

The bees of the genus *Colletes* LATREILLE 1802 of Mongolia (Hymenoptera, Apoidea: Colletidae)

With 5 figures

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Summary

All available information about bees of the genus *Colletes* in Mongolia is summarized. Thirty-three species are currently known from this country. *Colletes plumuloides* KUHLMANN & PROSHCHALYKIN **sp. n.** is described as new from the Dornogovi Aimag. Two species are newly recorded from Mongolia: *C. roborovskyi* FRIESE 1913 and *C. dubitatus* NOSKIEWICZ 1936. The female of *C. dubitatus* is here described for the first time.

Key words

Colletes, taxonomy, new species, fauna, Asia, Palearctic region.

New taxa

Colletes plumuloides KUHLMANN & PROSHCHALYKIN **sp. n.**

Zusammenfassung

In der vorliegenden Arbeit werden alle verfügbaren Daten zum Vorkommen der Bienengattung *Colletes* in der Mongolei zusammengefasst. Derzeit sind 33 Arten bekannt und *C. plumuloides* KUHLMANN & PROSHCHALYKIN **sp. n.** wird neu beschrieben basierend auf Material aus dem Dornogovi Aimag. Zwei Arten werden erstmals in der Mongolei nachgewiesen: *C. roborovskyi* FRIESE 1913 und *C. dubitatus* NOSKIEWICZ 1936. Das Weibchen von *C. dubitatus* wird hier zum ersten Mal beschrieben.

Introduction

The bee genus *Colletes* comprises about 470 described species with an estimated total of about 700 species (PROSHCHALYKIN & KUHLMANN 2012). It has been recorded from all continents except Antarctica, Australia, Madagascar and Southeast Asia (MICHENER 2007) and more than 200 species are known from the Palaearctic region with its centre of diversity in Middle Asia (KUHLMANN 2005, 2006). The *Colletes* bees of Mongolia (Fig. 1) have been studied twice before (KUHLMANN & DORN 2002, KUHLMANN 2009a). However, taxonomic information about the Mongolian bee fauna is still fragmentary so the additional 560 *Colletes* specimens recently made available mainly by museum collections in Russia (see Materials and methods) were very welcome. The inadequate state of knowledge is illustrated in this paper by the discovery of another previously undescribed species, new records for the country, the discovery of the hitherto unknown female of *C. dubitatus* NOSKIEWICZ and the saga regarding the identity of the females of *C. edentulus* NOSKIEWICZ and *C. ravulus* NOSKIEWICZ (KUHLMANN 2010) that has only recently been solved (KUHLMANN & PROSHCHALYKIN 2011). The bee fauna of Mongolia has an endemic element but can also be seen as a transition from a northern temperate fauna to that of the arid interior of China and Central Asia. Together with the recently studied *Colletes* fauna of the Asian part of Russia (KUHLMANN & PROSHCHALYKIN 2011), investigation of the Mongolian fauna is an important cornerstone for the exploration and a better understanding of the rich but little known *Colletes* faunas of neighbouring China (KUHLMANN 2002, 2007, NIU et al. 2013) and Central Asia (KUHLMANN 2003, 2005, 2006).

The present study aims to summarize the present state of knowledge of the bee genus *Colletes* of Mongolia as a basis for further investigations of the largely unexplored but species rich faunas of China and Central Asia. Including the newly studied material the results presented here are based on a total of more than 2600 specimens representing 33 species. *Colletes plumuloides* KUHLMANN & PROSHCHALYKIN sp. n., and the female of *C. dubitatus* are here described for the first time.

Materials and methods

Terminology for the description of species is based on MICHENER (2007) for general morphology. Puncture density is expressed as the relationship between puncture diameter (d) and the space between them (i), such as $i = 1.5d$ or $i < d$. The following abbreviations were used for morphological structures: T–metasomal tergum, S–metasomal sternum, Bl–body length. Measurements follow the guidelines of MICHENER (2007). Body length was measured from the vertex to the apex of the

body. Nomenclature and definition of species groups in *Colletes* follows KUHLMANN (2000) and KUHLMANN et al. (2009).

Acronyms for collections from which specimens were borrowed or are deposited are as follows:

- AMNH American Museum of Natural History, New York, USA (J. Ascher, J. Rozen);
- IBSS Institute of Biology and Soil Science, Russian Academy of Sciences, Vladivostok, Russia (A. Lelej);
- ISEN Institute of Animal Systematic and Ecology, Russian Academy of Sciences, Novosibirsk, Russia (V. Dubatolov);
- OÖLM Oberösterreichisches Landesmuseum/Biology Centre, Linz, Austria (F. Gusenleitner);
- PHAS Philadelphia Academy of Sciences, Philadelphia, USA (J. Gelhaus);
- PCJS private collection of J. Straka, Prague, Czech Republic;
- RCMK research collection of Michael Kuhlmann, London, UK;
- ZISP Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (S. Belokobylskij, Yu. Astafurova).

The following abbreviations were used for collectors: AT – A. Timokhov, JH – J. Halada, JG – J. Gelhaus, JS – J. Straka, IK – I. Kerzhner, KA – M. Kadlecova, MH – M. Halada, MK – M. Kozlov, YD – Yu. Danilov, VZ – V. Zaitsev.

New distribution records for provinces (Aimags) in Mongolia are marked with an asterisk (*).

Results

Species recorded

Colletes caspicus species-group

Colletes alini KUHLMANN 2000

Material examined:

(2 ♀♀, 10 ♂♂): Bayan-Khongor Aimag: 1 ♂, 75 km S Bayankhongor (E100°53' N45°31'), 1500 m, 8-9.VII.2004, JS (PCJS); 1 ♂, Orog-Noor Lake (E100°42' N45°03'), 15-16.VIII.1967, VZ (ZISP); Usv Aimag: 2 ♂♂, Togtokhyn-Shil Ridge, 50 km ESE Ulangom (E92°04' N49°59'), 7.VIII.1970, IK (ZISP); 3 ♂♂, 50 km E Ulangom (E92°70' N49°59'), 10-11.VII.1968, MK (ZISP); Khovd Aimag: 2 ♂♂, 20 km SSW Tsetseg (E93°06' N46°23'), 2060 m, 11.VI.2012, AT (IBSS); Umnugovi Aimag: 2 ♀♀, 70 km S Saynshand (E102°33' N42°55'), 1100 m, 6.VIII.2007, JH (OÖLM); Dornod Aimag: 1 ♂, 7 km S Erentsav [= Chuluun-Khorot] (E114°80' N49°61'), 22.VIII.1975, E. Narchuk (ZISP).

Published records:

OSYTSJNJUK & ROMANKOVA 1995: 483 (as *C. seitzi* ALFKEN 1900); KUHLMANN & DORN 2002: 90; PROSHCHALYKIN 2007: 879 (as *C. seitzi*); 2012: 449; KUHLMANN 2009a: 21; KUHLMANN & PROSHCHALYKIN 2011: 7.

Distribution in Mongolia:

Uvs Aimag, *Bayan-Khongor Aimag, Khovd Aimag, Tuv Aimag, *Umnugovi Aimag, Dornod Aimag, Sukhbaatar Aimag (Fig. 2).

General distribution:

Russia, Mongolia, North-eastern China.

Colletes squamosus species-group

Colletes wahrmani NOSKIEWICZ 1959

Material examined:

(1 ♀): Umnugovi Aimag: 1 ♀, 60 km E Talyn-Bilgakh-Bulak River (E104°47' N44°12'), 17-19.VIII.1969, IK (ZISP).

Published records:

KUHLMANN 2009a: 21; 2009b: 16.

Distribution in Mongolia:

Govi-Altai Aimag, *Umnugovi Aimag (Fig. 2).

General distribution:

Turkey, Kazakhstan, Turkmenistan, Uzbekistan, Pakistan, Mongolia, China [Xinjiang].

Colletes mixtus species-group

Colletes dubitatus NOSKIEWICZ 1936

Material examined:

(1 ♀, 4 ♂♂): Bayan-Khongor Aimag: 1 ♀, 3 ♂♂, Ekhin-Gool Oasis (E99°81' N42°31'), 11-14.VIII.1969, MK (ZISP/RCKM); Khovd Aimag: 1 ♀, 12 km S Altaj (E92°22' N45°83'), 22.VII.1970, IK (ZISP).

The female of *C. dubitatus* is here described for the first time. The single female was found with three conspecific males so there is no doubt about its identity.

Diagnosis:

Colletes dubitatus is morphologically very similar to the other four species (five including the unknown female of *C. issykkuli* KUHLMANN) of this group. The most noticeable character of this species separating it from its relatives are the very broad apical metasomal tergal hair bands that are much broader than the hairless disc of the

respective terga (Fig. 4c). In *C. kozlovi* FRIESE the hairless discs of the metasomal terga are about as broad as the apical hair bands and in *C. annejohnae* KUHLMANN, *C. mixtus* RADOSZKOWSKI and *C. stachi* NOSKIEWICZ the hairless discs are much broader than the apical hair bands.

