

New species of gall midges (Diptera, Cecidomyiidae, Porricondylinae) from Estonia

Voldemārs Spuņģis

Faculty of Biology, University of Latvia, 4 Kronvalda Blvd., Riga, LV-1842, Latvia

Abstract

Spuņģis V. 1998. New species of gall midges (Diptera, Cecidomyiidae, Porricondylinae) from Estonia. – Latv. Entomol., 36: 21-26.

Gall midges were investigated in Estonia mainly in 1987. 39 species of gall midges of the subfamily Porricondylinae were recorded from Estonia for the first time and 45 species totally. They represent species characteristic for the fauna of Baltic region.

Key words: Cecidomyiidae, Porricondylinae, Estonia, fauna.

Introduction

Gall midges of the subfamily Porricondylinae inhabit soil and decaying wood, there they feed on fungal mycelium and bacterial films. Free living gall midges are poorly investigated, particularly in Estonia. V.Spuņģis (1992) has mentioned 6 species, namely *Winnertzia globifera* Mamaev, *W. graduata* Spungis, *W. nigripennis* Kieffer, *W. solidaginis* Felt, *W. pravdini* Mamaeva et Mamaev. P.Poldmaa and T.Heinrichson-Normet (1969) investigated midges on different rust fungi and recognized 2 species, belonging to the subfamily Cecidomyiinae. Any other data on free living gall midges present.

Material and methods

Gall midges were collected in 58 localities spread all over the territory of Estonia mainly during excursions in 1987 and few specimens in 1988. The July to September was selected for collecting because of the maximum flight period of gall midges (Spungis, 1998)

As the Porricondyliids are very common in forests opposite to meadows and other open biotopes the majority of specimens was collected in different forest habitats. Entomological net and aspirator were used to collect adults, few larvae were extracted from soil samples. Localities, dates of collecting and biotopes were listed below in chronological order. Localities were named in accordance with the nearest settlement. A collection of gall midges is deposited in the Faculty of Biology of the University of Latvia.

Gall midge collecting sites, dates and habitats in Estonia

| Locality | Collecting date | Habitat |
|-------------|-----------------|--|
| Kaagjarve | 10.07.1987 | mixed forest |
| Lullemee | 10.07.1987 | spruce forest |
| Kaika | 10.07.1987 | coniferous wet forest |
| Antsla | 10.07.1987 | spruce forest |
| Haanja | 11.07.1987 | deciduous and mixed forests |
| Võru | 11.07.1987 | pine bog |
| Vaimela | 11.07.1987 | poplar forest |
| Kanepi | 11.07.1987 | pine and birch forests |
| Otepe | 12.07.1987 | ash-tree and spruce forests |
| Nuini | 12.07.1987 | pine forest |
| Elva | 12.07.1987 | spruce forest |
| Valga | 12.07.1987 | mixed and pine forests |
| Kamara | 17.07.1987 | white alder forest |
| Karksi | 17.07.1987 | deciduous forest |
| Sultsi | 17.07.1987 | coniferous and mixed forests |
| Viljandi | 17.07.1987 | mixed forest |
| Suure-Jaani | 18.07.1987 | spruce forest and city park |
| Kaansoo | 18.07.1987 | pine and poplar forests |
| Aluste | 18.07.1987 | birch forest |
| Tootsi | 18.07.1987 | spruce forest |
| Tori | 18.07.1987 | birch and mixed forests |
| Urge | 19.07.1987 | poplar forest |
| Tihemetsa | 19.07.1987 | spruce and poplar forests |
| Audru | 27.07.1987 | spruce forest |
| Ahaste | 27.07.1987 | deciduous forests |
| Vatla | 27.07.1987 | ash-tree and birdcherry-tree forests |
| Hanila | 27.07.1987 | xerophitic meadow and white alder forest |
| Orissare | 28.07.1987 | deciduous and pine forests |
| Valjala | 28.07.1987 | pine and birch forests |
| Kaali | 28.07.1987 | coniferous-oak forest |
| Kurressare | 29.07.1987 | deciduous forests |
| Kjarla | 29.07.1987 | pine forest |
| Mustjala | 29.07.1987 | coniferous forest |
| Panga | 30.07.1987 | pine forest |
| Leisi | 30.07.1987 | white alder forest |
| Lihula | 31.07.1987 | white alder forest |
| Kullamaa | 01.08.1987 | black alder forest |
| Sipa | 01.08.1987 | coniferous forests |

