

On two new gall midges (Dipt., Cecidomyiidae) from the Netherlands

by

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The purpose of this paper is to describe two new gall midges from the Netherlands. The first gall midge, *Campylomyza edwardsi* sp.n., belongs to the subfamily Lestremiinae, tribe Campylomyzariae, genus *Campylomyza* (*Amblyspatha* Kieff., ♂; *Cylophora* Kieff.; *Neurolyga* Rond.?; *Prionellus* Kieff.; *Urosema* Kieff.?) This genus was erected by MEIGEN (1818) and studied in detail by EDWARDS (1938). I named the species in honour of the late Dr. F. W. EDWARDS, who collected the first male specimen of this species at Sherrard's Wood, Welwyn (Herts) in England on 22.X.1936. Having only one specimen he refrained from naming it. However, a male, taken by me in an emergence cage used for phenological observations on the raspberry cane midge (*Thomasiniana theobaldi* Barnes) at Wageningen, 21.IV.1957, did not show definite differences from EDWARDS's specimen.

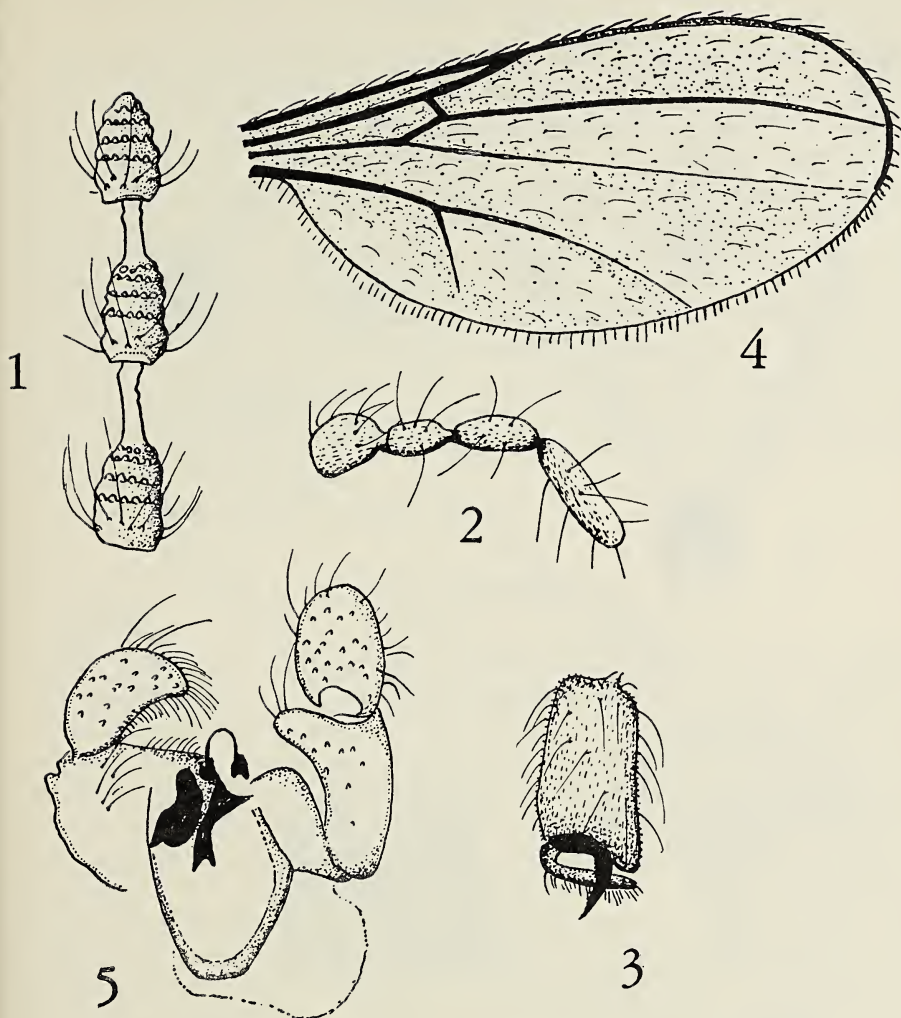
It is a small insect strongly resembling *C. pumila* Winn., but the male genitalia show marked differences from *pumila* and related species.

Campylomyza edwardsi sp.n.

