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***Lonchaea xylophila* Kovalev, 1978 (Diptera,  
Lonchaeidae) new to Finland, with description of  
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Lehden nimi, *w-album*, pohjautuu hyönteiskerhon logoon, joka on Ari Karhilahden tyyllittelemä jalavanopsasiipi (*Satyrrium w-album*).

# *Lonchaea xylophila* Kovalev, 1978 (Diptera, Lonchaeidae) new to Finland, with description of the female

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**Abstract.** The rare Palearctic *Lonchaea* species, *Lonchaea xylophila* Kovalev, 1978 (Diptera, Lonchaeidae), is reported as new to the Finnish fauna and its female is described for the first time. The Finnish fauna of Lonchaeidae is discussed.

***Lonchaea xylophila* Kovalev, 1978 (Diptera, Lonchaeidae) Suomelle uusi laji sekä sen naaraan kuvaus**

**Lyhennelmä.** Harvinainen palearktinen *Lonchaea*-laji, *Lonchaea xylophila* Kovalev, 1978 (Diptera, Lonchaeidae), ilmoitetaan Suomen faunalle uutena ja sen naaras kuvataan ensimmäisen kerran. Heimion Lonchaeidae suomalaisesta lajistosta esitetään pohdintaa.

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## 1. Introduction

*Lonchaea xylophila* (Diptera, Lonchaeidae) was described by Kovalev (1978) based on two male specimens. These type specimens were reared from puparia collected on 16 June 1974 from birch (*Betula* sp.) timber in a forest around Lake Glubokoye, Ruza district, Moscow Province, Russia. The male of the species is quite characteristic, making the determination of the species relatively easy (MacGowan 2020). However, as the species is rare, the female has remained undescribed.

In addition to the type specimens, *Lonchaea xylophila* is known from Västerbotten in Sweden (Artfakta 2023), Troms in Norway (MacGowan & Gustad 2022) and Mordavia in Russia (MacGowan et al. 2021). The studied Finnish specimens, one male and two females, were found in the province *Laponia kemiensis occidentalis* (*Lkoc*). During the preparation of this manuscript

Iain MacGowan informed me of additional unpublished Finnish specimens, one male and two females, reared from puparia found under birch at *Ok*: Kuhmo Vesanvaara by Graham Rotheray in May 2004.

## 2. Material and methods

The studied specimen collected in Finland during 2006 was a female: FINLAND: Lkoc: Kolari / (5) / 746:335 [67°10' N; 23°40' E] / 15.07.-15.08.2006 / J. Jakovlev leg. // LONCHAEIDAE / *Lonchaea* / *xylophila* Kov. / det. A. Haarto 2022 / AHa22-001195. This female is deposited in Finnish Museum of Natural History, Helsinki, Finland. This label and the other labels include Finnish grid coordinates (ykJ) (see [http://www.maanmittauslaitos.fi/sites/default/files/Finnish\\_Coordinate\\_Systems.pdf](http://www.maanmittauslaitos.fi/sites/default/files/Finnish_Coordinate_Systems.pdf)). The corresponding geographical coordinates are given in square brackets. The specimen was collected

using a malaise trap with 50 % glycol as the preservative. When the collected material was sorted, it was first rinsed with water and subsequently stored in 70 % ethanol.

The other specimens studied were a male: FINLAND: Lkoc: Muonio / Kihlanki 751246:336591 [67°40.1' N; 23°50.0' E] / 29.6.-16.7.2021 bait trap / Mika Rahko leg. // LONCHAEIDAE / *Lonchaea* / *xylophila* Kov. / det. A. Haarto 2022 / AHa22-001193 and a female: FINLAND: Lkoc: Muonio / Kihlanki 751246:336591 [67°40.1' N; 23°50.0' E] / 3.-28.7.2022 bait trap / Mika Rahko leg. // LONCHAEIDAE / *Lonchaea* / *xylophila* Kov. / det. A. Haarto 2022 / AHa22-001194. These specimens are deposited in the personal collection of Antti Haarto. An equal part solution of chloroform and tetrachloroethane was used as a killing substance in the bait trap. The collected material was dry and was sorted and stored directly in 70 % ethanol. All the identifications were made in the ethanol solution. The specimens were pinned and air-dried after acetone immersion. The purpose of the acetone treatment was to harden the specimens and prevent shrinkage due to the drying after being stored in ethanol.

