ISSN 0031-0301, Paleontological Journal, 2008, Vol. 42, No. 1, pp. 63–65. © Pleiades Publishing, Ltd., 2008.
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A New Genus and Species of Timber Beetle (Coleoptera: Lymexylidae) from the Baltic Amber

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Received July 12, 2007

Abstract—*Ponomarenkylon alexandri* gen. et sp. nov. (Melittommatinae) from the Late Eocene Baltic amber is described. The long filiform antennae and the apparent absence of sensillary organs, which are frequently present on modified maxillary palps in other lymexylids, are evidence of the primitive state of the new genus.

DOI: 10.1134/S0031030108010103

Key words: Coleoptera, Lymexylidae, timber beetles, Upper Eocene, Baltic Amber.

INTRODUCTION

Lymexyloidea are a small, extremely isolated group, in which some organs probably show secondary simplification as a result of specialized lifestyle. This group is usually treated as a separate superfamily; however, the Strepsiptera (twisted winged parasites) are sometimes included in it. Undoubted lymexyloids are only known from the Cenozoic (Heer, 1865; Klebs, 1910; Wickham, 1911; Larsson, 1978; Grimaldi and Engel, 2005), although Grimaldi et al. (2002) listed these beetles among the families founded in the Burmese amber. A specimen from this publication, placed in Lymexylidae, does indeed resemble a lymexylid (judging from the figure provided). However, it appears to be flatter, and has much longer tarsi, than other members of the family. In addition, some larvae that should be assigned to Lymexylidae (Menge, 1856; Larsson, 1978) have been recorded from the Baltic amber. All references to fossil lymexylids and additional information are provided by Ponomarenko and Kirejtshuk (2007). A new species of this family from the Baltic amber is described here; this species is placed in a new genus.

Ponomarenkylon gen. nov. has long filiform antennae, while other members of the family have shorter and more or less modified antennae. The antennae may be transformed even into a pinnate organ, with numerous clearly visible sensilla. The absence of a visible maxillary sensillary organ (at least, in females), which is a modification of the maxillary palps in other lymexylids, is probably a characteristic of the new genus. These features should be interpreted as evidence of the primitive state of the genus. At the same time, the presence of the family Lymexylidae in the Burmese amber (Grimaldi et al., 2002) seems highly probable. If this is the case, it should be noted that the Cretaceous taxon from the Burmese amber also has short antennae, as have all other lymexylids, except for *P. alexandri* gen. et sp. nov.

The holotype is housed in the Paleontological Institute of the Russian Academy of Sciences, Moscow (PIN).

SYSTEMATIC PALEONTOLOGY

Family Lymexylidae Fleming, 1821

Subfamily Melittommatinae Wheeler, 1986

Genus *Ponomarenkylon* Kirejtshuk, gen. nov.

E t y m o l o g y. Named in honor of the outstanding paleontologist A.G. Ponomarenko, and from the Greek *xylon* (wood) (from the name of the type genus *Lymexylon*). Masculine gender.

T y p e s p e c i e s. *P. alexandri* sp. nov.

D i a g n o s i s. Body relatively broad (only 2.6 times as long as broad). Integument with reduced or completely absent pubescence. Antennae long, filiform. Puncturation of elytra uniform, fine, and smooth, with distinct longitudinal rows of superficial and somewhat larger punctures.

S p e c i e s c o m p o s i t i o n. Type species.

C o m p a r i s o n. The new genus differs from all genera of the family in the set of characters listed in the diagnosis.

R e m a r k s. The distinct “neck”, five visible abdominal ventrites, and the rather long elytra are the basis for the assignment of the new genus to the subfamily Melittommatinae.

Ponomarenkylon alexandri Kirejtshuk, sp. nov.

E t y m o l o g y. In honor of Aleksandr Georgievich Ponomarenko.