Description:

Female. Bl = 8.5 mm. **Head.** Head wider than long. Integument black except mandible dark reddish-brown. Face including clypeus densely covered with long, yellowish-white, erect hairs (Fig. 4b). Clypeus convex without a longitudinal median depression, supraclypeal area convex in profile. Clypeus very finely and densely punctate; surface between punctures shiny (Fig. 4b). Malar area medially very short, almost linear, finely striate. Antenna black, ventrally dark brown (Fig. 4b).

Mesosoma. Integument black. Mesoscutal disc between punctures smooth and shiny; disc sparsely punctate ($i = 3.0-4.0d$). Scutellum anteriorly sparsely punctate with more dense punctation apically, surface smooth and shiny. Mesoscutum, scutellum, metanotum, mesepisternum and propodeum densely covered with long yellowish-white erect hairs (Fig. 4a). **Wings.** Slightly yellowish-brown; wing venation and stigma yellowish-brown. **Legs.** Integument black to dark reddish-brown. Vestiture whitish, scopa white. **Metasoma.** Integument black except apical margins of T yellowish to brownish translucent. T1 in its anterior half densely covered with short appressed hairs leaving a strip of the disc hairless that is narrower than the width of the apical tergal hair band (Fig. 4c); T1 sparsely covered from the front to the disc with long, erect white hairs. T2 – T5 with broad basal and apical hair bands, hairless tergal discs narrower than the width of the apical tergal hair bands (Figs 4a, c). Terga very densely and very finely punctate ($i < d$) (Fig. 4c).

Distribution in Mongolia:

*Bayan-Khongor Aimag, *Khovd Aimag (Fig. 2).

General distribution:

Kazakhstan, Turkmenistan, Tajikistan, Uzbekistan, Mongolia.

Colletes kozlovi FRIESE 1913

Material examined:

(2 ♂♂): Umnugovi Aimag: 2 ♂♂, 70 km S Saynshand (E102°33' N42°55'), 1100m, 6.VII.2007, JH (OÖLM).

Published records:

NOSKIEWICZ 1936: 240; KUHLMANN & DORN 2002: 91; KUHLMANN 2005: 1369; 2009a: 21; 2009b: 16; KUHLMANN & PROSHCHALYKIN 2011: 7.

Distribution in Mongolia:

Khovd Aimag, Zavkhan Aimag, Bayan-Khongor Aimag, Umnugovi Aimag, Dornogovi Aimag, Dornod Aimag (Fig. 2).

General distribution:

Russia, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Mongolia, China (Xinjiang, Gansu, Inner Mongolia).

Colletes mixtus RADOSZKOWSKI 1891

Material examined:

(7 ♀♀, 27 ♂♂): Bayan-Khongor Aimag: 4 ♀♀, 6 m♂♂, Talyn-Bilgekh-Bulak, 13 km E Tsagan-Bogdo-Ula (E99°23' N42°85'), 16.VIII.1969, MK (ZISP/RCMK); 1 ♂, Ekhin-Gool Oasis (E99°81' N42°31'), 31.VIII.1970, MK (ZISP); 3 ♀♀, 19 ♂♂, 11-14.VIII.1969, MK (ZISP/RCMK); 1 ♂, 100 km SE Bayan-Obo (E101°12' N45°10'), 21.VI.1971, MK (ZISP).

Published records:

KUHLMANN & DORN 2002: 91; KUHLMANN 2005: 1370.

Distribution in Mongolia:

Khovd Aimag, Govi-Altai Aimag, Bayan-Khongor Aimag (Fig. 3).

General distribution:

Turkey, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, Mongolia, China.

Colletes roborovskiyi species-group

Colletes roborovskiyi FRIESE 1913

Material examined:

(5 ♂♂): Khovd Aimag: 4 ♂♂, 25 km N Bulgan, Ulyastain-Gol River (N91°85' N46°32'), 31.VII.1970, MK (ZISP); Umnugovi Aimag: 1 ♂, 70 km S Saynshand (E102°33' N42°55'), 1100 m, 6.VIII.2007, JH (OÖLM).

Distribution in Mongolia:

*Khovd Aimag, *Umnugovi Aimag (Fig. 2).

General distribution:

Turkey, Russia, Georgia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Mongolia.

Colletes uralensis species-group

Colletes kaszabi KUHLMANN 2002

Material examined:

(6 ♀♀, 8 ♂♂): Zavkhan Aimag: 1 ♀, 40 km SW Uyasutay, dunes (E96°31' N47°31'), 18.VII.2005, KA (OÖLM); Govi-Altai Aimag: 1 ♂, Gobi, Orgon (E98°23' N44°43'), 11.VII.2005, P. Tyrner (OÖLM); Bayan-Khongor Aimag: 1 ♀, 3 ♂♂, 75 km S Bayankhongor (E100°53' N45°31'), 1500 m, 8-9.VII.2004, JS (PCJS/RCMK); Bulgan Aimag: 1 ♀, 143 km NE Arvaykheer (E103°39' N47°24'), 1300 m, 26.VII.2004, JS (RCMK); Ulaanbaatar: 1 ♂ (E106°59' N47°45'), VII.1991, M. McKenna (AMNH); Tuv Aimag: 1 ♀, 75 km W Ulaanbaatar, dunes (E106°04' N47°55'), 2.VIII.2005, JH (OÖLM); Dornogovi Aimag: 1 ♂, 2 km SE KhuvsGol (E109°70' N43°50'), 5.VIII.2007, MH (OÖLM); 2 ♀♀, 28 km SE Chatan-Bulag (E109°30' N43°05'), 3.VIII.2007, KA (OÖLM); Sukhbaatar Aimag: 1 ♂, 100 km SSW Baruun-Urt (E112°55' N45°45'), 1100 m, 30.VII.2007, MH (OÖLM); 1 ♂, 15 km SE Khongor, Ongon-Els (E113°09' N45°72'), 5-6.VII.1971, MK (ZISP).

Published records:

KUHLMANN & DORN 2002: 92; KUHLMANN 2009a: 21.

Distribution in Mongolia:

Uvs Aimag, *Zavkhan Aimag, Bayan-Khongor Aimag, Govi-Altai Aimag, *Bulgan Aimag, *Ulaanbaatar, Tuv Aimag, Dornogovi Aimag, Dornod Aimag, Sukhbaatar Aimag (Fig. 2).

General distribution:

Mongolia.

Colletes flavicornis species-group

Colletes emaceatus NOSKIEWICZ 1936

Material examined:

(2 ♀♀, 7 ♂♂): Bayan-Khongor Aimag: 2 ♂♂, 75 km S Bayankhongor (E100°53' N45°31'), 1500 m, 8-9.VII.2004, JS (PCJS); 1 ♂, Tuin-Gool River, S Bogdo-Ula (E101°04' N45°09'), 5.VIII.1969, IK (ZISP); Uvurkhangai Aimag: 1 ♀, 2 ♂♂, 159 km SW Arvaykheer, 2 km E Khöövör, Taatsyn Tsagaan Noor, sandy dunes (E101°26' N45°11'), 1250 m, 5.VII.2004, JS (PCJS/RCMK); Umnugovi Aimag: 1 ♂, 70 km S Saynshand (E102°33' N42°55'), 1100 m, 6.VII.2007, MH (OÖLM); 1 ♀, 1 ♂, Bordzon-Goby, 80 km SSE Nomgon (E105°77' N42°35'), 5-8.VIII.1967, IK (PCMK).

Published records:

KUHLMANN 2009a: 22.

Distribution in Mongolia:

Bayan-Khongor Aimag, Uvurkhangai Aimag, Umnugovi Aimag (Fig. 3).

General distribution:

Kazakhstan, Turkmenistan, Mongolia.

Colletes gusi KUHLMANN 2009

Material examined:

(2 ♀♀, 2 ♂♂): Usv Aimag: 1 ♂, 50 km E Ulangoma, Uvs-Noor Lake (E92°15' N50°22'), 6.VIII.1970, MK (ZISP); Umnugovi Aimag: 1 ♂, 70 km S Saynshand (E102°33' N42°55'), 1100 m, 6.VIII.2007, JH (OÖLM); 1 ♀, 60 km E Talyn-Bilgakh-Bulak River (E104°45' N44°06'), 14-19.VIII.1969, MK (ZISP); Dornogovi Aimag: 1 ♀, 28 km SE Chatan-Bulag (E109°30' N43°05'), 3.VIII.2007, KA (OÖLM).

Published records:

KUHLMANN 2009a: 22.

Distribution in Mongolia:

*Usv Aimag, *Umnugovi Aimag, Dornogovi Aimag, Dornod Aimag (Fig. 3).

General distribution:

Mongolia.

Colletes plumuloides KUHLMANN & PROSHCHALYKIN
sp. n. ♂

Material examined:

(1 ♂): Holotype (♂): Mongolia, Dornogovi Aimag, 28 km SE Chatan-Bulag (E109°30' N43°05'), 3.VIII.2007, JH (RCMK).

