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First record of a fossil larva of Hemerobiidae (Neuroptera) from Baltic amber

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Abstract

A fossil larva of Hemerobiidae (Neuroptera) is recorded for the first time from Baltic amber. The subfamilial and generic affinities of this larva are discussed. It is assumed that it may belong to *Prolachlanius resinatus*, the most common hemerobiid species from the Eocene Baltic amber forest. An updated list of extant species of Hemerobiidae with described larvae is provided.

Key words: Insecta, Neuroptera, Hemerobiidae, Baltic amber, Eocene, larva

Introduction

The Hemerobiidae is the most widely distributed family of Neuroptera. Hemerobiid species occur from the subpolar tundra to tropical regions, but with approximately 550 species they are not particularly speciose (Oswald 2007). Their fossil record extends to the Late Jurassic (Makarkin *et al*. 2003); however, records of fossils older than the Eocene are rare. The larvae of Hemerobiidae feed on small arthropods (e.g., aphids, mites) and are often used for pest control. For this reason, the larvae of many species have been described. A list of these species was provided by Gepp (1984). Later, Oswald & Tauber (2001) considerably added to these data. We give here an updated list (Table 1).

The Hemerobiidae are the most common Neuroptera in Baltic amber in terms of specimens after the Nevrorthidae and Coniopterygidae, and a most diverse family in terms of number of species. Five species have been described from there (Pictet-Baraban & Hagen 1856; Krüger 1923; Makarkin & Wedmann 2009; Jepson *et al*. 2010), and at least the same number awaits description (see below). Nevertheless, hemerobiid larvae were hitherto unknown from Baltic amber. In this paper we describe a fossil larva of this family for the first time. Although this larva is rather poorly preserved, its general appearance and all preserved details support its hemerobiid affinity.

Material and methods

The amber is from the private collection of Thomas Weiterschan, Höchst im Odenwald, Germany. The photographs were taken by Sonja Wedmann and Thomas Weiterschan using a Leica MZ12.5 stereomicroscope and a Nikon D300 digital camera. Extension of depth of focus was achieved by stacking several photos with a test version of the program Helicon Focus, version 5.2.16 of December 2011. The drawings were prepared by Thomas Weiterschan. The terminology follows MacLeod (1964) and Tauber (1991).

Institutional abbreviations: GZG, Geowissenschaftliches Zentrum der Universität Göttingen [Geoscience Centre of the University of Göttingen], Germany; SMF, Senckenberg Forschungsinstitut und Naturmuseum Frankfurt, Frankfurt am Main, Germany.

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Systematic paleontology

Order Neuroptera Linnaeus, 1758

Family Hemerobiidae Latreille, 1802

Hemerobiidae indet., larva
Figs. 1, 2

Material examined. Specimen no. 1530 deposited in the private collection of Thomas Weiterschan; a larva in a small piece of Baltic amber (precise collecting locality is unknown); an oribatid mite (Acari) is preserved as syninclusion.

