

A survey of Baltic amber Theridiidae (Araneae) inclusions, with descriptions of six new species

Обзор инклюзов Theridiidae (Araneae) из балтийского янтаря, с описаниями шести новых видов

YU.M. MARUSIK¹ & D. PENNEY²

¹ Institute for Biological Problems of the North, Portovaya Str. 18, Magadan, 685000 Russia. email: yurmar@mail.ru

² Earth Sciences, The University of Manchester, Manchester, M13 9PL, United Kingdom. email: david.penney@man.ac.uk

ABSTRACT. Baltic amber spider inclusions previously placed in the family Theridiidae are reviewed. Six new species from the Palanga Amber Museum collection are described: *Episinus balticus* sp.n. (♂), '*Episinus*' *eskovi* sp.n. (♂), '*Euryopis*' *baltica* sp.n. (♂), *Nanomysmena palanga* sp.n. (♂), *N. petrunkevitchi* sp.n. (♂), *N. pseudogracilis* sp.n. (♂). *Nanomysmena* Petrunkevitch, 1958 is removed from synonymy with *Clya* Koch et Berendt, 1854. Two new replacement names are proposed: *Theridion berendti* nom.n. for *T. globosum* (Koch et Berendt, 1854) preoccupied by *T. globosum* (Presl, 1822) (both species are fossil) and *T. sulawesiense* nom.n. for *T. simplex* Thorell, 1877 (Recent species) preoccupied by *T. simplex* Koch et Berendt, 1854 (fossil species). Five new combinations are established: *Episinus kaestneri* (Petrunkevitch, 1958) comb.n. ex. *Eodipoena* Petrunkevitch, 1942; *Episinus longimanus* (Koch et Berendt, 1854) comb.n. and *Episinus succini* (Petrunkevitch, 1942) comb.n. both ex. *Flegia* Koch et Berendt, 1854; '*Steatoda*' *stigmatica* (Koch et Berendt, 1854) comb.n. ex. *Teutana*; and '*Steatoda*' *antica* (Berland, 1939) comb.n. ex. *Lithyphantes*. Forty-three theridiid species from Baltic amber are currently attributed to 14 genera. The most species rich genera are *Nanomysmena* Petrunkevitch, 1958 (six species), *Eodipoena* Petrunkevitch, 1942 and *Episinus* Walckenaer, 1809 (each with five species). However, ten fossil species are attributed to *Theridion* Walckenaer, 1805 but it seems that they were incorrectly placed in this genus and no diagnostic illustrations were provided in the original descriptions. The correct placement of several fossil species attributed to the genera *Eodipoena*, *Episinus* and *Steatoda* is also questionable. Judging from the structure of the copulatory organs and somatic morphology it seems that many fossil Theridiidae species are incorrectly placed. Recent and fossil *Episinus* require revision. All reliably identifiable theridiids preserved in Baltic amber belong to basal subfamilies but higher theridiids are known from Miocene Dominican Republic amber. Therefore, the origins and major radiations of the higher theridiid subfamilies are probably relatively recent, occurring between the mid-Eocene and early Miocene, some 20–40 million years ago.

РЕЗЮМЕ: Проведён обзор всех пауков семейства Theridiidae найденных в балтийском янтаре. Описано шесть новых видов из коллекции Музея Янтаря, Паланга: *Episinus balticus* sp.n. (♂), '*Episinus*' *eskovi* sp.n. (♂), '*Euryopis*' *baltica* sp.n. (♂), *Nanomysmena palanga* sp.n. (♂), *N. petrunkevitchi* sp.n. (♂), *N. pseudogracilis* sp.n. (♂). Род *Nanomysmena* Petrunkevitch, 1958 выведен из синонимов *Clya* Koch et Berendt, 1854. Предложено два новых названия: *Theridion berendti* ном.н. для *T. globosum* (Koch et Berendt, 1854) преокупировано *T. globosum* (Presl, 1822) (оба вида ископаемые) и *T. sulawesiense* ном.н. для *T. simplex* Thorell, 1877 (рецентный) преокупировано *T. simplex* Koch et Berendt, 1854 (ископаемый). Уста-

новлено пять новых комбинаций: *Episinus kaestneri* (Petrunkevitch, 1958) comb.n.ex. *Eodipoena* Petrunkevitch, 1942; *Episinus longimanus* (Koch et Berendt, 1854) comb.n. и *Episinus succini* (Petrunkevitch, 1942) comb.n. оба ex. *Flegia* Koch et Berendt, 1854; '*Steatoda*' *stigmata* (Koch et Berendt, 1854) comb.n.ex. *Teutana*; и '*Steatoda*' *antica* (Berland, 1939) comb.n.ex. *Lithyphantes*. 43 вида теридиид известных из Балтийского янтаря относят к 14 родам. Наиболее богаты видами рода *Nanomysmena* Petrunkevitch, 1958 (6 видов), *Eodipoena* Petrunkevitch, 1942 и *Episinus* Walckenaer, 1809 (по 5 видов). Хотя десять ископаемых видов отнесены к роду *Theridion* Walckenaer, 1805, их таксономическое положение неясно, и, по всей видимости они относятся к другим таксонам. Таксономическое положения ряда видов, относимых к *Eodipoena*, *Episinus* и *Steatoda* неясно также. Судя по строению копулятивного аппарата и внешнему виду, многие виды теридиид отнесены к тем или иным родам неправомочно. Современные и ископаемые пауки рода *Episinus* нуждаются в ревизии. Все идентифицируемые теридииды из балтийского янтаря относятся к базальным подсемействам, высшие же теридииды известны только с Миоцена (доминиканский янтарь). Последнее свидетельствует о том, что высшие подсемейства Theridiidae относительно молоды и появились в середине эоцена – начале миоцена (20–40 миллионов лет назад).

KEY WORDS: Spiders, Araneae, Baltic amber, Theridiidae, new species, new combination, new names.
КЛЮЧЕВЫЕ СЛОВА: Пауки, Araneae, балтийский янтарь, Theridiidae, новые виды, новые комбинации.

Introduction

Platnick's [2004] world spider catalogue continues to provide an excellent up-to-date resource for taxonomists working on extant spiders. However, it does not include fossil taxa and no similar resource currently exists for palaeoarachnologists. Fossil and Recent arachnological taxonomy cannot be considered as totally independent disciplines. However, fossil taxa are rarely considered in revisions of extant spiders. The importance of considering fossils became evident when the fossil genus *Archaea* Koch et Berendt, 1854 (placed in Archaeidae) from Baltic amber was shown to be a senior synonym of the Recent genus *Eriauchenius* O. Pickard-Cambridge, 1881 (originally placed in Theridiidae) from Madagascar [e.g., Forster & Platnick, 1984]. This example also highlights that fossil taxa may be the same as Recent taxa that now live far from the fossil deposits, and so the fossils can play an important role in studies on biogeography. In addition, it has also been demonstrated that some names of Recent taxa (genera and families) are senior synonyms of amber taxa (e.g., fossil *Flegia* Koch et Berendt, 1854 = Recent *Episinus* Walckenaer, 1809 [see Wunderlich, 1978, 1986]).

One diverse, extant family (2209 species in 80 genera [Platnick, 2004]) commonly encountered as amber inclusions is the Theridiidae or

comb-footed spiders. They are common in both Dominican Republic [e.g., Penney & Pérez-Gelabert, 2002] and Baltic ambers (see below), two species have been described from Mexican amber [Petrunkevitch, 1963], one species from Romanian amber [Protescu, 1937] and one unnamed specimen has been described from Japanese amber [Nishikawa, 1974]. They have also been recorded, but not described from Tertiary Bitterfeld amber [Schumann & Wendt, 1989], and Cretaceous ambers from Canada [McAlpine & Martin, 1969] and Burma [Rasnitsyn & Ross, 2000; Grimaldi *et al.*, 2002]. Until these specimens are described their correct placement in the Theridiidae should be considered tentative. Two non-amber fossils attributed to Theridiidae are known from the Tertiary of Aix-en-Provence [Gouret, 1888; Berland, 1939], however their generic and even family placements are dubious.

Berendt [1845] listed a number of Baltic amber theridiid spiders but provided no further details. Most Baltic amber theridiids (species and genera) were described by Koch & Berendt [1854], Menge [in Koch & Berendt, 1854] and Petrunkevitch [1942, 1946, 1950, 1958]. The brief descriptions of Menge [in Koch & Berendt, 1854], which consisted solely of very short footnotes, and those of Koch & Berendt [1854] are inadequate by current standards. Menge provided no figures for his new species

and those of Koch & Berendt were basically the authors' reconstructions of how the animal would appear in life, rather than detailed drawings of the fossils themselves. It is almost impossible to recognize distinct species or indeed whether they were correctly placed in the Theridiidae. Petrunkevitch [1942, 1946, 1950, 1958] assumed that the type specimens of Koch & Berendt and Menge were lost, and described many new fossil spider species from Baltic amber. However, many of Koch & Berendt's types are held in the Institut für Paläontologie, Museum für Naturkunde, Humboldt Universität zur Berlin, Germany. Presumably some of Petrunkevitch's species were junior synonyms of the previously described species, but these remain to be identified. The type specimens of Menge are currently considered lost. His collection was originally donated to the Westpreussische Provinzialmuseum, Gdańsk (formerly Danzig), which was established in 1880. In 1945 the collection was moved to a number of villages in northern Poland and has not been seen since. Although single samples of his collection have been found in Germany and Poland, there seems little hope that further items will be found [Koteja, pers. comm. to DP 2002; see also Kosmowska-Ceranowicz, 2001]. Furthermore, it is worth noting that Petrunkevitch's concept of the 'genus' is not clear and certainly not uniform. It was definitely not based on copulatory organs, nor was it based on somatic characters. For example, judging from the figures (both of copulatory organs and somatic characters) congeners of *Eomysmena* belong to different subfamilies. In this paper we describe six new species of Baltic amber Theridiidae from the Palanga Amber Museum collection and review the previously described theridiid taxa from this fossil source.

