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PSEUDONAPOMYZA HOBOKENSIS SP. N. FROM BELGIUM (DIPTERA, AGROMYZIDAE)

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Abstract. A new agromyzid species (Diptera), *Pseudonapomyza hobokensis*, is described from Hoboken, Belgium. *P. hobokensis* shows high similarity in external morphology with many European species of this genus. The distiphallus proves to be the only reliable diagnostic character to separate *Pseudonapomyza* species.

Key words : Agromyzidae, *Pseudonapomyza*, taxonomy, new species, Belgium.

INTRODUCTION

Pseudonapomyza HENDEL (1920) is one of the genera of Agromyzidae poor in species. Till 1973 it was believed that only one species, *Pseudonapomyza atra* (MEIGEN, 1830), was present in Europe. At the moment, 14 species of this genus are recorded from the European region (SPENCER, 1973; ČERNY, 1992; PAKALNIŠKIS, 1992, 1994; ZLOBIN, 1993a). The high similarity in external morphology of the species of the genus *Pseudonapomyza* is probably the reason it took so long before these species were described. SPENCER (1973), ČERNY (1992) and ZLOBIN (1993a, b), pointed out that reliable identifications within this genus are only possible when the male and/or female terminalia are examined. The aedeagus, especially the distiphallus, of all *Pseudonapomyza* species has a very species specific structure. Also the shape of the fifth sternum, and the shape of the periandrium and the sperm pump may give additional diagnostic information (ČERNY, 1992).

During 1990, the agromyzid fauna of the nature reserve «Hobokense polder» was sampled by means of a broad range of trapping types (SCHEIRS *et al.*, 1995). When identifying the Agromyzidae caught in these traps, a new *Pseudonapomyza* species was detected.

Abbreviations used to indicate the position of bristles

ors: upper orbital; *ori*: lower orbital; *or*: orbital; *oc*: ocellar; *pvt*: postvertical; *vte*: outer vertical; *vti*: inner vertical; *vi*: vibrissa; *dc*: dorsocentral; *pp*: propleural; *m*: mesopleural; *st*: sternopleural; *h*: humeral; *prs*: presutural; n: notopleural; *sa*: supra-alar; *ipa*: inner postalar; *epa*: outer postalar; *la*: lateral; *ap*: apical; *ia*: intra-alar; *prsc*: prescutellar.

Material examined

Holotype: 1♂ captured in a white colour trap on 20.vii.1990, leg. F. ven, genitalia dissected and mounted on slide HP.575.

Paratypes: 1♂ trapped on 13.vii.1990 in a green colour trap, genitalia mounted on slide HP.574; 1♂ trapped on 24.viii.1990 in a green colour trap, genitalia mounted on slide HP.576; 1♂ trapped on 31.viii. 1990 in a blue colour trap, genitalia mounted on slide HP.608.

Material deposited at the Department of Biology, University of Antwerp, Belgium (holotype, 2 ♂♂ paratypes) and in the von Tschirnhaus collection (1♂ paratype, HP. 576, genitalia transferred to slide 3076). The material in the collection of the University of Antwerp, will later be deposited in the collections of the Royal Belgian Institute of Natural Sciences, Brussels.

Type locality

Hobokense Polder, a nature reserve in Hoboken near Antwerp, Belgium. Four male individuals were captured in the centre of the reserve in a humid, overgrown meadow. The vegetation of that meadow is characterised as a transient between *Agropyro-Rumicion crispi* and *Filipendulion*. For a more detailed description of the sample site: see SCHEIRS *et al.* (1995).

Description of the male

Head: Frons 1.2-1.6 times broader than eye at level of anterior ocellus. Ocellar triangle, occupying about half of the vertex width, anterior corner reaching level of the upper *or*. Frons above antennae moderately projecting above eye in profile. One reclinated *ors* and 3 weaker *ori* present. Few orbital hairs present, short, fine and upright. *oc, pvt, vte, vti,* and *vi* present, *pvt* weaker than *vte, vti*, and *ors*. Gena posteriorly about 0.4 times width of eye height. Eye oval and bare. First antennal segments adjoining, 3rd antennal segment (Fig. 3) angulate with distinct apical corner, arista thickened at base and twice as long as 3rd antennal segment. Palpi normal, decreasing in size from back to front.