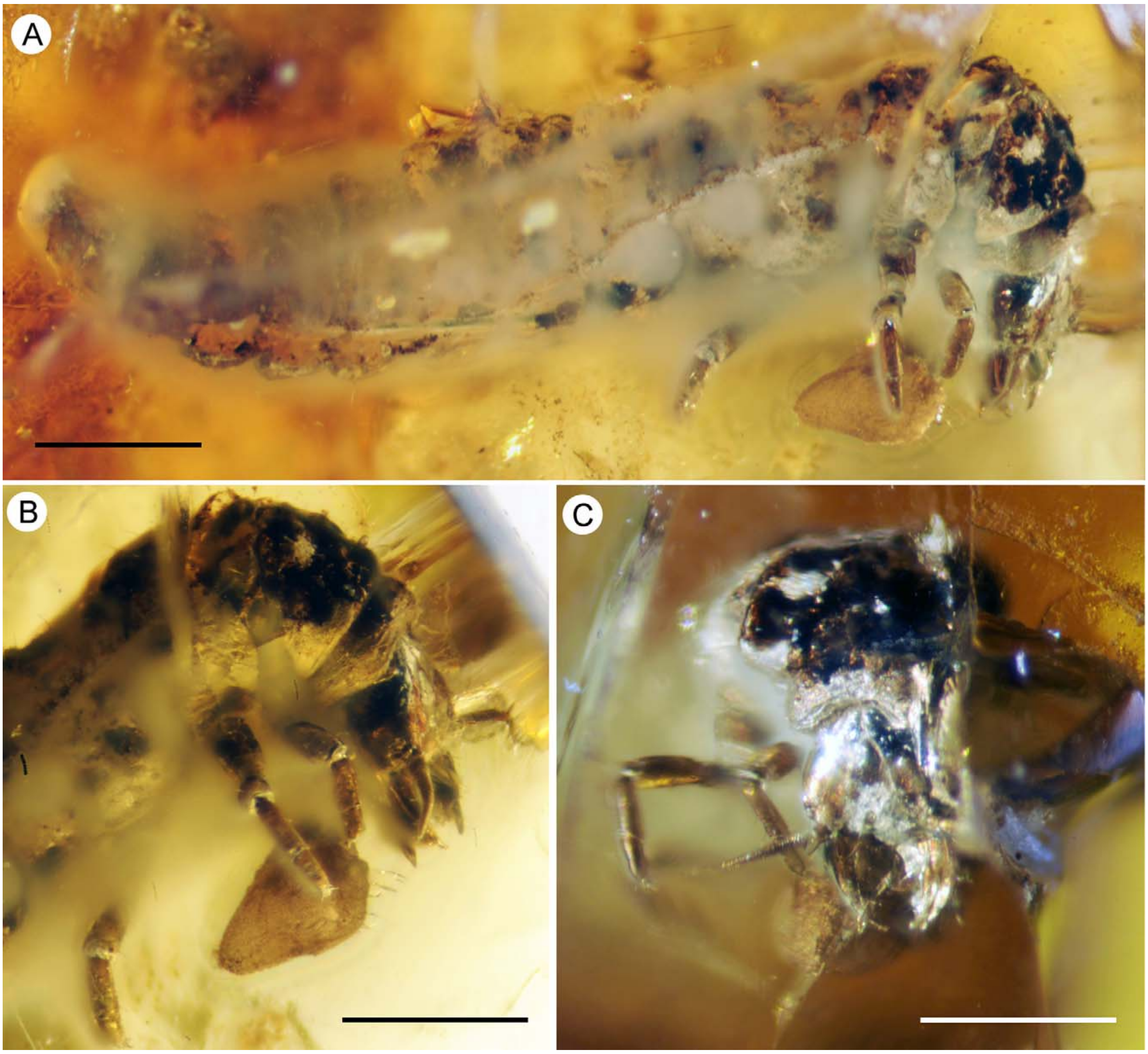

FIGURE 1. Hemerobiidae indet., larva, specimen 1530 from coll. T. Weiterschan. A, whole larva, lateral view. B, head and thorax, lateral view. C, head, fronto-dorsal view. All scale bars = 0.5 mm.

Description. Larva approximately 3.6 mm long (including mouthparts), rather swollen.

Head somewhat retracted into prothorax. Head capsule about 0.36 mm long, about 0.36 mm wide; area between antennae and basal parts of mouthparts not clearly visible. Mandibles, maxillae form sucking mouthparts (their parts hard to distinguish from each other); mouthparts slightly shorter than head capsule width, smoothly curved inward; maxillae apparently slightly longer than mandibles with apex somewhat blunt. Antennae slightly longer than head capsule width, distinctly three-segmented; basal segment short, rounded, with smooth surface; second segment approximately twice as long, conspicuously stouter than third segment, both with annulated surfaces; apex of antenna with short bristle. Labial palps three-segmented, slightly shorter than mandible length; two basal segments cylindrical, both slightly longer than wide; terminal segment fusiform, length approximately equal to length of two basal segments together. Dorsal ecdysial lines distinct, Y-shaped. Each eye with four stemmata.

