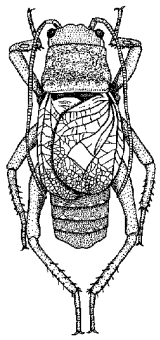

Far Eastern Entomologist

Дальневосточный энтомолог

Journal published by Far East Branch
of the Russian Entomological Society
and Laboratory of Entomology,
Institute of Biology and Soil Sciences,
Vladivostok

Number 175: 1-18 ISSN 1026-051X August 2007

THE BEES OF FAMILY MEGACHILIDAE (HYMENOPTERA, APOIDEA) OF TRANSBAIKALIA

M. Yu. Proshchalykin

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

The annotated list of 51 species in 11 genera of megachilid bees is given. Nine species: *Hoplitis robusta* (Nylander), *Osmia orientalis* Benoist, *Anthidium manicatum* (Linnaeus), *Coelioxys afra* Lepeletier, *C. emarginata* Förster, *C. polycentris* Förster, *C. rufescens* Lepeletier et Serville, *Megachile remota* Smith, and *M. lagopoda* (Linnaeus) are newly recorded from Transbaikalia. Patterns of megachilid diversity in the Russian Far East and Transbaikalia are discussed.

KEY WORDS. Hymenoptera, Apoidea, Megachilidae, bees, Transbaikalia.

М. Ю. Прощалыкин. Пчелы семейства Megachilidae (Hymenoptera, Apoidea) Забайкалья // Дальневосточный энтомолог. 2007. N 175. С. 1-18.

Дается аннотированный список 51 вида пчёл из 11 родов. 9 видов: *Hoplitis robusta* (Nylander), *Osmia orientalis* Benoist, *Anthidium manicatum* (Linnaeus), *Coelioxys afra* Lepeletier, *C. emarginata* Förster, *C. polycentris* Förster, *C. rufescens* Lepeletier et Serville, *Megachile remota* Smith и *M. lagopoda* (Linnaeus) впервые указываются для фауны Забайкалья. Обсуждаются особенности разнообразия пчел-мегахилид на Дальнем Востоке России и в Забайкалье.

Биолого-почвенный институт, Дальневосточное отделение Российской академии наук, Владивосток-22, 690022, Россия.

INTRODUCTION

The Transbaikalia consists of three administrative regions of Russia (Fig. 1): Chitinskaya oblast', Republic of Buryatia (Buryatia) and part of Irkutskaya oblast' (Predbaikal'e..., 1965). *Megachile baicalica* Kokujev, 1927 (=*M. fulvimana* Eversmann, 1852), *M. lapponica* Thomson, 1872, *M. dacica* Mocsáry, 1879, and *Anthidium punctatum* var. *fulvipes* Friese, 1897 (=*A. punctatum* Latreille, 1809) were the first four megachilid species, which have been recorded from the Transbaikalia (Buryatia) (Kokujev, 1927). The distribution data on bee species from the Transbaikalia have been published in the next papers: Cockerell, 1928; Popov, 1946, 1964; Romankova, 1992, 1994, 1995, 2003; Banaszak & Romasenko, 1998; Davydova & Pesenko, 2002; Proshchalykin, 2003, 2006, 2007; Proshchalykin et al., 2004; Proshchalykin & Kupianskaya, 2005. Forty-two species of megachilid bees have been recorded from the Transbaikalia until now.

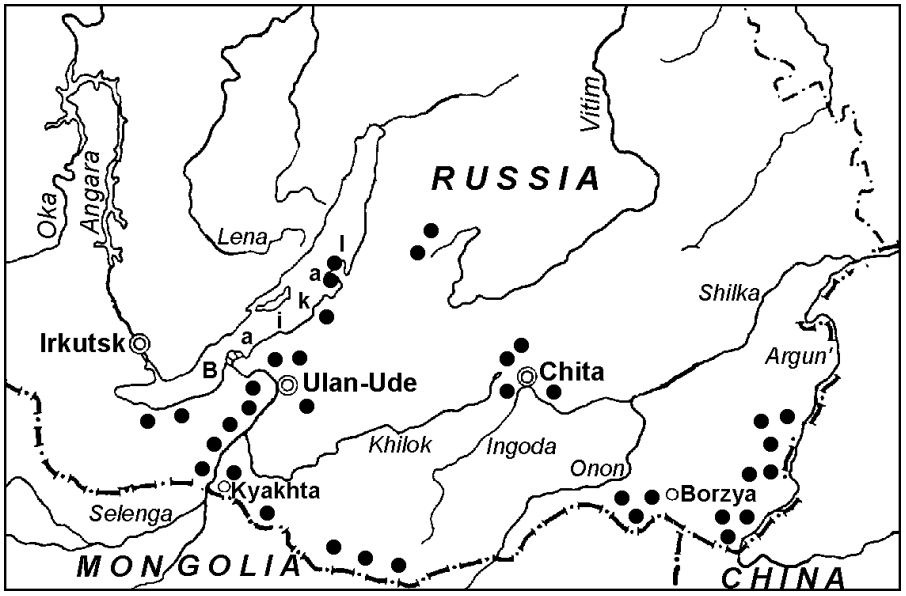

Fig. 1. The collecting places of the bees in Transbaikalia.

This study is based on more than 350 megacilid specimens. This material deposit in the collections of the Institute of Biology and Soil Science, Russian Academy of Sciences, Vladivostok [IBSS], Zoological Institute, Russian Academy of Sciences, St. Petersburg [ZISP], Zoological Museum of Moscow University [ZMMU], Institute of General and Experimental Biology, Russian Academy of Sciences, Ulan-Ude [IGBU], Institute of Animal Systematic and Ecology, Russian Academy of Sciences, Novosibirsk [ISEN], and I.I. Schmalgausen Institute of Zoology of National Academy

of Sciences of Ukraine, Kiev [IZK]. The classification of bees follows C. Michener (2007), the distribution of bees follows J. Banaszak, L. Pomasenko (1998) and M. Proshchalykin (2007). Next acronyms are used for the collectors: AL – A.S. Lelej, DK – D.R. Kasparyan, MP – M.Yu. Proshchalykin, SR – S.G. Rudykh, TR – T.G. Romankova, VL – V.M. Loktionov, YP – Yu.A. Pesenko. New records in the distribution section are asterisked (*).

The work described here was supported in part by the grant of Far Eastern Branch of Russian Academy of Sciences No 06–III–B–195.

