

# Description of a new mycophagous species of *Pegomya* Robineau-Desvoidy, 1830 (Diptera, Anthomyiidae) from Sweden

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*Pegomya abrollensis* sp. n. is described from the province of Skåne (Scania) in southern Sweden. The morphology of the only available male specimen suggests a closest relationship to the widespread Palaearctic *P. rufina* (Fallén, 1825), a species feeding as larva on agaric mushrooms. Differences between the two species are summarized and supported by photos of the male terminalia.

Key words: Diptera, Anthomyiidae, *Pegomya*, new species, Europe, taxonomy, faunistics.

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## Introduction

*Pegomya* Robineau-Desvoidy, 1830 is a specious anthomyiid genus occurring mainly in the temperate parts of the Northern Hemisphere. The European fauna alone exceeds 80 species (Michelsen 2011, Michelsen 2015). A substantial part (>40%) of the European species are expected to have mycophagous larvae living in the fruit bodies of bolete or gilled mushrooms. The taxonomic knowledge about the mycophagous species of *Pegomya* found in the western and central parts of Europe is reasonably good thanks to the contributions by Hennig (1973a, 1973b), Michelsen (2006, 2015) and Michelsen & Ackland (2009). It therefore came as a surprise, when a male of an unknown mycophagous *Pegomya* showed up in mid-July 2018 in Skåne (S Sweden), one of the best investigated areas in Europe in respect to the Diptera diversity. It was collected on a very hot summer day among countless other shade-seeking Diptera by waving a sweep net vigorously over the cavities of an old stone wall at a forest edge. A perusal of the taxonomic literature convinced me that the specimen found represents

a species new to science. A formal description and assessment of its relationships is given below.

## Material and methods

The type locality Åbrolla [56°26'N 14°08'E, alt. 142 m] situated in NE Skåne is a mosaic of forested land dominated by spruce (*Picea abies*) and birch (*Betula pubescens*, *B. pendula*), admixed with oak (*Quercus robur*), rowan (*Sorbus aucuparia*), hazel (*Corylus avellana*) and aspen (*Populus tremula*) and open fens dominated by rushes (*Juncus* spp.) and sedges (*Carex* spp.), bordered by shrubs of willow (*Salix aurita*). An inventory of the species diversity of calyptrate Diptera within approximately one hectare of land in Åbrolla was initiated by the present author in 2004 and has continued all subsequent seasons. A sweep net has from the beginning been the primary collecting tool, but it was soon supplemented by a Malaise trap. Dry-mounted voucher specimens of all species found so far are deposited in the Diptera collection of the Natural History Museum of Denmark, University of Copenhagen (NHMD).

***Pegomya abrollensis* sp. n.**

(Figures 1A–B, 2A–E)

**Material examined.** HOLOTYPE ♂, SWEDEN: Skåne: Åbrolla, Osby (56°26'N 14°08'E), 142 m a.s.l., 14–21.VII.2018, leg. V. Michelsen (NHMD).