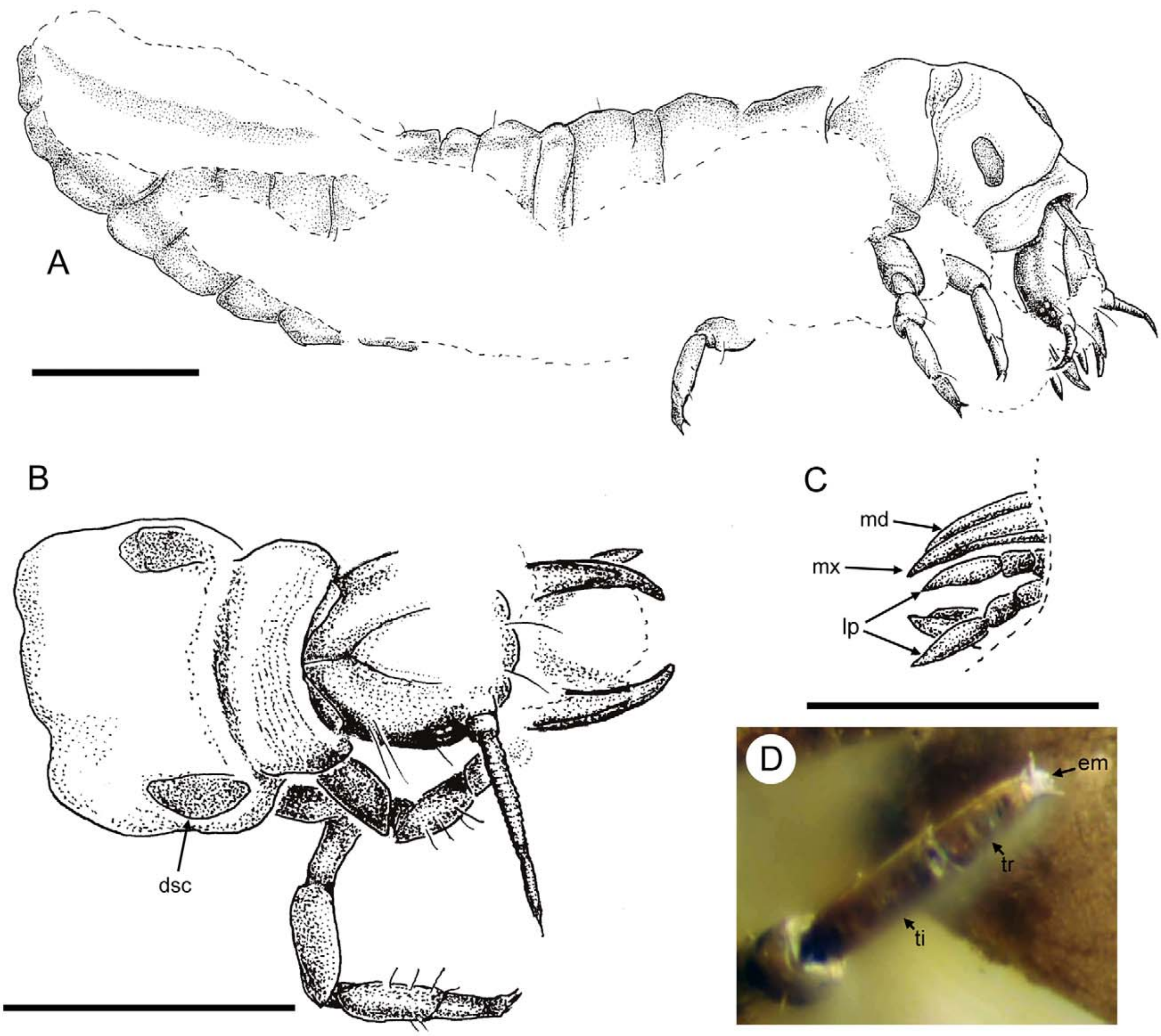

FIGURE 2. Hemerobiidae indet., larva, specimen 1530 from coll. T. Weiterschan. A, whole larva as preserved, lateral view. B, head and prothorax, dorsal view. C, mouthparts, ventro-lateral view. D, apex of right mid-leg. dsc, dorsal sclerite; em, empodium; lp, labial palps; md, mandible; mx, maxillae; ti, tibia; tr, tarsus. All scale bars = 0.5 mm (D not to scale).

Cervix short, transverse, forming collar which slightly overlaps posterior margin of head capsule. Anterior subsegment of prothorax broad, about 0.6–0.7 mm wide and about 0.3–0.4 mm long; lateral dorsal sclerites large, crescent-shaped. Posterior subsegment of prothorax, meso-, metathorax poorly visible, no measurements can be given.