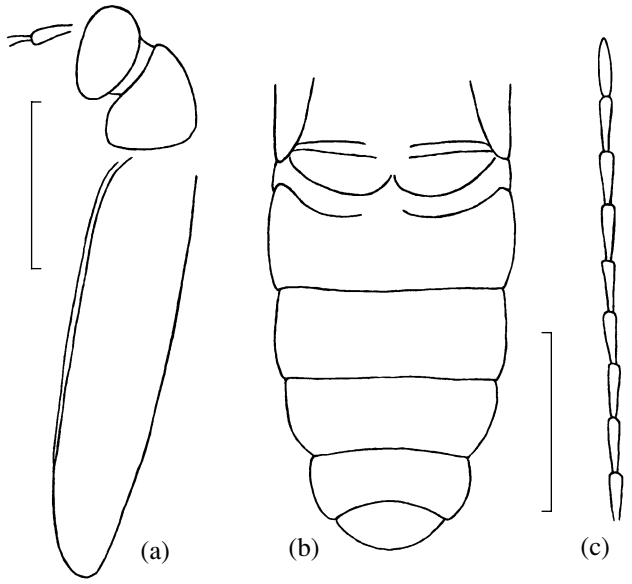

Fig. 1. *Ponomarenkylon alexandri* sp. nov., structural details of the holotype: (a) dorsal part of the body, lateral view; (b) abdomen, ventral view, and (c) antenna. Scale bar, (a) 2 mm and (b, c) 1 mm.

Holotype. PIN, no. 964/1088, beetle inclusion (? female) in a slice of amber with numerous microcracks (including numerous circular dim microcracks around the body) and cracks, one of which passes obliquely through the entire body of the beetle; this prevents examination of the general outline and many structural details of the inclusion surface; Baltic amber; Upper Eocene.

Description (Fig. 1). The beetle is very elongate, moderately convex from above and below; black, weakly shining; the upper side lacks distinct pubescence, while the ventral side has short, widely spaced hairs.

The pronotum is covered with dense weak punctures, which are smaller than the eye facets, giving the impression of a uniform fine nodular pattern. The elytra have very fine, relatively widely spaced punctures, which are much finer than the eye facets, and slightly larger superficial punctures, which are almost equal in size to eye facets and arranged in longitudinal rows. The distance between the punctures in a row is slightly less than the diameter of these punctures, while the distance between the rows is two or three times greater than the diameter of the punctures. Sculpture between the punctures is smooth or shagreened. The metaventrite has distinct, densely spaced deep punctures, which are approximately equal in size to eye facets, the space between them is smooth, less than the puncture diameter. The puncturation and sculpture of the epipleura are almost the same as those of the metaventrite, but the punctures are more superficial, and the microsculpture is smoother. The abdominal ventrites have distinct punctures, which are significantly smaller than the eye facets, the space between them is two to four times greater than the diameter of the punctures, with smooth microsculpture.

The eyes are ovate, with large facets, their vertical diameter is almost as great as the prothorax length; the maxillary palps are apparently rather small, without a well-developed sensillary organ (their outlines are vaguely traced in a grid of numerous microcracks). The antennae are 11-segmented, almost filiform, reaching the penultimate abdominal ventrite; the scape is apparently the widest and longest segment; antennomeres 3–11 are approximately equal in length, slightly expand towards the apex. The pronotum is apparently transversely triangular (the length-to-width ratio is probably considerably more than 2), with a distinct lateral border. The greatest width of the pronotum is at its base; the disk is uniformly convex; the lateral sides uniformly descend; the anterior and posterior corners are widely rounded. The elytra are approximately five times as long as the prothorax, with widely rounded apices forming an open sutural angle. The pygidium only projects slightly from under the elytra and has an almost transverse apex.

The prosternum is medially convex, without an intercoxal process. All coxal cavities are contiguous; those of the forecoxae are slightly transverse. The fore and hind coxae relatively project weakly. The metathorax is rather convex. Five ventrites are visible in the abdomen; the first ventrite is somewhat shorter than the pronotum, the length of each succeeding ventrite decreases towards the apex. The apex of the hypopygidium is widely rounded.

The femora are typical in outline, the fore and middle femora are approximately three or four times as wide as the tibiae, and the hind femora are less than three times as wide as the tibiae. The tibiae are moderately narrow, slightly expanding towards the tip, slightly wider than the flagellomeres.

Measurements in mm. Length, 6.5; width, about 2.5; height, 1.7.

Remarks. The head surface is hardly visible because of numerous microcracks. The mesothorax and scutellum are invisible because of the arrangement of cracks and microcracks. The tarsi are absent.

Material. Holotype.

ACKNOWLEDGMENTS

I am grateful to I.D. Sukatsheva (PIN) and A. Nel for helpful assistance in investigations of amber collections of PIN and Museum National d'Histoire Naturelle, Paris.

This study was supported by the Program of the Presidium of the Russian Academy of Sciences "The Origin and Evolution of the Biosphere," the Russian Foundation for Basic Research (project no. 07-04-00540a), the Royal Society (United Kingdom), and the National Museum of Natural History, Paris.

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