



## Contribution to the taxonomy of the *Hylaeus gibbus* species group in Europe (Hymenoptera, Apoidea and Colletidae)

JAKUB STRAKA<sup>1</sup> & PETR BOGUSCH<sup>2</sup>

<sup>1</sup>Department of Zoology, Charles University in Prague, Viničná 7, CZ–12844 Praha 2, Czech Republic. E-mail: straka.jakub.1@gmail.com

<sup>2</sup>Department of Biology, University of Hradec Králové, Rokitanského 62, CZ–500 03 Hradec Králové, Czech Republic. E-mail: bogusch.petr@gmail.com

### Abstract

We redescribe and present new diagnoses of the *Hylaeus gibbus* group in Europe. Species of this group were often confused with each other. Our method of distinguishing between the species is based on dividing three commonly recognised species into four. We present diagnoses and list the characteristics of *Hylaeus confusus* Nylander, 1852; *Hylaeus gibbus* Saunders, 1850; and *Hylaeus pictus* (Smith, 1853). For the newly characterised form, one of Förster's available names has been resurrected—*Hylaeus incongruus* Förster, 1871. *Hylaeus gibbus* occurs only in southern Europe and northern to southern parts of central Europe, while *H. incongruus* reaches more northern latitudes. Types of the most problematic and poorly described forms were examined. Some names of clearly lost types were fixed by designating neotypes.

**Key words:** Hymenoptera, Apoidea, Colletidae, *Hylaeus*, taxonomy, redescription, Europe

### Introduction

The taxonomy of *Hylaeus* Fabricius, 1793 has been relatively stable throughout time. Most of the species occurring in central Europe were described during the 19<sup>th</sup> century. However, species are still being described outside Europe (e.g., Dathe 2000), and sibling species are being differentiated from common species in central Europe (Dathe et al. 1996). *Hylaeus gibbus* Saunders, 1850 is a well-known species that was described long ago. This species is related to the more common *H. confusus* Nylander, 1852, and the rarer, thermophilous *H. pictus* Smith, 1853. Various authors have published these species under many synonyms. Förster (1871), for example, described species that, based on general appearance, were related to the above mentioned ones, with most of them now synonymised. Dathe (1980) added the following species to the key of European *Hylaeus*: *H. confusus*, *H. gibbus*, and *H. pictus*. In this key *H. pictus* is mentioned as a well-recognised species, with uniquely shaped yellow marks on the mask and thorax. This species is distributed in “western and southern Europe, reaching Cyprus in the east”. The other two species probably occur throughout Europe. However, Noyes (2004) listed *H. pictus* as a synonym of *H. gibbus*. Schwarz et al. (1996) did not mention *H. pictus* or any of its synonyms in their catalogue of German, Austrian and Swiss bees because *H. pictus* has never been collected in Central Europe. This publication, prepared by the main authorities in Europe, contains almost all of the available names for Central European species of the *gibbus*-group and, thus, maintains *H. pictus* as a separate, valid species. Amiet et al. (1999) included *H. confusus* and *H. gibbus* as species common in Switzerland in their key for *Hylaeus* in the Fauna Helvetica series. They were unable to distinguish between *H. gibbus* and *H. confusus* reliably and presented a map of the distribution of both species together.

In this paper, we present new taxonomic insight into the problem of differentiating between *H. confusus* and *H. gibbus* species. The identification of these species became more consistent after we distinguished four species in our material on the *Hylaeus gibbus* group from central and southern Europe. We differentiate between the following four species: *H. confusus*, *H. pictus*, *H. gibbus* and *H. incongruus* Förster, 1871. The last name mentioned has been recorded as a synonym of *H. confusus* (Schwarz et al. 1996, Amiet et al. 1999) and *H. gibbus* (Dathe 1980).