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ASSOCIATION OF THE LOUSE-FLIES OF THE GENUS *ORNITHOCTONA* SPEISER, 1902 (DIPTERA: HIPPOBOSCIDAE) WITH BIRDS AND FIRST RECORD OF *O. AUSTRALASIAE* (FABRICIUS, 1805) FROM THE RUSSIAN FAR EAST

E. P. Nartshuk[1)], A. V. Matyukhin[2)], Ya. A. Red'kin [3)]

1) Zoological institute of Russian Academy of Sciences, Universitetskaya nab. 1, St. Petersburg 199034, Russia. E-mail: chlorops@zin.ru

2) A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences Leninsky pr., 33, Moscow 119071, Russia. E-mail: amatyukhin53@mail.ru

3) Zoological Museum of Moscow State University M.V. Lomonosov, Bolshaya Nikitskaya 2, Moscow 125009, Russia. E-mail: yardo@mail.ru

Summary. A review of the association of 12 species *Ornithoctona* Speiser, 1902 with the host birds of the World fauna is given. One species, *O. australasiae* (Fabricius, 1805), is recorded from Russia for the first time.

Key words: Diptera, Hippoboscidae, *Ornithoctona*, bird, host, review, fauna, new record, Russia.

Э. П. Нарчук, А. В. Матюхин, Я. А. Редькин. Связи мух-кровососок рода *Ornithoctona* Speiser, 1902 (Diptera: Hippoboscidae) с птицами и первое нахождение *O. australasiae* (Fabricius, 1805) на Дальнем Востоке России // Дальневосточный энтомолог. 2018. N 355. С. 23-28.

Резюме. Приведен список 12 видов кровососок рода *Ornithoctona* Speiser, 1902 с указанием семейств их хозяев–птиц мировой фауны. Впервые для России приводится *O. australasiae* (Fabricius, 1805).

INTRODUCTION

Importance of the birds in the diffusion of transmissive diseases of the men and animals is evident and need in detailed researches (Matyukhin & Boiko, 2007). Birds and their ectoparasitic Arthropoda are important link in the complex of transmissive diseases caused by viruses, ricketses and bacteria (Pavlovsky & Tokarevich, 1966; Balashov, 1982; Boiko *et al*., 1973).

Louse-flies (Hippoboscidae) damage birds at once as bloodsuckers and as vectors of pathogenic organisms of different nature. Zumpt (1939) and Bequaert (1953) indicated possibility to mechanical transfer of *Bacillus anthracis* Coh. by Hippoboscidae. Louse flies *Pseudolynchia canariensis* (Macquart, 1840) is transfer of *Trypanosoma hannae* and *Haemoproteus columbia* Kryse from sick to healthy pigeons (Baker, 1967). Another species

of louse-fly *Ornithomyia avicularia* (Linnaeus, 1758) transfers *Trypanosoma avium* to rooks and jackdaws (Corvidae) (Baker, 1956) and some species of *Haemoproteus* to pigeons (Baker, 1963). Listed parasitic organisms develop in bodies of louse-flies. Farajollahi *et al*. (2005) detected the West Nile virus RNA from the louse-fly *Icosta americana* (Leach, 1817) in North America, positive serological reaction on this virus in *I. americana* was early detected (Ganez *et. al*., 2002). Boiko *et al*. (1973) suggested involvement of birds' louse-flies in circulation of pathogene of tick's encephalitis in forest-steppe zone of the Middle Volga. DNA of *Bacillus burgdorferi* s. l. genospecies of *B. afzelii* и *Borrelia* sp. were found in louse-flies *Icosta ardea* (Macquart, 1835), *Pseudolynchia canariensis* (Macquart, 1840), and *Ornithomyia avicularia* (Linnaeus, 1758) taken on the South of Rostov oblast (Russia) (Zabashta *et al*., 2017a, 2017b). Most species of Hippoboscidae living on birds have wing, fly, have many birds as host and may transfer pathogenic organism from one bird to another. Some pathogenic organism develops in the body of louse-flies.

The genus *Ornithoctona* Speiser, 1902 includes 12 species of louse-flies (Maa, 1969; McClure *et al*., 1973, with changes and adding). They occur mainly in tropical zone of both Hemispheres: 6 species are known in the Old World and 6 species in the New World. Only two species of the genus *Ornithoctona* are recorded in the Palaearctic Region (Soós & Hůrka, 1986).

