Russian Entomol. J. 17(2): 209–212

New records of Hymenoptera from the Moscow Region and other parts of Russia, with notes on synonymy of *Konowia* species

Новые находки перепончатокрылых из Подмосковья и других регионов России, с замечаниями по синонимии видов *Konowia*

Dmitry E. Shcherbakov
Д.Е. Щербаков

Paleontological Institute, Russian Academy of Sciences, Profsoyuznaya ul. 123, 117647 Moscow, Russia. E-mail: dshh@narod.ru
Палеонтологический институт РАН, Профсоюзная ул. 123, 117647, Москва, Россия

KEY WORDS: Hymenoptera, Symphyta, *Blasticotoma, Heptamelus, Konowia,* Trigonalidae, Ibaliidae, Ichneumonidae, Chrysidoidea, Tiphiidae, Sapygidae, Pompilidae, Vespidae, Sphecidae, Apoidea, faunistics, Russia, Moscow Region, Transbaikalia.

КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Symphyta, *Blasticotoma, Heptamelus, Konowia,* Trigonalidae, Ibaliidae, Ichneumonidae, Chrysidoidea, Tiphiidae, Sapygidae, Pompilidae, Vespidae, Sphecidae, Apoidea, фаунистика, Россия, Московская область, Забайкалье.

ABSTRACT. New records for several rare and protected Hymenoptera are listed, some of them at the northern limit of their ranges. The Euro-Siberian disjunction of *Blasticotoma filiceti* is partly filled with new finds in Udmurtia. Occurrence of *Heptamelus ochroleucus* in Russia is confirmed (abnormal 8-segmented antenna is reported in one specimen). Several other species are first recorded from Moscow Region or Transbaikalia. *Konowia megapolitana* Brauns, 1884 = *betulae* (Enslin, 1917), **syn.n.** *Polistes nimpha* became common near Moscow in the last decade, presumably due to climate warming.

РЕЗЮМЕ. Перечислены новые находки ряда видов редких и охраняемых перепончатокрылых, некоторые из них отмечены на северном пределе их распространения. Евро-сибирский разрыв ареала *Blasticotoma filiceti* частично заполнен новыми находками в Удмуртии. Подтверждено обитание в России *Heptamelus ochroleucus* (у одного экземпляра найден аномальный 8-члениковый усик). Несколько видов впервые отмечены в Московской области или Забайкалье. *Konowia megapolitana* Brauns, 1884 = *betulae* (Enslin, 1917), **syn.n.** *Polistes nimpha* стал обычным в окрестностях Москвы за последнее десятилетие, вероятно в связи с потеплением климата.

The records for several species are at the northern limit of their ranges (see abbreviations below), many of them being confined to valleys of the Moscow, Oka, Volga and other rivers that are main corridors of northward dispersal for steppe plants and insects (see Smirnov [1958: fig. 60], Dedyukhin [2003]). Few species are found about eastern or southern limits of their ranges. Several species are included in Red Data Books of Russian Federation [2001], Moscow Region [1998], and Moscow [2001]. Several species are first recorded from the Moscow Region (not mentioned in checklists of Symphyta [Zhelokhovtsev & Prokhorova, 1976], Chrysididae [Zvantsov, 1988], Apidae s.l. [Panfilov, 1988], and Megachilidae [Levchenko, 2007], Red Data Book of Moscow Region [1998] or other papers), some others from Transbaikalia (not reported from there in the Keys… [1995, 2007] and other papers). If not indicated otherwise, the specimens were collected by the author and/or in the Moscow Region, many of them near Ramenskoe (Moscow River valley ca 40km SE Moscow), Snegiri (Istra River valley ca 40 km WNW Moscow) and Luzhki (Oka River valley ca 10 km SE Serpukhov, nr Prioksko-Terrasny Reserve).

Abbreviations:
* — first recorded from Moscow Region
• — first recorded from Transbaikalia
A — Appendix 1 to Red Data Book of Moscow Region
E — about eastern limit of range
F — Red Data Book of Russian Federation
M — Red Data Book of Moscow
N — about northern limit of range
R — Red Data Book of Moscow Region
R2 — 2nd edition of Red Data Book of Moscow Region
S — about southern limit of range

Xyelidae

Xyela longula Dalman, 1819 — nr Ramenskoe 17.04.1988.

