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FIRST RECORD OF THE GRASS FLIES (DIPTERA: CHLOROPIDAE) FROM Khabarovskii Krai and Jewish Autonomous Region

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Summary. An annotated list of 35 species of the family Chloropidae from the Khabarovskii krai and the Jewish Autonomous Region is given. All species, except *Lasiambia shatalkini* Nartshuk, 1986 are recorded for the first time from these parts of the Russian Far East. Two main groups of species are distinguished according their general distribution. One group contains 27 species with vast ranges (multiregional, Holarctic and Transpalaeartic) and another group includes 8 species with ranges from Amurskaya oblast in Russia to Japan and Taiwan. Data on substrate where larvae of *Conioscinella divitis* Nartshuk, 1991 develop is recorded for the first time.

Key words: Diptera, Chloropidae, fauna, new records, Russian Far East.

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Резюме. Приведен список 35 видов злаковых мух (Diptera: Chloropidae) Хабаровского края и Еврейской Автономной области. Все виды, за исключением *Lasiambia shatalkini* Nartshuk, 1986, впервые указываются для исследованной территории. В составе изученной фауны выделяются две группы, одна включает 27 широко распространенных видов с мультирегиональными, голарктическими и транспалеарктическими ареалами; другая – объединяет 8 видов с ареалами, простирающимися от Амурской области до Японии и Тайваня. Впервые указаны данные о местах развития личинок *Conioscinella divitis* Nartshuk, 1991.

INTRODUCTION

Chloropidae is a family of Diptera Acalyptratae. Flies are small with yellow or black body. The family is characteristic by biological diversity and species richness; it makes this a family of ecological importance. Many species are associated with grasses (Poaceae) and sedges (Cyperaceae). Chloropidae are numerous on meadows, agricultural fields, fens and other wetlands. The fauna of Chloropidae of Khabarovskii krai and Jewish Autonomous Region has never been investigated, only *Lasiambia shatalkini* Nartshuk, 1986 was recorded from the Malyi Khingan Ridge (Nartshuk, 1986). However there are several publications on Chloropidae from adjacent territories: Amurskaya oblast (Fedoseeva, 1986; Nartshuk, 1986), Primorskii krai (Duda, 1933; Nartshuk, 1969; Nartshuk & Fedoseeva, 1983), Sakhalin and Kuril Islands (Nartshuk, 1973, 1974, 2016).

The material studied is deposited in the collection of the Zoological Institute of Russian Academy of Sciences in St. Petersburg (Russia). A part of material was collected by author in 1979 in two localities: Bolshekhkhzhir Natural Reserve and on an island on the River Amur situated opposite of Khabarovsk. Territory of island is occupied by individual gardens, but natural meadow vegetation is retained along river banks. Bolshekhkhzhir Natural Reserve is situated on Bolshoy Khekhzhir Ridge and its territory is forestry. Chloropidae were collected by sweeping and latter double pinned. Other material was collected by late K. Elberg in 1973 and by D.R. Kasparyan in 1983–1985. Some other specimens were found in the collection of the Zoological Institute (St. Petersburg). Totally nearly 300 specimens were examined.

List of the species
Subfamily Oscinellinae

***Conioscinella divitis* Nartshuk, 1971**

MATERIAL. Petropavlovka, ENE Khabarovsk, 30.VII 1978, 1 ex. (Kasparyan); “upper part of basin of the Amgun River, April 1970”, reared from cones of *Larix sibirica*, 1 ex. (Yurchenko); Myxen, May 1971, reared from cones of *Abies abovata*, 3 ex.; (Yurchenko); Khabarovskii krai, April 1970, reared from cones of *Larix sibirica*, 1 ex. (Yurchenko); island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 1 ex. (Nartshuk).

DISTRIBUTION. Russia (Amurskaya oblast, Khabarovskii krai, Kuril Islands: Iturup), East Mongolia, North China, Taiwan, Korea, Japan.

NOTES. Larvae probably saprophagous develop in cones of coniferous trees damaged by other insects, like larvae of *Hapleginella laevifrons* Loew (Chloropidae). Data on substrate where larvae develop is published for the first time.

***Elachiptera biculiminata* Nashijma, 1956**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 4 ex. (Nartshuk).

DISTRIBUTION. Russia (Khabarovskii krai, Sakhalin, South Kuril Islands), Korea, Japan.

NOTES. Common on wet localities, larvae phytosaprophagous, develop in decaying tissues of grasses.