Legs relatively short, stout, robust. Coxa elongate, stout; trochanter indistinctly visible, apparently elongate; femur rather short, stout; tibia short, only slightly longer than tarsus; claws rather short; empodium between claws short, pad-shaped (Fig. 2D).

Abdomen poorly preserved, in general swollen.

Remarks. Some details of the larva are indistinctly visible. The maxillae and their association with the mandibles might be slightly different in the drawing and photo as there are reflecting fractures that disturb the view. The abdomen is obscured by a milky covering and the boundaries between the segments are not clearly visible.

The presence of a short, pad-shaped empodium clearly shows that this is a 2nd or 3rd instar larva; the empodium is long and trumpet-shaped in the first instar larva of Hemerobiidae. Most probably this is a 2nd instar larva, judged from its relatively small size. Such small 3rd instar larvae are unknown in any species of extant Hemerobiidae. For instance, in *Sympherobius amiculus* (Fitch, 1855) the 2nd instar larva is 2.81 mm long, and the 3rd instar larva is 4.8 mm long (Smith 1923); in *Psectra diptera* (Burmeister, 1839) the 2nd instar larva is 3.75 mm long, and the 3rd instar (full-grown) larva is 5.5 mm long (Killington 1946); in *Megalomus fidelis* (Banks, 1897) the mature 2nd instar larva is 3.32 ± 0.43 mm long, and the mature 3rd instar larva is 4.53 ± 1.05 mm (MacLeod 1961).

Discussion

The Baltic amber Hemerobiidae. We know of 42 adult specimens of Hemerobiidae (including undescribed specimens from GZG, SMF, and the Weiterschan and Hoffeins private collections) to be found in Baltic amber. Five species of four genera have been described: *Prolachlanius resinatus* (Hagen in Pictet-Baraban & Hagen, 1856), *Prospadobius moestus* (Hagen in Pictet-Baraban & Hagen, 1856), *Prophlebonema resinatum* (Krüger, 1923), *Sympherobius completus* Makarkin & Wedmann, 2009, and *S. siriae* Jepson *et al*., 2010.

Prolachlanius resinatus was probably the most common hemerobiid species in the Baltic amber forest. At least 21 specimens of this species are known (Pictet-Baraban & Hagen 1856; Weitschat & Wichard 1998: Pl. 56f; Kupryjanowicz 2001: Fig. 51; Janzen 2002: Fig. 262; Scheven 2004, Fig. on p. 67, and twelve undescribed specimens from GZG, and the Weiterschan and Hoffeins collections). Also, there is a specimen in the Weiterschan collection which may belong to another species of *Prolachlanius*. The genus *Prolachlanius* Krüger was assigned to the subfamily Sympherobiinae by Krüger (1923). Examination of new material confirms this attribution.

Three species of *Sympherobius* Banks are known: nine specimens belong to the closely related species *S. completus* and *S. siriae* (Weitschat & Wichard 1998: Pl. 56e; Kobbert 2005: Fig. on p. 108 [T214]; Makarkin & Wedmann 2009; Jepson *et al*. 2010, and five undescribed specimens from SMF and the Hoffeins collection), and one specimen to an undescribed species (Kobbert 2005, Fig. on p. 105 [T079]), probably of the *fuscescens* species group (see Makarkin & Wedmann 2009).

Prospadobius moestus is known from a single holotype specimen which is now apparently lost. It probably represents a distinct genus of unknown subfamily affinity. In general, its venation is similar to that of Sympherobiinae, but there are three crossveins between the proximal-most branch of Rs to CuA in the outer ("Randreihe") gradate series in the hind wings (Krüger 1923), absent in other Sympherobiinae genera.

Prophlebonema resinatum is known from a single specimen which is now apparently lost. It is clearly closely related to *Drepanepteryx* or may be even its synonym judged from the description of Krüger (1923). In particular, the eight Rs separately originated from R (i.e, ORB; see Makarkin & Wedmann 2009) are found in *Prophlebonema resinatum*; such numerous ORBs are characteristic of *Drepanepteryx*. In other species known from Baltic amber (including undescribed) the number of ORB is much less. Hagen (1852) reported '*Drepanopteryx*' from Baltic amber but it was never described or mentioned in his subsequent papers (Hagen 1854; Pictet-Baraban & Hagen 1856; Hagen 1866). Therefore, it is impossible now to ascertain what he meant, *Prophlebonema* Krüger, 1923 or the largest species of a new *Megalomus*-like genus (see below).

