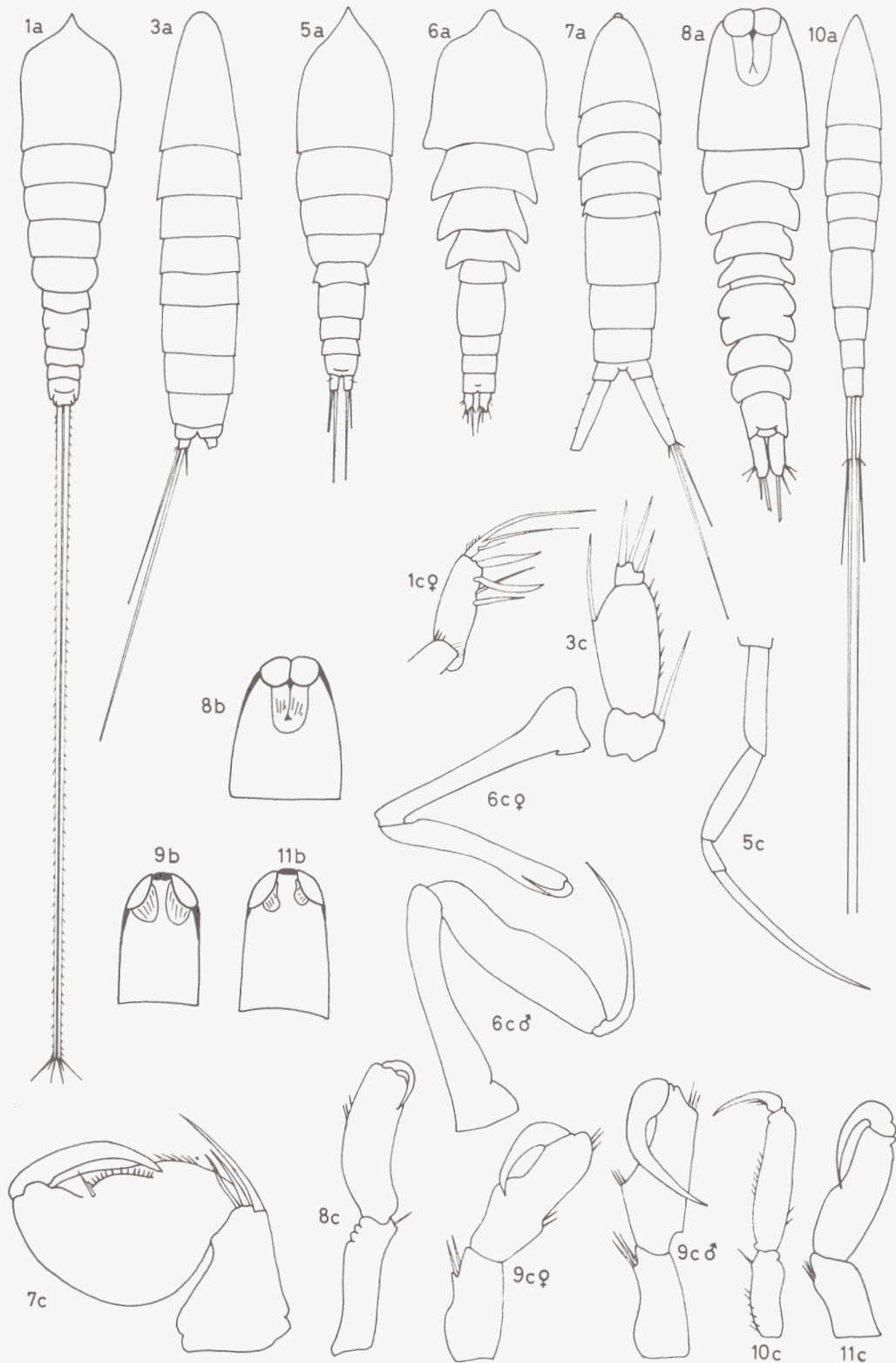
COPEPODA - I
SUB-ORDER HARPACTICOIDA

(Revised by J. B. J. WELLS)

