



The genus *Colletes* (Hymenoptera: Apoidea: Colletidae) in Central Asia

MICHAEL KUHLMANN¹ & MAXIM YU. PROSHCHALYKIN²

¹Department of Life Sciences, Natural History Museum, Cromwell Road, London, SW7 5BD, UK.

E-mail: m.kuhlmann@nhm.ac.uk

²Institute of Biology and Soil Science, Far Eastern Branch of Russian Academy of Sciences, Vladivostok-22, 690022, Russia.

E-mail: proshchalykin@biosoil.ru

Table of contents

Abstract	403
Introduction	403
Material and methods	403
Taxonomy	406
Genus <i>Colletes</i> Latreille	406
<i>Colletes nigricans</i> group	406
<i>Colletes bidentulus</i> Noskiewicz 1936	406
<i>Colletes eous</i> Morice 1904	406
<i>Colletes carinatus</i> group	407
<i>Colletes carinatus</i> Radoszkowski 1891	407
<i>Colletes hylaeiformis</i> group	407
<i>Colletes hylaeiformis</i> Eversmann 1852	407
<i>Colletes caspicus</i> group	407
<i>Colletes anceps</i> Radoszkowski 1891	407
<i>Colletes caspicus</i> Morawitz 1874	408
<i>Colletes idoneus</i> Cockerell 1922	409
<i>Colletes maidli</i> Noskiewicz 1936	409
<i>Colletes morawitzi</i> Noskiewicz 1936	409
<i>Colletes transitus</i> Kuhlmann & Proshchalykin sp. nov.	410
<i>Colletes squamosus</i> group	412
<i>Colletes annulicornis</i> Morawitz 1876	412
<i>Colletes askhabadensis</i> Radoszkowski 1886	412
<i>Colletes askhabadoides</i> Kuhlmann & Proshchalykin sp. nov.	412
<i>Colletes bernadettae</i> Kuhlmann 2000	414
<i>Colletes brunneitarsis</i> Noskiewicz 1958	414
<i>Colletes comatus</i> Noskiewicz 1936	414
<i>Colletes cretaceus</i> Morawitz 1876	414
<i>Colletes fraterculus</i> Noskiewicz 1936	414
<i>Colletes ottomanus</i> Noskiewicz 1958	415
<i>Colletes pollinarius</i> Noskiewicz 1936	415
<i>Colletes rubripes</i> Noskiewicz 1936	415
<i>Colletes sellatus</i> Morawitz 1893	415
<i>Colletes skorikowi</i> Noskiewicz 1936	416
<i>Colletes squamosus</i> Morawitz 1877	416
<i>Colletes wahrmani</i> Noskiewicz 1959	416
<i>Colletes wollmanni</i> Noskiewicz 1936	416
<i>Colletes mixtus</i> group	417
<i>Colletes annejohnae</i> Kuhlmann 2003	417
<i>Colletes dubitatus</i> Noskiewicz 1936	417
<i>Colletes issykkuli</i> Kuhlmann 2003	417
<i>Colletes kozlovi</i> Friese 1913	417
<i>Colletes mixtus</i> Radoszkowski 1891	418
<i>Colletes stachi</i> Noskiewicz 1958	418
<i>Colletes roborovskyi</i> group	419
<i>Colletes roborovskyi</i> Friese 1913	419