Diagnosis:

Colletes plumuloides belongs to the *C. flavicornis* species-group and is closely related to *C. plumulosus* NOSKIEWICZ. Both species have a dense crest of short white hairs on the dorsal ridge of the apical part of the gonocoxite and the gonostylus (Fig. 5d) that is unique among the Palaearctic *Colletes*. In *C. plumuloides* S7 (Fig. 5c) is of similar shape but only about 2/3 of the size of that of *C. plumulosus*, the ventral side of the antennal flagellum is orange-brown (Fig. 5a) (blackish-brown in *C. plumulosus*), malar area shorter, length medially about 1/3 as long as width of mandible base (in *C. plumulosus* malar area medially about 1/2 as long as width of mandible base) and metasomal tergal hair bands (Fig. 5b) slightly narrower than in *C. plumulosus*.

Description:

Female. Unknown.

Male. Bl = 6.0 mm. **Head.** Head wider than long. Integument black except apical margin of clypeus and most of mandible dark reddish-brown. Face densely covered with long, yellowish-white, erect hairs. Malar area medially about 1/3 as long as width of mandible base, finely striate. Antenna black, ventrally bright orange-brown (Fig. 5a). **Mesosoma.** Integument black. Mesoscutal disc impunctate, smooth and shiny. Scutellum almost impunctate, only lateral and apical margins with some small punctures, surface smooth and shiny. Mesoscutum, scutellum, metanotum, mesepisternum and propodeum covered with long, greyish-white erect hairs (Fig. 5a). **Wings.** Slightly yellowish-brown; wing venation and stigma yellowish-brown. **Legs.** Integument mostly black, basal and apical ends of tibiae and tarsi reddish-brown. Vestiture white. **Metasoma.** Integument black except apical tergal depressions yellowish translucent (Fig. 5b). Tergal hairs are rubbed off in this single specimen so little can be said about pilosity patterns but apical tergal hair bands are probably broad (Fig. 5b). Terga densely and finely punctate ($i = 0.5-1.0d$), between punctures smooth and shiny (Fig. 5b). **Terminalia.** Genitalia and S7 as illustrated (Figs 5c, d).

Etymology:

This species is named for its similarity to *C. plumulosus*.

General distribution:

Only known from the type locality in Mongolia (Fig. 3).

Floral hosts:

unknown.

Seasonal activity (first–last observations). VIII.

Colletes popovi NOSKIEWICZ 1936

Material examined:

(1 ♀, 3 ♂♂): Khovd Aimag: 1 ♂, 12 km SW Altaj-som, Bodonchin-Gol River (E92°25' N45°81'), 22.VII.1970, MK (ZISP); Govi-Altai Aimag: 1 ♂, 60 km SW Tsel (E95°08' N45°42'), 19.VII.1970, VZ (ZISP); Bayan-Khongor Aimag: 1 ♂, Talyn-Bilgekh-Bulak, 13 km E Tsagan-Bogdo-Ula (E99°23' N42°85'), 16.VIII.1969, MK (ZISP); Uvurkhangai Aimag: 1 ♀, Tatsyn-Tsagan-Noor Lake (E101°61' N44°85'), 2-4.VIII.1969, VZ (RCMK).

Published records:

KUHLMANN 2005: 1372.

Distribution in Mongolia:

*Khovd Aimag, *Govi-Altai Aimag, *Bayan-Khongor Aimag, *Uvurkhangai Aimag (Fig. 3).

General distribution:

Kazakhstan, Mongolia, China.

Colletes fodiens species-group

Colletes daviesanus SMITH 1846

Material examined:

(1 ♂♂): Umnugovi Aimag: 1 ♂♂, 65 km SE Nomgon (E105°91' N42°35'), 9.VIII.1967, IK (ZISP).

Published records:

KUHLMANN & DORN 2002: 93; KUHLMANN 2005: 1373; 2009a: 24; PROSHCHALYKIN & KUHLMANN 2012: 15; PROSHCHALYKIN 2012: 449.

Distribution in Mongolia:

Uvs Aimag, Zavkhan Aimag, Tuv Aimag, *Umnugovi Aimag (Fig. 3).

General distribution:

Ireland, Great Britain, Norway, Sweden, Netherlands, Belgium, France, Germany, Switzerland, Liechtenstein, Austria, Italy, Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Serbia, Finland, Poland, Estonia, Romania, Ukraine, Russia, Turkey, Georgia, Armenia, Kazakhstan, Kyrgyzstan, Mongolia, North-eastern China.

Colletes edentuloides KUHLMANN 2011

Material examined:

(11 ♀♀): Tuv Aimag: 11 ♀♀, 50 km N Ulaanbaatar (E106°46' N48°22'), 1180 m, 8-13.VIII.2007, JH (OÖLM/RCMK).

Published records:

KUHLMANN & PROSHCHALYKIN 2011: 24.

Distribution in Mongolia:

Tuv Aimag (Fig. 3).

General distribution:

Mongolia.

Colletes edentulus NOSKIEWICZ 1936

Published records:

KUHLMANN & DORN 2002: 94; KUHLMANN 2009a: 25.

Distribution in Mongolia:

Uvs Aimag, Bayan-Khongor Aimag, Tuv Aimag (Fig. 3).

General distribution:

Turkey, Azerbaijan, Mongolia.

Colletes fodiens (FOURCROY 1785)

Published records:

KUHLMANN & DORN 2002: 94 (as *C. fodiens kirgiscus* RADOSZKOWSKI 1868); KUHLMANN 2005: 1373 (as *C. fodiens kirgiscus*); 2009b: 17 (*C. fodiens kirgiscus*); KUHLMANN & PROSHCHALYKIN 2011: 9; PROSHCHALYKIN & KUHLMANN 2012: 16.

Distribution in Mongolia:

Uvs Aimag (Fig. 3).

General distribution:

Great Britain, Portugal, Spain, Sweden, Netherlands, Belgium, France, Denmark, Germany, Switzerland, Austria, Finland, Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Italy, Slovenia, Croatia, Serbia, Romania, Bulgaria, Ukraine, Russia, Turkey, Azerbaijan, Kazakhstan, Kyrgyzstan, Iran, Pakistan, Mongolia, China [Xinjiang].

Colletes inexpectatus NOSKIEWICZ 1936

Published records:

KUHLMANN & DORN 2002: 94; KUHLMANN 2005: 1373.

Distribution in Mongolia:

Uvs Aimag (Fig. 2).

General distribution:

Austria, Poland, Czech, Slovakia, Hungary, Yugoslavia, Bulgaria, Ukraine, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Mongolia.

Colletes ravulus NOSKIEWICZ 1936

Material examined:

(2 ♀♀, 2 ♂♂): Usv Aimag: 2 ♀♀, channel between Airag and Khirgis-Noor (E93°20' N49°10'), 28-29.VIII.1968, MK (ZISP/RCMK); Dornod Aimag: 1 ♀, 1 ♂, Kerulen River, Steppe (E113°23' N48°02'), 18.VIII.2009, YD (ISEN/RCMK); 1 ♂, Choibalsan, Steppe (E114°27' N48°30'), 20.VIII.2009, YD (ISEN).

Published records:

KUHLMANN & DORN 2002: 94; KUHLMANN & PROSHCHALYKIN 2011: 10.

Distribution in Mongolia:

Usv Aimag, Dornod Aimag (Fig. 2).

General distribution:

Russia, Mongolia, China [Inner Mongolia].

Colletes cunicularius species-group

Colletes cunicularius (LINNAEUS 1761)

Published records:

KUHLMANN & DORN 2002: 94; KUHLMANN & PROSHCHALYKIN 2011: 14; PROSHCHALYKIN & KUHLMANN 2012: 24; PROSHCHALYKIN 2012: 449.

Distribution in Mongolia:

Khovd Aimag (Fig. 2).

General distribution:

Ireland, Great Britain, Spain, Norway, Sweden, Netherlands, Belgium, France, Denmark, Germany, Switzerland, Austria, Finland, Poland, Czech Republic, Slovakia, Hungary, Italy, Slovenia, Serbia, Romania, Greece, Ukraine, Russia, Turkey, Mongolia, North-eastern China.

Colletes foveolaris species-group

Colletes reinigi NOSKIEWICZ 1936

Material examined:

(1 ♂): Tuv Aimag: 1 ♂, 15 km S Ulaanbataar, Zuunmod env., Bogd Han Uul mts. (E107°00' N47°49'), 2200 m, 29.VII.2002, JS (RCMK).

Published records:

KUHLMANN 2009a: 25.

Distribution in Mongolia:

Arkhangai Aimag, *Tuv Aimag, Umnugovi Aimag (Fig. 2).

General distribution:

Tajikistan, Mongolia, China.

Remarks:

KUHLMANN (2009) reported *C. cf. reinigi* for Mongolia for the first time based on male specimens but some uncertainty remained about the identity of the specimens. In the meantime males identified by NOSKIEWICZ could be studied confirming the previous identification.

Colletes clypearis species-group

Colletes cinerascens MORAWITZ 1894

Material examined:

(4 ♂♂): Khovd Aimag: 4 ♂♂, 25 km N Uench (E92°04' N46°15'), 1700 m, 15.VI.2012, AT (IBSS).

Published records:

KUHLMANN & DORN 2002: 95; KUHLMANN 2005: 1377; 2009a: 25; 2009b: 18.