Material and methods

All taxa described here are deposited in the Palanga Amber Museum, Lithuania. This material was studied and illustrated in 1988 and 1989 by YMM. Descriptions are based mainly on the figures. All measurements are in millimeters. Pedipalp sclerite terminology follows Levi & Levi [1962]. The sex of the fossils and the repository information are provided where known.

Abbreviations used for museums: AMNH = American Museum of Natural History, New York; BMNH = Natural History Museum, London; CCCU = Crosby Collection, Cornell University, Ithaca, New York; MCZ = Museum of Comparative Zoology, Harvard; MGMC = Mineralogical and Geological Museum, Copenhagen; USNM = U.S. National Museum, Washington, D.C.; YPM = Peabody Museum, Yale University; ZMHUB = Zoological Museum, Humboldt University, Berlin. Other abbreviations: † = exclusively fossil; * = type species (= generotype).

TAXONOMIC NOTE. Some authors [e.g., Forster *et al.*, 1990; Yoshida, 2002] placed *Dipoena*, *Euryopis*, *Lasaeola* (and 11 other genera) in Hadrotarsinae Thorell, 1881 (= Hadrotarsidae) (but see discussion for a more recent view [Agnarsson, 2004]). However, judging from the peculiar kidney-shaped PME, and the structure of the reproductive organs of *Hadrotarsus* Thorell, 1881 and some allied genera (*Gmogala* Keyserling, 1890, *Guaraniella* Baert, 1984; and others), this group is not closely related to *Dipoena*, *Euryopis*, *Lasaeola* and related genera. Here, we list the latter group of genera under Euryopinae Simon, 1894. This name (Euryopeae) has page priority (p. 524) over Dipoeninae Simon, 1894 (p. 564). Members of this group are characterized by having thoracic furrows in the male, a high clypeus, relatively short chelicerae, a high subtegulum and four spermathecal receptacula.

Survey of genera and species

Antopia Menge, 1854†

Antopia Menge, 1854: 43.

This genus was proposed by Menge for several *Mizalia* species (family Mizaliidae synonymized with Oecobiidae: Urocteinae by Wunderlich [1986]) and one species of *Gea*. The status of this taxon is unclear, because no type species was designated, types of all species are lacking and the original descriptions were rather poor.

Antopia punctulata (Koch et Berendt, 1854)

Mizalia punctulata Berendt, 1845: 871 *nomen nudum*.

Mizalia punctulata Koch et Berendt, 1854: 42, pl. 5, f. 31.

Mizalia punctulata: Scudder, 1891: 274.

Antopia punctulata: Menge in Koch & Berendt, 1854: 7, 43; Bronn & Römer, 1856: 637; Giebel, 1856: 446; Thorell, 1870: 226; Scudder, 1891: 249; Bonnet, 1955: 334.

REMARKS. Transferred from *Mizalia* by Menge [in Koch & Berendt, 1854].

***Antopia obscura* (Koch et Berendt, 1854)**

Gea obscura Koch et Berendt, 1854: 44, pl. 3, f. 13.

REMARKS. Removed from *Gea* by Menge [in Koch & Berendt, 1854]. Original figures of *Mizalia punctulata* and *Gea obscura* are dissimilar in terms of carapace shape and relative leg lengths and spination, and it is unclear why these species were placed in the same genus.

***Antopia tenera* Menge, 1854**

Antopia tenera Menge in Koch & Berendt, 1854: 7, 43.

Antopia tenera: Giebel, 1856: 447; Scudder, 1891: 249; Bonnet, 1955: 334.

REMARKS. This species was never illustrated or properly described.

***Astodipoena Petrunkevitch, 1958*†**

Astodipoena Petrunkevitch, 1958: 201.

REMARKS. This genus appears not to belong to Euryopinae. Although the single species attributed to this genus has a very high clypeus as in Euryopinae, the male palp has a long tibia (very short in Euryopinae).

Astodipoena crassa* Petrunkevitch, 1958

Astodipoena crassa Petrunkevitch, 1958: 201, f. 216–222 (♂ in ZMHUB).

Astodipoena crassa: Selden, 1993: 318.

REMARKS. See under genus.

***Clya Koch et Berendt, 1854*†**

Clya Koch et Berendt, 1854: 31.

The position of this genus within Theridiidae is unclear. However, based on the redescription of the type species by Wunderlich [1986: fig. 37] it is correctly placed in this family. Wunderlich [1986] synonymized this genus with *Nanomysmena* Petrunkevitch, 1958 (type species: *N. gracilis* Petrunkevitch, 1958). However, judging from the figures of the type species provided by Wunderlich and Petrunkevitch, and taking into account our figures for the new *Nanomysmena* species described in this paper, it is clear that these groups are not closely related. *Clya lugubris* has a distinct tegular outgrowth and a relatively small cymbium, while *Nanomysmena* has no tegular outgrowths, a much larger embolus and a larger cymbium.

Clya lugubris* Koch et Berendt, 1854

Fig. 1.

Clya lugubris Berendt, 1845: 871 *nomen nudum*.

Clya lugubris Koch et Berendt, 1854: 31, pl. 3, f. 19 (♂ in ZMHUB).

Clya lugubris: Bronn & Römer, 1856: 634; Giebel, 1856: 400; Thorell, 1870: 227; Scudder, 1891: 258; Bonnet, 1956: 1166; Wunderlich, 1986: f. 37.

REMARKS. Wunderlich [1986] provided a figure of the male palp. We do not consider this species closely related to *Nanomysmena* (see above).

***Nanomysmena Petrunkevitch, 1958*†**

Nanomysmena Petrunkevitch, 1958: 193 (type species: *N. gracilis* Petrunkevitch, 1958).

REMARKS. This genus was synonymized with *Clya* Koch et Berendt by Wunderlich [1986]. We remove it from synonymy here. This genus can be distinguished by its high carapace with a slightly extended eye field, coiled (flat coil) embolus (*Clya* has a three dimensional, spiraled embolus), and the lack of distinct tegular extensions or apophyses. See comments under *Clya*.

***Nanomysmena aculeata* Petrunkevitch, 1958**

Nanomysmena aculeata Petrunkevitch, 1958: 195, f. 195–209 (juv. ♀ in MGMC).

Nanomysmena aculeata: Selden, 1993: 318.

REMARKS. The juvenile female type is probably not related to the type species because it has a more elongate carapace (subcircular in *N. gracilis*), lower clypeus and a triangular sternum (ovoid in *N. gracilis*).

Nanomysmena gracilis* Petrunkevitch, 1958

Nanomysmena gracilis Petrunkevitch, 1958: 193, f. 188–194 (♂ in ZMHUB).

? *Clya* sp.: Wunderlich, 1986: f. 337.

Nanomysmena gracilis: Selden, 1993: 318.

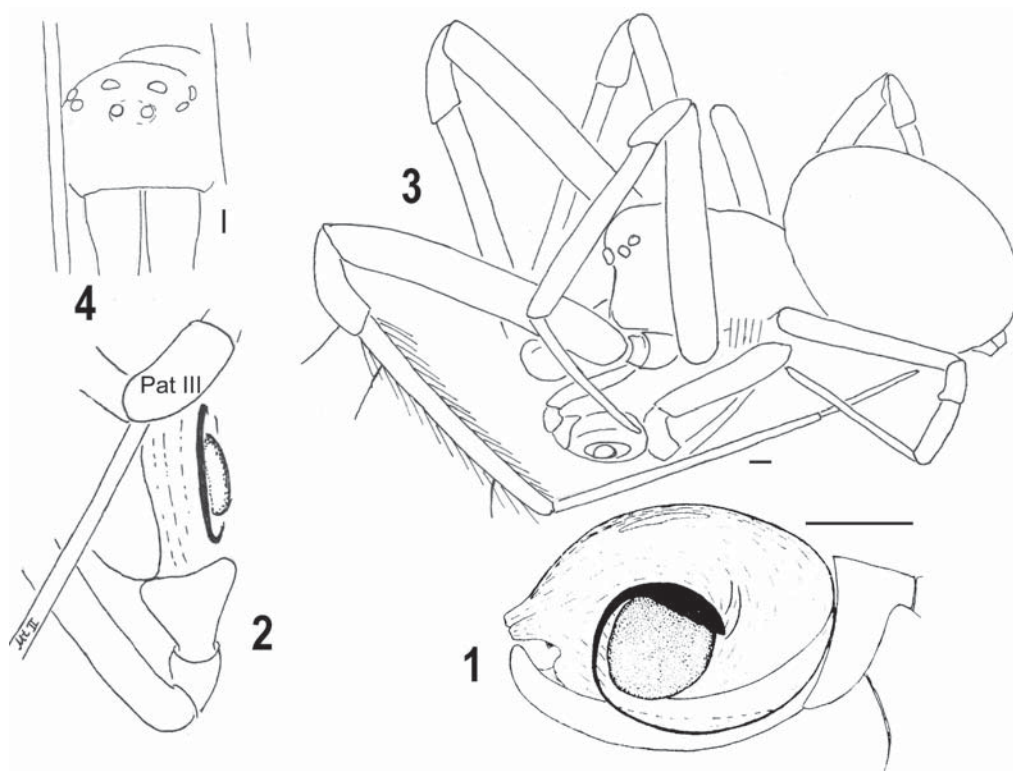
REMARKS. The specimen illustrated as *Clya* sp. by Wunderlich [1986] probably belongs to this species. Although his specimen somewhat resembles *C. lugubris*, it has a much smaller bulbus, lacks a tegular outgrowth, and has a more distinct embolic coil. Therefore, it does not seem to be closely related to *Clya lugubris*.

