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Prey records for spider wasps (Hymenoptera: Pompilidae) from The Netherlands: period 1992-1993

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RIASSUNTO

Durante il 1992/93 sono stati catturati in Olanda 14 Pompilidi insieme con i loro ragni preda. Predatori e prede sono stati identificati ed i risultati confrontati con i dati noti nella precedente letteratura.

I nuovi reperimenti confermano l'ipotesi sulla preferenza della preda per *Anoplius infuscatus* (ragni che vivono sul terreno), *Anoplius viaticus* (il Licoside *Trochosa terricola*), *Anoplius carbonarius* (ragni dei "piani verticali"), *Episyron rufipes* (ragni con tela circolare), *Arachnospila* e *Pompilus cinereus* (non selettivi). *Agenioideus cinctellus* sembra preferire i Salticidi.

Parole chiave: Araneae, Predazione, Imenotteri Pompilidi, Selettività, Olanda.

SUMMARY

In the course of 1992/1993, 14 pompilid wasps were caught together with their spider prey. Predators as well as prey were identified, and data were compared to earlier records and data from the literature. The new records confirm hypotheses concerning prey preferences in the case of *Anoplius infuscatus* (ground dwelling spiders), *Anoplius viaticus* (the wolf spider *Trochosa terricola*), *Arachnospila* (not selective), *Auplopus carbonarius* (spiders from vertical planes), *Episyron rufipes* (orbweb building spiders), and *Pompilus cinereus* (not selective). *Agenioideus cinctellus* appears to prefer jumping spiders.

Key words: Araneae, Predation, *Pompilidae*, Selectivity, The Netherlands.

Introduction

Female pompilid wasps attack spiders, which are paralysed by stinging and subsequently transported to burrows. There, an egg is laid on each spider. A larva, hatching from the egg, feeds on the haemolymph of the spider (GAULD & BOLTON, 1988).

Data on pompilid prey in the literature, however scarce, suggest some prey specialization, but many of these records are unreliable or out of date, or do not go beyond generic level (KOOMEN & PEETERS, 1993). To obtain more information concerning possible prey preferences of pompilids, spider wasps were caught together with their prey, whenever met. The results of catches done in 1987-1991 were published elsewhere (KOOMEN & PEETERS, 1993). This paper reports on results of 1992-1993.

Methods and materials

Collecting and preservation techniques are described in KOOMEN & PEETERS (1993). Wasps were identified with the aid of WOLF (1972), DAY (1988) and OEHLKE & WOLF (1987). Identification of spiders was based mainly on ROBERTS (1985ab, 1987). Autecological data on spiders are derived from Jones (1983) and MAURER & HÄNGGI (1990). All spiders and wasps collected will be lodged in the National Museum of Natural History, Leiden, The Netherlands.

Results

In total, 14 prey of 6 pompilid species were collected. Data are summarized below. Common characteristics of prey are given when appropriate.

- *Agenioideus cinctellus* (Spinola): *Salticidae* (1 juv., Loon op Zand, 18.vii.1993); *Heliophanus* sp. (1 juv., Asten, 6.vi.1993); *Heliophanus flavipes* (Hahn) (1♀, Loon op Zand, 18.vii.1993). All three species are jumping spiders (*Salticidae*).
- *Anoplius infuscatus* (Vander Linden): *Pardosa monticola* (Clerck) (1♀, Wassenaar, 29.vi.1992).

- *Anoplius viaticus* (Linnaeus): *Trochosa terricola* Thorell (1♀, Son en Breugel, 25.iv.1993).
- *Arachnospila rufa* (Haupt): *Alopecosa fabrilis* (1 juv., Noordwijk, 28.viii.1993).
- *Auplopus carbonarius* (Scopoli): *Clubiona brevipes* Blackwall (1♀, Leiden, 28.vii.1993).
- *Episyron rufipes* (Linnaeus): *Larinioides* sp. (juv., Almere, 22.viii.1992); *Nuctenea umbratica* (Clerck) (1♀, Wassenaar, 29.vi.1992). Both are orbweb building species.
- *Pompilus cinereus* (Fabricius): *Haplodrassus dalmatensis* (L. Koch) (1♀, Wassenaar, 29.vi.1992); *Aelurillus v-insignitus* (Clerck) (1 juv., Wassenaar, 29.vi.1992); *Arctosa perita* (Latreille) (1 juv., Noordwijk, 25.v.1993; 1 juv., Zandvoort, 2.viii.1993; 1 juv., Otterlo, 4.viii.1993). All species are thermophilic ground dwelling spiders.

Discussion

The new observation can be compared to hypotheses concerning prey preferences, drawn up on base of earlier records and data from the literature on pompilids in The Netherlands and nearby countries (see KOOMEN & PEETERS, 1993, for an overview).

- *Agenioideus cinctellus* was not recorded by us with prey before. The new records fit well within data from the literature, suggesting a preference for jumping spiders (Salticidae) (HAUPT, 1927: *Salticus scenicus*; RICHARDS & HAMM, 1939: salticid juvenile, *Heliophanus cupreus*, *Heliophanus* sp.; WAHIS, 1957: *Evarcha arcuata*, *Heliophanus cupreus*; LEFEBER, 1976: *Salticus scenicus*; OEHLKE & WOLF, 1987: *Evarcha*, *Euophrys*, *Heliophanus*; DAY, 1988: Salticidae). However, crabspiders (Thomisidae) are mentioned as prey as well (OEHLKE & WOLF, 1987: *Xysticus*; DAY, 1988: sometimes Thomisidae), but these reports probably all refer to a record from Sweden (ADLERZ, 1903:

Xysticus audax) and a record from France (MANEVAL, 1932: Thomisidae spp.).

- *Anoplius infuscatus* was thought to prefer ground dwelling spiders (KOOMEN & PEETERS, 1993). The new record of a wolf spider is in agreement with this hypothesis.
- *Anoplius viaticus* showed earlier a preference for *Trochosa terricola* (KOOMEN & PEETERS, 1993; BRISTOWE, 1948). The new record concerns the same species.
- *Arachnospila rufa* was concluded to be not selective (KOOMEN & PEETERS, 1993). With only one new record, there is no reason to abandon this hypothesis.
- *Auplopus carbonarius* probably has a preference for spiders that walk along, or hide in crevices in, vertical planes, like walls or tree trunks (KOOMEN & PEETERS, 1993). This conclusion will not be altered: the species of the new record (*Clubiona brevipes*) was already among earlier records. Again, the habit of *Auplopus carbonarius* of amputating the legs of its prey (GRANDI, 1961), could not be confirmed (see also KOOMEN & PEETERS, 1993). The spider of the new record still had all of its legs.
- *Episyron rufipes* was stated to be specialized in catching orbweb building spiders (KOOMEN & PEETERS, 1993). The new records confirm this statement.
- *Pompilus cinereus* was supposed to be non-selective, because many different prey are known from the literature (KOOMEN & PEETERS, 1993). The new records are not enough to change to another hypothesis.

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