

Microhymenoptera from Zackenberg, North East Greenland

(Hymenoptera: Chalcidoidea, Cynipoidea et Ceraphronoidea)

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Six species from Zackenberg, North East Greenland are reported. They are: *Thomsonisca amathus* (Walk.), *Metaphycus groenlandicus* sp. n., *Elachertus artaeus* (Walk.), *Aprostocetus meltoftei* sp. n., *Alloxysta victrix* (Westw.), and *Dendrocercus aphidum* (Kieff.).

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During the summer of 1996, Dr. Hans Meltofte (Zoological Museum, Copenhagen) collected arthropods using pan traps at Zackenberg in North East Greenland (74°28'N 20°38'W). Four species of Chalcidoidea, one of Cynipoidea, and one of Ceraphronoidea are present in the material. Of the six species five are new to Greenland. Of the described species, one is Holarctic and three are Palaearctic. In the list below the abbreviations for trap types and stations used on the labels are mentioned in brackets after the date of capture; G = yellow pan traps, P = white pan traps, K = clear pan traps. After the name of each species a reference is given for the work used at determination. The material treated below comprises all the specimens collected of the relevant groups. The material is deposited in the collection of the Zoological Museum, University of Copenhagen.

Chalcidoidea

Encyrtidae (Encyrtinae)

Thomsonisca amathus (Walker, 1838) (Trjapitzyn, 1989)

2 ♂: 1 ♂ 22.7. (G, st. 6), 1 ♂ 19.8. (P, st. 4). Palaearctic, first record from Greenland.

Metaphycus groenlandicus sp. n. (Figs 1-3)

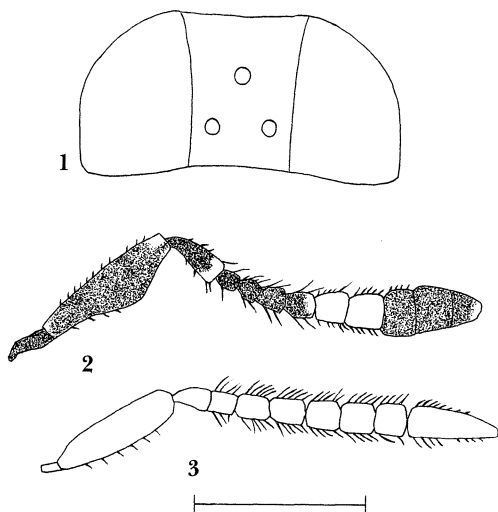
Holotype ♀: N.E. Greenland, Zackenberg 12.8.

1996 (G, st. 5, No. 4) (H. Meltofte). Paratypes (6 ♀, 5 ♂): same locality, 1 ♂ 22.7.1996 (K, st. 4, No. 4), 3 ♀ 29.7.1996 (K, st. 5, No. 4, and P, st. 5), 1 ♀, 1 ♂ 5.8.1996 (G, st. 5, No. 4, and P, st. 4, respectively), 1 ♂ 19.8.1996 (K, st. 4, No. 4), 1 ♀, 2 ♂ 2.9.1996 (♀: P, st. 4; 2 ♂: K, st. 4, No. 4) (all H. Meltofte); E. Greenland, Gåselandet, Faxø Sø, 1 ♀ 1958 (Chr. Vibe).

Description. Female: total length 1.0-1.5 mm (holotype 1.5 mm). Head light brown to orange, blackened below eyes and posteriorly; antenna blackish, tip of A1, A2 and A11 white, A7-A8 entirely white, A6 may be more or less white; mesosoma dorsally blackish except for pronotum which is yellowish or light brown as are sides of mesosoma except for somewhat blackened metapleura; anterior margin of pronotum black, shoulders with a black spot; legs yellow, each tibia with 2 dark brown bands; wing hyaline; mesosoma blackish dorsally, light brown ventrally.