***Nanomysmena munita* Petrunkevitch, 1958**

Nanomysmena munita Petrunkevitch, 1958: 199, f. 210–215 (♀).

Nanomysmena munita: Selden, 1993: 318.

REMARKS. The illustrations and text provided by Petrunkevitch are insufficient to determine whether this species is correctly placed. However, the shape of the sternum and the palpal coxae of *N. munita* differ from those of the type species (*N. gracilis*).



Figs 1–4. Diagnostic drawings of *Clya lugubris* Koch et Berendt, 1854 (1) and *Nanomysmena pseudogracilis* sp.n. (2–4). 1 — male palp, ventral view (holotype, after Wunderlich [1986]); 2 — male palp, prolateral view; 3 — whole specimen, lateral view; 4 — frontal part of carapace. Scale: 0.1 mm.

Рис. 1–4. Диагностические рисунки *Clya lugubris* Koch et Berendt, 1854 (1) и *Nanomysmena pseudogracilis* sp.n. (2–4). 1 — палпа самца, вид снизу (голотип, по Wunderlich [1986]); 2 — палпа самца, вид сбоку; 3 — внешний вид; 4 — передняя часть карапакса. Масштаб: 0,1 мм.

Nanomysmena pseudogracilis sp.n.

Figs 2–4.

MATERIAL. Holotype ♂ (PM 276), Baltic amber in the Palanga Amber Museum, Lithuania.

ETYMOLOGY. The specific epithet reflects the similarity of this species to *N. gracilis*.

DIAGNOSIS. The new species differs from the related *N. gracilis*, by having a larger palpal tibia, the carapace is longer and not as high, it has a larger embolic base and more widely spaced eyes (cf. figs 188–194 in Petrunkevitch [1958]).

REMARKS. The figure of ?*N. gracilis* (sub. *Clya* sp.) in Wunderlich [1986] is very similar to ours, however our specimen has a less prominent AME projection and relatively longer legs (carapace length/tibia I ratio 0.8, in '*Clya*' sp. 0.88).

DESCRIPTION. Total length 1.9. Carapace 0.9 long, 0.6 high. PME largest, separated by more than one times their diameter, tubercle bearing AME not extended over clypeus. Leg I: 1.5 + 0.5 + 1.25 + 1.3

+ 0.46. Palp not clearly visible, tibia and patella of subequal size, embolus forming approximately 1.25 loops.

Nanomysmena palanga sp.n.

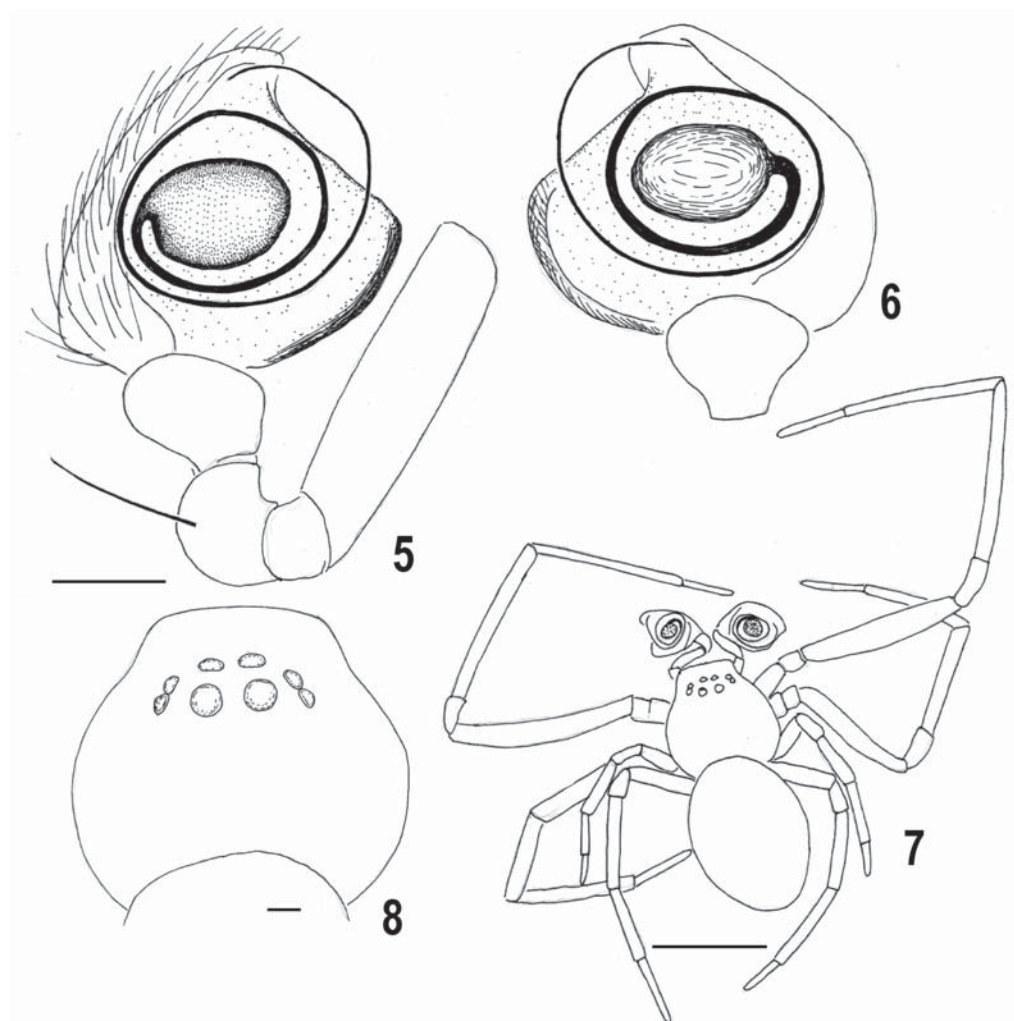
Figs 5–8.

MATERIAL. Holotype ♂ (PM 18348), Baltic amber in the Palanga Amber Museum, Lithuania.

ETYMOLOGY. The specific epithet is after Palanga Town (Lithuania).

DIAGNOSIS. This species has a palp similar to that of *N. petrunkevitchi* sp.n., however it has a smaller embolic base and the embolus at its origin is turned down (turned up in *N. petrunkevitchi* sp.n.).

DESCRIPTION. Total length 2.27. Carapace 1.03 long, 1.13 wide, eye sizes and interdistances see Fig. 8, PME largest. Leg I: 1.59 + 0.45 + 1.59 + 1.41 + 0.63. Palp as in Figs 5–7, with small tibia (equal to size of patella), embolic base oval-shaped, embolus forming 1.75 loops, proximal region of embolus turned downward.



Figs 5–8. Diagnostic drawings of *Nanomysmena palanga* sp.n. 5–6 — right and left male palp, respectively, ventral view; 7 — whole specimen, dorsal view; 8 — carapace, dorsal view. Scale: 0.1 mm if not otherwise indicated.

Рис. 5–8. Диагностические рисунки *Nanomysmena palanga* sp.n. 5–6 — правая и левая пальпа самца, вид снизу; 7 — внешний вид, сверху; 8 — карапакс, сверху. Масштаб: 0,1 мм, если не указано иначе.

Nanomysmena petrunkevitchi sp.n.

Figs 9–13.

MATERIAL. Holotype ♂ (PM 15694), Baltic amber in the Palanga Amber Museum, Lithuania.

ETYMOLOGY. The specific epithet is a patronym in honour of the late Alexander Petrunkevitch, who made a highly significant contribution to the study of fossil arachnids and particularly to the study of Baltic amber spiders.

