

New Data on the Pteromalid Wasps (Hymenoptera, Chalcidoidea: Pteromalidae) of Krasnodar Territory (Russia)¹

E. V. Tselikh^a and V. V. Kostjukov^b

^aZoological Institute, Russian Academy of Sciences, St. Petersburg, 199034 Russia

e-mail: tselikhk@gmail.com

^bAll-Russia Research Institute of Biological Plant Protection, Russian Academy of Sciences, Krasnodar, 350039 Russia

e-mail: salchia@yandex.ru

Received May 6, 2016

Abstract—Three genera (*Erdoesia* Bouček, *Metastenus* Walker, and *Novitzkyanus* Bouček) and 24 species are recorded for the first time for the fauna of Russia; in addition, 39 species are new for the fauna of Krasnodar Territory. New host–parasite associations are revealed for 6 species of pteromalid wasps.

DOI: 10.1134/S0013873817010067

Pteromalidae is one of the largest families of Chalcidoidea, the Russian fauna of which has been studied very fragmentarily. The pteromalid fauna of the Russian Far East has been intensely investigated in recent years (Tselikh, 2011, 2012a, 2012b, 2013, 2015, 2016; Burks, 2013; Tselikh and Mitroiu, 2014), but large territories of Siberia and the south of the European part of Russia remain poorly explored. Data on 16 pteromalid-wasp species of Krasnodar Territory are available in a number of publications (Novitzky, 1955; Tselikh, 2010; Kostjukov et al., 2014, 2015).

In the present paper, new data on the fauna and host–parasite associations of the pteromalid wasps of Krasnodar Territory are given.

MATERIALS AND METHODS

The study is based on examination of the large collection material of the Zoological Institute, Russian Academy of Sciences (St. Petersburg; ZIN), the All-Russia Research Institute of Biological Plant Protection, Russian Academy of Sciences (Krasnodar; ARRBPP), and the Center of Forest Health of Krasnodar Regions (Krasnodar) and also the material collected in Severskii and Tuapsinskii districts, in the environs of the city of Goryachii Klyuch and in Lazarevskii District of the city of Sochi.

The material was examined in the laboratory using a MC-2 ZOOM microscope and Leica MZ16 stereo-

microscopes. The slides were examined using a Mikromed 3 microscope.

Most of the studied material on the Pteromalidae of Krasnodar Territory consisted in the collection of the Zoological Institute, Russian Academy of Sciences; this material was mostly collected by V.I. Tobias, V.A. Trjapitzin, O.V. Kovalev, V.I. Shchurov, O.V. Kosheleva, E.V. Tselikh, and D.V. Rachin.

The classification of pteromalid wasps follows that in the Universal Chalcidoidea Database—World Web Electronic Publication (Noyes, 2016) which also presents a detailed bibliography and data on synonymy and hosts. Data on the distribution are cited after Noyes (2016), with account of taxonomic and faunistic publications on some pteromalid groups (Tselikh, 2010, 2011, 2013, 2016; Burks, 2013; Kostjukov et al., 2015).

In the text, one asterisk (*) designates the species recorded for the fauna of Krasnodar Territory and the Far East of Russia for the first time, two asterisks (**), species new to the Russian fauna.

RESULTS

FAMILY PTEROMALIDAE

Subfamily ASAPHINAE

1. **Asaphes suspensus* (Nees, 1834).

Material. Russia. Krasnodar Terr.: Slavyansk-on-Kuban: 8–9.VI.1978, 28.X.1980 (Pukinskaya), 4 ♀, 3 ♂; same locality, 2.IV.1979, 18.VI.1979, 2.VII.1979 (Solovieva), 4 ♀, 2 ♂; Sochi, Lazarevskoe, Polkovnich'ya (Generalskaya) Gully, 29.VII.2009 (E.V. Tse-

¹ This article was originally submitted by the authors in Russian and is first published in translation.

likh, D.V. Rachin), 1 ♀; Krasnodar, ARRBPP, Moriger traps, 21.VI.2012 (O.V. Kosheleva), 2 ♂. *Kamchatka Terr.*: Klyuchevskoe Vill., Kamchatka River, 6–10.VI.1909 (Derzhavin), 23 ♂; Milkovo Vill., 6.VII.1985 (S.A. Belokobylskij), 1 ♀; Kozyrevsk Vill., 24.VII.1985 (S.A. Belokobylskij), 1 ♀. *Amurskaya Prov.*: 25 km N of Svobodnyi Vill., Bolshaya Pera River, 31.VII–2.VIII.2003 (S.A. Belokobylskij), 1 ♀.

Distribution. Russia: Krasnodar Territory, Eastern Siberia, the Far East (*Kamchatka Territory, *Amurskaya Province, Primorskii Territory, Sakhalin Province).—West and East Europe, North Africa, Turkey, Israel, Middle Asia, Iran, Pakistan, Nepal, China, North and South Korea, Japan, India, North and South America.

Biology. A hyperparasitoid of Aphidiidae and Aphelinidae which are parasitoids of aphids (Aphidoidea).

Subfamily CLEONYMINAE

2. ***Cleonymus laticornis* Walker, 1837.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, forest, 8.VII.1981 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, North Africa, North America.

Biology. A primary parasitoid of many species of Coleoptera: *Ochina ptinoides* Marsham (Anobiidae), *Gracilia minuta* (Fabricius), *Molorchus minor* (L.) (Cerambycidae), *Hylesinus toranio* (Danthoine) (Curculionidae: Scolytinae), and *Mecinus pyraister* (Herbst) (Curculionidae: Curculioninae).

3. **Heydenia pretiosa* Förster, 1856.

Material. Russia. *Krasnodar Terr.*: Gelendzhik, Kabardinka Vill., 21.VIII.2014 (A.S. Bondarenko), 2 ♀, 2 ♂.

Distribution. Russia: Samara Province, Krasnodar Territory.—West and East Europe, Israel, Iran.

Biology. A primary parasitoid of many bark-beetle species (the family Curculionidae, subfamily Scolytinae) and also of *Phaenops cyanea* (Fabricius) (Buprestidae), *Acanthocinus griseus* (Fabricius) (Cerambycidae), and *Magdalis armigera* (Geoffroy) (Curculionidae). In addition, it was reared from *Cosmophorus cembrae* Ruschka (Hymenoptera, Ichneumonidae).

4. ***Notanisis sexramosus* (Erdős, 1946).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, forest, clearings, 2–4.V.1973, 10–11.V.1979 (V.I. Tobias), 4 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Azerbaijan, North America.

Biology. A primary parasitoid of *Tetramesa calamagrostidis* (Schlechtendal) and *Tetramesa* sp. (Hymenoptera, Eurytomidae).

Subfamily COLOTRECHNINAE

5. ***Colotrechnus subcoeruleus* Thomson, 1878.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, forest edge, 8.VII.1974 (V.I. Tobias), 2 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Transcaucasia, Kazakhstan, India.

Biology. A primary parasitoid of *Melanagromyza* sp. (Diptera, Agromyzidae).

Subfamily MISCOGASTERINAE

6. **Halticoptera collaris* (Walker, 1836).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 10–11.V.1979 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar, Khabarovsk, and Primorskii territories, Sakhalin Province.—West and East Europe.

Biology. A primary parasitoid of *Ophiomyia phaseoli* (Tryon) (Diptera, Agromyzidae).

