ANDROMORPHIC FEMALES IN A POPULATION OF *NEMASTOMA DENTIGERUM* CANESTRINI, 1873 (OPILIONES, NEMASTOMATIDAE)

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ABSTRACT
A sample of *Nemastoma dentigerum* Canestrini, 1873 collected in the Netherlands predominantly consists of males and andromorphic females. Chelicerae and pedipalps of these females have a male morphology, although not fully developed. Illustrations are presented.
Key words: *Nemastoma*, andromorphism, Netherlands

Introduction

Currently, *Nemastoma dentigerum* can be regarded a common species in the Netherlands, being especially abundant in the riverine area (Wijnhoven 2009). This small soil-dwelling species often occurs in large numbers in pitfall traps, but it can also be easily collected by sieving leaf litter. As it regularly occurs in very high densities in litter of forest flours (e.g. Willow *Salix*) on river clay soils, hand collecting is a suitable method too in these habitat types. This can be done by carefully removing a layer of dead leaves. Then one just waits for a few minutes focusing on the litter-free patch (± ¼ m²) until the harvestmen start to move around in search for shelters. This straightforward method was used during an inventory of harvestmen in 2013 in the "Roerdal" region (flood plains of the Roer, a tributary of the river Maas), province of Limburg, the Netherlands (Helsdingen et al. 2013). After closer examination of the sample (5♂, 6♀) five out of six females turned out to show distinct andromorphic characteristics. These aberrant females are presented here briefly.

Male characters

The presence of a dorsal apophysis in the distal region of the first cheliceral segment is one of the secondary sexual characteristics of *Nemastoma* males (fig. 1e; Martens 1978). The median apophysis region has short setae and a patch of micropores from which a glandular secretion can be released that probably plays a role in courtship and mating behaviour (Martens 1973). In *N. dentigerum* the apophysis is constricted basally and has a more or less flattened top. The male pedipalp has species-specific modifications: femur conspicuously thickened and curved, mediodistally with a hook-shaped projection; patella mediodistally broadening into a flat protrusion (fig. 1e). In females the chelicerae lack an apophysis, the pedipalps are slender and have no modifications (fig. 1a).

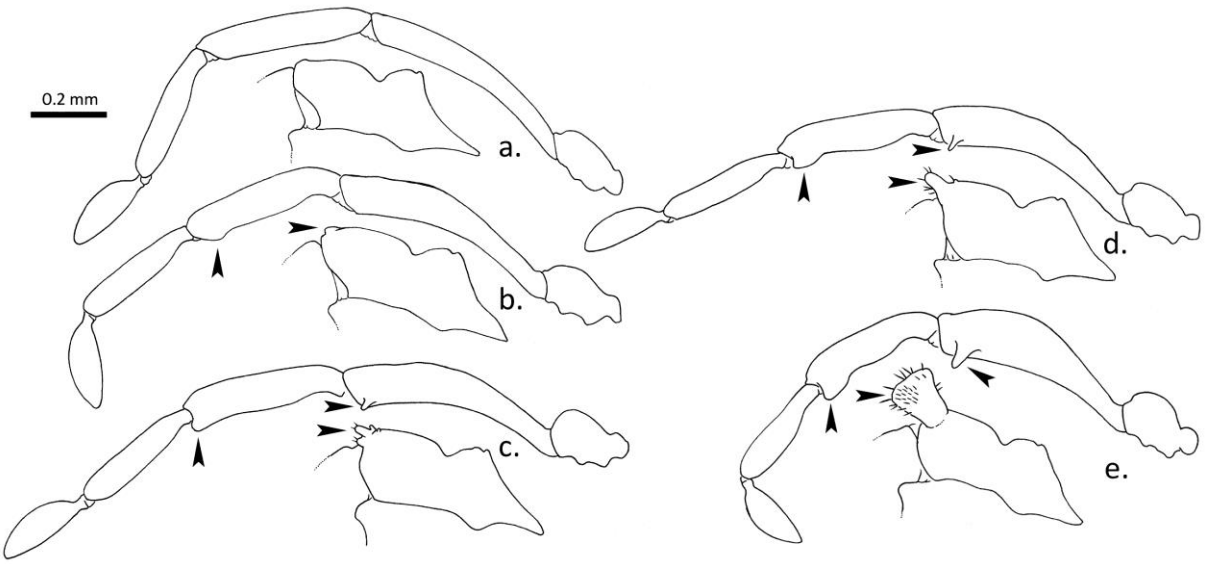

Fig. 1. *Nemastoma dentigerum* collected at Paarlo, median views of right pedipalp (top) and first segment of right chelicera (bottom): typical female (a), andromorphic females (b-d) and male (e) (setae not drawn). Arrows indicate male characters. Drawings H. Wijnhoven.

Andromorphic females

On 16-10-2013 5 adult males and 6 females were collected by hand at Paarlo, province of Limburg, the Netherlands (51.08.44.8N, 6.01.48.9E; AC198-351) from leaf litter in a deciduous wood (*Salix*, *Alnus*, *Populus*) on clay soil. Five females show distinct andromorphic characters on chelicerae and pedipalps (fig. 1b-d) with some individual variation. These females have normal gonads and ovipositor, no additional aberrant features can be noticed. The illustrations demonstrate that male characters are not fully developed in that the female cheliceral apophysis is much smaller than in males, more rounded and that it has no micropores (glands). In one female it has three tips (Fig. 1c). The female andromorphic pedipalp shows modifications in that the femur is thickened and curved, a distal hook can be present, the patella can have a distal protrusion and a male-like ventral curvature (fig. 1 b-d). Left and right appendages are asymmetrical in two females.
It appears that the degree in which the cheliceral apophysis is modified is congruent with that on the pedipalp. In other words, a female with a 'more male' chelicera also has a 'more male' pedipalp (compare fig. 1b-d).

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SAMENVATTING

Van een serie *Nemastoma dentigerum* (5 ♂, 6 ♀), verzameld in het Roerdal in 2013, vertoont het overgrote deel van de vrouwtjes (5 ex) mannelijke kenmerken aan cheliceer en pedipalp. Het lijkt er op dat een grotere ('meer mannelijke') apophyse op de cheliceer gepaard gaat met sterker ontwikkelde mannelijke kenmerken op de pedipalp.

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