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The genus *Hylaeus* Fabricius in Mongolia, an updated species inventory (Hymenoptera: Apoidea, Colletidae)

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Abstract

Since the last inventory of *Hylaeus* species of Mongolia (Dathe 1986a) extensive new collections have been evaluated. An updated checklist of 38 species of *Hylaeus* so far known from Mongolia is provided, with comments on their biogeographical assignment. Two new species, *Hylaeus* (*Hylaeus*) *kozlovi* **sp. n.** and *Hylaeus* (*Hylaeus*) *mellon* **sp. n.**, are described. *Hylaeus albitarsis* Morawitz, 1887 (= *H. fuliginosus* Warncke, 1972) has been ascertained as a synonym of *Hylaeus* (*Hylaeus*) *pusillus* (Warncke, 1972). The following nine known species are newly recorded from Mongolia: *H.* (*Dentigera*) *pallidicornis* Morawitz, 1876, *H.* (*Hylaeus*) *aborigensis* Dathe, 1994, *H.* (*Hylaeus*) *angustatus* (Schenck, 1861), *H.* (*Hylaeus*) *fedtschenkoi* (Cockerell, 1906), *H.* (*Hylaeus*) *oblitus* (Warncke, 1972), *H.* (*Hylaeus*) *vulgaris* Morawitz, 1876, *H.* (*Lambdopsis*) *pfankuchi* (Alfken, 1919), *H.* (*Nesoprosopis*) *pectoralis* Förster, 1871, *H.* (*Patagiata*) *nigrocuneatus* Cockerell, 1924.

Key words: fauna, Palaearctic region, taxonomy, new records, new species

Introduction

Mongolia (*Mongol Uls*) is a large landlocked country in eastern central Asia, covering 1,564,100 km². Politically, Mongolia is divided into 21 provinces called "aimags" (Fig. 1). It is bordered by Russia to the north and China to the south, east and west. Geographically and climatologically, it is an area of contrasts and extremes, between cold mountainous regions up to 4,000 m asl. to the north and west and one of the largest deserts of the world in the south, the Gobi Desert. Most of the country is located on high plateaus, covered by steppes and extensive forested areas. It has an extreme continental climate with long, cold winters and short hot summers, during which most of its annual precipitation falls (Lavrenko 1979).

In winter, Mongolia comes under the influence of the cold Siberian anticyclone. The regions most severely affected by this cold weather are Uvs Aimag, western Khuvsgul, eastern Zavkhan, northern Bulgan and eastern Dornod Aimag. Due to their particular position, winter is much milder in the Umnugovi Aimag and in the region of the Altai Mountains bordering China. The steppe-forest region of central and eastern Arkhangai and northern Uvurkhangai Aimags possesses a unique climate. The arid conditions in the Gobi are caused by the rain shadow effect of the Himalayas (Hilbig 2007). With respect to its biogeography and climate regimes, Mongolia includes—and insofar connects—as many as six biomes (Yunatov 1950, Fig. 2).

During the last ice ages, numerous species with a trans-Palaearctic distribution pattern occupied refugia in East Asia, especially the so-called Mongolian and Mandchurian refugia. It has generally been assumed that postglacial expansion took place exclusively from there (de Lattin 1964, 1967). Consequently, populations of these species are genetically hardly differentiated over vast areas of Eurasia (Bernard *et al.* 2011). Recent molecular genetic studies underline the outstanding importance of southeastern Russia and adjacent areas, including Mongolian landscapes, for species survival during Pleistocene glacial periods. However, striking differentiation patterns in genetic

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