7. *Halticoptera patellana* (Dalman, 1818).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 3–6.VI.1974 (V.I. Tobias), 2 ♀. *Sakhalin Prov.*: Kunashir Island, Golovnin Volcano: 11–13.VI.1973 (I.M. Kerzhner), 3 ♂; 24.VII.1973 (D.R. Kasparyan), 1 ♂; Alekhino Vill., 28.VII.1973 (D.R. Kasparyan), 1 ♂; Dubovoe Vill., 31.VIII.1973 (D.R. Kasparyan), 1 ♂; Sernovodsk Vill., 22.VII.1981 (S.A. Belokobylskij), 1 ♀, 1 ♂.

Distribution. Russia: Krasnodar (Kostjukov et al., 2015) and Primorskii territories, *Sakhalin Province; without specifying regions (Peck, 1963).—The Canaries, West and East Europe, Turkey, China, Japan, the Hawaii, North and South America.

Biology. A primary parasitoid of many species of the dipterous families Agromyzidae, Cecidomyiidae, Chloropidae, Drosophilidae, and Tephritidae; it was also reared from *Phloeosinus dentatus* (Say) (Coleoptera, Curculionidae: Scolytinae) and *Leucoptera laburnella* (Stainton) (Lepidoptera, Lyonetiidae).

8. **Merismus megapterus* Walker, 1833.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 10–11.V.1979 (V.I. Tobias), 1 ♀. *Kamchatka Terr.*: 20 km N of Kozyrevsk Vill., 21.VII.1985 (S.A. Belokobylskij), 1 ♀; Kozyrevsk Vill., 24.VII.1985 (S.A. Belokobylskij), 1 ♀; Pinachevo Vill., Nalychevo Nature Park, 9.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀; 80 km S of Lazo Vill., Kronotskii Nature Reserve, Ipuin locality, 55°06.969'N, 159°57.925'E, 18.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀; 90 km S of Lazo Vill., Kipele locality, 55°08.165'N, 160°05.832'E, 20.VII.2013 (E.V. Tselikh, D.V. Rachin), 3 ♀; 15 km W of Elizovo Vill., Mt. Moroznaya, 53°09.709'N, 158°13.023'E, 27.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar, *Kamchatka and Primorskii territories, Sakhalin Province.—West and East Europe, Kazakhstan, Mongolia, China, South Korea, Japan, North America.

Biology. A primary parasitoid of many species of the dipterous family Agromyzidae and also of the lepidopterans *Biselachista serricornis* (Stainton), *B. utonella* Frey, *Elachista fulgens* Parenti, and *E. maculicerusella* (Bruand) (Elachistidae).

9. *Miscogaster rufipes* Walker, 1833.

Material. Russia. *Krasnodar Terr.*: Krasnodar, ARRBPP, garden, Moericke traps, 23–28.IX.2011 (O.V. Kosheleva), 1 ♀, 4 ♂.

Distribution. Russia: Krasnodar Territory (Kostjukov et al., 2015).—West and East Europe, Turkey, Kazakhstan.

Biology. A primary parasitoid of *Agromyza abiens* Zetterstedt, *A. pseudoreptans* Nowakowski, *A. reptans* Fallen, *A. rufipes* Meigen, *Phytomyza medicaginis* Hering, and *Phytomyza* sp. (Diptera, Agromyzidae).

Subfamily ORMOCERINAE

10. **Semioteilus mundus* (Walker, 1834).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, area cleared for power line, 1.X.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar and Kamchatka territories.—West and East Europe, China.

Biology. A primary parasitoid of *Mayetiola dactylidis* Kieffer and *M. destructor* (Say) (Diptera, Cecidomyiidae).

11. **Systasis encyrtoides* Walker, 1834.

Material. Russia. *Krasnodar Terr.*: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E, 22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀.

Distribution. Russia: Belgorod and Voronezh provinces, Krasnodar Territory, Magadan and Amurskaya provinces, the Jewish Autonomous Area, Primorskii Territory, Sakhalin Province.—The Canaries, West and East Europe, North Africa, Azerbaijan, Turkey, Israel, Middle Asia, Iran, China, North America.

Biology. A primary parasitoid of many species of the dipterous families Agromyzidae, Cecidomyiidae, and Tephritidae; it was also reared from the lepidopterans *Cochylidia implicitana* (Wocke) and *Tortrix viridana* L. (Tortricidae) and the coleopterans *Exapion fuscirostre* (Fabricius) (Apionidae), *Bruchidius ater* (Marsham) (Bruchidae), and *Tychius medicaginis* Brisout (Curculionidae).

12. ***Systasis parvula* Thomson, 1876.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 29–31.VII.1972 (O.V. Kovalev), 1 ♀, 1 ♂.

Distribution. Russia: Krasnodar Territory.—The Canaries, West and East Europe, Kazakhstan, China, North America.

Biology. A primary parasitoid of the dipterans *Bremiella caraganae* Fedotova, *Contarinia medicaginis* Kieffer, *Dasineura berteroeae* (Stelter), and *Schizomyia galiorum* Kieffer (Cecidomyiidae).

Subfamily PTEROMALINAE

13. **Anisopteromalus calandrae* (Howard, 1881).

Material. Russia. *Krasnodar Terr.*: Krasnodar, crops, 21.IX.1946 (Zagainyi), 1 ♀.

Distribution. Russia: Krasnodar Territory.—Distributed nearly worldwide.

Biology. A primary parasitoid of many species of the coleopterous families Anobiidae, Anthribidae, Apionidae, Bostrichidae, Bruchidae, Curculionidae, Dermestidae, Dryophthoridae, Nitidulidae, Silvanidae,

and Tenebrionidae and also the lepidopterous families Gelechiidae and Pyralidae.

14. **Apsilocera bramleyi* Graham, 1966.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, VIZR, forest, 21.VII.1975 (V.A. Trjapitzin), 1 ♀.

Distribution. Russia: Krasnodar and Primorskii territories.—West and East Europe, Iran, Japan.

Biology. A primary parasitoid of the gall midge *Mycocecis ovalis* Edwards (Diptera, Cecidomyiidae).

15. **Catolaccus ater* (Ratzeburg, 1852).

Material. Russia. *Krasnodar Terr.*: Krylovskii Distr., Eya River valley, steppe, *Zygaena laeta*, 20.VIII.2013 (V.I. Shchurov), 5 ♀, 2 ♂. *Magadan Prov.*: 12 km N of Seimchan, Lazo Vill., 30 and 31.VII.1975 (V.G. Marshakov), 1 ♀. *Kamchatka Terr.*: Pinachevo Vill., Nalychevo Nature Park, 6.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀; 80 km S of Lazo Vill., Kronotskii Nature Reserve, Ipuin locality, 55°06.969'N, 159°57.925'E, 23–24.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂; 90 km S of Lazo Vill., Kipelye locality, 55°08.165'N, 160°05.832'E, 20.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Kursk, Moscow, and Rostov provinces, Krasnodar Territory, Karachay-Cherkessia, *Magadan Province, *Kamchatka and Primorskii territories.—The Canaries, West and East Europe, Turkey, Armenia, Azerbaijan, Middle Asia.

Biology. A primary parasitoid of many species of the coleopterous family Curculionidae, the lepidopterous families Arctiidae, Gelechiidae, Geometridae, Lymantriidae, Noctuidae, Nymphalidae, Pieridae, Tortricidae, and Yponomeutida, and the dipteran *Contarinia pyrivora* (Rile) (Cecidomyiidae); it was reared for the first time from *Zygaena laeta* (Hübner) (Zygaenidae). A secondary parasitoid of the hymenopterous families Braconidae and Bethyidae.