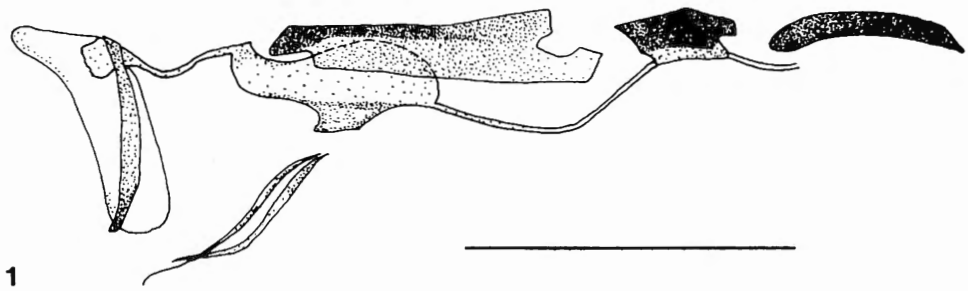
Thorax: Only three post-sutural *dc* on mesonotum decreasing in size from back to front. Acrostichals in 4 irregular rows. Macrochaetae: *pp*, 1*m*, 1*st*, 1*h*, *prs*, 2*n*, *sa, epa, la,* and *ap* present; *ia, prsc, ipa* missing. Setulae in the *ia*-area present. Mid tibia without posterolateral bristle. Wing 1.3-1.4mm in male, without posterior cross vein, with strong costalization, M_{1+2} more or less reduced, only a weak fold reaching the wing tip, M_{3+4} weakly present, ratio of costal sections 2-4; 30:12:26, 34:11:28, 30:11:26, and 30:13:26 (1 unit = 12.5 μm).

Abdomen: Sternum 5 of male (Fig. 5) longer than broad, inner oval emargination longer by half the length of the sternum.

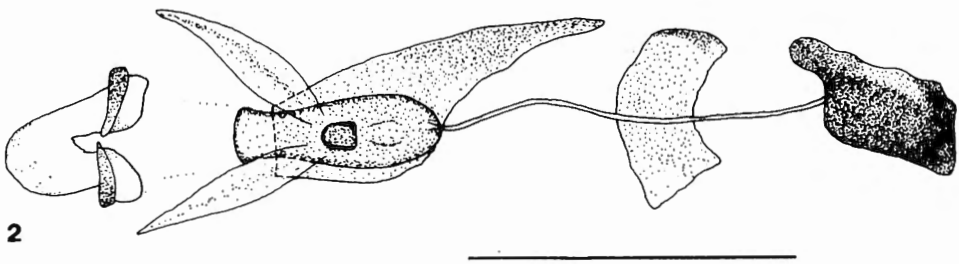
Male genitalia: Periandrium (Fig. 4) large, gonostylus with many fine hairs on the ventral inner side, cerci small and clublike. Aedeagus as in Figs 1 and 2, its distiphallus weakly sclerotized. Distiphallus equipped with a sclerotized ring, which is interrupted by a small gap on its ventral and dorsal side, bearing a membranous case anteriously and pos-

DESCRIPTION

Pseudonapomyza hobokensis sp. n.



1



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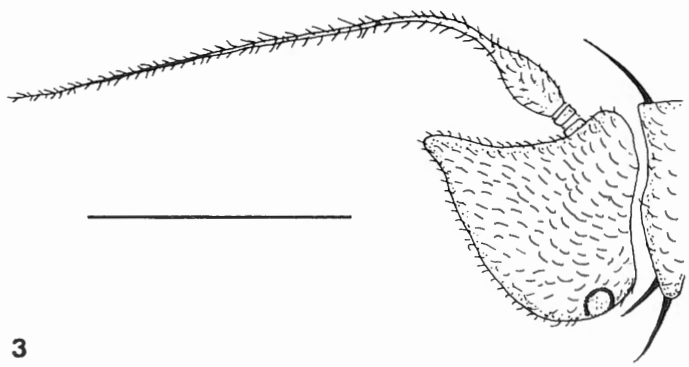
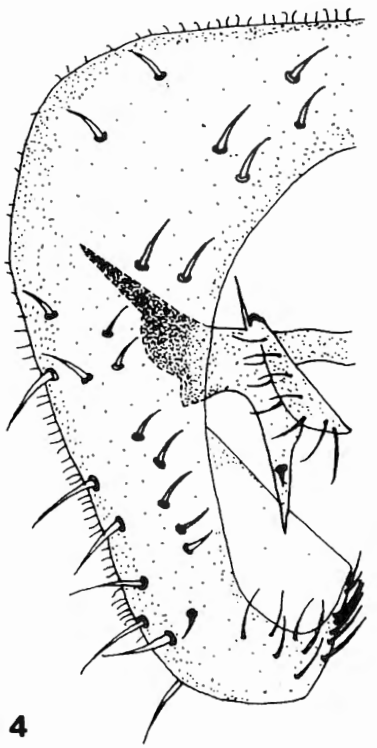
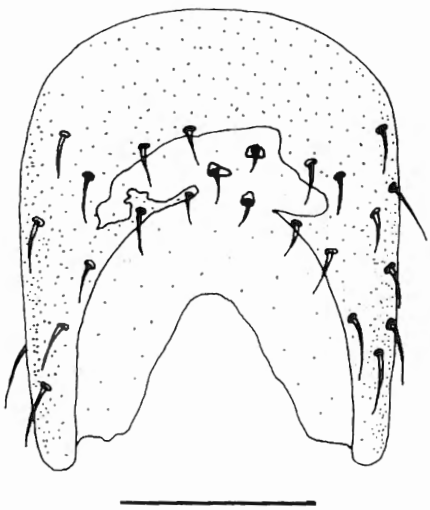
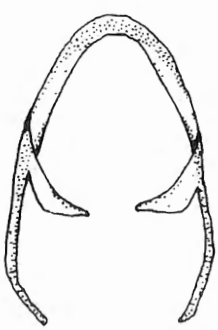