Pamphiliidae

Caenolyda reticulata (Linnaeus, 1758) — F R2: Moscow R. 10km WSW Zvenigorod 18.06.2005 (S. Levushkin).

Cephalcia lariciphila (Wachtl, 1898) (= *alpina* auct.) — nr Ramenskoe 9.05.1990.

Pamphilius (Anoplolyda) pallipes (Zetterstedt, 1838) — Losiny Ostrov nr Moscow 23.05.1982 (A. Rasnitsyn); Moscow R. 10km WSW Zvenigorod 8.06.1980.

P. (A.) varius (Lepeletier, 1823) — Moscow R. 10km WSW Zvenigorod 8.06.1980.

Megalodontesidae

Megalodontes cephalotes (Fabricius, 1781) (= *spissicornis* (Klug, 1824)) — N R: nr Snegiri 07.1993; nr Luzhki 21–23.06.1998 (V. Beiko & L. Volkova); Moscow R. 10km WSW Zvenigorod 20.05.2005 (V. Kartsev).

Argidae

Arge sanguinolenta Mocsáry, 1909 — Lesogor'e 70km ESE Kirovsky, Primorye 23.07.1977 (S. Toms).

Aprosthema sibirica Gussakovskij, 1935 — Ingoda R. nr Chita 19.07.1984.

Blasticotomidae

Blasticotoma filiceti Klug, 1834 — A M: Kostovaty 17km SSE Votkinsk and Chepanikha 25km SE Izhevsk, Udmurtia 28–30.06.2006, young larvae in rachises of *Athyrium filix-femina*. Nemoral species with known distribution from England to Udmurtia, from nr Altai to Baikal, and from Amur to Kuril Islands; quite rare in western part of its range; adults almost never observed [Shcherbakov, 2006]. New finds in Udmurtia partly fill the Euro-Siberian disjunction, and eventually the range may turn out to be rather continuous.

Tenthredinidae

Heptamelus ochroleucus (Stephens, 1835) — A: nr Ramenskoe 23.06.1988, 5.06.1998, 20km ESE Ramenskoe 7.06.1998, all females on *Athyrium filix-femina.* Larvae mining rachises of this fern [Meijere, 1911], their mines are not uncommon in Moscow Region. In one female the right antenna is 8-segmented, with terminal flagellomere divided into two equal segments; respective flagellomere of left antenna with a short scar of rudimentary intersegmental boundary (Fig. 1). Species excluded from the fauna of Russia in Taeger et al. [2006].

Siobla sturmi (Klug, 1814) — nr Luzhki 17.06.1979; nr Ramenskoe 6–9.06.1991.

Aglaostigma (Macrophyopsis) nebulosum (Ed. André, 1881) — nr Ramenskoe 4.06.1994.

Fig. 1. *Heptamelus ochroleucus* (Stephens, 1835), female, nr Ramenskoe, head with left antenna normal (7-segmented) and right one abnormal, 8-segmented, with divided terminal flagellomere.

Fig. 1. *Heptamelus ochroleucus* (Stephens, 1835), самка, окр. Раменского, голова с нормальным (7-члениковым) левым усиком и аномальным, 8-члениковым правым (последний сегмент разделен на два).