16. *Cheiopachus quadrum* (Fabricius, 1787).

Material. Russia. *Krasnodar Terr.*: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E, 22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; city of Goryachii Klyuch, waterfall on Kesukh River, 44°26.19'09"N, 39°01'52.3"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂.

Distribution. Russia: the European part, Krasnodar (Tselikh, 2010), Khabarovsk, and Primorskii territories.—The Canaries, West and East Europe, North Africa, Georgia, Armenia, Azerbaijan, Turkey, Israel, Iran, Middle Asia, Pakistan, China, India, North and South America.

Biology. A primary parasitoid of many species of the coleopterous families Bostrichidae, Cerambycidae, and Curculionidae (Scolytinae); it was also reared from the lepidopterans *Zeuzera pyrina* (L.) (Cossidae) and *Lymantria dispar* (L.) (Lymantriidae).

17. ***Chlorocytus inchoatus* Graham, 1965.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, Polkovnich'ya (Generalskaya) Gully, 29.VII.2009 (E.V. Tselikh, D.V. Rachin), 2 ♀; Novomikhailovskoe Vill., 30.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West Europe.

Biology. A primary parasitoid of the dipterans *Melanagromyza aeneoventris* (Fallén) and *M. dettmeri* Hering (Agromyzidae).

18. **Chlorocytus planus* (Walker, 1834).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, clearings, 23–30.VI.1974 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar and Primorskii territories.—West and East Europe.

Biology. A secondary parasitoid of *Tetramesa angustipenne* (Walker) (Eurytomidae) and *Mesopolobus graminum* (Hardh) (Pteromalidae).

19. ***Chlorocytus spicatus* (Walker, 1835).

Material. Russia. *Krasnodar Terr.*: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E, 22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀.

Distribution. Russia: Krasnodar Territory.—The Canaries, West and East Europe, China.

Biology. A primary parasitoid of the coleopteran *Ceutorhynchus* sp. (Curculionidae), the dipterans *Agromyza angelicae* Frost, *Melanagromyza aeneoventris* (Fallén), *M. lappae* (Loew), *Melanagromyza* sp., and *Phytomyza flavicornis* Fallén (Agromyzidae), and the lepidopteran *Phyllonorycter platani* (Staudinger) (Gracillariidae).

20. ***Chlorocytus terminalis* (Walker, 1836).

Material. Russia. *Krasnodar Terr.*: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E, 22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe.

Biology. A primary parasitoid of the weevils *Apion* sp. and *Perapion violaceum* (Kirby) (Apionidae).

21. **Coelopisthia extenta* (Walker, 1835).

Material. Russia. *Krasnodar Terr.*: Dinskoi Distr., environs of Vasyurinskaya Vill., *Hyphantria cunea*, 2.VIII.2014 (V.I. Shchurov), 22 ♀, 1 ♂; Severskii Distr., Planchesкая Shchel Vill., 44°39'0.15"N, 38°36'54.5"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀. *Magadan Prov.*: 12 km N of Seimchan Vill., 30 and 31.VII.1975 (V.G. Marshakov), 4 ♀, 1 ♂. *Kamchatka Terr.*: 10 km SW of Esso Vill., Bystrinskii Nature Park, 55°51.040'N, 158°38.167'E, 14–16.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀. *Amurskaya Prov.*: Khinganskii Nature Reserve, Kundur Vill., 17–20.VII.2003 (S.A. Belokobylskij), 1 ♀. *Jewish Autonomous Area*: 12 km W of Birobidzhan, Kirga Vill., 16.VI.1983 (D.R. Kasparian), 2 ♀.

Distribution. Russia: Moscow Province, Krasnodar Territory, *Magadan Province, *Kamchatka and Khabarovsk territories, *Amurskaya Province, *the Jewish Autonomous Area, Primorskii Territory, Sakhalin Province.—West and East Europe, Transcaucasia, Middle Asia, North America.

Biology. A primary parasitoid of many species of the coleopterous family Curculionidae, the lepidopterans *Cerapteryx graminis* (L.) (Noctuidae), *Choristoneura murinana* (Hübner) (Tortricidae), *Hyphantria cunea* (Drury), *Tyria jacobaeae* (L.) (Arctiidae), and *Macaria continuaria* (Eversmann) (Geometridae), and also the soft scale *Physokermes piceae* (Schrank) (Hemiptera, Coccidae).

22. **Conomorium amplum* (Walker, 1835).

Material. Russia. *Krasnodar Terr.*: Krasnodar, ARRBPP, garden, Moericke traps, 7. Kh.2011 (O.V. Kosheleva), 9 ♀; Abrau Peninsula, Bolshoi Utrish Vill., *Pima boisduvaliella*, 30.V.2001 (V.I. Shchurov), 4 ♀; Sochi, Lazarevskoe, Polkovnich'ya (General'skaya) Gully, 27.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀.

Distribution. Russia: Krasnodar Territory, the Jewish Autonomous Area, Primorskii Territory.—The Canaries, West and East Europe, Kazakhstan, Uzbekistan, China.

Biology. A primary parasitoid of many species of the lepidopterous families Arctiidae, Geometridae, Lymantriidae, and Notodontidae; it was reared for the first time from *Pima boisduvaliella* (Guenée) (Pyraliidae).

23. **Coruna clavata* Walker, 1833.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 10–11.V.1979 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar, Kamchatka, and Khabarovsk territories, Amurskaya Province, Primorskii Territory, Sakhalin Province; without specifying the region in Russia (Peck, 1963).—West and East Europe, Turkey, Kazakhstan, South Korea, Japan, India, North America.

Biology. A primary parasitoid of many species of the aphid family Aphididae and also a secondary parasitoid of the hymenopterous families Aphelinidae, Aphidiidae, and Megaspilidae.

24. **Cyclogastrella simplex* (Walker, 1834).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 3–6.VI.1974 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar and Primorskii territories.—West and East Europe, North Africa, Kazakhstan, Uzbekistan, North America.

Biology. A primary parasitoid of the lepidopterous families Gelechiidae and Tortricidae. It is also known as a parasitoid of *Goniozus claripennis* (Foerster) (Hymenoptera, Bethyridae).

25. **Dibrachys microgastri* (Bouché, 1834).

Material. Russia. *Krasnodar Terr.*: Utrish Nature Reserve, Mt. Soldatskaya, juniper, *Dichomeris marginella*, 6–7.VII.2000 (V.I. Shchurov), 3 ♀, 1 ♂.

Distribution. Russia: Moscow, Nizhniy Novgorod, and Voronezh provinces, Krasnodar Territory, Kalmykia, Magadan Province, Kamchatka Territory.—West and East Europe, North Africa, Turkey, Middle Asia, Iran, Afghanistan, Pakistan, China, South Korea, Japan, India, South Africa, North and South America, Australia, New Zealand.

Biology. A wide polyphage parasitizing many species of the orders Coleoptera, Dermaptera, Diptera, Hemiptera, Hymenoptera, Lepidoptera, Neuroptera, and Strepsiptera.

26. **Dinarmus acutus* (Thomson, 1878).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 29–31.VII.1972 (O.V. Kovalev), 1 ♀.