Three undescribed *Megalomus*-like species may be recognized which belong to a new undescribed genus. The first is the largest species, the forewing of the only known specimen is 10 mm long (Scheven 2004, Fig. on p. 67). The second species is intermediate in size (the forewing of one specimen is 8.8 mm long), known from four specimens (Weitschat & Wichard 1998: Pl. 56c and three specimens from SMF and the Hoffeins collection). The third species is smallest; it is represented by three specimens and the forewing of one of them is 6.9 mm long (Erichson & Weitschat 2000: Fig. 45; Kobbert 2005: Fig. on p. 107 [T371]; Weitschat & Wichard 1998: Pl. 56c, one specimens in GZG).

The photograph of 'Hemerobiidae' provided by Bachofen-Echt (1949: Fig. 121) belongs most probably to some undescribed genus of Nevrorthidae (V.M., per. obs.).

Thus, two distinct groups of Hemerobiidae are found in Baltic amber: Sympherobiinae (*Prolachlanius* and

Sympherobius) and Drepanepteryginae or/and Megalominae (*Prophlebonema* and a new undescribed genus). The subfamilial affinity of *Prospadobius* is unknown. The abundance of sympherobiine specimens in the Baltic amber forest was much higher than that of Megalominae/ Drepanepteryginae (thirty-two versus nine specimens, respectively).

The subfamilial and generic attribution of the larva. Ten subfamilies are recognized in the family Hemerobiidae: Hemerobiinae, Sympherobiinae, Megalominae, Drepanepteryginae, Microminae, Notiobiellinae, Drepanacrinae, Carobiinae, Psychobiellinae and Adelphohemerobiinae (Oswald 1993, 1994). Larval stages are unknown only in the three latter subfamilies (Table 1). However, these subfamilies are monogeneric, they have few species and are restricted to Australia (and adjacent islands) and Chile.

TABLE 1. A list of species of extant Hemerobiidae with larvae described.

