



## New and little known bees of the genus *Sphcodes* Latreille, 1804 (Hymenoptera: Apoidea: Halictidae) from Central Asia

YULIA V. ASTAFUROVA<sup>1</sup>, MAXIM YU. PROSHCHALYKIN<sup>2,4</sup> & MAXIMILIAN SCHWARZ<sup>3</sup>

<sup>1</sup>Zoological Institute, Russian Academy of Sciences, Universitetskaya Nab., 1, Saint Petersburg, 199034, Russia.

E-mail: [Yulia.Astafurova@zin.ru](mailto:Yulia.Astafurova@zin.ru)

<sup>2</sup>Federal Scientific Centre for East Asian Terrestrial Biodiversity, Far Eastern Branch of Russian Academy of Sciences, Vladivostok-22, 690022, Russia. E-mail: [proshchalikin@biosoil.ru](mailto:proshchalikin@biosoil.ru)

<sup>3</sup>A-4052, Ansfelden, Austria. E-mail: [maximilian.schwarz@liwest.at](mailto:maximilian.schwarz@liwest.at)

<sup>4</sup>Corresponding author

### Abstract

Following a previously published study on Central Asian species of *Sphcodes* bees we here present a further report on 20 rarely recorded and little known species. This brings to 34 the number of species of *Sphcodes* known from this region, with two of them recorded for the first time: *Sphcodes scabricollis* Wesmael, 1835 and *S. hakkariensis* Warncke, 1992. *Sphcodes sandykachis* Astafurova & Proshchalykin, **sp. n.** is described from Turkmenistan and Uzbekistan. *Sphcodes atlassa* Warncke, 1992, **stat. nov.** and *S. hakkariensis* Warncke, 1992, **stat. nov.** are raised to full species level.

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

### Introduction

The available information on *Sphcodes* bees of Central Asia (Kazakhstan, Uzbekistan, Kyrgyzstan, Turkmenistan, and Tajikistan) has recently been summarized (Astafurova & Proshchalykin 2017a; Astafurova *et al.* 2018) based on a comprehensive study of specimens in various collections. A great deal of additional unstudied material (more than 3.000 *Sphcodes* specimens) was discovered in the private collection of Maximilian Schwarz (Ansfelden, Austria), including a number of rarely collected and remarkable species. To complete the study on Central Asian *Sphcodes*, we here report additional records of 20 little known species with one species described as new and two recorded from Central Asia for the first time, bringing the total number of species known from this region to 34 (Kazakhstan—30, Uzbekistan—24, Kyrgyzstan—25, Turkmenistan—23 and Tajikistan—26). *Sphcodes atlassa* Warncke, 1992, **stat. nov.** and *S. hakkariensis* Warncke, 1992, **stat. nov.** are raised to species level.

### Materials and methods

The results presented in this paper are based on 269 specimens collected mainly in the last few decades by Czech entomologists in Uzbekistan, Kyrgyzstan, Turkmenistan and Tajikistan and currently housed in the private collection of Maximilian Schwarz (Ansfelden, Austria). For detailed synonymy, general distribution and published records of Central Asian *Sphcodes* species see Astafurova & Proshchalykin (2017a).

Morphological terminology generally follows Michener (2007): e.g., we have used the abbreviations T1, T2, T3, etc., to denote the first, second, third, etc., metasomal terga; S1, S2, S3, etc. to denote the first, second, third, etc., metasomal sterna; and F1, F2, F3, etc., to denote the first, second, third, etc. flagellomere. Integumental sculpture is described by the following formula: puncture diameter (in  $\mu\text{m}$ ) / ratio of distance between punctures to average puncture diameter, e.g., 15–20  $\mu\text{m}$  / 0.5–1.5. The ventral surfaces of some flagellomeres bear a distinctive