<i>Colletes arenarius</i> group	419
<i>Colletes arenarius</i> Morawitz 1876	419
<i>Colletes uralensis</i> group	419
<i>Colletes uralensis</i> Noskiewicz 1936	419
<i>Colletes flavicornis</i> group	420
<i>Colletes alicularis</i> Noskiewicz 1936	420
<i>Colletes emaceatus</i> Noskiewicz 1936	420
<i>Colletes flavicornis</i> Morawitz 1876	420
<i>Colletes kaline</i> Kuhlmann & Proshchalykin sp. nov.	421
<i>Colletes pallipes</i> Noskiewicz 1936	421
<i>Colletes plumulosus</i> Noskiewicz 1936	423
<i>Colletes popovi</i> Noskiewicz 1936	423
<i>Colletes nanus</i> group	423
<i>Colletes gussakowskii</i> Noskiewicz 1936	423
<i>Colletes schwarzi</i> Kuhlmann 2002	423
<i>Colletes fodiens</i> group	423
<i>Colletes daviesanus</i> Smith 1846	423
<i>Colletes fodiens</i> (Fourcroy 1785)	424
<i>Colletes inexpectatus</i> Noskiewicz 1936	424
<i>Colletes pauljohni</i> Kuhlmann 2002	425
<i>Colletes similis</i> Schenck 1853	425
<i>Colletes tuberculatus</i> Morawitz 1893	426
<i>Colletes senilis</i> group	427
<i>Colletes desertorum</i> Kuhlmann 2002	427
<i>Colletes laevifrons</i> Morawitz 1893	427
<i>Colletes mlokoszewiczi</i> Radoszkowski 1891	427
<i>Colletes senilis</i> (Eversmann 1852)	428
<i>Colletes subnitens</i> Noskiewicz 1936	428
<i>Colletes foveolaris</i> group	428
<i>Colletes reinigi</i> Noskiewicz 1936	428
<i>Colletes cunicularius</i> group	428
<i>Colletes cunicularius</i> (Linnaeus 1761)	429
<i>Colletes armeniacus</i> (Friese 1921)	429
<i>Colletes clypearis</i> group	429
<i>Colletes clypearis</i> Morawitz 1876	429
<i>Colletes cinerascens</i> Morawitz 1893	429
<i>Colletes ebmeri</i> Kuhlmann 2002	429
<i>Colletes floralis</i> Eversmann 1852	430
<i>Colletes friesei</i> Cockerell 1918	430
<i>Colletes impunctatus</i> Nylander 1852	430
<i>Colletes integer</i> Noskiewicz 1936	431
<i>Colletes jankowskyi</i> Radoszkowski 1891	431
<i>Colletes muellermotzfeldi</i> Kuhlmann & Proshchalykin sp. nov.	431
<i>Colletes radoszkowskii</i> Noskiewicz 1936	433
<i>Colletes sidemii</i> Radoszkowski 1891	433
<i>Colletes tadschikus</i> Kuhlmann 2002	433
<i>Colletes conradti</i> group	433
<i>Colletes conradti</i> Noskiewicz 1936	433
<i>Colletes marginatus</i> group	434
<i>Colletes chengtshensis</i> Yasumatsu 1935	434
<i>Colletes pesenkoi</i> Kuhlmann & Proshchalykin sp. nov.	434
<i>Colletes succinctus</i> group	436
<i>Colletes arsenjevi</i> Kuhlmann 2006	436
<i>Colletes collaris</i> Dours 1872	436
<i>Colletes albomaculatus</i> group	436
<i>Colletes albomaculatus</i> (Lucas 1849)	436
<i>Colletes dorsalis</i> Morawitz 1888	436
Species of doubtful placement	437
<i>Colletes minutissimus</i> Kuhlmann 2002	437
<i>Colletes mirabilis</i> Kuhlmann & Proshchalykin sp. nov.	437
<i>Colletes wacki</i> Kuhlmann 2002	439
Description of a new species from Turkey and Iran	440
<i>Colletes squamosus</i> group	440
<i>Colletes comatoides</i> Kuhlmann & Proshchalykin sp. nov.	440
Acknowledgments	446
References	446

Acknowledgments

We thank all curators of the respective Hymenoptera collection listed under materials and methods: V.L. Kazenas, Almaty, Kazakhstan, and A. Amolin, Donetsk, Ukraine for loans of material. Yu.N. Danilov (Institute of Systematics and Ecology of Animals, Russian Academy of Sciences, Novosibirsk, Russia) kindly forwarded *Colletes* specimens from Russia to London. The work of MYP was supported by Grant of the President of the Russian Federation for young Russian scientist support (Grant number MK-411.2013.4), the Russian Funds for Basic Research (Grant numbers 12-04-31175-мол_а, 11-04-00624_а, 11-04-98585-р_восток_а), and the Far Eastern Branch of the Russian Academy of Sciences (Grant numbers 12-III-A-06-074, 12-I-II-30-03, 12-I-OBH-02, 12-III-A-06-069, 13-III-B-06-026, 13-III-D-06-015). We are grateful to two anonymous reviewers for comments and suggestions that helped to improve this article.