1970

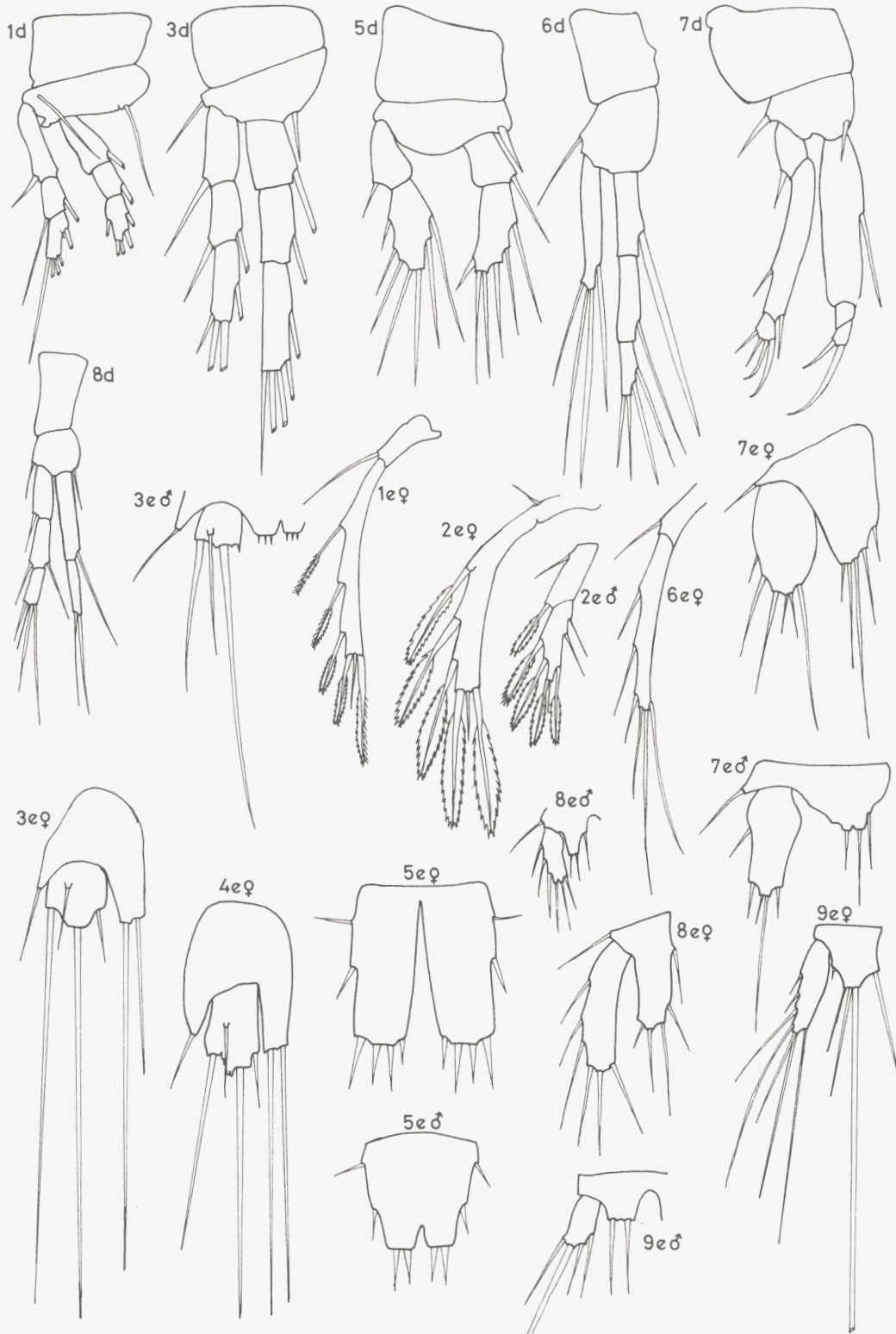
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1. *Aegisthus aculeatus*; 2. *A. mucronatus*; 3. *Microsetella norvegica*; 4. *M. rosea*; 5. *Euterpina acutifrons*; 6. *Clytemnestra scutellata*; 7. *Parathalestris croni*; 8. *Miracia efferata*; 9. *M. minor*; 10. *Macrosetella gracilis*; 11. *Oculosetella gracilis*.