**Etymology.** The species epithet is derived from the name of the type locality, Åbrolla.

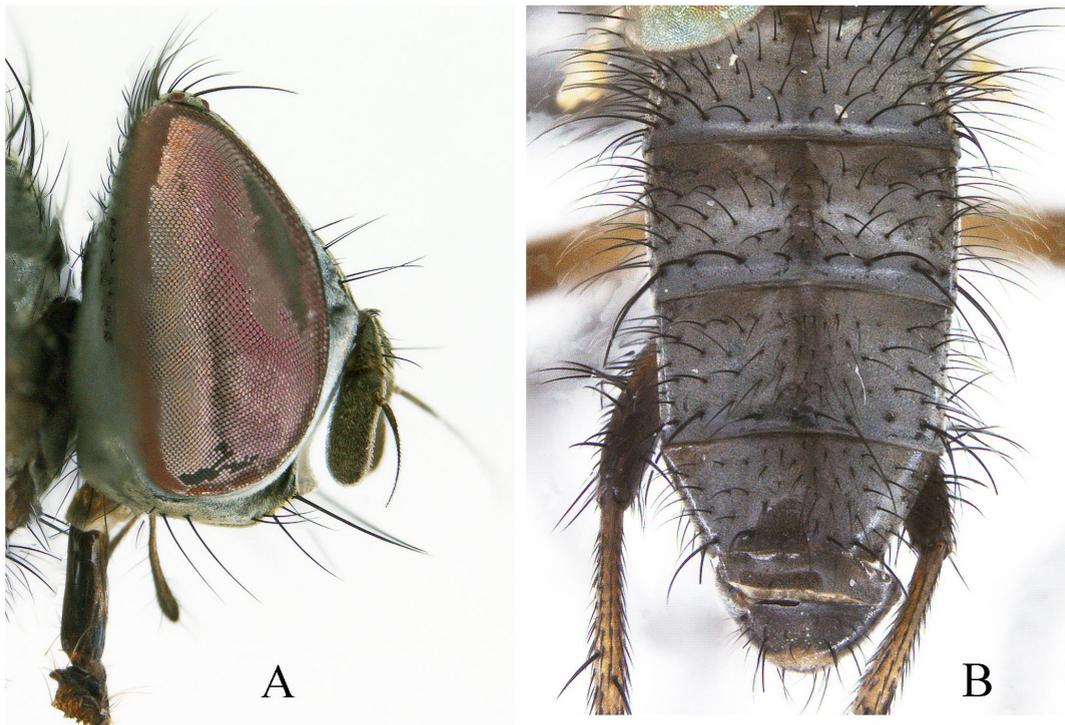
**Diagnosis (male):** The following combination of characters may separate males of the *P. abrollensis* from other species of *Pegomya*: Ground colour of head, antenna, palpus, thorax and abdomen brownish black; only coxae, basal parts of femora and all tibiae fuscous ochre yellow to yellow. Orbital and interfrontal setulae absent. Setae on genae in single row; setulae on lower part of head black. Lower calypter slightly smaller than upper calypter. Male terminalia: Sternite V (Figure 2A) with posterior lobes relatively short and tapering, with cover of setulae and a few strong setae latero-basally. Shape of surstyli (Figure 2 B, C) species distinctive.

