

New records of saproxylic Diptera from Denmark

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During April 2001 a collection of Dipteran larvae and puparia was made from dead wood and tree sap exudations in the Copenhagen area. The adults which emerged were identified and of 16 species five were found to not previously have been recorded from Denmark: *Rhiphidia ctenophora* Loew, 1871 (Limoniidae), *Dasiops spatiosus* (Becker, 1895) (Lonchaeidae), *Medetera excellens* Frey, 1909 and *Medetera pinicola* Kowarz, 1877 (Dolichopodidae), and *Neopachygaster meromelas* (Dufour, 1841) (Stratiomyidae). Further information is provided on the five newly recorded species.

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Background

Saproxylic insects are defined by Speight (1989) and Rotheray *et al.* (2001) as being those which are dependent, during some part of their life cycle, upon the dead or moribund wood of standing or fallen dead trees, or on decaying material associated with the woody parts of trees. Across Europe saproxylic insects often require conservation because they are under threat due an extensive reduction in natural woodland area and an impoverishment of what little remains. In comparison with Coleoptera, saproxylic Diptera are poorly known and information regarding their ecological requirements during their life cycle is scanty. Collecting saproxylic Diptera by searching for their larvae and rearing these through to adults is one of the most effective ways of surveying this fauna and obtaining details of their breeding sites. This information can in turn be used to facilitate the management and conservation of these species.

During a short visit to Denmark during April 2001 I was able to collect larvae and puparia of several species of saproxylic Diptera from the Copenhagen area and at Hellebæk near Helsingør.

Material and methods

Specimens were collected from under the bark of trees or branches which had fallen 2-3 years previously and to which the bark was still attached. In addition, larvae were also collected from sap exudations emanating from living trees, and a puparium was collected from the decaying heartwood of a fallen birch tree. The material containing the specimens was kept in plastic containers covered with a clear plastic bag. As the adults emerged they were killed, pinned and identified, and the results are summarised below. Specimens were collected at the following sites and at the given dates in Northeast Zealand (NEZ):

- Copenhagen, Frederiksberg Have/Søndermarken, 25th April, 2001.
- Copenhagen, Skovshoved, 26th April, 2001.
- Copenhagen, Klampenborg, 29th April, 2001.
- Hellebæk, 28th April 2001.

The majority of the specimens listed have been deposited in the collections of the National Museums of Scotland, Edinburgh.

Results

This small survey resulted in a total of 16 species of saproxylic Diptera, five of which are previously unrecorded in Denmark. The latter are marked with an asterisk in the list below, and the numbers in parenthesis indicate the number of adults which were bred from the collected material.

Species list

* = new Danish record.

Anisopodidae

Sylvicola cinctus (Fabricus, 1787)

Klampenborg, (many) larvae in sap run on *Fagus* and *Aesculus*.

Frederiksberg Have/Søndermarken, (many) larvae in sap exudation on *Tilia* and *Aesculus*.

Limoniidae

**Rhiphidia ctenophora* Loew, 1871

Frederiksberg Have/Søndermarken, (1) larva in sap exudation on *Aesculus*.

Mycetobiidae

Mycetobia pallipes Meigen, 1818

Klampenborg, (many) larvae in sap exudation on *Fagus* and *Aesculus*.

Dolichopodidae

**Medetera excellens* Frey, 1909

Hellebæk, (5) larvae under bark of fallen *Pinus*.

Hellebæk, (3) larvae under bark of fallen *Picea*.

**Medetera pinicola* Kowarz, 1877

Hellebæk, (3) larvae under bark of fallen *Pinus*.

Systemus pallipes (von Roser, 1840)

Klampenborg (1) larva in *Aesculus* sap exudation.

Klampenborg (1) larva in *Fagus* sap exudation.

Hybotidae

Tachypeza fuscipennis (Fallen, 1815)

Klampenborg (1) larva under bark of fallen *Quercus*.

Lonchaeidae

**Dasiops spatiosus* (Becker, 1895)

Hellebæk, (1) puparium in decaying *Betula* log.

Lonchaea sylvatica Beling, 1873

Hellebæk, (3) larvae under bark of fallen *Picea*.

Klampenborg, (2) larvae under bark of fallen *Fagus*.

Lonchaea scutellaris Rondani, 1874

Klampenborg, (1) larvae under bark of fallen *Quercus*.

Skovshoved, (13) larvae and puparia under bark of fallen *Fagus*.

Lonchaea fugax Becker, 1895

Hellebæk, (1) larva under bark of fallen *Fagus*.

Skovshoved, (12) larvae and puparia under bark of fallen *Fagus*.

Klampenborg, (24) larvae and puparia under bark of fallen *Quercus*.

Klampenborg, (8) larvae and puparia under bark of fallen *Fagus*.

Lonchaea peregrina Becker, 1895

Klampenborg, (7) larvae and puparia under bark of fallen *Quercus*.

Muscidae

Phaonia gobertii (Mik, 1881)

Klampenborg, (2) larvae under bark of fallen *Ulmus*.

Pallopteridae

Toxoneura usta (Meigen, 1826)

Hellebæk, (6) larvae under bark of fallen *Larix*.

Hellebæk, (6) larvae under bark of fallen *Picea*.

Stratiomyidae

**Neopachygaster meromelas* (Dufour, 1841)

Klampenborg, (26) larvae and puparia under bark of fallen *Quercus*.

Zabrachia tennella (Jaenicke, 1866)

Hellebæk, (1) larva under bark of fallen *Picea*.

Notes on species recorded as new to Denmark

Rhiphidia ctenophora Loew, 1871

Not listed in Petersen & de Jong (2001). This species is known from Ireland, Great Britain, Netherlands, Belgium, France, Germany, Switzerland, Austria, Italy (Sicily), Romania, and Bulgaria (Oosterbroek 2004). It has been recorded as larvae from a range of dead wood habitats including rot holes, decaying heart rot, hollow stumps and under bark of fallen trees. The larvae have been found in association with the following tree species: chestnut (*Aesculus*), sycamore (*Acer*), poplar (*Populus*) and elm (*Ulmus*).

Dasiops spatiosus (Becker, 1895)

Not listed in MacGowan & Petersen (2001). It has been recorded as being reared from a similar microhabitat in decaying birch logs in Scotland (Rotheray *et al.* 2001). Recorded by Kovalev & Morge (1984) from Poland, Germany and Russia and by Carles-Tolrá (2004) even from Great Britain, Belgium, Czech Republic, Slovakia, Finland and Belarus.

Medetera excellens Frey, 1909

Listed in Pollet & Petersen (2001) as “likely to occur in Denmark based on the distributional pattern”. Breeding records from Scotland are summarised by MacGowan (2001), where the larvae are found commonly in association with *Pinus*, *Picea* and *Larix*. Also known from the other Scandinavian countries (Pollet 2004).

Medetera pinicola Kowarz, 1877

Not listed in Pollet & Petersen (2001). A relatively common species in Scotland and Scandinavia where the larvae are found under the bark of a range of conifer species.

Neopachygaster meromelas (Dufour, 1841)

Listed in Petersen & Hauser (2001) as “considered likely to occur in Denmark by the reviewing expert” and as “likely to occur in Denmark based on the distributional pattern”. Recently bred by the author from larvae found under the bark of *Populus tremula* in Finland and Sweden.

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