LIST OF THE SPECIES

***Ornithoctona australasiae* (Fabricius, 1805)**
Figs 1, 2

DISTRIBUTION. South-East Asia (from Malaya to Solomon Islands), Japan (Honshu), Kazakhstan, Russia (new record).

Fig. 1. *Ornithoctona australasiae* (Fabricius, 1805), specimen from Kunashir (photo by V. Neimorovits).

FAMILIES OF THE HOST BIRDS. Alcedinidae, Artamidae, Campephagidae, Columbidae, Dicruridae, Falconidae, Hirundinidae, Laniidae, Meliphagidae, Motacillidae, Muscicapidae (chiefly), Paradisaeidae, Paridae, Picidae, Pittidae, Ptilonorhynchidae, Pycnonotidae, Sturnidae, Timaliidae, Zosteropidae.

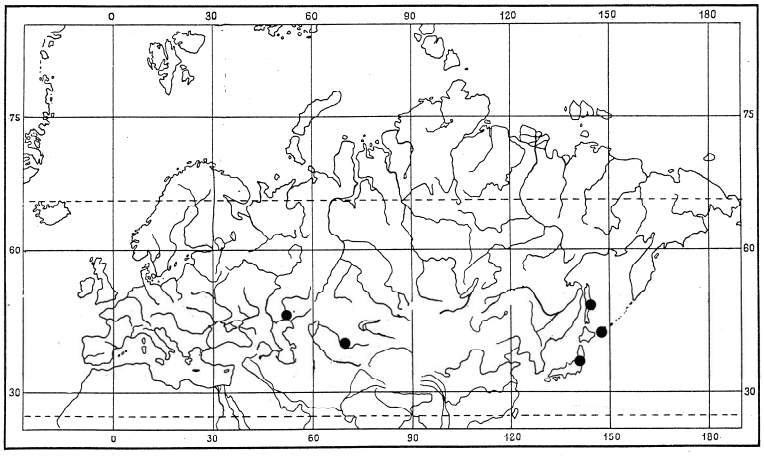

Fig. 2. Records of *Ornithoctona australasiae* (Fabricius, 1805) in the Palearctic region.

NOTES. In the Palaearctic region *O. australasiae* was recorded from Kazakhstan and Japan. One male and two females were taken from *Accipiter nisus* 29.IV 1974 in Makhambet (Ural River) and one female from *Riparia riparia,* 22.V 1972 in Shakpak Pass (Karatau Ridge) in Kazakhstan (Doszhanov, 2003). Here this species is recorded from Russia for the first time. A female was taken from *Passer rutilans* 4.VII 1962 on Kunashir Island (V. Nechaev) (coll. Zoological Institute, St. Petersburg); another female was taken from *Ficedula mugimaki*, 2.VI 2010 in the low stream of Bauri River, Noglinsky rayon, Sakhalin (Red'kin) (coll. of A. Matyukhin). Record from Sakhalin is the most northern locality (51°58′49″ N, 143°07′04″ E) for this species. The nearest southern locality is Japan, one female, Mt. Fuji, ex *Parus minor minor*, apparently straggler (Maa, 1967, 1969). Bird species of 38 genera are known as host of this louse-fly. Birds *Passer rutilans* and *Ficedula mugimaki* are migrants on Kunashir and Sakhalin Islands, and spend winter period in the South-East Asia, where situated the main range of *O. australasiae.* Both birds make its nests on Kuril Islands and Sakhalin. Probably some southern populations of *Passer rutilans* are resident of the Russian Far East.

***Ornithoctona idonea* Falcoz, 1929**

DISTRIBUTION. Madagaskar.
FAMILY OF THE HOST BIRDS. Coraciidae.

***Ornithoctona laticornis* (Macquart, 1835)**

DISTRIBUTION. Africa from Ethiopia to Cape Province.
FAMILIES OF THE HOST BIRDS. Alcedinidae, Anatidae, Columbidae, Coraciidae, Dicruridae, Eurylaimidae, Fringillidae, Hirundinidae, Laniidae, Muscicapidae, Oriolidae, Picidae, Phoenicopteridae, Ploceidae, Pycnonotidae, Sturnidae, Trogonidae, Zosteropidae.

***Ornithoctona plicata* von Olfers, 1816**

DISTRIBUTION. Russia (Kuril Islands), Mongolia, East China, Korea, Japan, India, Sri-Lanka, Thailand, Philippines, Sumatra, Java, Borneo, New Guinea, Australia, Madagascar, Fiji, Samoan and Tonga Islands.