References

- Alfken, J.D. (1912) Die Bienenfauna von Ostpreußen. *Schriften der Physikalisch-ökonomischen Gesellschaft zu Königsberg in Prague*, 53, 114–182.
- Alfken, J.D. (1932) Entomologische Ergebnisse der Deutsch-Russischen Alai-Pamir-Expedition 1928 (II). 1. Hymenoptera IV. Apidae. *Mitteilungen aus dem Zoologischen Museum in Berlin*, 16, 823–844.
- Astafurova, Yu.V., Tobias, V.I., Kerzhner, I.M., Belokobylskij, S.A. & Radchenko, V.G. (2008) In memory of Yu. A. Pesenko (1944–2007). *Entomological Review*, 88 (4), 497–507.
<http://dx.doi.org/10.1134/s0013873808040131>
- Atdayev, T. (1972) Associations of bees (Hymenoptera, Apoidea) with wild-growing plants in the Lower Murgab and Tedzhen. In: Tokgayev, T. & Myartseva, S.N. (Eds.), *Insects of Southern Turkmenia*. Ashkhabad (Ylym), 116–145. [in Russian]
- Aurivillius, C. (1903) Svensk Insektfauna. 13. Hymenoptera. 1. Gaddsteklar. Aculeata. *Entomologisk Tidskrift*, 24, 129–218.
- Cockerell, T.D.A. (1918) Descriptions and records of bees. – LXXIX. *Annals and Magazine of Natural History*, 9 (1), 158–167.
<http://dx.doi.org/10.1080/00222931808562297>
- Cockerell, T.D.A. (1922) Descriptions and records of bees. – XCIII. *Annals and Magazine of Natural History*, 9 (9), 242–249.
<http://dx.doi.org/10.1080/00222932208632685>
- Cockerell, T.D.A. (1924) Descriptions and records of bees. – C. *Annals and Magazine of Natural History*, 9 (13), 594–606.
<http://dx.doi.org/10.1080/00222932408633087>
- Dalla Torre, C.G. (1896) *Catalogus hymenopterorum hucusque descriptorum systematicus et synonymicus. Vol. 10: Apidae (Anthophila)*. Engelmann, Leipzig, 643 pp.
- Dours, J.A. (1872) Hyménoptères nouveaux du bassin méditerranéen. *Revue et Magasin de Zoologie*, 23, 293–311, 349–359, 396–399, 419–434.
- Eversmann, E. (1852) Fauna Hymenopterologica Volgo-Uralensis. *Bulletin de la Imperiale Society d'Naturalistes de Moscou*, 25 (2), 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.
- Friese, H. (1913) Vorläufige Diagnosen von neuen Bienenarten, die von den Expeditionen Roborovsky-Koslov (1893–95) und von Koslov (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'Académie Imperiale des Sciences de St. Peterbourg*, 18, 59–61.
- Friese, H. (1921) Eine neue Bienenartung *Melittoides* n.gen (Hym.). *Archiv für Naturgeschichte*, 87A, 177–180.
- Gmelin, J.C. (1790) *Caroli a Linné, systema naturae per regna tria naturae secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio decima tertia, aucta, reformata. Tom. I., Pars V.* G.E. Beer, Lipsiae, pp. 2225–3020.
- Ikudome, S. (1989) A revision of the family Colletidae of Japan (Hymenoptera, Apoidea). *Bulletin of the Institute of Minamikyūshū Regional Science*, 5, 43–314.
- Jørgensen, P. (1912) Revision der Apiden der Provinz Mendoza, Republica Argentina. *Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Tiere*, 32, 89–162.
- Kirby, W. (1802) *Monographia Apum Angliae. Vol. 2.* J. Raw, Ipswich, 387 pp.
- Klausnitzer, B. (2009) Laudatio für Herrn Prof. Dr. Gerd Müller-Motzfeld. *Mitteilungen der Deutschen Gesellschaft für allgemeine und angewandte Entomologie*, 17, 21–23.
- Klausnitzer, B. & Dathe, H.H. (2009) Prof. Dr. Gerd Müller-Motzfeld (19. Juli 1941 – 24. Juli 2009) zu ehrendem Gedenken. *DGaaE-Nachrichten*, 23 (3), 148–150.
- Kuhlmann, M. (2000) Katalog der paläarktischen Arten der Bienenartung *Colletes* Latr., mit Lectotypenfestlegungen, neuer Synonymie und der Beschreibung von zwei neuen Arten (Hymenoptera: Apidae: Colletinae). *Linzer biologische Beiträge*, 32 (1), 155–193.