a - ♀ dorsal; b - cephalothorax dorsal; c - maxilliped; d - ♀ P. 1; e - P. 5.



Acknowledgements – GIESBRECHT, 1892 (1a, c, d, e, 2e♀, 3e♂, 4e, 6c, 8c, d, 10a, c, e); SARS, 1911 (3a, c, d, e♀, 7a, c, d, e♀); SARS, 1921 (5, 6a, d, e); SCOTT, 1893 (2e♂, 9c, e); BRADY, 1880 (7e♂); WHEELER, 1899 (8e); WILSON, 1932 (11e); original (8a, b, 9b, 11b, c).

HARPACTICOIDA

Family Aegisthidae

Genus *Aegisthus* Giesbrecht

First thoracic segment free. Caudal rami short, fused to the last segment, furcal setae at least twice as long as the the entire body. Maxilla and maxilliped rudimentary in male. Both rami P. 1–P. 4 of three segments. P. 5 styliform.

A. aculeatus Giesbrecht, 1891. GIESBRECHT, 1892, p. 573, Pl. 46, Figs. 44–45, 50, Pl. 49, Figs. 1, 4–5, 7–9, 11; LANG, 1948, p. 177, Fig. 106. (♂ unknown).

A. mucronatus Giesbrecht, 1891. GIESBRECHT, 1892, p. 573, Pl. 46, Figs. 46–49, 51, Pl. 49, Figs. 2–3, 6, 10; T. SCOTT, 1893, p. 104, Pl. XI, Figs. 31–44 (as *A. longirostris*); LANG, 1948, p. 175, Fig. 105.

A. spinulosus Farran, 1905. FARRAN, 1905, p. 46, Pl. XII, Figs. 8–14, Pl. XIII, Figs. 1–4; LANG, 1948, p. 177, Fig. 107 (♂ unknown).

LANG (1948) considers this is a species of doubtful validity. On morphological grounds it is difficult to distinguish from the other species and has certain features which make LANG (1948, p. 174) conclude that it is a last copepodid stage, possibly of *A. aculeatus*. WILSON (1942, 1950) records it from the Pacific Ocean but gives no indication how he identified it as this species.

Family Ectinosomidae

Genus *Microsetella* Brady & Robertson

First thoracic segment fused with head. Caudal rami about as long as broad, furcal setae 1–2 times as long as the body. Both rami P. 1–P. 4 of three segments. Basendopodite P. 5 expanded on inner side. P. 5 reduced in the male.

M. norvegica (Boeck, 1864). GIESBRECHT, 1892, p. 550, Pl. 44, Figs. 33–34, 36, 39–40, 42, 44–45 (as *M. atlantica*); SARS, 1904, p. 44, Pl. XXIV; LANG, 1948, p. 230, Fig. 122.

