

in) Calanoida - Temoridae ①
Heterocope valid. ①
Sars, 1863 H. appendiculata.

Syn. Heterocope Sars, 1863, p. 223.
Heterocope Herrick, 1884, p. 130.
Heterocope Sars, 1902, p. 104.
Heterocope Schmeil, 1896, p. 78
c' Ετερος, different, and κωπη = oar.
Heterocope Schmeil, 1898, p. 182.
Cyclopsine (pars) Fischer, 1851, p. 158.
Diaptomus (pars) Willjeborg, 1863, p. 395

Body stout; gen. segt. in ♀ enlarged and protuberant below. 1° antennae slender 25-jointed in ♀; right one geniculate in ♂. Exopod of 2° antennae much narrower than endopod - 6-jointed. Mandibles with 16 cutting teeth simple. Endopod of all the legs small and 1-jointed; 5° legs in ♀ 4-jointed; left one in ♂ much larger - no ovisac.

Heterocope Giesb. & Schmeil, 1898, p. 96.
Heterocope Marsh, 1925, p. 2, Art. 8.

HETEROCOPE SAARS

CARD 2

- BORUTZKY, 1960: 13, IN KEY; 70-71, KEY TO SOME SPP.;
155,
- LABBÉ 1929: 580
- STELLA 1984: 30, DIAGNOSIS; TYPE-SP. H. APPENDICULATA
- STELLA 1982: 26, DIAGNOSIS
- HUMES 1955: 441
- ZHADIN & GERD 1961: 70, 306, 363, 364, 368
- NORDQVIST 1888: 63-65
- VAN DOUWÉ 1909 b: 15-16, KEY, LIST OF SPECIES,
DIAGNOSIS

Heterocope Sars

card 3

- Ferrari 1991:118-

- WILLIAMSON 1991: 788-

- BORUTZKY ET AL. 1991: 75-78, DIAGNOSIS, KEY

Heterocope alpina G. O. Sars, ♀

— — G. O. Sars,

Immature young of Heterocope saliens.
(Sars, 1902, p. 106).

-- NORDQVIST 1888: 65

-- STELLA 1984: 30, = H. SALIENS

Heterocope appendiculata G.O. Sars, ♀, ♂.

— — Sars, 1862, p. 15 (224).

— — Sars, 1902, p. 109; pl. 74.

— — Herrick, 1895, p. 81; pl. 11, fig. 3.

— — De Guerne & Richard, 1889, pl. 18: table.

Habitat, Fresh-water, Northern Europe;
Russia -

--, ACADEMIA SINICA, 1979: 56-57) FIG. 19

--, HALVORSEN & ELGMORK, 1976: TAB. III

- — Nordquist, 1888, p. 66: pl. 7: pl. 8, f. 6.
— — De G. & R., 1889, c, p. 73: pl. 3, f. 12 & 16.
— — Schmeil, 1896, p. 97: pl. 9, f. 1-11.
— — T. Scott, 1903, p. 6.
— — Giesbrecht & Schmeil, 1898, p. 98.
— — Rylov, 1930, p. 248; fig. 81.
— — Jaschnov, 1927, p. 22. Kara Sea.

--, Herbst, 1955, p. 257, 276-7

--, Pesta, 1928, p. 53, fig. 45

--, Litynski, 1922, p. 13

--, Wierzbicka, 1953, p. 532

--, Herbst, 1953, p. 147

— — Borutzky, 1962b: 246

Heterocope appendiculata G.O. Sars

card 2

- , Maemets, 1959, p. 35-36
- , Elgmork, 1981, p. 280, 288
- Kikuchi, 1940: 291, fig. 1a-d.
- Patalas, 1965: 40
- Petkouski, 1959a: 1-4, fig. 10-11
- ROGNERUD & KJELLBERG 1984: 667
- NILSSON & PEJLER 1973: 54-77.
- MÄEMETS & VELDRE 1956a: 16, 19, 77, 79-80,
Pl. VIII, Figs. 5-8 - ESTONIA

Heterocope appendiculata G. O. Sars

card 3

-- Persson 1985: 201-238, Sweden

— Kikuchi, 1936: 279

— Petkouski, 1983: 90-92, fig. 12 A-H

— Patalas & Patalas, 1966: 210, 211, fig. 6.