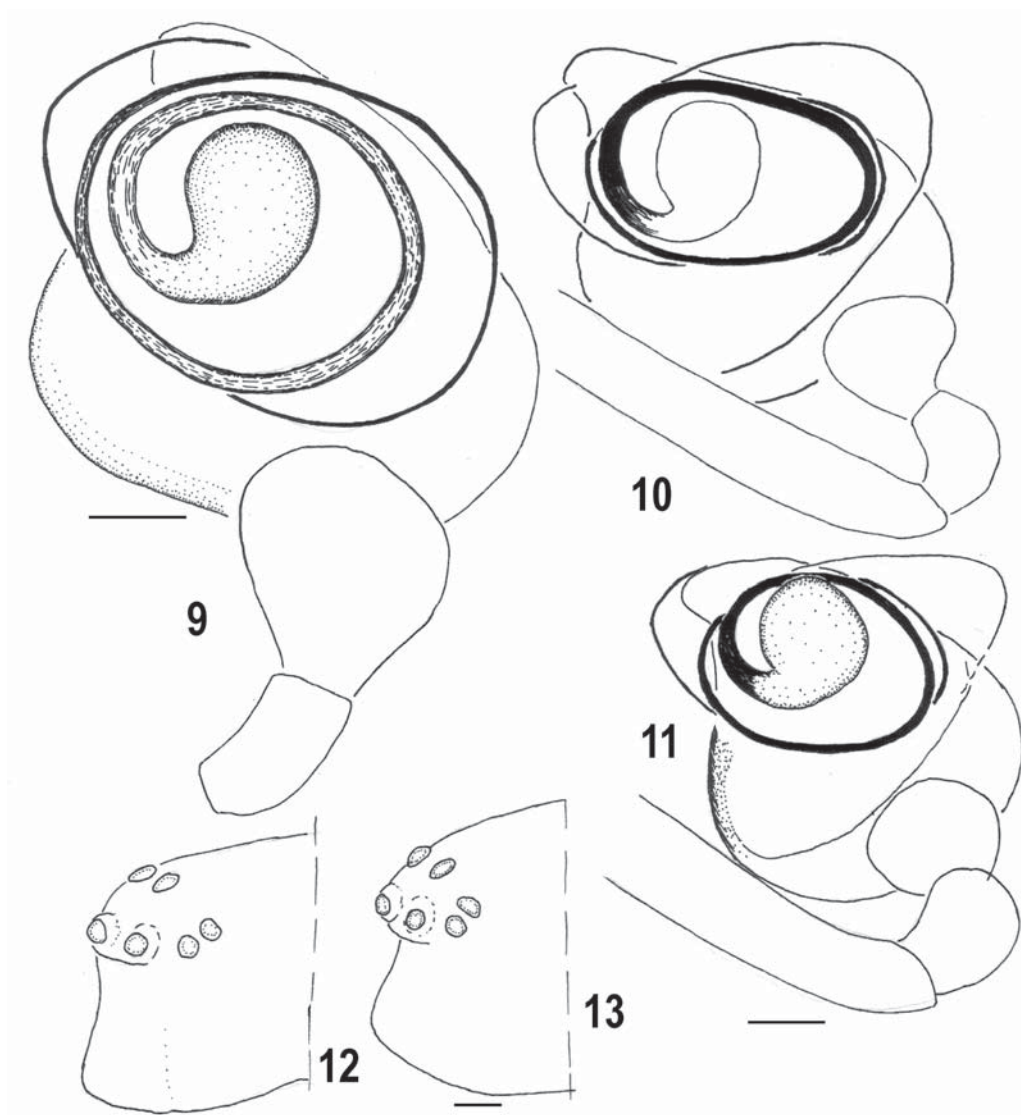
DIAGNOSIS. From the similar *N. palanga* sp.n. it can be easily separated by the longer embolus, larger embolic base, subequal eye sizes and the extension of the eye-field over the clypeus.

DESCRIPTION. Carapace approximately 0.6 high, clypeus 0.24, eyes subequal in size, AME slightly extend over clypeus (Figs 12, 13). Palp as in Figs 9–11, tibia slightly larger than patella, embolic base oval-shaped, embolus forming 2.25 loops, proximal region of embolus turned upward.

Dipoena Thorell, 1869

Dipoena Thorell, 1869: 91 (type species: *Atea melanogaster* C.L. Koch, 1837).

REMARKS. This is one of the largest theridiid genera, with 163 extant species [Platnick, 2004]. Judging from the variation in the structure of the



Figs 9–13. Diagnostic drawings of *Nanomysmena petrunkevitchi* sp.n. 9–11 — left male palp, ventral view, viewed from slightly different angles; 12–13 — anterior region of carapace showing eyes and clypeus. Scale: 0.1 mm.

Рис. 9–13. Диагностические рисунки *Nanomysmena petrunkevitchi* sp.n. 9–11 — левая пальпа самца, разные аспекты; 12–13 — передняя часть карапакса, показаны глаза и клипеус. Масштаб: 0,1 мм.

male palp amongst those species currently attributed to the genus, *Dipoena* is polyphyletic and most species should be transferred elsewhere.

‘*Dipoena*’ *infulata* (Koch et Berendt, 1854)

Micryphantes infulatus Berendt, 1845: 871 *nomen nudum*.

Micriphantes infulatus Koch et Berendt, 1854: 5, 7, 40, f. 29 (♂).

Micryphantes infulatus: Giebel, 1856: 444; Scudder, 1891: 273; Bonnet, 1957: 2910.

Nactodipoena infulata: Petrunkevitch, 1950: 284, f. 51–54, 189–190 (♂ hypotype (= neotype) in MCZ, no 9191).

Dipoena infulata: Petrunkevitch, 1958: 165; Selden, 1993: 318.

REMARKS. The original figure shows the male carapace with an extended cephalic region, rather long palps and a relatively small bulb. The type of

this species was considered lost and Petrunkevitch [1950] selected a hypotype male (equal to neotype) for this species and illustrated some somatic characters. This species was transferred to *Dipoena* by Petrunkevitch [1958] solely on the basis of its relative eye sizes. None of the Baltic amber Euryopinae examined by us or Wunderlich have a palp similar to *Dipoena*, therefore we question its correct placement in this genus.

***Eodipoena* Petrunkevitch, 1942†**

Eodipoena Petrunkevitch, 1942: 271 (type species: *Eodipoena oculata* Petrunkevitch, 1942).

REMARKS. Petrunkevitch [1942] placed this genus in Latroectinae. Judging from the original figures of the type species it belongs to Euryopinae because of the characteristic shape of its carapace and globular abdomen. Petrunkevitch [1958] listed six species in this genus, but we transfer *E. kaestneri* Petrunkevitch, 1958 to *Episinus* (see below).

'*Eodipoena*' *consulata* Petrunkevitch, 1958

Eodipoena consulata Petrunkevitch, 1958: 178, f. 140–148 (♂ in ZMHUB).

Eodipoena consulata: Selden, 1993: 318.

REMARKS. This species is not a member of Euryopinae and does not belong in *Eodipoena* because it differs from the type species. The holotype male has a rather long palpal femur and a relatively large tibia; to our knowledge, such characters are unknown in Euryopinae. In addition, the clypeus of this species is relatively low and the carapace has no furrows. For these reasons we place the genus name in quotations.

***Eodipoena germanica* Petrunkevitch, 1958**

Eodipoena germanica Petrunkevitch, 1958: 181, f. 149–162 (♂ in ZMHUB).

Eodipoena germanica: Selden, 1993: 318.

REMARKS. This species is a true member of Euryopinae. It has the correct type of palp and bulbus, high clypeus, etc.

'*Eodipoena*' *nielseni* Petrunkevitch, 1958

Eodipoena nielseni Petrunkevitch, 1958: 188, f. 173–179 (juv. ♀ in MGMC).

Eodipoena nielseni: Selden, 1993: 318.

REMARKS. Judging from the elongate sternum (1.5 times longer than wide) and the long, non-converging maxillae, this species is not related to Euryopinae.

Eodipoena oculata* Petrunkevitch, 1942

Eodipoena oculata Petrunkevitch, 1942: 272, pl. 17, f. 160–168, pl. 61, f. 565 (♀ in BMNH, In. 18740 [Klebs 498, No. 13488]).

Eodipoena oculata: Petrunkevitch, 1946: 9, f. 33–34 (♀ in AMNH, No 26260); 1950: 283 (lists an additional female specimen in MCZ, no. 6899 [548]); 1955: 142, f. 102: 4; 105: 5; 1958: 177, f. 137–139 (♀ in MGMC); Dubinin, 1962: 503, f. 1443; Morris, 1980: 37; Selden, 1993: 318.

REMARKS. The three specimens illustrated by Petrunkevitch, including the holotype, probably belong to different species and even genera because they differ in carapace shape and eye arrangement. Some doubts regarding the conspecificity of the AMNH specimen were raised by Petrunkevitch [1946]. It seems that the holotype female belongs in Euryopinae because of its characteristic carapace shape and the small chelicerae.

***Eodipoena regalis* Petrunkevitch, 1958**

Eodipoena regalis Petrunkevitch, 1958: 190, f. 180–187 (juv. ♂ in MGMC).

Eodipoena regalis: Selden, 1993: 318.

REMARKS. Judging from Petrunkevitch's illustrations (short carapace with raised cephalic region, eye pattern) this species is a member of the Euryopinae.

***Eomysmena* Petrunkevitch, 1942†**

Eomysmena Petrunkevitch, 1942: 283 (type species: *E. moritura* Petrunkevitch, 1942).

REMARKS. Whether the type species of this genus belongs in the Theridiidae is uncertain. The palp somewhat resembles that of *Episinus*, but unlike *Episinus* it has a high clypeus. In the revision by Petrunkevitch [1958] species were assigned to this genus based on the length of the tarsi, the leg formula (1423) and the "slanting sides of the face".

'*Eomysmena*' *bassleri* (Petrunkevitch, 1942)

Eodipoena bassleri Petrunkevitch, 1942: 274, pl. 49 f. 461–464, pl. 69 f. 617 (♀ in USNM).

Eomysmena bassleri: Petrunkevitch, 1958: 169 (transferred without comments or reasoning); Selden, 1993: 318.