Cimbicidae

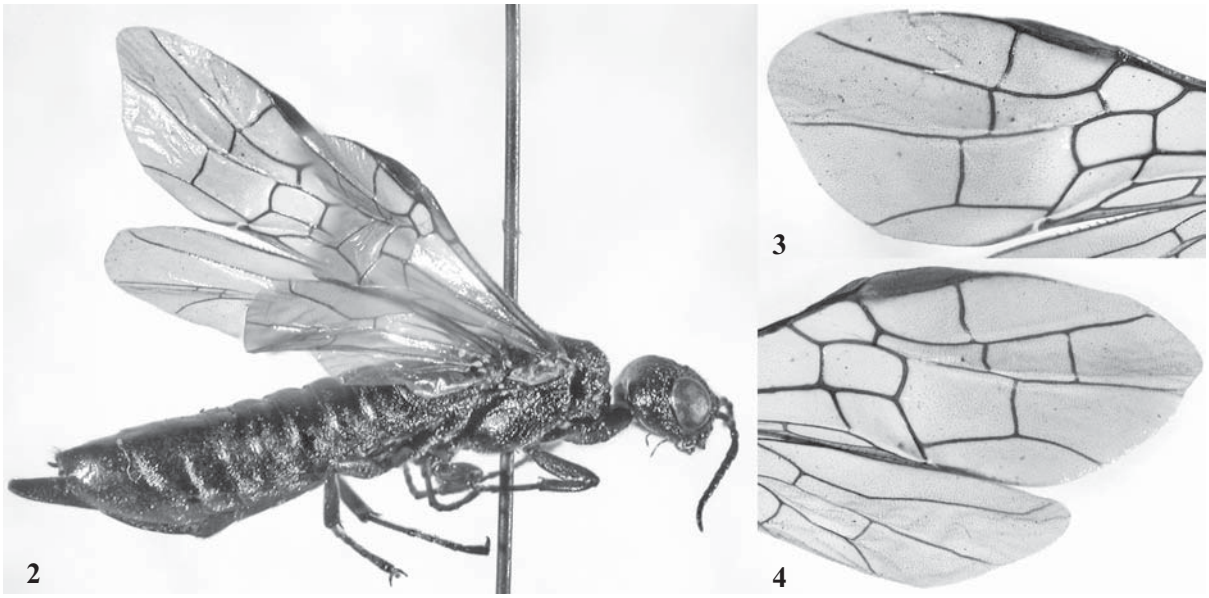
Corynis amoena (Klug, 1834) — A: nr Ramenskoe 18.06.1988 etc.

C. lateralis (Brullé, 1832) — A: nr Ramenskoe 11.06.1988 etc.

Xiphydriidae

Xiphydria prolongata Geoffroy, 1785: nr Ramenskoe 16.06.1991; Moscow (Neskuchny Garden) 06.1997.

Konowia megapolitana Brauns, 1884 (= *betulae* (Enslin, 1917), **syn.n.**): in some years not rare in Moscow and environs [Sinadsky, 1967]. The female collected 27.05.2005 in Moscow



Figs 2–4. *Konowia megapolitana* Brauns, 1884 = *betulae* (Enslin, 1917), **syn.n.,** female, Moscow: 2 — habitus, lateral; 3 — distal part of left forewing; 4 — distal parts of right wings.

Рис. 2–4. *Konowia megapolitana* Brauns, 1884 = *betulae* (Enslin, 1917), **syn.n.,** самка, Москва: 2 — общий вид сбоку; 3 — дистальная часть левого переднего крыла; 4 — дистальные части правых крыльев.

(Neskuchny Garden) shows three radiomedial cells in the right forewing and two in the left one (Figs 2–4), the number of cells being the only reliable character to discriminate between two species of the genus. Apparently, the number of radiomedial cells is variable within one species. Contrary to Lelei & Taeger [2007], wings in *K. betulae* were described as infuscated in distal third, less so than in *K. megapolitana* [Gussakovsky, 1935]; the wings of the above specimen are slightly infuscated in distal third.

Orussidae

•*Orussus abietinus* (Scopoli, 1763) — F R: Moscow 28.06.1931 (from collection of N. Filippov); nr Ramenskoe 6.06.1991, 18.06.2001 etc; nr Snegiri 9.06.1991; nr Teberda, N. Caucasus, 7.08.1988; Kamenka R. 12km S Lysva, Perm Region 22.05.1964 (V. Zherikhin); Chita, Transbaikalia 25.06.1983.

Trigonalidae

**Pseudogonalos hahnii* (Spinola, 1840) — nr Luzhki 8–10.09.1959, N of Pushkino 2.07.1975, Losiny Ostrov nr Moscow 7.08.1990 (all A. Rasnitsyn); Moscow R. nr Myachkovo 13.07.1988; nr Ramenskoe 19.06.1988 etc.

