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A New Species of *Dactylolabis* (*Eobothrophorus*) from Baltic Amber (Diptera: Limoniidae)

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Abstract: A new species, *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum* sp. nov. from the Baltic amber is described, based on one male. The distinctive characters are the shape of the discal cell in the wing and the shape of the process on tergite IX. The description of *Dactylolabis* (*Eobothrophorus*) *lauryni* Podenas, 2003 is amended, based on an additional specimen. With the new species added herein, the number of species of this subgenus totals four. The wing venation, antennae, and tergal processes of all four species of the subgenus described from the Baltic amber are compared.

Key words: new species, *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum*, Dactylolabinae, Limoniidae, fossil, Diptera, Eocene, Baltic amber

1 Introduction

The subfamily Dactylolabinae (Diptera, Limoniidae) is a small subfamily comprising 57 species belonging to three genera: *Bothrophorus* Savchenko, 1984 (one species), *Coenolabis* Savchenko, 1969 (two species), and *Dactylolabis* Osten-Sacken, 1860 (54 species). Dactylolabinae are known from the Holarctic region.

The first information about fossil representatives of the Dactylolabinae was published by Meunier (1906a, 1906b) who described five species of *Dactylolabis* from Baltic amber. According to Alexander (1931), none of these species belongs to this genus.

Fossil representatives of Dactylolabinae are rare. Until now, 13 fossil species have been described, belonging to two genera: a recent genus *Dactylolabis* Osten-Sacken, 1860 and *Electrolabis* Alexander, 1931, known only from the Baltic amber. Only one of these species, *Dactylolabis tenuis* Statz, 1944, was described from a sedimentary rock (Rott; Oligocene of Germany); all remaining are the inclusions in Baltic amber (Upper Eocene). Two species from the genus *Dactylolabis* were described in a monograph by Alexander (1931), representing two subgenera: *Dactylolabis* (*Dactylolabis*) *vetusta* Al. and *Dactylolabis* (*Idiolabis*) *terebrella* Al. Krzeminski (2000) described a new species, *Dactylolabis* (*Idiolabis*) *christelae*. A further five species, belonging to three new subgenera, were described by Podenas (2003): *Dactylolabis* (*Aurolabis*) *labis*, *Dactylolabis* (*Eolabis*) *latusta*, and three species of *Dactylolabis* (*Eobothrophorus*): *Dactylolabis* (*Eobothrophorus*) *alna*, *Dactylolabis* (*Eobothrophorus*) *altata*, and *Dactylolabis* (*Eobothrophorus*) *lauryni*.

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Two other specimens of the subgenus *Dactylolabis* (*Eobothrophorus*) were found in private collections of amber inclusions. One of them is a new species. The second represents *Dactylolabis* (*Eobothrophorus*) *lauryni* Podenas; it is the second known specimen of this species.

2 Material and Methods

The specimens are from two private collections: *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum* sp. nov. is the property of known German collectors Christel and Hans Werner Hoffeins. The holotype is to be deposited in the Senckenberg German Entomological Institute in Müncheberg (previously: Eberswalde) (SDEI). *Dactylolabis* (*Eobothrophorus*) *lauryni* Podenas belongs to the private collector, Andrzej Górski. The drawings were made from the camera pictures of the specimens.

3 Systematic Paleontology

Order Diptera Linné, 1758
Family Limoniidae Speiser, 1909
Subfamily Dactylolabinae Alexander, 1920
Genus *Dactylolabis* Osten-Sacken, 1860
Subgenus *Eobothrophorus* Podenas, 2003

Species *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum* sp. nov. (Figs. 1a–g, 2d, 3f).

Diagnosis: Vein Sc ending opposite fork of vein Rs into veins R2+3+4 and R5; discal cell comparatively small, characteristically indented in upper distal corner by the position of dM1+2 shifted to middle of d cell. Cross-vein m-cu a little before fork of basal vein Mb into veins M1+2 and M3+4. Tergite