**Description. MALE.**

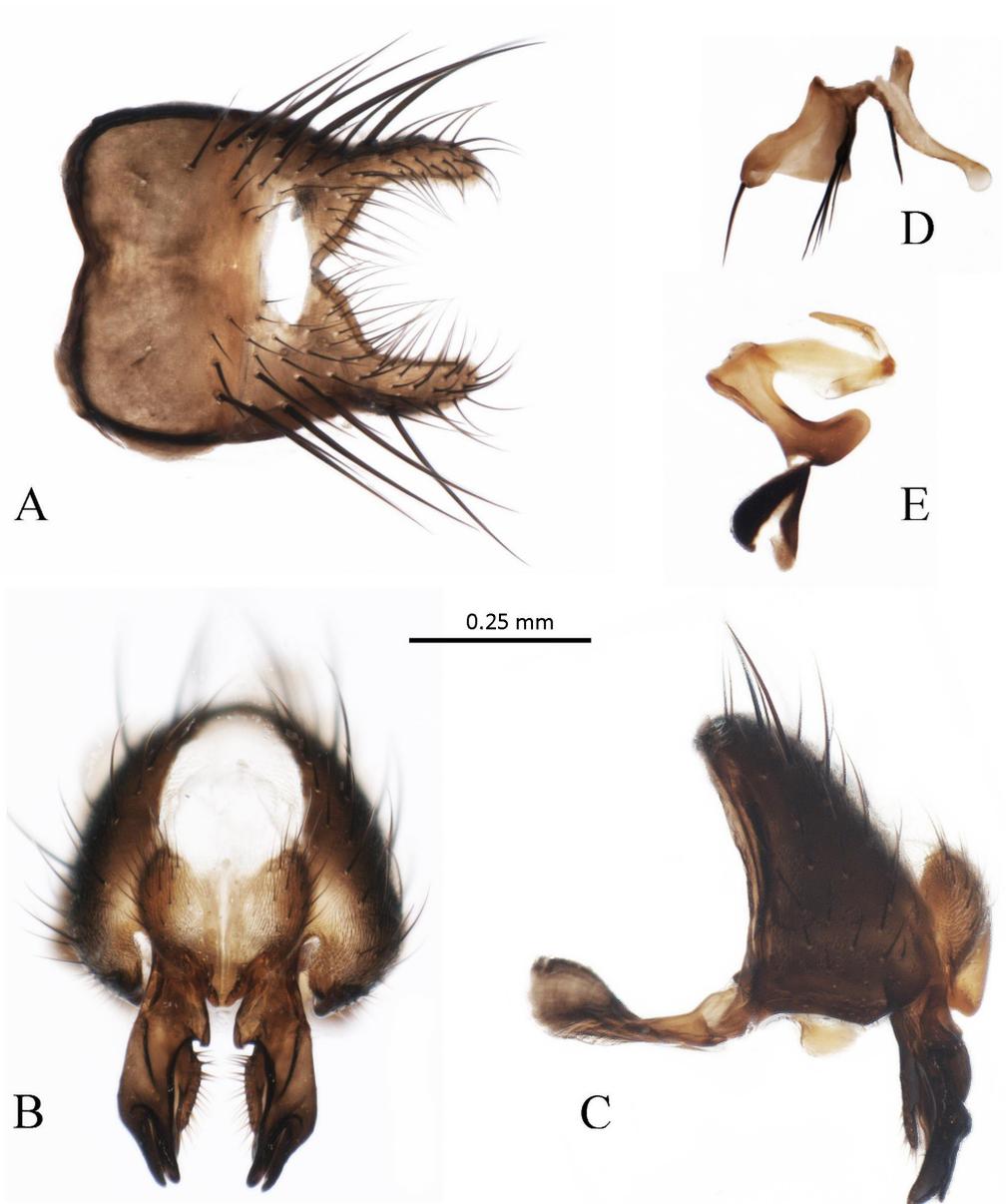
**Size:** Medium, wing length 5.2 mm (n=1).

**Colour:** Head, thorax and abdomen wholly dark in ground colour. Head greyish pruinose with a silvery shine on fronto-orbital and parafacial plates; antenna and palp dark, the latter slightly yellowish brown on basal part. Thorax grey pruinose; mesonotum with dark reflections but without pattern of dark striping. Wing membrane lightly tinged with brown, paler ochre-brown on basal part of wing; calypteres and halter whitish with a distinct ochre-yellowish tinge. Legs: coxae ochre yellow; fore femur extensively brownish black; mid femur ochre yellow on basal half, gradually becoming brownish black on distal half; hind femur as mid femur except brownish black part confined to distal third; tibia fuscous ochre yellow; tarsi brownish black. Abdomen (Figure 2B) covered in dense grey pruinosity delimiting a narrow mid-dorsal dark stripe.

