

Earomyia lonchaeoides (Zetterstedt, 1848) (Diptera, Lonchaeidae) a species and genus new to the Norwegian fauna

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The lance fly *Earomyia lonchaeoides* (Zetterstedt, 1848) is reported from Norway representing the first time that not only this species but also this genus has been recorded from the country. *E. lonchaeoides* is recorded from Viken and Vestfold og Telemark. Comments on biology, distribution, habitat, and identification characters are provided.

Key words: Diptera, Lonchaeidae, *Earomyia lonchaeoides*, first record, Norway, biology, distribution.

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Introduction

The lance-flies Lonchaeidae are a family of Diptera characterized by small size, black or blackish blue body, often metallic, glossy, and with hyaline (without dark spots) wings (Shtakel'berg 1989). Korneyev (2000) split the Tephritoidea into two sections, placing the Lonchaeidae in the “lower Tephritoidea”, along with Piophilidae, Pallopteridae and Richardiidae. Morphological support is limited for the exact resolution of the relationships among the lower tephritoid families.

The genus comprises thirteen species in the Palaearctic and eight from Nearctic and is not currently known from any other biogeographical realm (MacGowan 2020a). Knowledge of the larval requirements within the genus is incomplete but where documented the larvae have a range of development sites with one group specialising in conifer cone seeds (McAlpine 1958), whilst

others develop in thistle heads or in the stems of herbaceous plants (MacGowan 2020a).

Earomyia lonchaeoides (Zetterstedt, 1848) is the first *Earomyia* Zetterstedt, 1842 species to be identified in the Norwegian fauna. It is one of six known *Earomyia* species from the Nordic countries, the others being *E. argenta* MacGowan, 2019, *E. netherlandica* MacGowan, 2004, *E. schistopyga* Collin, 1953, *E. viridana* (Meigen, 1826) and *E. virilis* Collin, 1953 (Kahanpää 2020, MacGowan 2019).

Diagnostic characters

The general impression of *E. lonchaeoides* is of an approximately 4 mm dark fly with hyaline slightly darkened wings. The basal costal cell (bs) and costal cell (c) are large and conspicuous, giving a characteristic broad wing profile. The subcostal

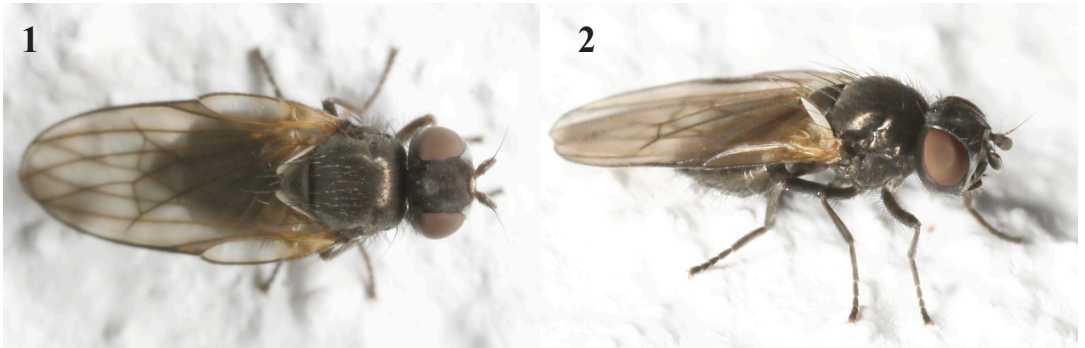
cell (sc) is slightly darker than the surrounding cells. Body and abdomen slightly glossy, legs (tarsi included) all black. Uniquely in the Palaearctic *Earomyia* sp. the genae are high and broad and the legs are entirely black. The Norwegian specimens are of both sexes. Sexual differences include the female's broader frontalia, smaller eye size, and long sclerotized ovipositor (retracted when not in use). Females frequently have yellowish wing bases. Parafacials contrastingly covered with silver-grey coating.