Distribution. Russia: Krasnodar and Primorskii territories.—West and East Europe, North Africa, Transcaucasia, Turkey, Israel, Iran, Iraq, Kazakhstan, India, Sri Lanka, South Africa, North America.

Biology. A primary parasitoid of many species of bean weevils (Bruchidae); it was also reared from *Ceroplastes rusci* (L.) (Hemiptera, Coccidae). This species is also known as a secondary parasitoid of the pteromalid wasps *Dinarmus* sp. (Pteromalidae).

27. ***Erdoesia tessellata* Bouček, 1957.

Material. Russia. *Krasnodar Terr.*: Severskii Distr., Verkhneafipskoe hunting area, 44°36'6.58"N, 38°35'15.6"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; Sochi, Lazarevskoe, forest edge, 8.VII.1974, 10–11.V.1979 (V.I. Tobias), 3 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe.

Biology unknown.

28. **Erythromalus rufiventris* (Walker, 1835).

Material. Russia. *Krasnodar Terr.*: Severskii Distr.: Verkhneafipskoe hunting area, 44°36'6.58"N, 38°35'15.6"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; Planchesкая Shchel Vill., 44°39'0.15"N, 38°36'54.5"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 10 ♀, 1 ♂; Sochi, Lazarevskoe, 3–6.VI.1974 (V.I. Tobias), 1 ♀; same locality, Mamedov Gorge, Berendeevo Tsarstvo locality, 43°56'53.4"N, 39°19'08.3"E, 17.IX.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory, Yaroslavl Province.—West and East Europe.

Biology unknown.

29. ***Gastracanthus pulcherrimus* Westwood, 1833.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 1–12.X.1981 (V.I. Tobias), 2 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Iran.

Biology. A primary parasitoid of the coleopterans *Sphenoptera* sp. (Buprestidae) and *Byrrhus fasciatus* Förster (Byrrhidae).

30. **Holcaeus stylatus* Graham, 1969.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, Mamedov Gorge, Berendeevo Tsarstvo locality, 43°56'53.4"N, 39°19'08.3"E, 17.IX.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀. *Kamchatka Terr.*: Atlasovo Vill., 10.VII.1985 (S.A. Belokobylskij), 1 ♀; 22 km W of Pinachevo Vill., Nalychevo Nature Park, 53°27.445'N, 158°32.311'E, 6.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar, *Kamchatka, and Primorskii territories, Sakhalin Province.—West and East Europe.

Biology unknown.

31. **Homoporus apharetus* (Walker, 1839).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 30.VI.1974 (V.I. Tobias), 1 ♀. *Sakhalin Prov.*: Kunashir Island, Ivanovskii Cape, 17–20.IX.2013 (Yu.N. Sundukov), 1 ♀.

Distribution. Russia: Krasnodar and Primorskii territories, *Sakhalin Province.—West and East Europe, Kazakhstan, Kyrgyzstan, China.

Biology. A parasitoid of *Tetramesa brevicornis* (Walker) and *T. linearis* (Walker) (Hymenoptera, Eurytomidae).

32. ***Homoporus arestor* (Walker, 1848).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, Polkovnich'ya (Generalskaya) Gully, 27.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Turkey, Kazakhstan, Kyrgyzstan, China.

Biology unknown.

33. **Homoporus destructor* (Say, 1817).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, clearings, 23–30.VI.1974 (V.I. Tobias), 1 ♀, 1 ♂.

Distribution. Russia: Krasnodar Territory; “Russia” without specifying the region (Thompson, 1958; Peck, 1963).—West and East Europe, North Africa, China, North America.

Biology. A primary parasitoid of the dipterans *Mayetiola avenae* (Marchal), *M. destructor* (Say), *M. phalaris* Barnes (Cecidomyiidae), *Elachiptera cornuta* (Fallén), and *Oscinella frit* (L.) (Chloropidae), the hymenopterans *Calameuta filiformis* (Eversmann) (Cephidae), *Eurytoma pollux* Claridge, and *Tetramesa eximia* (Giraud) (Eurytomidae), and the lepidopteran *Hemerocampa leucostigma* Abbot et Smith (Lymantriidae). A secondary parasitoid of *Platygaster hieimalis* Forbes, *P. zosine* Walker, and *Platygaster* sp. (Platygastriidae).

34. **Homoporus fulviventris* (Walker, 1835).

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, Tsuskhavadzh River valley, 10.VII.1975 (V.A. Trjapitzin), 3 ♀.

Distribution. Russia: Krasnodar and Primorskii territories; “Russia” without specifying the locality (Thompson, 1958; Andriescu and Mitroiu, 2004).—The Canaries, West and East Europe, Transcaucasia, Turkey, Kazakhstan, Iran, China.

Biology. A primary parasitoid of the hymenopterous families Cynipidae and Eurytomidae; it is also known as a secondary parasitoid of *Eupelmus cicadae* Giraud (Eupelmidae) and *Tetramesa eximia* (Giraud) (Eurytomidae).

35. **Homoporus luniger* (Nees, 1834).

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, area cleared for power line, 1.X.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂.

Distribution. Russia: Krasnodar and Primorskii territories, Sakhalin Province; “Russia” without specifying the region (Thompson, 1958).—West and East Europe, Transcaucasia, Kazakhstan, China.

Biology. A primary parasitoid of many species of the chalcid family Eurytomidae and also *Mayetiola* sp. (Diptera, Cecidomyiidae) and *Elachista bisulcella* (Duponchel) (Lepidoptera, Elachistidae). It is also known as a secondary parasitoid of *Tetramesa calamagrostidis* (Schlechtendal) (Hymenoptera, Eurytomidae).

36. ***Mesopolobus diffinis* (Walker, 1834).

Material. Russia. Krasnodar Terr.: Krasnodar, *Gleditsia triacanthos*, *Dasineura gleditchiae*, 18.VI.2011 (V.I. Shchurov), 11 ♀, 5 ♂; Kanevskii Distr., Chelbas River valley, *Dasineura gleditchiae*, 19.VII.2014 (V.I. Shchurov), 1 ♀, 1 ♂.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Transcaucasia, Turkey, Kazakhstan, Turkmenistan.

Biology. A primary parasitoid of many species of the dipterous family Cecidomyiidae; it was reared for the first time from *Dasineura gleditchiae* (Osten Sacken). It is also known as a parasitoid of *Argyresthia fundella* (Fischer von Röslerstamm) (Lepidoptera, Yponomeutidae).

37. **Mesopolobus incultus* (Walker, 1834).

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, clearings, 23–30.VI.1974 (V.I. Tobias), 9 ♀.

Distribution. Russia: Krasnodar Territory, Amurskaya Province.—West and East Europe, North Africa, Turkey, Syria, North America, New Zealand.

Biology. A primary parasitoid of the coleopterans *Apion* sp. (Apionidae), *Gymnetron* sp., *Mecinus pascuorum* (Gyllenhal), *Mecinus* sp. (Curculionidae: Curculioninae), and *Polygraphus poligraphus* (L.) (Curculionidae: Scolytinae), the dipterans *Calycomyza humeralis* (von Roser) (Agromyzidae) and *Kaltenbachiola strobi* (Winnertz) (Cecidomyiidae), and also a secondary parasitoid of the hymenopterans *Bruchophagus gibbus* (Boheman) (Eurytomidae) and *Spinterus dubius* (Nees) (Pteromalidae).

38. **Mesopolobus teliformis* (Walker, 1834).

