

Calanus valid

Leach, 1819. C. finmarchicus (M)

Syn: Cetochilus, Vauzème, 1834, p. 337.

Calanus, Leach, 1819, p. 539

Calanus, Boeck, 1865, p. 230.

Calanus, Dana, 1849^b, p. 278; 1846, p. 227.

Kálanos, a Brahmin mentioned in Plutarch.

Calanus, Wheeler, 1901, p. 164.

Monoculus (pars) Gummer, 1765.

Cyclops (pars) Müller, 1785:1776.

Body slender, ant. division twice as long
as posterior - Head separate from 1^o segt.
Caudal rami in ♂ articulated so as to be spread
outward - 1^o antennae longer than body; 2^o
antennae with 7-jointed exopod - Nymphs.
with terminal part longer than basal, and
5-jointed.

- Cyn. Cetochilus, Claus, 1863, p. 169; 1881, p. 10. Calanus (2)
- Calanus, Brady, 1883, p. 30; 1878, p. 37.
- Calanoides, Brady, 1883, p. 74.
- Undina, Brady, 1883, p. 52.
- Undina, Dana, 1852, p. 1047; 1849^a, p. 279.
- Calanus, Giesbrecht, 1892, p. 45, 88, 725.
- Calanus, Dahl, 1894, p. 61.
- Calanus, Dahl, 1898, p. 13.
- Calanus, Fisterly, 1905, p. 123.
- Calanus, Sars, 1901, p. 8.
- Calanus, Templeton, 1836, p. 195.

Cetochilus M-Edwards, 1841, p. 336.

Cetochilus Goodson, 1843, p. 336.

Cetochilus Baird, 1850, p. 233.

Hemicalanus (pars) Dana, 1852, p. 1103.

Calanus Krøyer, 1849, p. 527.

Calanus Tubbock, 1854, p. 126; 1856, p. 8.

1857, p. 403; 1860, p. 4.

Undina Tubbock, 1856, p. 15; 1860, p. 7.

Calanus Lilljeborg, 1875, p. 6; 1888, p. 155.

Calanus Brady & Robertson, 1876, p. 196.

Calanus G.O. Sars, 1877, p. 363.

Cetochilus T.J. van Beneden, 1861, p. 121.

Calanus Streets, 1877, p. 139.

Calanus Norman, 1878, p. 4: 1868, p. 299.

not Calanus Claus, 1881, p. 10.

Calanus Trybom, 1881, p.

Calanus Giesbrecht, 1882, p.

Calanus Schneider, 1884, p.

Calanus Poppe, 1884, p. 282.

Calanus Möbius, 1884, p. : 1887, p.

Calanus Aurivillius, 1886, p.

Calanus Malcolmson, 1886,

Calanus G.O. Sars, 1886, p. 76.

- Calanus Kölbl, 1886, p. 1886, p.
Calanus I. C. Thompson, 1888, p. 139; 1889, p.
Calanus Giesbrecht, 1888, p. 330; 1889, p. 164.
Cetochilus Claus, 1866, p. 3.
Cetochilus Norman, 1867, p. ; 1868, p. 299.
Cetochilus Carpenter & Jeffreys, 1871, p. 172.
Calanus Brady, 1872, p.
Calanus Brady & Robertson, 1873, p.
Cetochilus Maitland, 1874,
Cetochilus Buchholz, 1874, p. 391.
Cetochilus Möbius, 1875, p.

Calanus Brady, 1878, p. : 1879, p. : 1882, p.

Cetochilus Hoek, 1876, p. : 1878, p.

Cetochilus Gourret, 1889, p. 474.

Cetochilus Bourne, 1889, p. : 1890, p.

Calanus (pars) Dana, 1852, p. 1044, 1047.

Calanus Claus, 1863, p. 172

CALANUS Leach, 1819

card 5

- , TANAKA, 1956a: 251, 252, 259, 260, 261, 262, 263, 264
- , MAJCHLINE & NEMOTO, 1977: 108, 114
- , GAULD, 1966: 313-33 (SWIMMING & FEEDING)
- , DANA 1846: 227.
- , CHATTON 1911: 1.
- , VIVES, 1978, p. 88
- , Boxshall, 1982, p. 147. 151, 153, 154, 155, 171, 177
- , Jachnov, 1959, p. 1743
- , McLaren, 1967, p. 975-978

Calanus Leach, 1819

card 6

- , NICHOLLS 1933: 46-49
- , Gardner & Szabo, 1982, pp. 25, 135.
- , FERRARI, 1984: 173,
- , KOGA 1973: 36, FIG. 10-1, NAUPLIUS
- , KOGA 1984b: 95-229, NAUPLIUS; FIGS 2-1, 59(1-6)
- , BRESCIANI, 1986: 131, 139, 142 - TEGUMENT
- , SCHRAM 1986: 448, 462 - 463
- , ANDERSON & ROSSITER 1969a: 472
- , CLAUS 1893e: 332

CALANUS LEACH, 1819

CARD 7

- VINCK + HEIP 1979: 295

- PETIPA 1975: 32 - 47, FEEDING MECHANISMS

- ZIEGELMAYER 1925: 494

- ZAMORA SANCHEZ 1974: 46

- VYSHKUARTZEVA 1972b: 161-171, MANDIBLES

- MAUCHLINE 1988: 719-, FIG. 12A, PORE SIGNATURE

- OHTSUKA ET AL. 1987: 60

- BAMSTEDT 1986: 8-

- SARGENT + HENDERSON 1986: 59-

Calanus Leach, 1819

card 8

- Björnberg 1986: 56-, fig. 5b, 8, nauplius
- SHIH 1986: 109-
- BOXSHALL 1986: 161
- BJÖRNBERG 1986 (IN KABATA-ED.): 199
- BJÖRNBERG, T. 1986b: 232-
- POULET ET AL. 1986: 435-
- RUNGE & MYERS 1986: 446
- KABATA 1988b: 8, DERIVATION OF NAME
- BRADFORD 1988: 73-81, LIMITS OF GENUS
- HUNTLEY 1988: 83-, FEEDING BIOLOGY

Calanus Leach, 1819

card 10

- Turner, J.T. 1984d:5-, feeding biology

- MONTA' 1989:38-, FIG. 1, FEEDING-REVIEW; FIG. 4A

VYSHKVA RTZ EVA 1989b:14-

- BRODSKY 1972:8-107, REVISED GENUS

Calanus, subgenera Calanus, Neocalanus, Tropocalanus,
Carinocalanus Brodsky, 1972

- . BRODSKY 1972: 8-107

- Brodsky's subgenera discussed and rejected by
Bradford, 1988: 74-

Calanidae - Calanoidae

Calanus aculeatus Brady, ♀

— — Brady, 1918, p. 14: pl. 9, figs. 19-23.

Habitat, Lusitania Bay, Tasmania

Calanidae - Calanoida.

Calanus acutus Giesbrecht, ♀.

— — Giesbrecht, 1902, p. 17: pl. 1, figs. 10-14.

— — T. Scott, 1912, p. 528.

— — Wolfenden, 1908, p. 10: pl. 1, figs. 9-10.

Galanoides acutus, Tanaka, 1960. pp. 14-16, pl. 3, fig. 1-9

Habitat. Antarctic Ocean.

— — Brodsky, 1967 p. 191

— — Brodsky, 1965: 28

--, BRODSKY, 1976: 6

- — Wolfenden, 1911, p. 192
- — Farran, 1929, p. 216: fig. 2, text.
- — VERVOORT, 1951, P. 41-57 - FIG. 25-33. ANTARTIC WATERS.
- — —, Brodsky, 1962. pp. 709-712
- — —, Brodsky, 1960. p. 12
- — —, Brodsky, 1964. pp. 224-233
- — Brodsky, 1967, p. 1444
- — Brodsky, 1967: 222
- , Heinrich, "The life histories, ..", p. 16, 20
- (Calanoides) -, Brodskii, 1967, p. 191-
- " -, Brodskii, 1964, p. 227-239
- , Cushing, 1951, p. 166
- , Bjornberg, 1963: 100 (table)
- , VYSHKVA RTZEVA, 1977: 17

CALANUS ACUTUS

CARD 2

- BRODSKY 1972: 8-107, FIGS.
- VYSHKUARTZEVA, 1976: 23, 25, 26, 33, 35, 36, 41, 44, 45, 48, 50, 53, 55; TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16; FIG. 7.
- VYSHKUARTZEVA, 1977: 97, 125, 130, 131; FIG. 19, 30
- Bradford, 1971, pp 15-16, fig. 7.
- Zvereva, 1975: 251
- MINODA + HOSHIAI, 1982: 32-37, SOUTH GEORGIA
- VYSHKUARTZEVA 1972b: 162-171, FIGS. 5(4a-b)
- LE BORGNE 1986: 142-
- MONTU' 1989: 41-, FEEDING

CALANUS ACUTUS GIESBRECHT

③

Calanidae - Calanoida.

Calanus affinis Dana, ♀.

— — Dana, 1849^a, p. 15

— — Dana, 1852, p. 1067: pl. 73, f. 8, a-c.

not — Krøyer, 1849, p. 544; 553; 607: pl. 41.

— — Giesbrecht, 1892, p. 298 (position doubtful).

Habitat. Ocean near Sumatra.

— — Giesbrecht & Schmeil, 1898, p. 51.
(position doubtful)

Calanidae - Calanoida.

Calanus affinis Krøyer,

— — Krøyer, 1842-45, pl. 41, §. 5 (no text).

— — Krøyer, 1848, p. 544:553:607: pl. 41.

A synonym of Calanus finmarchicus.

(With, 1915, p. 10).

— — (= C. finmarchicus) Giesbrecht, 1892, p. 89.

Calanidae - Calanoida.

Calanus amaenus Dana, ♀.

- — Dana, 1849a, p. 18; 1849, b. p. 278.
- — Dana, 1852, p. 1076: pl. 74, f. 8, a-b.
- — (= C. vulgaris) Giesbrecht, 1892, p. 92.

Habitat. Pacific near Samoa Islands.

Calanidae - Calanoidae.

Calanus americanus Herrick, ♀.

COAST

- — Herrick, 1887, p. 6: pl. 1. FIG. 9, ALABAMA,
— — (= *C. gracilis*?) Giesbrecht, 1892, p. 90.

Habitat. Gulf of Mexico.

Calanidae - Calanoida.

Calanus anglicus Lubbock, ♀.

— — Lubbock, 1857, p. 403: pl. 10.

— — Giesbrecht, 1892, p. 298 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. England.

Calanidae - Calanoida,

Calanus apressus Dana, ♀.

— — Dana, 1849, p. 17.

— — Dana, 1852, p. 1074: pl. 74, f. 5, a-c.

— — (= *C. darwini*) Giesbrecht, 1892, p. 91.

If the two are equal, apressus precedes.

Habitat. Pacific near Sumatra,

Calanus arcticus Lubbock, ♀.

- — Lubbock, 1854, p. 128,
- — Giesbrecht, 1892, p. 298 (position doubtful).
- — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. English Seas.

Calanidae - Calanoida,

Calanus arcuicornis Dana, ♀.

— — Dana, 1849, p. 12.

— — Dana, 1852, p. 1056: pl. 72, §. 7, a-b.

— — (= *Clausocalanus* a-) Giesbrecht, 1892, p. 186.

--, GREENWOOD, 1977: 51

Habitat. Pacific Ocean, South.

Calanus arietis Templeton, ♀.

— — Templeton, 1836, p. 195: pl. 21, f. 9.

— — M-Edwards, 1840, p. 429 (transferred to
genus Cyclopsina).

— — (= C. finmarchicus) Giesbrecht, 1892, p. 89.

Habitat. Mid-ocean, Atlantic.

Calanus attenuatus Dana

— — Dana, 1849, p. 18.

— — Dana, 1852, p. 1080; pl. 75, fig. 2, a-m.

— — (=Eucalanus a—) Giesbrecht, 1892, p. 131.

a synonym of Eucalanus attenuatus (Dana)
(With, 1915, p. 52)

Calanus australis Brodsky, 1959

1959--pp. 1539-1542, fig. 1, 9

-- --, Brodsky, 1961. pp. 7-8, 17, pl. 1, fig. 9-12,
pl. 2, fig. 4, 8, 10, 11; pl. 3, fig. 11, 13, 14, pl. 4,
fig. 6-9.

-- --, Brodsky, 1959. pp. 35-39

-- --, Brodsky, 1960. p. 12

-- --, Grice & Hulsemann, 1967, pp. 20, fig. 3

-- -- Deerey, 1966, p. 156

-- -- Brodsky, 1967 p. 1442

-- -- Brodsky 1967: 222

- , Heinrich, 1971, p. 292, Fig 2
--, Bradford, 1970 p. 345
--, Brodsky 1967 p. 191
--, Brodsky, 1965: 28
-- Bradford & Gillett, 1974, pp. 6, 7, 9.
--, /Bradford, 1972, p. ~~30~~ 31, fig. 4.1-4.3
--, Brodskii, 1967, p. 191-
--, Brodskii, 1964, p. 212
--, Arcos, 1975, p. 7, Fig. 1&2 (in Appendix)
--, Williams, 1972, p. 59.
--, Vyshtkrantseva, 1972, p. 152.
--, Frost, 1974, p. 87.
--, Arcos, 1976: 89; TAB. II
--, Mikheev, 1977: 511-516

Calanus australis Brodsky, 1959

card 2

- Shih:1986: 108-
- Marin & Antezana, 1985: 963 Tab 1 Chile
- Ohman, 1987: 1318- , fig 6, tab 1 New Zealand
- SEVIGNY + McLAREN 1988: 267-
- DE DECKER 1984: 158
- BRADFORD ET AL. 1989: 301, FIG. 16-19, TAB. 2; OFF
NEW ZEALAND; DEVELOPMENT.
- RAZOUKS 1994: 9

CALANUS AUSTRALIS

CARD 2

- VYSHKUARTZEVA, 1976: 27, 33, 35, 36, 44, 48, 57; TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16
- VYSHKUARTZEVA, 1977: 97; FIG. 3, 30
- Heinrich, 1974, p. 45
- Bradford, 1979, passim
- Ramirez, 1969: 34-35, Pl. 3, fig. 13-17
- TRANTER 1977: 623.
- Bjornberg, 1981: 618, fig # 205-3
- BRADFORD 1988: 74-

Calanus australis

card 3

-- Alekseev 1990b: 33-, diapause

C.a.a., BRODSKY 1972: 8-107, FIG 5.

-- ARNOFSKY 1996: 133

Calanus australis var atlanticus Brodsky

Brodsky, 1959

Brodsky, 1961. p. 18, pl. 4, fig. 8; pl. 1, fig. 11;
12, pl. 2, fig. 11; pl. 3, fig. 14,;
pl. 4, fig. 9.

-- Brodsky 1972: 8-107, FIGS.

Calanus australis var. pacificus Brodsky

Brodsky 1959

--- -- --, Brodsky, 1961. pp. 17-18, pl. 1, fig. 9;
pl. 2, fig. 3; pl. 3, fig. 13; pl. 4, fig. 6;
pl. 3, fig. 11; pl. 4, fig. 7

--- -- BRODSKY 1972: 8-107, FIGS.

Calanidae - Calanoida.

Calanus bellus Dana ♀.

