Zootaxa 3949 (4): 540–554
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3949.4.4
http://zoobank.org/urn:lsid:zoobank.org:pub:B25CC20A-99C0-4DB4-9C5C-E5CA299A5E66

Type specimens of *Colletes* Latreille (Hymenoptera, Colletidae) deposited in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, with description of a new species

MAXIM YU. PROSHCHALYKIN[1] & MICHAEL KUHLMANN[2]

[1]*Institute of Biology and Soil Science, Far Eastern Branch of Russian Academy of Sciences, Vladivostok-22, 690022, Russia. E-mail: proshchalikin@biosoil.ru*

[2]*Department of Life Sciences, Natural History Museum, Cromwell Road, London, SW7 5BD, UK. E-mail: m.kuhlmann@nhm.ac.uk*

Abstract

The type specimens of *Colletes* Latreille 1802 deposited in the Zoological Institute, Russian Academy of Sciences (St. Petersburg) are reviewed. Precise information about types of 30 taxa are provided (12 described by J. Noskiewicz; 9 by F. Morawitz; 8 by M. Kuhlmann and M. Proshchalykin; 1 by H. Friese). Lectotypes are designated here and illustrated for the following six nominal taxa: *Colletes alpinus* Morawitz 1872, *C. caspicus* Morawitz 1874, *C. montana* Morawitz 1876, *C. squamosus* Morawitz 1877, *C. tuberculatus* Morawitz 1893, and *C. wollmanni* Noskiewicz 1936. *Colletes alpinus* was synonymized with *C. impunctatus* Nylander 1852 but is now recognized as a synonym of *C. floralis* Eversmann 1852. *Colletes morawitzensis* Kuhlmann & Proshchalykin, **sp. nov.** is described based on a male specimen from Turkmenistan and deposited in the Morawitz collection.

Key words: bees, taxonomy, lectotypes, Palaearctic region

Introduction

The Entomological Collection of the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZISP) is the largest in Russia and currently contains several million specimens, including primary types of several tens of thousands of taxa. The majority of specimens and types belong to the parasitic Hymenoptera (especially Ichneumonoidea), but nearly all other groups of hymenopterous insect (including bees) are also represented by more or less numerous material, including the types.

The bee genus *Colletes* Latreille includes about 500 described species with an estimated total of about 700 species, from all continents except Antarctica and Australia, as well as from Madagascar and parts of Southeast Asia (Michener 2007; Kuhlmann 2014). The present paper reviews the type specimens of *Colletes* kept in ZISP that is tightly linked with the activities of famous apidologists: Eduard Eversmann (1794–1860), Oktawiucz Radoszkowski (1820–1895), and Ferdinand Morawitz (1827–1896).

The Eversmann's collection of insects, including bees, was bought by the Russian Entomological Society and now is deposited at the ZISP (Pesenko & Astafurova 2003). E. Eversmann described five species of *Colletes* (two of them in the genus *Andrena*), with three of them still valid. We could not find the type specimens of Eversmann's *Colletes* species in the collection of the ZISP.

The Radoszkowski's collection was donated by his wife in 1898 to the Poznan Society of Friends of Sciences. 600 «duplicates of types» from this collection were given through exchange to the Zoological Museum of the Berlin University in 1899. The rest, together with the library and manuscripts passed in 1902, also through exchange, to the Polish Academy of Learning in Krakow, and currently is located at the Institute of Systematic and Experimental Zoology of the Polish Academy of Sciences in Krakow (Pesenko & Astafurova 2003). O. Radoszkowski described 11 species of *Colletes*, nine of them are still valid. The remaining type specimens of Radoszkowski's *Colletes* species are stored in the Institute of Systematics and Evolution of Animals, Kraków, Poland.

 Accepted by C. Rasmussen: 30 Mar. 2015; published: 29 Apr. 2015

with small punctures. Scutellum anteriorly almost impunctate but with dense punctation posteriorly, surface smooth and shiny. Mesoscutum, scutellum, metanotum, mesepisternum and propodeum covered with long, greyish-white erect hairs (Fig. 31a). Wings. Slightly yellowish-brown; wing venation light yellowish-brown. Legs. Integument dark reddish-brown to yellowish-brown (tarsi). Vestiture greyish-white. Metasoma. Integument black to dark reddish-brown, apical quarter of T1 and T2 dark red, depressed apical tergal margins yellowish translucent (Fig. 31b). Basal half of T1 densely covered with long, white, erect hairs; base of T2 and less so on T3 with narrow band of short appressed white hairs; apical tergal hair band on T1 narrow (largely rubbed-off in this specimen), on following terga broader (Fig. 31b). Terga apically distinctly depressed. Terga with dense and very fine punctuation, on T1 more dispersed (i = 0.5–1 d) than on following terga (i < 0.5 d), between punctures smooth and shiny (Fig. 31b). Terminalia. Genitalia and S7 as illustrated (Figs. 31e–f).