Head reticulate-coriaceous, from above (Fig. 1) as wide as thorax, 2.1 times as wide as long; frontovertex 1.5 times as long as wide; ocelli arranged in an equilateral triangle, the lateral ocelli separated from inner orbits by hardly less than their diameter. Head from in front 1.1 times as wide as high; malar space fully half height of an eye. Maxillary palpi 4-segmented, labial palpi 3-segmented. Antenna (Fig. 2) with scape flattened, 3 times as long as wide; pedicellus slightly shorter than A3-A5 combined; A3-A8 each about as long as wide or (smaller specimens) slightly transverse.

Mesosoma 1.3 times as long as wide and almost 1.3 times as wide as high. Mesoscutum dull, finely



Figs. 1-3. *Metaphycus groenlandicus* sp. n. – 1, female head, dorsal view; 2, female antenna; 3, male antenna. Scale bar 0.25 mm.

reticulate, with no trace of notauli, rather densely and evenly hairy. Scutellum sculptured as mesoscutum, slightly less hairy.

Spur of mid tibia 0.8 times as long as metatarsus. Fore wing slightly overreaching tip of metasoma (holotype), sometimes just reaching tip or even slightly shorter; marginal cilia very short.

Metasoma hardly shorter than head and mesosoma combined. Ovipositor not exerted.

Male: total length 0.8-1.2 mm. Characters much as in female except for antenna (Fig. 3) which is almost uniformly brown with scape fully 3.5 times as long as wide, and A3-A8 each not or slightly longer than wide (antennae of all males examined rather cracked).

A rather distinct species on account of the slender antenna, lack of notauli, and dark dorsal areas of mesosoma. In Timberlake's (1916) key *groenlandicus* runs to *M. coquilletti* (Howard, 1898), but this species has ocelli in an acute-angled triangle, the lateral ones being separated from inner orbits by only one fourth of their diameter, frontovertex twice as long as wide, and A3-A8 more transverse than in *groenlandicus*. *M. groenlandicus* runs to *M. stagnarum* Hoffer, 1954 in Trjapitzyn's (1978) key, but *stagnarum* has frontovertex twice as long as wide, scape only 2.5 times as long as wide, and notauli indicated. *M. groenlandicus* runs to *M. sibiricus* Sugonjaev, 1977 in Trjapitzyn's (1989) key, but *sibiricus* has antennal club 5 times as long as A8, and club brighter coloured than in *groenlandicus*; also it is a smaller

species, ♀ being 1.0-1.1, ♂ 0.8-0.9 mm. *M. groenlandicus* runs to *M. melanostomatus* (Timberlake, 1916) and *M. lounsburyi* (Howard, 1898) in Viggiani & Guerrieri's (1988) key, but both these species have antennal segments less elongate than in *groenlandicus*. According to this key *groenlandicus* belongs to the *zebratus* species group due to its 4-segmented maxillary palpi. According to an anonymous identification label on the *groenlandicus* specimen from Faxe Sø, this should be "a dark variety" of *M. punctipes* (Dalman, 1820) or "an American species". According to fig. 60 in Dalman (1820), however, the antenna of *punctipes* is much stouter than in *groenlandicus*; the scape of *punctipes* is hardly 2.5 times as long as wide, and the flagellar segments are distinctly broader than in *groenlandicus*, and the club thicker; *punctipes* also has an orange yellow or yellowish mesoscutum. Jensen (1983) suggests *punctipes* to be "probably a nomen dubium". He was unable to recognize a type specimen in any relevant Swedish museum collection. *M. groenlandicus* is the first species of *Metaphycus* recorded from Greenland.

Eulophidae (Eulophinae)

Elachertus artaeus (Walker, 1839) (Askew, 1968)
2 ♂ 1.7.1996 (G, st. 5, No. 4). Palaearctic, first record from Greenland.