LIST OF THE SPECIES

1. *Chelostoma* (*Gyrodromella*) *rapunculi* (Lepeletier, 1841)

Heriades rapunculi Lepeletier, 1841: 406.
Osmia archanensis Cockerell, 1928: 353.
Chelostoma fuliginosum: Romankova, 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Ivolginskii datsan, 17.VII 1991, 1♀ (TR).

DISTRIBUTION. Russia: Buryatia; Khabarovskii krai, Amurskaya oblast', Sakhalin, European part. – Kazakhstan, Turkmenia, Asia Minor, Europe, Caucasus, North-Eastern America.

2. *Hoplitis* (*Alcidamea*) *leucomelana* (Kirby, 1802)

Osmia leucomelana Kirby, 1802: 260.
Hoplitis parvula: Romankova, 1992: 146; 1995: 536.
Hoplitis leucomelana: Proshchalykin, 2007: 890.

SPECIMENS EXAMINED. **Buryatia:** Ivolginskii datsan, 17.VII 1991, 1♀ (TR). **Chitinskaya oblast':** Kaidalovka, 4.VII 1912, 1♂ (Valueva); Kyra, 24.VI 1975, 1♀ (DK); Bylyra, 23.VI 1975, 1♀ (DK); Tsasuchei, 16.VII 1990, 1♀ (TR); Telemba, 10.VI 1991, 2♀ (TR); 20 km SSE Krasnokamensk, 4, 6.VIII 2007, 1♀ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Khabarovskii krai, Amurskaya oblast', Primorskii krai, Altai, European part. – Mongolia, Europe, North Africa.

3. *Hoplitis* (*Alcidamea*) *scita* (Eversmann, 1852)

Osmia scita Eversmann, 1852: 63.
Hoplitis scita: Romankova, 1992: 146; 1994: 120; 1995: 536; Proshchalykin, 2007: 891.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, 7.VI 1961, 1♀.

DISTRIBUTION. Russia: Buryatia, Irkutskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai. – Mongolia, North-Eastern China.

4. *_Hoplitis_ (_Formicapis_) _robusta_ (Nylander, 1848)

Heriades robusta Nylander, 1848: 270.

SPECIMENS EXAMINED. **Chitinskaya oblast':** Bylyra, 23.VI 1975, 1♀ (DK); 65 km SE Chita, Kadakhta, 5.VI 1994, 2 ♀ (YP).

DISTRIBUTION. Russia: *Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Magadanskaya oblast', Khabarovskii krai, Amurskaya oblast. – Mongolia, Europe, North America.

5. _Hoplitis_ (_Megalosmia_) _fulva_ (Eversmann, 1852)

Osmia fulva Eversmann, 1852: 62.
Hoplitis fulva: Romankova, 1992: 146; 1995: 535.

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Transbaikalia, European part. – Asia Minor, Europe, Caucasus, Kazakhstan, China.

6. _Hoplitis_ (_Megalosmia_) _princeps_ (Morawitz, 1872)

Osmia princeps Morawitz, 1872: 54.
Hoplitis princeps: Romankova, 1995: 535.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♂ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia; Ural, European part. – China, Mongolia, Europe.

7. _Hoplitis_ (_Monumetha_) _tuberculata_ (Nylander, 1848)

Osmia tuberculata Nylander, 1848: 263.
Hoplitis tuberculata: Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Guba Ayaya, 15.VIII 1923, 1♂ (Turov); Nizhneangarsk, 1-4.VII 1954, 1♂ (Popov); Gusinoe Lake, 7.VI 1961, 1♂. **Chitinskaya oblast':** Chita, 19.VI 1990, 1♀ (TR); Telemba, 10.VI 1991, 6♀, 1♂ (TR); Preobrazhenka, 12.VI 1991, 1♂ (TR); Zurmenskii Pass, 15.VI 1991, 1♂ (TR); Sokhondinskii Reserve, 20.VI 1991, 1♂ (Zakharov); Titovskaya Mt., 3, 7.VI 1994, 2♂ (YP); 65 km SE Chita, Kadakhta, 5.VI 1994, 1♀ (YP).

DISTRIBUTION. Russia: **Buryatia**, Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Magadanskaya oblast', Khabarovskii krai, Amurskaya oblast', Altai, European part. – Europe.

8. _Osmia_ (_Helicosmia_) _leaiana_ (Kirby, 1802)

Apis leaiana Kirby, 1802: 263.
Osmia confusa: Romankova, 2003: 2.
Osmia leaiana: Proshchalykin et al., 2004: 165; Proshchalykin, 2007: 892.

SPECIMENS EXAMINED. **Chitinskaya oblast':** Yablonevyi Ridge, 20.VII 1990, 1♀ (TR).

DISTRIBUTION. Russia: Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Khabarovskii krai, Sakhalin, European part. – North Kazakhstan, North Tadzhikistan, Europe.

9. *_Osmia_ (_Helicosmia_) _orientalis_ Benoist, 1929

Osmia orientalis Benoist, 1929: 142.

SPECIMENS EXAMINED. **Chitinskaya oblast':** 55 km SW Chita, Yablonevyi Ridge, 4.VI 1984, 1♂ (YP).

DISTRIBUTION. Russia: *Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin. – Japan (Honshu, Shikoku, Kyushu).

10. _Osmia_ (_Melanosmia_) _maritima_ Friese, 1885

Osmia maritima Friese, 1885: 85; Proshchalykin, 2007: 892.

SPECIMENS EXAMINED. **Buryatia:** Ulan-Ude, 26.V 1993, 1♀, 26.V 2006, 1♀ (SR); 10 km E Srednii Ubukun, 13.V 1998, 1♀ (SR). **Chitinskaya oblast':** Titovskaya Mt., 3.VI 1994, 3♀ (YP); 55 km SW Chita, Yablonevyi Ridge, 4.VI 1994, 2♀ (YP).

DISTRIBUTION. Russia: **Buryatia**, Chitinskaya oblast'; Yakutia, Kamchatskii krai, Khabarovskii krai, Primorskii krai, Sakhalin, European part. – Central and North Europe.

11. _Osmia_ (_Melanosmia_) _nigriventris_ (Zetterstedt, 1838)

Anthophora nigriventris Zetterstedt, 1838: 465.
Osmia nigriventris: Romankova, 1984: 362.
Osmia nigriventralis (sic!): Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Dzhida, 13.VII 1943, 2♀ (Zhelokhovtsev).

DISTRIBUTION. Russia: Buryatia; Yakutia, Magadanskaya oblast', Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, North Ural, European part. – Europe.