Distribution in Mongolia:

Uvs Aimag, *Khovd Aimag, Govi-Altai Aimag, Bayan-Khongor Aimag (Fig. 2).

General distribution:

Kyrgyzstan, Tajikistan, Kazakhstan, Mongolia.

Colletes ebmeri KUHLMANN 2002

Material examined:

(1 ♀, 4 ♂♂): Khovd Aimag: 1 ♀, 40 km N Uench-somona (E92°06' N46°38'), 31.VII-1.VIII.1968, MK (ZISP); Govi-Altai Aimag: 1 ♂, 37 km NE Tsogt, Dutiin-Daba Ridge (E97°13' N45°67'), 14.VII.1970, IK (ZISP); Khuvsgul Aimag: 1 ♂, Renchinumbe Soum, 19 km N Renchinumbe (E99°43' N51°16'), 1595 m, 2.VII.2006, JG (PHAS); 1 ♂, 20 km SW Buren-Khan (E99°85' N49°51'), 30.VI.1968, MK (PCMK); Ulaanbaatar: 1 ♂ (E106°59' N47°45'), 11.VI.1967, IK (ZISP).

Published records:

KUHLMANN & DORN 2002: 95; KUHLMANN 2009a: 25.

Distribution in Mongolia:

*Khovd Aimag, *Gobi-Altai Aimag, *Khuvsgul Aimag, Arkhangai Aimag, Bayan-Khongor Aimag, *Ulaanbaatar (Fig. 2).

General distribution:

Mongolia.

Colletes floralis EVERS-MANN 1852

Material examined:

(15 ♂♂): Khuvsgul Aimag: 1 ♂, Ongonii davas (mountain pass), 12 km E Tsagaan-Uur (E101°42' N50°33'), 1273 m, 16.VII.2005, JG (PHAS); 3 ♂♂, Chandmani-Ondor Soum, unnamed trib. of Hohoo Gol (E100°44' N50°40'), 1566 m, 18.VII.2005, JG (PHAS); Arkhangai Aimag: 1 ♂, Tsenkher Soum, Nuurlin Khooloi lake, 9 km SW of Tavanbulag (E101°49' N47°20'), 1693 m, 10.VII.2004, JG (PHAS); Bulgan Aimag: 1 ♂, Teshig

Soum, main branch of Tariankhtain Gol (E103°06' N49°42'), 911 m, 10.VII.2005, JG (PHAS); Uvurkhangai Aimag: 1 ♂, Kharkhorin Soum, Sant Uul pass, 23 km SE Shinebrigade (E103°08' N46°52'), 5.VII.2007, JG (PHAS); 1 ♂, Mongol Els n. res., dunes (E103°39' N47°24'), 1320 m, 31.VII.2005, KA (RCMK); Selenge Aimag: 1 ♂, Khuder Soum, unnamed stream, 54,2 km E Tavin (E107°16' N49°46'), 907 m, 25.VII.2003, JG (PHAS); Ulaanbaatar: 2 ♂♂, Zuunmod env. (E106°59' N47°45'), 1630 m, 27.VII.2004, JS (OÖLM); 2 ♂♂ (E106°59' N47°45'), 14.VII.1967, VZ (ZISP); Tuv Aimag: 1 ♂, Batsumber Soum, Haraa Gol, 5 km Bayanbuural (E106°47' N48°30'), 1051 m, 16.VII.2003, JG (PHAS); 1 ♂, 15 km S Ulaanbataar, Zuunmod env., Bogd Han Uul mts. (E107°00' N47°49'), 2200 m, 29.VII.2002, JS (PCJS).

Published records:

KUHLMANN & DORN 2002: 96; KUHLMANN 2005: 1377; 2009a: 28; 2009b: 18; PROSHCHALYKIN 2007: 878; 2012: 449; KUHLMANN & PROSHCHALYKIN 2011: 15.

Distribution in Mongolia:

*Khuvsgul Aimag, Arkhangai Aimag, Bayan-Khongor Aimag, *Bulgan Aimag, *Uvurkhangai Aimag, *Selenge Aimag, Ulaanbaatar, Tuv Aimag (Fig. 2).

General distribution:

Spain, Ireland, Great Britain, France, Norway, Sweden, Germany, Switzerland, Austria, Italy, Finland, Poland, Czech Republic, Hungary, Greece, Turkey, Belarus, Russia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Iran, Mongolia, India, Japan.

Colletes fulvicornis NOSKIEWICZ 1936

Material examined:

(8 ♀♀, 12 ♂♂): Govi-Altai Aimag: 8 ♂♂, Khasagt-Khairkhan Ridge, 17 km S Dzhangalan (E95°54' N46°50'), 1600-2100 m, 5-6.VI.2012, AT (IBSS); Bayan-Khongor Aimag: 1 ♀, 86 km NW Bayankhongor, along Ölzhiyt Gol (E100°04' N46°50'), 2070 m, 14.VII.2004, JS (OÖLM); 1 ♀, 56 km NW Bayankhongor, south slope (E100°12' N46°33'), 2220 m, 11-12.VII.2004, JS (RCMK); 1 ♀, 75 km S Bayankhongor (E100°53' N45°31'), 1500 m, 8-9.VII.2004, JS (PCJS); Uvurkhangai Aimag: 1 ♀, 12 km SW Araykheer, Ongij-Gol River (E102°49' N46°22'), 1770 m, 3.VII.2004, JS (OÖLM); Tuv Aimag: 3 ♀♀, 15 km S Ulaanbataar, Zuunmod env., Bogd Han Uul mts. (E107°00' N47°49'), 2200 m, 29.VII.2002, JS (PCJS); Umnugovi Aimag: 3 ♂♂, Dalan-Dzadgad, Yolyn Am canyon, Covi Curvan Sayhan National Park (E104°04' N43°29'), 2240 m, 24.VII.2002, JS (PCJS); 1 ♀, Gurvan-Saikhan, 40 km S Bulgan (E103°87' N43°78'), 28-29.VII.1967, IK (ZISP); Khentii Aimag: 1 ♂, 12 km N Gal-Shara (E111°08' N46°84'), 30.VII.1971, MK (ZISP).

Published records:

OSYTSJNJUK & ROMANKOVA 1995: 483; KUHLMANN & DORN 2002: 96; KUHLMANN 2009a: 28; KUHLMANN & PROSHCHALYKIN 2011: 16.

Distribution in Mongolia:

Uvs Aimag, Khovd Aimag, Govi-Altai Aimag, Arkhangai Aimag, Bayan-Khongor Aimag, Uvurkhangai Aimag, Ulaanbaatar, Tuv Aimag, Dundgovi Aimag, *Umnugovi Aimag, Khentii Aimag, Dornod Aimag (Fig. 2).

General distribution:

Russia, Mongolia, North-eastern China.

Colletes impunctatus NYLANDER 1852

Material examined:

(22 ♀♀, 25 ♂♂): Khovd Aimag: 1 ♂, 40 km N Uench-Somon (E92°06' N46°38'), 31.VII-1.VIII.1968, MK (ZISP); Zavkhan Aimag: 3 ♂♂, 40 km SW Uyasutay, dunes (E96°31' N47°31'), 18.VII.2005, KA, JH (OÖLM); 1 ♂, 30 km WNW Tes-Somon (E96°13' N48°25'), 3-4.VII.1968, MK (ZISP); Govi-Altai Aimag: 1 ♂, Khasagt-Khairkhan Ridge, 17 km S Dzhangalan (E95°54' N46°50'), 1600-2100 m, 5.VI.2012, AT (IBSS); Khuvsgul Aimag: 1 ♂, RENCHINIUMBE Soum, 19 km N RENCHINIUMBE (E99°43' N51°16'), 1595 m, 2.VII.2006, JG (PHAS); 1 ♂, RENCHINIUMBE Soum, Hog Gol River, 25 km W RENCHINIUMBE (E99°19' N51°06'), 1569 m, 1.VII.2006, JG (PHAS); 1 ♂, Chandmani-Ondor Soum, Hohoo Gol, 1.5 km SE Chandmani-Ondor (E100°57' N50°28'), 1251 m, 18.VII.2005, JG (PHAS); 2 ♂♂, Delger-Muren River, Buren-Khan (E99°02' N50°21'), 28-29.VI.1968, MK (ZISP); Arkhangai Aimag: 2 ♂♂, Tariat Soum, Terkhiin Tsagan Nuur, 8 km W Khorgo/TariatNuurlin Khooloi lake, 9 km SW Tavanbulag (E99°47' N48°09'), 2057 m, 18.VII.2004, JG (PHAS); 7 ♀♀, 4 ♂♂, Chulutyn-Gol River (E100°19' N47°48'), 1940 m, 23.VII.2005, JH (OÖLM); 1 ♂, Khangaun Mts., 5 km N Khunt (E99°08' N47°58'), 21.VII.2005, JH (OÖLM); 1 ♂, Chulutyn-Gol River, Chulut (E100°18' N47°65'), 29.VI.1975, MK (ZISP); 7 ♀♀, 1 ♂, 145 km NW Tsetserleg, Tariat env., Horgo Terhiyn Tsagaan Nuur National Park (E99°51' N48°11'), 2160 m, 17-18.VII.2002, JS (PCJS); Uvurkhangai Aimag: 1 ♂, Mongol Els, dunes (E103°39' N47°24'), 1320 m, 31.VII.2005, KA (OÖLM); Ulaanbaatar: 1 ♀, Zuunmod env. (E106°59' N47°45'), 1630 m, 27.VII.2004, JS (OÖLM); Tuv Aimag: 3 ♀♀, 50 km N Ulaanbaatar (E106°46' N48°22'), 1180 m, 8-13.VIII.2007, JH (OÖLM); 1 ♀, Gobi-Terelj National Park, 30 km E Ulaanbaatar, Tereli env. (E107°24' N47°50'), 1420 m, 13.VII.2002, JS (PCJS); 1 ♀, 15 km S Ulaanbaatar at Zuunmod env., Bogd Han Uul mts. (E107°00' N47°49'), 2200 m, 29.VII.2002, JS (PCJS); 1 ♀, Ulaanbaatar, Tola River (E106°55' N47°55'), 19.VI.1967, IK (ZISP); 2 ♂♂, Mungen-Mor't (E108°42' N48°17'), 6-7.VIII.1967, MK