REMARKS. The elongate sternum, short maxillae, epigyne structure and the hairs of metatarsus and tarsus I do not resemble those known in Euryopinae. In fact, this species may not even belong in Theridiidae because it does not have converging maxillae, nor distinct setae covering the epigyne.

'Eomysmena' baltica (Petrunkevitch, 1946)

Eodipoena baltica Petrunkevitch, 1946: 10, f. 35–38, 69 (♀ in AMNH).

Eomysmena baltica: Petrunkevitch, 1958: 169, f. 111–117 (described additional specimens that do not seem closely related to the type specimen); Selden, 1993: 318.

REMARKS. The carapace (flat, with eye field extended over chelicerae) illustrated by Petrunkevitch [1946: fig. 35] looks different from all other known Theridiidae. However, it may belong in Euryopinae because of the elongate and globular abdomen, but is clearly not related to the type species of *Eomysmena* because of the different carapace shape and eye arrangement.

Eomysmena moritura Petrunkevitch, 1942*

Eomysmena moritura Petrunkevitch, 1942: 284, pl. 28, f. 259–266, pl. 65, f. 591 (♂ in BMNH, ♂ 18113).

Eomysmena moritura: Petrunkevitch, 1955: 142; Petrunkevitch, 1958: 166, f. 104–110 (♂ in ZMHUB); Dubinin, 1962: 503, f. 1446; Morris, 1980: 37; Selden, 1993: 318.

REMARKS. The specimen illustrated by Petrunkevitch [1958] may belong to another species because it has a much thinner row of hairs on the clypeus [cf. Petrunkevitch, 1942: fig. 262 and Petrunkevitch, 1958: fig. 110] and a different palpal structure in the male. All specimens treated by Petrunkevitch have a barbed clypeus.

'Eomysmena' stridens Petrunkevitch, 1958

Eomysmena stridens Petrunkevitch, 1958: 172, f. 126–131 (♂ in MGMC).

Eomysmena stridens: Selden, 1993: 318.

REMARKS. This species is clearly not related to the type species because it has a distinctly different carapace shape, nor does it belong in Euryopinae. It has a palp similar to that seen in *Theridula*.

***Episinus* Walckenaer, 1809**

Episinus Walckenaer in Latreille, 1809: 371 (type species: *Episinus truncatus* Latreille, 1809).

Flegia Koch et Berendt, 1854: 28, pl. 3, f. 18. Synonymized by Wunderlich [1978].

REMARKS. The genus *Flegia* was initially erected by Berendt [1845] but this was considered a *nomen nudum* and the name is now attributed to Koch & Berendt [1854] (see Bonnet [1956]). The type species of *Flegia* is *F. longimana* Koch et Berendt, 1854 and the type species of *Episinus* is *E. truncatus* Latreille, 1809. The two genera were synonymized without detailed comments or new com-

binations. The two species assigned to *Flegia* differ in leg formulae, carapace shape and proportions, but the type species is lost. Therefore, *E. succini* (Petrunkevitch, 1942) may not be congeneric with *E. longimanus* (Koch et Berendt, 1854), however, we retain it in *Episinus* pending a revision of the Baltic amber material.

Here, our concept of this genus follows Levi & Levi [1962], however we do not agree in the broad sense, as it was based exclusively on somatic characters. The six Recent genera: *Episinopsis* Simon, 1894; *Hyocrea* Simon, 1894; *Hyptimorpha* Strand, 1906; *Janula* Strand, 1932; *Penictis* Simon, 1894 and *Plocamis* Simon, 1894 were synonymized with *Episinus* by Levi & Levi [1962]. We suspect that some of these will be removed from synonymy following further investigation. Judging from the structure of the male pedipalp of Recent and fossil species assigned to *Episinus*, it is evident that most of them are not closely related to the type species *E. truncatus* Latreille, 1809 and some of the fossil species may actually belong in some of the aforementioned genera. *Episinus* is clearly a genus in need of revision.

Episinus kaestneri (Petrunkevitch, 1958) **comb.n.**

Eodipoena kaestneri Petrunkevitch, 1958: 184, f. 163–172 (♀ in ZMHUB).

Eodipoena kaestneri: Selden, 1993: 318.

REMARKS. Judging from the original illustration this species is not congeneric with *Eodipoena*, a member of Euryopinae. It has a flattened carapace with a raised cephalic region cf. Fig. 16, which is typical of *Episinus*.

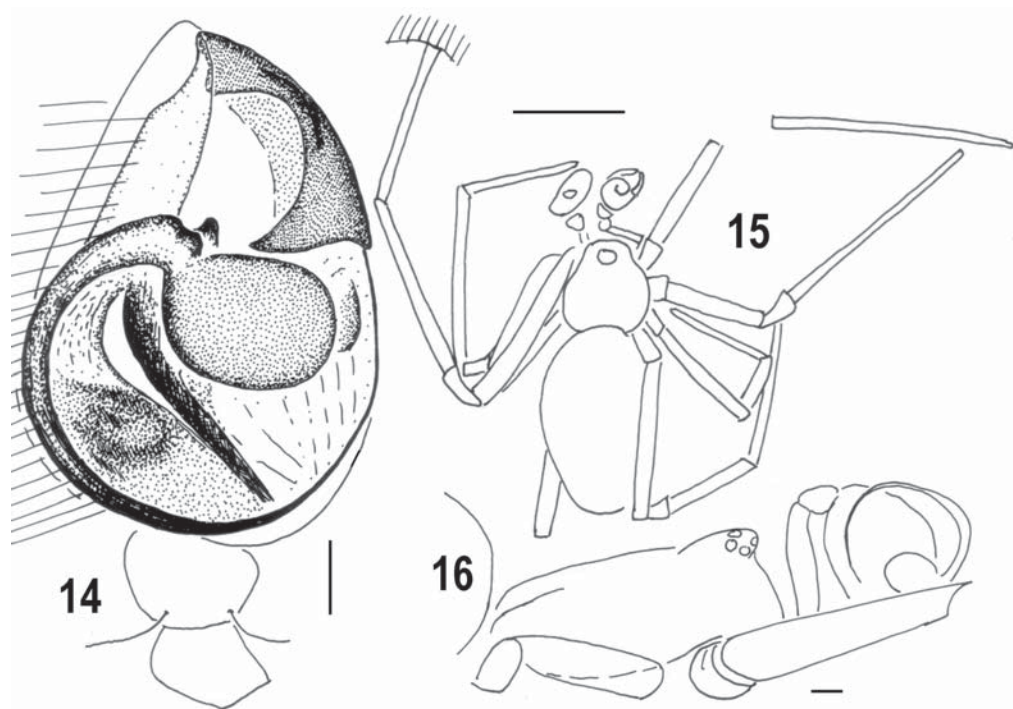
Episinus longimanus (Koch et Berendt, 1854) **comb.n.**

Flegia longimana Berendt, 1845: 871 *nomen nudum*.

Flegia longimana Koch et Berendt, 1854: 5, 7, 29, pl. 3, f. 18 (♂).

Flegia longimana: Bronn & Römer, 1856: 635; Giebel, 1856: 440; Thorell, 1870: 226; Scudder, 1891: 265; Petrunkevitch, 1946: 8, f. 26–32, 72 (♂ in AMNH, no 26259); 1950: 286, f. 55 (♂♂ in MCZ, no 7183 and 7225); 1955: 142, f. 105: 4a–b; 1958: 154 (just records that specimens of this species are also held in Yale, Copenhagen and in BMNH); Bonnet, 1956: 1911; Selden, 1993: 318.

REMARKS. Judging from the figures provided by Petrunkevitch [1946, 1950], he dealt with two different species (no rostrum-type clypeus in the 1946 figures and the femur I/carapace length ratio was 1.09 [1.6 in the 1950 specimen]).



Figs 14–16. Diagnostic drawings of '*Episinus*' *eskovi* sp.n. 14 — right male palp, ventral view; 15 — whole specimen, dorsal view; 16 — prosoma, lateral view. Scale: 14, 16 (0.1 mm), 15 (1 mm).

Рис. 14–16. Диагностические рисунки '*Episinus*' *eskovi* sp.n. 14 — правая пальпа самца, вид снизу; 15 — внешний вид, сверху; 16 — просома, сбоку. Масштаб: 14, 16 (0,1 мм), 15 (1 мм).

Episinus succini (Petrunkevitch, 1942)
comb.n.

Flegia succini Petrunkevitch, 1942: 269, pl. 52, f. 484–492, pl. 69, f. 624 (♂ in YPM, no. 1).

Flegia succini: Selden, 1993: 318.

REMARKS. Probably not congeneric with *E. longimanus* (the type species of *Flegia*); see under *Episinus* above.

'*Episinus*' *eskovi* sp.n.

Figs 14–16.

MATERIAL. Holotype ♂ (PM 15655), Baltic amber in the Palanga Amber Museum, Lithuania.

ETYMOLOGY. The specific epithet is a patronym in honour of our friend and colleague Dr. Kirill Yu. Eskov (Moscow), who initiated palaeoarachnological research in Russia.

DIAGNOSIS. The new species can be easily separated from all congeners by the shape of the embolus, conductor and radix.

REMARKS. The new species is distantly related to the type species and may represent a separate, new genus within *Episininae*.