- Kuhlmann, M. (2002) Neue paläarktische Arten der Bienengattung *Colletes* Latr. mit Anmerkungen zu weiteren Arten der Alten Welt (Hymenoptera: Apidae: Colletinae). *Linzer biologische Beiträge*, 34 (1), 743–770.
- Kuhlmann, M. (2003) Zur Kenntnis paläarktischer Bienen der Gattung *Colletes* Latr. Mit Beschreibung neuer Arten (Hymenoptera: Apidae: Colletinae). *Linzer biologische Beiträge*, 35 (2), 723–746.
- Kuhlmann, M. (2005) Faunistik und Zoogeographie der Bienengattung *Colletes* Latreille 1802 (Hymenoptera: Apidae: Colletinae) in Mittelasien. *Linzer biologische Beiträge*, 37, 1353–1396.
- Kuhlmann, M. (2006) Zur Biogeographie der Seidenbienen (Hymenoptera: Colletidae: *Colletes* Latr.) im Bienen-Diversitätszentrum Mittelasiens. *Mitteilungen der Deutschen Gesellschaft für Allgemeine und Angewandte Entomologie*, 15, 89–92.
- Kuhlmann, M. (2009a) Bees of the genus *Colletes* (Hymenoptera, Colletidae) from Central Asia collected by the Kyushu University expeditions. *Esakia*, 49, 15–20.
- Kuhlmann, M. (2009b) Erster Nachtrag zur Kenntnis der Bienengattung *Colletes* Latreille 1802 in der Mongolei mit Beschreibung einer neuen Art (Hymenoptera, Apiformes, Colletidae). *Beiträge zur Entomologie*, 59, 19–32.
- Kuhlmann, M., Almeida, E.A.B., Laurence, 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. & 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 Entomologische Kelttern*, 52 (1), 85–109.
- 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. & Quest, M. (2006) A new species of the bee genus *Colletes* Latreille, 1802 (Hymenoptera: Colletidae) from the Russian Far East and Mongolia. *Far Eastern entomologist*, 157, 1–4.
- Latreille, P.A. (1802) *Histoire Naturelle des Fourmis*. Crapelet, Paris, xvi + 445 pp., 12 pls.
- Lepelletier de Saint Fargeau, A.L.M. & Audinet-Serville, J.G. (1825–1828). In: Latreille, P.A. (Ed.), *Encyclopédie méthodique ou par ordre des matières. Histoire naturelle. Entomologie, ou histoire naturelle des crustacés, des arachnides et des insectes. Tome Dixième*. Veuve Agasse, Paris, pp. 1–832. (1825) 1–344, (1828) 345–832. [dates of publication after Shernborn & Woodward 1906]
- Linnaeus, C. (1758) *Systema Naturae per Regna Tria Naturae, secundum Classes, Ordines, Genera, Species, cum Characteribus, Differentiis, Synonymis, Locis. Tomus I. Editio Decima Reformata*. Laurentii Salvii, Holmiae [= Stockholm]. [4] + 1–823 + [5].
- Linnaeus, C. (1760 ["1761"]) *Fauna Suecica sistens animalia Sueciae renga: Mammalia, Aves, Amphibia, Pisces, Insecta, Vermes*. Laurentii Salvii, Stockholmiae, [48] + 578 pp. [dates of publication after Evenhuis 1997]
- Lucas, H. (1849) *Histoire naturelle des animaux articulés. Troisième Partie: Insectes. Exploration scientifique de l'Algérie. Sciences physiques, Zoologie III*, Imprimerie Nationale, Paris, 141–344.
- Marikovskaya, T.P. (1999) The notes to biogeography of anthophorins (Hymenoptera, Anthophoridae) of Middle Asia and Kazakhstan. *Tethys Entomological Research*, 1, 195–200. [in Russian]
- Matsumura, S. & Uchida, T. (1926) Die Hymenopteren-Fauna von den Riukiu-Inseln. *Insecta Matsumurana*, 1 (1), 32–52, 1 (2), 63–77 + pl. 3.
- Michalik, P., Füsser, M., Sonnenberg, D. & Schmidt, J. (2010) Catalogue of the types of Gerd Müller-Motzfeld's Carabidae collection, and notes on the insect collections at the Zoological Institute and Museum (ZIMG) of the University of Greifswald (Germany). *Entomologische Blätter*, 106, 203–232.
- Michener, C.D. (1979) Biogeography of the bees. *Annals of the Missouri Botanical Garden*, 66, 277–347.
<http://dx.doi.org/10.2307/2398833>
- Michener, C.D. (2007) *The Bees of the World*. Second 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, sovershemoe 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 ethnographers 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 + pls. 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. (1880) Ein Beitrag zur Bienen-Fauna Mittel-Asiens. *Bulletin de l'Academie Impériale des Sciences de St. Pétersbourg*, 26 (22/36), 337–389.
- Morawitz, F. (1888) Hymenoptera aculeata nova. *Horae Societatis Entomologicae Rossicae*, 22, 224–302.
- Morawitz, F. (1893) Supplement zur Bienenfauna Turkestans. *Horae Societatis Entomologicae Rossicae*, 28 (1/2), 3–87.
- Morice, F.D. (1904) Illustrations of the male terminal segments and armatures in thirty-five species of the hymenopterous genus *Colletes*. *Transactions of the Royal Entomological Society of London*, 1904, 25–63, pls VI–IX.
<http://dx.doi.org/10.1111/j.1365-2311.1904.tb02736.x>