A photo of the female specimen was taken with the Euromex Novex RZ trinocular microscope and AmScope MU1803, Microscope Digital Camera, composed with AmScope camera's own software. The same microscope and camera combination was used for helping to draw the female aculeus and apical sclerite.

The morphological terminology used in this study follows MacGowan and Rotheray (2021), McAlpine (1981) and White et al. (1999).

### 3. *Lonchaea xylophila* Kovalev, 1978

Diagnostics of the male:

Eyes bare. Mouth margin with anterior genal setae in a single row. Legs black, basal tarsomere of fore and middle legs and basal and second tarsomere of hind legs dark yellow. Fringes of calypteres with equally long yellowish setulae. Proepimeron with

only 1 seta. Anepimeron with 1-2 long setae. Large species with wing length more than 5.0 mm. (Kovalev 1978, MacGowan 2020). For original illustration of male terminalia see Kovalev (1978, Figs. 17-19).

Description of the female:

Head (Fig. 1): Eyes bare. Frons with dark grey dusting, lighter grey along the fronto-orbital plate. Orbital plate highly lustrous and with 0-2 setulae posterior to the single strong reclinate orbital seta. Frontal and interfrontal setulae erect, weakly curved, length about 0.3x that of orbital seta. Inner and outer vertical setae strong. Postocellar setae weak. Ocellar triangle lustrous, with a strong pair of ocellar setae. Lunule reddish ventrally, its upper part black with setulae. Parafacial and face covered with greyish dusting, lower part of parafacial with light brownish dusting. Gena almost as broad as the antennal postpedicel. Mouth margin with anterior genal setae in a single row. Antennae dark brown with a reddish brown apical inner margin on pedicel and stripe on medial surface of postpedicel. The length of the reddish stripe about 0.5x length of the postpedicel. Antennal postpedicel length about 2.2-2.4 times its width, with straight anterior margin and rounded apex. Arista reddish basally and microscopically pubescent. Palpus barely projecting beyond the margin of mouth, covered with setulae and with a longer apical seta.

Thorax: Scutum bluish black, shiny above. Lateral margins and posterior margin of scutum with thin greyish dusting. Scutum with black setulae, but notopleuron and posterior margin in front of scutellum without setulae. Scutellum with thin greyish dusting. Scutellum dorsally bare, with 1 pair of apical and lateral setae. Between apical setae with 3-6 setulae. Between apical and lateral setae 2-6 marginal setulae. No marginal setulae anterior to the lateral setae. Pleuron covered with brownish grey dusting, anepisternum and upper middle part of katepisternum only thinly. Proepisternum with 1 seta. Proepimeron with only 1 seta. Anepisternum with erect partly seta-like setulae and on posterior margin with 5-7 setae. Anepimeron with 1-2 setae. Katepisternum bare in the middle, long setulae on lower part between fore and mid coxa. Upper part of katepisternum

with setulae and 1 seta. No setulae posterior to the katepisternal seta. Meron without setulae and setae.



Fig. 1. The female head of *Lonchaea xylophila* Kovalev.  
Kuva 1. *Lonchaea xylophila* Kovalev naaraan pää.

**Wings:** Microtrichia yellowish. Veins yellow and costa with black setulae. Pterostigma approximately 2 times as long as crossvein r-m. Calypteres pale yellowish with light yellow margin and fringe of equally long setulae.

**Legs:** Legs black, basal and second tarsomeres dark yellow, covered with black setulae, only basal tarsomere of fore and hind legs with yellow ventral setulae.

**Abdomen:** Tergites bluish black with black setulae. Tergites 1-3 covered with brownish grey dusting, tergites 2-3 laterally without dusting. All sternites covered with brownish grey dusting. Sternite 1 bare, other sternites covered with black setulae. Aculeus is shown in dorsal and lateral view in Fig. 2.

Body length 5.1-5.4 mm, wing length 5.2-5.7 mm.

