



Species recognition in the genus *Scolothrips* (Thysanoptera, Thripidae), predators of leaf-feeding mites

LAURENCE A. MOUND

CSIRO Ecosystem Services, PO Box 1700, Canberra, ACT 2601. E-mail: laurence.mound@csiro.au

Abstract

Species of the genus *Scolothrips* are re-assessed based on examination of type material together with many other specimens, and a key is provided to identify the 14 species recognised. The possibility is discussed that the three North American species, *hoodi*, *pallidus* and *sexmaculatus* are colour variants of a single species. Three apparently Old World species, *dilongicornis*, *longicornis* and *takahashii*, cannot be distinguished satisfactorily. Three new synonyms are established: *quadrinotata* is a synonym of *asura*; *hartwigi* is a synonym of *brevipilis*; *priesneri* is a synonym of *takahashii*. Two species from the Canary Islands are considered *nomina dubia*: *quadrimaculatus* and *lansarotensis*. Two species are here recorded for the first time from Australia, *latipennis* and *rhagebianus*, and Australian records of *sexmaculatus* are considered to be based on misidentifications.

Key words: Six-spotted thrips, *Scolothrips sexmaculatus*, mite predators

Introduction

Species of the thripid genus *Scolothrips* are well known as predators of mites on the leaves of plants (Gilstrap 1995), and under the name “six-spotted thrips” these insects are sometimes marketed as biocontrol agents. Recognition of an adult thrips as being a member of the genus *Scolothrips* is particularly easy, due to the presence of six (rarely five) pairs of exceptionally long setae on the pronotum as well as a similar pair arising between the ocelli. However, recognition of species within the genus has remained difficult (Bhatti & zur Strassen, 2009), including three that are well-known in North American entomology (Stannard, 1968). The problem is that some species have been distinguished on small details of body and wing colour, and lengths of antennal segments and setae. The recorded differences between species are often slight, and authors rarely indicate how many specimens were measured, nor if these came from one or multiple samples. It is thus not possible to evaluate the statistical or biological significance of many published observations. Hoddle *et al.* (2008) suggested some of the recorded differences might result from environmental conditions during larval development, such as temperature or the mite species consumed. As discussed below, the most frequently recorded species belong in one of two species-groups, the *sexmaculatus* species-group, and the *longicornis* species-group. Each of these comprises three nominal species that are distinguished from each other on character states for which there is little evidence of reliability.

Technical problems

The identification of *Scolothrips* species remains based on slide-mounted museum specimens, many of which are in an unsatisfactory condition and with little or no host data. Most slide preparations of *Scolothrips* species in museum collections are uncleared, usually falling far behind the technical standards developed by several recent workers (see Okajima, 2006; Hoddle *et al.*, 2008). In most such specimens, iridescence from the body contents makes it difficult, sometimes impossible, to see surface details of sculpture and chaetotaxy, or even the extent of dark markings on the yellow bodies. Because of this, the major taxonomic reference work on this genus (Priesner,