The first Palaearctic record of the mycetophilid genus *Drepanocercus* Vockeroth (Diptera: Mycetophilidae)

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Söli, G. E. E.: The first Palaearctic record of the mycetophilid genus *Drepanocercus* Vockeroth (Diptera: Mycetophilidae). *Ent. scand.* 24: 73–77. Copenhagen, Denmark. April 1993. ISSN 0013-8711.

Drepanocercus spinistylus sp. n. is described, based on one male captured in a Malaise trap in Jostedalen, West Norway. The genus was previously monotypic, represented by the Nearctic species, *Drepanocercus ensifer* Vockeroth, 1980. The male genitalia of both species are figured, and a revised diagnosis of the genus is given. *Drepanocercus* is suggested to be most closely related to *Paratinia* Mik, 1874.

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Introduction

The genus *Drepanocercus*, with one included species, *D. ensifer* was described by Vockeroth (1980) on material from the Highlands, North Carolina, in North America. In addition, Vockeroth (1980) gives several other records from the southeastern parts of Canada (Quebec and Nova Scotia) and the eastern parts of North America (Maine, New Hampshire, Vermont, New York, Tennessee, North Carolina and Georgia).

During a study of invertebrates in Jostedalen (W Norway) in 1988, one male obviously belonging to *Drepanocercus* was collected in a Malaise trap. The locality is a dense birch forest with a rich undergrowth of ferns and perennial herbs, situated at Fåberg, Øyastrondi (61°40'N, 7°20'E), about 560 m.a.s.l.

For the purpose of comparison, paratypes of *D. ensifer* were borrowed from the Canadian National Collection, Ottawa. The male genitalia of *D. ensifer* are figured here for the first time.

The terminology follows McAlpine (1981) and Matile (1990).

Genus *Drepanocercus* Vockeroth

(Figs 1–3)

Drepanocercus Vockeroth, 1980: 538. Type species: *Drepanocercus ensifer* Vockeroth, 1980, by original designation.

Other included species: *Drepanocercus spinistylus* sp. n.

Revised diagnosis (based on Vockeroth 1980: 538). – Total length 3.3 to 7.1 mm.

Head (Fig. 2A). Antennae of male 2.4 to 2.8 times as long as thorax. Three ocelli. Frontal suture encircling median ocellus. The small plate above the median ocellus with a few setae. Two additional sutures present on frons, one running from the lateral ocellus to the border of the compound eye, the other as a broken line stretching from the compound eye towards the anterior border of the median ocellus. Eyes with a broad and moderately deep emargination above antennal base, with very short and scattered setae. Frons bare between ocelli and antennal bases. Face weak, bare. Clypeus large, with strong setae. Palpus with five palpomeres, their relative lengths 1 : 1 : 2 : 3–4 : 5. Third palpomere with sensory sensilla evenly distributed along most of the ventral, medial and dorsal surfaces.

Thorax (Fig. 3A). Scutum with mixed long erect and short subappressed acrostichal, dorsocentral and sublateral setae, the intervening areas bare. Antepronotum with both small and large setae. Proepisternum bare. Paratergite distinct. Medioter-

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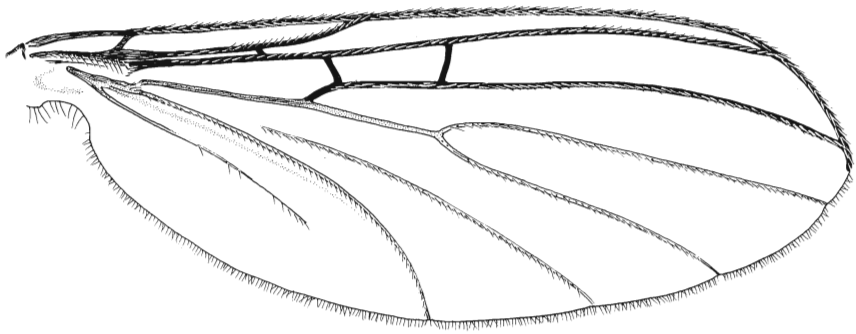

Fig. 1. *Drepanocercus spinistylus* sp. n., right wing.

gite and laterotergite bare. Phragma large, rounded or ending in a straight line. Metanotum with at least one strong erect seta medial to base of halter. Prosternum, mesopleuron and metapleuron bare.

Wing (Fig. 1) unmarked, densely clothed with microtrichia, without macrotrichia. Costa produced about ⅓ along the distance from apex of R_{4+5} to apex of M_1. Sc ending in costa; crossvein Sc-r faint, but traceable. R_{2+3} present, enclosing a small cell about three times as long as wide. Point of furcation for M situated below, or slightly before R_{2+3}. Point of furcation for CuA very close to base, basal protion of CuA_1 weak. A_1 well developed, with dorsal setae. All major veins except Rs, R_{2+3}, basal portion of r-m, M and stem of median fork with numerous dorsal setae.