Male. Length about 1.7 mm. Antennae with 2 + 12 segments. The first six flagellar segments each with two complete crenulate whorls and another incomplete one distally; the remaining ones similar, but with three complete crenulate whorls. Sensoria rudimentary. The neck of the penultimate segment being about two-thirds as long as the basal part (fig. 1). Palpi 4-segmented, fourth segment about 1.6 times longer than third (fig. 2). Thorax and abdomen mainly dark, membranous parts light reddish. Halteres pale yellow. Legs with dark femora and tibiae. Claws with four fine serrations as in *C. flavipes* Meigen. Last tarsal segment about equal to the fourth in length and thickness. Empodium hairy beneath and as long as the claws (fig. 3). Wings hairy over the whole surface and rather broad; length 1.7 mm. Costa reaching tip of M; Cu 2 straight and ending abruptly well before the wing margin (fig. 4). Genitalia resembling those of *C. lobata* Edwards in having the basal clasp segments produced apically into a thumb-like lobe. Distal clasp segment somewhat curved, having long erect hairs on the inner surface as well as at the tip. Tegmen of a very characteristic shape, similar to that of *C. fusca* Winn. Style large and broadly rounded apically (fig. 5).

Holotype: Cecid. 747 in the NIJVELDT collection.

Females of the second gall midge species were observed ovipositing in the inflorescence of *Phalaris arundinacea* L. near Kapelle on June 13th 1956. The eggs are translucent white, 0.5 mm long and 0.1 mm broad. Up to 12 eggs were found in a single floret (fig. 17). After about 5 days the eggs hatched; the yellow larvae prevented the formation of seed. Migration of the larvae to the soil