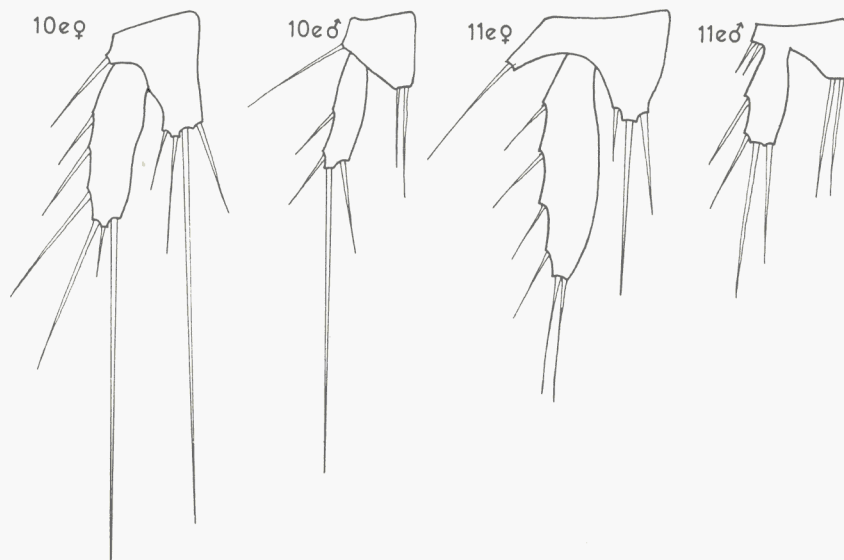
M. rosea (Dana, 1848). GIESBRECHT, 1892, p. 550, Pl. 44, Figs. 32, 35, 37–38, 41, 43, 46, 48–49; JOHNSON, 1942, p. 432, Pl. I (♂); LANG, 1948, p. 232, Fig. 122.

Family Tachidiidae

Genus *Euterpina* Norman

First thoracic segment fused with head. Caudal rami shorter than the last segment, furcal setae short. Both rami P. 1 of two segments; P. 2–P. 4 of three segments. Endopod P. 2 ♂ modified, two segments. P. 5 a rectangular plate, the pair fused together.

E. acutifrons (Dana, 1848). GIESBRECHT, 1892, p. 555, Pl. 44, Figs. 16–31 (as *Euterpe*); SARS, 1921, p. 97, Pl. LXVII; LANG, 1948, p. 285, Fig. 142.



Family Pseudo-Peltidiidae

Genus *Clytemnestra* Dana

First thoracic segment fused with head. Cephalothorax and thoracic segments with large epimeral plates. Caudal rami not longer than the last segment, furcal setae very short. Maxilliped extremely long and slender, with sexual dimorphism. P. 1 with endopodite of one segment, exopodite of three segments. Both rami P. 2–P. 4 of three segments. P. 5 styliform.

C. scutellata Dana, 1848. GIESBRECHT, 1892, p. 566, Pl. 1, Fig. 9, Pl. 45, Figs. 16–18, 21, 23–24, 27–30, 32, 34–38; Sars, 1921, p. 100, Pl. LXIX; LANG, 1948, p. 461, Fig. 195.

C. rostrata (Brady, 1883). GIESBRECHT, 1892, pp. 566, 572, Pl. 45, Figs. 19–20, 22, 25–26, 31, 33; LANG, 1948, p. 462, Fig. 195.

Family Thalestridae

Genus *Parathalestris* Brady & Robertson

First thoracic segment fused with head. Caudal rami longer than the last segment, about four times as long as broad, furcal setae about half the length of the body. Both rami P. 1–P. 4 of three segments. Endopodite P. 2 ♂ modified, of two segments. Basendopodite P. 5 expanded on inner side. Large eye spot present.

P. croni (Kröyer, 1842). Sars, 1905, p. 118, Pl. LXXII (as *Halithalestris*); BRADY, 1880, p. 133, Pl. LIX, Figs. 2–11 (as *Thalestris serrulata*) (♂); LANG, 1948, p. 511, Figs. 209, 211.

Family Miracidae

First thoracic segment fused with head. Caudal rami about as long as the last two segments. P. 1 with exopodite of three segments, endopodite of two segments. Both rami P. 2–P. 4 of three segments. Endopodite P. 2 ♂ modified, of two segments. Basendopodite P. 5 expanded on inner side. Cephalothorax usually with a pair of large cuticular lenses.

Genus *Miracia* Dana

Cuticular lenses present. Exopodite of antenna of one segment with two setae.