— — Dana, 1849a, p. 18; 1849b, p. 278,

— — Dana, 1852, p. 1077; pl. 74, f. 9, a-b.

— — (= *C. vulgaris*) Giesbrecht, 1892, p. 92.

Habitat. Sulu Sea.

Calanus borealis Lubbock, ♀.

— — — Lubbock, 1854, p. 127: pl. 5. figs. 2-3.
— — — (= C. hyperboreus) Giesbrecht, 1892, p. 91.

A synonym of Calanus finmarchicus.
(Brady, 1878, p. 38)

Calanus brevicornis Lubbock, ♀.

①

— — Lubbock, 1856, p. 11: pl. 3.

— — Cleve, 1900, p. 142: 1904, p. 185.

— — Lubbock, 1860, p. 5.

a synonym of Calanus carinatus Krøyer.
(With, 1915, p. 11).

— — Giesbrecht, 1888, p. 331: 1892, p. 90.

— — Giesbrecht, 1892, p. 90: pl. 6. f. 7, 9, 18:
pl. 7. f. 10, 11: pl. 8. f. 5, 28.

C. frontalis Dahl, 1894, p. 76.

c. brevic. — Giesbrecht & Schmeil, 1898, p. 16.

Calanoides Sars, 1907, b, p. 4.

Calanoides b — A. Scott, 1909, p. 10

Calanus brevicornis — Cleve, 1900, p. 44

— — Rose, 1933, p. 60: fig. 9.

— — Brodsky, 1965; 28.

--, Corral, 1970, p. 68-~~70~~

--, Ehrhardt, 1967, p. 736- (a syn. of C. carinatus)

--, Brodskij, 1964, p. 230

--, (= C. ^{ALANOIDES} CARINATUS), TANAKA, 1956a: 259

--, (= CALANOIDES CARINATUS), TANAKA, 1964b: 5-6

--, BEAUDOUIN, 1973: 125, 129

Calanus brevicornis Lubbock

card 2

-- Massuti & Navarro 1950: 20-28.

— Dakin & Colefax, 1933: 203

-- SAZHINA 1975: 80

-- RODRIGUEZ & VIVES 1984: 242, MALAGA HARBOR

-- ROSE, M. 1927: 145, 161, 162, OFF ALGERIA

-- ROSE, M. 1934: 54-81, OFF ALGERIA

Calanus carinatus Krøyer, 1849 - see Calanoides

Calanus caroli Giesbrecht - see Cosmocalanus

Calanidae - Calanoidae.

Calanus caudatus Krøyer, ♀.

- — Krøyer, 1848, p. 550, 553, 607: pl. 41.
- — Giesbrecht, 1892, p. 299 (position doubtful).
- — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. North Sea.

Calanus chilensis Brodsky

CARD 1

1959---pp. 1543--? , Fig. 1-4

-- --, Brodsky, 1961. pp. 8, 13, 18, pl. 1, fig. 13, 14
pl. 2, fig. 12; pl. 3, fig. 12; pl. 4, fig. 10, 11

-- ~~Bradford~~ & Jillett, 1974, pp 6, 7, 9

-- --, Brodsky, 1959. pp. 35-39

-- --, Brodsky, 1960. p. 12

-- -- Brodsky, 1967. p. 1444

-- -- Brodsky, 1967:224

-- --, Brodsky, 1967 p. 191

-- --, Brodsky, 1965:28

- , Brodskii, 1967, p. 191-
- , Brodskii, 1964, p. 212
- , Arcos, 1975, p. 7, fig. 3 & 4 (in Appendix)
- Vyschkvartseva, 1972, p. 152.
- Frost, 1974, pp. 81.
- , Arcos, 1976: 89; TAB. II
- , VYSHK VARTZEVA, 1976: 23, 27, 33, 35, 36, 44, 48, 57; TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16
- , VYSHK VARTZEVA, 1977: 97, 131; FIG. 4, 30
- SP., Arcos 1978: TAB III, 50.
- , Bradford, 1979, *passim*
- HERMAN 1984: 131, 133, 136 - 7, 141-145.
- Fleminger, 1985: 275-291

CALANUS CHILENSIS BRODSKY 1959 CARD 2

- , ARCOS + FLEMINGER 1986: 171-185, EASTERN PACIFIC
- HUNTLEY, MARIN + ESCRITOR 1987: 913 -
- LE BORGNE 1986: 120 -
- SHIH 1986: 108 -
- HEAD ET AL. 1986: 283 -
- BRADFORD 1988: 74 -
- SEVIGNY + McLAREN 1988: 267 -
- TURNER 1984d: 6 -
- KJØRBOE 1991: 240 -

CALANUS CHILENSIS BRODSKY, 1959

3

-- BRODSKY 1972: 8-107, FIGS.

-- ~~ARCOST F~~

-- ARNOFSKY 1996: 133

Pseudocalanidae - Calanocida.

Calanus clausii Brady, ♀.

- SEE ALSO UNDER PSEUDOCALANUS

— — Brady, 1865, p. 33: pl. 1, f. 1-11, 13.

— — (= Pseudocalanus elongatus) Giesbrecht, 1892, p. 197.

A synonym of Pseudocalanus elongatus,
(Brady, 1878, p. 45).

— — Norman, 1868, p. 299.

Calanidae - Calanoida.

Calanus communis Dana, ♀.

— — Dana, 1849^a, p. 18; 1849^b, p. 278.
Undina vulgaris Dana, 1849^a, p. 22; 1849^b, p. 279.
Calanus v — Giesbrecht & Schmeil, 1898, p. 17.
— — Cleve, 1904, p. 186.

Habitat. Agulhas current, South Africa; Tropical Atlantic.

C— communis Stebbing, 1910, p. 520.

— — Dana, 1852, p. 1076: pl. 74, f. 7.

— — (= C. vulgaris) Giesbrecht, 1892, p. 92.

If communis = vulgaris then communis precedes—

— — Lubbock, 1856, p. 10: pl. 10.

Calanus comosus

-- --, Chiba, 1956, p. 42

Calanidae - Calanoidae.

Calanus comptus Dana, ♀.

- — Dana, 1852, p. 1050; pl. 72, fig. 2a-c
not — T. Scott, 1894, p. 26; pl. 5, fig. 46-50; pl. 6, fig. 1-5.
— — Dana, 1849, p. 11
— — Esterly, 1905, p. 129 (syn. of C. robustior) ✓

Habitat. Gulf of Guinea; Pacific Ocean;

- — Giesbrecht, 1892, p. 299 (position doubtful)
- — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Calanidae - Calanoida.

Calanus cornutus Dana, ♀

--- Dana, 1849, p. 19.

see Rhincalanus cornutus (Dana, 1849)

Habitat. Tropical Atlantic.

Calanidae - Calanocida.

Calanus crassus Dana, ♀.

— — Dana, 1849, p. 12.

— — Dana, 1852, p. 1054: pl. 72, f. 5.

— — Giesbrecht, 1892, p. 299 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Atlantic Ocean, tropics:

Calanus cristatus Krøyer, 1845 - see Neocalanus

Calanidae - Calanoida.

Calanus curtus Dana, ♀.

— — Dana, 1849, p. 13.

— — Dana, 1852, p. 1059: pl. 72, f. 10.

— — (= Temora sp.) Giesbrecht, 1892, p. 329.

Habitat. "Sulu Ocean", near Philippines.

Calanidae - Calanoida.

Calanus danai Lubbock, ♀.

— — Lubbock, 1860, p. 6: pl. 29.

— — (= Eucalanus sp.) Giesbrecht, 1892, p. 132.

Habitat. Gulf of Guinea.

Calanus darwini (Lubbock) - see Cosmocalanus

Calanidae

Calanus elegans Lubbock, ♀

— — — Lubbock, 1854, p. 127: pl. 5. figs. 7-9.

— — — (= C. finmarchicus?) Giesbrecht, 1892, p. 89.

A synonym of Calanus finmarchicus.
(Brady, 1878, p. 38).

Calanoida - Calanidae,

Calanus elongatus Dana, ♂.♀.

- — Dana, 1849, p. 18.
 - — Dana, 1852, p. 1079: pl. 75. f. 1, a-n.
 - — (= Eucalanus e-) Giesbrecht, 1892, p. 131.
- a synonym of Eucalanus elongatus (Dana)
(With 1915, p. 48)

Calanus eristatus

-- Vyshkvartseva, 1972, p. 152.

Calanus erythrochilus Leuckart, ♀.

— — Leuckart, 1859, p. 260: pl. 6.

— — (= Eucalanus elongatus) Giesbrecht, 1892, p. 131.

Calanus euchaeta Tubbock, ^{Calanoida.}

— — Tubbock, 1857, p. 403.

— — (= Acartia sp.) Giesbrecht, 1892, p. 507,
a synonym of Acartia longiremis.

Doubtful synonym of Acartia clausi.
(Giesb. & Schmeil, 1898, p. 152).

CALANUS FINMARCHIANUS - SEE FINMARCHICUS

Calanoida - Calanidae
Calanus finmarchicus (Gunner), ♂, ♀.

Monoculus - Gunner, 1765, p. 175, figs. 20-23.

Cetochilus septentrionalis Goodwin, 1843, p. 339:

— — Baird, 1850, p. 235; pl. 30, f. 1a-g. pl. 6, figs. 1-11

— helgolandicus Claus, 1863, p. 171; pl. 26, f. 2-9.

Habitat: British Seas: Mediterranean
Greenland: Iceland: Faeroe Islands
Adriatic: Red Sea: Pacific:
Woods Hole.

- Calanus finmarchicus* Boeck, 1865, p. 8 (232).
 — — Brady, 1872, p. 424: 1879, p.
 — — Brady, 1878, p. 38: pl. 1, figs. 1-12.
 — *magnus* Lubbock, 1854, p. *borealis*, p.
 — *elegans*, p. Brady, 1882, p. : 1883, p.
Cetochilus septentrionalis Claus, 1885, p. 332.
 — — Claus, 1881, b, pl. 1, figs. 1-5.
Calanus finmarchicus Cleve, 1900, p. 140.
 — — Paulsen, 1906, p. 1-21: pls. 1-3.
 — — Gran, 1902, p. 56, ff.
 — — Damas, 1905, parasites of *Calanus*
 — — Apstein, 1911, pp. 207-223: 22 text figs.: 3 pls.
 — *spitzbergensis*, n. sp. Krøyer, 1842-5, pl. 41, figs. 1, a-n.
 — *finmarchicus*, Sars, 1877, p

- Calanus affinis, n. sp. Krøyer, 1842-5, pl. 41, fig. 5.
- quinqueannulatus, n. sp. Krøyer, 1842-5, pl. 41, fig. 3. ♂.
- spitzbergensis Krøyer, 1849, p. 531-542: p. 552. ♀.
- affinis Krøyer, 1849, pp. 544-545: p. 553. (young).
- quinqueannulatus Krøyer, 1849, pp. 545-546: p. 553.
- finmarchicus H. J. Hansen, 1886, pp. 255-6.
- — Sars, 1892, p. 170: pl. 1, figs. 13-19.
- — Giesbrecht, 1892, p. 89: pls. 6-8.
- — Vanhöffen, 1897, p. 278: pl. 1, fig. 7.
- — Aurivillius, 1898, pp. 67-69.
- — Giesbrecht-Schmeil, 1898, pp. 14-15.

- — Brady, 1899, p. 32 : T. Scott, 1899, p. 90.
— — Wheeler, 1900, pp. 164-5. fig. 1. : G. O. Sars, 1900, p. 2.
— — T. Scott, 1901, p. 338 : I. C. Thompson, 1903, p. 15.
— — Mrázek, 1902, p. 503: figs. 1-4, text.
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finmarchi. Wolfenden, 1904, pp. 126-7.
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- — von Bremen, 1908, p. 8-9: fig. 2.
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Calanus — Norman & Brady, 1909, p. 111.
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C. finmarchicus (4)

C- finmarchicus Wright, 1907, p. 13.

Cyclops ^{longe-}_{cornis} Müller, 1785, p. 115; pl. 19, f. 7-9.

Calanus finmarchianus Leach, 1819, p. 539.

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Cyclops finmarchicus Müller, 1776, no. 2415.

Calanus — Fowler, 1912, p. 131; pl. 35; p. 496.

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Daphnia dorsalis (?) Rafinesque, 1817, p. 42

Calanus finmarchicus Esterly, 1905, p. 125; text-f. 1.

C- perspicus, Dana, 1852, p. 1071; pl. 74, f. 1, a-c.

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Cetochilus septentrionalis Norman, 1867.
helgolandicus Carpenter & Jeffreys, 1871, p. 172.
C. finmarchicus Brady & Robertson, 1873, p. 126: 1876, p.
C. mundus Streets, 1877, p. 139.
C. sanguineus, Streets, 1877, p. 138; Dana, 1849
C. finmarchicus Schneider, 1884, p. p. 16
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- — Giesbrecht, 1888, p. 330. | p
- — Giesbrecht, 1889,
- — Willey, 1919, p.

C. finmarchicus (6)

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Ca lanus finmarchicus (Gunner.)

7

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- -, Glover, 1967, fig. 3B+3C, *passim*
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XXXXII, XXXXIV, XXXXVIII, 6,
LIV, LVI.
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Calanus finmarchicus

8

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691-693; FIG. 2; TAB. I-III.
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Calanus finmarchicus

card # 9

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Calanus finmarchicus

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10A, 14. ^{4 (10)}

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316

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TAB. 17, 18
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48, 50, 53, 57; FIG. 7; TAB. 1, 3, 4, 6-18.
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CALANUS FINMARCHICUS

CARD # 12

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- , ~~PARK, 1978~~
- , COSTE, ET AL., 1978: 466, 477, 478, 480
- , MARTENS, 1976: 61, 69

- , BRIGHT, ET AL., 1972: 297
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- , FLEMINGER, 1975: TAB. 1
- , JEFFRIES & JOHNSON, 1976: 98; TAB. 1
- , GAUDY, 1971: 67, 68, 69
- , GAULD & RAYMONT, 1953: 447, 453, 455, 456, 458, 45
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309 (Fig 9), 311 (Fig 11), 313
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Calanus finmarchicus

(2) (4) 10

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CALANUS FINMARCHICUS

CARD ~~12~~ 13

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TAB. 1
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- , ITOH, 1970: TAB. 1, 2; FIG. 3
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Calanus finmarchicus

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Calanus finmarchicus

card 15

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- , MOTODA & MINODA, 1974: 207, 211, 212, 215, 228, 232,
FIG. 10.3 (AS CALANUS GLACIALIS)
- HERMAN 1984: 131, 144
- LÖNNING & VADER, 1984: 118, 120 FIG. 11 B, C
- HIRAKAWA 1979: 54-56

Calanus finmarchicus

card 16

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- PAWLEY + ALFARO 1984: 1261
- IKEDA 1977a: 19, 23, 27
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- NIVAL & NIVAL 1973: _____
- MAUCHLINE 1972/73: 27-41.
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- UYE & KASAHARA 1978: 109, III
- HEBERER 1937b: 74, 78-79, FIGS. 1, 5 - CHROMOSOMES

Calanus finmarchicus

card 17

-- Williams 1973: Fig. 1

-- WICKSTEAD 1962: 545, 546

-- MICHEL & FOYO 1976: 145

-- KOGA 1968: 16, 18, Pl. I FIG. 1-egg

-- KOGA 1973: 32, FIGS. 4-1, ^{4-2, egg}VEGG

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-- MÄEMETS & VELDRÉ 1956a: 18, 43-44, Pl. I FIGS. 1-9
RECORDS - ESTONIA (?)