12. _Osmia_ (_Melanosmia_) _uncinata_ Gerstaecker, 1869

Osmia uncinata Gerstaecker, 1869: 336; Romankova, 1992: 146 (Chitinskaya oblast'); 1995: 537; Proshchalykin, 2007: 892.

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Chitinskaya oblast', Irkutskaya oblast', Yakitiya, Magadanskaya oblast', Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Europe.

13. *_Anthidium_ (_Anthidium_) _manicatum_ (Linnaeus, 1758)

Apis manicata Linnaeus, 1758: 577.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♀ (AL, MP, VL).

DISTRIBUTION. Russia: *Buryatia; European part. – Europe, Middle and North Asia, Caucasus, North Africa, North and South America.

14. _Anthidium_ (_Anthidium_) _punctatum_ Latreille, 1809

Anthidium punctatum Latreille, 1809: 43; Romankova, 1992: 145.
Anthidium punctatum var. *fulvipes*: Kokujev, 1927: 75.

SPECIMENS EXAMINED. **Buryatia:** Chivyrkuiskii Gulf, 1954, 1♀ (Popov); Ivolginskii datsan, 24.VII 1990, 3♂ (TR); Ulan-Ude, 26.VII 1990, 2♂ (TR); 10 km E Ulan-Ude, 7.VII 2006, 1♂ (SR); Gusinoe Lake, Baraty, 26.VII 2007, 2♂ (AL, MP, VL); Dzhida, 28.VII 2007, 4♀, 2♂ (AL, MP, VL); Naushki, 2.VIII 1984, 1♀ (AL); the same place, 30.VII 2007, 1♂ (AL, MP, VL). **Chitinskaya oblast':** Kyra, 24.VI 1975, 1♂ (DK); Peschanka, 28.VII 1984, 1♀ (AL); Tsasuchei, 17.VII 1990, 1♀, 5♂ (TR); 20 km SE Tsasuchei, 18.VII 1990, 1♀ (TR); 20 km SSE Krasnokamensk, 4, 6.VIII 2007, 2♂ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast', Irkutskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – North China, Mongolia, North Kazakhstan, Central Asia, Caucasus, Europe, North Africa.

15. _Anthidium_ (_Anthidium_) _septemspinosum_ Lepeletier, 1841

Anthidium septemspinosum Lepeletier, 1841: 359; Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Kyakhta, 17.VII 1965, 1♀; Naushki, 5.VIII 1984, 1♀ (AL); Ivolginskii datsan, 24.VII 1990, 1♂ (TR); Ulan-Ude, 26.VII 1990, 1♀ (TR).

DISTRIBUTION. Russia: Buryatia; Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Japan (Honshu), Korea, Mongolia, North Kazakhstan, Europe.

16. _Anthidium_ (_Anthidium_) _comatum_ Morawitz, 1896

Anthidium comatum Morawitz, 1896: 164; Romankova, 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Boyarskii, 11.VII 1984, 1♂ (AL); Ivolginskii datsan, 24.VII 1990, 5♂ (TR); **Chitinskaya oblast':** Peschanka, 28.VII 1984, 1♀ (AL); 55 km E Beklemishevki, 20.VII 1990, 1♀ (TR); Gusinoe Lake, Baraty, 25.VII 2007, 1♀ (AL, MP, VL); Dzhida, 28.VII 2007, 2♀ (AL, MP, VL); Naushki, Selenga River, 30.VII 2007, 1♀, 1♂ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Europe.

17. *Anthidiellum* (*Anthidiellum*) *strigatum* (Panzer, 1805)

Trachusa strigata Panzer, 1805: 14.

Anthidiellum strigatum: Romankova, 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Kyakhta, 27.VII 1977, 1♀ (Lehr), the same place, 28.VII 1977, 2♀ (AL); Ivolginskii datsan, 24.VII 1990, 3♀, 5♂ (TR); Ulan-Ude, 26.VII 1990, 1♀ (TG); Kalenovo, 28.VII 1990, 1♂ (TR); Gusinoe Lake, Baraty, 26.VII 2007, 1♂ (AL, MP, VL). **Chitinskaya oblast':** 12 km N Darasun, Tura River, 26.VI 1975, 1♀ (DK).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Korea, West Kazakhstan, Europe, North Africa.

18. *Bathanthidium* (*Stenanthidiellum*) *sibiricum* (Eversmann, 1852)

Anthidium sibiricum Eversmann, 1852: 79.

Dianthidium sibiricum: Romankova, 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Ulan-Ude, 26.VII 1990, 2♀ (TG); **Chitinskaya oblast':** Bylyra, 23.VI 1975, 1♂ (DK); Peschanka, 28.VII 1984, 1♀ (AL); Chita, 19.VII 1990, 2♀, 3♂ (TR).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai. – Korea, North-East China.

19. *Stelis* (*Stelis*) *aculeata* Morawitz, 1880

Stelis aculeata Morawitz, 1880: 374; Romankova, 1992: 146; 1995: 533.

SPECIMENS EXAMINED. **Buryatia:** 5 km N Haushki, Kharankhoi, 3.VIII 1977, 1 ♀ (Lehr); Naushki, 2.VIII 1984, 4♀ (AL); 7 km N Ulan-Ude, 13.VI 1996, 1♀ (SR).

DISTRIBUTION. Russia: Buryatia. – Central and Middle Asia.

20. *Stelis* (*Stelis*) *melanura* Cockerell, 1924

Stelis atterima melanura Cockerell, 1924: 526.

Stelis melanura: Proshchalykin, 2007: 894.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♀ (AL, MP, VL); Naushki, Selenga River, 30.VII 2007, 3♀ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Irkutskaya oblast'; Khabarovskii krai, Primorskii krai.

21. *Trachusa* (*Trachusa*) *byssina* (Panzer, 1798)

Apis byssina Panzer, 1798: 21.

Trachusa byssina: Popov, 1964: 409; Romankova, 1992: 146 (Tsasuchei); Proshchalykin, 2007: 894.

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Chitinskaya oblast', Irkutskaya oblast'; Khabarovskii krai, Amurskaya oblast', European part. – Mongolia, Europe.

22. *Aglaoapis tridentata* (Nylander, 1848)

Coelioxys tridentata Nylander, 1848: 254
Dioxoides tridentatus: Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Dzhida, 28.VII 2007, 3♀ (AL, MP, VL); Naushki, Selenga River, 30.VII 2007, 1♀ (AL, MP, VL). **Chitinskaya oblast':** 20 km SE Tsasuchei, 18.VII 1990, 1♀, 1♂ (TR).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast', Irkutskaya oblast'; Primorskii krai, European part. – Asia Minor, Europe, Caucasus.