- Niu, Z.-Q., Kuhlmann, M. & Zhu, H.-D. (2013) A review of the *Colletes succinctus*-group (Hymenoptera: Colletidae) from China with redescription of the male of *C. gigas*. *Zootaxa*, 3626 (1), 173–187.
<http://dx.doi.org/10.11646/zootaxa.3626.1.7>
- Noskiewicz, J. (1936) *Die Palearktischen Colletes-Arten*. Wydawnictwo Towarzystwa Naukowego we Lwowie, Lwow, v + 532 pp. [Prace Naukowe, ser. 2, No. 3]
- Noskiewicz, J. (1958a) Zwei neue asiatische Arten der Gattung *Colletes* Latr. (Hym., Apidae). *Polskie pismo entomologiczne*, 27, 5–19.
- Noskiewicz, J. (1958b) Deux espèces nouvelles paléarctiques du genre *Colletes* Latr. (Hymenoptera, Apidae). *Acta Zoologica Cracoviensia*, 2, 509–519.
- Noskiewicz, J. (1959) Weitere Beiträge zur Kenntnis der paläarktischen Arten der Gattung *Colletes* Latr. (Hym., Apidae). *Polskie pismo entomologiczne*, 29, 35–53.
- Nylander, W. (1852) Revisio synoptica apum borealium, comparatis speciebus Europae mediae. *Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar*, 2, 225–348.
- O'Toole, C. (1974) A new subspecies of the vernal bee, *Colletes cunicularius* (L.) (Hymenoptera: Colletidae). *Journal of Entomology Series B, Taxonomy and Systematics*, 42, 163–169.
<http://dx.doi.org/10.1111/j.1365-3113.1974.tb00070.x>
- Osytsnjuk, A.Z. & Romankova, T.G. (1995) Family Colletidae. In: Lehr, P.A. (Ed.), *Opredelitel nasekomukh Dalnego Vostoka Rossii [Key to the insects of Russian Far East]*. Vol. 4. Pt 1. Nauka, St. Petersburg, 480–489. [in Russian]
- Pérez, J. (1903) Espèces nouvelles de mellifères. *Actes de la Société Linnéenne de Bordeaux*, 58, 78–93, 208–236.
- Ponomareva, A.A. (1960) Bee pollinators of leguminous plants in western Kopet Dagh Mts. *Trudy Zoologicheskogo Instituta Akademii Nauk SSSR*, 27, 94–166. [in Russian]
- Popov, V.B. (1934) The bee fauna of the Kokchetav district in northern Kazakhstan (Hymenoptera, Apoidea). *Trudy Tajikskoi Basy Akademii Nauk SSSR*, 1, 51–63, 1 pl. [in Russian]
- Popov, V.B. (1935) Contributions to the bee fauna of Tajikistan (Hymenoptera, Apoidea). *Trudy Tajikskoi Basy Akademii Nauk SSSR*, 5, 351–408. [in Russian]
- Popov, V.B. (1949) Notes on the bee fauna of Tajikistan (Hymenoptera, Apoidea). *Trudy Zoologicheskogo Instituta Akademii Nauk SSSR*, 8, 688–699. [in Russian]
- Popov, V.B. (1952) The fauna of bees (Hymenoptera, Apoidea) of south-western Turkmenia and their landscape distribution. *Trudy Zoologicheskogo Instituta Akademii Nauk SSSR*, 10, 61–117. [in Russian]
- Popov, V.B. (1957) Neue Arten und die arealgeographischen Besonderheiten der Bienengattung *Eremaphanta* POPOV (Hymenoptera, Melittidae). *Zool. Zh.*, 36, 1704–1715. [in Russian]
- Popov, V.B. (1958) Zoogeographical peculiarities of central Asiatic bees of the genus *Halictoides* (Hymenoptera, Halictidae). *Doklady Akademii Nauk Tadzhikskoj SSR N.S.*, 1, 47–51. [in Russian]
- Popov, V.B. (1967) The bees (Hymenoptera, Apoidea) of Middle Asia and their associations with angiosperm plants. *Trudy Zoologicheskogo Instituta Akademii Nauk SSSR*, 38, 11–329. [in Russian]
- Proshchalykin, M.Yu. (2008) The bees of family Colletidae (Hymenoptera, Apoidea) of Transbaikalia. *Far Eastern entomologist*, 187, 1–9.
- Proshchalykin, M.Yu. (2012) Family Colletidae. In: Lelej, A.S. (Ed.), *Annotated catalogue of the insects of Russian Far East. Vol. 1. Hymenoptera*. Dalnauka, Vladivostok, 449–451. [in Russian]
- Proshchalykin, M.Yu. & Kuhlmann, M. (2012) The bees of the genus *Colletes* Latreille 1802 of the Ukraine, with a key to species (Hymenoptera: Apoidea: Colletidae). *Zootaxa*, 3488, 1–40.
- Radoszkowski, O. (1867) Matériaux pour servir à l'étude des insectes de la Russie. IV. Notes sur quelques Hyménoptères de la tribu de Apides. *Horae Societatis Entomologicae Rossicae*, 5 (3), 73–90.
- Radoszkowski, O. (1886) Fauna hyménoptérologique transcaspienne. *Horae Societatis Entomologicae Rossicae*, 20 (1), 3–56, 9 pls.
- Radoszkowski, O. (1891) Révision des armures copulatrices des mâles des genre *Colletes*. *Horae Societatis Entomologicae Rossicae*, 25 (1–2), 249–260.
- Razoumowsky, G. de (1789) *Histoire naturelle du jorat et de ses environs; et celle des trois lacs de Neufchatel, Morat et Biemme. Tome I*. J. Mourer, Lausanne, 133–239, 289–301.
- Robertson, C. (1897) North American bees – descriptions and synonyms. *Transactions of the Academy of Science of St. Louis*, 7, 315–356.
- Robertson, C. (1904) Synopsis of Anthophila. *The Canadian Entomologist*, 36, 37–43.
<http://dx.doi.org/10.4039/ent3637-2>