Type material (1 specimen). Holotype, male, Turkmenistan: Repetek [63°11′E 38°35′N], 19.V.1889 (ZISP).

Etymology. The species is dedicated to Ferdinand Morawitz (1827–1896) to honour his outstanding contribution to bee research particularly in Central Asia.

General distribution. Only known from the type locality in Turkmenistan.

Floral hosts. Unknown.

Acknowledgements

We thank S.A. Belokobylskij and Yu.V. Astafurova curators of the Hymenoptera collection (ZISP). A.S. Lelej (Institute of Biology and Soil Science, Vladivostok [IBSS]) made suggestions for the improving of text. V.M. Loktionov (IBSS) helped us in the preparing of the color plate. Comments by Claus Rasmussen and two anonymous reviewers substantially improved the manuscript.

The work of MYP was supported by President grant for government support of the Leading Scientific Schools of the Russian Federation (grant number НШ–150.2014.4), the Russian Funds for Basic Research (grant numbers 14–04–00649, 14–34–50002, 15–29–02466 офи_м), and the Far Eastern Branch of the Russian Academy of Sciences (grant number 15–II–6–014)

References

Blüthgen, P. (1930a) Über einige von Eversmann beschriebene Bienenarten. (Hym. Apidae). *Mitteilungen der Deutschen Entomologischen Gesellschaft*, 1, 147–149.

Blüthgen, P. (1930b) Revision der schweizerischen *Colletes*-Arten (Hym. Apidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 14 (6), 193–198.

Cockerell, T.D.A. (1918) Descriptions and records of bees. LXXIX. *Annals and Magazine of Natural History*, 9 (1), 158–167.

Eversmann, E. (1852) Fauna hymenopterologica volgo-uralensis (Continuatio). *Bulletin de la Société Impériale Naturalistes de Moscou*, 25 (3), 3–137.

Fourcroy, A.F. de (1785) *Entomologia Parisiensis; sive catalogus Insectorum quae in agro Parisiensi reperiuntur; secundum methodum Geoffroeanam in sectiones, genera & species distributus: cui addita sunt nomina trivialia & fere trecentae novae species*. Via et Aedibus Serpentineis, Parisiis, viii + [1] + 544 pp.

Frey-Gessner, E. (1899–1908) *Fauna Insectorum Helvetiae. Hymenoptera, Apidae*. Hans Körber, Schaffhausen. 392 pp.

Friese, H. (1914) Vorläufige Diagnosen von neuen Bienenarten, die von den Expeditionen Roborovsky-Kozlov (1893–95) und von Kozlov (1899–1901) aus Centralasien mitgebracht wurden und im Zoologischen Museum der Kaiserl. Akademie der Wissenschaften in St. Petersburg aufbewahrt werden. *Annuaire de Musée Zoologique de l'Academie Imperiale des Sciences de St. Peterbourg*, 18, 59–61.

Hadley, A. (2008) CombineZM. Available from: www.hadleyweb.pwr.blueyonder.co.uk/ (accessed 1 August 2011)

Kerzhner, I.M. (1972) Historical survey of studies of the insect fauna of the Mongolian People's Republic. *In*: Kerzhner, I.M. (Ed.), *Insects of Mongolia. No.1.* Nauka, Leningrad, pp. 57–112. [in Russian]

Kuhlmann, M. (2000) Katalog der palaarktischen Arten der Bienengattung *Colletes* Latr., mit Lectotypenfestlegungen, neuer Synonymie und der Beschreibung von zwei neuen Arten (Hymenoptera: Apidae: Colletinae). *Linzer biologische Beitrage*, 32 (1), 155–193.

Kuhlmann, M. (2014) *Colletes kinabalu* n. sp., first record of the genus for the Malay Archipelago and Southeast Asia (Hymenoptera: Anthophila: Colletidae). *Journal of Melittology*, 28, 1–6. http://dx.doi.org/10.17161/jom.v0i28.4614

Kuhlmann, M., Almeida, E.A.B., Laurenne, N. & Quicke, D.L.J. (2009) Molecular phylogeny and historical biogeography of

the bee genus *Colletes* Latreille, 1802 (Hymenoptera: Apiformes: Colletidae), based on mitochondrial COI and nuclear 28S sequence data. *Insect Systematics and Evolution*, 40, 291–318. http://dx.doi.org/10.1163/139956009X12475840653733

Kuhlmann, M. & Proshchalykin, M.Yu. (2011) Bees of the genus *Colletes* Latreille 1802 of the Asian part of Russia with a key to species (Hymenoptera, Apoidea: Colletidae). *Zootaxa*, 3068, 1–48.