23. **Coelioxys* (*Allocoelioxys*) *afra* Lepeletier, 1841

Coelioxys afra Lepeletier, 1841: 525.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 4♂ (AL, MP, VL).

DISTRIBUTION. Russia: *Buryatia; Khabarovskii krai, European part. – North-Eastern China, West Europe, North Africa.

24. **Coelioxys* (*Allocoelioxys*) *emarginata* Förster, 1853

Coelioxys emarginata Förster, 1853: 288.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♀, 1♂ (AL, MP, VL).

DISTRIBUTION. Russia: *Buryatia; Amurskaya oblast', Primorskii krai, European part. – China, Turkmenistan, Europe.

25. **Coelioxys* (*Allocoelioxys*) *polycentris* Förster, 1853

Coelioxys polycentris Förster, 1853: 282.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♀ (AL, MP, VL).

DISTRIBUTION. Russia: *Buryatia; European part. – Europe.

26. *Coelioxys* (*Coelioxys*) *alata* Förster, 1853

Coelioxys alata Förster, 1853: 296; Romankova, 1992: 146.

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Transbaikalia; Irkutskaya oblast', Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Europe.

27. *Coelioxys* (*Coelioxys*) *conoidea* (Illiger, 1806)

Anthophora conoidea Illiger, 1806: 105.

Coelioxys conoidea: Romankova, 1992: 145; 1995: 547; Proshchalykin, 2006: 322; 2007: 895.

SPECIMENS EXAMINED. **Buryatia:** Boyarskii, 6.VIII 1977, 1♀ (AL); Naushki, 2.VIII 1984, 4♀ (AL), 30.VII 2007, 2♀ (AL, MP, VL); Gusinoe Lake, Baraty, 25.VII 2007, 1♂ (AL, MP, VL); Dzhida, 28.VII 2007, 2♀ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia; Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Europe.

28. *Coelioxys* (*Coelioxys*) *elongata* Lepeletier, 1841

Coelioxys elongata Lepeletier, 1841: 522; Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 25.VII 2007, 1♀ (AL, MP, VL). **Chitinskaya oblast':** 20 km SSE Krasnokamensk, 4.VIII 2007, 3♀ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, European part. – Europe.

29. *Coelioxys* (*Coelioxys*) *inermis* (Kirby, 1802)

Apis inermis Kirby, 1802: 229.

Coelioxys inermis: Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Boyarskii, 6.VIII 1977, 3♀ (AL); Gusinoe Lake, Baraty, 6.VIII 1984, 1♀ (AL). **Chitinskaya oblast':** 42 km SW Borzi, Durbachi, 23.VII 1984, 1♀ (AL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, European part. – Europe.

30. *Coelioxys* (*Coelioxys*) *lanceolata* Nylander, 1852

Coelioxys lanceolata Nylander, 1852: 279; Romankova, 1992: 146 (Ulan-Ude, Tsasuchei, Borzya).

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Transbaikalia; Irkutskaya oblast', Yakutia, Kamchatskii krai, Amurskaya oblast', European part. – Western Europe.

31. *Coelioxys* (*Coelioxys*) *mandibularis* Nylander, 1848

Coelioxys mandibularis Nylander, 1848: 252; Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Boyarskii, 6.VIII 1977, 3♀ (AL); 32 km W Selenginska, 9.VIII 1984, 1♀ (AL); Kalenovo, 28.VII 1990, 1♀ (TR); Dzhida, 28.VII 2007, 3♀ (AL, MP, VL); Naushki, Selenga River, 30.VII 2007, 1♀ (AL, MP,

VL). **Chitinskaya oblast':** Tsasuchei, 14.VII 1990, 1♀ (TR); Barun–Torei Lake, 8 km SE Kulustai, 29.VI 1996, 1♀ (Dubatolov, Kosterin); 20 km SSE Krasnokamensk, 4, 6.VIII 2007, 2♂ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Yakutia, Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, Kuril Islands (Kunashir), European part. – Europe.

32. *Coelioxys* (*Coelioxys*) *quadridentata* (Linnaeus, 1758)

Apis quadridentata Linnaeus, 1758: 577.

Coelioxys quadridentata: Romankova, 1992: 146; 1995: 547; Proshchalykin et al., 2004: 168; Proshchalykin & Kupianskaya, 2005: 14; Proshchalykin, 2006: 323; 2007: 895.

SPECIMENS EXAMINED. **Buryatia:** Temnik River, 12.VI 1961, 1♀; Boyarskii, 7.VIII 1977, 1♀ (AL). **Chitinskaya oblast':** Tsasuchei, 14.VI 1990, 1♀ (TR); 55 km E Beklemishevki, 20.VII 1990, 1♀ (TR); Chita, 31.V 1994, 1♀ (YP); Titovskaya Mt., 3, 7.VI 1994, 3♀ (YP).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Yakutia, Magadanskaya oblast', Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, European part. – Europe.

33. **Coelioxys* (*Coelioxys*) *rufescens* Lepeletier et Serville, 1852

Coelioxys rufescens Lepeletier & Serville, 1852: 109.

SPECIMENS EXAMINED. **Chitinskaya oblast':** 20 km SSE Krasnokamensk, 4, 6.VIII 2007, 6♀, 1♂ (AL, MP, VL).

DISTRIBUTION. Russia: *Chitinskaya oblast'; Yakutia, Khabarovskii krai, Amurskaya oblast', Primorskii krai, Kuril Islands (Kunashir), European part. – North-Eastern China, Asia Minor, Europe.

34. *Megachile* (*Chalicodoma*) *desertorum* Morawitz, 1875

Megachile desertorum Morawitz, 1875: 104; Romankova, 2003: 2.

SPECIMENS EXAMINED. **Buryatia:** Temnik River, 12.VI 1961, 1♀; Selenduma, 31.V 2003, 1♀, 20.V 2004, 1♂ (SR).

DISTRIBUTION. Russia: Buryatia; Tuva, European part. – Mongolia, China, Kazakhstan, Turkmenia.

35. *Megachile* (*Eumegachile*) *bombycina* Radoszkowski, 1874

Megachile bombycina Radoszkowski, 1874: 139; Romankova, 1983: 144; 1995: 542; Proshchalykin, 2007: 897.

