

A NEW SPECIES OF THE BEE GENUS COLLETES LATREILLE, 1802 (HYMENOPTERA: COLLETIDAE) FROM THE RUSSIAN FAR EAST AND MONGOLIA

M. Kuhlmann and M. Quest

Institute of Landscape Ecology, University of Münster, Robert-Koch-Str. 26, D-48149 Münster, Germany. E-mail: kuhlmmi@uni-meunster.de

The bee species Colletes arsenjevi Kuhlmann, sp. n. is described from the Russia (Primorskii krai) and Mongolia. It is the only known member of the C. succinctus subgroup in the eastern Palaearctic region.

KEY WORDS: Hymenoptera, Colletidae, Colletes, bee, taxonomy, Russian Far East, Mongolia.

М. Кулманн, М. Квест. Новый вид пчел из рода Colletes Latreille, 1802 (Hymenoptera: Colletidae) с Дальнего Востока России и Монголии // Дальневосточный энтомолог. 2006. N 157. С. 1-4.

Из России (Приморский край) и Монголии описан Colletes arsenjevi Kuhlmann, sp. n. Этот вид является единственным представителем подгруппы С. succinctus в восточной Палеарктике.

Институт ландшафтной экологии, Университет Мюнстера, D-48149, Мюнстер, Германия. E-mail: kuhlmmi@uni-muenster.de

INTRODUCTION

Within the genus Colletes, the C. succinctus group (sensu Noskiewicz 1936) is characterised by the synapomorphy of a pair of prominent, deep lateral pits on S6 of the male. Females can be recognized by the translucent reddish-orange colour of the posterior margin (marginal area) of the basal tergum. The group comprises twelve described species in two subgroups: the collaris subgroup with three species 1

characterised by a very small male S7 and the *succinctus* subgroup with nine species and the males having a broad sickle-shaped S7 (Dubitzki & Kuhlmann 2004; Kuhlmann, 2000, 2003). The *collaris* subgroup has a transpalaearctic distribution with *C. collaris* Dours, 1872 known from Spain to Japan while *C. bischoffi* Noskiewicz, 1936 (Himalaya) and *C. taiwanensis* Dubitzki et Kuhlmann, 2004 (Taiwan) are restricted to the eastern Palaearctic. Species of the *succinctus* subgroup have their center of diversity in the western and central part of the Palaearctic with *C. reticulatus* (Cameron, 1887) and *C. bhutanicus* Kuhlmann, 2003 (both Himalaya) on the southeastern edge of its distribution.

However, there are published records of C. succinctus (Linnaeus, 1758) northeast of this area from Mongolia and East Siberia and Russian Far East. Morawitz (1880: 388, as C. balteatus Nylander, 1852) mentioned "In der nordwestl. und südöstl. Mongolei von Prshew. und Potan. gesammelt." and Noskiewicz (1936: 478) stated "[...] ich habe sehr zahlreiche Exemplare aus Ost- und Westsibirien, aus der Mongolei, [...] untersucht." Two additional records from Mongolia were published by Kuhlmann & Dorn (2002). Colletes succinctus is a specialised visitor of Calluna vulgaris (L.) Hull and Erica spp. (Ericaceae) and only collects pollen from these flowers (Westrich, 1989). A critical review of records from the eastern Palaearctic showed that those specimens of C. succinctus were collected far outside the distribution area of its host plants (Meusel, 1978). Additionally, the few available specimens show some morphological differences indicating that they belong to an undescribed but closely related species (Kuhlmann, 2003). Thus, it is supposed that all specimens of C. succinctus recorded from East Siberia, Russian Far East, and Mongolia belong to this new species. Additional males were collected by one of us (MQ) at the Pacific coast in Primorskii krai. These easternmost records of the C. succinctus group prompted the description of this new species.

In the description below, the following abbreviations are used: T1, T2, etc., to denote the first, second, etc., metasomal terga, and S1, S2, etc., to denote the first, second, etc., metasomal sterna.