- Schenck, A. (1853) Nachtrag zu der Beschreibung nassauischer Bienenarten. *Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau*, 9, 88–306.
- Smith, F. (1846) Description of the British species of Bees comprised in the genera *Colletes* of Latreille and *Macropis* of Klug with observations on their economy. *Zoologist*, 4, 1274–1281.
- Smith, F. (1853) *Catalogue of hymenopterous insects in the collection of the British Museum. Part I. Andrenidae and Apidae*. Taylor and Francis, London, 197 pp.
- Smith, F. (1879) *Descriptions of New Species of Hymenoptera in the Collection of the British Museum*. British Museum, London, xxi + 240 pp.
- Spinola, M. (1838) Compte rendu des hyménoptères recueillis par M. Fischer pendant son voyage en Égypte, et communiqués par M. le Docteur Waltl a Maximilien Spinola. *Annales de la Société Entomologique de France*, 7, 437–546.
- Strand, E. (1921) Apidologisches, insbesondere über paläarktische *Halictus*-Arten, auf Grund von Material des Deutschen Entomologischen Museums. *Archiv für Naturgeschichte*, 87A, 305–322.
- Swenk, M.H. (1906) New bees of the genus *Colletes*. *The Canadian Entomologist*, 38, 39–44.
<http://dx.doi.org/10.4039/ent3839-2>
- Thomson, C.G. (1872) *Hymenoptera Scandinaviae, Tom II. (Apis Lin.)*. Berling, Lund, 285 ss.
- Verhoeff, C. (1890) Ein Beitrag zur deutschen Hymenopteren-Fauna. *Entomologische Nachrichten*, 16, 321–336.
- Warncke, K. (1978) Über die westpaläarktischen Arten der Bienengattung *Colletes* Latr. (Hymenoptera, Apoidea). *Polskie pismo entomologiczne*, 48, 329–370.
- Yasumatsu, K. (1935) Insect of Jehol (VIII) – Order Hymenoptera (II), Superfamily Apoidea. *Report of the first scientific expedition to Manchoukuo under the leadership of Shigeyasu Tokunaga, June–October 1933*. Section V, Division I, Part XII, Article 67, 1–47, 7 tables.
- Yasumatsu, K. (1948[“1946”]) Hymenoptera Aculeata collected by Mr. K. Tsuneki in North China and Inner Mongolia. III. Apoidea. 1. *Mushi*, 17, 19–26.