

A new enigmatic ant genus from late Eocene Danish Amber and its evolutionary and zoogeographic significance

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Acta Palaeontologica Polonica 59 (4), 2014: 931-939 doi: <http://dx.doi.org/10.4202/app.2012.0028>

Usomyrma mirabilis gen. et sp. nov., belonging to the tribe Leptomyrmecini of the subfamily Dolichoderinae, are described based on two males from the late Eocene Danish Amber. *Usomyrma* differs from *Leptomyrmex* by a set of plesiomorphic and autapomorphic features. Distinctly plesiomorphic characters include the fore wing venation, i.e., the presence of the well developed pterostigma, the wide closed cell 3r and the big central closed cell that formed by the fusion of the cells (1+2r)+mcu, and the structure of mandibles, which are elongate-triangular, with a well developed masticatory margin that, unlike *Leptomyrmex*, possesses a set of well developed, relatively long and sharp teeth. The most distinctive autapomorphy of *Usomyrma* is the structure of the antennae: although it remains 13-segmented, its second funicular segment is extremely elongate, much longer than any other segment, including the apical one. The generic composition of the tribe Leptomyrmecini is partly reassessed compared to the previously published data. We propose to establish a new informal *Leptomyrmex* genus-group within tribe Leptomyrmecini, including in it the extant genus *Leptomyrmex*, two fossil (*Usomyrma* gen. nov., *Leptomyrmula*) and a “*Leptomyrmex*” male from the Dominican Amber that probably represents a third extinct genus. Finally, a new, alternative evolutionary and zoogeographic scenario for the *Leptomyrmex* genus-group is proposed. We suggest that fore wing venation of *Usomyrma* is ancestral to other genera of this group. The next evolutionary step was the complete reduction of the closed central cell in *Leptomyrmula*, while conserving the pterostigma and a wide closed cell 3r. Then, in the modern *Leptomyrmex* males the pterostigma was reduced and the cell 3r became very narrow. Finally, the most apomorphic condition is illustrated by the venation of “*Leptomyrmex*” male from the Dominican Amber, which has no pterostigma and pterostigmal appendages, combined with the absence of the closed cell 3r. As a result, we suppose that the ancestor of *Leptomyrmex* might penetrate from Eurasia to Australia via South-East Asia, and then *Leptomyrmex* penetrated to South America, where the most advanced morphologically form (i.e., “*Leptomyrmex*” male from the Dominican Amber) arose, but extinct in Miocene.

Key words: Hymenoptera, Formicidae, Dolichoderinae, Leptomyrmecini, evolution, amber, Eocene.

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