



УДК 595.753(470.23)

***Cixidia confinis* (Zetterstedt, 1828) (Hemiptera: Auchenorrhyncha: Fulgoroidea: Achilidae) in Saint Petersburg and Leningrad Province**

V.M. Gnezdilov^{1*}, A.F. Emeljanov¹, A.V. Kovalev^{1,2} and K.I. Fadeev¹

¹Zoological Institute, Russian Academy of Sciences, 1 Universitetskaya Emb., Saint Petersburg 199034, Russia; e-mails: vmgnezdilov@mail.ru, vgnezdilov@zin.ru

²All-Russian Institute of Plant Protection of the Russian Academy of Sciences, St. Petersburg–Pushkin 196608, Russia

ABSTRACT

Cixidia confinis (Zetterstedt, 1828) is recorded from the north of Saint Petersburg and from the Kurgalsky Reserve and near Volkovitsy village in Leningrad Province after the series of larvae collected since late April to late May 2019 with the adults appeared later in the laboratory. Until the present *C. confinis* was known from Russia only after few specimens. The photos of alive adults and larvae of *C. confinis* are provided for the first time.

Key words: Achilini, Cixidiina, *Cixidia*, European Russia

***Cixidia confinis* (Zetterstedt, 1828) (Hemiptera: Auchenorrhyncha: Fulgoroidea: Achilidae) в Санкт-Петербурге и Ленинградской области**

В.М. Гнездилов^{1*}, А.Ф. Емельянов¹, А.В. Ковалёв^{1,2} и К.И. Фадеев¹

¹Зоологический институт Российской академии наук, Университетская наб. 1, 199034 Санкт-Петербург, Россия; e-mails: vmgnezdilov@mail.ru, vgnezdilov@zin.ru

²Всероссийский институт защиты растений Российской академии наук, 196608 Санкт-Петербург–Пушкин, Россия

РЕЗЮМЕ

Cixidia confinis (Zetterstedt, 1828) указан из Санкт-Петербурга по серии личинок, собранных на севере города, а также в Кургальском заказнике и близ деревни Волковицы Ленинградской области с конца апреля по конец мая 2019 года, с последующим выведением имаго в лаборатории. До сегодняшнего дня *C. confinis* был известен из России только по нескольким экземплярам. Впервые даны фотографии живых личинок и имаго этого вида.

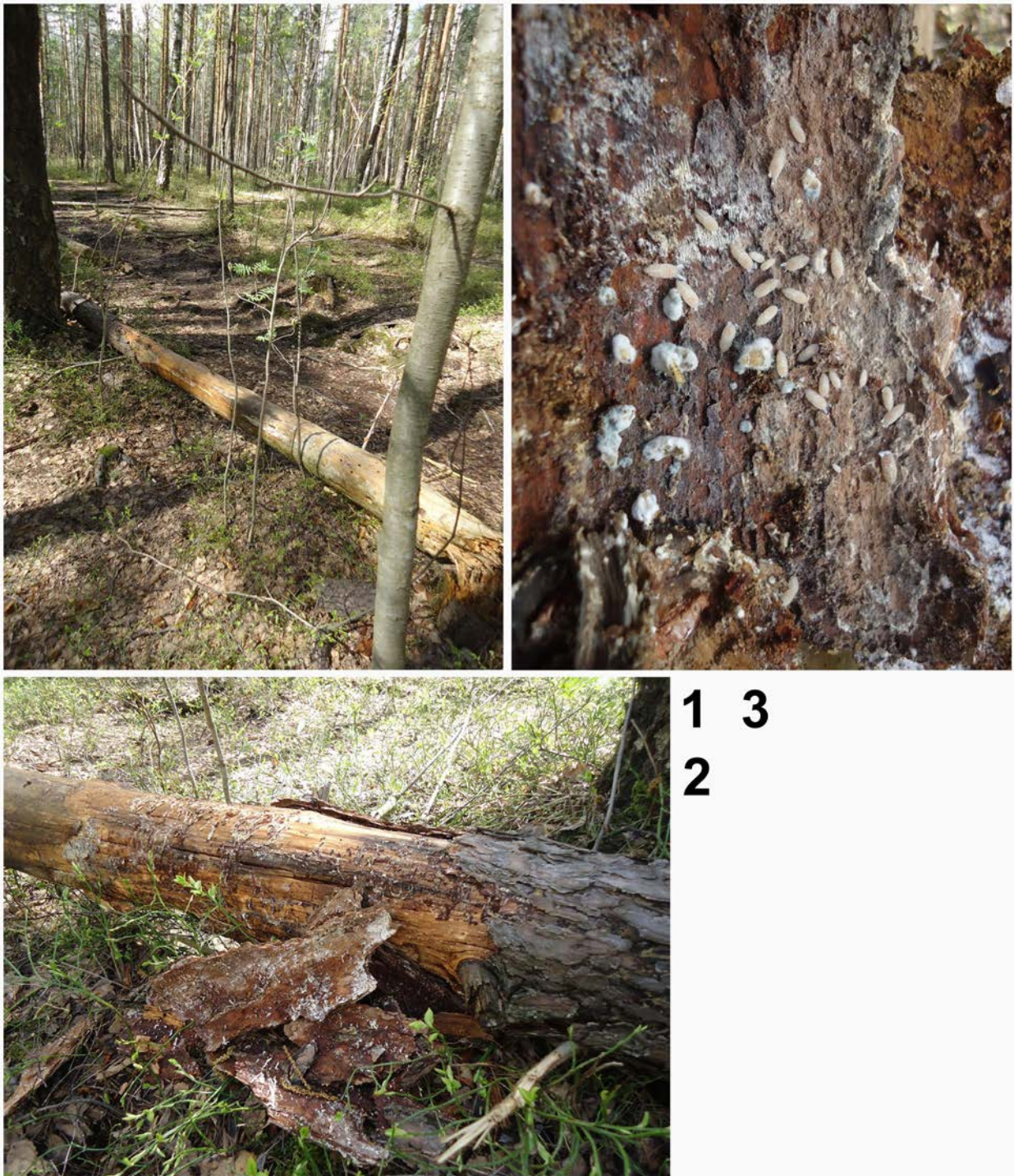
Ключевые слова: Achilini, Cixidiina, *Cixidia*, Европейская часть России

