

The phylogeny of the ant tribe Formicini (Hymenoptera: Formicidae) with the description of a new genus

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Abstract. The holarctic ant tribe Formicini is revised, the new genus *Bajcaridris* described, and possible phylogenetic relationships are discussed. The subgenus *Iberoformica* is synonymized with *Formica*. A synopsis, diagnosis and keys to the genera are provided.

Introduction and History

Formicini ants are among the most dominant faunal elements within the holarctic region, and often display a decisive effect on the composition of the local fauna. Their dominance is due to their social and mainly predacious life style with often extensive colonies of nests which can include up to more than 1000 nests and several hundred million ants within one locality (Hölldobler & Wilson, 1990). This has not only resulted a wealth of publications on ecology and behaviour, but was the reason for the use of ants, especially of the *Formica rufa* group, in biological control. However, the systematics and taxonomy of this tribe remained utterly unresolved and has never been treated above the local fauna level.

The present study provides an historical review of the genus-level taxonomy of the Formicini, re-defines the tribe and the included genera, and provides a cladistic analysis of the tribe and a key to genera. A discussion of each genus includes synonymies, comments, distribution and biology. This study is the fourth step towards a generic revision and cladistic analysis of the formicine ants on a worldwide base (Agosti, 1990, 1991, 1992).

As conceived here, the tribe Formicini includes seven genera, all of which are limited to the northern temperate hemisphere, but only two of which have a holarctic distribution. Number of species included and ranges of the genera are given in the table below. The number of species represents described species only, and will certainly increase since species-level taxonomy remains utterly uninvestigated over the greater part of the ranges of these genera.

Genus	Distribution	No. of species
<i>Formica</i> L.	Holarctic	158
<i>Cataglyphis</i> Foerster	S.W. Palaearctic-Sahelian	61
<i>Proformica</i> Ruzsky	Palaearctic	25
<i>Polyergus</i> Latreille	Holarctic	5
<i>Bajcaridris</i> gen.n.	W. Palaearctic	3
<i>Rossomyrmex</i> Arnoldi	Central Asia/Spain	2
<i>Alloformica</i> Dlussky	Central Asia	3

The tribe Formicini was established by Emery (1916). He included *Formica*, *Cataglyphis* and *Polyergus*, and distinguished the tribe by the following characters: sepals of the proventriculus not reflected, short; antenna of females and workers with 12, those of males with 13 segments, articulated close to the clypeus; clypeal and antennal grooves confluent. Male genitalia large and robust. Emery (1916) separated *Lasius* and *Prenolepis* and placed those two genera, because of the small genitalia of their males and the shape of the proventriculus, into the tribe Plagiolepidini.

The earlier attempts at a classification of the formicine ants by Forel (1893, 1912, 1917), Emery (1895b) and Wheeler (1922) included in Formicini or later in Formicini the genera *Pseudolasius*, *Lasius*, *Formica*, *Polyergus*, *Myrmecocystus* and *Cataglyphis* (which had been a subgenus of *Myrmecocystus* for some time), and culminated in the classic system proposed by Emery (1925), separating those genera into the two tribes Formicini with *Formica*, *Cataglyphis*, *Paraformica* and *Polyergus* and Lasiini with *Pseudolasius*, *Paratrechina*, *Myrmecocystus*, *Prenolepis*, *Lasius* and *Andragnathus*. Ashmead's (1905) unexplained idiosyncratic system will not be treated here.

The situation remained unchanged until Wheeler & Wheeler (1970, 1985) reunited the Formicini and Lasiini into a single tribe, based on larval characters, and included the more recently described Australian genus *Teratomyrmex* (McAreavey, 1957). Dlussky & Fedoseeva (1988) added *Alloformica* and the fossil genera *Glaphyromyrmex*, *Leucotaphus* and *Protoformica* in his list. Hölldobler &