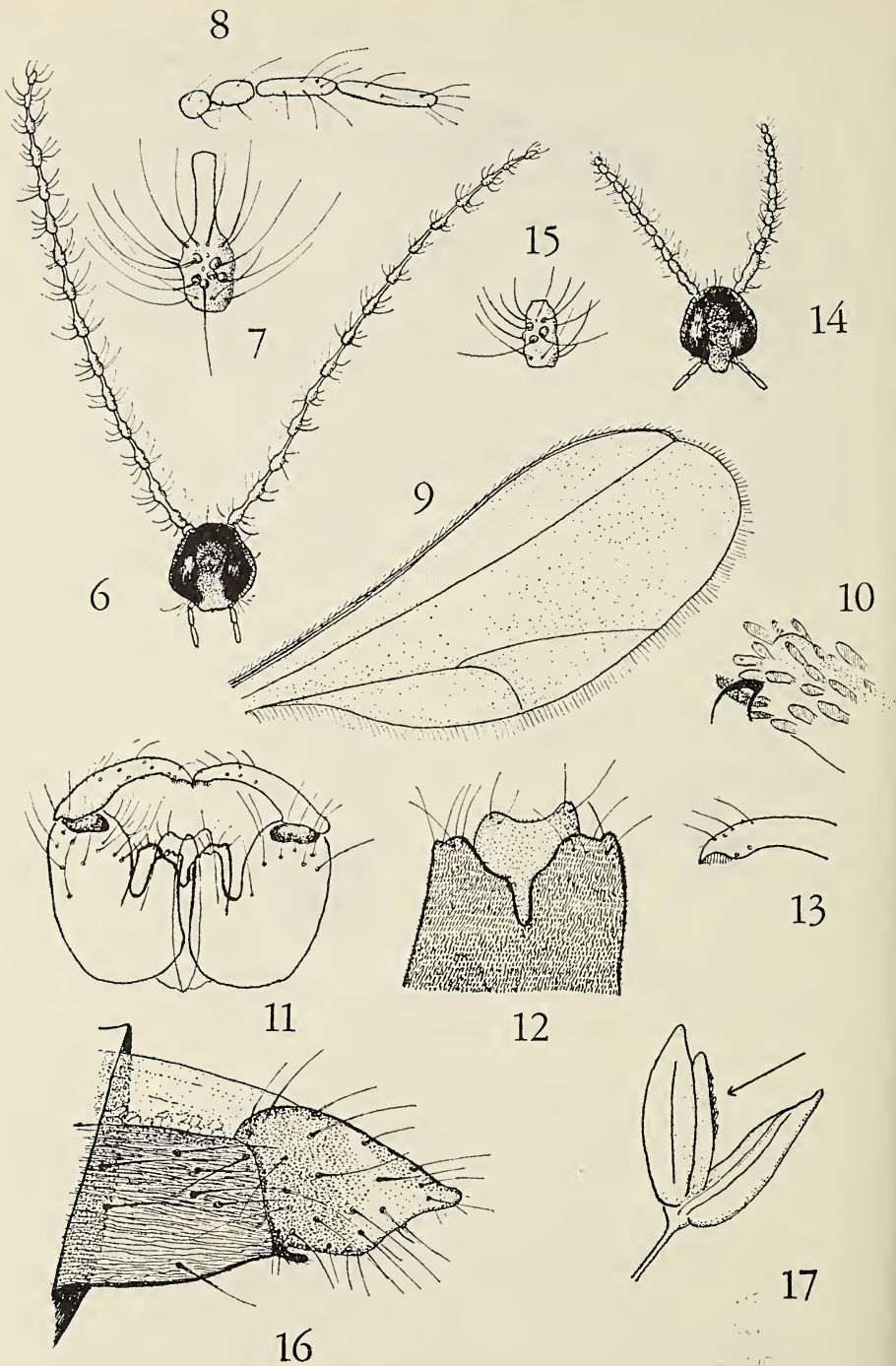


Campylomyza edwardsi, sp.n.

Fig. 1 — Tenth, eleventh and twelfth flagellar segment of male antenna. Fig. 2 — Palpus. Fig. 3 — Last tarsal segment with claw and empodium. Fig. 4 — Wing. Fig. 5 — Male genitalia.

apparently did not take place until the florets had fallen to the ground. Adults emerged in 1957 from June 8th till June 19th. Attempts failed to breed the midges on *Poa annua* L., *Holcus lanatus* L., *Lolium perenne* L., *Triticum aestivum* L. and *Secale cereale* L.

An examination showed that this gall midge from *Phalaris arundinacea* L. belongs to the tribe Dasyneuriariae and that it could not be run down in FELT's key to the genera of the world. I now erect the new genus *Coniophora*, based on the structure of the tip of the female ovipositor.



Coniophora graminicola, gen. et sp.n.

Fig. 6 — Head of male. Fig. 7 — One flagellar segment of male antenna. Fig. 8 — Palpus. Fig. 9 — Wing. Fig. 10 — Last tarsal segment with claw and empodium. Fig. 11 — Male genitalia. Fig. 12 — Dorsal and ventral plate of male genitalia. Fig. 13 — Tip of distal clasp segment of male genitalia. Fig. 14 — Head of female. Fig. 15 — One flagellar segment of female antenna. Fig. 16 — Ovipositor. Fig. 17 — Floret with eggs.

Coniophora, gen.n.

This genus is a remarkable one and related to the genera *Cystiphora*, *Cryptolautbia*, *Dasyneura* and *Lasiapteryx*, but distinguishable by the shape of the ovipositor and the male genitalia. Antennae of male with 2 + 14 to 15 segments; the flagellar segments, except the distal one, consist of a bead-like basal portion bearing long stout setae and a distinct neck as in *Dasyneura*. Antennae of female with 2 + 12 to 14 segments; each flagellar segment with a short cylindrical neck, bearing setae. First and second flagellar segments fused in both sexes. Palpi with four segments. Wings hyaline, the third vein reaching the margin before the apex of the wing, the fifth vein forked. Legs scaled, claws all toothed. Male genitalia: basal clasp segment broadly rounded with harpes as in *Dasyneura*; distal clasp segment slender and ending in a hook with short bristles on the inner side. Dorsal plate deeply cleft, lobes broadly rounded; ventral plate with slight emargination. Style about as long as ventral plate. Ovipositor distally cone-shaped with a small lower lamella.

Type of genus *Coniophora graminicola* sp. n.

Coniophora graminicola, sp.n.

Male. — Length about 1.8 mm. Antennae: 2 + 15; first and second flagellar segments fused (fig. 6). Each flagellar segment, except the distal one, consists of a head-like basal portion bearing long stout setae and a distinct neck (fig. 7); neck of the third flagellar segment about $3\frac{1}{2}$ times as long as broad, that of the tenth flagellar segment 4.7 times as long as broad, the distal segment obovate and about twice as long as broad. Palpi with four segments, all with setae (fig. 8); the first segment subglobular, the second segment 1.8 times as long as broad, the third 4 times as long as broad and the fourth segment 5.4 times as long as broad. Wings hyaline, length 2 mm., third vein reaching margin before apex, fifth vein forked; costa hairy, wing margin fringed (fig. 9). Legs covered with hairs and scales; claws all toothed, slightly bent and somewhat longer than empodium; empodium hairy on both sides (fig. 10). Genitalia: basal clasp segment broadly rounded on both sides with harpes as in *Dasyneura*, distal clasp segment slender, somewhat curved and ending in a hook with bristles on inner surface. Dorsal plate with microtrichae, deeply cleft, the lobes irregularly and broadly rounded; ventral plate straight, longer than dorsal plate with slight emargination. Style about as long as ventral plate.