FAMILIES OF THE HOST BIRDS. Accipitridae, Alcedinidae, Ardeidae, Artamidae, Bucerotidae, Campephagidae, Charadriidae, Columbidae, Corvidae, Cuculidae, Falconidae, Hirundinidae, Megapodiidae, Muscicapidae, Oriolidae, Phasianiidae, Picidae, Psittacidae, Pycnotidae, Sittidae, Strigidae, Sturnidae, Trogonidae. Chiefly on Accipitridae, Columbidae, Psittacidae.

NOTES. This species was recorded from Russia (Primorsky kray, Iturup Island), Mongolia, East China, Korea, and Japan (Honshu, Kyoto, ex hawk and Matsumoto, Nagano-ken ex *Ninox japonica japonica*) (Maa, 1967, 1969). Bird species of 52 genera are known as host of this species. In Primorsky kray one female was taken from *Cuculus optatus* 31.V 1965 in vicinity of Peishula, Shkotovsky rayon (Nazarov, 1968).

***Ornithoctona rugicornis* Maa, 1963**

DISTRIBUTION. West Africa: Island San-Tome in the Gulf of Guinea.

FAMILIES OF THE HOST BIRDS. Psittacidae, Sturnidae.

***Ornithoctona soror* Ferris, 1926**

DISTRIBUTION. Indonesia (Borneo Island).

FAMILIES OF THE HOST BIRDS. Dicruridae, Muscicapidae.

***Ornithoctona erythrocephala* (Leach, 1817)**

DISTRIBUTION. America from Canada to Chili and the Antillean islands.

FAMILIES OF THE HOST BIRDS. Accipitridae, Alcedinidae, Anatidae, Ardeidae, Caprimulgidae, Cathartidae, Columbidae, Corvidae, Cotingidae, Cracidae, Cuculidae, Eurypygidae, Falconidae, Furnariidae, Icteridae, Momotidae, Pandionidae, Phasianidae, Picidae, Pipridae Psittacidae, Ramphastidae, Strigidae, Trogonidae.

***Ornithoctona fusciventris* (Wiedemann, 1830)**

DISTRIBUTION. America from Canada to Chili and the Antillean islands.

FAMILIES OF THE HOST BIRDS. Accipitridae, Apodidae, Columbidae, Corvidae, Cotingidae, Cracidae, Falconidae, Formicariidae, Fringillidae, Furnariidae, Icteridae, Momotidae, Muscicapidae, Picidae, Phasianidae, Rhinocryptidae, Thraupidae, Trogonidae, Tyrannidae, Vireonidae.

***Ornithoctona hulahula* Maa, 1969**

DISTRIBUTION. Hawaii.

FAMILIES OF THE HOST BIRDS. Not known.

***Ornithoctona nitens* Bigot, 1885**

DISTRIBUTION. Mexico, Honduras, Nicaragua, Costa-Rica, Panama, Columbia, Venezuela.

FAMILIES OF THE HOST BIRDS. Columbidae, Muscicapidae Trochilidae, Trogonidae.

***Ornithoctona orizabae* Bequaert, 1954**

DISTRIBUTION. Mexico.
FAMILIES OF THE HOST BIRDS. Not known.

***Ornithoctona oxycera* Falcoz, 1929**

DISTRIBUTION. Columbia, Venezuela.
FAMILIES OF THE HOST BIRDS. Accipitridae, Muscicapidae, Thraupidae, Tyrannidae.

CONCLUSION

The birds of 54 families are recorded as host of the species of the genus *Ornithoctona*. Number of families as hosts varies: *O. idonea* Falcoz, 1929 feeds on hosts from one family of birds and *O. plicata* von Olfers, 1816 – on hosts from 23 families of birds. Both Palaearctic species of *Ornithoctona* are the most widespread and have numerous and diverse species of birds as host. Records under discussion give no evidence yet of possibility of acclimatization and reproduction of *O. plicata* and *O. australasiae* in Russia, but invasion of any infections and transfer to autochthonous species of birds are quite possible.

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Address: Federal Scientific Center of the East Asia Terrestrial Biodiversity (former Institute of Biology and Soil Science), Far East Branch of the Russian Academy of Sciences, 690022, Vladivostok-22, Russia.

E-mail: storozhenko@biosoil.ru web-site: http://www.biosoil.ru/fee