DESCRIPTION. Total length 2.55. Carapace 0.98 long, 0.8 wide, clypeus approximately 0.2 high. Cephalic region slightly raised over the thoracic. Abdomen elongate, without horns or angles. Legs relatively long, I: 1.72 + 0.41 + 1.72 + ?; femur IV c. 1.90. Palp as in Figs 14, 15, tibia very short, embolic base oval-shaped, located at the centre of the bulbus; embolus widely coiled forming approximately one loop, conductor massive, radix large and well separated from the conductor.

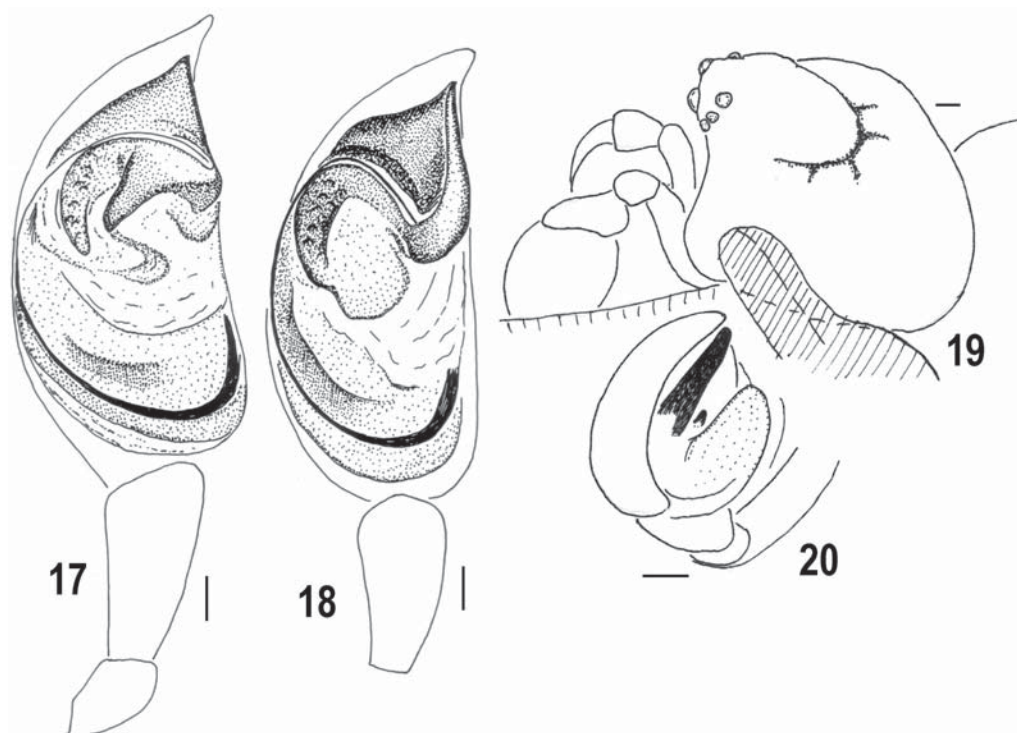
Episinus balticus sp.n.

Figs 17, 18.

MATERIAL. Holotype ♂ (PM 292), Baltic amber in the Palanga Amber Museum, Lithuania.

ETYMOLOGY. The specific epithet indicates the origin of the amber inclusion.

DIAGNOSIS. The male palp of this species is rather similar to that of extant *E. recifensis* Levi, 1964 from Brazil. The two species have a similar shape and position of the embolic base, cymbial tip and a triangular-shaped conductor. However, the new species has a shorter palpal tibia and a stronger radix.



Figs 17–20. Diagnostic drawings of *Episinus balticus* sp.n. (17–18) and '*Euryopis*' *baltica* sp.n. (19–20). 17–18, 20 — left male palp, viewed from slightly different angles; 19 — prosoma, lateral view. Scale: 0.1 mm.

Рис. 17–20. Диагностические рисунки *Episinus balticus* sp.n. (17–18) и '*Euryopis*' *baltica* sp.n. (19–20). 17–18, 20 — левая пальпа самца, разные аспекты; 19 — просома, сбоку. Масштаб: 0,1 мм.

REMARKS. The structure of the male palp in the new species is rather similar to those illustrated by Wunderlich [1986: figs 110–114] from Panama, Mexico and Dominican Republic amber, but they are all rather different from that of the type species.

DESCRIPTION. Body shape is poorly visible, however the palp is clearly visible (Figs 17, 18).

Euryopis Menge, 1868

Euryopis Menge, 1868: 175 (type species: *Micryphantes flavomaculatus* C.L. Koch, 1836; = *E. flavomaculata*).

REMARKS. According to Platnick [2004] this genus contains 72 species and has a worldwide distribution. However, judging from the structure of the male palp it is highly likely that many of these species are unrelated; the genus is in need of revision. There are at least six junior synonyms of this genus.

'*Euryopis*' *baltica* sp.n.

Figs 19, 20.

MATERIAL. Holotype ♂ (PM 298), Baltic amber in the Palanga Amber Museum, Lithuania.

ETYMOLOGY. The specific epithet indicates the origin of the amber inclusion.

DIAGNOSIS. This species can be easily separated from other congeners by the massive outgrowth of the bulbus (embolus?).

REMARKS. This species is placed in *Euryopis* provisionally because the delimitation of this taxon as well as related taxa (*Dipoena* s. lat.) is unclear. We place the new species in *Euryopis* rather than the related *Dipoena*, because of the large outgrowth of the palp. The palps in most *Dipoena* have smaller sclerites (conductor, embolus, median apophysis).

DESCRIPTION. Carapace 1.32 long, approximately 0.8 high, dorsum with furrow separating cephalic region, typical for the genus; this furrow with four smaller furrows directed posteriorly (Fig. 20). Palp as in Fig. 19, with two visible outgrowths, the large one may represent the embolus or conductor.

Euryopus Menge, 1854†

Euryopus Menge, 1854†: 40 (type species: *E. gracilipes* Menge in Koch & Berendt, 1854).

REMARKS. The spelling of the genus is similar to, but distinct from *Euryopis* Menge, 1868.

Euryopus gracilipes Menge, 1854*

Euryopus gracilipes Menge in Koch & Berendt, 1854: 40.

Euryopus gracilipes: Bronn & Römer, 1856: 633; Giebel, 1856: 444; Scudder, 1891: 265; Bonnet, 1956: 1828.

REMARKS. The description of the genus and species consisted of less than one line and no figures were provided.

Lasaeola Simon, 1881

Lasaeola Simon, 1881: 136–150 (type species: *Pachydactylus pronus* Menge, 1868).

Nactodipoena Petrunkevitch, 1942: 276 (type species: *N. dunbari* Petrunkevitch, 1942). Synonymized by Wunderlich [1988].

REMARKS. *Nactodipoena* was revised by Petrunkevitch [1958: 175] and later synonymized with *Lasaeola* by Wunderlich [1988]. *Lasaeola* was previously considered a junior synonym of *Dipoena*. *Dipoena* has several junior synonyms which were never properly revised. Therefore, it is possible that *Nactodipoena* may be a synonym of another genus or it may represent a separate taxon within Euryopinae.

Lasaeola dunbari (Petrunkevitch, 1942)

Nactodipoena dunbari Petrunkevitch, 1942: 276, pl. 51, f. 475–483, pl. 69, f. 627 (♂ in YPM, no. 7)

Nactodipoena dunbari: Petrunkevitch, 1955: 142; Selden, 1993: 318.

REMARKS. This species clearly belongs in Euryopinae, the male has a raised carapace, high clypeus, and furrowed thorax. Judging from the structure of the male palp, *Nactodipoena* may not be a junior synonym of *Lasaeola*.

Mictodipoena Petrunkevitch, 1958†

Mictodipoena Petrunkevitch, 1958: 161 (type species: *M. stridula* Petrunkevitch, 1958).

REMARKS. This genus is probably correctly placed in Theridiidae, however it does not belong in Euryopinae because it has an elongate, rather than a raised carapace, and it has an elongate abdomen.

Mictodipoena stridula Petrunkevitch, 1958*

Mictodipoena stridula Petrunkevitch, 1958: 161, f. 95–103 (?juv. ♀ or ♂ with lost palps, MGMC).

Mictodipoena stridula: Selden, 1993: 318.

REMARKS. The holotype of this species is a defective specimen and clearly does not belong in Euryopinae, it has an abdomen–pedicel stridulating apparatus.

Steatoda Sundevall, 1833

Steatoda Sundevall, 1833: 16 (type species: *Aranea bipunctata* Linnaeus, 1758).

REMARKS. A broad concept of *Steatoda* was introduced by Levi (cf. Levi [1957] and Levi & Levi [1962]) who synonymized 11 genera.

‘*Steatoda*’ *antica* (Berland, 1939) **comb.n.**

Lithyphantes anticus Berland, 1939: 4, f. 4–5 (♀ or juv.).

Lithyphantes anticus: Bonnet, 1957: 2555; Selden, 1993: 318.

REMARKS. *Lithyphantes* Thorell, 1869 was synonymized with *Steatoda* by Levi [1957: 375] but he did not include fossil species attributed to the former genus. Therefore, we transfer this species to *Steatoda* and make the new combination to conform to Levi’s [1957] synonymy. However its correct placement is doubtful because the figures in Berland [1939] are not sufficient to permit reliable family identification.

‘*Steatoda*’ *succini* Petrunkevitch, 1942

Steatoda succini Petrunkevitch, 1942: 278, pl. 50, f. 470–474, pl. 53, f. 499–502, pl. 54, f. 503, pl. 69, f. 622–623 (holotype ♀ in CCCU ♂ 3, paratype juv. ♂ YPM, ♂ 3602).