-- BORUTSKY 1960: 71, FIG. 27 (5); 178, 187

— Kiefer, 1978: 213

-- STELLA 1984: 30

— Smirnov, 1929: 162

-- FLÖSSNER 1985: 515, GERMANY

Heterocope appendiculata G. O. Sars, 1862

card 4

-- Zhadin & Gerd 1961: 254, USSR

-- RYKOV 1932: 254, E. SIBERIA

-- BREHM 1908a: 453 -

-- VAN DOUWFF 1909b: 16, 17-18, FIGS. 46-48, GERMANY

-- AKATOVA 1949: 348 -, KOLYMA RIVER

-- KIEFER 1978c: 69, Pl. 8, 9, EUROPE

-- BORUTZKY ET AL. 1991: 81-, FIG. 24, DIST. - USSR

Hetercope borealis (Fischer), ♀. ①

Cyclopsina — Fischer, 1851, b, p. 158: pl. 8, f. 40-46.
Hetercope robusta Gruber (not Sars), 1878, p. 5: pl. 1, f. 1-13.
Hetercope saliens Nordquist (not Willjeborg), 1888, p. 69: pl. 8,
Hetercope weismanni Imhof, 1890, c, p. 33. [f. 1-5]

Habitat, Norway Lakes: Finland: Hungary:
Switzerland: Nova Zemla: Siberia:

- H- borealis G. O. Sars, 1902, p. 107; pl. 73.
— — Herrick, 1895, p. 81: pl. 10, f. 15.
— — De Guerne & Richard, 1889, pl. 18: table.
— — De G. & Richard, 1889, c. p. 70: pl. 3, f. 17-18.
— saliens Daday, 1890, p. 135: pl. 6, f. 12-14.
— weismanni Schmeil, 1896, p. 94: pl. 7: pl. 8, f. 1-6.
— — Giesbrecht & Schmeil, 1898, p. 98.
— — Sars, 1903, p. 215.
— borealis Rylow, 1930, p. 241: fig. 79.
— — Smirnov, 1929, p. 124.
— — Einsle, 1967, p. 308
— —, Kiefer, 1960, p. 66

Heterocope borealis

card 2

- , Juday & Muttkowski, 1915, p. 29
- , Kiefer & Muckle, 1959, p. 27 (syn. H. robusta
Gruber 1878 non Sars 1863), H. weismanni
Imhof); pp. 28-9, tab. 11.
- , Kiefer, 1958, p. 47
- Geiling and Campbell, 1972, p. 304.
- , MAIN, 1962: 7, 32, 33, 57, 69, 70, 106, 113, 116, 118, 123; Tab. I.
- , ACADEMIA SINICA, 1979: 44, 58
- , ELSTER 1954: 598-609; 1 Tab; 1 fig.
- , ELSTER 1955: 409-410.
- , Kiefer, 1963, p. 37
- , Borutzky, 1962b: 246

Kikuchi, 1933: 139-140, fig. 1-3.

- Löffler, 1958: 22

-- HEBERER 1937b: 77-78, Fig. 3 (H. WEISMANNI asyn.)

- Kikuchi, 1936: 279

HETEROCOPE BOREALIS (FISCHER)

CARD 3

--, BORUTZKY, 1960: 71, FIG. 27(1)

— Kiefer, 1978: 213

— Smirnov, 1929: 162

— Zykoff, 1904: 338, 343, 344

-- RYKOV 1932: 270

-- FINSLE 1975: 99-

-- JARS 1903: 238-, RECORDS-CENTRAL ASIA

H. WEISMANNI, BREHM 1908a: 453-

H. WEISMANNI, VAN DOWWE 1909b: 16-17, FIGS. 40-43, GERMANY

Heterocope borealis (Fischer)

card 4

-- Ban & Minoda 1991: 299-308

-- KIEFFER 1978c: 12-, FIGS., EUROPE

-- BORUTZKY ET AL. 1991: 78-, FIG 23, DIST. - USSR

-- SARS 1898: 331-, PL. 7 FIGS. 1-5, JANA / SIBERIA

-- KIEFFER 1973: 264, 266, TABS. I, II, GERMANY

-- VEKHOV 1997: 25-26, TAB. 1, E. BARENTS SEA + ISLANDS

Remoridae-Calanoidea.

Heterocope caspia Sars, ♀. ♂.

- — Sars, 1897, p. 50: pl. 5, f. 1-15,
- — Giesbrecht & Schmeil, 1898, p. 98
- — Rylow, 1930, p. 254 : fig. 83.
- — Marsh, 1933, p. 27:
- — Damian-Georgescu, 1966: 114-116, fig. 45

Habitat. Caspian Sea,

- Kiefer, 1978: 213

--, Dolzonolskaya, 1970, p. 48, pl. IV, fig. 3

--, Bacescu, 1966, p. 179

--, BORUTZKY, 1960: 71, FIG. 27(4); 186

-- STELLA 1984: 17

-- ZHADIN + GERD 1961: 226, 384, 409, 460, USSR

-- KIEFER 1978c: 69-, Pl. 8, 9, EUROPE

-- BORUTZKY ET AL. 1991: 84, FIG. 26, 27, DIST. - USSR

temoridae - Calanoida,
Heterocope romana Imhof, ♀.

— — Imhof, 1888.