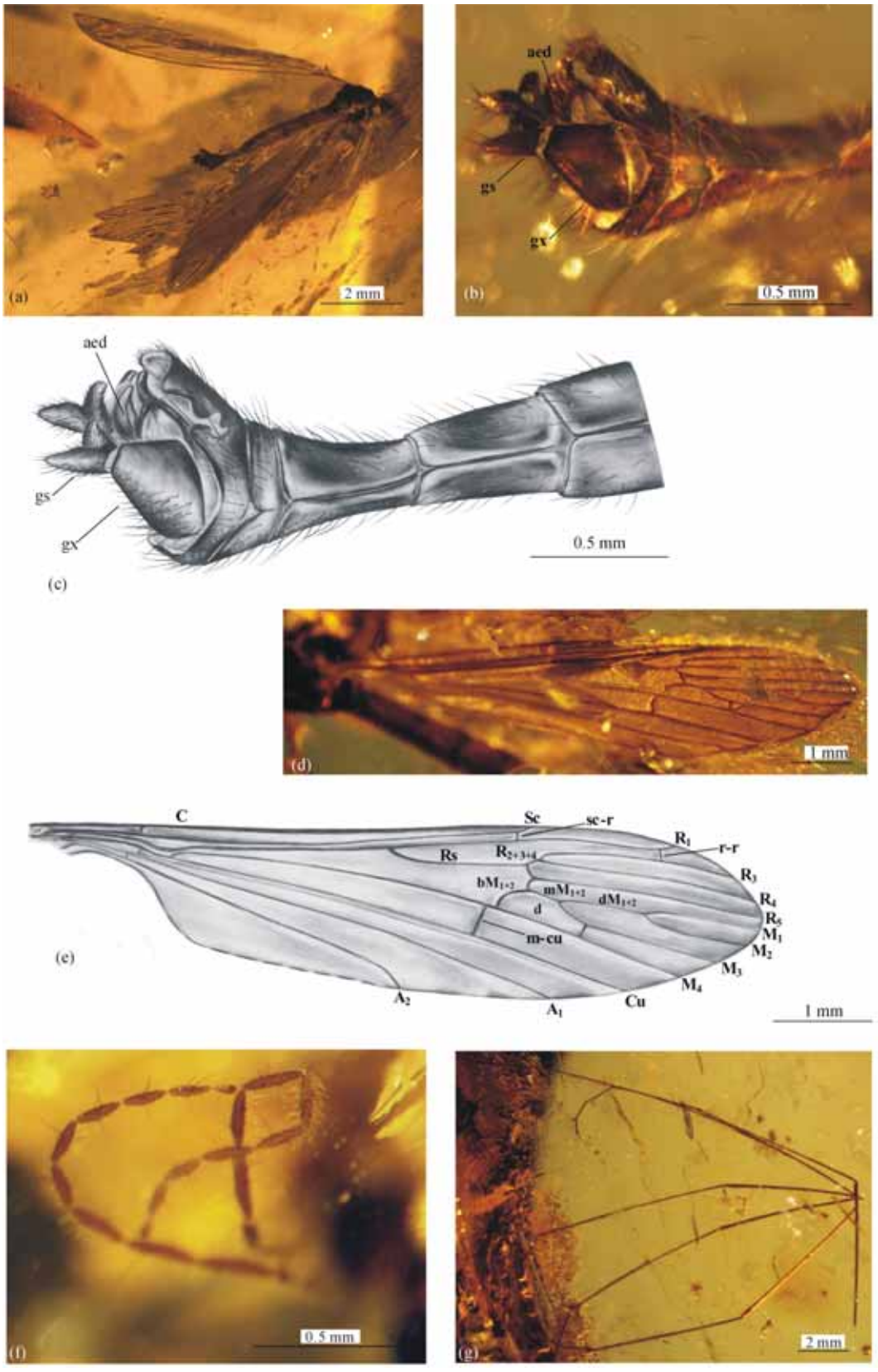

Fig. 1. *Dactylolabis* (*Eobothophorus*) *hoffeinsorum* sp. nov.
(a) specimen; (b) photograph of hypopygium, lateral view; (c) reconstruction of hypopygium lateral view; (d) photograph of wing; (e) reconstruction of wing; (f) antennae; (g) legs.