***Elachiptera insignis* (Thomson, 1869)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–28.VIII 1979, 2 ex. (Nartshuk); Bolshekhkhzhir Natural Reserve, 26.VIII 1979, 3 ex. (Nartshuk).

DISTRIBUTION. From Khabarovskii krai in Russia to Japan and Taiwan.

NOTES. Larvae are secondary invaders of grasses, including cereals.

***Elachiptera sibirica* (Loew, 1858)**

MATERIAL. Khabarovsk, dendropark, 31.VII 1978, 1 ex. (Kasparyan); island opposite of Khabarovsk on Amur River, 21.VIII 1979, 4 ex. (Nartshuk); Bolshekhkhzhir Natural Reserve 26.VIII 1979, 9 ex. (Nartshuk).

DISTRIBUTION. Widely distributed in Palaearctic Region; rather rare in European part of Russia and numerous in the Russian Far East.

NOTES. Common on wet lands, larvae phytosaprophagous. A female from island on the Amur River with entirely yellow mesonotum without usually black stripes.

***Elachiptera tuberculifera* (Corti, 1909)**

MATERIAL. Amurzet, 18.VI 1981, 1 ex. (Kasparyan); island opposite of Khabarovsk on Amur River, 21.VII 1979, 1 ex. (Nartshuk).

DISTRIBUTION. This species is widely distributed in the Palearctic Region eastwards to Mongolia, China, Russia (Khabarovskii krai, Jewish Autonomous Region, Kuril Islands), and Japan.

NOTES. Common on different kind of wetlands, adult hibernated. Larvae phytosaprophagous develop in stems of different, mostly Monocotyledonous, plants damaged by other insects.

***Hapleginella laevifrons* (Loew, 1858)**

MATERIAL. Amgun River, 13.V 1971, reared from cones of *Abies obovata*, 6 ex. (Yurchenko); Khabarovskii krai, 17.VIII 1966, reared from cones of *Pinus coreana*, damaged by caterpillars of Tortricidae, 5 ex. (Yurchenko).

DISTRIBUTION. Transpalaeartic boreal species known from British Isles to the Russian Far East.

NOTES. Larvae develop in cones of different coniferous trees infested by other insects, can develop in other parts of coniferous trees.

***Incertella albipalpis* (Meigen, 1830)**

MATERIAL. Langr Island in the estuary of Amur River, 29.VII 1915, 3 ex. (Pavlenko).

DISTRIBUTION. Transpalaeartic polyzonal species, known from British Isles to Japan.

NOTES. Larvae phytophagous or saprophagous, develop in shoots of diverse grasses, including cereals.

***Incertella kerteszi* (Becker, 1910)**

MATERIAL. Udinsk on the Amgun River, 26.VII, 1 ex. (Maslov).

DISTRIBUTION. Transpalaeartic boreal species known from British Islands to Kamchatka and Khabarovskii krai.

***Lasiambia shatalkini* Nartshuk, 1986**

MATERIAL. Malyi Khingan Ridge, Dichun River, 10.VII 1979, 2 ex. (Shatalkin).

DISTRIBUTION. This species was known from Amurskaya oblast and Primorskii krai (Nartshuk, 1986).

***Oscinella frit* (Linnaeus, 1758)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21.VII 1979, 10 ex. (Nartshuk).

DISTRIBUTION. Multiregional species, widely distributed in the Palearctic Region.

NOTES. Common species, pest of cereals, usually on meadows, agricultural fields with cereals. Larvae phytophagous in stems of grasses and cereals.

***Oscinella pusilla* (Meigen, 1830)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21.VII 1979, 1 ex. (Nartshuk); Vaninskii rayon, Vysokogorny, 14.VII 1983, 1 ex. (Kasparyan).

DISTRIBUTION. Widely distributed in the Palearctic Region; here it is firstly recorded from Khabarovskii krai.

NOTES. Common mesophilous species, usually on meadows, agricultural fields with cereals. Larvae phytophagous in stems of grasses and cereals.

***Polydaspis ruficornis* (Macquart, 1835)**

MATERIAL. Amurzet, 30.VII 1981, 2 ex. (Kasparyan); 40 km NNW Amurzet, Samaus River, 27.VII 1981, 1 ex. (Kasparyan); Londoko, W Bira, 28.VII 1981, 2 ex. (Kasparjan); Bolshekhekhzir Natural Reserve, 26.VIII 1979, 4 ex. (Nartshuk); Garmakhta, 23–24.VII 1910, 1 ex. (Efimov).