Ibaliidae

•*Ibalia jakowlewi* Jakobson, 1899 — Chita, Transbaikalia 5.07.1977 (V. Zherikhin).

Ichneumonidae

**Hellwigia elegans* Gravenhorst, 1823 — N: nr Ramenskoe 17.07.1992. Other northernmost finds in European Russia: Gorkov Region (Kstov District), Bashkiria (Belebey) (D.R. Kasparyan, pers.comm.).

Chrysididae

Elampus [Notozus] ambiguus Dahlbom, 1854 — A: nr Ramenskoe 9.05.1975.

Chrysis bicolor Lepeletier, 1806 — A: nr Ramenskoe 20.06.1971, 14.06.1985 etc.

Spinolia unicolor (Dahlbom, 1831) — N A: Tver, Tver Region 27.07.1972; nr Ramenskoe 21.08.1988.

Pseudospinolia incrassata (Spinola, 1838) — Argun' R. nr Olochi, Transbaikalia 17.08.1984; recorded from Irkutsk Region and/or Buryatia by Anichtchenko [2008].

Parnopes grandior (Pallas, 1771) — N F A: nr Luzhki 14.07.1973; nr Ramenskoe 2.07.1988 etc.

P. popovii Eversmann, 1857 — Turga R. 10km NE Mirnaya 1.08.1984, 10km SE Zapokrovsky 10.08.1984, Argun' R. nr Olochi 14.08.1984 (all Transbaikalia).

Embolemidae

**Embolemus ruddii* Westwood, 1833 — Polyarny Krug ['Arctic Circle'] rail station 20km NNW Chupa, Karelia, in nest of *Formica gagatoides* Ruzsky, 1904 in mound of *Sphagnum* bog 19.08.1961, 25km ESE Kumertau, Bashkiria 25.08.1980, Losiny Ostrov nr Moscow 21.08.1983 (all A. Rasnitsyn); nr Snegiri 20.09.1989.

Tiphiidae

**Tiphia unicolor* (Lepeletier, 1845) (= *ruficornis* (Klug, 1810) = *polita* A.Costa, 1858) — N A: nr Luzhki 25.07.1965 (A. Rasnitsyn); nr Ramenskoe 17–29.07.1992.

**Methocha articulata* (Latreille, 1792) (= *ichneumonides* Latreille, 1805) — N: nr Tomilino 14.06.1992 (V. Yanushev); nr Ramenskoe 23.08.1992.

Sapygidae

**Sapyga quinquepunctata* (Fabricius, 1781) — nr Ramenskoe 07.1974, 6.06.1991 etc.

**S. similis* (Fabricius, 1793) — nr Ramenskoe 3.05.1993; Chita, Transbaikalia 26.06.1983.

Pompilidae

Episyron rufipes (Linnaeus, 1758) — Moscow Government [Dwigubsky, 1892]; nr Ramenskoe 21.08.1988.

•*Batazonellus lacerticida* (Pallas, 1771) — Argun' R. nr Olochi, Transbaikalia 14.08.1984.

Ceropales erythropoda Gussakovskij, 1926 — Ingoda R. nr Chita 19.07.1984, Turga R. 10km NE Mirnaya 2.08.1984 (both Transbaikalia); recorded from Balzino, Transbaikalia ("Balzina, Scit. n. zabajk") and Minusinsk by Móczár [1987].

Vespidae

Polistes nimpha (Christ, 1791) — nr Ramenskoe not observed in 1970s and 1980s, occasionally collected in 1990s (e.g. 08.1997), and quite common now, presumably due to climate warming.

P. dominulus (Christ, 1791) (= *gallicus* auct.) — Moscow 29.08.1989; nr Ramenskoe 19.08.1989. Species expanding its range northwards in Europe [Pekkarinen & Gustafsson, 1999].

Vespa crabro altaica Pérez, 1910 — N: Ayatskoe Lake 50km N Ekaterinburg, Sverdlovsk Region 08.1996.