A synonym of Heterocope saliens.
(Sars, 1902, p. 106).

— — De Guerne & Richard, 1889, pl. 18: table

-- STELLA 1984: 30, = H. SALIENS

remoridae - Calanoida.
Heterocope robusta G.O. Sars, ♂. ♀.

— — G. O. Sars,

— — Gruber, 1878, p. 5: pl. 1, f. 1-13: pl. 2, f. 1-7, 9, 14-16.

— — Gruber, 1879, p. 425: pl. 24, f. 1-7, 9, 14.

— — Rückert, 1894: pl. 23-24 (double) figs, 23-30.

—, Kiefer & Muckle, 1959 (H. robusta Gruber, 1878 = H. borealis)

A synonym of Heterocope saliens.
(Sars, 1902, p. 106).

Temoridae - Calanoida.

Heterocope saliens (Lilljeborg), ♀.

Diaptomus - Lilljeborg, 1863, p. 395: pl. 3, fig. 18-31.

Heterocope Matscheck, 1910: p. 39: pl. 8, fig. 102-109.

— Richard, 1891, p. 136: pl. 5, fig. 3.

— G.O. Sars, 1902, p. 106: pls. 71-72.

— Löffler, 1958: 22

Habitat, Norway Lakes, Tatra Mts.

- Heterocope robusta* G.O. Sars, 1862, p. 220.
Heterocope alpina G.O. Sars, 1863, p. 233.
Heterocope romana Imhof, 1888, p. 451.
Heterocope saliens Herrick, 1895, p. 81: pl. 10, f. 14.
 — — De Guerne & Richard, 1889, pl. 18: table.
 — — De G. & Richard, 1889, c, p. 72: pl. 3, f. 4 & 19.
 — — Sowinsky, 1891, p. 45: pl. 2, f. 22-31.
 — — Frič & Vávra, 1894, p. 111: 3 text-figs.
 — — Schmeil, 1896, p. 92: pl. 8, f. 7-9 | text-f. 21-22
 — — Griesbrecht & Schmeil, 1898, p. 97. ^
 — — Matile, 1897, p. 138.
 — — Kessler, 1913^a, p. 546: figs. 1-2. text.
 — — Pesta, 1924, p. 557. = Rylow, 1930, p. 245; fig. 80.

H. saliens ②

— — Kessler, 1913^a, p. 546 : figs. 1-2

— — Klic, 1924, p. 1 :

— — Gajl, 1926, p. 87.

— — Smirnov, 1929, p. 109 : figs. 1-14.

— — Roen, 1952, p. 120

— —, Ravera, 1953, developmental stages. pl. 3, 10, 11. Italy.

--, Roen, 1957, pp. 31-33

Habitat. RUSSIA; Denmark, in sphagnum moor (Roen)

— Haberbosch, 1920 : 108

--, BALDI 1951 : p. 74.

--, TONOLLI & BOSSONE 1954 : pp 85-89, 91-93; Figs. 1, 2.

--, Pesta, 1928, p. 52-3, fig. 44

--, Herbst, 1953, p. 147

--, Kiefer, 1958, p. 46-47

___, Baldi, 1949, p. 62

--, MAIN, 1962: 5, 33, 106, 118

--, FERRARIN & ASCOLINI, 1975: 42

--, COMITA & McNETT, 1976: 103

--, LINDQUIST, 1959: 16; TAB. 4

--, Baldi 1951: Fig. 1, Tab. 1.

--, BRIAN 1927: p. 28.

Heterocope saliens (LILLJEBORG)

card 3

- , Maemets, 1959, p. 35
- Petkovski, 1959a: 1-4, fig. 1-9
- NILSSON & PEJLER 1973: 54-77
- PECORINI 1959: 219
- MÄEMETS & VELDRE 1956a: 19, 77-79, Pl. VIII,
FIGS. 1-9 - ESTONIA
- GLIWICZ & ROWAN 1984: 1298, TATRA MOUNTAINS
- Petkovski, 1983: 88-90, fig 11 A-6
- BORUTSKY 1960: 71, FIG. 27(3)
- Kiefer, 1978: 213

HETEROCOPE SALIENS (LILLJEBORG)

CARD 4

-- STELLA 1984: 3, 14, 17, 30-33, FIG. 13, DISTRIBUTION - ITALY;
GIVES SYNONYMY.