INTRODUCTION

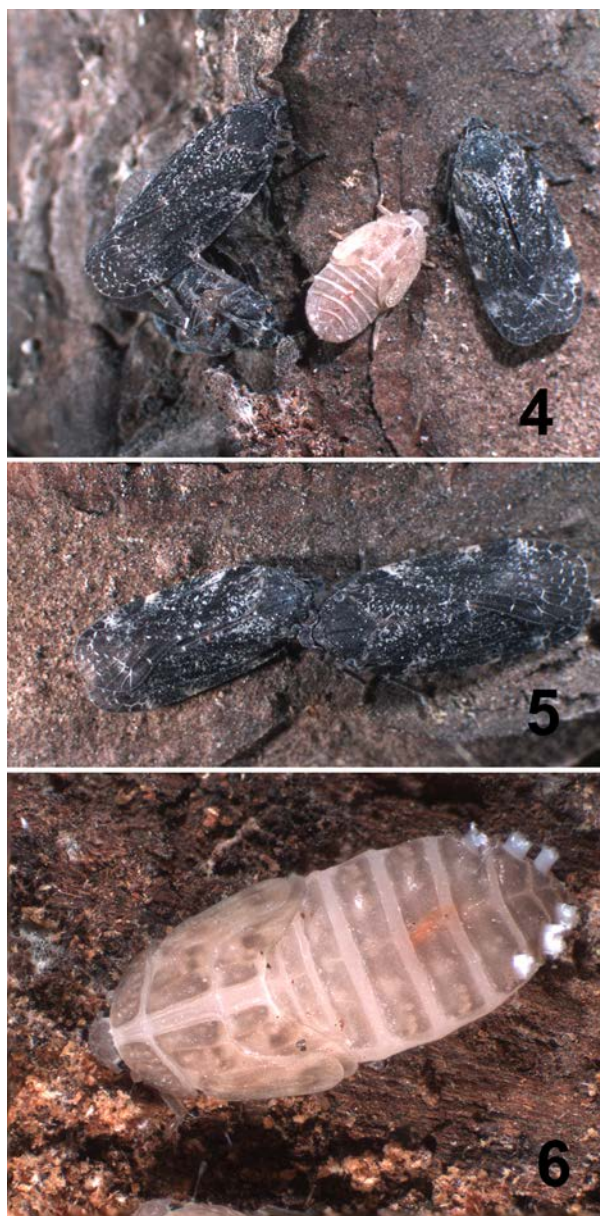
During a field work in Sosnovka Park on the north of Saint Petersburg, 21st April 2019, the series of alive larvae of several instars of *Cixidia confinis* (Zetterstedt, 1828) was collected under the bark of fallen pine tree (Figs 1–3). During next two weeks