**Discoelius zonalis* (Panzer, 1801) — nr Zvenigorod 7.08.1948 (G. Viktorov).

D. dufourii Lepeletier, 1841 — A: between Ozery and Gory, Kolomna District 7.06.1903 (N. Voronkov); Mytishchi 30.07.1931 (G. Kostylev); nr Ramenskoe 08.1997; Perm, Perm Region 6.09.1926 (A. Lyubishchev).

**Pterocheilus phaleratus* (Panzer, 1797) — N: nr Ramenskoe 23.08.1970, 2.07.1992 etc.

Odynerus melanocephalus (Gmelin, 1790) — Kolomna, Belye Kolodezi, Tarbushevo [Kozhevnikov, 1897]; Polosnya R. 15km SW Serebryanye Prudy 22.06.1984.

O. alpinus Schulthess, 1897 — Beris R. 35km upstream of its mouth, S of Kyusyur, N. Yakutia (70°21′N 127°48′E, beyond Arctic Circle) 13.08.1989 (I. Sukatsheva).

•*Katamenes sesquicinctus* (Lichtenstein, 1796) — Argun' R. nr Olochi, Transbaikalia 16.08.1984.

Microdynerus (Pseudomicrodynerus) parvulus (Herrich-Schaeffer, 1838) — A: between Ozery and Baburino, Kolomna District 7.06.1903 (N. Voronkov); Mytishchi 7.07.1929 (G. Kostylev); Valuevo 28.06.1961 (V. Meshcheryakov); nr Ramenskoe 20.06.1971, 9.07.1992 etc.

**Ancistrocerus nigricornis* (Curtis, 1826) — nr Ramenskoe 28.04.1975.

Sphecidae

Pemphredon montana Dahlbom, 1845 — S A: nr Moscow [Kozhevnikov, 1897]; nr Ramenskoe 1.07.1984.

Passaloecus monilicornis Dahlbom, 1842 — Moscow Government [Assmus, 1859]; nr Ramenskoe 8.07.1984.

**Dinetus pictus* (Fabricius, 1793) — N A: nr Ramenskoe 16.07.1973, 12.07.1992 etc.; Unzha R. 30km SW Manturovo, Kostroma Region 11.08.1992.

**Miscophus concolor* Dahlbom, 1844 — E: nr Ramenskoe 5.08.1979.

**Bembecinus tridens* Fabricius, 1781 — N: nr Ramenskoe 07.1997.

**Nysson niger* Chevrier, 1868 — Nikol'skoe nr Zelenograd 11.07.1975.

Didineis lunicornis (Fabricius, 1798) — E: 25km ESE Kumertau, Bashkiria 26.08.1980.

**Harpactus elegans* (Lepeletier, 1832) — N: nr Ramenskoe 19.07.1992.

•*H. formosus* (Jurine, 1807) — E: 10km SE Zapokrovsky, Transbaikalia 10.08.1984.

Andrenidae

Andrena (Margandrena) marginata Fabricius, 1776 — N: Tver, Tver Region 24.07.1972; Unzha R. 30km SW Manturovo, Kostroma Region 3.08.1992.

Melitturga clavicornis (Latreille, 1806) — N R: Tver, Tver Region 29.07.1972; nr Ramenskoe 11.07.1992; nr Luzhki 30.06.1973. Other records in former USSR see Osychnyuk [1980].

Halictidae

Systropha curvicornis (Scopoli, 1770) — N R: nr Ramenskoe 27.06.1979.

**S. planidens* Giraud, 1861 — N R2: nr Ramenskoe 4.07.1971 etc; Polosnya R. 15km SW Serebryanye Prudy 23.06.1984.

Melittidae

**Dasypoda argentata* Panzer, 1809 (= *thoracica* Baer, 1853) — N R2: nr Luzhki 14.07.1973.

Melitta nigricans Alfken, 1905 — A: nr Ramenskoe 15.07.1980, 2.07.1988 etc.