Subfamilies	Species	References
Hemerobiinae	*Hemerobius atrifrons* McLachlan, 1868	Killington 1932a: Fig.; Killington 1937; Gepp 1984: Fig. 16a
	Hemerobius bolivari Banks, 1910	Monserrat 2003: Figs 1–7, 32, 33
	Hemerobius chilensis Nakahara, 1965	Monserrat 2003: Figs 8, 9, 34, 35
	Hemerobius conjunctus Fitch, 1855	Krakauer & Tauber 1996
	Hemerobius discretus Navás, 1917	Mitchell 1962 [*H. neadelphus*]
	Hemerobius humulinus Linnaeus, 1758	Brauer 1867; Smith 1923: Pl. 2, Figs. 5, 6; Withycombe 1923b: Pl. 15, Fig. 4; Killington 1936: Pl. 10, Fig. 3; Killington 1937; Nakahara 1954: Pl. 4, Figs. 3–6 [*H. obtusus*]; MacLeod 1964; Agekyan 1973: Fig. 2; Krakauer & Tauber 1996: Fig. 2
	Hemerobius japonicus Nakahara, 1915	Nakahara 1954: Pl. 3, Figs. 2–6
	Hemerobius lutescens Fabricius, 1793	Withycombe 1923b; Withycombe 1925: Fig. 11; Killington, 1937; Genay 1953
	Hemerobius micans Olivier, 1792	Withycombe 1923b: Pl. 15, Fig. 2; Killington 1936: Pl. 10, Fig. 4; Killington, 1937
	Hemerobius nitidulus Fabricius, 1777	Withycombe 1923b: Pl. 15, Fig. 3; Killington 1936: Pl. 10, Fig. 5; Killington 1937 Genay 1953; Bänsch 1964: Figs. 2, 3
	Hemerobius pacificus Banks, 1897	Quayle 1912; Moznette 1915a: Pl. 15, Fig. 4; 1915b: Fig. 49B
	Hemerobius perelegans Stephens, 1836	Killington 1934; Killington 1936: Pl. 5. Fig. 2; Pl. 11, Fig. 2; Killington 1937
	Hemerobius pini Stephens, 1836	Killington 1932c; Killington 1936: Pl. 11, Fig. 3; Killington 1937
	Hemerobius simulans Walker, 1853	Killington 1932b: Fig.; Killington 1936: Pl. 11, Fig. 1; Killington 1937; VM, pers. obs.
	Hemerobius stenopterus Monserrat, 1996	Monserrat 2003: Figs 10,11
	Hemerobius stigma Stephens, 1936	Withycombe 1922: Fig. 3; Smith 1923: Pl. 1, Figs. 1, 2; Pl. 2, Figs. 11, 12 [*H. stigmaterus*]; Withycombe 1923b: Pl. 15, Fig. 5; Withycombe 1925: Figs. 22, 23, 25, 27; Killington 1936: Pl. 10, Fig. 2; Laidlaw 1936: Figs. 4–9; Killington 1937; Miller & Lambdin 1984: Fig. 1A–G
	Hemerobius sp.	Peterson 1951: Figs. 1A,C
	Hemerobius sp.	Gepp 1984: Fig. 16b,c
	Wesmaelius altissimus (Ohm, 1967)	Yang 1980a: Fig. 1 [*Kimminsia bihamita*]
	Wesmaelius concinnus (Stephens, 1836)	Withycombe 1923b: Pl. 15, Fig. 7; Killington 1937: Pl. 22, Fig. 4
	Wesmaelius navasi (Andreu, 1911)	Monserrat 1983: Figs. 4–12
	Wesmaelius nervosus (Fabricius, 1793)	Strøm 1788: Pl. 5, Figs. 1, 2 [*Hemerobius betulinus*]; Withycombe 1923b; Miles 1924; Killington 1934; Killington 1935; Killington 1936: Pl. 11, Fig. 5; Killington 1937 [*Boriomyia betulina*]; Morton 1935: Pl. 4A,B
	Wesmaelius quadrifasciatus (Reuter, 1894)	Killington 1934; Killington 1937: Pl. 22, Fig. 3

continued next page

TABLE 1. (continued)