Colletes arsenjevi Kuhlmann, sp. n.

TYPE MATERIAL. Holotype – &, Russia, Primorskii krai, Lazovski Zapovednik, sandy coast, 43°01′07′N 134°07′46′′E, 0 m, 16-25.IX 2001, Malaise trap (leg. M. Quest) (Coll. Institute of Biology and Soil Science, Vladivostok). Paratypes: 1 &, Russia, Lazovski Zapovednik, Kordon Petrov, coastal dune, 42°52′29′′N 133°48′13′′E, 0 m, 11.IX 2003, on Asteraceae (leg. M. Quest) (Coll. Kuhlmann); 1 &, Mongolia, Čojbalsan aimak, between Somon Chalchingol and Chamardavaa ul, 600 m, Nr. 398, 12.VIII 1965, Exp. Dr. Z. Kaszab (Coll. Kuhlmann).

DIAGNOSIS. In the punctation of terga and the width of apical tergal hair bands the new species (Fig. 3) is very similar to *C. brevigena* Noskiewicz, 1936 but it differs in having a malar area about 0.5 times the width of the base of mandible (only about 0.3 in *C. brevigena*), in having a broader S7 (Fig. 1) and especially by having numerous long erect hairs on the disc of T2 (Fig. 3). The punctation of T1 is similar to *C. standfussi* Kuhlmann, 2003 but the latter clearly differs in the shape of 2



Figs 1-3. *Colletes arsenjevi* sp. n. 1) shape of male S7, 2) gonostylus (scale bar = 0.5 mm), 3) punctation and pilosity of male T1 and T2.

S7, narrower apical tergal hair bands (Kuhlmann 2003) and the lack of long erect hairs on T2. The remaining species of the *C. succinctus* subgroup are characterised by broader apical tergal hair bands and a finer tergal punctation. The male of *C. arsenjevi* can be clearly identified by the combination of the following characters: coarse punctation of T1, shape of S7, length of malar area and numerous long erect hairs on the disc of T2.

DESCRIPTION. MALE. Length: 9-10 mm. *Vestiture*. vertex and mesonotum with long brownish orange hairs, face, sides of mesosoma and legs yellowish to whitish brown, ventral side of head and mesosoma, the moderately narrow apical tergal (T1–T6) and sternal hair bands yellowish white; hairs generally dense and long on head and mesosoma, T1 and disc of T2 with moderately abundant long erect hairs (Fig. 3), T3–T7 with short and fine blackish hairs. The male from Mongolia differs from the Far Eastern specimens in having narrower but more dense apical hair bands on the sterna.

Integument. black, except sometimes ventral surface of antennal flagellum (dark brown), tibial spurs yellow and apical tergal depressions translucent orange-brown; facial fovea narrow, about 0.3 times as wide as distance between eye and lateral ocellus; malar area about 0.5 times as wide as width of base of mandibles; punctation of T1 and T2 coarse, successively finer on T3–T7, much finer on apical tergal depressions, integument smooth and shiny between punctures (Fig. 3); apical end of S6 with lateral grooves; gonostylus and S7 as in Figs 1-2.

FEMALE. Unknown.

DISTRIBUTION. The species seems to be widespread in East Siberia, Russian Far East, and Mongolia (see Morawitz 1880: as *C. balteatus*, and Noskiewicz 1936: as *C. succinctus*). The specimens from Mongolia published by Kuhlmann & Dorn (2002) were collected at 46°50′N 113°30′E (site 349) and approximately 47°50′N 118°30′E (site 398).