DISTRIBUTION. Widely distributed in the Palearctic and Oriental Regions, more rear in the western part of the Palearctic Region and numerous in the Asian part.

BIOLOGICAL NOTES. The species exhibit a wide ecological plasticity in relation to dietary spectrum. Larvae saprophagous and necrophagous, develop in many different substrates.

***Rhodesiella inexpectata* Nartshuk, 1968**

MATERIAL. Bolshekhekhzir Natural Reserve, Levaya River, 15–18.VII 1983, 1 ex. (Kasparyan).

DISTRIBUTION. Russia (Khabarovskii krai, Kuril Islands: Iturup), Japan (Hokkaido, Honshu), East Mongolia.

***Rhodesiella pallipes* (Duda, 1934)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21.VIII 1979, 5 ex. (Nartshuk); 40 km NNW Amurzet, Samaus River, 18.VIII 1985, 1 ex. (Kasparyan); Amurzet, 18.VI 1985, 1 ex. (Kasparyan).

DISTRIBUTION. Russia (Primorskii krai, Khabarovskii krai, Jewish Autonomous Region), China.

***Rhodesiella plumiger* (Meigen, 1830)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21.VIII 1979, 2 ex. (Nartshuk); Londoko, W Bira, 2.VIII 1981, 1 ex. (Kasparyan).

DISTRIBUTION. Transpalearctic species, known from British Islands to Russian Far East.

***Siphonella oscinina* (Fallén, 1820)**

MATERIAL. Pereyaslovka, 9.IX 1993, 2 ex. (Elberg).

DISTRIBUTION. Holarctic species.

***Tricimba cincta* (Meigen, 1830)**

MATERIAL. Bolshekhekhzir Natural Reserve, 14.VI 1985, 1 ex. (Kasparyan); Amurzet, 18.VI 1985, 1 ex. (Kasparyan); 20 km NW Amurzet, 17.VI 1985, 1 ex. (Kasparyan).

DISTRIBUTION. Holarctic species.

BIOLOGICAL NOTES. Hibernate as adults. The species exhibit a wide ecological plasticity in relation to dietary spectrum, was reared from decaying plant stem, mushrooms, berries of *Sambucus racemosa*, dead mollusc.

Subfamily Chloropinae

***Chlorops figuratellus* Smirnov et Fedoseeva, 1976**

MATERIAL. Vicinity of Khabarovsk, 25.V 1968, 1 ex. (Esipenko).

DISTRIBUTION. The species was described from Transbaikalia (Ust-Kiran). Here it is firstly recorded from Russian Far East.

***Chlorops kirigaminensis* Kanmiya, 1978**

MATERIAL. Ussuri River, 15 km S Khabarovsk, 4.VI 1910, 2 ex. (Soldatov).

DISTRIBUTION. The species is known from North Fennoscandia to Japan.

***Chlorops meigenii* Loew, 1866**

MATERIAL. Manoma, 26.VII 1973, 1 ex. (Elberg); Island opposite of Khabarovsk on Amur River, 26.VIII 1979, 4 ex. (Nartshuk).

DISTRIBUTION. Transpalaeartic widely distributed polyzonal species, known from British Islands to Kamchatka and Japan.

NOTES. Larvae phytophagous, develop in shoots of *Calamagrostis* spp.

***Chlorops planifrons* Loew, 1866**

MATERIAL. Khabarovsk, 24.VIII 1973, 1 ex. (Elberg); Polina Osipenko, 30.VII 1973, 7 ex. (Elberg); Nikolaevsk, on *Carex*, 6.VIII 1973, 2 ex. (Elberg); Manoma, 25.VIII 1973, 1 ex. (Elberg).

DISTRIBUTION. Transpalaeartic widely distributed polyzonal species known from British Islands to the Russian Far East of, in Europe southwards to Spain.

NOTES. On wetlands, larvae phytophagous, develop in shoots of big *Carex*, e.g. *C. inflata*.

***Chlorops zernyi* (Duda, 1933)**

MATERIAL. Khabarovsk, Polina Osipenko, 30.VII 1979, 4 ex. (Elberg); Nikolaevsk, 6.VIII 1973, 8 ex. (Elberg); Ozerpah, 5.VIII 1973, 3 ex. (Elberg); Manoma, 26.VIII 1973, 1 ex. (Elberg).

DISTRIBUTION. Transpalaeartic species.

NOTES. On bogs. Larvae phytophagous, develop in shoots of *Carex inflata*.