Steatoda succini: Petrunkevitch, 1955: 142; Selden, 1993: 318.

REMARKS. The correct placement of this species was questioned by Petrunkevitch [1942] because some important characters were not visible.

‘*Steatoda*’ *stigmatorosa* (Koch et Berendt, 1854) **comb.n.**

Erigone stigmatorosa Berendt, 1845: 871 *nomen nudum*.

Erigone stigmatorosa Koch et Berendt, 1854: 5, 38, pl. 16, f. 136 (♂).

Erigone stigmatorosa: Giebel, 1856: 443; Scudder, 1891: 263; Bonnet, 1956: 1775; Wunderlich, 1984: 88 (identified as belonging in Theridiidae).

Teutana stigmatorosa: Wunderlich, 1986: 27 (transferred to *Teutana*).

REMARKS. Here transferred to *Steatoda* because this genus is treated as a senior synonym of *Teutana* (see Platnick [2004]).

***Theridion* Walckenaer, 1805**

Theridion Walckenaer, 1805: 72 (type species: *Aranea picta* Walckenaer, 1802).

REMARKS. When the first Baltic amber *Theridion* was described, only four extant theridiid genera had been established (*Latrodectus* Walckenaer, 1805, *Theridion* Walckenaer, 1805, *Episinus* Latreille, 1809 and *Steatoda* Sundevall, 1833). The figures and descriptions of Koch & Berendt [1854] were so general, that even the correct family placement for most of their species is questionable. No pictures of copulatory organs were provided. Historically and even currently, the concept of many theridiid genera is very broad. There are no recent descriptions of *Theridion* or other Theridiinae in Baltic amber. Therefore, we assume that the descriptions of Koch & Berendt [1854] and those of Menge [1854] refer to other taxa, and possibly not even to theridiids. Questions regarding the correct placement of the *Theridion* spp. described by Koch & Berendt were raised by Petrunkevitch [1942: 266]. Five species mentioned by Menge [in Koch & Berendt, 1854: 7] in the table of species described, namely: *T. bifurcum* Menge, 1854, *T. chorius* Menge, 1854, *T. clavigerum* Menge, 1854, *T. crassipes* Menge, 1854 and *T. setulosum* Menge, 1854 were not formally described and are therefore *nomina nuda* (see Petrunkevitch [1942: 266]).

***Theridion* alutaceum Koch et Berendt, 1854**

Theridium alutaceum Berendt, 1845: 871 *nomen nudum*.

Theridium alutaceum Koch et Berendt, 1854: 5, 8, 37, pl. 16, f. 135 (♀).

Theridium alutaceum: Giebel, 1856: 443; Scudder, 1891: 293; Bonnet, 1959: 4447.

Theridion alutaceum: Selden, 1993: 318.

REMARKS. Placed in *Theridion* based on its eye pattern, however its position within Theridiidae is uncertain due to the lack of a proper description and of type material.

***Theridion* deterrentum Koch et Berendt, 1854**

Theridium deterrentum Berendt, 1845: 871 *nomen nudum*.

Theridium deterrentum Koch et Berendt, 1854: 5, 7, 37, pl. 17, f. 144 (♂).

Theridium deterrentum: Giebel, 1856: 443; Scudder, 1891: 294; Bonnet, 1959: 4468.

Theridion deterrentum: Selden, 1993: 318.

REMARKS. Koch & Berendt [1854] compared this species with *Achaearanea lunata* (Clerck, 1757), however, its position within Theridiidae is uncertain due to the lack of a proper description and of type material.

***Theridion* globosum (Presl, 1822)**

Aranea globosa Presl, 1822: 208 (sex?)

Theridium globosa: Scudder, 1891: 250.

Theridion globosa: Bonnet, 1959: 4476.

REMARKS. The correct familial placement of this species is uncertain because the description is inadequate, the location of the type is unknown, and the transfer to *Theridion* was not made by an arachnologist.

***Theridion* berendti nom.n.**

Mizalia globosa Berendt, 1845: 871 *nomen nudum*.

Mizalia globosa Koch et Berendt, 1854: 5, 8, 43, pl. 5, f. 32 (♀).

Theridium globosum: Menge in Koch & Berendt, 1854: 8; Scudder, 1891: 294; Bonnet, 1959: 4476.

Mizalia globosa: Giebel, 1856: 446; Scudder, 1891: 273.

Mizalia globules (lapsus calami): Berland, 1932: 446.

REMARKS. Transferred from *Mizalia* by Menge [in Koch & Berendt, 1854]. At the time of transfer by Menge [1854], the name *T. globosum* was preoccupied by an extant species described by Hentz [1850] from North America, which is currently placed in *Achaearanea* [Platnick, 2004]. Scudder [1891: 250] transferred the fossil species *Aranea globosa* Presl, 1822 to *Theridion*, and hence two names became secondary homonyms. Therefore, we propose a replacement name for this species. The correct taxonomic position of the two species *T. globosum* (Presl, 1822) and *T. berendti* nom.n. is doubtful.

***Theridion* granulatum Koch et Berendt, 1854**

Theridium granulatum Berendt, 1845: 871 *nomen nudum*.

Theridium granulatum Koch et Berendt, 1854: 5, 8, 36, pl. 4, f. 26 (♂).

Theridium granulatum: Giebel, 1856: 443; Scudder, 1891: 295; Bonnet, 1959: 4477.

Theridion granulatum: Selden, 1993: 318.

REMARKS. Correct placement of this species within Theridiidae is uncertain due to the lack of a proper description and of type material.

***Theridion* hirtum Koch et Berendt, 1854**

Theridium hirtum Berendt, 1845: 871 *nomen nudum*.

Theridium hirtum Koch et Berendt, 1854: 5, 7, 35, pl. 4, f. 25 (♀).

Theridium hirtum: Giebel, 1856: 442; McCook, 1890: 467; Scudder, 1891: 295; Bonnet, 1959: 4479.

Theridion hirtum: Selden, 1993: 318.

REMARKS. Correct placement of this species within Theridiidae is uncertain due to the lack of a proper description and of type material.

‘*Theridion*’ *oblongum* (Presl, 1822)

Aranea oblonga Presl, 1822: 208.

Theridium oblongum: Scudder, 1891: 251; Bonnet, 1959: 4496.

REMARKS. The correct familial placement of this species is uncertain because the description is inadequate, a type seems not to exist and the transfer to *Theridion* was not made by an arachnologist.

‘*Theridion*’ *ovale* Koch et Berendt, 1854

Theridium ovale Berendt, 1845: 871 *nomen nudum*.

Theridium ovale Koch et Berendt, 1854: 5, 7, 34, pl. 4, f. 23 (♀).

Theridium ovale: Giebel, 1856: 442; Scudder, 1891: 295; Bonnet, 1959: 4497.

Theridion ovale: Selden, 1993: 318.

REMARKS. The correct placement of this species within Theridiidae is uncertain due to the lack of a proper description and of type material. Wunderlich [1988] described a Dominican Republic amber fossil spider as *T. ovale*, which was renamed *T. wunderlichi* by Penney [2001].

‘*Theridion*’ *ovatum* Koch et Berendt, 1854

Theridium ovatum Berendt, 1845: 871 *nomen nudum*.

Theridium ovatum Koch et Berendt, 1854: 5, 7, 33, pl. 4, f. 22 (♀).

Theridium ovatum: Giebel, 1856: 442; Scudder, 1891: 295; Bonnet, 1959: 4505.

Theridion ovatum: Selden, 1993: 318.

REMARKS. This species name is a secondary homonym of *Araneus ovatus* Clerck, 1757, which was transferred to *Theridion* by Walckenaer [1805] and is currently placed in *Enoplognatha*.

‘*Theridion*’ *simplex* Koch et Berendt, 1854

Theridium simplex Berendt, 1845: 871 *nomen nudum*.

Theridium simplex Koch et Berendt, 1854: 5, 7, 35, pl. 4, f. 24 (♀).

Theridium simplex: Giebel, 1856: 442; Scudder, 1891: 296; Bonnet, 1959: 4527.

Theridion simplex: Petrunkevitch, 1942: 266, f. 439–441 (*Theridium* in fig. legend) (♀ in BMNH, In. 18135); 1955: 142; 1958: 151, f. 82–90 (specimen in ZMHUB); Morris, 1980: 47; Selden, 1993: 318.

REMARKS. The specimens illustrated by Petrunkevitch [1942, 1958] appear to belong to different taxa because the shapes of the carapace and abdomen differ. His latter [1958] specimen may not even belong in Theridiidae because it lacks the comb setae on the fourth tarsus and its maxillae do not conform to the typical theridiid pattern. There is one junior homonym of this species, namely *T.*

simplex Thorell, 1877 (♀) from Sulawesi. Since its description, this species has not been reported from elsewhere and citations in the scientific literature are restricted to entries in systematic catalogues. Therefore, we propose the new name *T. sulawesiense* **nom.n.** for this species. The correct placement of *T. simplex* Koch et Berendt, 1854 within Theridiidae is uncertain because of the lack of type material and also because the redescrptions of Petrunkevitch [1942, 1958] seem to refer to different taxa.

