

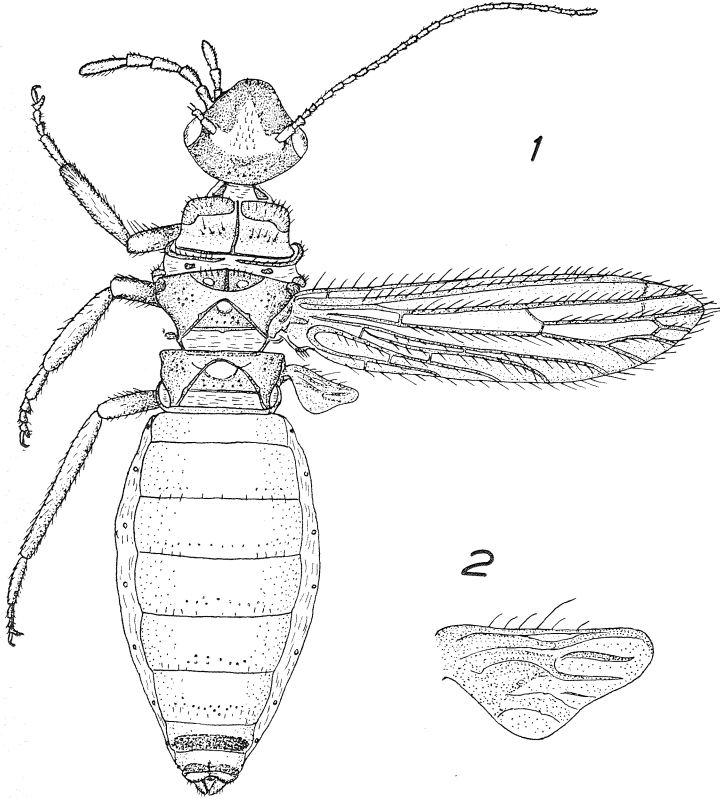
A new subapterous Coniopterygid from Denmark (Neuroptera).

By
Bo Tjeder

Through the kindness of Dr. Anker Nielsen, Copenhagen, I have been privileged to examine and describe a very remarkable lace-wing, discussed in this paper. The specimen has greatly reduced wings and is of unusual interest in several respects. In appearance it is very little agreeing with an average Coniopterygid. Its strongly haired, convex, unpowered forewings and the small, pad-like hindwings make it more suggestive of a *Psectra* than of a Coniopterygid. However, it certainly belongs to the Coniopterygidae. The shape of the galea (with basigalea and apical, round knob) as well as the presence of plicaturae on the abdominal sternites refer it to the subfamily Aleuropteryginae; the definite unpigmented and weak patch on the frons and the general shape of the bursa copulatrix to the genus *Helicoconis* End.

One single species of the genus *Helicoconis* was hitherto known from Europe, *H. lutea* Wallengr. 1871 (with *H. laufferina* Navas, 1913, as a somewhat uncertain synonym). That species is full-winged and of a general coniopterygid appearance, and so is also the S. African *H. capensis* End. 1914. But the other two known species of the genus, *H. maroccana* Carp. and Lest. 1927, from Morocco, and *H. salti* Kimm. 1950, from Mt. Ruwenzori, Uganda, are both brachypterous. *H. salti* has as well the forewings as the hindwings reduced into small pads, while *H. maroccana* has pad-like hindwings and strongly abbreviated forewings which, however, have a rather distinct venation and are coated with white wax as com-

monly in this family. The condition of the Danish specimen agrees best with that of *H. maroccana* but the forewings are more convex, their veins carry long, stiff up-standing hairs, and they are not covered with wax, the stiff hairiness apparently stopping such a covering.



Figs. 1—2. *Helicoconis hirtinervis* n. sp. (holotype ♀).—1. Sketch of the animal. — 2. Right hindwing.

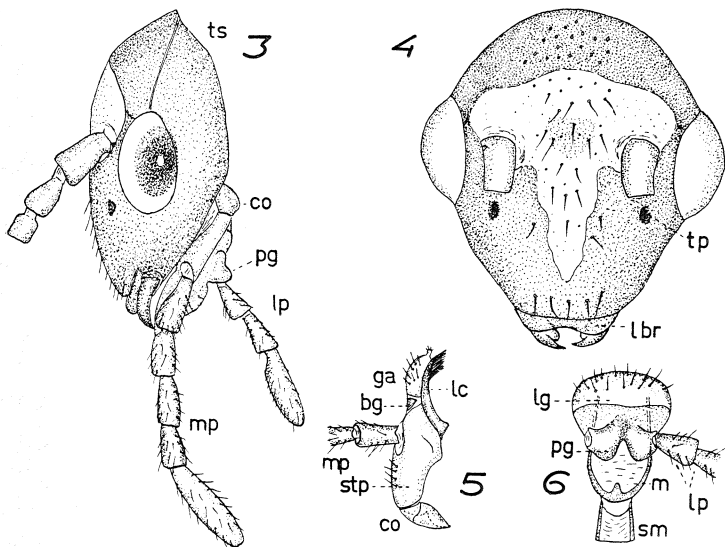
***Helicoconis hirtinervis* n. sp.**

(Figs. 1—14)

Locus typicus: Stensbæk Plantage, Sønderjylland, Denmark. — Holotype: one ♀ in the collections of the Zoologisk Museum of Copenhagen University.