M. efferata Dana, 1852. BRADY, 1883, p. 102, Pl. XLIII, Figs. 1–16; GIESBRECHT, 1892, p. 563, Pl. 45, Figs. 39–48 (♂); WHEELER, 1899, p. 188, Fig. 25; WILSON, 1932, p. 284, Fig. 176; LANG, 1948, p. 768, Fig. 311.

M. minor T. Scott, 1893. T. SCOTT, 1893, p. 102, Pl. XI, Figs. 18–30; GIESBRECHT, 1895, p. 217, Pl. 9, Figs. 1–13; LANG, 1948, p. 770, Fig. 311.

Genus *Macrosetella* A. Scott

Cuticular lenses absent; a simple eye spot present. Body very slender and fusiform.

M. gracilis (Dana, 1848). GIESBRECHT, 1892, p. 559, Pl. 1, Fig. 12, Pl. 45, Figs. 1–15 (as *Setella*); LANG, 1948, p. 770, Fig. 311.

Genus *Oculosetella* Dahl

Cuticular lenses present. Exopodite of antenna absent.

O. gracilis (Dana, 1852). DANA, 1852, p. 1261, Pl. 88, Figs. 12 a–c; WILSON, 1932, p. 283, Fig. 176; LANG, 1948, p. 770, Fig. 311. (In most papers prior to 1948, and in many since, this species is referred to as *Macrosetella oculata*).

KEY TO THE SPECIES

- | | | |
|--|--------------------------------------|---|
| 1. 1st. thoracic seg. free; a total of 9 free body segs. in ♀, 10 in ♂ | (Fam. Aegisthidae) | 2 |
| 1st thoracic seg. fused with head; a total of 8 free body segs. in ♀, 9 in ♂ | | 3 |
| 2. ♀ antennule 6-segs. Cephalothorax and thorax without network of ripples in chitin | <i>A. mucronatus</i> (Fig. 2) | |
| ♀ antennule 7-segs. Cephalothorax and thorax with network of ripples in chitin | <i>A. aculeatus</i> (Fig. 1) | |
| 3. Both rami of P. 1 2-segs | <i>Euterpina acutifrons</i> (Fig. 5) | |
| At least one of the rami of P. 1 3-segs | | 4 |
| 4. Exopodite of P. 1 1-seg., P. 5 styliform | (<i>Clytemnestra</i>) | 5 |
| Exopodite of P. 1 3-segs., P. 5 not styliform | | 6 |
| 5. ♀ antennule 8-segs., exopodite of P. 1 with 4 setae | <i>C. scutellata</i> (Fig. 6) | |
| ♀ antennule 7-segs., exopodite of P. 1 with 3 setae | <i>C. rostrata</i> | |

6. Endopodite of P. 1 2-segs	(Fam. Miracidae)	7
Endopodite of P. 1 3-segs.....		10
7. Cuticular lenses absent, body narrowly fusiform	<i>Macrosetella gracilis</i> (Fig. 10)	
Cuticular lenses present, body more or less cylindrical.....		8
8. Exopodite of antenna absent.....	<i>Oculosetella gracilis</i> (Fig. 11)	
Exopodite of antenna 1-seg., with 2 setae	(<i>Miracia</i>)	9
9. Basendopodite of P. 5 ♀ with 5 setae, ♂ with 3 setae	<i>M. efferata</i> (Fig. 8)	
Basendopodite of P. 5 ♀ with 4 setae, ♂ with 2 setae.....	<i>M. minor</i> (Fig. 9)	
10. Body slightly fusiform, caudal rami 4 times as long as broad	<i>Parathalestris croni</i> (Fig. 7)	
Body distinctly fusiform, caudal rami about as long as broad	(<i>Microsetella</i>)	11
11. Setae of caudal rami not longer than the body	<i>M. norvegica</i> (Fig. 3)	
Setae of caudal rami at least twice as long as the body.....	<i>M. rosea</i> (Fig. 4)	

Important works on the biology and distribution of the species

LANG (1948) summarizes the information known to about 1940 on the distribution, ecology and biology of each species and gives a general account of the distribution of the pelagic species. SEWELL (1948) gives a comprehensive review of the geographical distribution of planktonic copepods. The more useful papers published since 1940 are listed below.