Species that probably belong to Theridiidae

Municeps Petrunkevitch, 1942†

Municeps Petrunkevitch, 1942: 281 (type species: *M. pulcher* Petrunkevitch, 1942).

REMARKS. Originally placed in Mysmenidae, however judging from the sternum and maxilla shape it may belong in Euryopinae or at least Theridiidae. According to Petrunkevitch [1958] the difference between *Mysmena* and *Municeps* was the leg order (4123 in *Municeps*).

Municeps pulcher Petrunkevitch, 1942*

Municeps pulcher Petrunkevitch, 1942: 282, pl. 8, f. 73–75, pl. 58, f. 540 (juv.).

Municeps pulcher: Petrunkevitch, 1946: 10 (very young spiderling in AMNH no. 26262); 1955: 142; Dubinin, 1962: 503, f. 1445; Morris, 1980: 43; Selden, 1993: 318.

REMARKS. The description was based on a very juvenile specimen.

Municeps minutus Petrunkevitch, 1958

Eomysmena succini Petrunkevitch, 1942: 286 [in part]; Petrunkevitch, 1946: 11 (see comments).

Municeps minutus Petrunkevitch, 1958: 161 (♀, in AMNH No. 26263).

Municeps minutus: Selden, 1993: 318.

REMARKS. Petrunkevitch [1942] described *Eomysmena succini* Petrunkevitch, 1942 (= ‘*Mysmena*’ *succini*, which see). Petrunkevitch [1946] transferred one of the paratypes (AMNH specimen no. 26263) to *Municeps* and Petrunkevitch [1958] designated it as the holotype of the new species *M. minutus*, although the description was not supported by any figures. Thus, the type specimen of this species was originally described as *E. succini* Petrunkevitch, 1942.

Mysmena Simon, 1894

Mysmena Simon, 1894: 558 (type species: *Theridion leycoplaiatum* Simon, 1879).

REMARKS. *Mysmena* is the type genus of Mysmenidae. Most mysmenids are minute, the type species *M. leucoplagiata* is approximately 1 mm long and *Mysmenella* spp. are approximately 1.5 mm long. Only some of the South American species are relatively large. Therefore, it is highly likely that the mysmenids described by Petrunkevitch were incorrectly identified because they lack modifications of leg I in both sexes (1–3 prolateral spines on the male tibia/metatarsus, and a sclerotized spot ventro-distally on the female femur).

'Mysmena' succini (Petrunkevitch, 1942)

Eomysmena succini Petrunkevitch, 1942: 286, f. 341–346, 606 (juv. ♂ in BMNH).

Eomysmena succini: Petrunkevitch, 1946: 11 (one paratype specimen [AMNH specimen no. 26263] was transferred to *Municeps* by Petrunkevitch [1958] and is the type of *M. minutus*, see comments under this species).

Mysmena succini: Petrunkevitch, 1958: 158, f. 91–94 (juv? ♀, in Ipsen's collection); Selden, 1993: 318.

Eomysmena succini: Morris, 1980: 37.

REMARKS. First described sub *Eomysmena*, and actually may belong to Euryopinae. It seems that Petrunkevitch never saw true *Mysmena* or Mysmenidae and therefore placed this species in the wrong genus and family.

Nomina dubia

Corynitis Menge, 1854†

Corynitis Menge in Koch & Berendt, 1854: 30 (type species not designated).

REMARKS. This genus was described in the footnotes for *Flegia longimana* by Menge in Koch & Berendt [1854]. Menge compared it with *Episinus* (a senior synonym of *Flegia*). No figures or proper text were provided for the two species assigned to this genus, and the location of types for both species is unknown. This genus may be synonymous with *Episinus*.

Corynitis spinosa Menge, 1854

Corynitis spinosa Menge in Koch & Berendt, 1854: 30 (sex not mentioned in the text).

REMARKS. No description or illustrations were provided for this species.

Corynitis undulata Menge, 1854

Corynitis undulata Menge in Koch & Berendt, 1854: 30 (♂♀).

REMARKS. No description or illustrations were provided for this species.

Nomina nuda

Theridium bifurcum Menge, 1854, *T. chorius* Menge, 1854, *T. clavigerum* Menge, 1854, *T. crassipes* Menge, 1854 and *T. setulosum* Menge, 1854 (all in Koch & Berendt [1854]).

REMARKS. No descriptions or figures were provided for these species and all were considered *nomina nuda* by Petrunkevitch [1942].

Genera excluded from Theridiidae

Anandrus Menge, 1856†

Anandrus Menge, 1856: 7 (type species: *Elucus inermis* Petrunkevitch, 1942; designated by Wunderlich [1986]).

Elucus Petrunkevitch, 1942: 339 (type species: *E. inermis* Petrunkevitch, 1942). Synonymized by Wunderlich [1986: 134] and placed in Acrometidae.

REMARKS. The correct systematic position of this genus is not clear. Originally, it was placed in Theridiidae, Petrunkevitch treated it as a member of Theridiosomatinae, Wunderlich [1986] placed this genus in Acrometidae and Wunderlich [1996] transferred it to Synotaxidae without any reasoning.

Anandrus inermis (Petrunkevitch, 1942)*

Elucus inermis Petrunkevitch, 1942: 340, pl. 12, f. 112–116, pl. 60, f. 558 (♂).

Elucus inermis: Petrunkevitch, 1950: 299, f. 199.

Anandrus inermis: Wunderlich, 1986: 48, f. 282–284 (transferred to *Anandrus*).

REMARKS. The palp was not properly illustrated.

Anandrus infelix (Petrunkevitch, 1950)

Elucus infelix Petrunkevitch, 1950: 298, f. 83–89, 200–201 (♂).

Anandrus infelix: Wunderlich, 1986: f. 283–284 (transferred to *Anandrus*).

REMARKS. As in the type species, the pedipalp has a spine-like conductor and a coiled embolus. However, the palpal tibia is not of typical 'cup-like' form and the subtegulum is not shown in fig. 87 [Petrunkevitch, 1950]. The carapace shape is also rather different from that of *A. inermis*.

Anandrus quaesitus (Petrunkevitch, 1958)

Elucus quaesitus Petrunkevitch, 1958: 249, f. 332–343 (♂).

Anandrus quaesitus: Wunderlich, 1986: 134.

REMARKS. It seems that this species is clearly related to *A. inflex* by having a similar type of male palp.

Anandrus redemptus (Petrunkevitch, 1958)

Elucus redemptus Petrunkevitch, 1958: 245, f. 318–331 (♂).

Anandrus redemptus: Wunderlich, 1986: 134.

REMARKS. Judging from the male palp and carapace shape it seems that this species is not congeneric with the type species.

***Mizalia* Koch et Berendt, 1854**

Mizalia Berendt, 1845: 56 *nomen nudum*.

Mizalia Koch et Berendt, 1854: 44 (type species: *M. rostrata* Koch et Berendt, 1854).

Myzalia: in Bronn [1853–1856] (a misspelling).

REMARKS. The two species left in this genus by Menge in Koch & Berendt [1854] (*Mizalia rostrata* Koch et Berendt, 1854: 44, pl. 5, f. 33 and *Mizalia pilosula* Koch et Berendt, 1854: 45, pl. 5, f. 34) were synonymized by Bronn [1853–1856]. *Mizalia rostrata* has an extended clypeus and is now treated as a member of the Oecobiidae: Urocteinae [see Wunderlich, 1986: 20].

Conclusions

Forty-three theridiid species from Baltic amber are currently attributed to 14 genera. The most species rich genera are *Nanomysmena* (six species), *Eodipoena* and *Episinus* (each with five species). However, ten fossil species are attributed to *Theridion* but it seems that they were incorrectly placed in this genus and no diagnostic illustrations were provided in the original descriptions. The correct placement of several fossil species originally assigned to the genera *Eodipoena*, *Episinus* and *Steatoda* is also questionable. Judging from the structure of the copulatory organs and somatic morphology it seems that many fossil Theridiidae species are incorrectly placed. Recent and fossil *Episinus* require revision. In order to place many of the amber theridiids correctly, revisions of extant genera are required, and such revisions should take into account fossil spiders.

One current phylogeny of theridiid subfamilies is {Hadrotarsinae (Latrodectinae (Spintharinae (Pholcommatinae (Argyrorodinae (Anelosiminae, Theridiinae))))} [Agnarsson, 2004].

Therefore, those theridiids preserved in Baltic amber that we consider reliably identifiable belong in basal subfamilies, such as Euryopinae (= a tribe in Hadrotarsinae *sensu* Agnarsson [in press]) (e.g., *Dipoena*, *Euryopsis*) and Spintharinae (e.g., *Episinus*). However, the higher theridiids, such as Theridiinae (e.g., *Achaearanea*, *Simitidion*, *Theridion*), Argyrorodinae (e.g., *Argyrodes*) and Pholcommatinae (e.g., *Stemmops*) are known from Dominican Republic amber [Penney & Pérez-Gelabert, 2002], which is early Miocene in age. Therefore, the origins and major radiations of the higher theridiid subfamilies are probably relatively recent and presumably occurred between the mid-Eocene and early Miocene, some 20–40 million years ago. *Anelosimus clypeatus* (Anelosiminae) was described from Dominican Republic amber by Wunderlich [1988] but was considered incorrectly placed in that genus by Penney [2001] and currently remains unassigned. However, the presence of Anelosiminae in the Miocene is predicted by fossils of their sister taxon Theridiinae from Dominican Republic amber.

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