Description.

Holotype ♀. Received dried, gummed to apex of a triangular slip of paper; after clearing in caustic potash now preserved in alcohol. Head, body, legs, and hindwings of the dried specimen covered with a waxy substance of a clayish yellow colour; forewings not powered.



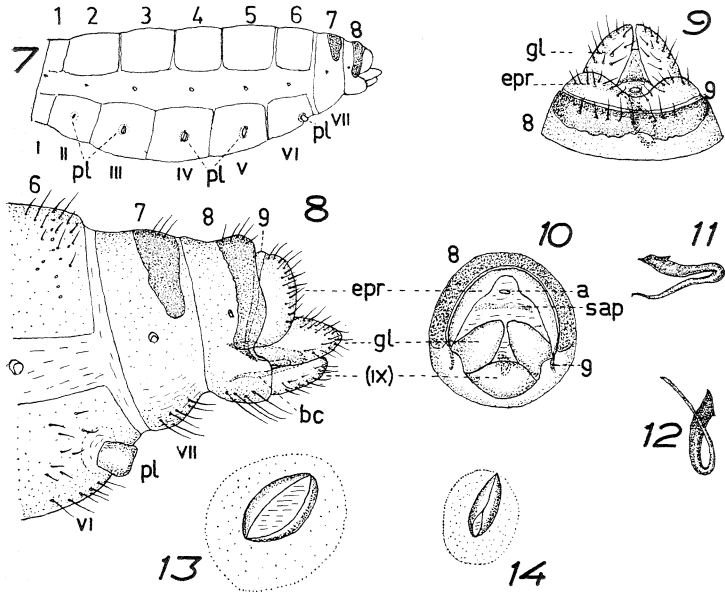
Figs. 3—6. *Helicoconis hirtinervis* n. sp. (holotype ♀). — 3. Head, lateral. — 4. Head, in front. — 5. Right maxilla, ventral. — 6. Labium, ventral.

Abbreviations: bg = basigalea; co = cardo; ga = galea; lbr = labrum; lc = lacinia; lg = ligula; lp = labial palpus; m = mentum; mp = maxillary palpus; pg = palpiger, sm = submentum; stp = stipe; ts = temporal suture; tp = tentorial pit.

Size: Length of body of the dried, shrivelled specimen about 2,8 mm; after clearing nearly 3,5 mm. Length of forewing 2 mm, of hindwing about 0,4 mm.

Head dark brownish with the weak patch of the frons yellowish and of shape as indicated in fig. 4. There is a small yellowish brown spot between the bases of the antennae. Maxillae and labium as in figs. 5 and 6.

Palpi pale yellowish. Mandibles brownish. Eyes small; genae hence very long. Ocular diaphragm conically inwards-backwards directed, black around the very small foramen (fig. 3; in this figure the external part of the eye is drawn transparent in order to show the foramen).



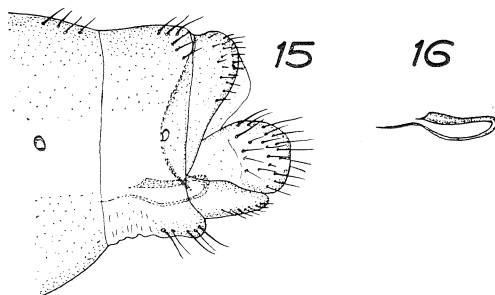
Figs. 7—14. *Helicoconis hirtinervis* n. sp. (holotype ♀).—7. Sketch of abdomen, lateral, showing the plicaturae.—8. Apex of abdomen, lateral.—9. Ditto, dorsal.—10. Ditto, caudal.—11. Bursa copulatrix, left lateral view.—12. Ditto, ventral.—13. Left plicatura of 4th sternite, open.—14. Right plicatura of 3rd sternite, partly open.

Abbreviations: a = anus; bc = bursa copulatrix; epr = ectoproct; gl = gonapophyses laterales; pl = plicaturae; sap = sub-anale; 1—9 = tergites 1—9; I—VII = sternites 1—7; (IX) = secondary 9th sternite.

Antennae pale yellowish, 27-segmented, a little shorter than forewing. First few segments of flagellum as long as wide, others about twice as long as wide.