(ZISP); Umnugovi Aimag: 2 ♂♂, Dalan-Dzadgad, Yolyn Am canyon, Covi Curvan Sayhan National Park (E104°04' N43°29'), 2240 m, 24.VII.2002, JS (PCJS); Dornod Aimag: 1 ♀, 50 km SW Choibalsan (E114°10' N47°40'), 960 m, 25.VII.2007, JH (OÖLM).

Published records:

KUHLMANN & DORN 2002: 97; PROSHCHALYKIN 2007: 879; 2012: 450; KUHLMANN 2009a: 28; KUHLMANN & PROSHCHALYKIN 2011: 17.

Distribution in Mongolia:

Bayan-Ulgii Aimag, Uvs Aimag, Khovd Aimag, Zavkhan Aimag, Govi-Altai Aimag, Khuvsgul Aimag, Arkhangai Aimag, Bayan-Khongor Aimag, Uvurkhangai Aimag, Ulaanbaatar, Tuv Aimag, *Dornod Aimag, *Umnugovi Aimag (Fig. 2).

General distribution:

Norway, Sweden, Netherlands, France, Denmark, Germany, Switzerland, Austria, Finland, Poland, Czech Republic, Italy, Russia, Mongolia.

Colletes jankowskyi RADOSZKOWSKI 1891

Material examined:

(12 ♀♀, 2 ♂♂): Arkhangai Aimag: 2 ♀♀, 2 ♂♂, 90 km NE Tsetserleg (E102°25' N48°08'), 1940 m, 24.VII.2004, JS (OÖLM); 1 ♀, Khangaun Mts., 5 km N Khunt (E99°08' N47°58'), 20.VII.2005, JH (OÖLM); 1 ♀, 25 km NE Tsetserleg (E101°45' N47°38'), 1730 m, 23.VII.2004, JS (OÖLM); Bayan-Khongor Aimag: 1 ♀, 86 km NW Bayankhongor, along Ölziyt Gol (E100°04' N46°50'), 2070 m, 14.VII.2004, JS (OÖLM); Uvurkhangai Aimag: 1 ♀, Arts-Bogdo Ridge, 20 km S Khovd (E102°15' N44°43'), 12-13.VIII.1967, VZ (ZISP); Ulaanbaatar: 4 ♀♀, Zuunmod env. (E106°59' N47°45'), 1630 m, 27.VII.2004 JS (OÖLM); Tuv Aimag: 1 ♀, 75 km W Ulaanbaatar, dunes (E106°04' N47°55'), 2.VIII.2005, JH (OÖLM); 1 ♀, 50 km N Ulaanbaatar (E106°46' N48°22'), 1180 m, 8-13.VIII.2007, JH (OÖLM).

Published records:

OSYTSNJUK & ROMANKOVA 1995: 484; KUHLMANN & DORN 2002: 98; KUHLMANN 2009a: 29; 2009b: 18; KUHLMANN & PROSHCHALYKIN 2011: 17; PROSHCHALYKIN 2012: 450.

Distribution in Mongolia:

Uvs Aimag, Arkhangai Aimag, *Bayan-Khongor Aimag, *Uvurkhangai Aimag, Ulaanbaatar, Tuv Aimag (Fig. 2).

General distribution:

Russia, Tajikistan, Mongolia, Western and North-eastern China.

Colletes pseudocinerascens NOSKIEWICZ 1936

Material examined:

(2 ♀♀, 5 ♂♂): Usv Aimag: 3 ♂♂, Togtokhyn-Shil Ridge, 50 km ESE Ulangom (E92°15' N50°22'), 7.VIII.1970, MK (ZISP); Zavkhan Aimag: 1 ♂, 30 km WNW Tes-Somon (E96°13' N48°25'), 3-4.VII.1968, MK (ZISP); Khuvsgul Aimag: 2 ♀♀, 1 ♂, 25 km NNE Ulan-Ula (E115°04' N49°10'), 15-16.VII.1975, MK (ZISP).

Published records:

KUHLMANN & DORN 2002: 98; KUHLMANN 2009a: 29; KUHLMANN & PROSHCHALYKIN 2011: 18.

Distribution in Mongolia:

Usv Aimag, Zavkhan Aimag, *Khuvsgul Aimag (Fig. 3).

General distribution:

Russia, Mongolia.

Colletes sidemii RADOSZKOWSKI 1891

Material examined:

(13 ♀♀, 250 ♂♂): Usv Aimag: 1 ♂, 5 km S Khyargas-Noor (E93°20' N49°10'), 10.VIII.1970, VZ (ZISP); Zavkhan Aimag: 23 ♂♂, 40 km SW Uyasutay, dunes (E96°31' N47°31'), 18.VII.2005, KA, JH (OÖLM); Khuvsgul Aimag: 1 ♂, Erdenebulgan Soum, 12.6 km S Erdenebulgan (E101°37' N49°59'), 1344 m, 14.VII.2005, JG (PHAS); 1 ♂, Bayanzurkh Soum, Delger Moron Gol, 8.3 km W Bayanzurkh (E98°51' N50°10'), 1580 m, 22.VII.2005, JG (PHAS); 2 ♂♂, Ider River, Dzhargalant (E100°83' N48°79'), 19-20.VII.1975, MK (ZISP); 1 ♂, Delger-Muren River, Buren-Khan (E99°02' N50°21'), 28-29.VI.1968, MK (ZISP); Arkhangai Aimag: 1 ♀, 3 ♂♂, Chuluut Soum, Chuluutin Gol, 33 km SW Chuluut/Jargalant (E100°02' N47°18'), 2287 m, 16-17.VII.2004, JG (PHAS); 2 ♂♂, Tsenkher Soum, Nuurlin Khooloi lake, 9 km SW Tavanbulag (E101°49' N47°20'), 1693 m, 10.VII.2004, JG (PHAS); 64 ♂♂, Khangaun Mts., 5 km N Khunt (E99°08' N47°58'), 21.VII.2005, KA, JH (OÖLM); 4 ♂♂, 100 km NW Tsetserleg, Chulutyn-Gol (E100°19' N47°48'), 1940 m, 18.VII.2004, JS (OÖLM); 4 ♂♂, Chulutyn-Gol River (E100°19' N47°48'), 1940 m, 23.VII.2005, JH (OÖLM); 5 ♂♂, 25 km NE Tsetserleg (E101°45' N47°38'), 1730 m, 23.VII.2004, JS (OÖLM); 6 ♀♀, 23 ♂♂, 90 km NE Tsetserleg (E102°25' N47°03'), 1400 m, 27.VII.2005, KA, JH (OÖLM); 35 ♂♂, Tsagan-Noor Lake (E99°43' N48°11'), 2100 m, 22.VII.2005, JH (OÖLM); 45 ♂♂, Khangayn Mts., 30 km S Khunt (E99°08' N47°58'), 20.VII.2005, KA, JH (OÖLM); 3 ♀♀, 145 km NW of Tsetserleg, Tariat env., Horgo Terhiyn Tsagaan Nuur National Park (E99°51' N48°11'), 2160 m, 17.VII.2002, JS (PCJS); 1 ♂, 30 km E Tsetserleg (E101°47' N47°79'), 1.VII.1975, MK (ZISP); Uvurkhangai Aimag: 2 ♂♂, Hujirt Soum, Khavtsaliin Gol valley, Pond (E103°02'