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Calanus finmarchicus

card 18

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- GRICEY & HART 1962a: 294, W. NORTH ATLANTIC
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- Tanaka, 1965a: 11, fig. 1a-c
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CALANUS FINMARCHICUS

CARD 19

- , ALVAREZ, M. P. J., 1985: 183
- , BRESCIANI, 1986: 126, 127 - tegument
- Decey & Brooks, 1977: 263
- DeDecker, 1984: 315
- SCHRAM 1986: 453, - 457, FIGS. 37-5, 37-6; p. 463
- ALANUS -, CHANG-EXU 1960: 89
- , LAWSON & GRICE 1973: 53
- GOTTO 1957: 286-287
- GRAINGER 1951: 142

Calanus finmarchicus (Gunner)

card 20

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-- LI & FANG 1983b: 110

-- Kjørboe, et al, 1985: passim.

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HELGOLANDICUS OF EARLIER WORKS.

CALANUS FINMARCHICUS (GUNNER)

CARD 21

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- JASHNOV 1966b: 25-29.
- RAYNER + KING 1986: 837
- RAE + FRASER 1991: 175, 180
- RAZOULS, S. ET AL. 1987: 660

Calanus finmarchicus (Gunner)

card 22

-- Runge et al. 1985: 241-246, sw Nova Scotia

-- TUPITSKY 1982: 110-

-- VYSHKUARTZEVA 1972b: 161-169

-- COSTE ET AL. 1982: 249

-- CARLI 1971b: 371-2, LIGURIAN SEA

-- THOMPSON, B. M. 1982: 360, NORTH SEA

-- HUNTLEY ET AL. 1987: 103

-- HUNTLEY, MARIN + ESCRITOR 1987: 912-

-- IANORA ET AL. 1987: 30

-- MAUCHLINE 1988: 719

Calanus finmarchicus (Gunner)

card 23

- Sage & Herman 1972: 32-, Sandy Hook Bay, New Jersey
- ZELIKMAN & KAMSHILOV 1960(64): 11-, BARENTS SEA
- DAVIS 1976 b: 820
- DAVIS 1982: 725-, NEWFOUNDLAND
- DAVIS 1986: 29-, "
- BAMSTEDT 1986: 9-
- SARGENT & HENDERSON 1986: 60-, Figs, 2.1, 2.4
- LE BORGNE 1986: 114-
- MAYZAUD 1986a: 165-

Calanus finmarchicus (Gunner, 1765)

card 24

- Corner et al. 1986: 263-
- GROENDAHN & HEINROTH 1986: 311-318, ARCTIC
- TESTER 1986: 475-
- KING ET AL. 1986: 345
- BLADES-ECKELBARGER 1986: 26- , FIGS. 1A, 15
- BJÖRNBERG, T. 1986: 61
- KLEIN BRETELER & GONZALEZ 1986: 80
- HEIP 1986: 100
- SHIH 1986: 105 -
- McLaren, 1986: 1342-45 fig 1

Calanus finmarchicus (Gunner, 1765)

- Mayzaud & Mayzaud 1986: 350-
- McLAREN & CORKETT 1986: 362-367, NOVA SCOTIA
- WATSON 1986: 509, 511
- CORKETT ET AL. 1986: 539-545, SCOTIAN SHELF
- DAVIS, CABELL S. 1986: 628, GEORGES BANK
- MARTENS, P. 1975: 4, 75, OSTSEE; 80-
- ZHADIN & GERD 1961: 254, USSR
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Calanus finmarchicus (Gunner, 1765)

card 26

- McLaren, Seigny^A ^{FROST} 1989: 568 fig 2
- McLaren et al. 1989: 553, 558
- Magnesen 1988:194 - W. Norway
- Frost, 1985: 1,5,10,11 fig 10
- GIBBONS 1938: 494-, FIGS. A, C, NAUPLII; OFF SCOTLAND
- FONTAINE 1955: 858-, UNGAVA BAY
- FLEMINGER & HULSEMANN 1987: 46-
- FERRARI & HAVEK 1990: TAB. 1
- KARAVAEV 1894: 42
- CITARELLA 1989: 123-, ST. LAWRENCE GULF, CANADA
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Calanus finmarchicus (Gunner, 1765)

card 27

- Head & Harris 1985: 103-105
- HEAD & HARRIS 1987: 228
- HEAD ET AL. 1985: 281-
- BAASTEDT, 1988: 44-58, KOSTERFJORDEN, SWEDEN;
BARENTS SEA
- RUNGE 1988: 61-71, GULF OF ST. LAWRENCE
- BRADFORD 1988: 74-
- JASCHNOV 1975: 32-
- MARUKAWA 1921: 7-, JAPAN

Calanus finmarchicus (Gunner, 1765)

card 28

- Huntley et al. 1983: 158
- HUNTLEY + BOYD 1984: 458
- HUNTLEY ET AL. 1987: 199 -
- HUNTLEY 1988: 83 -
- SARGENT + FALK-PETERSEN 1988: 101-, BALSFJORD, NORWAY
- TANDE + GRANVIK 1983: 44-, BALSFJORD, NORWAY
- TANDE 1988: 115-126, NORWAY
- CONOVER 1988: 127-, N. ATLANTIC
- WILLIAMS 1988: 151-159, N. ATLANTIC

Calanus finmarchicus (Gunner, 1765)

card 29

- Marin 1988b: 444
- KLEIN BRETELER + GONZALEZ 1988: 208
- R. WILLIAMS + CONWAY 1988: 259-, OFF BRITISH ISLES
- SEVIGNY + McLAREN 1988: 267-274, ATLANTIC
- McLAREN + CORKETT 1984: 828-, NOVA SCOTIA
- McLAREN + MARCOGLIESE 1983: 721-, NOVA SCOTIA
- McLAREN ET AL. 1988: 275-, NOVA SCOTIA
- McLAREN ET AL. 1989: 560-, SCOTIAN SHELF
- UYE + MATSUDA 1988: ~~284~~, 285

Calanus finmarchicus (Gunner, 1765)

card 30

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-- GONZALEZ DE INFANTE 1988: 62

-- HO & PERKINS 1985: 586, ALSO MONOCYCLUS F.

-- DERJUGIN 1928b: 527; KILDIN IS, BARENTS SEA

-- STEPHENSEN 1917: 304, GREENLAND FJORDS

-- JIMÉNEZ PEREZ ET AL. 1988: 86-

-- MARIN 1986: 139-

-- TURNER, J.T. 1984d: 5-, FEEDING

Calanus finmarchicus (Gunner, 1765)

card 31

- Montú 1989:39-, Fig.2A, 3A, feeding
- MCLAREN ET AL. 1966: 1642
- HERZIG 1983: 81
- BURRILL + ZWERNER 1972: 138, CHESAPEAKE BAY
- MILLER 1988: 226 -
- MILLER + CLEMONS 1988: 307-
- PRÉFONTAINE + BRUNEL 1962: 252, ST. LAWRENCE ESTUARY.
- COPLEY ET AL. 1989: 117, NW ATLANTIC

Calanus finmarchicus (Gunner, 1765)

card 32

- Grant 1977:4-8-, W Atlantic
- HARDING, G. ET AL. 1980:32-, NOVA SCOTIA
- BOTTFER 1985:225-
- SHIH ET AL. 1971:32-35, CANADA-ATLANTIC;
201, ARCTIC
- CITARELLA 1984:138-, SHÉDIAC BAY, NEW BRUNSWICK,
CANADA
- ^{S.L.} DE DECKER 1984b:156-, OFF S. AFRICA
- HIRCHE 1984:233-241, SWEDISH FJORD

Calanus finmarchicus (Gunner, 1765)

card 33

-- Muus 1967:52-

- ALVARIÑO, A. 1989: 64-, OFF PLYMOUTH, ENGLAND

- Wishner & Allison, 1986: 714, f. 6, tbl. 2

- SMYLY 1968: 336 - (cal. finmarchicus)

- WHITEHOUSE & LEWIS 1973: 233 -

- SCHINDLER & COMITA 1966: 126 -

- GAULD 1953: 461-474, CLYDE SEA

- GAULD 1951: 695-706, NE ATLANTIC

- CONOVER 1965: 314 -

Calanus finmarchicus (Gunner, 1765)

card 34

-- Lüling 1953: 4-

-- BOWMAN 1978a: 113-, FIG. 1A, B

-- BRADY 1872: 424, OFF NE ENGLAND

-- ASTTHORSON & GISLASON 1992: 229-234, TAB. 1, ICELAND

-- DAHL, F., 1893: 107.

= FINMARCHICUS

CALANUS FINMARCHIANUS ~~LEACH~~ CARD 34

- SCOTT & SCOTT, 1901: 338
- LEACH, 1819
- , McLAREN, WOODS, SHEA, 1966: 1, 2
- , = C. FINMARCHICUS, BAIRD, 1850: 228
- , McLELLAN & SHIH, 1974: 1348
- , GRAINGER, 1965: 543-564.
- , McLAREN, 1966: 457-469
- , MATTHEWS, 1968: 371-382; FIG. 1-5
- , HAMOND, 1973: 336
- , VYSHKVAR'TSEVA, 1972: 150

- , BERNARD, 1970: 7, 8, 12, 109, 124
- , PESTA, 1925: 15-16; FIG. 10
- , SATO, 1913: NO. 1; PL. 1
- , FROLANDER, 1962: 659
- , BRIAN 1927: 9, 11.
- Heberer, 1932: 265, passim, fig. 12-14
- Matthews, 1967: 159-175
- Williamson, 1963; PL. III Distr. Map

Calanus finmarchicus (Gunner, 1765)

card 35

-- Ohman 1988b:537-

-- OHMAN ET AL. 1989: 1321-

- Nilborg, 1944: 30-38 passim t. 2-7, fig. 14, 15, 16, 17

- MILLER, C. B. & GRIGG 1991: 479-493, GULF OF MAINE, USA

- MILLER, C. B., COWLES ET AL. 1991: 79-91, S. NEW ENGLAND, USA

- LINDLEY 1992: 368-370, RESISTANT EGGS?

- GRANDORI 1914: 164, VENICE LAGOON

- BOXSHALL 1992: 348, FIG. 1A, 5

- ALEKSEEV 1990b: 33-, DIAPAUSE

CALANUS FINMARCHICUS (GUNNER, 1765)

37

- WYNGAARD + CHINNAPPA 1982: 491-

- TUPITSKII 1976: 108-120, TABS. 1, 2, BARENTS SEA

- ACKMAN ET AL. 1974: 1813-1817, N. ATLANTIC

- CARVALHO, J.P. 1939: 38, FIG. 6, SÃO PAULO, BRAZIL

- NOTI 1991: 3-4

- SALVANES + NORDEIDE 1993: 223, 234, APPENDIX 1,
NORWAY

- GISLASON + ASTTHORSON 1992: 219-221, TAB. 1, ICELAND

- BARTHEL ET AL. 1995: 26, TAB. 1, NORWAY

Calanus finmarchicus (Gunner, 1765)

38

-- ROSE, M. 1927:145, OFF ALGERIA

-- HEUCH + KARLSEN 1997: 735, 742

-- DEFAYE, SUCH + DUSSART 1985:119

-- UYE + MURASE 1997:9

Calanus finmarchicus + allied species:
Differentiation

Brodsky, 1959 Zool. Jour. 38 (10): 1537-1553

CALANUS FINMARCHICUS HELGOLANDICUS TANAKA, 1956

-- TANAKA, 1956a: 254-255

--, CORRAL, 1970: 62

--, CHATTON 1911: 2.

Calanus finmarchicus var. pontica Karavaev, 1894

--- Karavaev 1894: 37-42, Pl. I Figs. 1-18, new variety,
Black Sea

--- Fleminger & Hulsemann 1987: 43-81, raised to species
rank from C. helgolandicus ponticus

Calanus finmarchicus var. telezkensis Stålberg

_____ var. _____ Stålberg 1931, 209-220, figs. 1-13.

Calanidae - Calanoida,

Calanus glavipes Dana, ♀.

— — Dana, 1849, p. 15.

— — Dana, 1852, p. 1068; pl. 73, f. 9, a-b.

— — Giesbrecht, 1896, p. 299 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Atlantic near Rio Janeiro,

fam. Calanidae

Calanus fonsecai Oliveira, 1945, p. 458,
pl. 7, fig. 1-4. Rio de Janeiro.

not Calanus

Calanidae - Calanoida.

Calanus furcicaudus Dana, ♀.

— — Dana, 1849, p. 12.

— — Dana, 1852, p. 1055: pl. 72, f. 6, a-c.

— — (= Metridia, sp.) Giesbrecht, 1892, p. 531.

— — Giesb. & Schmeil, 1898, p. 124 (uncertain).

Habitat. Pacific Ocean, tropics.

Calanus gracilis Dana, ~~1855~~¹⁸⁵² - see Neocalanus

Calanus glacialis Jaschnov

-- -- Jaschnov, 1955, pp. 1211-1213, fig. 1.

-- -- Jaschnov, 1957.

-- --, Grice, 1962, pp. 101, 102

-- --, Mullin, 1963. pp. 239-50. Woods Hole, (feeding)

-- --, Johnson, 1963. pp. 92, 93, 97, 99

-- --, Brodsky, 1961. p. 14, pl. 3, fig. 1, pl. 4 fig. 1

-- --, Brodsky, 1960. p. 12

-- --, Sushkina, 1962. pp. 1004-1012

-- -- Wilson, Parrish, 1971, p. 202.