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, clearings, 23–30.VI.1974 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar Territory, Sakhalin Province.—West and East Europe, Turkey, Kazakhstan.

Biology unknown.

39. ***Metastenus concinnus* Walker, 1834.

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, Mamedov Gorge, Berendeevo Tsarstvo locality, 43°56'53.4"N, 39°19'08.3"E, 5.IX.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Transcaucasia, Kazakhstan, Iran, India, South America.

Biology. A primary parasitoid of the dipteran *Calloeneis signata* (Korschefsky) and the coleopterans *Cryptolaemus montrouzieri* Mulsant, *Scymnus impexus* Mulsant, *S. apetzi* Mulsant, and *Scymnus* sp. (Coccinellidae).

40. ***Mokrzeckia pini** (Hartig, 1838).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, area cleared for power line, 1.X.2015 (E.V. Tselikh, D.V. Rachin), 1 ♂. *Kamchatka Terr.*: Atlasovo Vill., 10.VII.1985 (S.A. Belokobylskij), 2 ♂. *Jewish Autonomous Area*: Kundur Vill., 8 and 9.VII.2003 (S.A. Belokobylskij), 1 ♀.

Distribution. Russia: Krasnodar Territory, Tomsk Province, *Kamchatka Territory, *the Jewish Autonomous Area, Primorskii Territory.—West and East Europe, North Africa, China, South Korea, Japan.

Biology. A primary parasitoid of the lepidopterans *Aporia crataegi* (L.) (Pieridae), *Cerura vinula* (L.) (Notodontidae), *Choristoneura murinana* (Hübner) (Tortricidae), *Dendrolimus pini* (L.), *D. superans* (Butler) (Lasiocampidae), *Lymantria dispar* (L.) (Lymantriidae), and *Smerinthus planus* Walker (Sphingidae) and the hymenopteran *Pristiphora abietina* (Christ) (Tenthredinidae). A secondary parasitoid of the hymenopterans *Cotesia affinis* (Nees), *C. glomerata* (L.), *C. ordinaria* (Ratzeburg), *Protapanteles liparidis* (Bouché) (Braconidae), and *Hyposoter ebeninus* (Gravenhorst) (Ichneumonidae).

41. ****Novitzkyanus cryptogaster** Bouček, 1961.

Material. Russia. *Krasnodar Terr.*: Krasnodar, ARRBPP, garden, Moericke traps, 7. Kh.2011 (O.V. Kosheleva), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, North Africa, Kazakhstan.

Biology. A primary parasitoid of the dipteran *Sarcophaga penicillata* Villeneuve (Sarcophagidae).

42. ***Pachyneuron aphidis** (Bouché, 1834).

Material. Russia. *Krasnodar Terr.*: Slavyansk-on-Kuban: 20–21.VI.1978, 25.X.1980 (Pukinskaya), 2 ♀, 2 ♂; same locality, 2.VII.1979, 30.VII.1979, 3.VIII.1979, 29.X.1979 (Solovieva), 6 ♀, 3 ♂.

Distribution. Russia: Krasnodar Territory, Moscow Province.—The Canaries, West and East Europe, North Africa, Armenia, Turkey, Middle Asia, Israel, Syria, Iran, Iraq, Pakistan, India, China, South Korea, Japan, Central Africa, the Hawaii and Antilles, North and South America, Australia, New Zealand.

Biology. Mainly a hyperparasitoid of the ichneumon-fly families Aphidiidae, Aphelinidae, Scelionidae, Encyrtidae, and Figitidae; it also parasitizes aphids (Aphididae) and dipterans of the family Charipidae.

43. ****Pachyneuron grande** Thomson, 1878.

Material. Russia. *Krasnodar Terr.*: Sochi, Tsentralnyi Distr., *Nerium oleander* L., from puparia of *Syrphus* sp., 10.IX.2015 (T.N. Ignat'eva, E.V. Tselikh), 16 ♂.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Kazakhstan, Kyrgyzstan, Iran, China.

Biology. A primary parasitoid of the dipterans *Leucopomyia silesiaca* (Egger) (Chamaemyiidae), *Dasyrphus venustus* (Meigen), *Episyrphus balteatus* (De Geer), *Eupeodes lapponicus* (Zetterstedt), and *E. luniger* (Meigen) (Syrphidae), the pseudo-coccid *Nipaecoccus vastator* (Maskell) (Pseudococcidae), and the lepidopterans *Choristoneura murinana* (Hübner) (Tortricidae) and *Pieris rapae* (L.) (Pieridae).

44. ****Platygerrhus affinis** (Walker, 1836).

Material. Russia. *Krasnodar Terr.*: Severskii Distr., Verkhneafipskoe hunting area, 44°36'6.58"N, 38°35'15.6"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; Sochi, Lazarevskoe, forest, 10–11.V.1979, 1–12.X.1981 (V.I. Tobias), 3 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe.

Biology. A primary parasitoid of the coleopterans *Anobium punctatum* (De Geer, 1774), *Xylocleptes bispinus* (Duftschmid) (Anobiidae), *Leiopus punctulatus* (Paykull), *Stenostola ferrea* (Schrank) (Cerambycidae), *Ernoporos tiliae* (Panzer), and *Pityokteines curvidens* (Germar) (Curculionidae: Scolytinae), and also dipterans of the family Agromyzidae.

45. ***Plutothrix bicolorata** (Spinola, 1808).

Material. Russia. *Krasnodar Terr.*: Severskii Distr., Plancheskaya Shchel Vill., 44°39'0.15"N,

38°36'54.5"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 4 ♀, 2 ♂; city of Goryachii Klyuch, waterfall on Kesukh River, 44°26.19'09"N, 39°01'52.3"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀; Sochi, Lazarevskoe, forest, 2–4.V.1973, 3–6.VI.1974, 30.VI and 5–8.VII.1974, 10–11.V.1979 (V.I. Tobias), 9 ♀, 1 ♂; same locality, 21.VII.1975 (V.A. Trjapitzin), 1 ♀.

Distribution. Russia: Krasnodar and Primorskii territories.—West and East Europe.

Biology. A primary parasitoid of the coleopterans *Anobium punctatum* (De Geer) and *Ernobius abietis* (Fabricius) (Anobiidae).

46. ***Plutothrix pilicoxa*** Graham, 1993.

Material. Russia. Krasnodar Terr.: Severskii Distr., Plancheskaia Shchel Vill., 44°39'0.15"N, 38°36'54.5"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 2 ♀; city of Goryachii Klyuch, waterfall on Kesukh River, 44°26.19'09"N, 39°01'52.3"E, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; Sochi, Lazarevskoe, forest, 8.VII.1974 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West Europe.

Biology unknown.

47. ***Plutothrix trifasciata*** (Thomson, 1878).

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, forest, 28.V.1974, 3–6.VI.1974, 30.VI.1974 (V.I. Tobias), 4 ♀, 1 ♂.

Distribution. Russia: Krasnodar and Primorskii territories.—West and East Europe, the Caucasus, Kazakhstan.

Biology unknown.

48. ***Pseudocatolaccus nitescens*** (Walker, 1834).

Material. Russia. Krasnodar Terr.: Novomikhailovskoe Vill., 30.VIII.2015 (E.V. Tselikh, D.V. Rachin), 3 ♀, 1 ♂; Sochi, Lazarevskoe, clearings, 17 and 28.V.1974, 3–6 and 23–30.VI.1974, 8.VII.1974 (V.I. Tobias), 12 ♀; same locality, Polkovnich'ya (Generalskaya) Gully, 29.VIII.2009 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂.