ETYMOLOGY. The species is dedicated to the famous Russian naturalist Vladimir Klavdievich Arsenjev (10.IX 1872–4.IX 1930). He came to Vladivostok in 1899 and in the following 30 years organised and took part in twelve major expeditions that investigated the Russian Far East, especially the Sikhote-Alin mountains and the

Ussuri plains. He was the director of the museum in Khabarovsk (1910-1918). Arsenjev published over 60 scientific and popular books and articles. His most popular book is "Dersu Uzala"

REMARKS. The two males found in Primorskii krai were collected on the narrow coastal plains of two different bays of the Pacific Ocean. The sandy and sparsely vegetated plains have a width of 30 m up to 200 m and are covered by dunes of different age. They provide excellent nesting sites for ground nesting bees like Colletes. In late summer the vegetation is dominated by flowers of Centaurea, Aster, Hieracium, Senecio (Asteraceae), Trifolium (Fabaceae), Campanula (Campanulaceae), Allium (Liliaceae) and Potentilla (Rosaceae) and one male was collected on Centaurea

According to Kaszab (1965) the male at site 349 in Mongolia was collected in a dry montane steppe with Stipa sp. and Artemisia sp., along a water course with Ulmus sp. trees and Sorbus sp. shrubs. The two males from site 398 he found in a steppe area that was in full bloom.

ACKNOWLEDGEMENTS

M. Quest is very much indebted to A.A. Laptev, director of the Lazovski Reserve, for the permission to work and collect insects and S.A. Khokhriakov, deputy director of Lasovski Reserve, as well as V.P. Shokhrin, ornithologist, for support during field work. A. Lelej kindly helped with the Russian abstract and S.P.M. Roberts made linguistic corrections.

REFERENCES

Dubitzky, A. & Kuhlmann, M. 2004. First record of the bee genus Colletes for Taiwan with description of a new species (Hymenoptera, Apoidea, Colletidae). - Deutsche Entomologische Zeitschrift 51: 271-278.

Kaszab, Z. 1965. Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei. 66. Liste der Fundorte der III. Expedition. - Folia Entomologica Hungarica N.S. 18: 587-623.

Kuhlmann, M. 2000. Katalog der paläarktischen Arten der Bienengattung Colletes Latr., mit Lectotypenfestlegungen, neuer Synonymie und der Beschreibung von zwei neuen Arten (Hymenoptera: Apidae: Colletinae). - Linzer biologische Beiträge 32: 155-193.

Kuhlmann, M. 2003. Zur Kenntnis paläarktischer Bienen der Gattung Colletes Latr. mit Beschreibung neuer Arten (Hymenoptera: Apidae: Colletinae). - Linzer biologische Beiträge 35: 723-746.

Kuhlmann, M. & Dorn, M. 2002. Die Bienengattung Colletes Latreille 1802 in der Mongolei sowie Beschreibungen neuer Arten aus Sibirien und den Gebirgen Zentralasiens (Hymenoptera, Apidae, Colletinae). - Beiträge zur Entomologie 52: 85-109.

Meusel, H. (ed.) 1978. Vergleichende Chorologie der zentraleuropäischen Flora. Band II, Karten. Jena: 259-421.

Morawitz, F. 1880. Ein Beitrag zur Bienen-Fauna Mittel-Asiens. - Bulletin de l'Academie Impériale des Sciences de St-Pétersbourg 27: 339-390.

Noskiewicz, J. 1936. Die paläarktischen Colletes-Arten. - Prace Naukowe Wydawnictwo Towarzystwa Naukowego we Lwowie 3: 1-531

Westrich, P. 1989. Die Wildbienen Baden-Württembergs. Stuttgart. 972 S.

© Far Eastern entomologist (Far East. entomol.) Journal published since October 1994. Editor-in-Chief: S.Yu. Storozhenko

Editorial Board: A.S. Lelej, V.S. Sidorenko, N.V. Kurzenko

Address: Institute of Biology and Soil Science, Far East Branch of Russian Academy of Sciences, 690022, Vladivostok-22, Russia.

E-mail: entomol@ibss.dvo.ru

FAX: (4232) 310 193