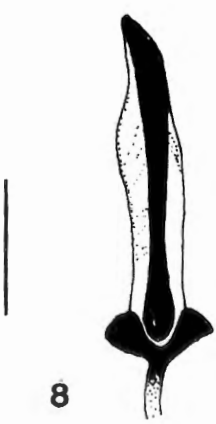
3

Figs 1-3. – *Pseudonapomyza hobokensis* sp. n. – 1. aedeagus in left, lateral view – 2. aedeagus in ventral view – 3. 3rd antennal segment. (Scale = 0.1 mm).









Figs 4-8. – *Pseudonapomyza hobokensis* sp. n. – 4. Left side of periandrium in caudal view – 5. 5th abdominal sternum – 6. Hypandrium in ventral view – 7. Sperm pump in side view – 8. Sperm pump in front view. (Scale = 0.1 mm).

teriously of variable size. Distiphallus may be twisted to the right. Hypandrium as in Fig. 6. Sperm pump as in Figs 7 and 8 with blade broadening from its base.

Colour: Entirely black species, except for the frons, which is more light brown. Wing clear and transparent, veins pale brown while squamae, squamal fringe, and halters white. Orbits and thorax shiny. Legs dark.

Female unknown. Females of the genus *Pseudonapomyza* can be identified according to the shape of their spermathecae (ČERNY, 1992) . Based on this character, we could only detect females of *P. atra* and *P. europaea* SPENCER, 1973 in the samples of the trap catches.

Derivatio nominis

This species is named after the type locality, Hoboken in Belgium.

DISCUSSION

For identification of European *Pseudonapomyza* species we refer to ČERNY (1992). This study gives full description and drawings of genitalia of all European species, except *P. insularis* ZLOBIN, 1993 and *P. spinosa* SPENCER, 1973 only known from the Macaronesion region, and *P. hobokensis* sp. n.

The external morphology of *P. hobokensis* is very similar to that of most European *Pseudonapomyza* species. Only the colour of the squamal fringe, white in *P. hobokensis*, can be used to separate this species from *P. balkanensis* SPENCER, 1973 the only European species with a black squamal fringe.

According to the shape of the genitalia, *P. hobokensis* could only be confused with *P. spenceri* ČERNY, 1992 because the distiphallus of both species has a ring-like sclerite in the apical part. However, *P. hobokensis* has a reduced distiphallus missing the cask-like sclerite of the distal part present in *P. spenceri* (compare Fig. 1 and 2 with Fig. 56 and 57 of ČERNY [1992]). The shape of the sperm pump is also different. The sperm pump of *P. hobokensis* has a blade already broadening from its base, contrary to the sperm pump of *P. spenceri* which is more slender in the basal part (compare Fig. 7 and 8 with Fig. 59 and 60 of ČERNY [1992]).

ČERNY (1992) created a key of the European *Pseudonapomyza* species known as at 1992. That key uses external morphological and colour traits, frequently in combination with shape aspects of the aedeagus. Some traits used in this key appear to be too subtle and unreliable. Especially the colour traits are difficult to interpret (e.g. difference between pale brown and brown to black), the more when one takes the discoloration of preserved material, frequently noticed with alcohol material, into account. Therefore, we were reluctant to include *P. hobokensis* in this key. Nevertheless, ČERNY (1992) is aware of this problem and frequently points out that *Pseudonapomyza* species can only be identified with certainty when genital preparations are made.

Hitherto, only two members of this genus have been found in Belgium: *P. atra* and *P. europaea*. They were found in the same traps as *P. hobokensis* sp. n. (SCHEIRS *et al.*, 1995). Based on the agromyzid fauna known from the surrounding countries, we expect that several other *Pseudonapomyza* species will be found in Belgium.

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