Distribution. Russia: Kursk Province, Krasnodar Territory.—The Canaries, West and East Europe, North Africa, Turkey, Kazakhstan.

Biology. A primary parasitoid of many species of the dipterous family Cecidomyiidae and also the coleopterans *Cionus thapsus* Fabricius (Curculionidae) and *Bruchidius unicolor* (Olivier) (Bruchidae).

49. ***Psilocera obscura*** Walker, 1833.

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, 3–6.VI.1974 (V.I. Tobias), 1 ♂; same locality, Mamedov Gorge, Berendeevo Tsarstvo locality, 43°56'53.4"N, 39°19'08.3"E, 17.IX.2015 (E.V. Tselikh, D.V. Rachin), 1 ♂. Kamchatka Terr.: 20 km N of Kozyrevsk Vill., 21.VII.1985 (S.A. Belokobylskij), 1 ♀; 22 km W of Pinachevo Vill., Nalychevo Nature Park, 53°27.445'N, 158°32.311'E, 6.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂; Pinachevo Vill., 9.VII.2013 (E.V. Tselikh, D.V. Rachin), 2 ♀, 1 ♂; 90 km S of Lazo Vill., Kipelye locality, 55°08.165'N, 160°05.832'E, 21.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♀; 15 km W of Elizovo Vill., Mt. Moroznaya, 53°09.709'N, 158°13.023'E, 27.VII.2013 (E.V. Tselikh, D.V. Rachin), 1 ♂. Khabarovsk Terr.: 15 km N of Bikin Vill., Shevka River, 2.VI.1983 (D.R. Kasparyan), 1 ♀. Jewish Autonomous Area: Kundur Vill., 8 and 9.VII.2003 (S.A. Belokobylskij), 1 ♀; Malyi Khingan Mt. Range, Radde Vill., Amur River, 12–15.VII.2003 (S.A. Belokobylskij), 1 ♀.

Distribution. Russia: Krasnodar Territory, Irkutsk Province, *Kamchatka and *Khabarovsk territories, Amurskaya Province, *the Jewish Autonomous Area, Primorskii Territory, Sakhalin Province.—West and East Europe, Turkey, Kazakhstan.

Biology. A secondary parasitoid of *Cotesia glomerata* (L.) (Hymenoptera, Braconidae).

50. ***Pteromalus albipennis*** Walker, 1835.

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, Polkovnich'ya (Generalskaya) Gully, 27.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar and Kamchatka territories, Amurskaya Province, Primorskii Territory, Sakhalin Province.—The Canaries, West and East Europe, Turkey, Kazakhstan, Japan.

Biology. A primary parasitoid of many species of the dipterous family Tephritidae.

51. ***Pteromalus bedeguaris*** (Thomson, 1878).

Material. Russia. Krasnodar Terr.: Gelendzhik, Divnomorskoe Vill., Rosa, 10.IX.1965 (E.S. Sugonyaev), 24 ♀, 10 ♂.

Distribution. Russia: Rostov Province, Krasnodar Territory.—West and East Europe, Transcaucasia, Turkey, Iran, Middle Asia, North America.

Biology. A primary parasitoid of many species of the hymenopterous family Cynipidae and also a secondary parasitoid of *Orthopelma mediator* (Thunberg) (Ichneumonidae), *Glyphomerus stigma* (Fabricius), and *Torymus bedeguaris* (L.) (Torymidae).

52. **Pteromalus dispar* (Curtis, 1827).

Material. Russia. Krasnodar Terr.: Ust-Labinskii Distr., Laba River valley, Dubki locality, *Archips crataegana*, 3.V.2015 (V.I. Shchurov), 3 ♀, 1 ♂.

Distribution. Russia: Krasnodar Territory, Magadan Province.—West and East Europe, Kazakhstan, Pakistan.

Biology. A primary parasitoid of the coleopterans *Anthonomus phyllocola* (Herbst) and *Ceutorhynchus assimilis* (Paykull) (Curculionidae) and the lepidopterans *Haploptilia serratella* (L.) (Coleophoridae), *Acrionicta salicis* Curtis (Noctuidae), *Pieris brassicae* (L.) (Pieridae), *Notarcha ruralis* Scopoli (Pyrilidae), and *Zygaena* sp. (Zygaenidae); it was reared for the first time from *Archips crataegana* (Hübner) (Tortricidae). It is also known as a secondary parasitoid of the hymenopterous family Braconidae.

53. **Pteromalus puparum* (Linnaeus, 1758).

Material. Russia. Krasnodar Terr.: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E, 22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; Abrau Peninsula, Bolshoi Utrish Vill., *Pima boisduvaliella*, 30.V.2001 (V.I. Shchurov), 4 ♀, 1 ♂.

Distribution. Russia: Krasnodar Territory, Adygea, Kamchatka and Khabarovsk territories, Amurskaya Province, Primorskii Territory, Sakhalin Province.—The Canaries and the Azores, West and East Europe, North Africa, Turkey, Israel, Iraq, Iran, Middle Asia, Pakistan, Mongolia, China, South Korea, Japan, the Hawaii, Malaysia, India, Sri Lanka, South Africa, North and South America, Australia, New Zealand.

Biology. A wide polyphage parasitizing many species of the orders Coleoptera, Diptera, Hemiptera, Hymenoptera, and Lepidoptera; it was reared for the first time from *Pima boisduvaliella* (Guenée) (Pyrilidae).

54. **Pteromalus sequester* Walker, 1835.

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, 3–6.VI.1974 (V.I. Tobias), 2 ♀. Primorskii Territory: Vladivostok, Akademgorodok, 27.VII.1961 (V.A. Trjapitzin), 1 ♀; same locality, Sedanka, 4.VIII.2001 (S.A. Belokobylskij), 2 ♀.

Distribution. Russia: Krasnodar Territory, Primorskii Territory, Sakhalin Province; “Russia” without specifying the region (Thompson, 1958).—The Canaries, West and East Europe, North Africa, Turkey, Israel, Iraq, Iran, Middle Asia, India, the Hawaii, North and South America, Australia, New Zealand.

Biology. A primary parasitoid of many species of the coleopterous families Bruchidae, Apionidae, and Curculionidae, the dipterous family Cecidomyiidae, the hymenopterous family Eurytomidae, and the lepidopterous family Pyralidae; a secondary parasitoid of *Dinarmus italicus* (Masi) (Hymenoptera, Pteromalidae).

55. **Sphegigaster nigricornis* (Nees, 1834).

Material. Russia. Krasnodar Terr.: Krasnodar, ARRBPP, garden, Moericke traps, 23–28.IX.2011 (O.V. Kosheleva), 2 ♀; Sochi, Lazarevskoe, forest, 28.V, 30.VI and 8.VII.1974 (V.I. Tobias), 2 ♀, 1 ♂.

Distribution. Russia: Krasnodar Territory, Sakhalin Province.—The Canaries, West and East Europe, Kazakhstan.

Biology. A primary parasitoid of many species of the dipterous family Agromyzidae and also of *Ceratopion carduorum* (Kirby) (Coleoptera, Apionidae).

56. ***Sphegigaster pallicornis* (Spinola, 1808).

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, forest edge, 8.VII.1974 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Turkey, Kazakhstan, North America.