***Diptotoxa messoria* (Fallén, 1820)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 13 ex. (Nartshuk); Bolshekhkhzir Natural Reserve, 26.VIII 1979, 1 ex. (Nartshuk); Manoma, on *Juncus*, 26.VIII 1973, 1 ex. (Elberg).

DISTRIBUTION. Holarctic species; in Palearctic known from British Islands to the Russian Far East.

NOTES. Larvae develop in rotting stems of *Eleocharis* spp.

***Diptotoxoides dalmatina* (Strobl, 1900)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 1 ex. (Nartshuk).

DISTRIBUTION. Transpalaeartic species distributed from British Islands to the Russian Far East.

***Epichlorops puncticollis* (Zetterstedt, 1848)**

MATERIAL. 40 km NNW Amurzet, water-meadow 27.VII 1981, 2 ex. (Kasparyan); Kada and Bulava, below of the Amur River, 27.VII 1910, 1 ex. (Soldatov); Kada, right bank of the Amur River, 24.VIII 1911, 1 ex. (Soldatov); Polina Osipenko, 30.VII 1973, 1 ex. (Elberg).

DISTRIBUTION. Holarctic species, widely distributed in Palaeartic Region from British Islands to Kamchatka and Japan.

NOTES. Rather common on wetlands, especially with sedges (Cyperaceae).

***Lasiosina herpini* (Guérin-Méneville, 1843)**

MATERIAL. Bolshekhzhir Natural Reserve, 26.VIII 1979, 6 ex. (Nartshuk); Island opposite of Khabarovsk on Amur River, 21–28.VIII 1979, 1 ex. (Nartshuk).

DISTRIBUTION. Transpalaeartic species.

NOTES. Larvae develop in shoots of different grasses as secondary invaders. Specimens from Russian Far East differs from European specimens by the tip of ocellar triangle with rather small black rhomboid spot and by entirely black and dusted spot on katepistern.

***Lasiosina orientalis* Nartshuk, 1973**

MATERIAL. Bolshekhzhir Natural Reserve 26.VIII 1979 (Nartshuk); island opposite of Khabarovsk on Amur River, 21–22.VIII 1979 (Nartshuk); Manoma, 25.VIII 1973 (Elberg); Pivan, 17.VIII 1973 (Elberg). Totally 12 ex.

DISTRIBUTION. The species is known from Russia (Southern Yakutia, Amurskaya oblast, Khabarovskii krai, Primorskii krai, Sakhalin, Kuril Islands), Mongolia, North China and Japan.

NOTES. Everywhere rather common in wetlands.

***Meromyza nigriventris* Macquart, 1835**

MATERIAL. 24 km Khabarovsk, 30.V 1983, 1 ex. (Kasparyan).

DISTRIBUTION. Holarctic species; in the Palaearctic widely distributed from British Isles to Japan.

NOTES. Larvae phytophagous, develop in different cereals and wild grasses.

***Meromyza saltatrix* (Linnaeus, 1761)**

MATERIAL. Ussuri River, 15 km S Khabarovsk, 4.VI 1910, 4ex. (Saldatov).

DISTRIBUTION. Holarctic species, widely distributed through the Palearctic, the most common species of the genus, in North America known only from Alaska.

NOTES. Larvae phytophagous, develop in different wild grasses.

***Meromyza sibirica* Fedoseeva, 1961**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VII 1979, 5 ex. (Nartshuk); Amurzet, 30.VII 1981, 2 ex. (Kasparyan).

DISTRIBUTION. Transpalaeartic species rather common in Asia, but rare in Europe.

NOTES. Larvae phytophagous, develop in stem of grasses.

***Platycephala umbraculata* (Fabricius, 1794)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 8 ex. (Nartshuk); Amurzet, 30.VII 1981, 1 ex. (Kasparyan).

DISTRIBUTION. Transpalaeartic species, known from British Isles to Russian Far East.

NOTES. Occurs on common reed beds. Larvae phytophagous, live in yang shoots of *Phragmites australis* forming galls.

***Pseudopachychaeta oscinina* (Fallén, 1823)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 1 ex. (Nartshuk).

DISTRIBUTION. Known from Europe southwards to Spain and from Kazakhstan.

NOTES. Larvae phytophagous, live in inflorescence of *Eleocharis* species.

***Thaumatomyia glabra* (Meigen, 1830)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 1 ex. (Nartshuk); island on Amur River, 26.VII 1927, 1 ex. (Stackelberg); delta of the Amur River, 15.VII 1995, 1 ex. (Chernavin); Russogorny, 5.VII 1971, 1 ex. (Negrobov).