- C. glacialis, Jaschnov, 1958. pp. 838-843
- --, Jaschnov, 1961. pp. 1314-1334
- -- McLaren, Woods, Shea, 1966, pp. 1-2.
- -- Park, 1968, pp. 527-572.
- -- McLaren, 1966, pp. 457-469.
- - Brodsky, 1967 p. 1442
- - Brodsky, 1967:222
- - . Peruyeva, 1972: passim [feeding]
- , Grainger, E.H. 1961 Passim
- , Cairns, 1967, p. 559
- , Glover, 1967, p. 197
- - Brodsky, 1965: 28
- , Fleminger & Hulsemann, 1977, p. 233-246
figs 246-7

Calanus glacialis Jaschnov

card 2

--, Jaschnov, 1970, pp. 199-201, fig. 1

--, Pertsova, 1967, p. 240-

--, Meshcheryakova, 1970, p. 95-, 97-

--, Lubni-Gertsik, 1959, p. 71-

-- **Davis and Green, 1974, p. 57**

--, *HEIP + Smol, 1976: TAB. 5*

--, *VYSHKVARZHEVA, 1977: 5-28*

--, *KOS, 1977: 34-35, 42, 47, 48, 51-52, 53*

--, *PAVSHTIK, 1977: 56, 57, 58-64, 67, 70, 71*

--, *PRYGUNKOVA, 1977: 105, 106*

- , PAVSH TIKS, 1977: TAB. 1
- , VYSHK VARTZEVA, 1977: 97, 123, 131, 138; FIG. 30
- , DAMKAER, 1975: 11
- , JAWED, 1973: 3
- , HEINLE, 1969: FIG. 8
- , STEELE, 1975a: 193
- , Mc LAREN, 1969: 1491, 1539-1540, 1548, 1550;
TAB. 11

Calanus glacialis Jaschnov

- -- Grainger, 1965, pp. 543-549 564 (548-549).
- , Maclellan, 1967, p. 102 -, figs. 2 & 4.
- Bradford, Dillett - 1974, pp. 6, 7, 9, 10,
- , Frost, B. W. 1971, pp. 23-29, fig 1 a-c, e, 2-6 (graphs)
- Williams, 1972, pp. 53-60, Pl. 17-19, fig. 134.
- Vyshtkvaritseva 1972, p. 152.
- , Frost, 1974, pp. 77-99, figs 2B-4B, 5, 7, 8, 10B, 14, 16.
- , JASCHNOV, 1972: 279-284; FIG. 1-3; TAB. 1
- , BRODSKY, 1976: 5
- , VYSHKVARITSEVA, 1976: 13, 23, 28, 30, 33, 35, 36, 39, 40, 44, 45, 48, 50, 57; FIGS. 4-6, 9, 10, 12, 14-25; TAB. 1, 3, 4, 6-27.
- , Grainger, E.H., ... Calanus as indicators... p. 74-76, 83-85

Calanus glacialis Jaschnov

card 4

--, Kos, 1969, p. 605-607

--, Shih & Laubitz, 1978, p. 48

— marshallae, Gardner & Szabo, 1982, pp. 25, 136-137, fig. 8.1.1.

--, Sutherland, 1982, p. 478

— Jaschnov, 1963: 1005-1011, fig 1-4, 6.

— Lacroix, 1966: 52

--, NISHIDA, 1984: 38

--, SCHNACK, 1983: 66, 67

CALANUS GLACIALIS JASCHNOV

CARD 5

--, MOTODA + MINODA, 1974: 207, 211, 212, 215, 228, 232

FIG. 10.3

-- HERMAN 1984: 131

-- Fleminger, 1985: 275-291

-- Runge, et al., 1985: 241-245

-- Horner & Murphy; 1985: 203, passim

-- Matthews, 1967: 161-175

-- VYSHKVA RTZEVA 1972b: 162-171, FIG. 3, 5(2a-b)

-- HUNTLEY, MARIN + ESCRITOR 1987: 912-

Calanus glacialis Jaschnov

card 6

- Runge & Ingram 1988: 280-284, Hudson Bay
- DAVIS 1982: 725-, NEW FOUNDLAND
- DAVIS 1986: 29-, "
- BAMSTEDT 1986: 22-
- SARGENT & HENDERSON 1986: 65-
- GROENDAHN & HERNROTH 1986: 311-318, ARCTIC
- SHIH 1986: 107-
- GRAINGER & MOHAMMED 1986: 304-, ARCTIC
- CORKETT ET AL. 1986: 539-545, SCOTIAN SHELF

Calanus glacialis Jaschnov

card 7

- McLaren & Seigny[†] 1989: 568 fig 2
- McLaren et al. 1989: 558

-- FLEMINGER + HULSEMAN 1987: 46 -

- HEAD 1986: 371-379, JONES SOUND (NWT), ELLESMERE IS.
- HEAD & HARRIS 1987: 228
- HEAD ET AL. 1985: 281-288, JONES SOUND, BAFFIN BAY
- HEAD ET AL. 1986: 271-286, ARCTIC (4 LOCALITIES)
- BAKSTEDT 1988: 45-50, BARENTS SEA
- BRADFORD 1988: 74 -
- JASCHNOV 1975: 32-34, FIG. 1, PACIFIC

Calanus glacialis Jaschnov

card 8

- Huntley & Boyd 1984: 458-
- HUNTLEY ET AL. 1987: 208-
- SARGENT & FALK-PETERSEN 1988: 102-
- CONOVER 1988: 127-, N. ATLANTIC
- SEVIGNY & McLAREN 1988: 267-274, ATLANTIC &
HUDSON BAY
- McLAREN & MARCOGLIESE 1983: 721-, NOVA SCOTIA
- McLAREN ET AL. 1988: 275-, NOVA SCOTIA
- McLAREN, TREMBLAY ET AL. 1989: 579-, SCOTIAN SHELF

Calanus glacialis Jaschnov

card 9

- Montú 1989:41-, feeding ; FIG. 4B-1
- Mc LAREN ET AL. 1966: 1642
- SHIH ET AL. 1971: 35-, CANADA-ATLANTIC; 144,
PACIFIC; 201-202, ARCTIC
- BOOMAN 1978a: 113-
- BRODSKY 1972: 8-105, RELEGATES TO SUBSPECIES OF
C. FINMARCHICUS
- WYNGAARD ET AL. 1995: 98-103, RNA; NOVA SCOTIA, CANADA
- SIFERD + CONOVER 1992: 277, TAB. 1, CANADIAN ARCTIC
OCEAN

Calanidae - Calanoida.

Calanus helgolandicus (Claus). ♀.

etochilus Claus, 1863, p. 171: pl. 26, fig. 2-9.

Calanus Sars, 1901, p. 11: pl. 4,

— — Rose, 1929, p. 5

A synonym of Calanus finmarchicus
(Witt, 1915, p. 10).

— — Wilson, 1932, p. 25: fig. 11; 1942, p. 172

— — Rose, 1933, p. 59: fig. 8.

— — Fontaine, 1955, p. 872. Ungava Bay. (1 cop. IV)

- --, Anraku, 1954. pp. 123-136.. Aleutian Is.
-- --, Anraku, 1954, pp. 1-8.. NW Pacific..
-- --, MORI-1937, P. 14, JAPAN AREA.
-- --, BRODSKY, 1950, P. 88, Fig. 20.
-- --, FURUHASHI 1957, P. 17, MAIZURO BAY, JAPAN.
-- --, Chiba, Tsuruta, + Maeda, 1955! Bikini.
-- --, Mauchline, 1956. Differentiation from C. finmarchicus.
-- --, Tanaka, 1957, p. 9-10.
-- --, Jaschnov, 1957.
-- --, Jaschnov, 1955, pp. 1215-16, fig. 3.
-- --, Grice, 1963. p. 497, fig. 1, B
-- --, Furuhashi, 1961. p. 4
-- --, Mullin, 1963. pp. 239-250. (feeding), Calif. coast
-- --, Brodsky, 1961. p. 15: pl. 1, fig. 1; pl. 2, fig. 2, 6, pl. 3, fig. 3;
-- --, Brodsky, 1959. pp. 35-39 pl. 4, fig. 3

Calanus helgolandicus (Claus, 1863)

(2)

- --, Brodsky, 1960. p. 12
- --, Jaschnov, 1958. pp. 838-843
- --, Jaschnov, 1961. pp. 1314-1334
- -- McLaren, Woods, Shea, 1966, pp. 1-2.
- --, Grice & Hulsemann, 1965, pp. 225,
- --, Moraitou-Apostolopoulou, 1969, pp. 1-3, table 1
- --, Vilela, 1968, p. 7,
- --, Gilat, Kane, & Martin, 1965, pp. 13-20
- Brodsky, 1967 p. 1442
- Brodsky, 1967:222
- Peruyeva, 1971. Passim [feeding]
- , Glover, 1967 passim

(see back)

— —, Aure & Scotti di Carlo, 1968:33

--, Chiba, 1956, p. 9

--, Corral, 1970, p. 62, pl. 6

--, Bernard, 1970, p. ~~141~~ 141, 163

--, Jaschnov, 1970, p. 204-5, fig. 3

--, Stormer, 1929, p. 5

--, Pesta, 1928, p. 15

--, Dolzonolskaya, 1970, p. 38, pl. 1, fig. 4

--, Sazhina, 1970, p. 154, pl. I

--, Sato, 1913, in no. 1

--, Shen & Bai, 1956, p. 218

Galanus helgolandicus

- , Björnberg, 1963: Table 10
 --, Ehrhardt, 1967, p. 737-
 --, Fahrenbach, 1962, p. 354
 --, Corral, 1970, p. 62-3, syns.: Cetochilus h.
 C. finmarchicus h., pl. 6
 --, Giesbrecht, 1882, p. 152
 --, Omori, 1973, pp. 4, 6-9.
 --, Brodskii, 1964, p. 211
 --, Marumo, 1962, p. 17
 --, Allan, 1976, p. 170-
 --, Hue, 1967, pp. 14, 21, 22.
 --, Roe, 1972a, pp. 280-
 --, Roe, 1972b, pp. 314-318
 --, Roe, 1972d, pp. 1039.

C. helgolandicus

--, Vives, 1972, pp. 206, 207, 237

--, Ong & Lake, 1969, pp. 9-20.

--, Bradford, Sillett, 1974, pp. 6, 7, 9,

--, Evans, 1972, p. 47, 48, figs 10, 11

--, Frost, B. W. 1971, pp. 23, 29.

-- Robertson, 1968, pp. 197, 209.

-- Hammond, 1973, p. 336

-- Williams, 1972, pp. 53-60, pl. 17-19, fig. 1, 3.

-- Vyshtkivartseva, 1972, p. 152.

-- Fleminger + Huberman, 1977, p. 233-246 figs 2, 4, 6, 7

-- Frost, 1974, pp. 77, 81, 94 fig 6

--, Furuhashi, 1966: 297, 298, 299-302, 304, 306, 311, 315,
316

--, Furuhashi, 1961: 74, 100, 105

Calanus helgolandicus

- , Bjornberg, 1963: 15
- , TANAKA, 1956a : 252, 253, 254
- , MARSHALL & ORR, 1966: 513-530 (RESPIRATION & FEEDING)
- , CORRALY ALVAREZ-OSSORIO, 1978: 138
- , TASHCHNOV, 1970: 279-284; FIG. 1-3; TAB. 1
- , JEFFRIES & JOHNSON, 1976: 98
- , BAINBRIDGE, 1972: 84, 85
- , HELD & SMOL, 1976: TAB. 5
- , BREEMEN, 1906: 15
- , VYSAK VARTZEVA, 1977: 5-28

- , CHISLENKO, 1977: TAB. 3
- , BRODSKY, 1976: 5
- , VYSHKVARTZEVA, 1976: 27, 28, 30, 33, 35, 36, 38, 44, 45, 48, 50, 57; TAB. 1, 3, 4, 7-18.
- , VYSHKVARTZEVA, 1977: 97, 103, 124, 132, 136, 138
- , BINET & JUISSE DE SAINTE CLAIRE, 1975: 28, 29
- , BJORNBERG & WILBUR, 1968: 407
- , FLEMINGER & CLUTTER, 1965: 100, 101, 102; TAB. 2, 4, 7, 9, 10
- , BEAUDOUIN, 1973: 125-128, 167; FIG. 3-4; TAB. 1
- , ITOH, 1970: FIG. 4
- , HEIP, 1974: 123

CALANUS HELGOLANDICUS

CARD 5

- , COMITA, ET AL., 1966: 2, 14, 15
- , FASHAM, ET AL., 1974: TAB. 1, 4
- , PAFFENHOFER, 1976: 49-58; FIG. 1-5; TAB. 1, 2
- , SCOTTO DI CARLO, ET AL., 1975: 184; TAB. 1
- , ANDRONOV & MAIGRET 1980: 84
- , Chiba & Hirakawa 1972: 74, 76; Tab. 2; Fig. 2
- , Kovalev, A.V., 1968, p. 441
- , Kasahara, S., S. Uye, & T. Okné, 1975, p. 25
- , Svetlichnyi, Zagorodnyaya, & Stepanov, 1977, p. 434

card 6

Calanus helgolandicus

- , Kasahara, S., S. Uye, & T. Obné, 1975, p. 25
- , Vives, 1974, p. 313-318
- , Vives, 1978, p. 83-92
- , Ueda, 1978, p. 57
- , Kovalev, et al., 1975, p. 195-199
- , Cannicci, 1959: *passim*
- PATRITI 1984b: 165, MARSEILLES

card 7

Calanus helgolandicus

- , Fernandez, 1977, p. 580-581, fig. 9-12, 13-16
- , Smol & Heip, 1974, p. 162
- , Bradford, 1979, *passim*
- Conover, 1970: *passim*.
- Hirota, 1969b: *passim*.
- Prahl, et al., 1984: 1235-1236.
- Motoda & Marumo, 1963: *passim*.
- , NISHIDA, 1984: 39
- , SCHNACK, 1983: 67

CALANUS HELGOLANDICUS

CARD 8

- PAFFENHÖFER & GARDNER, 1984: 509, 510
- SPECCHIA & VALLI, 1979: 133-134
- HIRAKAWA 1979: 55-6 (= C. PACIFICUS)
- PAWLEY & ALFARO 1984: 1261
- MASSUTI & NAVARRO 1950: 20-28.
- PROFANT & MEURICE 1982: 162.
- NIVAL & NIVAL 1973: 135-144.
- UYE 1984a: 45
- UYE 1984b: 173

Calanus helgolandicus CLAUS

card 9

- Patrity 1984a: 157-161, Gulf of Fos-sur-Mer
- KOGA 1968: 16-17, 18, Pl. I FIG. 3-EGG
- KOGA 1973: 33, FIG. 4-3, EGG
- KOGA 1984b: FIG. 11-3, EGG; 129, 193
- IWASAKI ET AL 1977: 60.
- IWASAKI & KAMIYA 1977: 53.
- GRICE & HART 1962b: TABLE 3, W. ATLANTIC
- STEPANOV & SUETLICHNII 1976a: 42, 44, 46
- STEPANOV & SUETLICHNII 1976b: 48, 50

Calanus helgolandicus Claus

card 10

- Pechen'Finenko & Pavlovskaya 1976: 23
- ZAGORODNYAYA & SUETLICHNII 1976: 41
- Tanaka, 1965a: 11, fig. 2a
- Devey & Brooks, 1977: 263
- Harris & Malej, 1986: 75-85 (ammonium excretion)
- Hure, 1955: 20
- Hure, 1961: 14
- SUETLICHNY & STEPANOV 1975: 61-64, FIG. 1.
- PAVLOVA & TSAREVA 1975: 64-68

Calanus helgolandicus Claus

card 11

- Sazhina 1975:79, 82, 84
- PETIPA 1975:30-33, FIGS. 2, 3(I)
- VILELA 1972:2
- LI & FANG 1983b:110, 116
- UEDA 1987:65
- HERDMAN ET AL. 1910: 228-297, TEXT FIG. 9, PLATE B, FIG. 4 - ISLE OF MAN.
- HERDMAN & SCOTT 1911: 218-223, ISLE OF MAN
- HERDMAN & SCOTT 1912: 142-146, ISLE OF MAN

CALANUS HELGOLANDICUS CLAUS

CARD 12

-- HERDMAN ET AL. 1913: 212, ISLE OF MAN, = C.

