

Notes on North European Lonchoptera (Dipt., Lonchopteridae) With lectotype designations

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In 1823, Fallén described the species *Dipsa furcata*. It is now known as *Lonchoptera furcata* (Fall.). de Meijere (1906) revised all palearctic *Lonchoptera* species described up to that time and greatly improved our knowledge of the taxonomy of the genus. He introduced the use of the male genitalia as distinctive characters.

de Meijere studied three syntypes of *D. furcata* Fall. from Fallén's collection in Stockholm and one syntype from Meigen's collection in Paris. He found that the syntypes represented two species, one described earlier by Panzer as *L. lutea*. He restricted the name *furcata* Fall. to represent the second species, which is common and widely distributed and usually known to be parthenogenetic. de Meijere had a few males which he thought belonged to *furcata* Fall., and he described and figured their genitalia. Collin (1938) showed that these males represented another species which he described as *L. meijerei* Coll. At the same time he figured the genitalia of the true *furcata* male.

By the courtesy of Mr. P. I. Persson, Riksmuseum, Stockholm, I have been able to study the whole syntype series of *furcata*, in all 14 specimens, from Fallén's collection. Three of the specimens have special printed loan number labels and are apparently the three specimens seen by de Meijere. One of them has lost its abdomen, as stated by de Meijere. Another, a female with loan-number "80", is in fairly good condition, only the third antennal segments being missing, and agrees with de Meijere's and subsequent authors' opinion of *L. furcata* (Fall.). I have designated it as lectotype of *Dipsa furcata* Fall. and labelled it accordingly. The other two specimens seen by de Meijere are, as he states, *L. lutea* Panz. The remaining syntypes are 5 ♀ *furcata* Fall. and 2 ♂ 4 ♀ *lutea* Panz.

Lonchoptera furcata (Fall.) (syn. *L. dubia* Curran) is known from Europe, Asia, North and South America, New Zealand and Hawaii and probably from Tasmania and Australia (Stuckenberg, 1963). From most areas only females are known. A few records of males from Europe have been published. Records of males earlier than Collin's revision (1938) are uncertain since before this revision the closely related bisexual species *L. meijerei* Collin and *L. impicta* Zett. were not clearly distinguished from *L. furcata*. As far



Fig. 1. Iceland, Vestman Islands, Bjarnarey. Dry meadow, locality for a parthenogenetic population of *Lonchoptera furcata* Fall.

as I know, the only reliable records of *furcata* males are those from the British Isles (Collin, 1938, Smith, 1969).

It is therefore of interest to note that on the 28th June, 1968, I came across a bisexual population of *furcata* on Bjarnarey, one of the smaller Vestman Islands off the south coast of Iceland. Bjarnarey has a surface of about 0.3 sq. km., an altitude of up to 164 m. and is surrounded by perpendicular cliffs. On the summit there is a thick, tussocky carpet of dry meadow vegetation, 97 % of which consists of the grasses *Agrostis tenuis*, *Festuca rubra* and *Poa pratensis* (fig. 1). There are also puffin colonies (*Fratercula arctica*) with *Festuca rubra* and *Stellaria media* as the dominating plants. The material of *furcata* was found on the dry meadow, 5 ♂ 7 ♀, and especially at and in a small shallow artificial depression in the meadow in which *Agrostis stolonifera* and *Montia lamprosperma* were growing, 18 ♂ 14 ♀. Only one male was taken in the puffin colony.

The material from Bjarnarey is distinctly darker than material from other parts of Iceland, most of the males belonging to the darkest variety, *cinerella*.

	<u>var. <i>furcata</i> + var. <i>rivalis</i></u>	var. <i>lacustris</i>	var. <i>cinerella</i>
Bjarnarey	5 ♀	4 ♂ 8 ♀	20 ♂ 8 ♀
The other Vestman Isl.	121 ♀	6 ♀	4 ♀
South Iceland	209 ♀	3 ♀	2 ♀

The specimens from Bjarnarey are also smaller than usual; especially the males are conspicuously small. The male genitalia agrees well with the figures by Collin (1938) and Smith (1969).