— H. saliens, Tonolli, 1954: 542-545, fig. 1d

-- STELLA 1982: 26-28, FIG. 19

-- FORRO' 1986: 561

-- EKMAN 1904: 40-, SWEDEN

-- PIROCCHI 1947c: 61-, LAIGO MAGGIORE, ITALY

-- TONOLLI 1949e: 48-, ITALY

-- TONOLLI & TONOLLI 1951: ~~52~~-136, ITALIAN ALPS

Heterocope saliens (Lilljeborg)

card 5

- Brehm 1908a: 453-
- PESTA 1911: 118, GERMAN ALPS
- NORDQVIST 1888: 65, 69-70, PL. VIII (1-5), FINLAND
- VAN DOUWE 1909b: 16, 17, FIGS. 43-45, GERMANY
- ELGMORK & FIE 1989: 62-, NORWAY
- ELGMORK ET AL. 1990: 193, SOUTH-CENTRAL NORWAY
- KIEFER 1978c: 68-, ^{PL.} FIG. 8, 9, EUROPE
- BORUTZKY ET AL. 1991: 82-, FIG. 25, DIST. - USSR

MeteroCOPE septentrionalis Juday & Muttkowski
Remoridae - Calanoida

- Tash, 1971, p. 104, 105, 108, fig. 5, CAPE THOMPSON,
ALASKA
- Juday & Muttkowski, 1915, p. 27: f. 4, A.B.C.D.
E, & F: f. 5, A.B.C.: f. 6, A, B.
- Marsh, 1920, p. 5: pl. 2, f. 3, 5, 6, 8-13.
- Marsh, 1933, p. 26: pl. 14, figs. 1-8.
- -- Reed, 1962, pp. 27-50.

Habitat. St Paul Island, Alaska; Herschel
Island, Yukon.

--, BARDACH, 1954: 48, 50, 52

--, REED, 1963: 50

--, Wilson, 1953, p. 316

--Tash, 1967, p. 135.

- Septentrionalis, BRENN 1949: 419.

--, Sutherland, 1982, p. 478

--, Luecke & O'Brien, 1983, passim.

--, PATALAS + SALKI, 1984: 616 TAB.1, 627-8, 633-634

-- CLEMENS ET AL 1968: 25, 26, 69, LAKE TESLIN,
CANADA

-- HAVEL 1985: 145

- HETEROCOPE SEPTENTRIONALIS JUDAY & MUTTKOWSKI (2)
- , BORUTZKY 1960: 71, FIG. 27(2)
 - RAMCHARAN ET AL. 1985: 3218
 - REED 1964: 692-, CANADA
 - REED 1959: 26-, RECORDS - ALASKA, CANADA
 - FERRARI & HAYEK 1990: TAB. 1
 - BOILEAU & HEBERT 1988b: 393-400, MANITOBA
 - GONZALEZ DE INFANTE 1988: 71
 - RAWSON 1959: ^{52,} WOLLASTON LAKE, SASKATCHEWAN
 - TASH 1971: 96-, CAPE THOMPSON, ALASKA

Heterococe septentrionalis Juday & Muttkowski card 3

- Tash & Armitage 1967:132-, Cape Thompson, Alaska
- WILLIAMSON 1991: 794-
- REED 1958b: 665, FORT CHURCHILL, MANITOBA
- REED 1958a: 152, ARCTIC ALASKA
- BOILEAU 1991: 390 -
- REID & REED 1994: 80, YUKON, CANADA

Temoidae — Calanoida

Heterocope soldatovi W. Rylow ♀, ♂

— — Rylow, 1930, p. 251: fig. 82.

— — Rylow, 1922, p. 164: figs. 1-6.

--, BORUTZKY, 1960: 71, FIG. 27(6); 178

-- SMIRNOV 1929: 318, SUIFUN RIVER

-- RYLOV 1932: 255, E. SIBERIA

-- BORUTZKY ET AL. 1991: 87, FIG. 28, DIST. - USSR

Habitat. Russia

Remoridae - Calanoida,
Hetercope weismanni Imhof. ♀

— — Imhof, 1890, c, p. 33.

— — Schmeil, 1896, p. 94: pl. 7: pl. 8, f. 1-6

A synonym of Hetercope borealis.
(Sars, 1902, p. 107).

--, Juday & Muttkowski, 1915, p. 30

-- --, Heberer, 1924. (spermatogenesis)

— — Pesta - 1924 - p. 558.

--, Johnson, 1948: 326

— Heberer, 1931: 208-209, fig 2.

— Elster, 1932: ~~101~~ 101, figs. 1-115.

--, Kiefer & Muckle, 1959, = H. borealis

--, Pesta, 1928, p. 51-2, fig. 43

--, Herbst, 1953, p. 147

--, Kiefer, 1958, p. 47, a syn. of H. borealis

—, Löffler, 1958: 13

-- HEBERER 1937b: 77-78, Fig. 3 - chromosomes
(= H. BOREALIS FISCHER)

-- BREHM 1953: 115, RED-COLORED

-- KOGA 1984b: 103

— Heberer, 1932: 265, passim, fig. 2, 6, 7-9, 15, 16, 19
21, 22, 24-28, 31-32.

HETEROCOPE SP.

-- FREY 1964: 57.