Pronotum saddle-shaped, pale, with definite yellowish brown side-pieces along the fore-corners and with median

longitudinal and basal transversal ribbon-like lists (fig. 1). Meso- and metanota yellowish brown with pale spots as indicated in fig. 1. Legs yellowish with basal portion of femurs fuscous tinged. Forewings short and narrow, convex (fig. 1). Their longitudinal veins very broad and conspicuous, clothed with stiff, upstanding, long hairs. Wing margin with long fringes. Membrane without macrotrichia, translucent pale brownish. Venation of the common



Figs. 15—16. *Helicoconis lutea* (Wallengr.) ♀ from Sweden: Sdml. Saltsjöbaden (leg. A. Jansson). — 15. Apex of abdomen (7th to last segments), lateral. — 16. Bursa copulatrix, left lateral view.

Helicoconis-type but Sc joining the foremargin of the wing instead of running to apex. Forks of R and M very short. Crossvein between M and Cu_1 absent. Hindwings small, pad-like, with obscure venation but with foremargin distinctly thickened, bearing 6 long setae, the 4th of which being twice as long as the others (fig. 2).

Abdomen very weak, whitish. Tergites 7 and 8, however, with well-defined, dark brownish pigmented and strongly chitinized callosities along the dorsal hindmargin (cf. figs. 1, 7, 8, 9). Lower ends of the very narrow tergite 9 also brownish. Ectoprocts (fig. 8, epr) with smoothly rounded hind margin. Secondary 9th sternite (ix) rounded, projecting below the gonapophyses laterales (gl) which are narrow and tapering towards the apex. A very indistinct subanale (sap, fig. 10) present, being a darkpig-

mented, transverse area below anus. Bursa copulatrix blackish, bent as a hairpin and else of shape as shown in figs. 11 and 12. There are 5 pairs of plicaturae, on sternites 2 to 6 respectively; those of segment 2 very small (fig. 7).

Geographical distribution.

Denmark: Sønderjylland, Stensbæk Plantage, holotype ♀, 22. 6. 1949, leg. Worm-Hansen, in coll. Zoologisk Museum, Copenhagen.

Ecological distribution.

Dr. Nielsen has informed me that the specimen according to Mr. Worm-Hansen was captured either on meadow-ground or, most probably, on a heathery area close to the plantage. The species no doubt lacks power of flight and is most probably confined to lower herbage. The known specimens of the two African brachypterous species were found: *H. maroccana* (together with larvae) on *Arenaria pungens* in a colony of the Coccid *Orthezia arenariae* Vayss; *H. salti* under moss on stones. Dr. Nielsen suggests that *H. hirtinervis* n. sp. perhaps feeds on some Coccid on *Calluna*. It should be noted that the gut contents of the available specimen when boiled in KOH became intensively red, almost purple. The food of the specimen has thus probably been some with KOH red-reacting insect. Dr. F. Ossiannilsson, Uppsala, has informed me that the Aphids *Eriosoma lanigerum* and *Sappaphis piri* have a blood-coloured body-fluid which, at least in the latter case, sustains boiling in KOH, and that in several Pseudococcidae the body-fluid becomes blue or red when boiled in KOH (for other particulars on similar tests see my papers 1957a, p. 110 and 139, and 1957b, p. 3).

Note.

When examining the ventral abdominal structures, denominated by me (1957a) as plicaturae I observed a condition which I had never seen before. Some of these

plicaturae were open! (fig. 13). In all the other specimens of the Aleuropteryginae examined by me I have always found them closed. I have often tried to handle them with thin needles but I have never succeeded in opening a plicatura. In this specimen it was easy to pull the point of the needle between the halves of organ. The point did not, however, enter some duct but stopped on the basal plate of the organ which plate seems to be strong and solid, or at least did not have any opening which could be observed in my preparation. The function of these organs is still obscure. Withycombe's suggestion (1925) of their being repugnatorial glands may be considered as a perhaps tenable assumption.

H. hirtinervis n. sp. is easily distinguishable by the long hairiness of the veins of forewings, a character which it does not share with any known species in the family. The females of the two African subapterous species are unknown. Neither the female of the full-winged *H. capensis* End., figured by the author (1957a, figs. 10—13, 24—26), nor that of *H. lutea* (Wallengr.) have dark callosities on the 7th and 8th tergites. There are also other differences in the female genitalia. Fresh figures of *H. lutea* are here given for comparison (figs. 15—16). The bursa copulatrix of *H. lutea* has a similar hairpin bend as that of *hirtinervis* but is more slender. The gonapophyses laterales of *lutea* are much broader than those of *hirtinervis* and not tapering.

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Anmeldelse.

Bertil Gullander: **Dagsommerfugle i Norden.** Oversat og bearbejdet af Torben W. Langer. Gyldendals forlag. København. 1960. Pris Kr. 14,75.

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