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The male and larvae of *Nigritothrips longistylosus* (Thysanoptera, Thripidae) with observations on its biology

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Abstract

The male and larvae of *Nigritothrips longistylosus* (Priesner) are described for the first time. The life cycle, seasonal abundance, natural enemies and host plant relationships are described. This is the first record of this species from the Iberian Peninsula.

Key words: *Nigritothrips*, Thysanoptera, host plant, Rubiaceae, Spain

Introduction

The Thysanoptera family Thripidae includes 94 genera in Europe (Zur Strassen 2003). Amongst the 14 genera of the *Anaphothrips* group, in all of which the pronotum lacks any long setae, there are two genera in which the species have the last two antennal segments unusually elongate, *Belothrips* and *Nigritothrips*. The species of *Belothrips* are associated with *Galium* (Rubiaceae), but the host associations of *Nigritothrips* have remained unknown. This paper provides an account of the host plant and biology of *N. longistylosus* (Priesner) in northern Spain, a significant extension of the known distribution, together with a first description of the male and larval stages.

The two species in this genus, *N. longistylosus* (Priesner) and *N. zurstrasseni* Bhatti, are both from northern Europe (Austria, West Russia and Poland). *N. longistylosus* has been collected from grasses in Austria, at Klaus in Alpevorland (Franz & Priesner 1961), and in Russia in the Kursk area (Schielephake & Klimt 1979). According to Zur Strassen (2003), this species is associated with bank and riparian vegetation, but Jenser (2008) collected four females by beating *Crataegus monogyna* in Hungary in the Mátra Mountains, at Fallóskút-Mátraszentimre (near to Gyöngyös) in June 2005. Thus there is no precise information on the host plant where the adults lay eggs and complete their life cycle.

Material and methods

Sampling was carried out weekly during May and June of 2011 and 2012 in Spain, Alava Province Zalduondo, 617m altitude, during the blooming period of *Cruciata laevipes* (Rubiaceae) (Fig. 13). During this time, 50 plants were collected weekly into 75% ethanol. Samples were filtered, and the thrips sorted under a Leica MZ9 stereomicroscope. Thrips were cleared with cold 10% NaOH for ten minutes prior to mounting onto slides. Some specimens were mounted directly without maceration to preserve the original color according to Moritz *et al.* (2002). Measurements and figures were prepared with a Leica DM4500B using DIC and processed through Helicon Focus software (Helicon Soft Ltd). Nomenclatural details of all taxa mentioned in this paper are given in ThripsWiki (2013). Morphological terminology for the larvae follows Kucharczyk (2010). Specimens are deposited in the Natural History Museum, London.

Cruciata laevipes is a Euro-Siberian plant that is known across Europe to Siberia (Fitter & Peat 1994). In the Iberian Peninsula it is present in the North where it grows in meadows, road verges, riverbanks, scrub and open woodland, generally on well-drained calcareous soils. In the Basque Country the species is known from wet meadows and grasslands, shaded forest environments (pine, fir, beech and oak) on soils rich in organic matter (Fig. 13). It blooms in spring (first of May to the end of June) (Castroviejo *et al.* 1986) and the flowers sometimes contain a diversity of thrips (Goldarazena & Mound 1997).

Nigritothrips zurstrasseni Bhatti was collected in Austria in a prairie formed with grasses (Bhatti 1978), but there is no precise information concerning the host plant. Collecting methods based on scattered and isolated sampling are not informative about the plants where the thrips put their eggs and can result in erroneous associations. Much effort is needed during sampling to discover the plant where a thrips completes its life cycle. Repetitive seasonal captures throughout the years, and presence of immature stages of the thrips on the same plant are essential to establish host correlations.

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