Hind coxa with a complete vertical row of about 8 to 10 long strong setae. Tibial bristles weak, the longest at most subequal in length to tibial diameter. Tarsal claws each with a small ventral tooth.

Abdomen with sternite 1 bare. Sternites 2 to 7 each with a pair of submedian to sublateral fold lines.

Male terminalia. Tergite 7 and sternite 7 at most slightly shorter than sclerites of segment 6. Tergite 8 and sternite 8 distinctly shorter than sclerites of segment 7. Tergite 9 free, subquadrate, broader than long. Gonocoxites separated apicoventrally by a small membraneous area. Gonostylus broadly articulated to the dorsolateral part of the gonocoxite, bearing several strong apicoventral setae or spines.

Female terminalia. As in Vockeroth (1980: 538).

Systematics

Vockeroth (1980) included *Drepanocercus* in the tribe Gnoristini in the subfamily Sciophilinae. This is correct according to the present delimitation of these taxa, but – as mentioned by Vockeroth – the monophyly of Gnoristini must be questioned. This may even apply to the subfamily as a whole.

Vockeroth (1980) notes that *Drepanocercus* differs markedly from other genera of the tribus Gnoristini in the Holarctic region by having CuA forked very near its base. This is not fully correct as the genus *Apolephthisa* Grzegorzek, 1885 also shows this character, at least *A. subincana* (Curtis, 1837). However, *Apolephthisa* has numerous setae on the laterotergite in contrast to *Drepanocercus*. In the key given by Hutson et al. (1980) for the British fauna, *Drepanocercus* would run to *Grzegorzekia* Edwards, 1942. However, *Grzegorzekia* has a well developed cubital fork. A key which includes *Drepanocercus* is given by Vockeroth (1981).

Drepanocercus shares several characters with *Paratinia* Mik, 1874, to which it appears most closely related. Among these characters are the nearly naked eyes, the bare proepisternum, the distinct paratergite and the well developed phragma. Some of these characters may be synapomorphies. Notwithstanding, *Paratinia* has traditionally been placed in the tribe Sciophilini due to the presence of setae on the apical half of the wing membrane.

Drepanocercus spinistylus sp. n.

(Figs 1, 2)

Type material. Holotype ♂: NORWAY, SFI: Luster, Jostedalen, Fåberg, Øyastrondi, 24.vi–12.vii.1988, G. E. E. Söli (ZMBN No. 159).

Diagnostic characters. – The male is separable from *D. ensifer* in being about twice as large, and in having well developed empodia and several prono-