Microsetella norvegica: DE DECKER, 1964; FISH, 1955; TANAKA, 1960; WIBORG, 1954; WILSON, 1942.

M. rosea: BJÖRNBERG, 1963; BOGOROV, 1958; DAVIS, 1950; DE DECKER, 1964; LEGARÉ, 1961; WILSON, 1942; ZOPPI, 1961.

Euterpina acutifrons: BERNARD, 1963; BJÖRNBERG, 1963; DAVIS, 1950; DE DECKER, 1964; DE DECKER & MOMBERG, 1964; GANAPATI & SHANTHAKUMARI, 1961; GRICE, 1956; HAQ, 1965; LEGARÉ, 1961; EL MAGHRABY, 1965 a, b; TANAKA, 1960; WILSON, 1942; WOODMANSEE, 1958; ZOPPI, 1961.

Clytemnestra scutellata: DE DECKER, 1964; WILSON, 1942.

C. rostrata: BJÖRNBERG, 1963; BOGOROV, 1958; DE DECKER, 1964; DE DECKER & MOMBERG, 1964; LEGARÉ, 1961; WILSON, 1942; ZOPPI, 1961.

Miracia efferata: BJÖRNBERG, 1965; EVANS, 1961; LEGARÉ, 1961; WILSON, 1942.

Macrosetella gracilis: BJÖRNBERG, 1963, 1965; BOGOROV, 1958; DAVIS, 1950; DE DECKER, 1964; DE DECKER & MOMBERG, 1964; EVANS, 1961; GANAPATI & SHANTHAKUMARI, 1961; GRICE & HART, 1962; LEGARÉ, 1961; MOORE & O'BERRY, 1957; MOORE & ROEHR, 1966; TANAKA, 1960; WILSON, 1942; ZOPPI, 1961.

Oculosetella gracilis: BJÖRNBERG, 1965; WILSON, 1942.

Distribution

Aegisthus aculeatus: Southern North Atlantic Ocean, Agulhas current, eastern Indian Ocean, Celebes Sea, eastern Pacific Ocean. Characteristic of moderate depths (150–1500 m.), occasionally at surface.

A. mucronatus: World-wide, except polar seas. Characteristic of moderate to deep waters (150–3000 m.), occasionally at surface.

A. spinulosus: Very rare; one record west of Ireland, isolated records from eastern Pacific Ocean.

Microsetella norvegica: World-wide, except polar seas. Pelagic.

M. rosea: World-wide, including polar seas. Pelagic.

Euterpina acutifrons: World-wide, except polar seas. Pelagic.

Clytemnestra scutellata and *C. rostrata*: Pan-temperate and pan-tropical. Pelagic, some indication that it descends to moderate depths.

Parathalestris croni: Arctic and Atlantic Oceans, north of 42°N. Pelagic, often associated with floating seaweed.

Family Miracidae: See STEUER (1935) for details to that date. All species pelagic.

Miracia efferata: World-wide, except polar seas.

M. minor: Tropical Atlantic and Indian Oceans. One record from the western Mediterranean Sea.

Macrosetella gracilis: Mainly between 15°C mean annual surface temperature isotherms. Scattered records in north Atlantic and Southern Oceans outside these limits.

Oculosetella gracilis: Confined between 15°C mean annual surface temperature isotherms, more common between 25°C isotherms.

Other species of Harpacticoida taken in the plankton

In addition to the 13 species considered above a large number of species have been taken in plankton. In most cases they have been found in the neritic zone and usually only in waters very close to the shore. They are properly considered as part of the littoral and shallow sublittoral benthic fauna which have been become temporarily displaced, their normal habitat being among the attached algae. Identification of these temporary plankters can be made with LANG (1948).

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