Kuhlmann, M. & Proshchalykin, M.Yu. (2013) The genus *Colletes* (Hymenoptera: Apoidea: Colletidae) in Central Asia. *Zootaxa*, 3750 (5), 401–449.

Kuhlmann, M. & Proshchalykin, M.Yu. (2014) New and little known bees of the genus *Colletes* Latreille 1802 (Hymenoptera: Colletidae) from Central Asia. *Zootaxa*, 3846 (4), 591–596. http://dx.doi.org/10.11646/zootaxa.3846.4.8

Latreille, P.A. (1802) *Histoire Naturelle des Fourmis*. Crapelet, Paris, xvi + 445 pp. [12 plates]

Michener, C.D. (2007) *The Bees of the World*. 2nd Edition. Johns Hopkins University Press, Baltimore, Maryland, 953 pp.

Morawitz, F. (1868) Ueber einige Faltenwespen und Bienen aus der Umgegend von Nizza. *Horae Societatis Entomologicae Rossicae*, 5 (4), 145–156.

Morawitz, F. (1872) Ein Beitrag zur Bienenfauna Deutschlands. *Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien*, 22, 355–388.

Morawitz, F. (1874) Die Bienen Daghestans. *Horae Societatis Entomologicae Rossicae*, 10, 129–189.

Morawitz, F. (1876) Pchely (Mellifera) [Bees (Mellifera)]. *In*: *Puteshestvie v Turkestan chlena-osnovatelya obshtshestva A.P. Fedchenko, sovershennoe ot Imperatorskogo obshtshestva lyubiteley estestvoznaniya po porucheniyu Turkestanskogo general-gubernatora K.P. fon Kaufmana [A travel to Turkestan by the member-founder of the society A.P. Fedtschenko accomplished from the Imperial society of naturalists, anthropologists, and etnographists on a commission from the general-governor of Turkestan K.P. von Kaufmann]. Issue 13. Vol. II. Zoogeographical Investigations. Pt V. (Division 7).* St. Petersburg, Moscow, pp. 161–303. + plates. 1–3. [Izvestiya Imperatorskogo obshtshestva lyubiteley estestvoznaniya, antropologii i etnografii (*Proceedings of the Royal Society of Amateurs of Natural History Sciences, Anthropology and Ethnography*), 21(3)] [in Russian]

Morawitz, F. (1877) Nachtrag zur Bienenfauna Caucasiens. *Horae Societatis Entomologicae Rossicae*, 14 (1), 3–112.

Morawitz, F. (1893) Supplement zur Bienenfauna Turkestans. *Horae Societatis Entomologicae Rossicae*, 28 (1/2), 3–87.

Noskiewicz, J. (1936) *Die Palearktischen Colletes-Arten*. Wydawnictwo Towarzystwa Naukowego we Lwowie, Lwow, v + 532 pp. [Prace Naukowe, ser. 2, No. 3]

Nylander, W. (1852) Reviso synoptica apum borealium, comparatis speciebus Europae mediae. *Notiser ur Sällskapets pro Fauna et Flora Fennica Förhandlingar*, 2, 225–348.

Pérez, J. (1903) Espéces nouvelles de melliféres. *Actes de la Société Linnéenne de Bordeaux*, 58, 78–93, 208–236.

Pesenko, Yu.A. & Astafurova, Yu.V. (2003) Annotated Bibliography of Russian and Soviet Publications on the Bees (Hymenoptera: Apoidea; excluding *Apis mellifera*): 1771–2002. *Denisia*, 11, 1–616.

Proshchalykin, M.Yu. & Kuhlmann M. (2013) A new species of the genus *Colletes* Latreille, 1802 (Hymenoptera, Colletidae) from Kazakhstan. *Proceedings of the Russian Entomological Society*, 84 (2), 88–91.

Proshchalykin, M.Yu. & Lelej, A.S. (2013) The species-group names of bees (Hymenoptera: Apoidea, Apiformes) described from Siberia. *Euroasian entomological journal*, 12 (4), 315–327.

Schmiedeknecht, O. (1930) *Die Hymenopteren Nord- und Mitteleuropas*. 2nd Edition. Gustav Fischer, Jena, 1062 pp.

Wanat, A., Jałoszyński, P. & Wanat, M. (2014) The Hymenoptera: Apidae collection of Jan Noskiewicz in the Museum of Natural History, University of Wrocław. *Genus,* 25 (4), 631–643.