SPECIMENS EXAMINED. **Buryatia:** Boyarskii, 12.VIII 1984, 1♂ (AL). **Chitinskaya oblast':** Peschanka, 13.VII 1925, 1♂ (Mikhno).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', European part. – North and Central Asia, Europe.

36. *Megachile* (*Eutricharaea*) *argentata* (Fabricius, 1793)

Apis argentata Fabricius, 1793: 336.
Megachile argentata: Romankova, 1984: 144; 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Ulan-Ude, 26.VII 1990, 1♀ (TR); Gusinoe Lake, Baraty, 25.VII 2007, 6♀, 9♂ (AL, MP, VL); Naushki, Selenga River, 30.VII 2007, 9♀ (AL, MP, VL). **Chitinskaya oblast':** 55 km E Beklemishevki, 20.VII 1990, 2♀ (TR); Telemba, 10.VI 1991, 1♀ (TR).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – North-Eastern China, Europe, Caucasus, North Africa, North America.

37. *Megachile* (*Eutricharaea*) *rotundata* (Fabricius, 1787)

Apis rotundata Fabricius, 1787: 303.
Megachile rotundata: Romankova, 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Temnik River, 17.VII 1961, 1♂. **Chitinskaya oblast':** 20 km SSE Krasnokamensk, 4.VIII 2007, 1♀ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Yakutia, Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Mongolia, Europe, North Africa, North and South America, New Zealand, Australia.

38. *Megachile* (*Megachile*) *alpicola* Alfken, 1924

Megachile alpicola Alfken, 1924: 357; Romankova, 1983: 144; 1992: 146; 1995: 541.
Megachile rubtzovi: Romankova, 1983: 146.

SPECIMENS EXAMINED. **Buryatia:** Naushki, Selenga River, 30.VII 2007, 1♀ (AL, MP, VL). **Chitinskaya oblast':** Yablonevyi Ridge, 20.VII 1990, 1♀ (TR); Telemba, 10.VI 1991, 2♀ (TR); Zurmanskii Pass, 15.VI 1991, 1♂ (TR).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, South Sakhalin, European part. – Korea, Europe.

39. *Megachile* (*Megachile*) *centuncularis* (Linnaeus, 1758)

Apis centuncularis Linnaeus, 1758: 575.
Megachile centuncularis: Romankova, 1983: 144 (Baturino, Makaveyevo, Bal'zinskoe); 1992: 145; 1995: 540; Proshchalykin, 2007: 897.

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Magadanskaya oblast', Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Europe, North America.

40. *Megachile* (*Megachile*) *dacica* Mocsáry, 1879

Megachile dacica Mocsáry, 1879: 9; Kokujev, 1927: 75; Romankova, 1983: 147 (Peschanka, Dzhida, Troitskosavsk).

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Buryatia, European part. – Europe.

41. *Megachile* (*Megachile*) *fulvimana* Eversmann, 1852

Megachile fulvimana Eversmann, 1852: 71; Romankova, 1983: 145 (Armak, Troitskosavsk); 1995: 542.

Megachile baicalica Kokujev, 1927: 75; Popov, 1946: 106.

SPECIMENS EXAMINED. **Chitinskaya oblast':** Onon, 19.VI 1947, 1 ♀ (Zhelokhovtsev); Chita, 26.VI 1947, 1♀ (Zhelokhovtsev); Tsasuchei, 17.VII 1990, 3♀ (TR); Yablonevyi Ridge, 20.VII 1990, 1♀ (TR); Telemba, 12.VI 1991, 1♀, 1♂ (TR); Zurmenskii Pass, 15.VI 1991, 1♂ (TR); Daurskii reserve, 29.VI 1996, 1♂ (Dubatolov, Kosterin); 20 km SSE Krasnokamensk, 6.VIII 2007, 3♂ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Yakutia, Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, Ural, European part. – Mongolia, Kazakhstan, Europe.

42. *Megachile* (*Megachile*) *lapponica* Thomson, 1872

Megachile lapponica Thomson, 1872: 227; Kokujev, 1927: 75; Romankova, 1983: 145; 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Yamarovka, 30.VI 1905, 1♂ (Mikhno); Gusinoe Lake, 29.VII 1927, 1♂ (Mikhno); Dzhida River, 13.VII 1947, 1♂ (Zhelokhovtsev); NE Baikal, Krutaya guba, 10.VII 1954, 1♀ (Yur'eva); Nizhneangarsk, 30.VII 1954, 2♀ (Popova); Tampuda River, 31.VII 1954, 1♀ (Popova); Boyarskii, 11.VIII 1984, 1♀ (AL); Ivolginskii datsan, 17.VI 1990, 1♀, 2♂ (TR); Kalenovo, 28.VII 1990, 1♂ (TR); Dzherginskii reserve, 20.VII 1994, 1♂ (SR); Maiskii, 23.VII 1995, 1♀ (SR). **Chitinskaya oblast':** Soktui, 16.VII 1958, 2♀ (Grunin); Yablonevyi Ridge, 30.VII 1984, 1♀ (AL).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast' Irkutskaya oblast'; Yakutia, North Ural, Magadanskaya oblast', Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, Kuril Islands (Kunashir). – Korea, North Europe.

43. *Megachile* (*Megachile*) *maackii* Radoszkowski, 1874

Megachile maackii Radoszkowski, 1874: 135; Romankova, 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Nizhneangarsk, 19, 27.VII 1954, 2♀, 1♂ (Popova); Ivolginskii datsan, 17.VI 1991, 1♂ (TR).

DISTRIBUTION. Russia: Buryatia, Irkutskaya oblast'; Yakutia, Magadanskaya oblast', Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Central Asia.

44. *Megachile* (*Megachile*) *melanopyga* Costa, 1863

Megachile melanopyga Costa, 1863: 45; Romankova, 1983: 146; 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** Naushki, 4.VIII 1984, 1♀ (AL).

DISTRIBUTION. Russia: Buryatia, Eastern Siberia, European part. – Japan, Korea, North-Eastern China, Caucasus, Europe.

45. **Megachile* (*Megachile*) *remota* Smith, 1879

Megachile remota Smith, 1879: 69.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♀ (AL, MP, VL); Dzhida, 28.VII 2007, 1♀ (AL, MP, VL).

DISTRIBUTION. Russia: *Buryatia, Khabarovskii krai, Primorskii krai. Japan (Kyushu), Korea, North-Eastern China.

46. *Megachile* (*Megachile*) *versicolor* Smith, 1844

Megachile versicolor Smith, 1844: 697; Romankova, 1983: 146 (Alkhaloi); 1992: 146; 1995: 541; Proshchalykin, 2007: 897.

