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First occurrence of syninclusion of ants *Lasius schiefferdeckeri* Mayr (Hymenoptera: Formicidae and aphids *Germaraphis ungulata* Heie (Homoptera: Aphidinea) in amber (Klesov)

Первая находка сининклюза муравьёв *Lasius schiefferdeckeri* Mayr (Hymenoptera: Formicidae) и тлей *Germaraphis ungulata* Heie (Homoptera: Aphidinea) в янтаре (Клёсов)

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КЛЮЧЕВЫЕ СЛОВА: Homoptera, Aphidinea, *Germaraphis,* Hymenoptera, Formicidae, *Lasius,* янтарь, палеонтология, Украина

ABSTRACT. Described is the first syninclusion of formicine ant *Lasius schiefferdeckeri* Mayr (three workers) and aphid *Germaraphis* (*Henningsenia*) *ungulata* Heie (six larvae) from Rovno amber. The first find of ant pupae and *Henningsenia* in Rovno amber are also reported.

РЕЗЮМЕ. Описан первый сининклюз формицины *Lasius schiefferdeckeri* Mayr (трое рабочих) и тли *Germaraphis* (*Henningsenia*) *ungulata* Heie (шесть личинок) из ровенского янтаре. Приводится первая находка куколок муравьев в ровенском янтаре.

Syninclusions (joint fossilisation of different organisms in a piece of amber) is known as the important source of palaeoecological information [Koteja, 1989, 2000]. Syninclusions of ants and homopteran from Eocene ambers are widely known, but not particularly studied. The first review of ant/homopteran syninclusions was published in the end of the last century [Kutscher & Koteja , 2000]; then we add two papers on ant/aphids syninclusions and one on ant/matsucoccid syninclusions in Rovno, Bitterfeldian and Baltic amber [Perkovsky, 2006, 2006a, 2007].

Study of the representative samples of Late Eocene Rovno and Baltic amber show that the representation of *Germaraphis* aphids in Rovno coll. (see below) is 0.19 times as high as in the Brighton coll. [Perkovsky et al., 2007].

The former collection (further referred to as Rovno coll.) have been selected from 120 kg of translucent amber from amber with layered structure (with turbid, strongly polluted and foamy amber being excluded), non-sorted for or against any kinds of inclusion, weighing 2–50 gr. per piece. The selected material of total weight 12.3 kg mostly from Klesov (Pugach) and Dubrovitsa (Vol'noje) (both — Rovno region) quarries has been acquired by the Schmalhausen Institute of Zoology in 2001–2002 at the factory "Ukramber" (Rovno). The Baltic representative collection has been selected directly at the factory in Yantarny in June 1993 by the team of the Arthropoda Laboratory, Paleontological Institute, Moscow. It is currently kept at the Booth Museum of Natural History (Brighton, England) and is further referred to as Brighton coll. Totally, the Rovno coll. comprises 1256 remains of Arthropoda (907 insects), and the Brighton coll. 757 inclusions (487 insects) [Perkovsky et al., 2007].

All specimens, mentioned in this paper, were found in Pugach mine (Klesov) in 2007 and deposited in collection of Shmalhausen Institute of Zoology of National Academy of Sciences of Ukraine, Kiev (SIZK).

The formicine *Lasius schiefferdeckeri* Mayr overrepresented in Rovno amber in comparison with Baltic amber. In many amber pieces were found big series of *Lasius schiefferdeckeri* — most spectacularly 16 workers and 3 pupae (the first ant pupae from Rovno amber) in one piece of amber from Klesov (SIZK, inventory number K–3474). This species is common in Baltic and Bitterfeldian amber (but never as common as *Ctenobethylus goepperti* (Mayr); in both ambers were found

syninclusions of *Lasius schiefferdeckeri* with dominant amber aphid species — *Germaraphis* (*G.*) *dryoides* (Germar et Berendt) [Perkovsky, 2006, 2008]. But we supposed that underrepresentstion of *Germaraphis* aphids in Rovno amber can produce new kinds of ant-and-aphids relationships.

In Rovno amber syninclusions of *Lasius schiefferdeckeri* with *Germaraphis dryoides* still not found; we reported from Rovno amber the first record of *Germaraphis* (*Balticorostrum*) *oblonga* Heie syninclused with ants [Perkovsky, 2007] — specifically with *Lasius schiefferdeckeri*. Syninclusion displays five aphids, four workers of *L. schiefferdeckeri*, and two ant larvae.

The second record of the aphid-and-*Lasius* syninclusion in the Rovno amber is decribed below.

In the little piece of translucent amber [the net weight without crust 4.5 g; the piece was further subdivided into three polished slices numbered SIZK, K–3475 (two slices) and SIZK, K–3476 (one slice)] were found three workers of *Lasius schiefferdeckeri* (SIZK, K–3476) and six larvae of *Germaraphis* (*Henningsenia*) *ungulata* Heie (SIZK, K–3475). Other syninclusions — 3 Diptera (2 Sciaridae, Cecydomyiidae); Collembola, Symphypleona (K–3476); cockroach and nematoceran legs and part of the head (?Cecidomyiidae) (K–3475).

Germaraphis ungulata was described "by four apterous specimens, probably all larvae in four pieces of amber" [Heie, 1967: p. 86] from Danish amber; the species deviates from *Germaraphis* (*G.*) *baltica* Heie "above all in having only one claw on the tarsus" [Heie, 1967: 88].This is the first record of the *Germaraphis ungulata* in the ant-and-aphid syninclusion and in the Rovno amber as well.

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