FINMARCHICUS

— Matthews, 1967: 159-175

— Schnack, 1979: 41-46 (feeding)

— Turner & Ferrante, 1979: 671

— Vives, 1978: 265, 269 table 1

-- ASSIS ET AL 1984: 218-, PORTUGAL

-- REGNER 1987: 373 -, EASTERN ADRIATIC

-- VYSHKUARTZEVA 1972b: 162-171, FIG. 4

Calanus helgolandicus Claus

card 13

- Carli 1968: 101-, Ligurian Sea
- CARLI ET AL. 1973 -, 339-359, SICILY
- CARLI + SERTORIO 1964: 207-, LIGURIAN SEA
- CARLI & VALENTE 1981: 731-, " "
- THOMPSON, B.M. 1982: 360, NORTH SEA
- HUNTLEY, MARIN + ESCRITOR 1987: 912-
- MAUCHLINE 1988: 719
- KIORTSIS ET AL. 1969: 36-, AEGEAN
- BAMSTEDT 1986: 9-

Calanus helgolandicus (Claus, 1863)

card 14

- Sargent & Henderson 1986: 61-
- LE BORGNE 1986: 111-
- MAYZAUD 1986a: 187-, FIG. 4.3B
- MAYZAUD 1986b: 235-
- CORNER ET AL. 1986: 261-, FIGS. 6.1, 6.9, 6.10, 6.11,
- CITARELLA 1986: 278-, MARSEILLES
- BLADES-ECKELBARGER 1986: 32, FIG. 10B
- KLEIN BRETELIER + GONZALEZ 1986: 72-
- CONOVER + POULET 1986: 96

Calanus helgolandicus (Claus, 1863)

card 15

- Shih 1986: 107-
- CHEN Q-C 1986: 527
- MULLIN, C.H. 1968: 29-34, PUGET SOUND
- PAFFENHÖFFER & STEARNS 1988: 36
- Ayukai, 1987: 488
- McLaren, 1986: 1342, 45
- McLaren, ^{et al.} 1989: 568 fig 2
- McLaren, et al. 1989: 558
- Schnack: 1983: 50, 51, 52 fig 2 tabs 1, 2 NW Africa

Calanus helgolandicus (Claus, 1863)

- Lonsdale et al. 1979: 235
- Soldevilla, et al., 1988: 57 Canary Islands
- Ohman, 1987: 1327

-- FONTAINE 1955: 858-, UNGAVA BAY

-- S.L., FLEMINGER + HULSEMAN 1987: 43-81,
 FIG. 2, MORPHOMETRY, DISTINGUISHED 3 POPULATIONS
 + DISTINGUISHED C. PONTICUS AS SEPARATE SPECIES,
 FROM CALANUS HELGOLANDICUS S. STR.

-- RODRIGUEZ + VIVES 1984: 242; MALAGA HARBOR

-- JASCHNOU 1975: 32-

Calanus helgolandicus (Claus, 1863)

card 17

-- Marin 1988b: 444

- R. WILLIAMS + CONWAY 1988: 259-, N. ATLANTIC

- SEVIGNY + McLAREN 1988: 267-, N. ATLANTIC

- McLAREN ET AL. 1988: 275-, PLYMOUTH, ENGLAND

- MARIN 1986: 139-

- TURNER 1984d: 6-

-- MONTU' 1989: 41-, FEEDING

-- McLAREN ET AL. 1966: 1642

-- SHIH ET AL. 1971: 36, CANADA - ATLANTIC; 202,
ARCTIC

Calanus helgolandicus (Claus, 1863) s. restr.

Fleminger & Hulsemann, 1987

-- Fleminger & Hulsemann 1987:43-81, fig. 2, restricted this species to Atlantic and Mediterranean populations and raised C. h. ponticus Karavaev to species rank.

-- FERRARI & HAYEK 1990: TAB. 1

-- HEAD 1986: 377-

-- BRADFORD 1988: 74-

-- SARGENT & FALK-PETERSEN 1988: 102-

-- CONOVER 1988: 127- N. ATLANTIC

-- Williamson, 1963: Pl. III Distr. Map.

Calanus helgolandicus (Claus, 1863) s. restr. card 20

-- Gauld 1953:469--

- CLOGSTON 1965: 11 -

- OHMAN ET AL. 1989: 1322 -

- TODA & HIROSE 1991: 615

- MILLER, C.B. ET AL. 1991: 80 -

- HELGOLANDICUS, ALEKSEEV 1990/4: 36, DIAPAUSE

Calanus helgolandicus Claus var ponticus Jaschnov

--- Jaschnov, 1955, pp. 1216-1217, fig. 4.

---, Marcus, 1957, p. 91.

---, Jaschnov, 1957.

~~---, Corral, 1970, p. 62~~

---, Corner, 1961, pp. 6, 11, 13, 14.

--- Frost, 1971, pp. 23, 29.

---, Kovalev, et al., 1975, p. 195

--- VVSH KVARTZEVA 19726:170

Calanidae

Calanus hyperboreus Krøyer, ♀.

- — Krøyer, 1838, p. 84: pl. 4, fig. 23.
- — Cleve, 1900, p. 140.
- — Krøyer, 1842-45, pl. 41, fig. 2, a-g.
- — Krøyer, 1848, pp. 542-3: p. 559.
- — Brodsky, 1965: 28

Habitat. Greenland; Denmark Strait; Iceland;
Norwegian Sea.

- With, 1915: 30-35  fig. 6a-b, pl. I, fig a-d.

- — Giesbrecht, 1892, p. 91: pls. 6, f. 6: pl. 7, f. 12
— — Aurivillius, 1898, p. 88. [pl. 8, f. 10, 23
— — Giesbrecht & Schmeil, 1898, p. 15.
— — Th. Scott, 1899, p. 90: 1902, p. 450: 1905, p. 221.
— — Vanhöffen, 1897, p. 278.
— — G. O. Sars, p. 2, 1900: 1901, p. 12: pl. 5.
— — T. & A. Scott, 1901, 338. : Mrázek, 1902, p. 506.
— — Jensen, Johansen, & Levinsen, 1903, p. 303.
— — Norman, 1903, p. 135: Wolfenden, 1904, p. 112.
— — G. O. Sars, 1905, p. 1.
— — Damas & Koefoed, ed, 1907, p. 352, 405.
— — Farran, 1908, p. 20: 1911, p. 89.
— — Rose, 1929, p. 6.

- — v. Bremen, 1908, p. 8: fig. 3.
- — Stephensen, 1913, p. 71: 1913. b, p. 307.
- — Wilt, 1915, p. 30: pl. 1, figs 1. a-d: fig. 6, text.
- — Stephensen, 1916, p. 303.
- magnus Tubbock, 1854, p. 125.
- finmarchicus var major,
- borealis(?) Tubbock, 1854, p. 127.
- plumosus Tubbock, 1854, p. 128.
- finmarchicus (pars), Lilljeborg, 1875, p. 6.
- — Buchholz, 1874, p. 391: pl. 15 (pars).
- — Sars, 1877, p. 363 (pars): 1886, p. 76.

- *finmarchicus* Norman, 1878, p. 4 (pars).
- *hyperboreus* Giesbrecht, 1889, p. 164.
- — Willey, 1919, p.
- — Cleve, 1902, p. 19.
- — Willey, 1920, p. 6K
- — Mrázek, 1902, p. 506.
- — Cleve, 1900, p. 47.
- — Wilson, 1932, p. 21: fig. 8: 1942, p. 173
- — Jaschnov, 1927, p. 14. Kara Sea
- — Linko, 1913, p. 20
- — Jespersen, 1934, p. 34: figs. 9-10. - 1940, p. 7-9, Iceland.
- — Rose, 1933, p. 57: fig. 6.
- — , Fontaine, 1955; p. 872-3. Ungava Bay, Canada.
- — , BRODSKY, 1950, p. 85. USSR.

Calanus hyperboreus Krøyer

(3)

- --, Grice, 1962. pp. 101, 102
- --, Mullin, 1963. pp. 239-50. Woods Hole. (feeding)
- --, Conover, 1962. pp. 190-197, fig. 1-3
- --, Conover, 1960. p. 404
- --, Johnson, 1963. pp. 92, 93, 97, 99
- --, Conover, 1965. pp. 153-158, fig. 1,2, pl. 1
- --, Conover, 1965(b). pp. 306-320, fig. 1-4, pl. 1
- --, Brodsky, 1960 p. 12
- --, Conover, 1966, pp. 187-193
- --, Conover, 1967, pp. 61-72
- --, Conover, 1968, p. 108
- --, Conover, 1964, pp. 81-91

(see back)

-- -- Grainger, 1965, pp. 543-564.

-- -- Brodsky, 1967 p. 1442

-- -- Brodsky, 1967:223

-- Cairns, 1967, 559

-- -- Coull and Vernberg, 1970, p. 342

-- --, Apstein, 1905, p. XVIII, XX, XXXIV, XXXX,
XXXII, XXXIV, XXXVIII, L,
LIV, LVI

--, Chiba, 1956, p. 21

--, Heinrich, "The life histories...", p. 17

--, MARSHALL, ET AL., 1935: 23

--, BAINBRIDGE, 1972: 85

Calanus hyperboreus

card 41

- , Stormer, 1929, p. 5
- , Omori, 1973, pp. 4, 8.
- , Sherman, 1968, p. 6
- , Maclellan, 1967, p. 102.
- , Filteau & Tremblay, 1953, p. 17.
- , Omori, 1970, pp. 122-3.
- , Vyshkvartseva, 1972, p. 152.
- , Bjornberg, 1963: 100 (+ table)
- , ROBERTSON, ET AL., 1974: 74
- , TANAKA, 1956a: 252, 258
- , MARSHALL & ORR; 1966: 513-530 (RESPIRATION + FEEDING)
- , TASCHNER 1970: 280

- , HEINLE, 1970a: 370
- , HEIPY SMOL, 1976: TAB. 5
- , LACROIX & FILTEAU, 1971: 787, 809, 811, 812; TAB. 17, 18
- , VYSHKUARTZEVA, 1977: 6, 17, 18
- , PAVSHTIKS, 1977: 56, 57, 64-67, 70, 71
- , VYSHKUARTZEVA, 1976: 23, 33, 34, 35, 36, 44, 48; FIG. 6;
TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16
- , TOPITSKY, 1976: 120
- , VYSHKUARTZEVA, 1977: 97, 123, 125, 126, 131; FIG. 10, 29, 30
- , DAMKAER, 1975: 11
- , DIGBY, 1954: 300, 301-304, 307, 308-309, 328; FIG.
1-3, 15; TAB. 1

5
Calanus hyperboreus Kroyer

-- -- Grainger, 1965, pp. 543-564 (548-549).

-- Bradford, Jillett, 1974, pp. 6, 7, 9,

--, Frost, B.W., 1971, pp. 23

--, Harding, 1974, p. 143.

--, Frolander, 1962, p. 659.

--, Frost, 1971, pp. 23.

--, Williams, 1972, pp. ~~53-60, Pl. 17-19, figs. 59~~

--, Vyshkvartseva, 1972, p. 152.

--, Frost, 1974, p. 81.

--, COSTE, ET AL., 1978: 466, 478

--, TAUCHI & FUKUCHI, 1975: 159

--, LINDQUIST, 1959: 5

CALANUS HYPERBOREUS

CARD # 6

- Scott & Scott, 1901 : 338
- , Dagg & Littlepage, 1972 : 169
- , Itoh, 1970 : TAB. 2
- , Comita, et al., 1966 : 4, 15
- , Johnson, 1956a : 10, 18, 19; TAB. 1-7
- , Paffenhofer, 1976 : 56
- , Grainger, E.H., ... Calanus as indicators..., p. 86-90
- , Ueda, 1978, p. 57
- , Brodskij, 1958, p. 27, 28
- , Sutherland, 1982, p. 478

- Lacroix, 1966: 52
- Lacroix, 1961: 25
- Lacroix, 1963a: 64
- , SCHNACK, 1983: 66, 67
- HERMAN 1984: 131
- KOGA 1968: 16, 17, 18, PL. I FIG. 4 - EGG
- KOGA 1973: 33, FIG. 4-4 - EGG
- KOGA 1984b: 102, 108, 119, FIG. 11-4, EGG; 128-129;
195
- BRUNEL 1959: 21, 54 - BAIE DES CHALEURS
- GRAINGER 1959: 474, 481-483, ARCTIC OCEAN.

CALANUS HYPERBOREUS

CARD 7

- GRICEY & HART 1962a: 295, W. NORTH ATLANTIC
- GRICEY & HART 1962b: TABLE 3.
- PECHEN' FINENKO & PAVLOVSKAYA 1976: 23
- Fleminger, 1985: 275-291, fig. 5C
- Tande & Slagstad, 1985: 1093-1099
- Deevy & Brooks, 1977: 263
- Horner & Murphy, 1985: 203, passim
- VILELA 1972: 2
- LI & FANG 1983 b: 110
- Kjørbe, et al, 1985: passim.

CALANUS HYPERBOREUS KRØYER, 1838

CARD 8

- UEDA 1987: 65
- Matthews, et al, 1978: 277-284
- ROUCH 1968a: 117
- TUPITSKY 1982: 110 -
- VYSHKVARTZEVA 1972b: 162 - , FIG. 5, 1a-b
- COSTE ET AL. 1982: 249
- HUNTLEY, MARIN & ESCRITOR 1987: 912 -
- MAUCLINE 1988: 719
- ZELIKMAN & KAMSHILOV 1960(64): 32, BARENTS SEA

Calanus hyperboreus Krøyer, 1838

card 9

-- Davis 1982: 727-, Newfoundland

-- DAVIS 1986: 30-, "

-- BAMSTEDT 1986: 18-

-- SARGENT & HENDERSON 1986: 65-

-- LE BORGNE 1986: 123-

-- MAYZAUD 1986 a: 167-

-- MAYZAUD 1986 b: 250-

-- GROENDALH & HERNROTH 1986: 315, ARCTIC

-- BLADES-ECKELBARGER 1986: 36

Calanus hyperboreus Krøyer, 1838

card 10

- Corkett et al. 1986: 539-545, Bedford Basin, Nova Scotia
- McLaren & Sevigny^{† FROST} 1989: 568 fig 2
- McLaren et al. 1989: 558
- Ohman, 1987: 1326, 1327
- FONTAINE 1955: 858, UNGAVA BAY
- CITARELLA 1989: 123, ST. LAWRENCE GULF, CANADA
- HEAD 1986: 371-379, JONES SOUND (NWT), ELLESMERE IS.
- HEAD & HARRIS 1985: 99-106, JONES SOUND (NWT)
- HEAD & HARRIS 1987: 228

Calanus hyperboreus Krøyer, 1838

card 10

- Head et al. 1985: 281-288, Jones Sound, Baffin Bay
- HEAD ET AL. 1986: 271-286, ARCTIC (4 LOCALITIES)
- BRADFORD 1988: 74-
- HUNTLEY + BOYD 1984: 458-
- HUNTLEY ET AL. 1987: 197-212, MALANGEN SOUND, NORWAY
- HUNTLEY 1988: 89-
- SARGENT + FALK-PETERSEN 1988: 102-
- TANDE + GRØNVIK 1983: 52-
- CONOVER 1988: 127-, N. ATLANTIC

Calanus hyperboreus Krøyer, 1838

card 11

- R. Williams & Conway 1988: 262, N. Atlantic
- SEVIGNY & McLAREN 1988: 267-, N. ATLANTIC
- HYPERBOREAS, McLAREN & MARCOGLIESE 1983;
721-, NOVA SCOTIA
- McLAREN & MARCOGLIESE 1988: 275-, NOVA SCOTIA
- McLAREN, TREMBLAY ET AL. 1989: 579-, SCOTIAN SHELF
- SHIH ET AL. 1988: 319-324, BRAS D'OR LAKES,
NOVA SCOTIA
- STEPHENSEN 1917: 303-304, OFF GREENLAND (FJORDS)

Calanus hyperboreus Krøyer, 1838

card 12

-- Montu' 1989:38-, feeding

-- MILLER 1988:226 -

-- PRÉFONTAINE + BRUNEL 1962:252, ST. LAWRENCE
ESTUARY

-- COPLEY ET AL. 1989:11-, NW ATLANTIC

-- HARDING, G. ET AL. 1980:32-, NOVA SCOTIA

-- SHIH ET AL. 1971:36, CANADA-ATLANTIC; 202, 203,

ARCTIC

-- CONOVER 1965:308-320, PL. IV, FIGS. 1-3, OFF MAINE
+ MASSACHUSETTS

Calanus hyperboreus Krøyer, 1838

card 13

-- Ohman et al. 1989:1320-

-- Wiborg, 1944: 55

-- MARCOTTE 1977: 191-

-- MOREIRA + VERNBERG 1968: 284

-- C.B. WILSON 1936: 370, CANADIAN ARCTIC.

