

Nieuwsbrief European Invertebrate Survey - Nederland, 10 (1981): 41-43.

HEMARIS FUCIFORMIS (L., 1758) IN THE NETHERLANDS (LEP., SPHINGIDAE)

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Introduction

The working group 'Sphingidae' of EIS-Nederland up to now has collected nearly 10 000 records. In a preceding publication we have reported on the occurrence and distribution of *Hyloicus pinastri* and *Deilephila porcellus* in the Netherlands (Meerman & Schouten 1980). In this paper we present a map and some biological data of the Broad-bordered beehawk *Hemaris fuciformis* (Linnaeus, 1758). The closely related Narrow-bordered beehawk *Hemaris tityus* (Linnaeus, 1758) has disappeared from the Netherlands during the 1950's. This local extinction was probably induced by destruction of its habitat, viz. wet bogs and moorland, where its foodplants *Knautia arvensis* and *Succisa pratensis* grow (Heath & Emmet 1979, for Scotland and England).

H. fuciformis still occurs on many localities in our country, although it was amazing to learn that most collectors failed to find this species and regarded it as rare. This may be ascribed to the small sizes of moth and caterpillar, and thus they are easily overlooked if one is not systematically looking for it. It might prove to be more common when one would pay more attention to it.

Distribution

The distribution of *H. fuciformis* is given in Fig. 1. We have 300 records of this species, covering the period from 1900 to 1980. Most of these are data documented in museum or private collections.

Although the map certainly is still incomplete, it indicates that this species is rather widely distributed. The pattern, however, is not well understood as yet.

Ecology

H. fuciformis is a diurnal moth. It has well-developed feeding organs, as most European Sphingids, and it is usually collected when hovering in front of flowers.

The moth is seen in significant numbers from May onwards, and can be observed up to August. This prolonged flight-period is caused by the occurrence of two generations in some years, but the second generation is usually of minor importance as may be concluded from Fig. 2.

The easiest way to determine the occurrence of *H. fuciformis* is to look for its caterpillars. They normally feed on *Lonicera* and *Symphoricarpos* and their presence can be determined by searching

