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A new species of predaceous mite of the genus *Neoseiulus* Hughes (Acari, Phytoseiidae), with redescriptions of *N. magnanalis* (Thor) and *N. ellesmerei* (Chant & Hansell), from Svalbard, High Arctic

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Abstract

A new species of phytoseiid mite of the genus *Neoseiulus* (Acari, Phytoseiidae) found in Svalbard is described and illustrated. Redescriptions, drawings, measurements, and diagnosis of two related species, *N. magnanalis* (Thor) and *N. ellesmerei* (Chant & Hansell) are given. A neotype is designated for *N. magnanalis*.

Key words: Acari, mites, taxonomy, new species, *Neoseiulus*, Edgeøya, Spitsbergen

Introduction

Phytoseiid mites are well known as effective predators of small microarthropods, particularly phytophagous pests on various terrestrial plants and in other habitats, such as moss and soil (Kolodochka 2006). Thor (1930) described *Lasioseius* (*Lasioseius*) *magnanalis* (Laelaptidae) from moss and *Salix* sp. near Hiorthamn, and in Mälardalen, Adventdalen (near Longyearbyen, Spitsbergen). Chant (1959) in his revision moved *L. magnanalis* into the family Phytoseiidae, genus *Amblyseius*. In addition he included *A. magnanalis* in the list of dubious species (*nomina dubia*) based on the brevity of Thor's description noted that "its identity cannot be determined from his description". Moraes *et al.* (1986, 2004) accepted the proposal of Chant (1959) and included *L. magnanalis* in their list of "Species Insertae Sedis". Thor did not designate a type specimen (as holotype) or type series (as syntypes) for this species. The description of the new species was brief, including only general measurements of the female and male idiosoma were given, and no information was provided on the number of females and males collected.

Unfortunately, the type specimens upon which Thor based his original description were destroyed after Thor's death in accordance with his will (Lindquist, 1963). This assertion has recently been reaffirmed by Geir Sølvi (Natural History Museum, University of Oslo) (pers. comm.). We have no information about any other specimens on which the description of *Neoseiulus magnanalis* was based, except at the Natural History Museum, University of Oslo. Therefore Thor's type specimens which were described and labelled as *magnanalis* must be considered as lost. In order to clarify the identity of this species, we here designate a neotype.

Material and methods

Individuals of phytoseiid mites (Parasitiformes, Phytoseiidae) were found in samples of soil, vegetation, moss and litter collected from Edgeøya and Spitsbergen (Svalbard) in 2007 and 2009. Mites were extracted using a Berlese funnel and mounted in Hoyer's medium. The specimens of *Neoseiulus* were separated and examined under a microscope Zeiss Axioscop 2. In the present study the family structure and setal nomenclature follow that of Kolodochka (2006). The nomenclature of spermatheca structures follows Kolodochka (1990). Measurements are given in micrometres. Type material is deposited at the Institute of Zoology, National Academy of Sciences of

Description. Female (holotype). Dorsal shield (Fig. 31) elongated, moderately sclerotised, finely striated, with seven pairs of solenostomes (*it, iv, id, isc, il, is, ic*) and 17 pairs of setae. All setae smooth and short except PM2 and PM3 which are elongated. Sternal shield with two pairs of solenostomes and three pairs of setae; MST on metasternal platelets. Ventrianal shield scutiform with three pairs of pre-anal setae. Anal pores small, distinct, rounded, the distance between them subequal to the distance between bases of PrA2 (Fig. 32). All ventral setae smooth, sharp, and fine. Setae V1, MV1, MV2 and PV on the integument surrounding the ventrianal shield. Peritremes long, terminate anteriorly the level of D1. Chelicerae normal in relation to body size. Fixed digit with four teeth, movable digit without teeth (Fig. 34). Spermatheca bell-shaped with thick-wall funnel and atrium on verrucose cervix (Figs 35, 36). Large metapodal plate sharply asymmetrical in form; smaller platelet nearly straight (Figs 37, 38). Posterior part of peritrematal shield curved, broadened towards beak-shaped tip (Fig. 33). Leg IV with 3 sharp and smooth macrosetae. Macroseta on basitarsus IV longer than those on genu and tibia (Fig. 39, 40). No macrosetae on other legs.

Notes. Specimens of *N. ellesmerei* collected in Svalbard differ from the holotype in the following features: fixed digit of chelicerae with three teeth instead of four; some specimens have shorter peritremes anteriorly than the holotype, and the large metapodal plates clearly broader than those in holotype. The description and illustrations are based on the holotype. Type material deposited in the Canadian National Collection, Ottawa, Canada. No information is available about the biology or food habits of *N. ellesmerei*.

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