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## *Dicyphus escalerae* Lindberg, 1934 (Hemiptera: Miridae), a plant-bug species new for Switzerland

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The first record of *Dicyphus escalerae* from Switzerland is reported. Information about the phenology and host-plant relations of the Swiss population are presented.

Key words: Miridae, *Dicyphus escalerae*, *Antirrhinum*, Switzerland, climate change.

### INTRODUCTION

*Dicyphus escalerae* Lindberg, 1934, was described from Spain, and subsequently collected in Italy (Tamanini 1956), Corsica (Péricart 1965) and mainland France: SW (Ehanno, 1987 a/b), SE and SW (Matocq 1996). More recently it has been reported from Germany: Rheinland-Pfalz (Simon 1995) and from Paris intramuros (at U.V. light, Matocq 1996), possibly as an introduction associated with horticultural *Antirrhinum majus* (Scrophulariaceae). Specimens of *Dicyphus* collected in Meyrin, Geneva, on 10.vi.2004 represent the first record of *D. escalerae* from Switzerland. Voucher specimens are present in the Geneva Natural History Museum and Matocq collections. These specimens were taken from a population living on *Antirrhinum majus* on a sheltered south-west facing balcony, which had been present since the previous summer, apparently introduced with plants purchased in Meyrin. The situation of this population permitted the following observations.

### MORPHOLOGY

The adults of *D. escalerae* have a rather coarse, erect, black dorsal pubescence, the hairs arising from black spots, habitus in Simon (1995) and Matocq (1996). The second antennal segment is short, with very strong black bands near the base and apex, the latter almost giving an impression that the segment is clubbed. Conclusive diagnosis is only possible with reference to the male genitalia however, the distinctive left paramere being figured in Wagner (1951 : fig 6 j), Wagner & Weber (1964 :67 fig 62 e) and Simon (1995 : fig 3 a and b). The nymphs are bright green, also have a black pubescence, and the dark red markings of the second antennal segment recall those of the adult. Newly emerged adults are also green with red markings, but start to darken within an hour.

Most of the adults in the Swiss population were macropterous, but bachypterous individuals of both sexes were observed. The proportion of brachypters varied, ranging from about 5% to about 15% of the population, though no reason for such variation was apparent.

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#### PHENOLOGY

The population studied did not exhibit discrete generations. Adults were present on the host-plant at all times between May and October 2004 (period of main observations), the emergence of adults being observed on 24.vii.04 and 14.viii.04. In addition, nymphs of all stages were present throughout this period. Mating was observed on 22.vii.04 and 9.x.04, while a female was seen ovipositing on a bract on 22.vii.04. Overwintering is at least partially in the adult stage, an individual being taken on a window on 17.i.04, though other stages may also overwinter (Simon 1995).

The situation of the population was very sheltered and sunny, a situation similar to most of the German records, conditions which could perhaps effect the normal phenology. A population of *Corizus hyoscyami* (L.) (Heteroptera: Rhopalidae) on these *Antirrhinum* plants in 2004 passed a normal lifecycle however, the nymphs first being seen in late August, with adults appearing on 9.x.04 (see Southwood & Leston 1959: 67; Moulet, 1995: 178).

#### HOST-PLANT RELATIONS

*Dicyphus escalerae* is reported to be stenophagous on *Antirrhinum majus* (Ehanno 1987a : 401, Simon 1995). Nymphs of the population studied here were only seen on this host-plant, and although adults were occasionally seen in other places, they were not seen feeding on other plants. Feeding damage on the host-plant was obvious, comprising yellow or white flecks (sometimes coalescing into larger patches) accompanied by blackish flecks of frass. Examined under a microscope, the frass appeared to be composed of coagulations of dark brownish matter in a watery suspension, perhaps suggesting that the insect does not feed solely on phloem.

Many species of *Dicyphus* are thought to be at least partial predators (Wheeler 2001, Wagner & Weber 1964), but no predation by *D. escalerae* was observed, either of the few other insects seen on the host plant or of smaller conspecific individuals.

Although all parts of the plant may be used for feeding (as observed by Simon 1995), virtually all of the damage was to the flower spikes: buds, bracts, flowers, seed pods and stems. The damage was frequently intense enough to kill the shoots, either above those flowers which were open before the plant was attacked or by preventing the shoot from developing entirely.

#### DISPERSAL

When disturbed, the defensive response of *D. escalerae* is to retreat around or down the host-plant, rather than jumping, flying or dropping off (behaviours commonly seen in other herbivorous insects). This clearly facilitates the transport of the insect with its host-plant. Short-range dispersal was observed, in that individuals were seen on self-seeded *Antirrhinum* plants, and on newly purchased plants, several metres from the original colony. No individuals were seen more than a few metres from the host plant however, and the extent of voluntary dispersal over long distances is unclear, although the presence of the species at light traps (Matocq 1996) indicates that it is possible.

It is interesting to speculate why the species has only been recorded spreading recently, given that *Antirrhinum majus* has been a popular and widespread gar-

den plant for many years. It seems likely that climate change and changes in the scope and volume of the transportation of goods around Europe are implicated.

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