

parently has a boreal distribution and an isolated, montane-subalpine relict population in the Alps. The boreal area probably extends across West Siberia to at least the Johansen Line (JOHANSEN 1955), even if the species is probably relatively rare. We examined specimens from 20 different locations.

***Formica* sp. 11**

This undescribed species, a sister species of *F. forsslundi*, is apparently an endemic of the Great Caucasus. Georgia: Kazbegi, 42° 41' N, 44° 37' E, 2100 m a.s.l., 27.VII.1985, leg. Seifert and 2180 m a.s.l., 10.VIII.2004, leg. Trettin; Schenako, 42° 23' N, 45° 42' E, 1500 m a.s.l., 01.VIII.1985, leg. Seifert. Azerbaijan: 41° 14' N, 47° 14' E, 2000 m a.s.l., 05.VI.2006, leg. Etzold.

***Formica* sp. 12**

This new species, known only from several alate gynes caught during nuptial flight in the Tarbagatay Mountains in Kazakhstan, is probably a less widespread Central Asian species related to *F. exsecta* et *mesasiatica*. Tarbagatay: 47° 07' 37" N, 82° 22' 04" E, 2070 m a.s.l., 04.VIII.2001, leg. Seifert (Fig. 3).

Comparative zoogeographic consideration

Twelve *Coptoformica* species can currently be distinguished in the Palaearctic; three of them occur in the entire (northern) Palaearctic, six in the West Palaearctic and three in the East Palaearctic.

Of the three panpalaearctic species, *Formica exsecta* et *mesasiatica* shows by far the most extended distribution. This is a direct result of its (in terms of the subgenus) unusually large temperature and moisture tolerance; moreover it has a stronger self-assertion against other *Formica* species, including Wood Ants (*Formica* s. str.), due to its strength. The distribution of *F. exsecta* is probably continuous along the submeridional, temperate and at least south boreal zone from central Spain and the British Isles to Kamchatka. On the Japanese Islands, *F. exsecta* et *mesasiatica* is replaced by the sister species, *F. fukaii*. In the mountain ranges of Tianshan and Pamir as well as the Tibetan plateau, the range of *F. exsecta* et *mesasiatica* goes far below the submeridional zone to the south. However, the southern border of its distribution in the Pamir and in Tibet has yet to be found.

The two other Panpalaearctic species, *F. pressilabris* and *F. forsslundi*, show the same basic distribution picture as *F. exsecta* et *mesasiatica*. At least in Europe, however, they reach only the temperate zone; in Asia, on the other hand, they can occur through Mongolia to Tibet. Neither species were found in the Pamir-Tianshan mountains. Among all *Coptoformica* species, *Formica forsslundi* is the least able to defend itself; on mineral soil, it is agonistically inferior to most of the territorial ant species. Furthermore, it uses only one host species in Europe: the sole host in 19 examined cases was *F. picea*. The result is an occurrence on sites such as bogs, Atlantic moist heaths and mineral grounds of the subalpine zone where competing congeneric species are absent or rare, but it by no means follows the host into all parts of its distribution area.

Formica foreli and *F. bruni* are restricted to the West Palaearctic. Both species are clearly xerothermophilous and have their centre of distribution in the north-submeridional and temperate zone. Their range reaches from northern

Spain to the eastern border of the West Palaearctic in the Tarbagatay mountain range (East Kazakhstan). The apparent gigantic distribution gap in East Europe and West Asia is certainly not real, as the finding of *F. bruni* in the Ukraine points out. The present authors are willing to examine crucial specimens.

Two species, which based on the current state of information are also West Palaearctic, *F. fennica* and *F. suecica*, probably have a solid, distinctly boreal area with southern relict occurrences in the Caucasus (*F. fennica*) or in the Alps (*F. suecica*). *Formica fennica* is clearly more continental and will probably not extend farther to the west, neither in its boreal nor in its mountain area. In the east the species is probably restricted to the West Palaearctic and is replaced in the East Palaearctic by its sister species, *F. manchu*. How far the distribution area of *F. suecica* reaches to the east is currently unknown.

Two of the three East Palaearctic species, *F. manchu* and *F. pisarskii*, settle the forest-steppes and high steppes of Central Asia. Accordingly, their distribution range here is similar to that of the co-occurring *F. exsecta*, *F. pressilabris*, and *F. forsslundi*. Whether the known locations outline the entire distribution range remains unclear. It should be examined whether *F. pisarskii* also spreads into Tibet or Manchuria, like *F. manchu*.

In general, *Coptoformica* species prefer open, dry and warm habitats; closed woods are avoided. Thus, suitable habitats for *Coptoformica* are relatively frequent in the "artificial steppe" of Europe; the cleared areas of the southern taiga zone and the forest-steppe belts of Fennoscandia up to the Far East are also settled. In the central parts of Asia, however, *Coptoformica* also extend into the completely tree-free high steppes and can stretch their area far to the south.

We are far from fully understanding the distribution of all species belonging to the subgenus *Coptoformica*. The present contribution provides an insight into what is currently known. There are large gaps with low collection intensity, e.g., East Europe and West Siberia. Much more has to be done to understand the distribution, especially in Central and East Asia. Bibliographical references are potentially helpful, but should be reviewed due to potentially incorrect determinations.

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Zusammenfassung

Zehn beschriebene und zwei unbeschriebene *Coptoformica*-Arten (Hymenoptera: Formicidae, Gattung *Formica*) sind gegenwärtig aus der Paläarktis bekannt. Drei von ihnen – *Formica exsecta* NYLANDER, 1846 et *mesasiatica* DLUSSKY, 1964, *F. pressilabris* NYLANDER, 1846 und *F. forsslundi* LOHMANDER, 1949 – kommen sowohl in der West- als auch in der Ostpaläarktis vor. *Formica exsecta* et *mesasiatica* ist von allen *Coptoformica*-Arten am weitesten ver-