Biology. A primary parasitoid of *Chromatomyia ramosa* (Hendel), *Phytomyza ilicis* Curtis, *Ph. rufipes* Meigen, and *Phytomyza* sp. (Diptera, Agromyzidae).

57. **Sphegigaster truncata* Thomson, 1878.

Material. Russia. Krasnodar Terr.: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E,

22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀. *Magadan Prov.*: 12 km N of Seimchan Vill., 30 and 31.VII.1975 (V.G. Marshakov), 1 ♀.

Distribution. Russia: Krasnodar Territory, *Magadan Province, Primorskii Territory, Sakhalin Province.—West and East Europe, Kazakhstan, Iran, China.

Biology unknown.

58. **Stenomalina favorinus* (Walker, 1839).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, forest, 10–11.V.1979 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar Territory, Magadan Province.—West and East Europe, Turkey.

Biology unknown.

59. *Syntomopus thoracicus* Walker, 1833.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, Polkovnich'ya (Generalskaya) Gully, 29.VII.2009 (E.V. Tselikh, D.V. Rachin), 4 ♀. *Magadan Prov.*: 12 km N of Seimchan Vill., 24.VII.1975 (V.G. Marshakov), 1 ♀. *Kamchatka Terr.*: 20 km N of Kozyrevsk Vill., 21.VII.1985 (S.A. Belokobyl'skij), 1 ♀.

Distribution. Russia: Krasnodar (Kostjukov et al., 2015) and *Kamchatka territories, *Magadan and Sakhalin provinces.—West and East Europe, Kazakhstan, China.

Biology. A primary parasitoid of *Melanagromyza aeneoventris* (Fallén), *M. eupatorii* Spencer, *M. sojaj* (Zehntner), and *Napomyza lateralis* (Fallén) (Diptera, Agromyzidae).

60. ***Trichomalopsis tigas* (Walker, 1839).

Material. Russia. *Krasnodar Terr.*: Krasnodar, ARBPP, garden, Moericke traps, 23.IX.2011 (O.V. Kosheleva), 1 ♀; Sochi, Lazarevskoe, Polkovnich'ya (Generalskaya) Gully, 27.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Kazakhstan.

Biology. A primary parasitoid of *Bucculatrix maritima* Stainton (Lepidoptera, Bucculatricidae).

61. ***Trichomalus campestris* (Walker, 1834).

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, clearings, 17.V.1974 (V.I. Tobias), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Turkey, Israel.

Biology. A primary parasitoid of the weevils *Catapion seniculus* (Kirby), *Eutrichapion arrogans* (Wencker), *Holotrichapion pisi* (Fabricius), *Ischnopterapion loti* (Kirby), *Melanapion minimum* (Herbst), and *Protapion apricans* (Herbst) (Apionidae).

62. ***Trichomalus flagellaris* Graham, 1969.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, forest, 10–11.V.1979 (V.I. Tobias), 1 ♀; same locality, Polkovnich'ya (Generalskaya) Gully, 27.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe.

Biology. A primary parasitoid of the weevil *Ceratopion onopordi* (Kirby) (Coleoptera, Apionidae).

63. ***Trichomalus fulvipes* (Walker, 1836).

Material. Russia. *Krasnodar Terr.*: Novomikhailovskoe Vill., 30.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀; Sochi, Lazarevskoe, Mamedov Gorge, Berendeevo Tsarstvo locality, 43°56'53.4"N, 39°19'08.3"E, 5.IX.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, Turkey, Israel.

Biology. A primary parasitoid of the weevils *Apion* sp. and *Eutrichapion arrogans* (Wencker) (Coleoptera, Apionidae).

64. ***Trichomalus lonchaeae* Bouček, 1959.

Material. Russia. *Krasnodar Terr.*: Sochi, Lazarevskoe, 23–30.VI.1974 (V.I. Tobias), 2 ♀; same locality, Polkovnich'ya (Generalskaya) Gully, 29.VII.2009 (E.V. Tselikh, D.V. Rachin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe.

Biology. A primary parasitoid of *Lonchaea zetterstedti* Becker (Diptera, Lonchaeidae).

65. ***Trigonoderus cyanescens* (Förster, 1841).

Material. Russia. *Krasnodar Terr.*: Novomikhailovskoe Vill., 30.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♂; Sochi, Lazarevskoe, Mamedov Gorge, Berendeevo Tsarstvo locality, 43°56'53.4"N,

39°19'08.3"E, 17.IX.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀, 2 ♂.

Distribution. Russia: Krasnodar Territory.—West and East Europe.

Biology. A primary parasitoid of the coleopterans *Phaenops cyanea* (Fabricius) (Buprestidae) and *Scolytus intricatus* (Ratzeburg) (Curculionidae: Scolytinae).

66. ***Trigonoderus princeps* Westwood, 1832.

Material. Russia. Krasnodar Terr.: Krasnodar, Krasnyi Kut Forest-Park, 44°58'04"N, 39°01'23.8"E, 22.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂; Severskii Distr., Planchesnaya Shchel Vill., 44°39'0.15"N, 38°36'54.5"E, hornbeam, *Trachodes hystrix*, 25.VIII.2015 (E.V. Tselikh, D.V. Rachin), 1 ♀, 1 ♂; Sochi, Lazarevskoe, VIZR, forest, 21.VII.1975 (V.A. Trjapitzin), 1 ♀.

Distribution. Russia: Krasnodar Territory.—West and East Europe, the Caucasus, Japan.

Biology. A primary parasitoid of the coleopterans *Parmena balteus* (L.), *Leiopus nebulosus* (L.), and *Saperda scalaris* (L.) (Cerambycidae) and also of *Scolytus scolytus* (Fabricius) (Curculionidae: Scolytinae); in addition, it was reared for the first time from *Trachodes hystrix* Gyllenhal (Curculionidae).

67. **Trigonoderus pulcher* Walker, 1836.

Material. Russia. Krasnodar Terr.: Sochi, Lazarevskoe, forest, 3–6.VI.1974, 30.VI.1974 (V.I. Tobias), 2 ♀, 1 ♂. Amurskaya Prov.: Khinganskii Nature Reserve, Kundur Vill., 17–20.VII.2003 (S.A. Belokobylskij), 1 ♀.

Distribution. Russia: Krasnodar and Khabarovsk territories, Amurskaya Province, Primorskii Territory, Sakhalin Province.—West and East Europe, Japan, India.

Biology unknown.

DISCUSSION

The study performed has considerably supplemented our knowledge of the pteromalid fauna of Krasnodar Territory and entire Russia. Three genera (*Erdoesia* Bouček, *Metastenus* Walker, and *Novitzkyanus* Bouček) and 24 species of pteromalid wasps are recorded for the first time for the fauna of Russia, and 39 species, for the fauna of Krasnodar Territory. Thus, according to our study and published data (No-

vitzky, 1955; Tselikh, 2010; Kostjukov et al., 2014, 2015), the pteromalid fauna of Krasnodar Territory comprises 79 species belonging to 45 genera of 6 sub-families.