Subfamilies	Species	References
	Wesmaelius ravus (Withycombe, 1923)	Withycombe 1923a; Killington 1937
	Wesmaelius subnebulosus (Stephens, 1936)	Withycombe 1923b: Pl. 15, Fig. 6; Killington 1935; Killington 1936: Pl. 11, Fig. 4; Killington 1937; Agekyan 1973
Sympherobiinae	*Nomerobius cuspidatus* Oswald, 1990	Monserrat 2003: Figs 12–18, 36
	Sympherobius amiculus (Fitch, 1855)	Smith 1923: Pl. 3, Figs. 9–11
	Sympherobius barberi (Banks, 1903)	Smith 1934
	Sympherobius californicus Banks, 1911	Essig 1910: Fig. 59A [*S. angustus* (non Banks. 1904)]; Essig 1913: Fig. 133A [*S. angustus* (non Banks 1904)]
	Sympherobius domesticus Nakahara, 1954	Nakahara 1954: Pl. 5, Figs. 5–8
	Sympherobius elegans (Stephens, 1936)	Withycombe 1923b; Killington 1937
	Sympherobius fallax Navás, 1908	Bodenheimer & Guttfeld 1929: Fig. 11f,g [*S. amicus*]; Bodenheimer 1930 [*S. amicus*]
	Sympherobius fuscescens (Wallengren, 1863)	Withycombe 1923b [*S. inconspicuus*]; Withycombe 1925: Fig. 15 [*S. inconspicuus*]; Killington 1931: Fig. 1; Killington 1937: Pl. 22, Fig. 2
	Sympherobius gayi Navás, 1910	Monserrat 2003: Figs 19–24, 37
	Sympherobius marmoratipennis (Blanchard in Gay, 1851)	Reguilón & Nuñez Campero 2005: Figs. 1–3
	Sympherobius matsucocciphagus Yang, 1980	Yang 1980b: Fig. 3
	Sympherobius pellucidus (Walker, 1853)	New 1967: Fig. 1
	Sympherobius pygmaeus (Rambur, 1942)	Withycombe 1923b: Pl. 15, Fig. 1; Withycombe 1925; Killington 1937: Pl. 22, Fig. 1; Silvestri 1943
Megalominae	*Megalomus fidelis* (Banks, 1897)	MacLeod 1961: Figs. 1–6; Tauber 1991: Fig. 33.25
	Megalomus hirtus (Linnaeus, 1761)	Killington 1934; Killington 1936: Pl. 5, Fig. 1; Killington 1937: Pl. 22, Fig. 5
Drepanepteryginae	*Drepanepteryx phalaenoides* (Linnaeus, 1758)	Réaumur 1737: Pl. 32, Figs. 3, 4; Gleichen 1770: Pl. 3, Figs. 22–24; Gleichen 1787: Pl. 3, Figs. 22–24; Brauer 1867; Standfuss 1906; Morton 1910: Fig. 1–3 [Figs. reproduced from Gleichen 1770, 1787]; Standfuss 1910; Killington 1937; Fulmek 1941; Christensen 1943; Gepp 1986: Fig. on p. 18; VM, pers. obs.
	Gayomyia falcata (Blanchard in Gay, 1851)	Monserrat 2003: Figs. 25–31
Drepanacrinae	*Drepanacra binocula* (Newman, 1838)	New 1975: Figs. 2–6
Notiobiellinae	*Psectra diptera* (Burmeister, 1839)	Killington 1946: Figs. 4–10
Microminae	*Micromus angulatus* (Stephens, 1836)	Aubrook 1935 [*M. aphidivorus*]; Killington 1936; Fraser, 1940; Stroyan 1949; Aspöck & Aspöck 2007: Fig. 37
	Micromus igorotus Banks, 1920	Vidya 2007: Pl. 1a
	Micromus numerosus Navás, 1910	Nakahara 1954: Pl. 6, Figs. 2, 3; Kawashima 1958: Pl. 10A–D
	Micromus paganus (Linnaeus, 1767)	Withycombe 1923b: Pl. 15, Fig. 8; Killington 1936: Pl. 10, Fig. 1
	Micromus posticus (Walker, 1853)	Smith 1922: Pl. 3, Figs. 1, 2; Selhime & Kanavel 1968; Miller & Cave 1987: Fig. 4; Krakauer & Tauber 1996
	Micromus rubrinervis (Perkins in Sharp, 1899)	Tauber & Krakauer 1997
	Micromus subanticus (Walker, 1853)	Selhime & Kanavel 1968; Krakauer & Tauber 1996: Figs. 1–4
	Micromus tasmaniae (Walker, 1860)	Froggatt 1904 [*M. australis*], Froggatt 1907: Fig. 38 [*M. australis*]; New & Boros 1983: Figs. 1–9; Tauber 1991: Fig. 33.24.
	Micromus timidus Hagen, 1853	Williams 1927 [*M. vinaceus*]; VM, pers. obs.

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TABLE 1. (continued)

Subfamilies	Species	References
	Micromus vagus (Perkins in Sharp, 1899)	Terry 1908; Tauber & Krakauer 1997: Fig. 1 [reproduced in Tauber *et al*. 2003: Fig. 6E].
	Micromus variegatus (Fabricius, 1793)	Brauer 1871: Pl. 2, Fig. 2; Withycombe 1924; Killington 1936; Kimmins 1939: Pl. 8; Dunn 1954: Pl. 1b; Agekyan 1973
	Micromus variolosus Hagen, 1886	Smith 1934
	Nusalala uruguaya (Navás, 1923)	Souza 1997: Figs. 2–6.
Subfamily uncertain	Hemerobiidae gen. sp. indet.	Riek 1970: Figs. 29.5G, 29.11H

Oswald & Tauber (2001) divided the larvae of extant Hemerobiidae into two informal morphological types, ‘Type 1’ and ‘Type 2’. The former are characterized by a slender body, an elongate, tapered abdomen, a head which cannot be retracted into the prothorax, and by prominent thoracic sclerites (exemplified by *Micromus* Rambur and *Hemerobius* Linnaeus); the latter have a swollen (physogastric) body, a lobed abdomen, a head which can be retracted into the prothorax, and reduced or absent thoracic sclerites (exemplified by *Megalomus* Rambur and *Psectra* Hagen). The Baltic amber larva studied here appears to be intermediate between these two types but is clearly more similar to Type 2 than to Type 1. On the one hand, its body is swollen and the head is retracted into the prothorax; on the other hand, at least the prothoracic sclerites are prominent.