Megachilidae

**Osmia (Melanosmia) maritima* Friese, 1885 — nr Ramenskoe 27.04–6.05.1975.

Anthidium septemspinosum Lepeletier, 1841 — Novouralsk 55km NNW Ekaterinburg, Sverdlovsk Region 30.06.1972.

Stelis breviuscula Nylander, 1848 — R: nr Ramenskoe 1.07.1984 etc.

S. minima Schenck, 1859 — R: nr Ramenskoe 18.06. 1988.

Aglaoapis [Dioxoides] tridentatus (Nylander, 1848) — 10km SE Zapokrovsky 9–10.08.1984, Argun' R. nr Olochi 14–17.08.1984 (both Transbaikalia).

Coelioxys brevis Eversmann, 1852 — N: Shamanikha, Tavatui Lake 40km NW Ekaterinburg, Sverdlovsk Region 23.07.1988.

Apidae

Melecta luctuosa (Scopoli, 1770) — R: Moscow [Kozhevnikov, 1897]; nr Ramenskoe 9–11.05.1975, 06.1976.

Tetraloniella [Tetralonia] salicariae (Lepeletier, 1841) — N A: nr Ramenskoe 29.06.1988, 17.07.1992 etc.

Triepeolus tristis (Smith, 1854) — N A: nr Ramenskoe 13.07.1988, 21.07.1990, 11.07.1992 etc. Recorded in same locality as *T. salicariae,* and presumably cleptoparasitic on this latter.

Biastes emarginatus (Schenck, 1853) — A: Chashnikovo nr Zelenograd 9.07.1975; nr Ramenskoe 25.06.1988 etc.

•*B. truncatus* (Nylander, 1848) — Argun' R. nr Olochi, Transbaikalia 14–17.08.1984.

Epeoloides coecutiens (Fabricius, 1775) — R: Dar'ino 5km N Zhavoronki [Kozhevnikov, 1897]; nr Ramenskoe 11.07.1971, 25.06.1988, 18.07.1992 etc. Reported as rarest bee of Europe [Schmiedeknecht, 1930].

ACKNOWLEDGEMENTS. We are grateful to A. Taeger (German Entomological Institute, Müncheberg), D.R. Kasparyan (Zoological Institute, St.-Petersburg) and A.V. Antropov (Zoological Museum, Moscow State University) for valuable information and discussion, and to A.P. Rasnitsyn (Paleontological Institute, Moscow), L.B. Volkova (Institute of Ecology and Evolution, Moscow) and V.M. Kartsev (Moscow State University) for providing the specimens and collection data. The photographs were processed with Helicon Focus 4.16.

References

Anichtchenko A.V. 2008. [The chrysidid wasps (Hymenoptera, Chrysididae) of Cis- and Transbaikalia] // http://chrysididae.xm.com/sibshr.htm [in Russian].

Assmus E.Ph. 1859. Symbola ad faunam hymenopterologicam Mosquensem. Enumeratio Hymenopterorum Spheciformium gubernii Mosquensis // Bulletin de la Société Impériale des Naturalistes de Moscou. Vol.32. Pt.1. P.604–620.

Dedyukhin S.V. 2003. [Particularities of Coleoptera fauna and communities in Udmurtia] // Vestnik of Udmurtia University (Biology). P.93–104 [in Russian].

Dwigubsky I.A. 1892. Primitiae Faunae Mosquensis. 2nd ed. Mel'gunov I.P. (ed.). Moscow: Kushnerev & Co. 147 pp. [in Russian].

Gussakovskij V.V. 1935. [Insecta Hymenoptera. Vol.2(1). Chalastogastra. Pt.1] // Fauna SSSR (N.S.). Vol.1. Moscow–Leningrad: USSR Academy of Sciences. 453 pp. [in Russian].

[Keys to the insects of Russian Far East]. 1995. Vol.4. Pt.1. St.-Petersburg: Nauka. 606 pp. [in Russian].

[Keys to the insects of Russian Far East]. 2007. Vol.4. Pt.5. Vladivostok: Dal'nauka. 1052 pp. [in Russian].