N46°46'), 1750 m, 5-6.VII.2004, JG (PHAS); 8 ♂♂, 12 km SW Araykheer, Ongij-Gol River (E102°49' N46°22'), 1770 m, 3.VII.2004, JS (OÖLM); 2 ♂♂, Mongol Els n. res., dunes (E103°39' N47°24'), 1320 m, 31.VII.2005, KA (OÖLM); 3 ♂♂, Arts Bogdo Ridge (E102°08'N44°65'), 11.VII.1970, Myachmorsuren (ZISP); Selenge Aimag: 1 ♂, Khuder Soum, unnamed stream, 54.2 km E Tavin (E107°16' N49°46'), 907 m, 25.VII.2003, JG (PHAS); 2 ♂♂, Khuder Soum, Khandgait Lake, 18 km SW Khuder (E107°20' N49°43'), 819 m, 23.VII.2003, JG (PHAS); Ulaanbaatar: 2 ♂♂, Zuunmod env. (E106°59' N47°45'), 1630 m, 27.VII.2004, JS (OÖLM); 1 ♂ (E106°59' N47°45'), 14.VII.1967, VZ (ZISP); 1 ♂, Songinyin-Amralt (E106°59' N47°45'), 1.VII.1967, IK (ZISP); Tuv Aimag: 1 ♂, Batsumber Soum, Haraa Gol, 5 km Bayanbuural (E106°47' N48°30'), 1051 m, 16.VII.2003, JG (PHAS); 3 ♀♀, 2 ♂♂, Gobi-Terelj National Park, 30 km E of Ulaanbaatar, Tereli env. (E107°24' N47°50'), 1420 m, 13.VII.2002, JS (PCJS); 4 ♂♂, Gatsurt, 20 km E Ulaanbaatar (E107°08' N47°91'), 16.VII.1967, IK (ZISP); Dornod Aimag: 1 ♂, Numregiin-Gol, 32 km SE Salkhit Mt. (E119°63' N47°04'), 22-23.VII.1971, MK (ZISP); Sukhbaatar Aimag: 3 ♂♂, Dzotol (E115°10' N45°90'), 12.VII.1971, IK (ZISP); 2 ♂♂, 9 km SW Dariganga (E113°68' N45°22'), 6.VII.1971, MK (ZISP).

Published records:

OSYTSNJUK & ROMANKOVA 1995: 484; KUHLMANN & DORN 2002: 98; PROSHCHALYKIN 2007: 879; 2012: 450; KUHLMANN 2005: 1378; 2009a: 29; KUHLMANN & PROSHCHALYKIN 2011: 19.

Distribution in Mongolia:

Usv Aimag, Khovd Aimag, *Zavkhan Aimag, Govi-Altai Aimag, Khuvsgul Aimag, Arkhangai Aimag, Bayan-Khongor Aimag, Uvurkhangai Aimag, *Selenge Aimag, Ulaanbaatar, Tuv Aimag, Dornod Aimag, *Sukhbaatar Aimag (Fig. 2).

General distribution:

Russia, Kazakhstan, Kyrgyzstan, Uzbekistan, Mongolia, China [Xinjiang, Qinghai, Yunnan].

Colletes conradti species-group

Colletes conradti NOSKIEWICZ 1936

Material examined:

(4 ♂♂): Zavkhan Aimag: 2 ♂♂, 40 km SW Uyasutay, dunes (E96°31' N47°31'), 18.VII.2005, KA, JH (OÖLM); Govi-Altai Aimag: 1 ♂, Khasagt-Khairkhan Ridge, 17 km S Dzhangalan (E95°54' N46°50'), 1600-2100 m, 6.VI.2012, AT (IBSS); Umnugovi Aimag: 1 ♂, Tost-Ula, Tsagan-Ders-Khuduk (E100°53' N43°28'), 22.VI.1973, G. Medvedev (ZISP).

Published records:

KUHLMANN & DORN 2002: 99; KUHLMANN 2005: 1379; 2009a: 30.

Distribution in Mongolia:

Uvs Aimag, Zavkhan Aimag, Govi-Altai Aimag, Uvurkhangal Aimag, Ulaanbaatar, Tuv Aimag, Umnugovi Aimag (Fig. 2).

General distribution:

Kazakhstan, Kyrgyzstan, Mongolia, China.

Colletes marginatus species-group

Colletes chengtehensis YASUMATSU 1935

Material examined:

(16 ♀♀, 61 ♂♂): Usv Aimag: 2 ♀♀, 30 km NE Barun-Turun (E94°24' N49°39'), 5.VII.1968, MK (ZISP); Khovd Aimag: 1 ♀, 5 km SW Altaj-som, Bodonchin-Gol River (E92°25' N45°81'), 4.VIII.1968, MK (ZISP); 3 ♂♂, 25 km N Bulgan, Ulyastain-Gol River (E91°32' N47°09'), 31.VII.1970, MK (ZISP); 1 ♂, 12 km SW Altaj-som, Bodonchin-Gol River (E92°25' N45°81'), 22.VII.1970, MK (ZISP); 1 ♂, 20 km SE Altaj, Elkhon (E92°25' N45°81'), 27.VII.1970, VZ (ZISP); Govi-Altai Aimag: 1 ♂, Gobi, Orgon (E98°23' N44°43'), 11.VII.2005, P. Tyrner (OÖLM); Khuvsgul Aimag: 2 ♂♂, Buren Soum, Delger Moron Gol, 12 km W Moron (E99°59' N49°38'), 1277 m, 21.VII.2005, JG (PHAS); Arkhangai Aimag: 2 ♂♂, 90 km NE Tsetserleg (E102°25' N48°08'), 1940 m, 24.VII.2004, JS (OÖLM); 1 ♂, 25 km NE Tsetserleg (E101°45' N47°38'), 1730 m, 23.VII.2004, JS (OÖLM); 2 ♂♂, 25 km W Tevshrulekh (E101°75' N47°10'), 11.VIII.1970, Belova (ZISP); Bayan-Khongor Aimag: 1 ♂, Orog-Noor Lake, near Tuin-Gool River (E100°42' N45°03'), 5.VIII.1969, IK (ZISP); 1 ♂, Orog-Noor Lake (E100°42' N45°03'), 15-16.VIII.1967, VZ (ZISP); 1 ♂, 60 km SW Shine-Dzhinsta, Burkant-Bulak (E98°62' N44°45'), 29.VIII.1970, E. Narchuk (ZISP); Bulgan Aimag: 1 ♂, Teshig Soum, main branch of Tariankhtain Gol (E103°06' N49°42'), 911 m, 10.VII.2005, JG (PHAS); 1 ♀, 143 km NE Arvaykheer (E103°39' N47°24'), 1300 m, 26.VII.2004, JS (OÖLM); Uvurkhangai Aimag: 1 ♂, 137 km NE Arvaykheer, sandy dunes (E103°40' N47°20'), 1250 m, 2.VII.2004, JS (OÖLM); 1 ♂, Tatsyn-Tsagan-Noor Lake (E101°75' N45°46') 2-4.VIII.1969, MK (ZISP); Selenge Aimag: 1 ♂, Tsagaannuur Sum, SW shore Tsagaan Noor (E105°20' N49°57'), 668 m, 25.VII.2003, JG (PHAS); 1 ♂, Ero-Gol River (E106°91' N49°72'), 26.VII.1970, MK (ZISP); Tuv Aimag: 1 ♀, 1 ♂, 50 km N Ulaanbaatar, E of Mandal (E106°46' N48°22'), 1180 m, 8-13.VIII.2007, JH (OÖLM); 6 ♀♀, 75 km W Ulaanbaatar, dunes (E106°04' N47°55'), 2.VIII.2005, JH (OÖLM); Umnugovi Aimag: 1 ♀, 1 ♂, 70 km S Saynshand (E102°33' N42°55'), 1100 m, 6.VIII.2007, JH (OÖLM); Khentii Aimag: 1 ♀, 6 ♂♂,

12 km N Gal-Shara (E110°85' N46°71'), 30.VII.1971, MK (ZISP); Dornogovi Aimag: 8 ♂♂, 10 km SW Sainshand, Tushilge Mt. (E110°08' N44°53'), 1.VIII.1971, IK (ZISP); Dornod Aimag: 1 ♂, Choibalsan (E114°27' N48°30'), 20.VIII.2009, YD (ISEN); 2 ♂♂, Steppe (E115°19' N49°20'), 1.VIII.2009, YD (ISEN); 2 ♂♂, 32 km SE Salkhit, Numregín-Gol River (E119°63' N47°04'), 23.VII.1971, MK, IK (ZISP); 2 ♂♂, 75 km SW Salkhit, Ar-Bulak (E118°30' N46°86'), 24.VII.1971, MK (ZISP); 2 ♂♂, 60 km NE Bayan-Burd, Derkhin-Tsagan-Obo Mt. (E118°85' N47°52'), 21.VII.1971, MK (ZISP); 1 ♂, 20 km NW Sangin-Dalai-Noor Lake (E116°55' N47°10'), 25.VII.1971, MK (ZISP); Sukhbaatar Aimag: 1 ♀, 210 km SSE Baruun-Urt, steppe (E114°10' N45°30'), 29.VII.2007, JH (OÖLM); 2 ♀♀, 100 km SSW Baruun-Urt (E112°55' N45°45'), 1100 m, 30.VII.2007, MH (OÖLM); 1 ♂, 20 km E Baruun-Urt (E113°16' N46°41'), 14.VII.1971, MK (ZISP); 1 ♂, 40 km SE Baruun-Urt (E113°18' N46°48'), 14.VII.1971, MK (ZISP); 2 ♂♂, 9 km SW Dariganga (E114°05' N45°33'), 8.VII.1971, MK (ZISP).