| | | |
|-------------|------------|----------------------------|
| Tamme | 01.08.1987 | spruce forest |
| Rapla | 01.08.1987 | spruce forest |
| Jagala | 10.08.1987 | pine forest |
| Kolga | 10.08.1987 | pine forest |
| Tapa | 04.09.1987 | spruce forest |
| Kunda | 05.09.1987 | pine and deciduous forests |
| Võru-Nigula | 05.09.1987 | pine-oak forest |
| Aa | 05.09.1987 | pine-birch forest |
| Johvi | 05.09.1987 | on the road |
| Pagari | 06.09.1987 | mixed forests |
| Jõuga | 06.09.1987 | coniferous forests |
| Kauksi | 06.09.1987 | poplar forest |
| Vaiatu | 06.09.1987 | spruce forest |
| Jõgeva | 06.09.1987 | mixed forest |
| Aizu | 07.09.1987 | birch forest |
| Põltsamaa | 07.09.1987 | spruce forest |
| Puurmani | 07.09.1987 | spruce forest |
| Laeva | 07.09.1987 | mixed forest |
| Tahtvere | 07.09.1987 | poplar forest |
| Rapla | 16.09.1988 | spruce forest |

Results

The species are ordered systematically in accordance with tribes and then alphabetically, the numbers of localities correspond to the numbers in table 1, number of caught adults or collected larvae (lv) is given in brackets, general data on biology of larvae and estimated occurrence of species in Estonia are presented.

Table 2

A list, distribution, biology and occurrence of gall midge species recorded in Estonia

| Taxa | Localities | No of spec. | Biology of larvae | Occurance |
|-------------------------------|---|-------------|--------------------------------------|---------------|
| Asynaptini | | | | |
| Camptomyia abnormis Mamaev | 1, 3, 5, 7, 8, 9, 23, 25, 27, 31, 38 | 37 | under the bark of deciduous trees | common |
| C. calcarata Mamaev | 1, 7, 15, 18, 25 | 8 | under the bark of deciduous trees | common |
| C. flavocinerea Panelius | 13, 25, 31, 35, 37, 40 | 12 | soil of deciduous forests | common |
| C. fulva Mamaev | 1 | 1 | under the bark of deciduous trees | not common |
| C. minima Spungis | 29 | 1 | unknown | rare |

24 Spunġis V. New species of gall midges (Diptera, Cecidomyiidae, Porricondylinae) from Estonia

| | | | | |
|---|--------------------------|----------|---|----------------|
| <i>C. multinoda</i> (Felt) | 1, 9, 18, 27 | 15 | under the bark of deciduous trees | common |
| <i>C. pinicola</i> Mamaev | 17 | 1 | under decaying bark of pine | rare |
| <i>C. piptopori</i> Panelius | 23 | 1 | in bracket fungi on dead birch trunks | rare |
| <i>C. spinifera</i> Mamaev | 27, 31, 38 | 3 | under the bark of deciduous trees | not common |
| <i>C. ulmicola</i> Mamaev | 16, 17, 26 | 5 | under the bark of deciduous trees | not common |
| <i>Colomyia clavata</i> Kieffer | 47, 54, 55, 56 | 6 | under the body of bracket fungi on dead deciduous trees | common |
| Dicerurini | | | | |
| <i>Dicerura triangularis</i> Mamaev | 9 | 1 | mainly in the soil of coniferous forests | rare |
| <i>D. xylophila</i> Mamaev | 57 | 1 | in decayed deciduous wood | rare |
| <i>Hilversidia autumnalis</i> Mamaev | 44, 46, 48, 50, 57, | 65 | in the soil of forests | very common |
| Dirhizini | | | | |
| <i>Dirhiza lateritia</i> H.Loew | 25 | 1 | unknown | rare |
| Solntseviini | | | | |
| <i>Solntsevia nigripes</i> Mamaev | 13 | 1 | in the decaying wood of spruce | rare |
| Holoneurini | | | | |
| <i>Holoneurus obscurus</i> Mamaev | 44, 48 | 3 | in the soil of deciduous forests | not common |
| <i>H. paneliusi</i> Yukawa | 45, 46 | 8 | mainly in the soil of deciduous forests | not common |
| <i>Schistoneurus impressus</i> Mamaev | 5, 45 | 2 | in the soil of various forests | rare |
| <i>Sch. irregularis</i> Mamaev | 18, 19 | 4 | in the soil of various forests | rare |
| Bryocryptini | | | | |
| <i>Bryocrypta indubitata</i> Mamaev | 42 | 1 lv. | in the soil of coniferous forests | rather rare |
| Porricondylini | | | | |
| <i>Claspettomysis chrysanthemi</i> (Panelius) | 28, 30, 44 | 3, 53 lv | mainly in the soil of deciduous forests | common locally |
| <i>C. montata</i> (Mamaev) | 2, 8, 25, 29, 30, 35, 36 | 21 | mainly in the soil of deciduous forests | common |
| <i>C. niveitarsis</i> | 17 | 1 | mainly in the soil of | rare |