Host-parasite associations are established for a number of the taxa. *Catolaccus ater* (Ratzeburg) was reared for the first time from *Zygaena laeta* (Hübner) (Lepidoptera, Zygaenidae), *Conomorium amplum* (Walker) and *Pteromalus puparum* (Linnaeus) from *Pima boisduvaliella* (Guenée) (Lepidoptera, Pyralidae), *Pteromalus dispar* (Curtis) from *Archips crataegana* (Hübner) (Lepidoptera, Tortricidae), *Mesopolobus diffinis* (Walker) from *Dasineura gleditchiae* (Osten Sacken) (Diptera, Cecidomyiidae), and *Trigonoderus princeps* Westwood from *Trachodes hystrix* Gyllenhal (Coleoptera, Curculionidae). The rearing of *Coelopisthia extenta* (Walker) from the fall webworm *Hyphantria cunea* (Drury) was confirmed, which is of particular interest as this insect can be used for biological control of the induced plant pest.

Some pteromalid wasps found in Krasnodar Territory are actively used or considered perspective for biological control (*Anisopteromalus calandrae* (Howard), *Cheilopachus quadrum* (Fabricius), *Coelopisthia extenta* (Walker), *Dinarmus acutus* (Thomson), *Pteromalus puparum* (Linnaeus)). Some are considered potentially effective for biological control, including parasitoids of many xylophagous species (*Heydenia pretiosa* Forster, *Platygerrhus affinis* (Walker), *Plutothrix bicolorata* (Spinola), *Pteromalus sequester* Walker, *Trigonoderus cyanescens* (Forster), and *T. princeps* Westwood), leaf miners of the family Agromyzidae (*Colotrechnus subcoeruleus* Thomson, *Miscogaster rufipes* Walker, *Chlorocytus inchoatus* Graham, *Sphegigaster pallicornis* (Spinola), and *Syntomopus thoracicus* Walker), the crop pest *Mayetiola destructor* (Say) (Cecidomyiidae) (*Semiotellus mundus* (Walker, 1834) and *Homoporus destructor* (Say, 1817)), many lepidopterous species (*Conomorium amplum* (Walker) and *Cyclogastrella simplex* (Walker)), and coleopterans of the family Apionidae (*Trichomalus campestris* (Walker) and *T. fulvipes* (Walker)).

ACKNOWLEDGMENTS

The authors are grateful to V.I. Shchurov and A.S. Bondarenko (Krasnodar) for the reared pteromalid wasps supplied for examination. We also thank L.N. Bugaeva, the Director of the Lazarevskaya Experimental Station of All-Russia Research Institute of

Biological Plant Protection (Krasnodar) and other specialists of this station for their help in organization and realization of our field studies in Krasnodar Territory.

The study was performed within the framework of the State project no. 01201351189 and financially supported by the Russian Foundation for Basic Research (grant nos. 15-34-50418/15, 15-29-02466 and 16-04-00197).

REFERENCES

1. Andriescu, I. and Mitroiu, M.D., "Notes on the Pteromalid Fauna (Hymenoptera, Chalcidoidea, Pteromalidae) of Dobrogea, Romania (II)," *Analele Științifice ale Universității "Al. I. Cuza" Iași, serie Biologie animală* **50**, 89–96 (2004).
2. Burks, R.A., "New Records of the Eulophidae and Pteromalidae (Hymenoptera) from the Russian Far East," *Far Eastern Entomologist* **25**, 1–5 (2013).
3. Kostjukov, V.V., Kosheleva, O.V., Nakonechnaya, I.V., and Gunasheva, Z.M., "The First Record of Parasites of the Horse-Chestnut Leaf Miner in Russia," *Zashchita i Karantin Rastenii* **9**, 41–42 (2014).
4. Kostjukov, V.V., Gunasheva, Z.M., Nakonechnaya, I.V., Apolonina, T.M., and Kosheleva, O.V., "The Hymenopteran Parasites *Tuta absoluta* Meyrick, *Phthorimaea operculella* Zetter (Gelechiidae), *Liriomyza huidobrensis* Blanchard, and *L. trifolii* Burgess (Agromyzidae) in the South of Russia," in *Proceedings of the International Symposium "Plant Protection—Advances and Prospects," Kishinev, October 27–28th, 2015* (Informatsionnyi Byulleten VPRS MOBB, 58–64 (2015)).
5. Novitzky, S., "Bemerkungen zu den Gattungen *Trigonoderus* Westw. und *Pterolyeus* Ratz. (Hym. Chalc. Cleon.)," *Entomologisches Nachrichtenblatt Österreichischer und Schweizer Entomologen* **7** (2), 26–34 (1955).
6. Noyes, J.S., Universal Chalcidoidea Database—World Wide Web Electronic Publication (Natural History Museum, London, 2016) [update August 2016; URL: <http://www.nhm.ac.uk/entomology/chalcidoids/index.html>] (accessed date 10.04.2016).
7. Peck, O., "A Catalogue of the Nearctic Chalcidoidea (Insecta: Hymenoptera)," *Canadian Entomologist (Supplement)* **30**, 1–1092 (1963).
8. Thompson, W.R., "A Catalogue of the Parasites and Predators of Insect Pests," Ottawa, Ontario, Canada: Commonwealth Agricultural Bureaux, Commonwealth Institute of Biological Control **2** (5), 562–698 (1958).
9. Tselikh, E.V., "Chalcids of the Subfamily Pteromalinae (Hymenoptera, Pteromalidae) as Parasitoids of the Bark Beetles (Coleoptera, Scolytidae) in the Fauna of Russia and Adjacent Territories," *Entomologicheskoe Obozrenie* **89** (3), 662–676 (2010) [*Entomological Review* **90** (7), 927–945 (2010)].
10. Tselikh, E.V., "New Records of the Chalcid Wasps of Family Pteromalidae (Hymenoptera: Chalcidoidea) from the Russian Far East," *Far Eastern Entomologist* **237**, 1–12 (2011).
11. Tselikh, E.V., "Hymenoptera, Pteromalidae," in *Annotated Catalog of the Insects of the Russian Far East. Vol. 1*, Ed. by Lelej, A.S. (Dalnauka, Vladivostok, 2012a), pp. 150–161 [in Russian].
12. Tselikh, E.V., "Review of Species of the Genus *Mokrzeckia* Mokrzecki, 1934 (Hymenoptera: Pteromalidae) from the Russian Far East," *Zoosystematica Rossica* **21** (2), 291–298 (2012b).
13. Tselikh, E.V., "Chalcid Wasps of the Family Pteromalidae (Hymenoptera, Chalcidoidea) of the Kuril Islands," *Entomologicheskoe Obozrenie* **92** (3), 603–625 (2013) [*Entomological Review* **94** (1), 86–104 (2014)].
14. Tselikh, E.V., "A New Species of the Pteromalid Wasp Genus *Hemitrichus* Thomson (Hymenoptera, Chalcidoidea: Pteromalidae) from the Russian Far East," *Entomologicheskoe Obozrenie* **94** (2), 459–462 (2015) [*Entomological Review* **95** (4), 914–916 (2015)].
15. Tselikh, E.V., "New Data on the Pteromalid Wasps (Hymenoptera, Chalcidoidea: Pteromalidae) of the Russian Far East," *Entomologicheskoe Obozrenie* **95** (1), 91–112 (2016) [*Entomological Review* **96** (2), 175–190 (2016)].
16. Tselikh, E.V. and Mitroiu, M.-D., "Wing Polymorphism in *Netomocera ramakrishnai* Sureshan, 2010 (Hymenoptera, Pteromalidae) in East Asia, with Description of the First Brachypterous Morph," *Proceedings of the Zoological Institute RAS* **318** (1), 70–75 (2014).