Published records:

KUHLMANN & DORN 2002: 99; 100 (as *C. pallescens* NOSKIEWICZ 1936); KUHLMANN 2005: 1379 (as *C. pallescens*); 2009a: 30; 2009b: 18; KUHLMANN & PROSHCHALYKIN 2011: 19; PROSHCHALYKIN & KUHLMANN 2012: 25.

Distribution in Mongolia:

Usv Aimag, Khovd Aimag, Zavkhan Aimag, Govi-Altai Aimag, *Khuvsgul Aimag, Arkhangai Aimag, Bayan-Khongor Aimag, *Bulgan Aimag, Uvurkhangai Aimag, *Selenge Aimag, Tuv Aimag, *Umnugovi Aimag, Khentii Aimag, Dornogovi Aimag, Dornod Aimag, Sukhbaatar Aimag (Fig. 2).

General distribution:

Austria, Hungary, Greece, Ukraine, Russia, Georgia, Azerbaijan, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Iran, Mongolia, North-eastern China.

Colletes succinctus species-group

Colletes arsenjevi KUHLMANN 2006

Material examined:

(1 ♀): Arkhangai Aimag: 1 ♀, Ugij-Noor Lake (E102°46' N47°45'), 1.IX.1967, VZ (ZISP).

Published records:

KUHLMANN & DORN 2002: 100 (as *C. succinctus* (LINNAEUS 1758)); KUHLMANN & QUEST 2006: 2; PROSHCHALYKIN 2007: 878; 2012: 449; KUHLMANN 2009a: 31; 2009b: 19; KUHLMANN & PROSHCHALYKIN 2011: 20; NIU et al. 2013: 178.

Distribution in Mongolia:

*Arkhangai Aimag, Dornod Aimag, Sukhbaatar Aimag (Fig. 3).

General distribution:

Russia, Mongolia, China [Xinjiang, Inner Mongolia, Gansu, Shanxi].

Colletes collaris DOURS 1872

Material examined:

(2 ♂♂): Arkhangai Aimag: 2 ♂♂, Tsagan-Noor Lake, 18 km NE Dash-Baldoro (E99°83' N48°38'), 23.VII.1975, MK (ZISP).

Published records:

KUHLMANN & DORN 2002: 100; KUHLMANN 2005: 1379; 2009a: 31; PROSHCHALYKIN 2007: 878; 2012: 449; KUHLMANN & PROSHCHALYKIN 2011: 21; NIU et al. 2013: 181.

Distribution in Mongolia:

*Arkhangai Aimag, Tuv Aimag, Khentii Aimag, Dornod Aimag, Sukhbaatar Aimag (Fig. 3).

General distribution:

Spain, France, Germany, Switzerland, Austria, Italy, Czech Republic, Hungary, Russia, Kazakhstan, Mongolia, China [Beijing, Sichuan, Xizang, Yunnan, Inner Mongolia, Heilongjiang], Japan.

Species of Doubtful Placement

Colletes dorni KUHLMANN 2002

Published records:

KUHLMANN & DORN 2002: 101.

Distribution in Mongolia:

Uvs Aimag (Fig. 3).

General distribution:

Mongolia.

Colletes wacki KUHLMANN 2002

Material examined:

(3 ♀♀): Uvurkhangai Aimag: 1 ♀, 12 km SW Araykheer, Ongij-Gol River (E102°49' N46°22'), 1770 m, 3.VII.2004, JS (OÖLM); 1 ♀, 139 km SW Arvaykheer (E101°41' N45°17'), 1430 m, 4.VII.2004, JS (RCMK); Govi-Altai Aimag: 1 ♀, Gobi, Orgon (E98°23' N44°43'), 11.VII.2005, P. Tyrner (RCMK).

Published records:

KUHLMANN & DORN 2002: 102; KUHLMANN 2005: 1381.

Distribution in Mongolia:

Uvs Aimag, *Uvurkhangai Aimag, *Govi-Altai Aimag (Fig. 2).

General distribution:

Kazakhstan, Mongolia.

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Fig. 1: Administrative map of Mongolia showing provinces (Aimag).

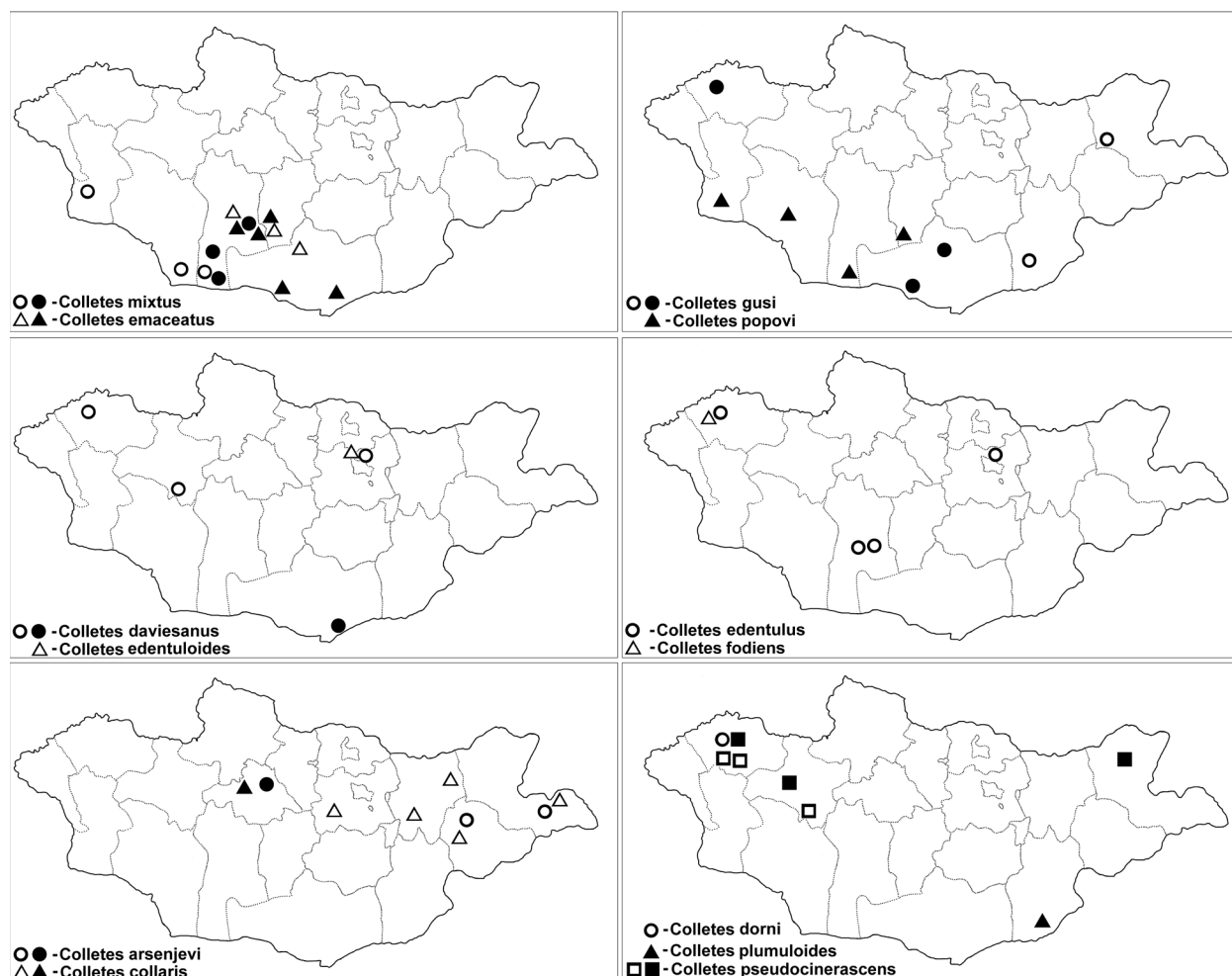


Fig. 3: Distribution of *Colletes arsenjevi*, *C. collaris*, *C. daviesanus*, *C. dorni*, *C. edentuloides*, *C. edentulus*, *C. emaceatus*, *C. fodiens*, *C. gusi*, *C. mixtus*, *C. plumuloides*, *C. popovi* and *C. pseudocinerascens* in Mongolia. White symbols: previous records. Filled symbols: New records.