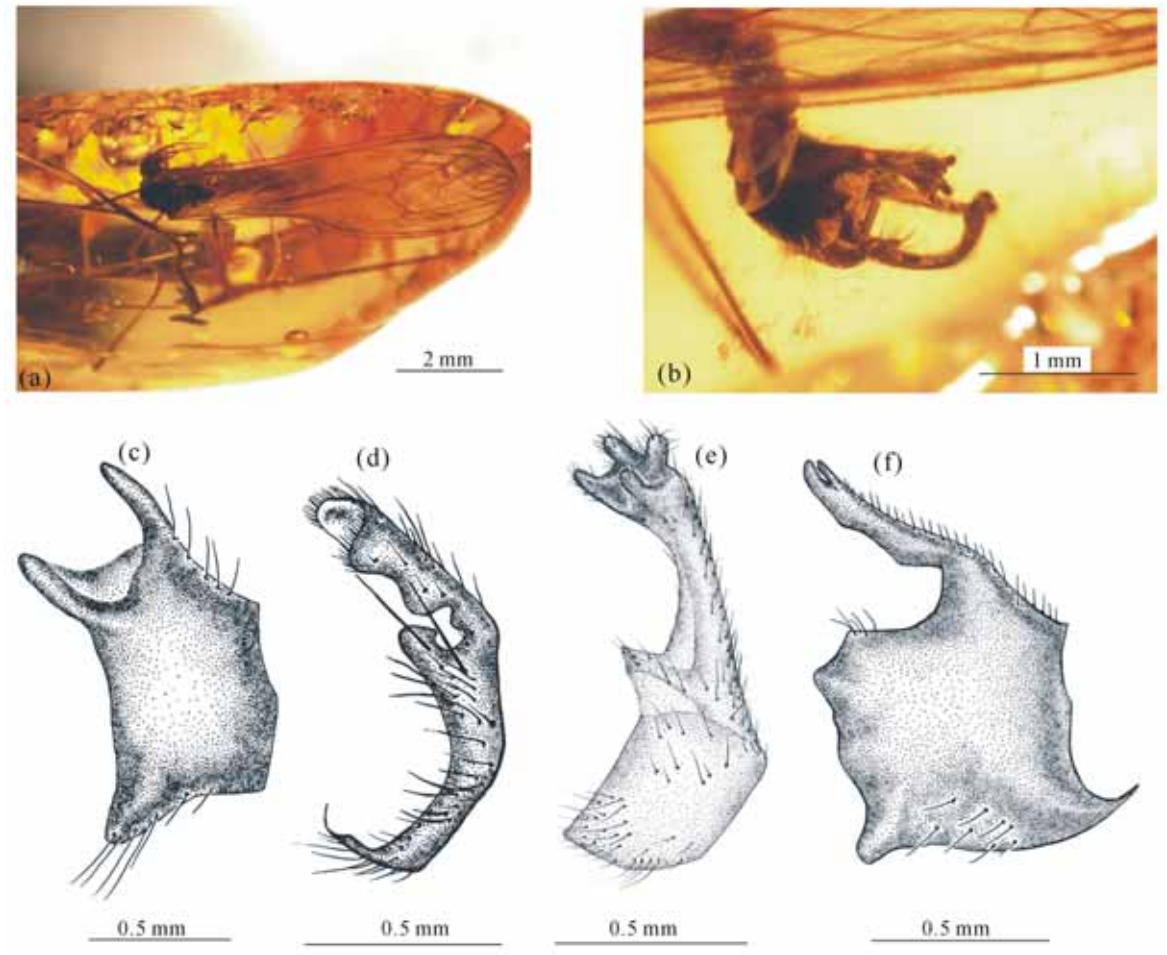

Fig. 2. specimen (a) and hypopygium (b) of *Dactylolabis* (*Eobothrophorus*) *lauryni* Podenas, 2003. Reconstruction of IX abdominal segment of *Dactylolabis* (*Eobothrophorus*) *altata* Podenas (c) after Podenas, *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum* sp. nov. (d), *Dactylolabis* (*Eobothrophorus*) *lauryni* Podenas (e), and *Dactylolabis* (*Eobothrophorus*) *alna* Podenas (f) after Podenas, 2003.

IX with large process indented into several small lobes. Gonocoxite short, very wide basally; gonostyle with short, wide process at base.

Etymology: The new species is dedicated to Christel and Hans Werner Hoffeins, enthusiastic amateurs and experts of inclusions in Baltic amber.

Holotype: Male no. 1088-2 in Baltic amber (Upper Eocene). Collection of Christel and Hans Werner Hoffeins; holotype to be housed in SDEI.

Description: The specimen is entirely preserved, with right wing visible (Fig. 1a, d). Body brown, 5.9 mm long; wing length 7.9 mm.

Antennae (Figs. 1f, 3f) long, 16-segmented, if bent backwards, they would reach the base of abdomen; scape long, cylindrical; pedicel short, pear shaped; flagellomeres elongated with numerous short bristles; apical flagellomere half as long as penultimate and expanded at apex. Palpi not visible.

Wings (Fig. 1d, e) slightly brown infuscate, Sc short, ending opposite fork of Rs into R2+3+4 and R5; cross-vein sc-r at its length before the end of Sc; arculus absent; R1 very long; cross-vein r-r (R2) at its length before end of R1, Rs comparatively long; R2+3+4 very short; R3 half of R2+3 and five times as long as R2+3+4; discal cell small (eighth of wing length) with rounded upper basal part due to bM1+2 being arched. Distal upper third of d cell characteristically indented due to the origin of dM1+2 being shifted to middle of d cell. M1 long, approximately 1.3 times dM1+2; M3 approximately 1.5 times as long as d cell; cross-vein m-cu a little before the fork of Mb into M1+2 and M3+4; both anal veins rather long and straight.

Fore and hind legs separated from the body; without tibial spurs (Fig. 1g).