**Head (Figure 1A):** Strongly holoptic; frons on upper part considerably narrower than diameter



**FIGURE 1.** *Pegomya abrollensis* sp. n. **A.** Head. **B.** Abdomen.

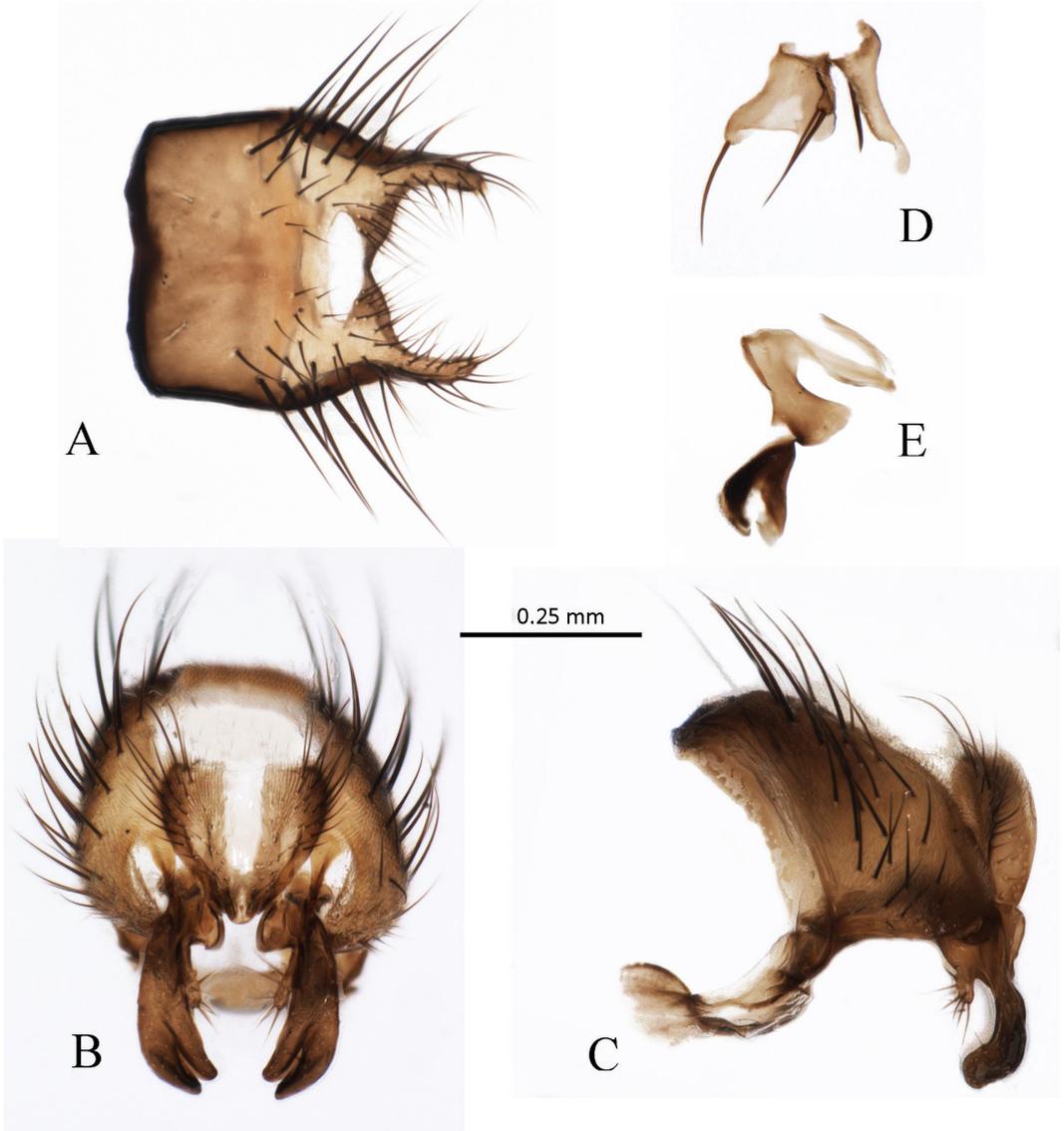


**FIGURE 2.** *Pegomya abrollensis* sp. n., male terminalia. A. Sternite V. B, C. Hypopygium in caudal and lateral view. D. Pregonite and postgonite. E. Phallus.

of anterior ocellus, with linear, contiguous fronto-orbital plates. Fronto-parafacial angle slightly projected beyond lower facial margin; parafacial narrow, in middle about one-third as wide as postpedicel. Gena in profile nearly as wide as postpedicel. Orbital and interfrontal setulae absent; frontal setae and setulae 3–4 pairs confined

to lower two-fifths of frons; setulae on lower part of head black. Postpedicel about two times as long as wide, almost reaching facial margin; arista very short-pubescent.