14 males and 7 females appeared in the laboratory where larvae were kept in a Petri dish with the pieces of pine bark and humidity controlled (Figs 4–6). Soon after, since 14th to 21st May 2019, more larvae were found in pine forests in Kurgalsky Reserve (Kingisepp District) and in vicinity of Volkovitsy village (Lomonosov District) of Leningrad Province (Fig. 7). In Kurgalsky Reserve the larvae were collected under the bark of dead vertically staying

*Corresponding author / Автор-корреспондент



Figs 1–3. Collecting site of *Cixidia confinis* (Zetterstedt) in Sosnovka Park of Saint Petersburg. 1 – fallen pine tree (piece of 2–3 m length with trunk diameter – 100–200 mm, laying horizontally in 1–1.5 m to forest path); 2 – trunk of the tree with a colony of larvae under the bark; 3 – colony of larvae. Photos © A.V. Kovalev.



Figs 4–6. *Cixidia confinis* (Zetterstedt). 4 – adults and larva; 5 – male and female; 6 – 5th instar larva. Photos © V.M. Gnezdilov.

pine tree at 1.5–1.7 m above soil level. Later in the laboratory 5 males and 3 female appeared under the same conditions.

This rare species of the family Achilidae Stål was known from Russia only after the few findings in Chuvashiya (Anufriev and Kirillova 1998 and the material listed below) and after a female with a label “St Petersburg” (no data and collector name) from the collection of August Puton in the Museum

national d’Histoire naturelle in Paris (Asche 2015).

Holarctic genus *Cixidia* Fieber, 1866 is known after 18 species in the Palaearctics (Emeljanov 2005; Anufriev and Emeljanov 1988; Asche 2015). Six species of the genus are recorded from Russia including four species from the European part of the country (*C. confinis* (Zetterstedt, 1828), *C. lapponica* (Zetterstedt, 1840), *C. mersinica* (Dlabola, 1987), *C. polias* Emeljanov, 2005) and three species from Primorsky Territory of the Russian Far East (*C. lapponica*, *C. kasparyani* Anufriev, 1983, *C. ussuriensis* Kusnezov, 1928) (Anufriev and Emeljanov 1988; Emeljanov 2005). The range of distribution of *C. confinis* except European Russia covering also Finland, Norway, Sweden, Germany, and Estonia (Asche 2015). The nearest to Saint Petersburg and Leningrad Province record of this species is known from Kastre-Paravalla of southeastern Estonia (Vilbaste 1971).

MATERIAL AND METHODS

The photographs of the specimens were taken using the microscope Leica MZ9.5 and a Leica DFC 490 camera. Images were produced using Helicon Focus V. 6.7.1 and Adobe Photoshop software.

The series of the species discussed are deposited in the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia.

SYSTEMATICS

Family Achilidae Stål, 1866

Subfamily Achilinae Stål, 1866

Tribe Achilini Stål, 1866

Subtribe Cixidiina Emeljanov, 1992

Genus *Cixidia* Fieber, 1866

Type species: *Cicada confinis* Zetterstedt, 1828.

***Cixidia confinis* (Zetterstedt, 1828)**
(Figs 3–6)

Material examined. RUSSIA: numerous larvae, Saint Petersburg, Sosnovka Park, N60°01.416' E30°21.108', 21 April 2019, K.I. Fadeev and A.V. Kovalev leg.; numerous larvae, Leningrad



Fig. 7. Distribution of *Cixidia confinis* (Zetterstedt) in Saint Petersburg and Leningrad Province. a – Sosnovka Park; b – Volkovitsy village; c – Kurgalsky Reserve.

Province, Kingisepp District, nearly 6 km NNW Ust'-Luga, Kurgalsky Reserve, N59°42.229' E28°12.495', 14 May 2019, K.I. Fadeev leg.; numerous larvae, Leningrad Province, Lomonosov District, W of Volkovitsy village, 59°38.435' N 29°47.937'E, 21 May 2019, A.V. Kovalev and A.M. Shapovalov leg.; 1 female, Chuvashiya, 6 km NNW of Cheboksary, left bank of Volga River, August 1996, L. Egorov leg.

DISCUSSION

For the first time *Cixidia confinis* (Zetterstedt, 1828) was recorded from Russia by Puton (1886) in 3rd edition of his "Catalogue des Hémiptères de la faune Paléarctique" where he recorded this species from "RS." which means Russia and Scandinavia. The female of *C. confinis* from Saint Petersburg deposited in Puton's collection in Paris mentioned

by Asche (2015) apparently was not known to V.F. Oshanin who published a list of Auchenorrhyncha of Saint Petersburg Province in 1907 but did not mention any Achilidae from Saint Petersburg (Oshanin 1907). Probably this female appeared in Puton's collection somewhere between 1875 when "Catalogue des Hémiptères d'Europe et du bassin de la Méditerranée" was published and where *C. confinis* was recorded only from Scandinavia – "S." (Puton 1875) and 1886.