SPECIMENS EXAMINED. No specimens examined.

DISTRIBUTION. Russia: Chitinskaya oblast'; Yakutia, Western Siberia, Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Europe.

47. *Megachile* (*Xanthosarus*) *analis* Nylander, 1852

Megachile analis Nylander, 1852: 257; Romankova, 1983: 144; 1992: 145.

SPECIMENS EXAMINED. **Buryatia:** Ivolginskii datsan, 24.VII 1990, 10♀, 4♂ (TR). **Chitinskaya oblast':** Zun-Torei Lake, 3.VII 1988, 1♂ (Kirilyuk); 55 km E Beklemishevki, 20.VII 1990, 1♀, 1♂ (TR); Preobrazhenka, 21.VII 1990, 4♀ (TR).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast', Irkutskaya oblast'; Yakutia, Magadanskaya oblast', Kamchatskii krai, Khabarovskii krai, Amurskaya oblast', Primorskii krai, North Sakhalin, European part. – North Korea, Turkmenia, Europe.

48. *Megachile* (*Xanthosarus*) *circumcincta lactescens* Cockerell, 1928

Megachile circumcincta var. *lactescens* Cockerell, 1928: 355; Davydova & Pesenko, 2002: 589.

Megachile circumcincta: Romankova, 1983: 145.

SPECIMENS EXAMINED. **Buryatia:** Ivolginskii datsan, 17.VI 1991, 1♂ (TR); Naushki, Selenga River, 30.VII 2007, 1♀ (AL, MP, VL). **Chitinskaya oblast':** Chita, 31.V 1994, 1♂ (YP); Titovskaya Mt., 3.VI 1994, 5♂ (YP); 65 km SE Chita, Kadakhta, 5.VI 1994, 2♂ (YP).

DISTRIBUTION. Russia: Buryatia, Chitinskaya oblast'; Yakutia, Amurskaya oblast'.

49. ****Megachile* **(*Xanthosarus*) ***lagopoda*** **(Linnaeus, 1761)**

Apis lagopoda Linnaeus, 1761: 422.

SPECIMENS EXAMINED. **Buryatia:** Naushki, 2.VIII 1984, 1♂ (AL); Selenduma, 21.VII 2003, 1♂ (SR); Dzhida, 28.VII 2007, 1♂ (AL, MP, VL). **Chitinskaya oblast':** Nerchinskii Zavod, 14.VIII 1996, 1♀ (Dubatolov, Brinikh); Nizhnii Tsasuchei, 18.VIII 1996, 1♂ (Dubatolov); 20 km SSE Krasnokamensk, 6.VIII 2007, 2♂ (AL, MP, VL).

DISTRIBUTION. Russia: *Buryatia, *Chitinskaya oblast'; Western Siberia, Khabarovskii krai, Amurskaya oblast', Primorskii krai. – Central Asia, Central and Northern Europe.

50. ***Megachile*** **(*Xanthosarus*)** ***maritima*** **(Kirby, 1802)**

Apis maritima Kirby, 1802: 242.
Megachile maritima: Romankova, 1983: 146.

SPECIMENS EXAMINED. **Buryatia:** Gusinoe Lake, Baraty, 26.VII 2007, 1♂ (AL, MP, VL); Dzhida, 28.VII 2007, 4♀ (AL, MP, VL); Naushki, Selenga River, 30.VII 2007, 4♀, 1♂ (AL, MP, VL).

DISTRIBUTION. Russia: Buryatia; Khabarovskii krai, Amurskaya oblast', Primorskii krai, European part. – Korea, Central Asia, Central and Southern Europe.

51. ***Megachile*** **(*Xanthosarus*)** ***willoughbiella*** **(Kirby, 1802)**

Apis willoughbiella Kirby, 1802: 233; Romankova, 1983: 146; 1992: 146.

SPECIMENS EXAMINED. **Buryatia:** NE Baikal, Nevyrkuiskii Gulf, 5.VII 1954, 2♂ (Popov); Ivolginskii datsan, 24.VII 1990, 2♀ (TR); Preobrazhenka, 21.VII 1990, 2♀ (TR); Kalenovo, 28.VII 1990, 2♂ (TR). **Chitinskaya oblast':** Zun-Torei Lake, 8.VII 1988, 6♂ (Kirilyuk); Solov'evsk, 17.VII 1988, 1♀ (Kirilyuk); Chita, 19.VII 1990, 6♀ (TR), 31.V–3.VI 1994, 17♀ (YP); 55 km SW Chita, Yablonevyi Ridge, 4.VI 1994, 53 (YP); Tsasuchei, 13.VII 1990, 2♀, 2♂ (TR); 20 km SSE Krasnokamensk, 4.VIII 2007, 13♀ (AL, MP, VL).

DISTRIBUTION. Russia: Irkutskaya oblast'; Yakutia, Magadanskaya oblast', Khabarovskii krai, Amurskaya oblast', Primorskii krai, Sakhalin, kuril Islands (Kunashir), European part. – Japan (Hokkaido, Honshu), Europe.

PATTERNS OF DIVERSITY

The megachilid fauna of Transbaikalia numbers 51 species in 11 genera. They are collected mainly in the southern part of the region. (Fig. 1). Forty-three species in ten genera are distributed in Buryatia and 33 species in eight genera are in Chi-

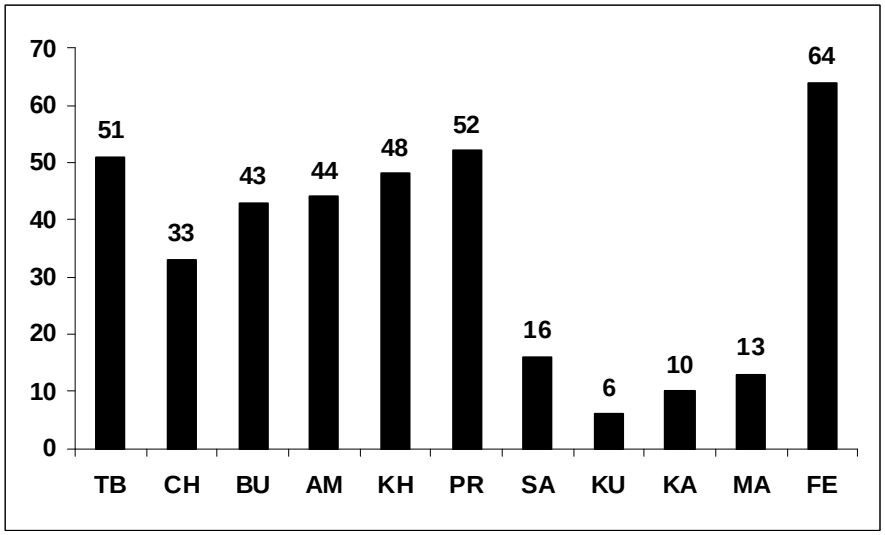

Fig. 2. Number of megachilid species distributed in the Transbaikalia and Russian Far East. (Regions: TB – Transbaikalia, CH – Chitinskaya oblast', BU – Buryatia, AM – Amurskaya oblast', KH – Khabarovskii krai, PR – Primorskii krai, SA – Sakhalin, KU – Kuril Islands, KA – Kamchatskii krai, MA – Magadanskaya oblast').