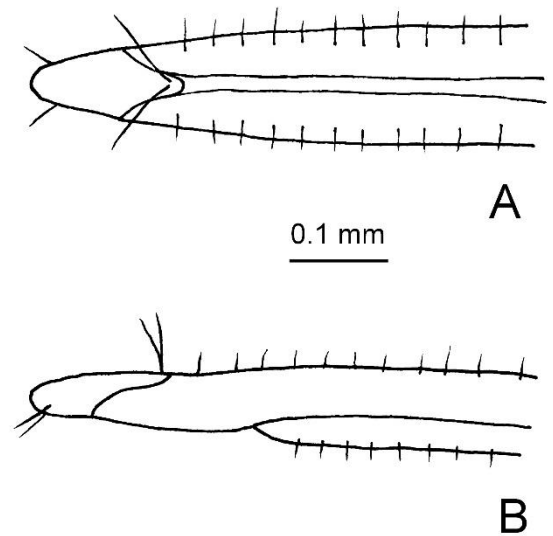


Fig. 2. The aculeus of *Lonchaea xylophila* Kovalev (A) dorsal view, (B) lateral view.

Kuva 2. *Lonchaea xylophila* Kovalev, aculeus (A) päältä ja (B) sivulta.

**Remarks:** The female of *L. xylophila* keyed out correctly using the test key to males of European *Lonchaea* (MacGowan 2020). The key characters of the female are mostly similar as the male: eyes bare; mouth margin with anterior genal setae in a single row; legs black, basal and second tarsomeres dark yellow; fringes of calypteres with equally long yellowish setulae; proepimeron with only 1 seta and anepimeron with 1-2 long setae. The biotope where the species *L. xylophila* was found in Finland by Mika Rahko was quite peculiar. It is a mixed forest where most of the trees are old spruces (*Picea abies*) with some birch (*Betula* sp.) and aspen (*Populus tremula*). In the forest water emerges through the sandy soil and the ground is always moist with some puddles. The other species of the family Lonchaeidae in the bait trap were *L. bukowskii* Czerny, *L. chorea* (Fabricius), *L. deuschi* Zetterstedt, *L. limatula* Collin and *L. ragnari* Hackman. Surprisingly *L. limatula* was the most common species with 57 specimens and the usually most numerous species in the northern areas, *L. affinis* Malloch, was totally missing in the bait trap material. The bait used was red wine and brown sugar, which is commonly used for collecting moths (Lepidoptera).

#### 4. Discussions

Determining specimens of the family Lonchaeidae is often quite a challenging task, especially when females are concerned. Earlier the most useful publications in Finland were The Lonchaeidae of Eastern Fennoscandia (Hackman 1956), Family Lonchaeidae in the Keys to the Insects of the European USSR (Shtakel'berg 1988) and British Lonchaeidae (MacGowan & Rotheray 2008). Now the European *Lonchaea* test key (MacGowan 2020) makes the determination of at least male specimens much easier.

The last Finnish checklist of Lonchaeidae (Kahanpää & Winqvist 2014) includes 41 confirmed and 3 doubtful species. After the checklist 7 new species have been published (Haarto et al. 2019, Winqvist & Malmberg 2020, MacGowan & Reimann 2021 & Haarto 2022) and there are still 2 unpublished species (Winqvist 2023). The total number of Finnish Lonchaeidae is now 51 confirmed and 3 doubtful species when *Lonchaea xylophila* is taken into account. The number of Finnish Lonchaeidae can be compared to the Swedish fauna with 60 known species (MacGowan 2015). There are clearly some southern species in the Swedish fauna which are missing from Finland, but some of the other Swedish species are very likely to be found in Finland as well. Probably also some eastern species could be found as new to Finland.