Collin (1938) has suggested that the rareness of *furcata* males could be due to nocturnal habits of that sex. I do not think this is the case. If the males in reality were as numerous as the females they would turn up more frequently in the collections in spite of nocturnal habits. The material from Bjarnarey was swept on the vegetation in full sunshine. I think it more

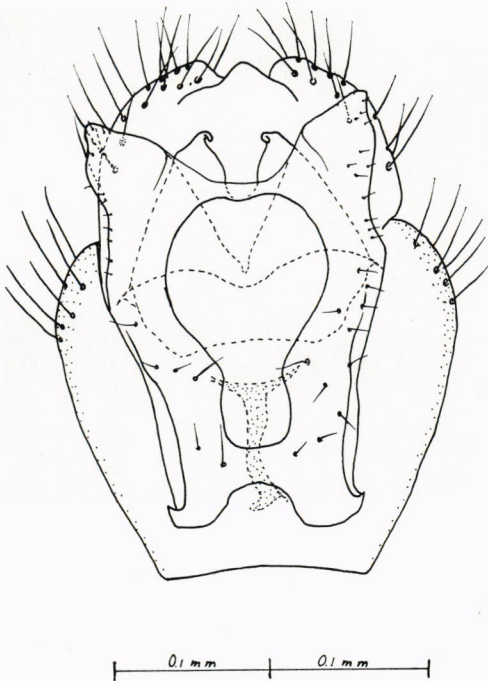


Fig. 2. Male genitalia of *Lonchoptera impicta* Zett. from Sweden, Norrbotten, Råneå, Högsövikén.

probable that males appear as an atavism from time to time and that bisexuality can redevelop and be maintained in small isolated populations, perhaps favoured by certain ecological conditions. Stalker (1956) mentions the imperfect state of parthenogenesis in the species, which manifests itself as a certain percentage of eggs, which are unable to develop.

In 1852, Carl H. Boheman described *Lonchoptera fuscipennis* on a single male specimen collected in Sweden, Skåne, Margretetorp. de Meijere (1906) treated this species as a synonym of *L. tristis* Meig., probably without having seen the type specimen. In Boheman's collection in Stockholm there are four male specimens determined as *fuscipennis* Boh. Three are labelled "Sc", "Bhn" (=Sweden, Skåne, leg. Boheman), and one is labelled "Hall.", "Bhn" (=Sweden, Halland, leg. Boheman). They are all conspecific and belong to *L. tristis* Meig. I think it is impossible today to decide which of the specimens from Skåne is the true holotype of *fuscipennis*. Most probably it is the first specimen which I have therefore designated and labelled as lectotype of *L. fuscipennis* Boh. Mr. P. I. Persson has informed me that other material collected by Boheman in South Sweden in 1851 is present in the collections in Stockholm.

A revision of Boheman's collection of *Lonchoptera* has shown that the material determined by him as:

- L. lutea* Panz. are 2 ♀ *lutea* Panz. and 13 ♀ *furcata* Fall.
- L. thoracica* Meig. are 6 ♀ *lutea* Panz. and 2 ♀ *furcata* Fall.
- L. trilineata* Staeg. are 2 ♂ 8 ♀ *lutea* Panz.

- L. impicta* Zett. are 1 ♂ *fallax* de Meij. and 1 ♀ *tristis* Meig.
L. cinerella Zett. are 3 ♀ *lutea* Panz. and 5 ♀ *furcata* Fall.
L. nigrimana Meig. are 8 ♀ *lutea* Panz.

The geographic distribution of the material is as follows:

- L. lutea* Panz.: Skåne 2 ♀, Småland 4 ♀, Öland 1 ♀, Bohuslän 1 ♀, Östergötland 2 ♀, Södermanland 1 ♀, Stockholm 2 ♂ 16 ♀.
L. furcata Fall.: Småland 1 ♀, Västergötland 1 ♀, Västergötland, Kinnekulle 4 ♀, Östergötland 4 ♀, Södermanland 3 ♀, Stockholm 7 ♀.
L. fallax de Meji.: Västergötland 1 ♂.
L. tristis Meig.: Skåne 3 ♂ 1 ♀, Halland 1 ♂.

The male genitalia of most of the palearctic *Lonchoptera*-species have been figured by de Meijere (1906), Czerny (1934), Collin (1938), Smith (1969), and others. As the genitalia of *L. impicta* Zett. have not been figured I publish a drawing of them (fig. 2). A comparison with fig. 8 in Smith (1969) shows that the genitalia of *L. meijerei* Coll. and *L. impicta* Zett. are rather similar.

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