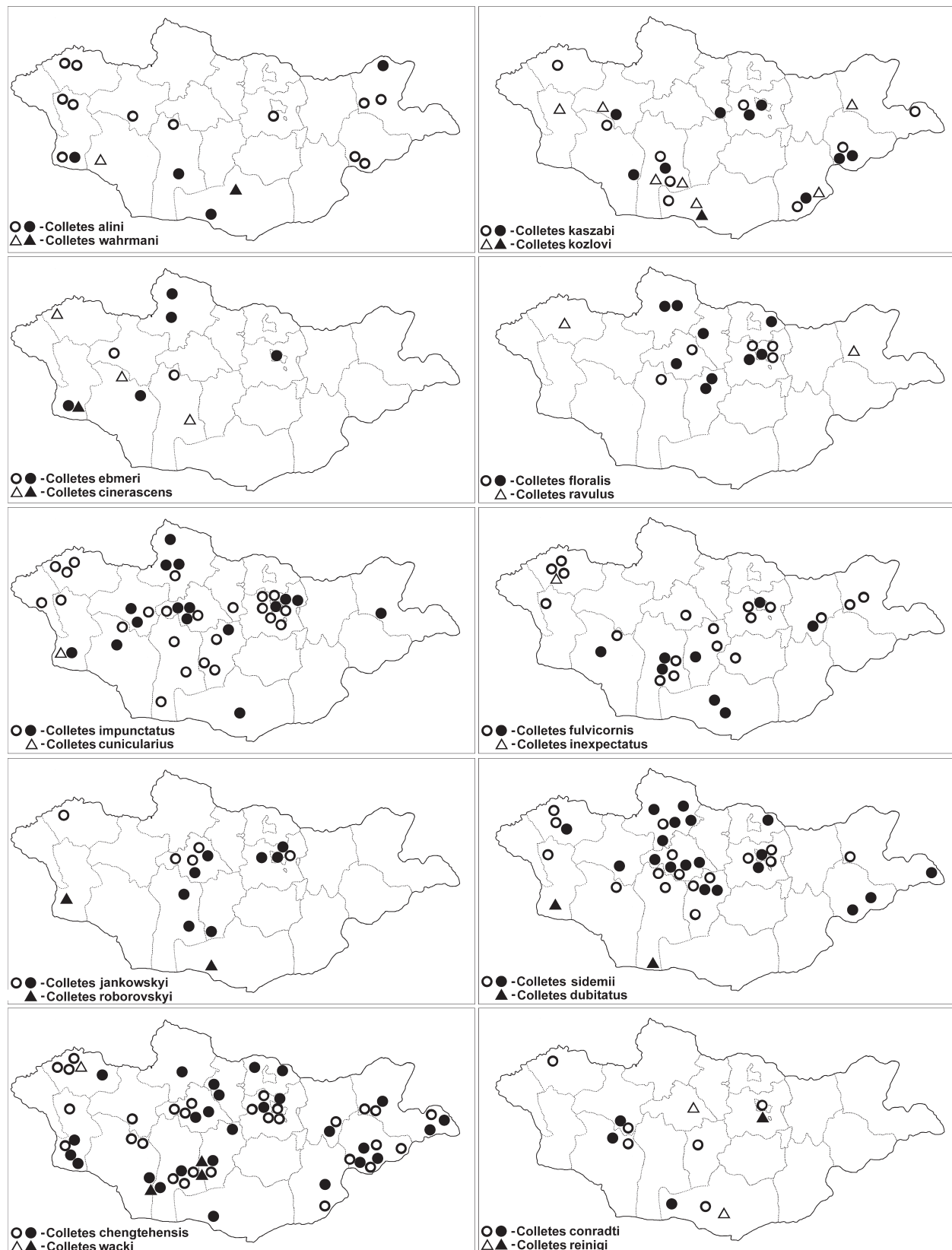


Fig. 2: Distribution of *Colletes alini*, *C. chengtehensis*, *C. cinerascens*, *C. conradti*, *C. cunicularius*, *C. dubitatus*, *C. ebmeri*, *C. floralis*, *C. fulvicornis*, *C. impunctatus*, *C. inexpectatus*, *C. jankowskyi*, *C. kaszabi*, *C. kozlovi*, *C. ravulus*, *C. reinigi*, *C. roborovskyi*, *C. sidemii*, *C. wacki* and *C. wahrmani* in Mongolia. White symbols: previous records. Filled symbols: New records.

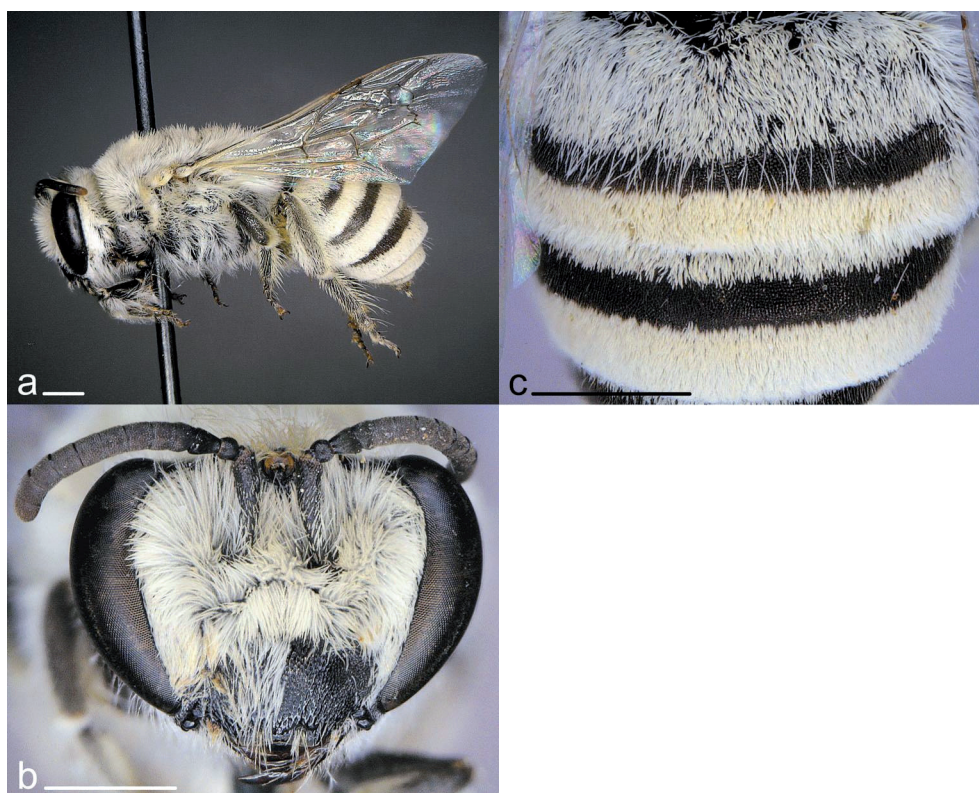


Fig. 4: *Colletes dubitatus* sp. n. ♀. a) Specimen in lateral view, b) head, c) metasomal terga 1 and 2. Scale bar: 1 mm.

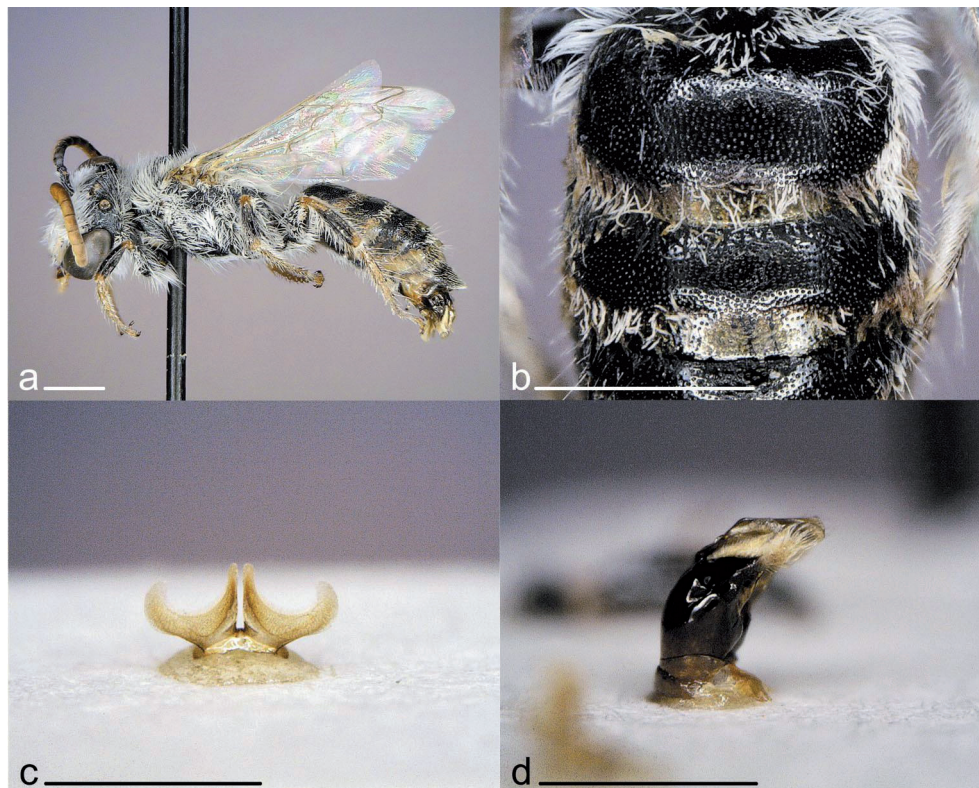


Fig. 5: *Colletes plumuloides* sp. n. ♂. a) Specimen in lateral view, b) metasomal terga 1 and 2, c) sternum 7, d) genitalia in lateral view. Scale bar: 1 mm.