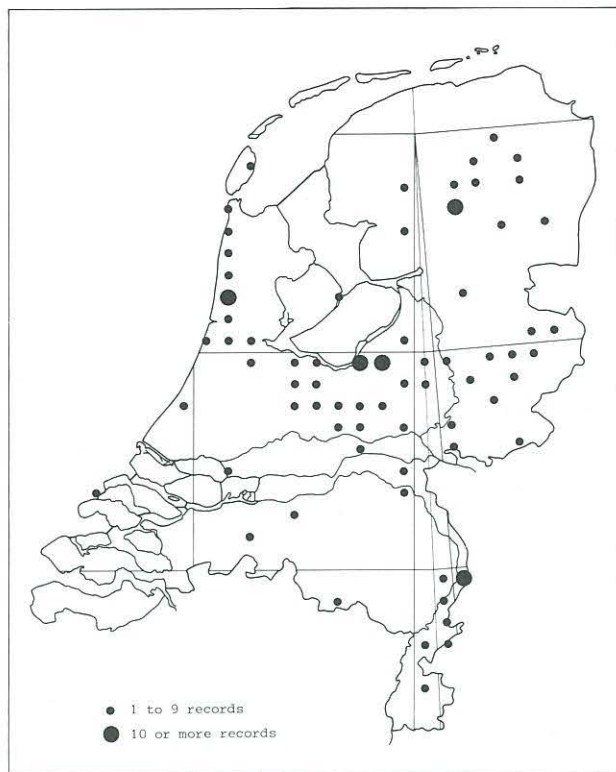


Fig. 1. *Hemaris fuciformis*, 1900-1980

Number of moths

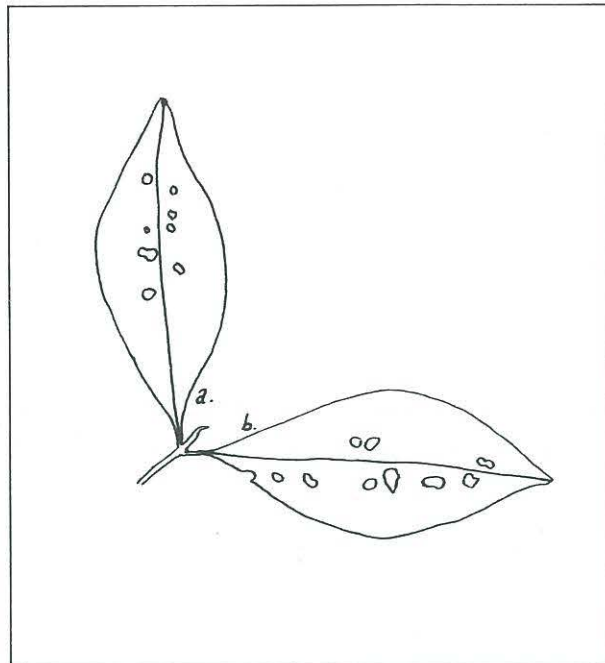
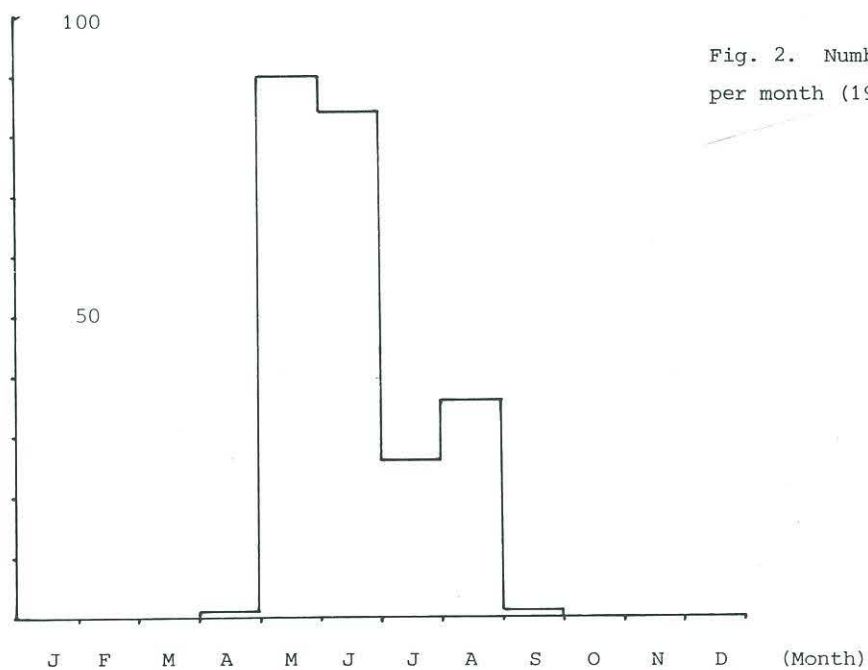


Fig. 3. *Lonicera periclymenum* leaf, seen from above. Note the holes on either side of the mid-vein. The egg was laid on the underside of leaf (a), while the caterpillar was sitting at the underside of leaf (b) at the moment the drawing was made (July 1981, Egmond, NH)

Fig. 2. Number of *Hemaris fuciformis* moths per month (1900-1980).

Table 1

Ecological data on *Hemaris fuciformis*

Landscape	Records
Gardens and parks	40
Edges of forests	4
Soil	
Humus	28
Sand	16

for symmetric holes on each side of the mid-vein of a leaf (Fig. 3). Turning over the leaf, one often finds the freshly hatched caterpillar sitting on the mid-vein, often still near the remains of the eggshell. During the later stages it becomes increasingly difficult to find the larvae, which then have become more mobile.

We have also tried to collect ecological data of the sampling places of sphingid moths. The results of the analysis of the data of *H. fuciformis* are presented in Table 1. These data agree with field observations suggesting that it is most commonly found along the edges or in open glades of woods. The soil is usually rich in humus, although sometimes there is a sandy underground. We suppose that the larger number of observations made in gardens or parks is caused by the more frequent visits by collectors, rather than by the commonness of moths in

this habitat, although this may also be attributed to the large number of cultivated plants suitable as foodplants, growing in this habitat.

References

- Heath, J. & A.M. Emmet, 1979. The moths and butterflies of Great Britain and Ireland. Volume 9. -- Curwen Books, London.
- Meerman, J.C. & R. Schouten, 1980. De verspreiding van *Hyloicus pinastri* (Linnaeus, 1758) and *Deilephila porcellus* (Linnaeus, 1758) in Nederland (Lep. Sphingidae). -- Entomologische Berichten, 40: 147-150. ■

Table 2

Foodplants of *Hemaris fuciformis* moths

Species	Records
<i>Rhododendron</i>	17
<i>Buddleia davidii</i>	8
<i>Ajuga reptans</i>	7
<i>Echium vulgare</i>	5
<i>Dianthus barbatus</i>	4
<i>Scilla non-scripta</i>	3
<i>Viola odorata</i>	3
<i>Pyracantha coccinea</i>	3
<i>Stachys sylvatica</i>	2