In the hypopygium, segment IX forms a complete ring; distinct, huge and wide lobe on tergum is present. Gonocoxite short, massive, very wide basally and regularly narrowing towards end. Gonostyle short, with short, thick lobe at the base; apex pointed. Aedeagus short and wide; parameres shorter than aedeagus. (Figs. 1b, c, 2d).

Dactylolabis (*Eobothrophorus*) *lauryni* Podenas, 2003 (Figs. 2a, b, e, 3a, e)

Dactylolabis (*Eobothrophorus*) *lauryni* Podenas, 2003: 63–64 .

A second specimen of this species was found. The details of

the hypopygium are perfectly visible and enabled us to amend the original description.

Materials examined: Male M. 5866 from the private collection of Andrzej Górski.

Additional description: Wing venation as in the holotype (Figs. 2a, 3a). In the hypopygium, the medial process of tergite IX is branched apically into four branches and not three, as in the original description (Podenas 2003). In the holotype, this structure is covered by the wing, and is thus less visible (Fig. 2b, e).

4 Conclusions

The fossil representatives from the genus *Dactylolabis* are rare in Baltic amber. Figs. 2c–f and 3 present comparisons of important morphological features of *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum* sp. nov. and related species that have not been described until now. Distinct differences occur both in the morphology of antennal segments (Fig. 3d–g) and in wing venation, especially in the length of R2+3+4, shape of d cell, and position of cross-vein m-cu (Figs. 1e, 3a–c). Morphology of process of tergite IX of the abdomen offers further distinctive features (Fig. 2c–f).

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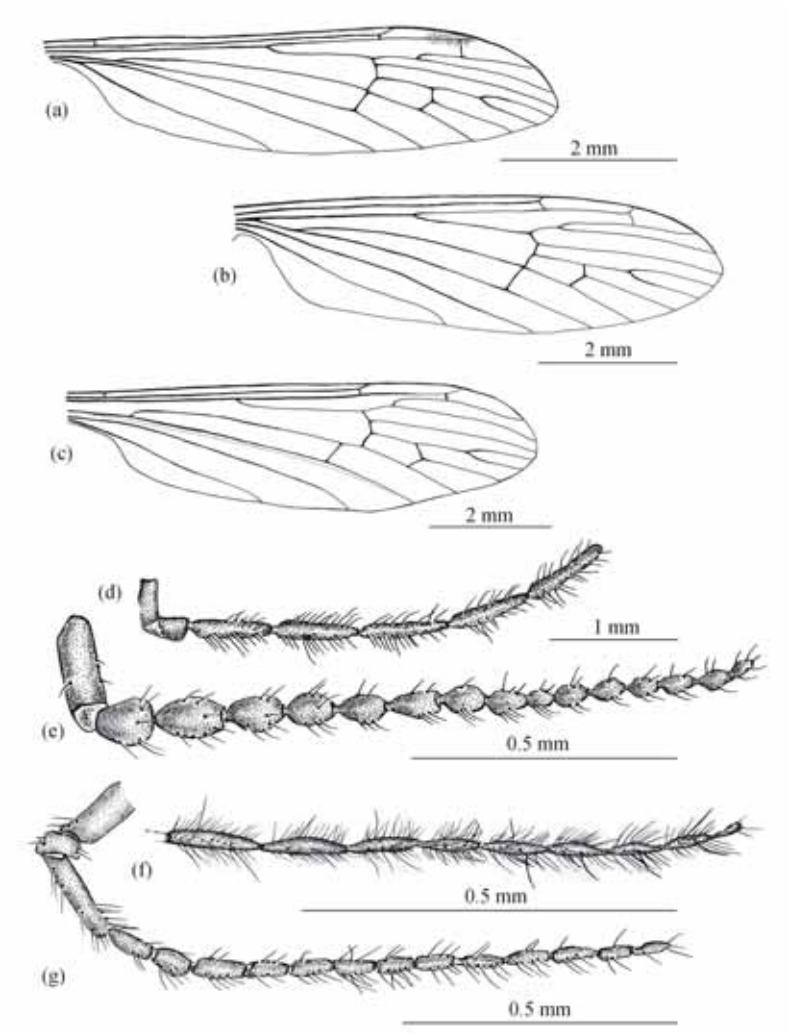

Fig. 3. Wing venation (a–c) and antennae (d–g) of *Dactylolabis* (*Eobothrophorus*) *lauryni* Podenas (a, e), *Dactylolabis* (*Eobothrophorus*) *alna* Podenas (b, g), *Dactylolabis* (*Eobothrophorus*) *altata* Podenas (c, d – proximal part); *Dactylolabis* (*Eobothrophorus*) *hoffeinsorum* sp. nov. (f). a, b, c, d, e, f after Podenas 2003.

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