tinskaya oblast' (Fig. 2). The are no endemic species of megachilids in this region. The megachilid fauna of Transbaikalia is very similar with one of the Russian Far East (44 common species). Seven species: *Hoplitis fulva* (Eversmann), *H. princeps* (Morawitz), *Anthidium manicatum* (Linnaeus), *Stelis aculeata* Morawitz, *Coelioxys polycentris* Förster, *Megachile desertorum* Morawitz, and *M. melanopyga* Costa, which are distributed in Transbaikalia are not represented in the fauna of the Russian Far East.

ACKNOWLEDGEMENTS

My great thanks are due to Yu.A. Pesenko [ZISP], A.V. Antropov [ZMMU], V.V. Dubatolov [ISEN], S.G. Rudykh [IGBU], and A.G. Kotenko [IZK] curators of the bee collections, for kindly loaned specimens, A.S. Lelej, S.Yu. Storozhenko and V.M. Loktionov (IBSS] for help during field survey and collecting of the bees, and A.S. Lelej for advising and critical reading of the manuscript.

REFERENCES

Alfken, J.D. 1924. *Megachile centuncularis* L. und ihre Verwandten. – Deutsche entomologische Zeitschrift, 68: 355–360.

Banaszak, J.& Romasenko, L. 1998. Megachilid bees of Europe (Hymenoptera, Apoidea, Megachilidae). Bydgoszcz: Pedagogical Univ. Bydgoszcz. 239 p.

Benoist, R. 1929. Description d'une novelle espèce d'Osmie du Japon. – Annales de la Société entomologique de France, 98: 142.

Cockerell, T.D.A. 1924. Descriptions and records of bees. XCIX. – The Annals and Magazine of Natural History, ser. 9, 13(77): 523–530.

Cockerell, T.D.A. 1928. Bees collected in Siberia in 1927. – The Annals and Magazine of Natural History, ser. 10, 1: 345–361.

Costa, A. 1863. Nuovi studii sulla entomologia della Calabria ulteriore. – Atti dell'Accademia nazionale di scienze fisiche e matematiche di Napoli, 1(2): 1–80.

Davydova, N.G. & Pesenko, Yu.A. 2002. Fauna pchel (Hymenoptera, Apoidea) Yakutii. I. [Bee fauna (Hymenoptera, Apoidea) of Yakutia. I]. – Entomologicheskoe obozrenie, 81(3): 382–599. (In Russian).

Eversmann, E. 1852. Fauna Hymenopterologica Volgo–Uralensis. – Bulletin de la Imperiale Society d'Naturalistes de Moscou, 25(2): 3–137.

Fabricius, J.Ch. 1787. Mantissa Insectorum sistens eorum species nuper detectas adiectis characteribus genericis, differentiis, specificis, emendationibus. Hafniae (Proft), 1, 20 + 348 p.

Fabricius, J.Ch. 1793. Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species adjectis synonymis, locis, observationibus, descriptionibus. Hafniae (Proft), 2, 8 + 519 p.

Förster, A. 1853. Eine Centurie neuer hymenopteren. Sechste bis zehnte Decade. – Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens, 10: 266–362.

Friese, H. 1885. Über einige seltene, zum Theil neue Apiden. – Entomologisches Nachrichtenblatt Berlin, 11: 81–87.

Gerstäcker, C.E.A. 1869. Beiträge zur näheren Kenntnis einiger Bienen–Gattungen. – Entomologische Zeitung, 30: 315–367.

Illiger, K. 1806. William Kirbys Familien der bienenartigen Insecten mit Zusätzen, Nachweisungen und Bemerkungen. – Magazin für Insektenkunde, 5: 28–175.

Kirby, W. 1802. Monographia Apum Angliae. II. Ipswich, 388 p.

Kokuev, N.R. 1927. Hymenoptera, sobrannye V.V. Sovinskim na beregakh ozera Baikala v 1920 godu [Hymenoptera collected by V. Sovinskij on shore of the Baikal Lake in 1902]. – Trudy Komissii po izucheniyu ozera Baikala. T. 2. Leningrad: AN SSSR: 63–76. (In Russian).

Latreille, P.A. 1809. Genera Crustaceorum et Insectorum. Paris, T.4. 399 p.

Lepeletier, A.L.M. 1841. Histoire naturelle des Insectes. Hyménoptères. Vol. 2. Librairie Encyclopédique de Roret, Paris. 680 p.

Lepeletier, A.L.M. & Serville, A. 1852. Insectes. – In: Encyclopédie méthodique. Histoire naturelle, 10: 1–833.

Linnaeus, C. 1758. Systema naturae per regna tria naturae secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. T. I. Editio X. Holmiae, 823 p.

Linnaeus, C. 1761. Fauna Suecica sistens animalia Sueciae rengi: mammalia, aves, amphibia, pisces, insecta, vermes. Laurentii Salvii, Stockholminae. 578 p.

Michener, Ch.D. 2007. The Bees of the World. Baltimore, London: John Hopkins University Press. Second edition. 953 p.

Mocsáry, A. 1879. Mellifera nova in collectione Musei Nationalis Hungarici. – Természetrajzt Füzetek, 3: 8–12.

Morawitz, F. 1872. Neue suedrussische Bienen. – Horae Societatis Entomologicae Rossicae, 9(1): 45–62.

Morawitz, F. 1875. Pchely (Mellifera). (I. Apidae genuinae) [Bees (Mellifera). (I. Apidae genuinae)]. – V serii: Puteshestvie v Turkestan A.P. Fedchenko, Moscow, I–II: 1–160.