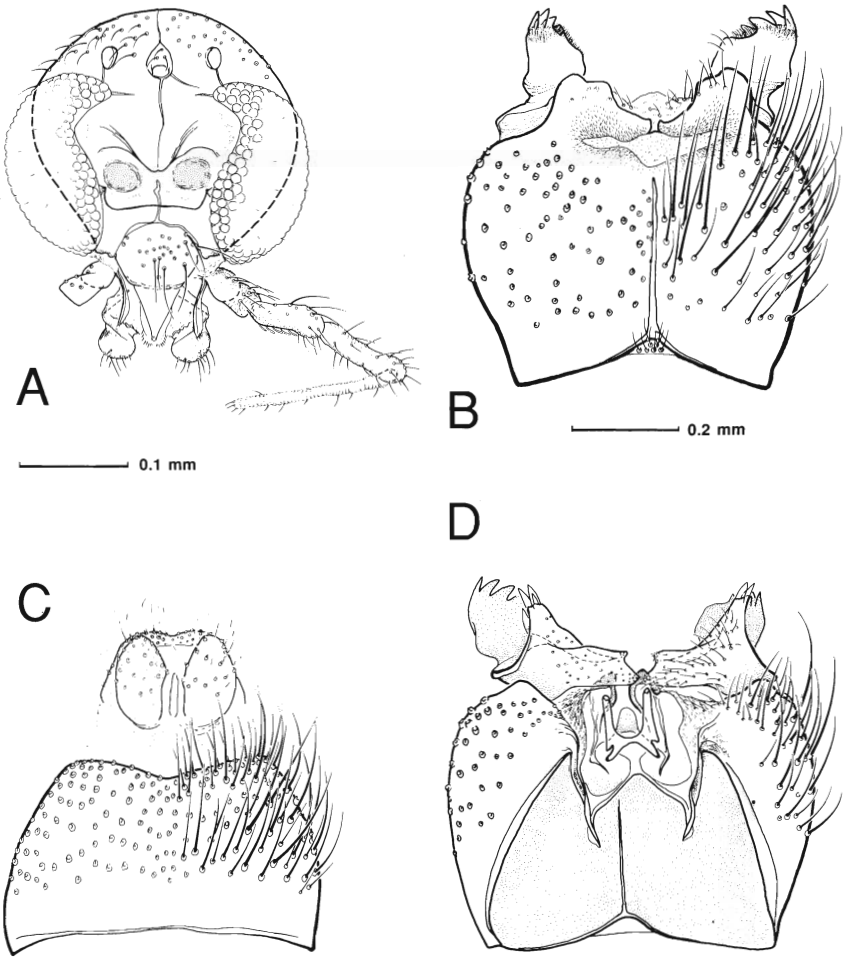

Fig. 2. *Drepanocercus spinistylus* sp. n.: (A) head; (B–D) male terminalia: (B) ventral view; (C) tergite 9 and proctiger; (D) dorsal view, tergite 9 removed.

unced teeth along apicodorsal and apicoventral margins of the gonostylus (Figs 2B–D, 3B–D).

Description (male (n=1)). – Total length 7.13 mm. Wing length, measured from the extreme base of A_1 (i.e. from the distal median plate) 5.11 mm. Total length / wing length 1.40. Wing length / length of profemur 3.52.

Head (Fig. 2A). Brown, including mouthparts and antennae. Flagellum 4.03 mm, or 2.7 times as long as thorax. First and second flagellomeres 5.1 and 3.9 times as long as wide, respectively. Length of first flagellomere / length of second flagellomere 1.3. All flagellomeres with both small and large trichia, first two flagellomeres also with some setae proximally. Very few setae between the ommatids. Frons bare between ocelli and antennal sockets. Plate above median ocellus with 3 small setae. Trichia above antennal socket minute. Frontal tubercle broad with a small apical incision. Face narrow and moderately sclerotized, bare. Tentorium very broad. Clypeus strongly sclerotized, shield like, with 25 long setae. No suture separating postclypeus from anteclypeus. Labrum bare, about half as long as clypeus. Stipes each with 4–6 setae. Palpus 5-segmented, but with the two first palpomeres intimately connected. Lacinia long, about as long as palpomeres 1 and 2.