Kozhevnikov G.A. 1897. [Additions to the lists of animals of the Moscow Government (No. 3)] // Izvestiya Imperatorskago Obshchestva Lyubitelei Estestvoznaniya, Antropologii i Etnografii. Vol.86. Trudy Zoologicheskago Otdeleniya Obshchestva. Vol.10. Dnevnik Zoologicheskago Otdeleniya Obshchestva. Vol.2. No.5. P.13–22 [in Russian].

Lelej A.S. & Taeger A. 2007. [Fam. Xiphydriidae] // Keys to the insects of Russian Far East. Vol.4. Pt.5. Vladivostok: Dal'nauka. P.960 [in Russian].

Levchenko T.V. 2007. [A contribution to the bee fauna (Hymenoptera, Apoidea) of the Moscow province: a preliminary list of species of the family Megachilidae] // Rasnitsyn A.P. & Gokhman V.E. (eds). Studies on hymenopterous insects. Moscow: KMK Sci. Press. P.153–161 [in Russian].

Meijere J.C.H. de. 1911. Über in Farnen parasitierende Hymenopteren- und Dipteren-Larven // Tijdschrift voor Entomologie. Bd.54. S.80–127.

Móczár L. 1987. Revision of the *maculata* and *albicincta* groups of the genus *Ceropales* Latreille (Hymenoptera: Ceropalidae) // Acta Zoologica Hungarica. Vol.33. P.121–156.

Osychnyuk A.Z. 1980. [*Melitturga clavicornis* (Latreille, 1806)] // Gorodkov K.B. (ed.). Areały nasekomykh evropeiskoi chasti SSSR. Atlas. Karty 21–72. Leningrad: Nauka. P.27 [in Russian].

Panfilov D.V. 1988. [Preliminary data on composition of the bee fauna of the Moscow Region] // Sablina T.B. (ed.). Nauchnye osnovy okhrany zhivoi prirody Podmoskov'ya. Moscow: Nauka. P.58–72 [in Russian].

Pekkarinen A. & Gustafsson B. 1999. The *Polistes* species in northern Europe (Hymenoptera: Vespidae) // Entomologica Fennica. Vol.10. P.191–197.

[Red Data Book of Moscow]. 2001. Moscow: ABF. 624 pp. [in Russian].

[Red Data Book of Moscow Region]. 1998. Moscow: Argus. 560 pp. [in Russian].

[Red Data Book of Russian Federation (animals)]. 2001. Moscow: AST, Astrel. 860 pp. [in Russian].

Schmiedeknecht O. 1930. Die Hymenopteren Nord- und Mitteleuropas. Jena: Fischer. 1062 pp.

Shcherbakov D.E. 2006. Fern sawfly larvae *Blasticotoma filiceti* Klug, 1834 (Hymenoptera: Blasticotomidae) are visited by ants: a new kind of trophobiosis // Russian Entomol. J. Vol.15. P.67–72.

Sinadsky Yu.V. 1967. [Bioecological peculiarities of development of the apical birch woodwasp (*Pseudoxiphydria betulae* Ensl.)] // Zoologichesky Zhurnal. Vol.46. P.1069–1073 [in Russian].

Smirnov P.A. 1958. [Flora of the Prioksko-Terrasny State Reserve] // Transactions of the Prioksko-Terrasny State Reserve. Vol.2. P.1–246 [in Russian].

Taeger A., Blank S.M. & Liston A.D. 2006. European sawflies (Hymenoptera: Symphyta) — a species checklist for the countries // Blank S.M., Schmidt S. & Taeger A. (eds.). Recent sawfly research: synthesis 'and prospects. Keltern: Goecke & Evers. P.399–504.

Zhelokhovtsev A.N. & Prokhorova L.G. 1976. [Sawflies and horntails of the Moscow Region] // Archives of Zoological Museum, Moscow State University. Vol.15. P.97–110 [in Russian].

Zvantsov A.B. 1988. F[auna and geographical distribution of gold wasps (Hymenoptera, Chrysididae) in the Moscow Region] // Rasnitsyn A.P. (ed.). Nasekomye Moskovskoi oblasti. Moscow: Nauka. P.80–97 [in Russian].