The Baltic amber larva does not belong to any extant genus whose larvae are known. The larger size and long antennae (considerably longer than the length of the head) of Hemerobiinae, Drepanepteryginae and Microminae exclude them from consideration. Only Megalominae, Notiobiellinae, Drepanacrinae, and Sympherobiinae may be considered.

The larvae of two species of *Megalomus* are similar to each other and possess the following shared features: the labial palps are longer than the mouthparts; the apical segment of labial palps is swollen, much longer than two basal segments together; the third antennal segment is very short, much shorter (at least three times) than the second; the prothoracic sclerites are reduced, almost not visible (Killington 1936, 1937; MacLeod 1961). These conditions are strongly different from those found in the Baltic amber larva. Only the swollen body, a head which is slightly retracted into the prothorax and short antennae are shared by both the extant *Megalomus* larvae and the Baltic amber larva. Most probably, the Baltic amber larva does not belong to the Megalominae.

The larva of *Drepanacra* Tillyard (Drepanacrinae) is rather similar to the Baltic larva but much larger (the 2nd instar full-grown larva is 4.17–5.20 mm long), and differs from the latter by the following features: the antennae are longer; the labial palps are shorter; the boundary between the second and the third segment of the antennae is not distinct; the prothoracic sclerites are reduced, and the tibia is twice the length of the tarsus (see New 1975). Most probably, the Baltic amber larva does not belong to the Drepanacrinae.

The larva of *Psectra* (Notiobiellinae) is similar to the Baltic amber larva in size and many features (swollen body; head retracted into prothorax, relative sizes of antennae, mouthparts and head capsule; the presence of large prothoracic sclerites and distinct ecdysial lines on the head; similar tibia/tarsus ratio) (Killington 1946). But in the larva of *Psectra*, the basal segment of antennae is annulated, the third antennal segment is much thinner than in the Baltic amber larva, and the labial palps are considerably longer than the mouthparts. Although the Baltic amber larva cannot belong to the genus *Psectra*, it may be assigned to some other genus of Notiobiellinae.

The larva of *Nomerobius* Navás (Sympherobiinae) is similar to the Baltic amber larva in its swollen body; a head which can be retracted into the prothorax; in the relative size of the antennae, mouthparts, labial palps and head capsule; in the structure of antennae; and in the presence of distinct prothoracic sclerites (Monserrat 2003). It differs from the Baltic amber larva by the rounded apex of the terminal segment of its labial palps (acute in the latter) and smaller prothoracic sclerites.

Although the larvae of many species of *Sympherobius* Banks are described, these descriptions are often not comprehensive (e.g., Withycombe 1923b, Killington 1931, 1937; Nakahara 1954; Monserrat 2003; Reguilón & Nuñez Campero 2005). The larvae of this genus are quite similar to those of the previous genus, but their labial palps are always longer than the mouthparts (although their apices are also rounded) and the prothoracic sclerites are more prominent. The structure of the labial palps distinguishes the *Sympherobius* and the Baltic amber larvae.

Although the latter does not belong to either *Nomerobius* or *Sympherobius*, it may be assigned to some other genus of Sympherobiinae.

In summary, the Baltic amber larva may be assigned to some genus of Notiobiellinae or Sympherobiinae whose larva is unknown yet. The review given above shows that the hemerobiid assemblage of Baltic amber is dominated by Sympherobiinae and that Notiobiellinae are not (yet) recorded from Baltic amber. Sympherobiinae are represented in Baltic amber by two genera, the extant *Sympherobius* and the extinct *Prolachlanius*. One of the *Prolachlanius* species, *P. resinatus*, is the most abundant hemerobiid species constituting about half of the known specimens of the family. Therefore, it is reasonable to assume that our larva may belong to this species. Its size (the forewing is about 4–5 mm long) is well concordant with the size of the 2nd instar larva.

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