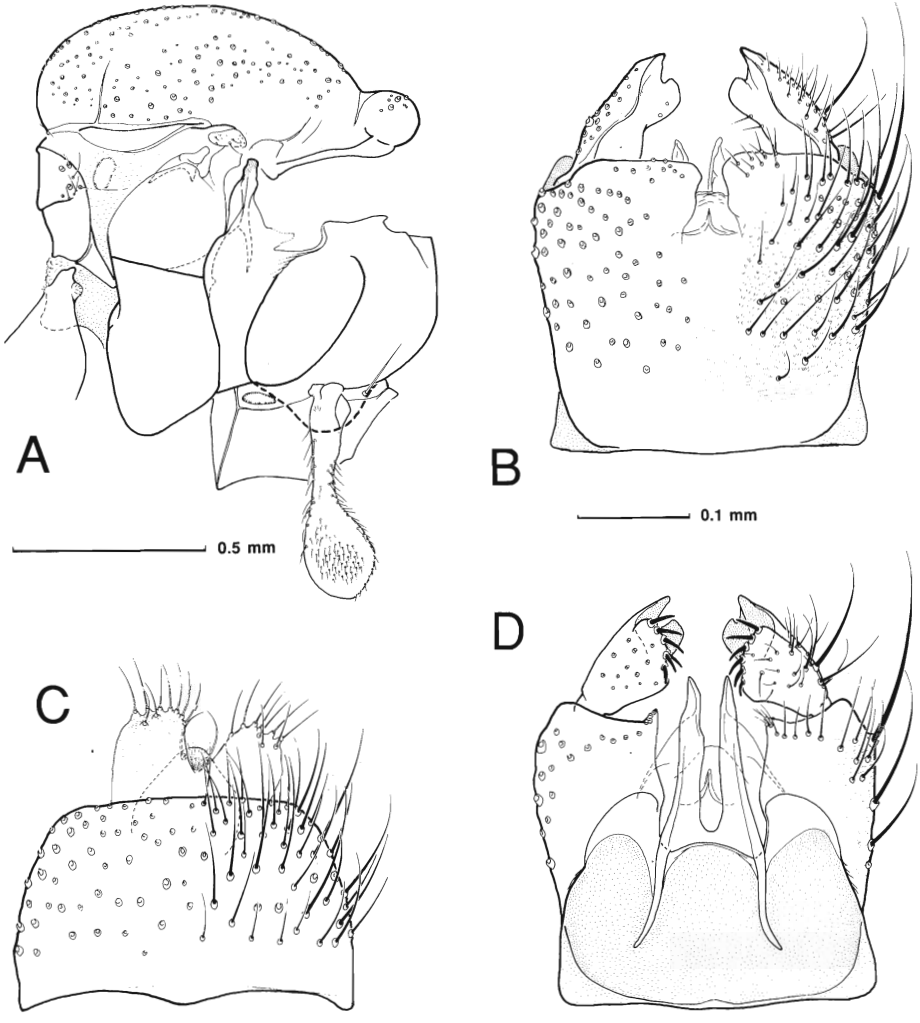

Fig. 3. *Drepanocercus ensifer* Vockeroth: (A) thorax, outline of phragma indicated by a broken line; (B–D) male terminalia: (B) ventral view; (C) tergite 9 and proctiger; (D) dorsal view, tergite 9 removed.

Thorax. Brown. Total length 1.50 mm. Scutellum with 8 setae on each side. Halter light brown; knob of halter with numerous small setae. Two small and one long erect setae posteriorly of base of halter.

Wing (Fig. 1). Sc with 23–26 dorsal setae. R_1 and R_{4+5} with several ventral setae, most numerous towards apex. M_1 and M_2 with a few ventral setae. Wing length / length of R_1 2.35. Wing length / length of R_{4+5} 1.90. Length of r-m /length of M-petiole 0.50. Length of M_1 / length of M-petiole 2.90; length of M_2 / length of M-petiole 2.25.

Legs. Light brownish. All tibia with numerous setae. Empodia well developed. Tibial spur formula (length of spur to the apical diameter of tibia): 1.7; 2.3, 2.6; 2.5, 2.7. Lengths (in μm):

	fe	ti	ta1	ta2	ta3	ta4	ta5
p1	1450	1910	1700	850	550	320	275
p2	1750	2345	1655	645	390	275	230
p3	2230	3035	1930	530	320	255	230

Abdomen. Brown. Tergite 7 and sternite 7

slightly shorter than tergite 6 and sternite 6, respectively. Tergite 8 about ⅔ as long as tergite 7; sternite 8 about half as long as sternite 7.

Terminalia (Figs 2B–C). Brown. Tergite 9 (epandrium) subquadrate, densely covered with setae. Cerci and hypoproct distinct, both with numerous setae. Sternite 9 forming a minute, triangular plate with 8 small setae, fused with the mediobasal part of the gonocoxite. Gonocoxites fused medioventrally along most of their lengths; posteriorly forming two well sclerotized lobes connected by thin mebraneous areas. Gonocoxal apodemes strong. The combined parameres H-shaped, situated dorsal to the aedeagus, each paramere rather small. Aedeagus blunt and weakly sclerotized. Two distinct lobes situated ventral to the aedeagus, which appear to be connected to the apicoventral lobes of the gonocoxites. Each gonostylus forming distinct dorsal and ventral lobes. The dorsal lobe has 3 to 4 stout apicolateral spikes which appear to be modified megasetae, and a moderately sclerotized extension pointing medially. The ventral lobe is more rounded, bearing 4 apicolateral teeth.

Additional material studied

Drepanocercus ensifer Vockeroth, 1980. – Paratypes (CNC No. 16054): Canada, Quebec, Masham Twp., Gatineau Co., 1 ♂ 1.vii.1974, D. M. Wood; U.S.A., Tennessee, Great Smoky Mt. Nat. Park, Indian Gap to Clingman's Dome, 5200–6600', 1 ♀ 6.viii.1957, J. G. Chillcott.

Discussion

Studies of the invertebrate fauna in the Jostedalen area, close to the largest glacier in continental Europe, have revealed several very interesting species. Unfortunately, only a restricted number of dipteran families have been included in these studies, among them mycetophilids (Söli, in press) and chironomids. It is worth mentioning that the chironomid genus *Vivacricotopus* Schnell & Sæther, 1988, which has its type locality in Jostedalen, has a similar distribution to that of *Drepanocercus* (see Cranston et al. 1989: 252). Today, both *Vivacricotopus* and *Drepanocercus*, have their only Palaearctic representatives in the Jostedalen area.

Revised manuscript accepted February 1993.

Acknowledgements

My best thanks to Drs J. R. Vockeroth and H. Walther, Canadian National Collection, Ottawa, for loan of material. One of the paratypes of *D. ensifer*, the female, was most kindly presented to the Museum of Zoology, Bergen. The field work in Jostedalen was funded by the Norwegian Water Resource and Electricity Board (NVE).

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