| | | | | |
|--|---|-----------|---|----------------|
| (Zetterstedt) | | | deciduous forests | |
| <i>Monepidosis pectinata</i> Mamaev | 17, 38 | 2 | mainly in the soil of coniferous forests | not common |
| <i>Parepidosis arcuata</i> Mamaev | 2, 4, 5, 6, 8, 9, 10, 11, 15, 17, 18, 22, 32, 34, 37, 38, 39, 40 | 57 | mainly in the soil of coniferous forests | very common |
| <i>Porricondyla albimana</i> (Winnertz) | 38, 42, 44, 45, 46, 48, 53, 54, 55, 56 | 42 | in the soil of various forests | very common |
| <i>P. fulvescens</i> Panelius | 5, 9 | 9 | in the soil of various forests | rare |
| <i>P. fuscostriata</i> Panelius | 42, 44, 58 | 127 lv. | in the soil of coniferous forests | common |
| <i>P. hypoxantha</i> Panelius | 1, 2, 5, 9, 10, 12, 13, 15, 16, 17, 18, 22, 28, 30, 36, 44, 45, 55 | 49, 3 lv. | in the soil of various forests | very common |
| <i>P. lata</i> (Mamaev) | 58 | 5 lv. | in the soil of coniferous forests | not common |
| <i>P. longipennis</i> Spungis | 5, 14, 24, 25, 29, 30, 38, 55 | 10 | in the soil of various forests | common |
| <i>P. lutescens</i> Spungis | 5, 13, 15, 16 | 12 | in the soil of deciduous forests | common |
| <i>P. modesta</i> Spungis | 44, 48, 50, 51, 52 | 15 | in the soil of various forests | not common |
| <i>P. neglecta</i> Mamaev | 15, 16 | 2 | in the soil of coniferous forests | rare |
| <i>P. nigripennis</i> (Meigen) | 41 | 1 | in the soil of various forests | rare |
| <i>P. quadridens</i> Spungis | 5, 13, 18, 19, 20, 21, 22, 24, 30 | 24 | in the soil of various forests | common |
| <i>P. rufescens</i> Panelius | 27, 33 | 2 | in the soil of various forests | rare |
| <i>Pseudepidosis lunaris</i> Mamaev | 53 | 1 | in the soil of deciduous forests | rare |

Discussion

39 species of subfamily were recognized. Majority of them are common in the Baltic region. The fauna of Estonia differs insignificantly from the fauna of adjacent studied areas in Finland and Latvia (Panelius, 1965; Spungis, 1988). The collected set of data does not

give complete overview on Porricondylinae fauna and the investigations should be continued.

Kopsavilkums

Pangodiņu pētījumi Igaunijā veikti galvenokārt 1987. gadā. Konstatētas 39 apakšdzimtas Porricondylinae sugas, kas visas ir jaunas Igaunijas faunai. Kopējais apakšdzimtas sugu skaits Igaunijā ir 45. Tās pārstāv Baltijas reģionam raksturīgu sugu kompleksu.

References

- Panelius S. 1965. A revision of the European gall midges of the subfamily Porricondylinae (Diptera, Itonididae). - Acta Zool. Fenn., N 113: 1-157.
- Põldmaa P. Heinrichson-Normet T., 1969. On rust-eating gall midge larva in Estonia. - Eesti NSV Teaduste Akad. Toitmetised, Biol., 18, N2: 196-201 (in Russian with English summary).
- Spungis V. 1988. An addition to gall midge (Diptera, Cecidomyiidae) fauna of Latvia. - Latv. Entomol., N31: 50-57 (in Russian with English summary).
- Spungis V. 1992. A revision of the European gall midges of the tribe Winnertziini. - Latv. Entomol., Suppl. 5: 1-38.
- Spungis V. 1998. Investigation of free-living gall midges (Diptera, Cecidomyiidae, Porricondylinae) in Northern Europe. - Entomologica Fennica (in press).

Received: September 30, 1997.