Holotype: Cecid. 748 in the NIJVELDT collection.

Paratypes: Cecid. 749—62 in the NIJVELDT collection.

Other specimens in the BARNES collection.

Female. — Length about 2 mm. Antennae: 2 + 13 (fig. 14); first and second flagellar segment cylindrical with a very short neck and bearing long curved setae (fig. 15); third flagellar segment 1.3 times as long as broad, tenth flagellar segment 1.8 times as long as broad and thirteenth segment obovate and 1.8 times as long as broad. Ovipositor short, firm, distally cone-shaped with a small lower lamella (fig. 16). In other respects the female is similar to the male.

Allotype: Cecid. 763 in the NIJVELDT collection.

Paratypes: Cecid. 764—83 in the NIJVELDT collection.

Other specimens in the BARNES collection.

References

- EDWARDS, F. W., 1938, On the British Lestremiinae, with notes on exotic species — 4. (Diptera, Cecidomyiidae) *Proc. R. ent. Soc. London*, 7 (series B): 173—182.
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Literatuur

Pringle, J. W. S., *Insect Flight*. Cambridge University Press, 1957. 133 pp., 52 fig., 3 tabellen. Prijs 15 shilling.

Wanneer een man als PRINGLE zich er toe zet een overzicht over de insectenvlucht samen te stellen, kan men zeker zijn, dat er iets goeds tot stand komt. Spierzenuwfysioloog, entomoloog, amateur-vlieger, wie anders dan hij, bovendien nog een knap schrijver, is in staat dit uiterst ingewikkelde gebied te overzien niet alleen, maar er anderen op zo bekwame wijze in rond te leiden. Van begin tot einde voelt de lezer de vaste hand van de deskundige gids.

Toch is dit boekje geen gemakkelijke lectuur, wat m.i. vooral veroorzaakt wordt door de uiterst gewetensvolle wijze, waarop PRINGLE tracht alle aspecten, die in aanmerking komen, hun volle waarde te geven. Een doorwrochte schrijfrant, waarbij op vrijwel elke pagina wordt verwezen naar details van figuren en tabellen, die elders voorkomen, is hiervan het gevolg.

PRINGLE's boek onderscheidt zich van alle vorige overzichten op dit gebied door een combinatie van grondige fysiologische behandeling en een minimum aan schematisering. De anatomische situatie in al haar ingewikkeldheid is uitgangspunt. Verloren gaan in details wordt voorkomen door fraaie en overzichtelijke schema's, grotendeels origineel.

De eerste twee hoofdstukken geven de anatomisch-morfologische basis en de mechanica; het vliegapparaat met al zijn aspecten als aderstelsel, bouw van thorax en vleugelbasis, directe en indirecte vliegspieren, al of niet gekoppelde vleugelslag, frequentie (5 per seconde bij *Papilio machaon*, 1000 per seconde bij mugjes van het geslacht *Forcipomyia*), amplitudo en draaimoment, „klik"-mechanismen in de vleugelbasis. De Orthoptera en de Diptera zijn het best bestudeerd, van vele orden ontbreken nog elementaire gegevens.

Het volgende hoofdstuk handelt over de vliegspieren en hun histologische, fysiologische en biochemische eigenschappen. De behandeling hiervan gaat vér uit boven het entomologische aspect en bezit een niveau, dat geen enkel fysiologisch leerboek zou misstaan. In vele opzichten zijn de vliegspieren van insecten beter bestudeerd dan menig spierstelsel bij de Vertebraten. KEILIN ontdekte aan hen het cytochroom, WILLIAMS de reuzenmitochondriën, BOETIGER het verschijnsel der auto-oscillaties.

Dan volgt een hoofdstuk over de aerodynamica (moeilijk!), gevolgd door een laatste over de rol van zenuwstelsel en zintuigen. Hierin vindt men ook het werk van de schrijver over de halteren der Diptera, die de functie van gyroscop blijken te vervullen en gedurende de vlucht stabiliserende reflexen verzorgen. Het gehele controlesysteem der reflexen gedurende de vlucht wordt in een overzichtelijk schema samengevat.

Als naslagwerkje voor iedere vakentomoloog onmisbaar, maar voor niet-fysiologen met mondjesmaat te genieten! — J. DE WILDE.