#### 5. Acknowledgements

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#### 6. References

- Artfakta 2023: *Lonchaea xylophila*. – <https://artfakta.se/artbestamning/taxon/lonchaea-xylophila-6007999> [3 January 2023]
- Haarto, A., Kakko, I. & Winqvist, K. 2019: Lisäyksiä Suomen Diptera-faunaan vuoden 2014 jälkeen. – w-album (22) 2019, 3-31. <https://blogit.utu.fi/teks/w-album/>
- Haarto, A. 2022: Suomen Diptera-faunaan 51 uutta lajia. – w-album (24) 2022, 3-19. <https://blogit.utu.fi/teks/w-album/>
- Hackman, W. 1956: The Lonchaeidae (Dipt.) of Eastern Fennoscandia. – *Notulae Entomologicae* 36(3-4): 89-115.
- Kahanpää, J. & Winqvist, K. 2014: Checklist of the Diptera superfamilies Tephritoidea and Sciomyzoidea of Finland (Insecta). In: Kahanpää, J., Salmela, J. (Eds) Checklist of the Diptera of Finland. – *ZooKeys* 441: 259–275. doi: 10.3897/zookeys.441.7143
- Kovalev, V.G. 1978: New and little-known species of Lonchaeidae (Diptera) from the Moscow region – *Entomologicheskoe Obozrenie* 57(1): 188-199.
- McAlpine, J.F. 1981: Morphology and terminology — adults. Pp. 9–63. In: McAlpine, J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vokeroth, J.R., Wood, D.M. (coordinators). *Manual of Nearctic Diptera*, Vol. 1. Agriculture Canada Monograph 27, Ottawa, vi + 674 pp.
- MacGowan, I. 2015: A Review and Checklist of Swedish Lonchaeidae (Diptera). – *Entomologisk Tidskrift* 136 (4): 165-172. Uppsala, Sweden. [https://www.sef.nu/download/entomologisk\\_tidskrift/et\\_vol\\_136\\_2015/ET-2015-165-172.pdf](https://www.sef.nu/download/entomologisk_tidskrift/et_vol_136_2015/ET-2015-165-172.pdf)
- MacGowan, I. 2020: A revised key to European species of the genus *Lonchaea* Fallen. – *Lonchaeidae online*. Available at: <http://lonchaeidae.myspecies.info/node/2373>.
- MacGowan, I. & Gustad, J.R. 2022: An annotated checklist of the Norwegian Lonchaeidae (Diptera, Cyclorrhapha) with the description of a new species. – *Norwegian Journal of Entomology* 69: 284-303.
- MacGowan, I. & Reimann, A. 2021: A new species of *Protearomyia* (Diptera, Lonchaeidae) with a review of the genus in the Palearctic. – *Zootaxa* 4966: 487–493.
- MacGowan, I. & Rotheray, G.E. 2008: British Lonchaeidae. Diptera, Cyclorrhapha, Acalyrtratae. – *Handbooks for the Identification of British Insects*, Vol. 10(15). – Royal Entomological Society, London.

MacGowan, I. & Rotheray, G.E. 2021: Lonchaeidae (Lance Flies). 67. In: Kirk-Spriggs, A.H. & Bradley, B.J. (Eds.). Manual of Afrotropical Diptera. Volume 3 Brachycera-Cyclorrhapha, excluding Calyptratae. – *Suricata* 8. South Pretoria, African National Biodiversity Institute. p. 1587-1596.

MacGowan, I., Vikhrev, N.E., Krivosheina, M.G., Ruchin, A.B. & Esin, N.M. 2021: New records of Diptera from the republic of Mordovia, Russia. – *Far Eastern Entomologist* 423: 9-20.

<https://www.biosoil.ru/files/fscpublications/fee/00002033.pdf>

Shtakel'berg, A.A. 1988: Chapter 75. Family Lonchaeidae. – In: Keys to the insects of the European part of the USSR, Bei-Bienko, G.Ya. (ed.) 5(2): 358-373. Diptera and Siphonaptera. (English Version). – Smithsonian Institution Libraries and the National Science Foundation, Washington, D.C.

White, I.M., Headrick, D.H., Norrbom, A.L., and Carroll, L.E. 1999: Glossary. Pp. 881–924. In: Aluja, M. and Norrbom, A.L. (eds.). *Fruit flies (Tephritidae): Phylogeny and evolution of behaviour*. CRC, Boca Raton, 944 pp.

Winqvist, K. 2023: Suomen Diptera-faunaan 70 uutta kärpäslajia 2018-2022. – w-album (26) 2023, in press.

Winqvist, K. & Malmberg, S. 2020: Korsnäsin Harvungönin kärpäskartoitus 2020. CoastNet LIFE (LIFE17NAT/FI/000544). – Raportti (asianumero MH 1272/2020). Metsähallitus, Luontopalvelut, Rannikko. [https://www.metsa.fi/wp-content/uploads/2021/06/Harvungon\\_karpaset\\_2020.pdf](https://www.metsa.fi/wp-content/uploads/2021/06/Harvungon_karpaset_2020.pdf)