



## A taxonomic revision of the subgenus *Andrena* (*Brachyandrena*) (Hymenoptera: Andrenidae)

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### Abstract

Species of the Palaearctic subgenus *Andrena* (*Brachyandrena*) are revised and an identification key to species is provided. Two new species, *Andrena alisadra* from Iran and *Andrena pinguis* from Turkey are herein described as new and assigned to this subgenus.

**Key words:** new species, Palaearctic, Iran, Turkey

### Introduction

*Andrena* (Andrenidae: Andreninae) is the most diverse bee genus in the Holarctic (Michener 2007) and can be considered as one of the most important pollinators of spring-blooming crops and trees (Delaplane & Mayer 2000). This genus comprises more than 1400 valid species (Gusenleitner & Schwarz 2002; Gusenleitner *et al.* 2005). Considering the Andreninae as a relatively young group in the evolutionary history of bees (Osytshnjuk *et al.* 2005), its species have a worldwide distribution, except for South America, most of central Africa, Southeast Asia, and Australia (Dubitzky 2006).

Among the 68 described subgenera for this genus in the Palaearctic region (Schmid-Egger 2005; Michener 2007), *Brachyandrena* was described by Pittioni (1948) and *Andrena colletiformis* Morawitz was designated its type species. This subgenus is found from the southwest of the Palaearctic region to central Asia. Warncke (1968) listed two species, which grew to four following the work of Gusenleitner and Schwarz (2002). Osytsnjuk *et al.* (2005) provided an identification key for three of these four species of the subgenus, along with redescriptions of *A. colletiformis* Morawitz and *A. limonii* Osytsnjuk.

**Diagnostic characteristics of *Andrena* (*Brachyandrena*).** Small bees (females: 7–8 mm, males: 5.5–7 mm); clypeus densely punctate; pronotum without humeral angle; mesoscutum densely and deeply punctate; propodeal enclosure coarsely rugose, with strong carina (Fig. 1A), dorsolateral area to enclosure more weakly rugose; metasomal terga densely and deeply punctate; fovea on lateral side of T2 narrow and elongated in female.

Based on the above-mentioned characteristics, we assigned the two newly described species of this paper to the *Andrena* (*Brachyandrena*) subgenus. One of them, *Andrena alisadra* **sp. n.**, has been found in Iran. The other one is a species formerly labeled as *Andrena punctatissima* Morawitz, 1866, and found in the Klaus Warncke's collection in the Biologiezentrum des Oberösterreichischen Landesmuseums in Linz, Austria. By