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. 1896. Neue *Anthidium*–Arten. – Horae Societatis Entomologicae Rossicae, 30(1/2): 161–168.

Nylander, W. 1848. Adnotationes in Expositionem Monographicam Apum Borealium. – Notiser ur Sällskapets pro Fauna et Flora Fennica Förhandlingar, 1: 165–282.

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

Panzer, G.W.F. 1798. Faunae Insectorum Germanicae initia oder Deutschlands Insecten. Nürnberg, H. 49–60.

Panzer, G.W.F. 1805. Faunae Insectorum Germanicae initia oder Deutschlands Insecten. Nürnberg, H. 85–96.

Popov, V.B. 1946. Notes on the nomenclature of the bees (Hymenoptera, Apoidea). – Proceedings of the Royal Society of London, Ser. B; Biological Sciences, 15 (9/10): 106–109.

Popov, V.B. 1964. O rodakh pchel *Trachusa* Panzer i *Trachusomimus* gen. n. (Hymenoptera, Megachilidae) [On the genera *Trachusa* Panzer and *Trachusomimus* gen. n. (Hymenoptera, Megachilidae)]. – Entomologicheskoe obozrenie, 43(2): 403–417.

Predbaikal'e i Zabaikal'e. Prirodnye usloviya i estestvennye resursy SSSR. 1965. Moscow: Nauka. 492 p. (In Russian).

Proshchalykin, M.Yu. 2003. The bees (Hymenoptera, Apoidea) of the Kuril Islands. – Far Eastern entomologist, 132: 1–21.

Proshchalykin, M.Yu. 2006. Pchely roda *Coelioxys* Latreille, 1809 (Hymenoptera, Apoidea, Megachilidae) fauny Dal'nego Vostoka Rossii [Bees of the genus *Coelioxys* Latreille, 1809 (Hymenoptera, Apoidea, Megachilidae) from the Russian Far East]. – Evrasiatskii entomologicheskii zhurnal, 5(4): 318–324. (In Russian).

Proshchalykin, M.Yu. 2007. Family Megachilidae. – In: Lelej, A.S., Belokobylskij, S.A., Kasparyan, D.R., Kupianskaya, A.N. & Proshchalykin, M.Yu. (eds.). Opredelitel' nasekomyh Dal'nego Vostoka Rossii [Key to the insects of Russian Far East]. Vol. 4. Neoropteroidea, Mecoptera, Hymenoptera. Pt. 5. Vladivostok: Dal'nauka. P. 889–897. (In Russian).

Proshchalykin, M.Yu., Lelej, A.S. & Kupianskaya, A.N. Fauna pchel (Hymenoptera, Apoidea) ostrova Sakhalin [Bee fauna (Hymenoptera, Apoidea) of Sakhalin Island]. – In: Storozhenko, S.Yu., Bogatov, V.V., Lelej, A.S. & Makarchenko, E.A. (eds.). Flora and fauna of Sakhalin Island. Materials of the International Sakhalin Island Project. Vladivostok: Dalnauka: 154–192. (In Russian).

Proshchalykin, M.Yu. & Kupianskaya, A.N. 2005. The bees (Hymenoptera, Apoidea) of the northern part of the Russian Far East. – Far Eastern entomologist, 153: 1–39.

Radoszkowski, O. 1874 (1873). Supplément indispensable a l'article publié par M. Gerstaecker en 1869, sur quelques genres d'Hyménoptères. (Suite et Fin). – Bulletin de la Imperiale Society d'Naturalistes de Moscou, 46(2/3): 132–151.

Romankova, T.G. 1983. Pchelinye roda *Megachile* Latr. (Hymenoptera, Apoidea, Megachilidae) fauny Sibiri i Dalnego Vostoka SSSR [Bees of the genus *Megachile* Latr. (Hymenoptera, Apoidea, Megachilidae) from Siberia and the Far East of the USSR]. – In: Soboleva, R.G. (ed.). Taxonomy and Ecological–Faunal Survey of Some Insect Orders in the Far East. Vladivostok: 141–147. (In Russian).

Romankova, T.G. 1984. Pchelinye roda *Osmia* Panz. (Hymenoptera, Megachilidae) fauny Dal'nego Vostoka [Bees of the genus *Osmia* Panz. (Hymenoptera, Megachilidae) in the fauna of the Far East [of the USSR]. – Entomologicheskoe Obozrenie, 53(2): 358–364. (In Russian).

Romankova, T.G. 1992. Bdzholini rodini Megachilidae Zabaikal'ya [Bees of the family Megachilidae in Transbaikalia]. – In: Dolin, V.G. (ed.). The 4th Congress of the Ukrainian Entomological Society (Kharkov, September 1992); Kharkov (Ukrainian Entomological Society): 145–146. (In Ukranian).

Romankova, T.G. 1994. Novye dannye po faune pchelinykh Sibiri i Dal'nego Vostoka (Hymenoptera, Apoidea, Megachilidae) [New data on the bee fauna of Siberia and the Far East (Hymenoptera, Apoidea, Megachilidae)]. – In: Kotenko, A.G. (ed.). Pereponchatokrylye Sibiri i Dal'nego Vostoka. Vypusk 3. Sbornik nauchnykh trudov zapovednika "Daurskii". Kiev (Institut zoologii Natsional'noi akademii nauk Ukrainy): 119–128. (In Russian).

Romankova, T.G. 1995. Family Megachilidae. – In: Lelej, A.S., Kupianskaya, A.N., Kurzenko, N.V. & Nemkov, P.G. (eds.). Opredelitel' nasekomyh Dal'nego Vostoka Rossii [Key to the insects of Russian Far East]. Vol. 4. Neoropteroidea, Mecoptera, Hymenoptera. Pt. 1. St. Petersburg: Nauka. P. 530–547. (In Russian).

Romankova, T.G. 2003. Additional data on the bee fauna (Hymenoptera, Apoidea: Megachidae, Apidae) of Siberia and the Russian Far East. – Far Eastern entomologist, 129: 1–6.

Smith, F. 1844. Notes on various Hymenopterous Insects, and descriptions of two new British Bees. – Zoologist, 2: 405–410.

Smith, F. 1879. Descriptions of New Species of Hymenoptera in the collection of the British Museum, London. 240 p.

Thomson, C.G. 1872. Skandinaviens Hymenoptera. – Lund, 2: 1–286.

Zetterstedt, J.W. 1838. Insecta Lapponica descripta. Sectio II. Hymenoptera. Lipsiae (Voss). Apoidea: 315–476.