Eulophidae (Tetrastichinae)

Aprostocetus (Aprostocetus) meltoftei sp. n. (Figs 4-6)
Holotype ♀: N.E. Greenland, Zackenberg 8.7.1996 (P, st. 5) (H. Meltofte). Paratypes (3 ♀, 1 ♂): same locality, 1 ♀, 1 ♂ 22.7.1996 (♀: K, st. 5, No. 4; ♂: P, st. 5), 1 ♀ 5.8.1996 (G, st. 5, No. 4), 1 ♀ 12.8.1996 (K, st. 6, No. 4) (all H. Meltofte).

Description. Female: total length 1.0-1.3 mm (holotype 1.1 mm). Colour blackish, faintly greenish metallic; eyes red; antennae, legs, and metasoma ventrally dark brown; dorsellum light brownish; tegulae over most of surface, femora apically, both ends of tibiae, and base of tarsi yellowish brown.

Head about as wide as thorax (collapsed), with fine reticulate microsculpture, mesoscutum with longitudinal reticulate microsculpture with meshes at least three times as long as wide, scutellum with finer longitudinal reticulate microsculpture, dorsal areas of propodeum with fine reticulate microsculpture.

Malar space 0.7 times the height of an eye, malar sulcus without fovea; eye about 1.3 times as high as long; mouth and malar space equal. An-

tenna (Fig. 4) inserted at level of lower margin of eye, scape hardly shorter than height of an eye, not reaching anterior ocellus; antenna with following relative length:width ratios of segments: I 6.0:2.0, II 3:1.5, III 2.6:1.2, IV 2.0:1.4, V 2.0:1.4, club 5.1:2.0. Spine on A8 about 0.4 length of segment. Pedicellus plus flagellum a little shorter than width of mesoscutum (14:15).

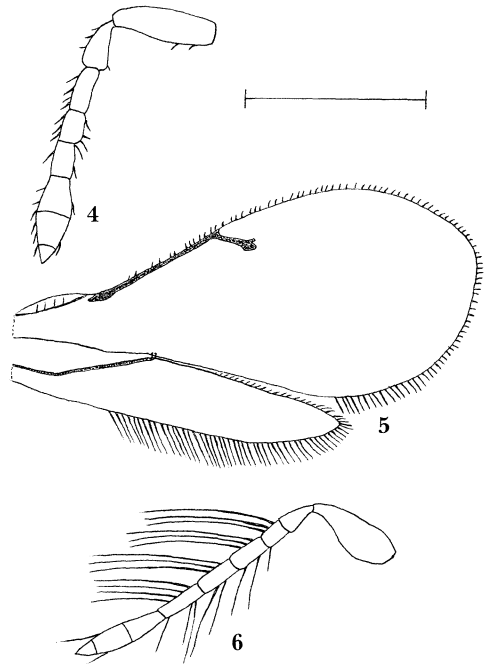
Mesosoma one and a third times as long as wide and one and a quarter times as wide as high. Pronotum short. Mesoscutum with a single row of 3-4 adnotaular setae along inner side of each distinct notauli, with fine median longitudinal line. Scutellum about as long as wide; setae of scutellum equal, their length shorter than distance between submedian lines; these distinct, nearer to sublateral lines than to each other, enclosing a space about twice as long as wide. Dorsellum about 2.5 times as wide as long. Propodeum not deeply emarginate, medially hardly as long as dorsellum, with a short longitudinal carina medially which is one-fifth as long as scutellum, propodeal callus with 2 setae.

Legs slender, hind femora 4.0-4.6 times as long as wide; spur of mid tibia one-third the length of basitarsus; fourth segment of middle and hind tarsi longer than third; hind coxa fully twice as long as wide, finely reticulate. Fore wing (Fig. 5) hyaline, 2.2 times as long as wide; submarginal vein with four dorsal setae; marginal vein with about 14 setae along front edge, 1.5 times as long as submarginal vein, 3.5 times as long as stigmal vein; speculum small, extending slightly below marginalis. Hind wing (Fig. 5) almost 5.4 times as long as wide; marginal cilia almost 0.4 times the width of wing.