-- LEGARÉ + MACLELLAN 1960: 434, MAINE/NEW BRUNSWICK

-- BRODSKY, 1972: 8-107, FIGS.

-- TUPITSKII 1976: 108-120, TABS. 1, 2, BARENTS SEA

-- GISLASON + ASTTHORSON 1992: 221, TAB. 1, ICELAND

CALANUS HYPERBOREUS KROYER, 1838

(14)

- ASTTHORSON & GISLASON 1992: 229, 233, TAB. 1,

ICELAND

- SIFERD & CONOVER 1992: 277, TAB. 1, CANADIAN ARCTIC

Calanidae - Calanoida.

Calanus inauritus Dana, ♀.

— — Dana, 1849, p. 16.

— — Dana, 1852, p. 1072: pl. 74, f. 3, a-c.

— — Giesbrecht, 1892, p. 299 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Tropical Atlantic.

Calanidae - Calanocidae.

Calanus inconspicuus Lubbock, ♀.

- — Lubbock, 1856, p. 8: pl. 2.
- — Giesbrecht, 1892, p. 300 (position doubtful).
- — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Tropical Atlantic.

Actideidae - Calanoida

Calanus latus Lubbock, ♀.

— — Lubbock, 1856, p. 15; pl. 2, f. 12; pl. 11, f. 8-11.
— — (= Euchirella pulchra) Giesbrecht, 1892, p. 233.

A synonym of Euchirella pulchra.

(Esterly, 1905, p. 153).

--, Von Jaupel Klein, 1982, p. 3

— — Lubbock, 1860, p. 4.

Calanidae - Calanoida.

Calanus levis Dana, ♀.

— — Dana, 1849, p. 14.

Fig. 2, a-d

— — Dana, 1852, p. 1062: pl. 73, f. 1, a-b: ^

— laevis Giesbrecht, 1892, p. 300 (position doubtful).

— levis Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Atlantic near Rio Janeiro.

Calanus lighti Bowman - see Mesocalanus

Calanidae

Calanus longiremis (Claus), ♀

Cetochilus — Claus, 1863, p. 171: pl. 26. f. 1.

— — Carus, 1885, p. 332.

Calanus — Brady & Robertson, 1876, p. 196.

— — (= C. gracilis) Giesbrecht, 1892, p. 90.

Habitat. Mediterranean.

CALANUS -, HERRICK 1887: 6

Calanus longus Lubbock, ♂. ♀.

-- Lubbock, 1854, p. 127: pl. 5, fig. 10.

-- (= Metridia longa) Giesbrecht, 1892, p. 339.

A synonym of Metridia longa.

(Sars, 1902, p. 112).

--, Arcos, 1975, p. 17.

--, DONN & HULSEMANN, 1979: 54, 55

Calanus macrocarinatus Brodsky - see Calanoides

Calanidae - Calanoida.

Calanus magellanicus Dana, ♀.

- — Dana, 1849, p. 11,
- — Dana, 1852, p. 1053: pl. 72, f. 4, a-c.
- — Giesbrecht, 1892, p. 300 (position doubtful).
- — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Pacific Ocean, Patagonia

Calanus magnus Tubbok, ♀

— — Tubbok, 1854, p. 125: pl. 5. figs. 1-11.

— — (= C. hyperboreus) Giesbrecht, 1892, p. 91.

A synonym of Calanus finmarchicus.
(Brady, 1878, p. 38).

A synonym of Calanus hyperboreus.
(Sars, 1901, p. 12).

Calanus Marshalliae Frost, 1974

- Frost, 1974, pp. 77-99, figs. 1-4, 10c, 14, 16.
- , Gardner & Szabo, 1985, pp. 25, 136-137, fig. 8.1.1.
- , NISHIDA, 1984: 38
- , PETERSON + MILLER, 1977: 718, 720-722
- MILLER ET AL. 1984: 1287
- SHIH 1986: 107-
- McLaren, et al., 1989: 568 fig 2
- FROST 1989: 545
- BANSTEDT 1988: 55
- BRADFORD 1988: 76-
- CONOVER 1988: 127-, N. ATLANTIC

Calanus marshallae Frost, 1974

card 2

- Sevigny & McLaren 1988: 267-, ~~Atlantic~~ ^{COAST OF} WASHINGTON
- McLAREN ET AL. 1988: 275, SEATTLE
- UYF 1988: 290-
- PETERSON ET AL. 1990: 91
- COYKE ET AL. 1990: 763-, AUK BAY, ALASKA
- FRYD ET AL. 1991: 683-
- OHMAN 1986: 685-, DABOB BAY, WASHINGTON STATE
- UYF 1991: 634

Calanus mastigophorus Claus - see Clausocalanus

Calanidae - Calanoidea,
Calanus medius Dana, ♀.

— — Dana, 1849, p. 14.

— — Dana, 1852, p. 1063: pl. 73, f. 3, a-b.

— — Giesbrecht, 1892, p. 300 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. North Pacific.

Calanus minor (Claus) - see Nannocalanus

Calanoida

Calanus minutus Krøyer, ♂.♀.

- — Krøyer, 1845-7, pl. 41, fig. 4.
 - — Krøyer, 1848, pp. 543, 552.
 - — Giesbrecht, 1892, p. 300 (position doubtful).
- a synonym of Pseudocalanus minutus (Krøyer).
(With, 1915, p. 57).
- — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).
 - , GENEVA, 1977: 82, 93
 - Andronov, 1986: 297.

-- ICZN 1988: 228, JUNIOR SUBJECTIVE SYNONYM
IS CLAUSIA ELONGATA BOECK

— — Lubbock, 1856, p. 16: pl. 5, f. 1-6.

— — (= *Eucal. attenuatus*) Giesbrecht, 1892, p. 132.

A synonym of *Eucalanus attenuatus*.

(Esterly, 1905, p. 133).

Calanus nataliensis Brady, 1914

--, Brodskii, 1964, p. 230

Calanidae - Calanoida,

Calanus nudus Dana, ♀.

— — Dana, 1849, p. 11.

— — Dana, 1852, p. 1052: pl. 72, f. 3, a-b.

— — Giesbrecht, 1892, p. 300 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 51 (doubtful).

Habitat. Atlantic Ocean: tropics.

Calanus orientalis Marukawa ♂♀

— — Marukawa, 1908, p. 5-6, ^{Pl. 1} figs 18-34

A deformed *C. vulgaris*; Mori, 1932, p. 33.

--, Chiba, 1956, p. 42

--, TANAKA, 1956a: 265. Undinula vulgaris (Dana) - abnormal specimen with branched caudal setae reported as C. orientalis n.sp. by Marukawa according to Mori 1932?

Habitat. Coast of Japan.

A senior homonym of Calanus orientalis Jaschnov 1975.

Calanidae - Calanoida.

Calanus mundus Dana, ♀.

- — Dana, 1849, p. 16.
- — Dana, 1852, p. 1071: pl. 74, f. 2, a-b.
- — Streets, 1877, p. 139.
- — (= *C. finmarchicus*) Giesbrecht, 1892, p. 89.

Habitat. North Pacific.

Calanus orientalis Jaschnov, 1975

- Jaschnov, 1975: 32, 35-38, Fig. 3, n. sp. ♀♂, Pacific Ocean near Honshu, Japan

Fig. 4, Map of distribution

- Bradford 1988: 78, POSSIBLE JUNIOR SYN. OF

C. PACIFICUS OCEANICUS BRODSKY 1959.

A primary junior homonym of Calanus orientalis Marukawa, 1908, which in turn is a junior subjective synonym of Undinula vulgaris (Dana).

No post 1975 publications by Jaschnov in Zool. Record

CAHANUS PACIFICUS BRODSKY (1958)

- — Brodsky, 1948, p. 31, pl. 2, fig. 4-10
- — BRODSKY, 1950, p. 89, Fig. 21, USSR
- —, Jaschnov, 1957.
- —, Jaschnov, 1955, p. 1217¹⁸, fig. 5
- —, Shen + Bai, 1956, pp. 180-182, pl. 1, fig. 1-6.
- —, Brodsky, 1961. p. 15, pl. 1, fig. 3, pl. 2, fig. 3, 9, pl. 3, fig. 4, pl. 4, fig. 4
- —, Brodsky, 1959. pp. 35-39
- —, Brodsky, 1960. p. 12
- —, Brodsky, 1962. pp. 1416-1419

- C. pacificus, Brodsky, 1962. p. 97
-- --, Jaschnov, 1958. pp. 838-843
-- --, Omori, 1965. pp. 18-27
-- -- Park, 1968, pp. 527-572.
-- --: Vaupel-Klein, 1970, pp. 5-7, fig. 1a-f.
- - Brodsky, 1967 p 1442
- - Brodsky, 1967:222
- - , Brodsky, 1965: 57
-- , Jaschnov, 1970, p. 205-7, fig. 4
-- , Shen & Bai, 1956, p. § 218-9, pl. I (1-6)
-- , Fulton, 1968, p. 33, fig. 20, syns.: some refs.
of C. finmarchicus, pacificus, sp.

Calanus pacificus S. I. Brodsky, 1948 card 2

--, Beklemishev, 1961, p. 140-, 153-, fig. 4

--, Brodskii, 1964, p. 205

--, Lubni-Gertsik, 1959, p. 70-

--,^{DS}Wilson, 1973, p. 912.

-- ~~Bradford~~, Jillett, 1974, pp. 6, 7, 9,

-- Minoda, 1972, p. 325-330.

-- Wilson, Parrish, 1971, p. 202

-- Williams, 1972, p. 59.

-- Vyshtartseva, 1972, p. 152.

-- Frost, 1974, p. 77, 81, 94.

--, Furuhashi, 1966: 316

--, Hirakawa, 1976: 73

--, Blades & Youngbluth, 1980, p. 47.

- , LANDRY, 1978: 1104-1112; FIG. 4, 7, 8; TAB. 1
- , BRODSKY, 1976: 6
- , VYSHKVARTZEVA, 1976: 27, 33, 35, 36, 39, 44, 47, 48, 57;
TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16
- , GELETIN, 1977: 90
- , VYSHKVARTZEVA, 1977: 97, 124; FIG. 1, 29, 30
- , JAWED, 1973: 3, 7-104
- , PAFFENHOFER, 1976: 49, 55, 56, 57
- , TAGUCHI & FUKUCHI, 1975: 146, 150, 153, 157; FIG. 2;
TAB. II-IV; VII
- , FIGUEIRA, 1971: 144.
- , Blades & Youngbluth, 1979, p. 353

Calanus pacificus s.l. Brodsky, 1948

- , Gardner & Szabo, 1982, pp. 25, 138-139, fig. 8.1.2
- , Uye, 1982, p. 5-7
- , Shen & Bai, 1956: 180-182, 218-219, fig. 16, pl. 1
- , Jaschnov, 1963: ~~1002-1011~~
1011 — 1016, fig. ~~4-4~~
5-6
- , FERRARI, 1980: 548.
- , HIROTA, 1982: 50
- , SCHNACK, 1983: 66-67

CALANUS PACIFICUS S.L. BRODSKY, 1948

CARD 4

--, PAFFENHÖFER + GARDNER, 1984: 510

--, PAFFENHÖFER, 1984: 330, 332

-- MILLER ET AL. 1984: 1274, 1278-1287

-- HIRAKAWA 1979: 49-58

-- KLEPPEL + MANZANILLA 1983: 155-159

-- IKEDA 1977a: 19-20, 22-23, 25, 26

-- NIVAL x NIVAL 1973: TRANSLATION P. 9-10.

-- CONLEY + TURNER 1985: 119

-- UYE + KASAHARA 1978: 116

Calanus pacificus s.l. Brodsky, 1948

card 5

-- Uye & Kasahara 1983: 155

-- UYE 1984a: 45, 47

-- UYE 1984b: 172

-- KOOA 1984b: 129

→ Runge, 1985: 382-395

— Mackas & Burns, 1986: 383-392

— Dawson & Knatz, 1980: 22, pl. 9, figs a-k

-- AMBLER 1986: 194

-- AMBLER ET AL. 1985: 189, SAN FRANCISCO BAY

— Schiemer, 1985: 3017 Tbl. 2

Calanus pacificus s. l. Brodsky, 1948

card 6

-- Yen 1982: 110, 115

-- YEN 1983: 69-76, PUGET SOUND

-- RAZOULS, S. ET AL. 1986: 887

-- RAZOULS, S. ET AL. 1987: 659

-- COONEY 1971: 101-, PUGET SOUND

-- HUNTLEY ET AL. 1987: 103-113, LA JOLLA

-- HUNTLEY, MARIN + ESCRITOR 1987: 911-, LA JOLLA

-- FORSYTH & JAMES 1984: 809

-- BAMSTEDT 1986: 11-

Calanus pacificus s. l. Brodsky, 1948

card 7

- Sargent & Henderson 1986: 61-
- LE BORGNE 1986: 116-
- MAYZAUD 1986a: 181-
- MAYZAUD 1986b: 234-
- CORNER ET AL. 1986: 304-
- TESTER 1986: 477
- KLEIN BRETELIER & GONZALEZ 1986: 72-
- CONOVER & POULET 1986: 94-
- SHIH 1986: 108-

Calanus pacificus Brodsky, 1948

card 8

-- Sykes & Huntley 1986: 636.