In early spring *E. lonchaeoides* can often be mistaken for members of the Anthomyiidae (Diptera) such as species of *Egle* Robineau-Desvoidy, 1830, a hairy spring genus. However, Anthomyiidae do not have a darkened costal section on the wing between Sc and R₁, they have strong setae on hind tibia, almost always including two or more posterodorsals and they almost always have distinct vibrissae on the

genae. A general caution should also be taken in care towards certain dark Agromyzidae, with dark halteres.

Material and methods

Viken (EIS 28), Drøbak: Tomters Øvre vei 10, Frogn 59.69950°N 10.64576°E, imago female resting on house wall/photographed 1 May 2013 (Figures 1–2), leg./det. Jørn R. Gustad/conf. Iain MacGowan. The specimen was not collected. The site is situated near the coast in the inner Oslofjord 90 meters above sea level. The habitat is a mixed deciduous/coniferous forest with heather. **Vestfold and Telemark** (EIS 11), Drangedal: Løbbedalen 76, Neslandsvatn 58.97625°N 9.16715°E, imago male resting on house wall/photographed 19 March 2019 (Figures 3–4), leg. Morten Angard Mjelde/det. Iain MacGowan. The specimen was



FIGURES 1–2. *Earomyia lonchaeoides* (Zetterstedt, 1848) 1 May 2013 at Tomters Øvre vei 10, Drøbak, Frogn, Viken. Female in dorsal and lateral views. Photos: Jørn R. Gustad.



FIGURES 3–4. *Earomyia lonchaeoides* (Zetterstedt, 1848) 19 March 2019 at Løbbedalen 76, Neslandsvatn, Drangedal, Vestfold og Telemark. Male in dorsal and lateral views. Photos: Morten Angard Mjelde.

not collected. The site is situated about 3 miles inland from the SE coastline of Norway about 97 meters above sea level. The habitat is mixed deciduous/coniferous forest.

The specimens were photographed but not collected. The first specimen by Canon D5MKIII with macro lens (Canon MP-E 65 mm 1-5x) and macro flash (Canon Macro Ring Lite MR14-EX). The second specimen by Nikon D7200 with macro lens (AF Micro-Nikkor 105 mm F2.8 D), Meike MK-N-AF-B ABS auto focus AF macro extension tubes 20mm and 36mm, and macro flash (Sigma EM-140 DG EO-ETTL).

Distribution and biology

Earomyia lonchaeoides was the most likely candidate to be recorded in Norway, as it is recorded from Denmark, and with a relatively large number of records, from Finland and Sweden. The western Palearctic species *E. lonchaeoides* is according to MacGowan (2020b) found in mid and northern Europe (Austria, Czechia, Denmark, Finland, France, Germany, Poland, European Russia, Slovenia, Sweden and Switzerland). It is apparently absent from the British Isles and southern Europe. The Finnish Biodiversity Information Facility (Kahanpää 2020) provides 50 records, of which 40 are during spring ranging from 28 March to 16 May (from the Gulf of Bothnia and southward). The same database contains only 2 records of *E. schistopyga* Collin, 1953, and 12 records of *E. viridana* (Meigen, 1826). In Sweden *E. argenta* MacGowan, 2019, *E. lonchaeoides*, *E. netherlandica* MacGowan, 2004, *E. schistopyga*, *E. viridana* and *E. virilis* Collin, 1953 are present (MacGowan 2015, MacGowan 2019). Of the 6 species recorded in Sweden 3 species were reported from the Swedish Malaise Trap project results again indicating that *E. lonchaeoides* is the far the most common *Earomyia* in Sweden (numbers given in parentheses, Karlsson *et al.* 2005, MacGowan 2015): *E. lonchaeoides* (68), *E. viridana* (2) and *E. virilis* (1). From Denmark *E. argenta*, *E. lonchaeoides* and *E. virilis* are known (MacGowan 2019, MacGowan 2020b-d).

E. lonchaeoides is typically an early spring

species, the males emerging before the females in early or mid-March. The female wings are darker than those of the male, most probably to increase the absorption of heat from the sun in the cool spring weather and thus assisting the development of the eggs. The larval biology of *E. lonchaeoides* is unknown. *E. lonchaeoides* adults have been reported in spring at Birch sap (Shtakel'berg 1989) and many records across Europe are from woodland areas but there are no records of this species being successfully reared from a larva.

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