Metasoma acuminate at apex, smooth, partly reticulate, one and a quarter times as long as head and mesosoma combined, hardly narrower than thorax; cercal setae just overreaching tip of gaster, longest seta of each cercus about twice the length of second longest, slightly kinked; ovipositor overreaching apical tergite by hardly 0.2 times the length of metasoma, ovipositor sheaths plus postcercal about 0.4 times length of hind tibia.

Male: total length 1.0 mm. Antenna (Fig. 6) rather cracked in the unique specimen and difficult to reconstruct accurately; scape equal to height of an eye; pedicellus plus flagellum 1.5 times the width of mesoscutum.

This species is distinct on account of antennal structure and small body size. The species is named after the collector. It runs to *A. (A.) caudatus* Westwood, 1833 and *A. (A.) rhipheus* (Walker, 1839) in Graham's (1987) key, but the female



Figs. 4-6. *Aprostocetus meltoftei* sp. n. – 4, female antenna (scale bar 0.25 mm); 5, female wings (scale bar 0.50 mm); 6, male antenna (scale bar 0.25 mm).

of *caudatus* has malar space only about 0.6 times the height of an eye, scape only 0.7 times height of eye, A3 at most 1.8 times as long as wide, and marginal cilia of hind wing 0.5-0.6 times width of wing, cf. Graham (1987) for further separating characters. The male of *meltoftei* has scape more narrowed in apical half and genitalia broader and shorter than in *caudatus*. The female of *A. rhipheus* and of the similar *A. (A.) meroe* Graham, 1987 differ from *meltoftei* in being larger (at least 1.2 mm), in having scape about 3.5 times as long as wide, A3-A5 subequal or decreasing only very slightly in length, and in having malar space only 0.55 height of eye. Further, *rhipheus* differs from *meltoftei* in having propodeum medially only 0.5-0.7 times as long as dorsellum. The males of *caudatus*, *rhipheus* and *meroe* differ from the male of *meltoftei* in having pedicellus plus flagellum at least 1.70-1.85 times the width of mesoscutum. Further, the male *meltoftei* has digitus of genitalia broader (less narrowed basally) and aedeagus more pointed at apex than in both *caudatus*, *rhipheus*, and *meroe*. *A. meltoftei* runs to *Tetrastichus pachyneurus* (Ratzeburg, 1844) in Kostjukov's (1978) key, but the female of this species has A1

shorter than A2-A3 combined, and A2 shorter than A3. *Aprostocetus meltoftei* runs to *Tetrastichus chlamytis* Ashmead, 1896 in Burks' (1943) key, but this species is 2.0 mm long, it has A3 shorter than A4, and submarginal vein with only two dorsal setae. *A. meltoftei* is the first representative of the large genus *Aprostocetus* hitherto reported from Greenland.

Cynipoidea

Alloxystidae

Alloxysta vitrix (Westwood, 1833) (Dalla Torre & Kieffer, 1910)

1 ♀ (var. *infuscatus* Kieffer, 1902) 22.7.1996 (P, st. 4). Holarctic; this species has earlier been recorded from Greenland, cf. Burks (1979).

Ceraphronoidea

Megaspilidae (Megaspilinae)

Dendrocerus aphidum (Kieffer, 1907) (Dessart, 1972)

2 ♀, 3 ♂: 1 ♂ 22.7. (K, st. 5, No. 4), 1 ♂ 5.8. (P, st. 5), 1 ♂ 19.8. (G, st. 3, No. 4), 1 ♀ 19.8. (P, st. 5), 1 ♀ 26.8. (P, st. 2) Palaearctic, first record from Greenland. As with the other species of *Dendrocerus* known from Greenland, *D. bifoveatus* (Kieffer, 1907) (Buhl, 1995), the Greenlandic specimens of *aphidum* agree well with the description and figures in Dessart (1972), also in the structure of male genitalia.

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