-- PAFFENHÖFFER & STEARNS 1988: 36

-- KIMOTO ET AL. 1986: 142

-- GREENE & LANDRY 1988: 1070-, OFF WASHINGTON STATE

-- McLaren, 1986: 1342, 45

-- Ayukai, 1987: 580, 585, 586

-- McLaren, & Sevigny, ^{F FROST} 1989: 568 fig 2

-- Schnack, 1988: 52

-- Sykes & Huntley, 1987: 19-24 California

Calanus pacificus Brodsky, 1948

card 9

-- Dam, 1986: 157

-- Dey, et al. 1988: 321- figs 5-8 tabs 1,2
Puget Sound WA

-- Frost, 1972: 805-814 Puget Sound WA figs 2-7 tab 2

-- Frost, et al. 1983: 1,8- fig 6 tabs 1,2
East subarctic Pacific

-- Frost, 1985: 1-11, figs 1,2,4,6-10 Dabob bay

-- Frost, 1975: 263-266 figs 1,2 tab 1

-- Huntley, et al 1987: 103-112 figs 2-5, tabs 2,3
La Jolla bay, California

-- FERRARI & HAYEK 1990: TAB. 1

-- CUMMINGS 1982: 120

-- ROMAN ET AL. 1988: 27-

Calanus pacificus Brodsky, 1948

card 10

- Head et al. 1985: 284-
- HEAD ET AL. 1986: 283 -
- BAMSTEDT 1988: 55 -
- RUNGE 1988: 63 -
- BRADFORD 1988: 74 -
- JASCHNOV 1975: 35 -
- HUNTLEY 1985: 41-55, CALIFORNIA
- HUNTLEY ET AL. 1983: 151-160, LA JOLLA, CALIFORNIA
- HUNTLEY + BOYD 1984: 455 -

Calanus pacificus Brodsky, 1948

card 11

- Huntley et al. 1986: 105-120, La Jolla, California
- HUNTLEY 1988: 87-
- SARGENT & FALK-PETERSEN 1988: 102-
- CONOVER 1988: 127-, N. ATLANTIC
- MARIN 1988b: 444-
- MARIN ET AL. 1986: 49-, LA JOLLA BAY, CALIFORNIA
- SEVIGNY & McLAREN 1988: 267-, COAST OF WASHINGTON
- McLAREN & CORRETT 1984: 828-
- McLAREN ET AL. 1988, 275-, SEATTLE

Calanus pacificus Brodsky, 1948

card 12

-- Uye 1988: 290-

-- GREENE, C.A. 1988: 296-, FIG. 2 C

-- JIMENEZ PEREZ ET AL. 1988: 77-90, BAHIA DE
TODOS SANTOS, BAJA CALIFORNIA

-- JIMENEZ-PEREZ + LARA-LARA 1988: 126-, GULF
OF CALIFORNIA

-- JIMENEZ PEREZ 1989: 90-, BAHIA DE TODOS SANTOS

-- TURNER 1984d: 6-

-- COPLEY + WIEBE 1990: 12, GUAYMAS BASIN

Calanus pacificus Brodsky, 1948

card 13

- Montú 1989:39--, feeding
- MILLER + CLEMENS 1988:307 -
- BOTTGER 1985:212 -
- SHIH ET AL. 1971:144, CANADA - PACIFIC
- DE DECKER 1984b:158
- ALVARIÑO 1989:65-, OFF S. CALIFORNIA
- GREENE, C.H. + M.R. LANDRY 1985:1408-1416, FIG. 6,
CABOB BAY + PUGET SOUND, WASHINGTON
- FRYD ET AL. 1991:683 -

Calanus pacificus Brodsky, 1948

card 14

-- Ohman 1985:28--

-- OHMAN 1986: 685-, DABOB BAY, WASHINGTON STATE

-- OHMAN 1988b: 533-

-- OHMAN 1990: 276 -

-- OHMAN ET AL. 1989: 1321-

-- OHMAN & WILKINSON 1989: 974, OFF S. CALIFORNIA

-- HADA & UYE 1991: 155-

-- UYE 1991: 634

-- MILLER, C. B. ET AL. 1991: 81-

Calanus pacificus Brodsky, 1948

card 15

-- Steinberg, 1993: 31-

-- BRODSKY 1972: 8-107, FIGS.

-- UYE + MURASE 1997: 7-9

Calanus pacificus f. californicus

- Fleminger, 1985: 275-291, fig 2-3
- FLEMINGER 1986: 87
- FLEMINGER + HULSEMAN 1987: 77
- CALIFORNIENSIS, FERRARI + HAYEK 1990: 114, 123, ^{TAB. 1}
- BRADFORD 1988: 78
- OHMAN 1988a: 143, CALIFORNIA CURRENT
- SMITH, P.E. ET AL. 1989: 95-, OFF S. CALIFORNIA
- BRODSKY 1972: 103

Calanus pacificus var. japonicus Brodsky

-- -- -- Brodsky 1959

-- -- -- Brodsky 1961. p. 16, pl. 5, fig. 5,6; pl. 3,
fig. 5-9, pl. 4, fig. 5

-- --, Heinrich, 1968, *passim*

CALANUS PACIFICUS OCEANICUS BRODSKY, 1959

--- BRADFORD 1988: 78

--- BRODSKY 1972: 103

Calanidae
Calanus parvus Claus, ♂.♀.

— — Claus, 1863, p. 173.

— — (= Paracalanus parvus) Giesbrecht, 1892, p. 164.

A synonym of Paracalanus parvus (Claus)
(With, 1915, p. 54)

ar

Arcos, 1975, p. 12

Calanidae - Calanoidea.
Calanus patagoniensis (Brady), ♀. ①

Calanoides — Brady, 1883, p. 74: pl. 23.

Calanus — Giesbrecht, 1888, p. 331.

— — Giesbrecht, 1892, p. 91: pl. 6. f. 8, 10, 17.

— — Giesbrecht & Schmeil, 1898, p. 16.

— —, Brodsky 1967 p. 191

Habitat. Chonos, Valparaiso.

— —, Brodsky 1965: 28

--, BRODSKY, 1976: 6

--, VYSHKUARTSEVA, 1977: 97; FIG. 20, 30

— — Farran, 1929, p. 215.

— — —, Brodsky, 1960. p. 12

— — —, Brodsky, 1967: 223

— — VYSHKUARTZEVA, 1972, p. 152.

— —, Brodskii, 1967, p. 191-

— —, Brodskii, 1964, p. 230

— —, Arcos, 1975, p. 9 (syn. Calanoides patagoniensis)

— —, VYSHKUARTZEVA, 1976: 25, 26, 27, 33, 35, 36, 41, 44, 47, 50,
53, 55; TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16

Dakin & Glefax, 1933: 203

— — VYSHKUARTZEVA 1972b: 162-171, FIG. 7(5).

Calanus patagoniensis (Brady, 1883)

card 2

-- Montu 1989:41-, *Fig. 48-3*

Calanus pauper Giesbrecht, 1888 - see Canthocalanus

Calanidae - Calanoida.

Calanus pavo Dana, ♀

- — Dana, 1852, p. 1061: pl. 72, f. 12, a-b.
— — Dana, 1849, p. 13.

A synonym of Calocalanus pavo.
(T. Scott, 1894, p. 37).

- — Thompson, 1888, a, p. 148: 1888, c, p. 139.
— — Giesbrecht, 1892, p. 175.

---, Cleve, 1901, p. 5

Calanidae - Calanoida,

Calanus pellucidus Dana, ♀.

— — Dana, 1849, p. 15

— — Dana, 1852, p. 1067: pl. 73, f. 7.

— — (= Calanus sp.) Giesbrecht, 1892, p. 92.

— — Giesbrecht & Schmeil, 1898, p. 18.

Habitat. Tropical Atlantic.

Calanidae - Calanoida.
Calanus penicillatus Lubbock, ♀.

— — Lubbock, 1856, p. 8: pl. 4.

— — (= *Calanus* sp.) Giesbrecht, 1892, p. 92.

— — Giesbrecht & Schmeil, 1898, p. 18.

Habitat. English Seas.

Calanidae - Calanoidea.

Calanus perspicax Dana, ♀

— — Dana, 1852, p. 1071: pl. 74, fig. 1, a-c.

A synonym of Calanus finmarchicus.
(Esterly, 1905, p. 125).

Calanus plumchrus Marukawa, 1921 - see Neocalanus

Calanidae - Calanoida.

Calanus plumosus Lubbock, ♀.

— — Lubbock, 1854, p. 126: pl. 5, figs. 4-5.

— — (= *C. hyperboreus*) Giesbrecht, 1892, p. 91.

Habitat. North Atlantic.

Calanus plumulosus Calanidae.
Claus, ♀

— — Claus, 1863, p. 174: pl. 26, fig. 15-16.

— — Carus, 1885, p. 332.

— — (= Calocalanus p-) Giesbrecht, 1892, p. 176.

A synonym of Calocalanus plumulosus.

(T. Scott, 1894, p. 39).

see Ischnocalanus plumulosus (Claus, 1863)

Calanus ponticus Kritschagin

— Kritschagin, 1873: 403-406 pl. II, fig. 11-13
= Paracalanus

Syn = Paracalanus

Calanus ponticus Karavaev 1894

C. FINMARCHICUS VAR. PONTICA, KARAVAEV 1894: 37-42, PL. I FIGS. 1-19, N. VAR. ♂, ♀, BLACK SEA

-- Fleminger & Hulsemann 1987: 43-81, ⁷⁵ raised to species rank from C. helgolandicus ponticus

* Calanus ponticus Kritschagin, 1873
has seniority.
Hulsemann placed it in Paracalanus

Calanus princeps Brady, ♂. ♀.

— — Brady, 1883, p. 36: pl. 4, figs. 3-7.

— — Fowler, 1912, p. 496.

— — Giesbrecht, 1892, p. 300 (position doubtful).

A synonym of Macrocalanus princeps (Brady)
(Witt, 1915, p. 37)

— — Giesbrecht & Schmeil, 1898, p. 52 (doubtful).

--, Wolfenden, 1906, p. 25

--, TANAKA, 1956a : 262

Calanidae - Calanoida.

Calanus propinquus Brady, ♀. ♂

— — Brady, 1883, p. 34: pl. 2, f. 1-7: pl. 14, f. 10-11

— — Quidor, 1906, p. 54.

— — T. Scott, 1894, p. 25: 1912, p. 528.

— — Brady, 1915, p. 136!

— — Brodsky, 1967 p. 191

Habitat. Gulf of Guinea: Tropical Atlantic:
Indian Ocean: Australia: Valparaiso:
Rio Janeiro: Malta: France:

- — Giesbrecht, 1888, p. 332.
- — Thompson, 1888, a. p. 147: 1888. c. p. 139.
- — Giesbrecht, 1892, p. 91: pl. 7. f. 31, 34: pl. 8.
- — Giesbrecht & Schmeil, 1898, p. 15. §. 14, 24, 32
- — Giesbrecht, 1902, p. 16: pl. 1, fig. 1-8
- — Wolfenden, 1908, p. 9: pl. 1, figs. 1-4.
- — Wolfenden, 1911, p. 190 ♂
- — Farran, 1929, p. 214.
- — Wilson 1942, p. 173
- —, VERVOORT, 1951, p. 27; FIGS. 14-24, ANTARCTIC ATLANTIC WATERS.
- —, Brodsky, 1962, pp. 709-712
- —, Brodsky, 1960, p. 12

Calanus propinquus Brady, 1883

(2)

- --, Brodsky, 1964. pp. 210-221
- --, Tanaka, 1960. pp. 10-12, fig. 1-8, pl. 1; pl. 2, fig. 1-2
- --; Vervoort, 1957, pp. 26-27.
- - Brodsky, 1967 p. 1442
- - Brodsky, 1967:222
- - (Brodsky) 1965:28
- , Bradford, 1971, p. 15, fig. 8,9
- , Heinrich, "The life histories...", p. 16
- , Seno, Komaki & Takeda, 1963, tab. 2, fig. 4,5
- Bradford & Juliett, 1974, pp. 6,7,9.
- Vervoort, 1957, pp. 23, 24, fig. 3

--, Beklemishev, 1961, p. 164

Brodskii, 1967, p. 191-

Brodskii, 1964, p. 213-27

-- Frost, 1974, p. 81

--, Cushing, 1951, p. 166

-- Vyshkvartseva, 1972, p. 15z.

--, TANAKA, 1964b: 4, 5, TAB. 2, 3

--, VYSHKVARTZEVA, 1977: 15

--, BRODSKY, 1976: 8

--, VYSHKVARTZEVA, 1976: 27, 33, 35, 36, 44, 47, 48, 57; TAB.

1, 3, 4, 6, 8, 9, 11, 13, 14, 16

CALANUS PROPINQUUS

CARD 3

- , VYSHK VARTZ E V A, 1977: 97, 124, 130, 131; FIG. 6, 7, 30
- , Grindley & Lane, 1979, p. 112-117, tbl. 2, figs. 2, 3
- , Brodskij, 1958, p. 27, 28
- , Bradford, 1971, p. 15, figs 8, 9.
- , Hempel, et al., 1983, p. 18.
- , Zvereva, 1975: 251
- , Ramirez, 1969: 35-38, Pl. 4, fig 18-22
- , SCHNACK, 1983: 63-67.
- VORONINA 1975: 60-87, SOUTH ATLANTIC

- Fleminger, 1985: 275-291
- Bjornberg, 1981: 618, fig 205 #7
- De Decker, 1984: 315
- MINODA + HOSHIAI, 1982: 33-37, SOUTH GEORGIA
- ZMIJEWSKA 1983: 33-46, PRYDZ BAY, ANTARCTICA
- VYSHKVARTZEVA 1972b: 162-171, FIG. 5(3).
- MONTÚ + CORDEIRO 1986: 88-, ANTARCTIC
- MONTÚ + OLIVEIRA 1986: 115 -, S. ATLANTIC
- RAMSTEDT 1986: 9- :
- LE BORGNE 1986: 123-
- ALMÆIDA PRADO POR 1986: 517-523, FIG. 2-9,
ANTARCTIC

CALANUS PROPINQUUS BRADY, 1883

CARD 4

- JAZDZEWSKI ET AL. 1982: 214, ~~DRAKE PASSAGE~~
BRANSFIELD STRAIT
- Vervoort, 1972: 96 Antarctica
- Nakamura et al. 1982: 28-30 tab 1 fig 2, 3 S. Indian C
(Antartic)
- FERRARI & DEARBORN 1989: 1318, OFF ANTARCTIC
PENINSULA, SOUTH GEORGIA
- KARAVAEV 1894: 40
- BRADFORD 1988: 74-

Calanus propinquus Brady, 1883

card 5

- Kanayeva 1968: 562-, Scotia Sea
- HUNTLEY ET AL. 1987: 208-
- MARIN 1987: 106-, SCOTIA SEA
- MARIN 1988a: 161-, ANTARCTIC (ATLANTIC SECTOR)
- MARIN 1988b: 439-, SCOTIA & WEDDELL SEAS
- RAZOULS & RAZOULS 1988: 239-
- SEVIGNY & McLAREN 1988: 267-
- ATKINSON & WARD 1988: 329-, SOUTH GEORGIA
- MARIN 1986: 1-177, ANTARCTIC SEAS

Calanus propinquus Brady, 1883

card 6

--Montú 1989:41-, feeding

--SCHNACK-SCHIEL ET AL. 1991:17-, WEDDELL SEA

--P. WARD 1989:144-, S. GEORGIA, ANTARCTIC

--OHMAN ET AL. 1989:1322-

--BRODSKII ET AL. 1983:17-

--RAMÍREZ 1966:5-, LAM. IV FIGS. 1-12, MAR DEL PLATA,
ARGENTINA

--RAZOUKS 1994:25-, PLATES 3, 4, ANTARCTIC

--SCHNACK-SCHIEL + HAGEN 1994:1543; WEDDELL SEA

CALANUS PROPINQUUS BRADY, 1883

7

-- BRODSKY 1972: 8-107, FIGS.

