

**First occurrence of syninclusion of ants *Ctenobethylus goepperti* (Mayr) (Hymenoptera: Formicidae) and matsucoccids (Homoptera: Matsucoccidae) in Rovno amber**

**Первая находка сининклюдоза муравьев *Ctenobethylus goepperti* (Mayr) (Hymenoptera: Formicidae) и матцуккокцид (Homoptera: Matsucoccidae) в ровенском янтаре**

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**КЛЮЧЕВЫЕ СЛОВА:** Homoptera, Coccoidea, Matsucoccidae, Hymenoptera, Formicidae, янтаре, палеонтология

**ABSTRACT.** Described is the first syninclusion of dolichoderine ant *Ctenobethylus goepperti* (Mayr) (two workers) and scale insect *Matsucoccus* (male and female) in Rovno amber.

**РЕЗЮМЕ.** Описан первый сининклюдоз долиходерины *Ctenobethylus goepperti* (Mayr) (двое рабочих) и кокциды *Matsucoccus* (самец и самка) 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 archaic scale insects of the family Matsucoccidae are little known. The only example in the available literature is a small piece of the Baltic amber from Bitterfeld with a worker of *Ctenobethylus goepperti* (Mayr) that holds a female *Matsucoccus* Cockerell on the ventral side of its abdomen as described in details in the first review of ant/homopteran syninclusions [Kutscher & Koteja, 2000: 180–184]. Extant matsucoccids are confined to the Holarctic and to the conifer genus *Pinus*.

This note presents two syninclusions of ants and matsucoccids found while studying the representative samples of Late Eocene Rovno and Baltic amber. 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).

The first Rovno amber syninclusion that presents two worker ants *C. goepperti* and male and female of *Matsucoccus* sp. (identified by G.M. Dlussky and J. Koteja, respectively) is founded in a little piece of amber also including abundant wood debris and additional inclusion of Scelionidae (the amber piece was further subdivided into five slices numbered UA–910–UA–914, so as the female and male scale insects are registered respectively as UA–913 and UA–914, and the ants as UA–910 and UA–911).

The only ant/homopteran syninclusion in Brighton coll. constitutes the syninclusion of a worker of *C. goepperti* (identified by G.M. Dlussky) and anterior part of a female scale insect (probably *Matsucoccus*) in a little piece of amber (N 145).

The dolichoderine ant *Ctenobethylus goepperti* dominates both Baltic and Rovno fossil assemblages [Wheeler, 1915; Dlussky & Perkovsky, 2002], but its share in the Brighton coll. is about twice as high as in Rovno coll. [Perkovsky et al., 2006]. Genus *Matsucoccus* includes about half all known fossils of the scale insects [Kutscher & Koteja, 2000; Koteja, 2000]. Syninclusions of *Matsucoccus* females and males are known, but very rare (only 1.2% of all fossil scale insects found-

ed in syninclusions of females and males [Koteja, 2000]. Other syninclusions of both sexes of *Matsucoccus* with ants are unknown to me. The share of scale insects in Rovno coll. is 0.4 times as high as in the Brighton coll. [Perkovsky et al., 2006].

Matsucoccid females are devoid of mouthparts and provide no honeydew in any stage, thus syninclusions with ants “represent a clear case of predation” [Kutscher & Koteja, 2000].

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