DISTRIBUTION. Holarctic species.

NOTES. Larvae carnivorous, live in rhizome of plants and feed on root aphids.

***Thaumatomyia notata* (Meigen, 1830)**

MATERIAL. Island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 15 ex. (Nartshuk); Kherzig, Levaya River, 15–18.VII 1983, 6 ex. (Kasparyan); Londoko W Bira, 2.VIII 1981, 2 ex. (Kasparyan); Sobolevo, 20 km S Vyazemski, 20.VII 1978, 2 ex. (Kasparyan); Khabarovsk, 26.VII, 14.VIII 1973, 2 ex. (Elberg); Bolshekhkhzir Natural Reserve, 26.VIII 1979, 8 ex. (Nartshuk).

DISTRIBUTION. Widespread species, recorded in the Palaearctic, Afrotropical and Oriental Regions. In Palaearctic known from British Isles to Japan.

NOTES. Adults hibernate, aggregate before hibernating, and search any holes, can penetrate autumn onto buildings. Larvae carnivorous, live in rhizome of plants and feed on root aphids.

***Thaumatomyia rufa* (Macquart, 1835)**

MATERIAL. Khabarovsk, dendropark, 31.VII 1978, 1 ex. (Kasparyan); island opposite of Khabarovsk on Amur River, 21–22.VIII 1979, 42 ex. (Nartshuk); 40 km NNW Amurzet, River Samaus, 27.VII 1981, 1 ex. (Kasparyan); Amurzet, 18.VI 1985, 2 ex. (Kasparyan); Londoko W Bira, 30.VII 1985, 2 ex. (Kasparyan); Kherzir, Levaya River, 30.VI 1983, 1 ex. (Kasparyan); Khabarovsk, 22.VIII 1982, 8 ex. (Zinovijev); Khabarovsk, 26.VII 1973, 3 ex. (Elberg); Khabarovsk, island on the Amur River, 29.VII 1927, 2 ex. (Stackelberg); Sobolevo, 20 km S Vyazemski, 30.VII 1978, 1 ex. (Kasparyan); Dormidonovka, 92 km S Khabarovsk, 28.VI 1978, 1 ex. (Kasparyan).

DISTRIBUTION. Transpalaearctic species, known from British Isles to Japan and southwards to North Africa, but more common and numerous in the Asian part of range.

NOTES. Larvae carnivorous, live in rhizome of plants and feed on root aphids.

DISCUSSION

Up to now only 35 species of Chloropidae are recorded from Khabarovskii krai and Jewish Autonomous Region (17 species of Oscinellinae and 18 species of Chloropinae). It presents not more than 1/3 of real number of species. All species, except *Lasiambia shatalkini*, are recorded from these parts of Russian Far East for the first time. Two species of the genus *Oscinella* Becker, 1909 are undetermined, probably they present new species, but material insufficient for description.

Two main groups of species are distinguished according to their general distribution. First group contains 11 species of Oscinellinae and 16 species of Chloropinae with vast ranges (multiregional, Holarctic and Transpalaearctic). Several species of this group are very common and numerous in the Asian part but rather rare or not so numerous in the European part of Palaearctic Region, namely *Elachiptera sibirica*, *Polyodaspis ruficornis*, *Chlorops kirigamiensis*, *Meromyza sibirica*, *Platycephala umbraculata*, and *Thaumatomyia rufa*. Second group of species with ranges limited by south-eastern part of the Palearctic Region is less numerous and consists of six species of Oscinellinae (*Conioscinella divitis*, *Elachiptera biculiminata*, *E. insignis*, *Lasiambia shatalkini*, *Rhodesiella inexpectata*, *Rh. pallipes*) and only two species of Chloropinae (*Chlorops figuratellus*, *Lasiosina orientalis*).

Three groups of species associated with different biotopes are distinguished. Six species, *Conioscinella divitis*, *Polyodaspis ruficornis*, *Rhodesiella inexpectata*, *Rh. pallipes*, *Rh. plumiger*, *Hapleginella laevifrons*, occur predominantly in forest and bushes. All species of the genus *Elachiptera*, *Lasiosina orientalis*, *Diplotoxa messoris*, *D. dalmatina*, *Epichlorops puncticollis*, *Chlorops planifrons*, *Ch. zernyi*, *Platycephala umbraculata*, and *Preudopachychaeta oscinina* inhabit on wetlands. Other species are meadow inhabitants.

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