-- BEAUMONT + HOSIE 1997: 121-131, PRYDZ BAY,
ANTARCTIC.

-- QUIDOR 1906: 1, 2, ANTARCTIC

Calanidae - Calanoida
Calanus pygmaeus Claus, ♀.

— — Claus, 1863, p. 174.

— — (= Paracalanus sp.) Giesbrecht, 1892, p. 164.

Habitat. Messina.

Calanidae — Calanoidea.

Calanus quinqueannulatus Krøyer, ♀.

— — Krøyer, 1842-45, pl. 41, §, 3 (no text).

— — Krøyer, 1848, p. 545.

A synonym of Calanus finmarchicus,
(With, 1915, p. 10).

— — (= C. finmarchicus) Giesbrecht, 1892, p. 89.

Calanus ramosus Mori ♂♀.

— — Mori, 1929, p. 208: pl. 10; figs. 9-15.

An abnormal *C. darwini*, Mori, 1932, p. 33.

Habitat S.W. Japan Sea.

Calanidae - Calanoida.

Calanus recticornis Dana, ♀.

— — Dana, 1849, p. 14.

— — Dana, 1852, p. 1064: pl. 73, f. 5, a-b.

— — (= *C. finmarchicus*) Giesbrecht, 1892, p. 89.

Habitat. "Sulu Ocean", Philippines.

Calanus robustior Giesbrecht, 1888 - see Neocalanus

Calanidae - Calanoida.
Calanus rostrifrons Dana, ♀.

— — Dana, 1849, p. 19.

= Rhinocalanus rostrifrons, GREENWOOD, 1976: 16-17

Habitat. Sulu Sea.

Calanidae - Calanoida
Calanus rotundatus Dana, ♀.

— — Dana, 1849, p. 11.

— — Dana, 1852, p. 1049: pl. 72, fig. 1, a-d.

— — Giesbrecht, 1892, p. 301 (position doubtful).

— — Giesbrecht & Schmeil, 1898, p. 52 (doubtful).

Habitat. Pacific Ocean.

Calanidae - Calanoidea,
Calanus sanguineus Dana, ♀

— — Dana, 1849, p. 16.

— — Dana, 1852, p. 1070: pl. 73. f. 11, a-b.

— — Streets, 1877, p. 138.

— — (= *C. finmarchicus*) Giesbrecht, 1892, p. 89.

Habitat. North Pacific; Sulu Sea.

Calanus sanguineus - Calanoida.

var. perspicax Dana, ♀.

-- Dana, 1852, p. 1071: pl. 74, f. 1, a-c.
-- (= C. finmarchicus) Giesbrecht, 1892, p. 89.

Habitat. Feejee Islands.

Calanidae - Calanoidea.

Calanus scutellatus Dana, ♀.

- — Dana, 1849, p. 13.
- — Dana, 1852, p. 1060: pl. 72, f. 11, a-b.
- — (= Temora discaudata) Giesbrecht, 1896, p. 328.

Habitat. "Sulu Ocean", Philippines.

Calanidae - Calanoida -
Calanus septentrionalis (Goodsir), ♀, ♂.

— — Norman + Brady, 1909, p. 111.

— — Goodsir, 1843, p. 339: pl. 6, fig. 1-11.

A synonym of Calanus finmarchicus.
(With, 1915, p. 10).

Calanidae - Calanoidea.
Calanus setuligerus Dana, ♀.

— — Dana, 1849, p. 15.

— — Dana, 1852, p. 1065: pl. 73, §. 6, a-d.

— — Lubbock, 1860, p. 4.

— — Giesbrecht, 1892, p. 301 (position doubtful).

Habitat. Tropical Atlantic.

— — Giesbrecht & Schmeil, 1898, p. 52 (abbreviated).

Calanus simillimus Giesbrecht, ♀.

- — Giesbrecht, 1902, p. 17.
- — Wolfenden, 1908, p. 10: pl. 1, figs. 5-6.
- — Wolfenden, 1911, p. 192
- — Farran, 1929, p. 213.
- —, VERVOORT, 1951, P.P. 11, FIGS. 3-14.

Habitat, Antarctic Ocean.

- —, Brodsky 1967 p. 191
- —, Brodsky 1965: 28
- — Bradford & Jillett, 1974, pp. 6, 79

- C. simillimus, Brodsky, 1962. pp. 709-712
-- --, Brodsky, 1960. p. 12
-- --, Brodsky, 1964. pp. 195-210
-- --, Tanaka, 1960. pp. 12-13, pl. 2, fig. 3-10
-- --; Vervoort, 1957, pp. 25-26.
-- -- Brodsky, 1967, p. 1442
-- -- Brodsky, 1967:224
-- --, Seno, Komaki & Takeda, 1963, tab. 2, fig. 4, 5
-- --, Beklemishev, 1961, p. 165
-- --, Brodskii, 1967, p. 191-
-- --, Brodskii, 1964, p. 200-13
-- --, Cushing, 1951, p. 166
-- -- Vyshkvartseva 1972, p 152.
-- -- Frost, 1974, p. 79, 81.
-- --, TANAKA, 1964b: 4, 5, TAB. 2, 3

CALANUS SIMILLIMUS

CARD 2

- , HIRAKAWA + ZAMA, 1985: 115-120, SOUTHERN CHILE
- , ARCOS, 1976: 90, 99; FIG. 4; TAB. II
- , VYSHKVARTEVA, 1976: 27, 33, 35, 36, 44, 48, 57; TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16
- , VYSHKVARTEVA, 1977: 97; FIG. 5, 30
- , Brodskij, 1958, p. 27-29
- , Hempel, et al., 1983, p. 18
- , VORONINA 1975: 60-87, SOUTH ATLANTIC
- Fleminger, 1985: 275-291
- Björnberg, 1981: 618, fig. 205 #8

— De Decker, 1984: 315

- MINODA + HOSHIAI, 1982: 32-37, SOUTH GEORGIA
- MONTÚ & CORDEIRO 1986: 88-, S. ATLANTIC
- VORONINA + ZADORINA 1974: 32-, S. ATLANTIC

Calanus simillimus

- Nakamura et al. 1982: 28-30 figs 2,3 tab 1 S. Indian Ocean
. Antarctic
- Marin & Antezana, 1985: 963,964 tab 1 Chile
- FERRARI & DEARBORN, 1989: 1318, OFF ANTARCTIC
PENINSULA, SOUTH GEORGIA
- BRADFORD 1988: 74-
- KANAYEVA 1968: 562-, SCOTIA SEA
- MARIN 1987: 109-, SCOTIA SEA
- RAZOULS & RAZOULS 1988: 239-246,
- SEVIGNY & MCLAREN 1988: 267-

Calanus simillimus GIESBRECHT

card 3

- Atkinson & Ward 1988: 329-, South Georgia
- MARIN 1986: 12-, ANTARCTIC SEAS
- DE DECKER 1984: 154-, OFF S. AFRICA
- P. WARD 1989: 144-, S. GEORGIA, ANTARCTIC
- RAZOULS 1994: 28-, FIGS. 5, 6, ANTARCTIC
- BRODSKY 1972: 8-107, FIGS.

Calanidae - Calanoida.

Calanus simplicicaudus Dana, ♀.

- — Dana, 1849, p. 16.
- — Dana, 1852, p. 1073: pl. 74, f. 4, a-b.
- — Giesbrecht, 1892, p. 301 (position doubtful).
- — Giesbrecht & Schmeil, 1898, p. 52 (doubtful).

Habitat, North Pacific.

Calanus sinicus Brodsky ♀ ♂ 1962 ①

-- Brodsky, 1965 p. 63

-- Brodsky, 1967:1442

-- Brodsky, 1967:222

--, Gurjanova, 1972, p. 66-7

--, Brodsky, 1972, p. 253-4

--, Brodskii, 1964, p. 203

--, Krylov, 1967?, p. 248

--, Bradford Jillett, 1974, pp. 6, 7, 9,

-- Vushkvar'tseva, 1972, p. 152.

-- Frost, 1974, p. 81

--, HIROTA, 1979a: 14; Fig. 3

--, VYSHKVARTEVA, 1976: 27, 33, 35, 36, 44, 47, ...
TAB. 1, 3, 4, 6, 8, 9, 11, 13, 14, 16

--, VYSHKVARTEVA, 1977: 97, 130, 131; FIG. 2, 30

--, CHENG et al. 1965: 2.

--, Bradford, 1979, *passim*

--, ~~Chen~~ ^{Chen} ~~Chao~~, 1982, p. 261-263, 266

- Chen, 1980: table 1

- Chen, et al, 1982: 260, *passim*

- Pulsifer, 1975: 101-106, fig. A, B

--, HIROTA, 1981: 21 TAB. 1

-- UYE & KASAHARA 1978: 116

Calanus sinicus Brodsky

card 2

-- Uye 1984b: 172

-- KOGA 1984b: 108, 110-113, FIGS. 4-1, 5-1, 6-1, 8-1-2,
9-2-3, NAUPH11; 127, 129, FIG. 13, TABLE 2-1;
FIGS. 57 (1-2), 61 (1)

-- LI & FANG 1983b: 110-118, FIGS. 1-37, DEVELOPMENT

-- UEDA 1987: 72

-- Uye, 1986e: 35-42, fig 1-4 graphs Japan

-- SHIH 1986: 108.

-- CHEN, Q-C & ZHANG 1986: 274, SOUTH CHINA SEA

Calanus sinicus Brodsky

card 3

- Chen, Q-C 1986: 526-
- KIMOTO ET AL. 1986: 142
- Uye, 1986: 35 - figs 3, 4 Inland Sea, Japan
- McLaren & Sevigny, ^{FROST} 1989: 568 fig 2
- BRADFORD 1988: 74 -
- JASCHNOV 1975: 32-35, FIG. 2, PACIFIC
- SEVIGNY + McLAREN 1988: 267-
- McLAREN ET AL. 1988: 275-, EAST CHINA SEA
- UYE 1988: 285-293, INLAND SEA, JAPAN

Calanus sinicus Brodsky

card 4

- Uye et al. 1987: 428-, Inland Sea, Japan
- UYE & MATSUDA 1988: 281-, " " "
- UYE & YASHIRO 1988: 48, " " "
- TODA & HIROSE 1991: 613-617, FIGS. 1, 2, EGGS, JAPAN
- UYE 1991: 634
- UYE ET AL. 1990: 851-, INLAND SEA, JAPAN
- BOXSHALL 1992: 382
- UYE & MURASE 1997: 3-10, INLAND SEA, JAPAN
- UYE & MURASE 1997: 97-99, " " "

CALANUS SINICUS BRODSKY

(5)

-- NAGANUMA ET AL. 1997: 783-786, INLAND SEA,
JAPAN

CALANUS SISTATUS

--, BRODSKY, 1976: 8

Calanidae - Calanoidea.
Calanus spitzbergensis Krøyer, ♀.

- — Krøyer, 1843-45, pl. 41, f. 1, a-n (no text).
— — Krøyer, 1848, p. 531

A synonym of Calanus finmarchicus.
(With, 1915, p. 10).

- — (= C. finmarchicus) Giesbrecht, 1892, p. 89.
— — (= C. FINMARCHICUS), HO + PERKINS 1985: 586

Calanus strenuus
--Frost, 1974, p. 78.

Temoridae - Calanoida.

Calanus stylifer Dana, ♀

— — Dana, 1849, p. 13.

— — Dana, 1852, p. 1058; pl. 72, f. 9.

— — (= Temora stylifera) Giesbrecht, 1892, p. 328.

A synonym of Temora stylifera.
(T. Scott, 1894, p. 75).

--, (= TEMORA STYLIFERA) VERVOORT, 1965: 100

Calanidae - Calanoida

Calanus syunpuensis Kurasige ♀.

— — Kurasige, 1933, p. 221: pl. 1.

An immature *C. helgolandicus*, Mori, 1932, p. 33.

Habitat, Tokyo, Japan.

Calanus tenuicornis Dana - see Mesocalanus

Calanus tonsus Brady - see Neocalanus.

Calanus tonsus plumchrus

---, Fulton, 1968, p. 34, a syn. of C. plumchrus

--, TANAKA, 1956a : 253, 257

Temoridae - Calanoida
Calanus turbinatus Dana, ♀.

— — Dana, 1849, p. 12.

— — Dana, 1852, p. 1057: pl. 72, §. 8.

A synonym of Temora longicornis,
(T. Scott, 1894, p. 76).

Habitat. "Sulu Ocean", near Borneo,

--, (= TEMORA TURBINATA) VERVOORT, 1965: 99

— — (= *Temora turbinata*) Giesbrecht, 1892, p. 328.

Calanus turbinalus Dana, 1849

--, Shen, 1963, p. 577, a syn. of Temora turbinata
(Dana); a typo?

Calanidae - Calanoida.

Calanus valgus Brady, ♂. ♀.

--, Corral, 1970, p. 70

-- Brady, 1883, p. 33: pl. 3, figs. 1-7.

-- T. Scott, 1894, p. 24.

-- Esterly, 1905, p. 126 (syn. of C. minor).

-- Thompson, 1888, a, p. 147; 1888, b, p. 139.

--, GREENWOOD, 1976: 7

Habitat. Atlantic Ocean: Mouth of Congo:

— — (= *C. minor*) Giesbrecht, 1892, p. 90.

Calanus vulgaris (Dana) - see Undinula

Calanus vulgaris plumulosus - see Undinula

Calanus sp.

①

- , Sato, 1913, no. 2, pl. 2
- , Seno, Komaki & Takeda, 1963, tab. 2
- Shan, 1962, Fulton, 1968, p. 33: a syn. of
C. pacificus
- , Roe, 1972b, p. 318
- , Frolander, 1962, pp. 662.
- , MAIN, 1962: 2, 4, 5, 6, 32, 42, 57, 76, 80, 95, 99-103, 110, 112, 116
- , CARTER, 1965: 353
- sp., FIGUEIRA 1971: 145-146.
- spp., FIGUEIRA 1971: 145.

- , CRISAFI + CRESCENTI 1975: 210-216.
- , Hempel, et al., 1983, pp. 4, 11, 18-19,
- , VAISSIÈRE + SEGUIN, 1984: 3 TAB. 1, 4, 5 TAB. 3
- , MOTODA + MINODA, 1972: 213
- BRUZZONE ET AL. 1979: 79, GULF OF GENOA
- BRUZZONE ET AL. 1982: 235, GULF OF GENOA
- CARLI 1971a: 61-, LIGURIAN SEA
- CARLI ET AL. 1973: 340-, SICILY
- CARLI + VALENTE 1981: 731-, LIGURIAN SEA
- GÓMEZ AGUIRRE + LEÓN ALVAREZ 1987: 54-,
CHAMELA BAY, MEXICO
- GRAINGER + MOHAMMED 1986: 304-, ARCTIC
- SHIH ET AL. 1971: 145-, CANADA - PACIFIC

Calanus sp.

card 2

-- Brodskii et al. 1983: 13-, Fig. 1, general morphology

Calanus spp.

- Uye & Kasahara 1983: 156.

- MALT 1983a: 464

- MAYZAUD 1986a: 174-

- CORNER ET AL. 1986: 264-

-- SHIH ET AL. 1971: 145, CANADA-PACIFIC

diaptomidae

Calchas

mordmanni

--, BRENN 1949: 416.