According to available data adults and nymphs of *Cixidia confinis* are found in "fissures and under the bark of dead trunks of pine feeding on mycelium of fungi" (Nickel 2003). In particular Linnavuori (1951) recorded larvae of this species occurred in small colonies with 10–15 specimens in 2–5 cm under the surface of pine trunk and Vilbaste (1971) mentioned *Amyloporia xantha* (Fr.) Bondartsev et

Singer ex Bondartsev (currently *Antrodia xantha* (Fr.) Ryvarden) (Polyporales, Fomitopsidaceae) as host fungi for larvae of *C. confinis*. Our collectings were made in the native mixed forest with pine, birch, mosses, bilberries, cranberries etc., sometimes swamped, equipped with drainage ditches, under the bark or in the cracks of wood of recently dead pine trees with brown rot caused by *Amyloporia sinuosa* (Fr.) Rajchenb., Gorjón et Pildain (= *Antrodia sinuosa* (Fr.) P. Karst.).

Apparently *Cixidia confinis* is a host of *Embolemus ruddii* Westwood, 1833 (Hymenoptera, Embolemidae) which is also known from Sosnovka Park (Olmi et al. 2014), however, the larvae examined during this study were not parasitized.

ACKNOWLEDGEMENTS

We thank Prof. Thierry Bourgoïn and Dr. Adeline Soulier-Perkins (Paris, France) for their help with literature, Dr. Sergey Volobuev (Saint Petersburg, Russia) for his identification of *Amyloporia sinuosa* and Dr. Manfred Asche (Berlin, Germany) for his review of the manuscript. The study is performed in the framework of the state research project AAAA-A19-119020690101-6.

REFERENCES

- Anufriev G.A. and Emeljanov A.F. 1988.** Cicadinea (Auchenorrhyncha). In: P.A. Lehr (Ed.). Key to the insects of the Far East of the USSR, 2. Leningrad, Nauka: 12–495. [In Russian].
- Anufriev G.A. and Kirillova V.I. 1998.** Cicadina (Homoptera) of Chuvash Republic. KLIO, Cheboksary, 176 p. [In Russian].
- Asche M. 2015.** The Western Palaearctic Achilidae (Hemiptera, Fulgoromorpha: Fulgoroidea) – a review with description of five new species from the Mediterranean. *Nova Supplementa Entomologica*, 25: 1–135.
- Emeljanov A.F. 2005.** New genera and new species of the family Achilidae (Homoptera). *Entomologicheskoe Obozrenie*, 84(1): 10–45. English translation published in *Entomological Review*, 85(1): 21–52.
- Linnavuori R. 1951.** Hemipterological observations. *Annales Entomologici Fennici*, 17(2): 51–65.
- Nickel H. 2003.** The leafhoppers and planthoppers of Germany (Hemiptera, Auchenorrhyncha): patterns and strategies in a highly diverse group of phytophagous insects. Pensoft Publishers, Keltern: Goecke & Evers, Sofia–Moscow, 460 p.
- Olmi M., Belokobylskij S.A. and Guglielmino A. 2014.** Revision of the family Embolemidae of Russia and Ukraine (Hymenoptera: Chrysidoidea), with description of a new species. *Annales Zoologici (Warszawa)*, 64(1): 97–108. <https://doi.org/10.3161/000345414x680672>
- Oshanin V.F. 1907.** Catalogue des Homoptères (Auchenorrhynques et Psyllides) du gouv. De St.-Petersbourg. *Annuaire du Musée Zoologique de L'Académie Impériale des Sciences de St.-Petersbourg*, 12: 213–40.
- Puton A. 1875.** Catalogue des Hémiptères (Hétéroptères, Cicadines et Psyllides) d'Europe et du bassin de la Méditerranée. 2e Ed. Paris: Deyrolle, 155 p.
- Puton A. 1886.** Catalogue des Hémiptères (Hétéroptères, Cicadines et Psyllides) de la faune Paléarctique. 3me Ed. Caen: Imprimerie le Blanc-Hardel Henri Desques, Successeur, 99 p.
- Vilbaste J. 1971.** Eesti Tirdid. Homoptera: Cicadina I. Tettigometridae, Cixiidae, Delphacidae, Achilidae, Issidae, Cicadidae, Aphrophoridae, Membracidae. Valgus, Tallin, 284 p.

Submitted July, 14, 2019; accepted September 1, 2019.