*Thorax:* Presutural rows of acrostichal setae slightly wider apart than their distance to adjacent rows of dorsocentral setae; setulae between



**FIGURE 3.** *Pegomya rufina* (Fallén, 1825), male terminalia. A. Sternite V. B, C. Hypopygium in caudal and lateral view. D. Pregonite and postgonite. E. Phallus.

presutural acrostichal rows rather few, arranged in two irregular rows. Prealar seta distinctly shorter than posterior notopleural seta. Outer posthumeral seta nearly as strong as inner posthumeral seta.

*Wings:* Vein C without any setulae on dorsal side. Lower calypter a little smaller than upper calypter, only narrowly visible behind upper calypter in lateral view.

*Legs:* Mid femur without av-setae but with

3–4 pv setae on basal third; hind femur with a row of av-setae on distal three-quarters, 1 p-seta near at base and a few pv-setae near the middle. Fore tibia with 1 ad-, 1–2-pv setae; mid tibia with 0 av-, 1 ad-, 1 pd- and 2 p-setae; hind tibia with 1 av-, 3 ad-, 2 pd- and 0 p/pv setae.

*Abdomen* (Figure 1B): Slender, parallel-sided, moderately thickened caudally. Tergites II–V with hind marginal setae but without discal

setae; tergite VI bare. Sternite V (Figure 2A): Posterior lobes rather short, tapering, covered in scattered setulae and a few strong lateral setae on basal part. Hypopygium (Figure 2B, C): Surstyli with distinctive outline in both caudal and lateral aspects. Gonites (Figure 2D): Pregonite with 1 apical seta and posteriorly with a subbasal group of 3–4 setae; postgonite long, gradually narrowing distal to middle, anteriorly with a robust subbasal seta. Phallus (Figure 2E): Basiphallus longer than distiphallus, with a hump-like projection; distiphallus compact, finely toothed along margin of paraphallic lobes.

FEMALE. Unknown.

**Relationships.** The morphology of the male holotype, the only specimen presently available for study, shows that *P. abrollensis* sp. n. belongs to the section of *Pegomya* having mycophagous larvae, more specifically the group of species feeding on gilled mushrooms. The proportions and simple chaetotaxy of sternite V and the shape of the gonites and phallus suggest further that *P. abrollensis* is most closely related to *P. rufina* (Fallén), a Palaearctic species ranging from Europe (Hennig 1973b) to China (Wu & Zhang 1988), Japan (Suwa 1986) and the Korean Peninsula (Suh & Kwon (1986). *P. rufina* may breed exclusively in fruit bodies of Agaricaceae. Hackman & Meinander (1979) reared it from three *Agaricus* spp. and *Chlorophyllum rhacodes*. *Pegomya rufina* differs in the male sex from *P. abrollensis* as follows: *Colour*: Coxae partially darkened; mid and hind femora and all tibiae extensively yellow, occasionally a little darkened on fore tibia and tips of mid and hind femora. Abdomen ochre brown to yellow in ground colour, usually with narrow blackish bands at hind margins of tergites II–IV, covered in light grey pruinosity delimiting a slightly broader mid-dorsal dark stripe on tergites III–V. *Thorax*. Distance between presutural rows of acrostichal setae almost twice the distance between presutural acrostichal and dorsocentral rows of setae; setulae between acrostichal rows more numerous, arranged in 3–4 irregular rows. *Wings*. Lower calypter larger than upper calypter, broadly visible behind upper calypter in lateral view. *Abdomen*. Slightly broader. Sternite V (Figure 3A) with

posterior lobes even smaller; strong lateral setae not extended onto posterior lobes. Surstyli (Figure 3B, C) of very different shape in both caudal and lateral views. Gonites (Figure 3D): postgonite shorter, narrowing on distal third. Phallus (Figure 3E): Basiphallus barely longer than distiphallus; posterior hump less prominent.

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