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Scented traps yield two large lacewing species (Neuroptera, Chrysopidae) new to Switzerland

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In the course of two entomological projects using scented traps (oak bark and leaves in alcohol at Tamins GR, red wine at Soazza GR), two *Nineta* (Neuroptera, Chrysopidae) species were found for the first time in Switzerland: *Nineta carinthiaca* (Hölzel, 1965) and *Nineta guadarramensis principiae* (Monserrat, 1980).

Keywords: Fauna, *Nineta*, new records, attractants, Switzerland

INTRODUCTION

The genus *Nineta*, with presently 17 described species, has a holarctic distribution (Canard 2004). In Europe, the genus is represented with six species (Aspöck *et al.* 2001, Canard 2004). One of them, *Nineta guadarramensis* (Pictet, 1865), is separated into two allopatric subspecies: *N. guadarramensis guadarramensis* (Pictet, 1865) (only in Spain) and *N. guadarramensis principiae* Monserrat, 1980 (rare and sporadic in several European countries except Spain). Canard *et al.* (1998) and Canard (2004) consider the two subspecies to be valid species.

In Switzerland, four of the six European species were known so far. The most common species is *Nineta flava* (Scopoli, 1763), developing on deciduous trees, followed by *N. pallida* (Schneider, 1846), restricted to coniferous trees, and *N. vittata* (Wesmael, 1846), which is mostly found on deciduous trees. *N. inpunctata* (Reuter, 1894), on the other hand, is a rare species in Europe (Aspöck *et al.* 1980), with only two localities known for Switzerland (Duelli and Hartmann 1992).

MATERIAL AND METHODS

Two independent research projects in Switzerland had in common that they used scented insect traps among a set of other trapping methods to assess the insect fauna in particular habitats:

1. Red Lists of saproxylic Coleoptera in Switzerland (S. Barbalat, CSCF)
2. Biodiversity on managed and abandoned Methusalem chestnut trees (selva) in Southern Switzerland (M. Moretti, WSL Sottostazione Sud delle Alpi)

In both projects standardized inventory methods were used: Window interception traps in combination with yellow pan traps (combi-traps; Duelli *et al.* 1999),

Fig. 1. Modified PET bottle filled with attractant solution (red wine).

and modified PET bottle traps filled with scented liquid. The «head» of the pet bottle was cut off where the diameter started to decrease towards the top. The cut-off top was used as a funnel and inserted into the bottle (Fig. 1).

The traps of the chestnut selva project were located in Grisons, at Soazza in the Mesocco valley. Ten «Methusalem-chestnuts» (over 500 years old, more than 7 m circumference) were sampled, five in open selva habitat with managed meadows, five in abandoned former selva habitat, now overgrown with chestnut forest. The scented traps at Soazza were filled with red wine (Montepulciano d'Abbruzzo), with salt and some detergent added to prevent mould. Three PET bottles were placed in the higher foliage of each of the 10 trees. The traps were exposed from 25.7.03 to 1.9.03 and emptied weekly.

For the red list project, 5 trapping stations were set in different regions of Switzerland. The single trap that yielded a new lacewing species was also located in Grisons, but north of the Alps, at Tamins in the upper Rhine valley southwest of Chur. The traps were placed in a light oak forest on a southern slope. The forest was close to a pasture with bushes and dead trees as well as close to a coniferous forest. The scented trap was filled with a lure of water and alcohol-soaked leaves and bark from oak trees. The trap was exposed from 7.5.2002 to 30.7.2002 and emptied every 10 days.

RESULTS

Nineta carinthiaca (Hölzel, 1965)

Soazza GR 736 800/135 700 Altitude 720m. Chestnut forest.

25.7.–4.8.2003	20 ♀♀	2 ♂♂
4.8.–11.8.2003	13 ♀♀	
11.8.–18.8.2003	42 ♀♀	
18.8.–25.8.2003	11 ♀♀	
25.8.–2.9.2003	6 ♀♀	
Total:	92 ♀♀	2 ♂♂

Nineta guadarramensis principiae Monserrat, 1980

Tamins GR 752 150/189 450 Altitude 620m. Oak forest.

11.7.2002	2 ♀♀	1 ♂
19.7.2002		1 ♂
29.7.2002	6 ♀♀	
Total:	8 ♀♀	2 ♂♂

Not a single specimen of the above two species was collected in the neighbouring non-scented combi-traps.

DISCUSSION

Nineta carinthiaca had been known so far from Austria (Hölzel 1965), with the type locality in Carinthia, as well as from Hungary, Slowenia, and Turkey (Aspöck *et al.* 2001). According to Aspöck *et al.* (1980) the species is found in moist forests with *Quercus* and *Fagus*, always in small numbers. The forest at Soazza, however, is strongly dominated by *Castanea sativa*, with some *Corylus*, *Fraxinus* and *Betula*. To find a «new species for Switzerland» in such high numbers was quite a surprise. With 94 specimens it was in fact the most abundant of all the 27 neuropteran species recorded in this project. Furthermore, the fact that 92 of the 94 specimens are females also is noteworthy. Obviously the females were more attracted to the wine, much more than the males.

Nineta guadarramensis principiae also had been collected only rarely and sporadically in Europe. Monserrat (1980) realized that the population in Italy was morphologically different from the Spanish population and proposed two subspecies. Pantaleoni (1995) also reported the species from Italy. Canard *et al.* (1998) found several populations in France. Interestingly, several of the records in France are based on material from McPhail traps, which are scent traps used to lure Mediterranean fruit flies in olive orchards. In Germany, as in all the above mentioned countries, *N. guadarramensis principiae* was found on oaks (Saure 1997; Gruppe & Schubert 2001).

The Swiss sample from the one trap at Tamins GR consisted of eight females and two males, a clear dominance of females as well, but not as pronounced as in *N. carinthiaca* at Soazza.

All species of the genus *Nineta* are large lacewings, with wing lengths of 16–26 mm markedly larger than the common green lacewings. Considering the intensity of entomological research in Switzerland in the last 100 years (the genus *Nineta* was established in 1912 by Navas), it is surprising that two species of the size of *Nineta* had been overlooked so far. The most likely explanation is that the two new species are not attracted to the lights entomologists use for collecting insects, and that they may live in the canopy, unreachable by ordinary sweep nets.

Scented traps thus seem to be a promising method for assessing hitherto unknown portions of neuropteran biodiversity.

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ZUSAMMENFASSUNG

Bei zwei entomologischen Forschungsprojekten mit Duftfallen (in Alkohol gelegte Eichenblätter und Eichenrinde in Tamins GR; Rotwein in Soazza GR) wurden zwei grosse, für die Schweiz neue Florfliegenarten gefunden: *Nineta carinthiaca* (Hölzel, 1965) und *Nineta guadarramensis principiae* Monserrat, 1980.

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