



Singhiella melanolepis, a new species of whitefly (Hemiptera: Aleyrodidae) from Taiwan with remarks on the genus *Singhiella* Sampson

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Abstract

The adult male, female and puparium of *Singhiella melanolepis* sp. nov. are described from *Melanolepis multiglandulosa* (Euphorbiaceae), together with scanning electron micrographs and figures. Comparisons are made between the puparium of this species and that of *Singhiella elaeagni* (Takahashi 1935), and remarks are provided on the genus *Singhiella* Sampson. After consideration of the diversity in adult structure among the species of *Singhiella*, it is suggested that this genus may be defined unsatisfactorily, and that more importance should be placed on adult morphology in whitefly taxonomy.

Key words. Hemiptera, Aleyrodidae, *Singhiella*, adults, new species

Introduction

The whitefly genus *Singhiella* was described by Sampson (1943) for *Trialeurodes bicolor* Singh. Prior to the year 2000 this genus was represented by only five species (Qureshi & Qayyam 1969; Mound & Halsey 1978; Qureshi 1979; Chou & Yan 1988; Martin 1999). However, as a result of a cladistic analysis of a large subset of species of *Dialeurodes sensu lato*, Jensen (1999, 2001) indicated that the whitefly species formerly accommodated in *Dialeurodes* in U.S.A. could be divided into three genera. Appropriate existing generic names were assigned to these groups, based on the placement of the type species of *Dialeurodes* Cockerell, *Massilieuroides* Goux and *Singhiella* Sampson. Species were assigned to each of these genera based on their placement in the cladograms and the original descriptions. As defined by Sampson (1943) and redefined by Qureshi (1979), Martin (1999) and Jensen (2001), *Singhiella* now comprises 29 described species (Table 1). A new species of this genus from Taiwan is described here that has been found only on *Melanolepis multiglandulosa* (Euphorbiaceae). A detailed study of the structural features of the puparium and adults of this species indicate that its inclusion in *Singhiella* Sampson as currently understood is appropriate. Moreover, a comparison is made of the characteristic features of the pupal case of the new species with those of the closely related species, *S. elaeagni* (Takahashi). Furthermore, remarks are provided on the genus *Singhiella* Sampson.

Material and methods

Puparia of the new species were collected in the field, and a colony was established in the laboratory. Specimens for scanning electron microscopy were removed from the host plants and washed in 95% ethanol with an ultrasonic mini-cleaner at 50–60 Hz for 2 min, dehydrated in 95% ethanol, and finished in 100% ethanol. Specimens were then critical-point-dried using CO₂ as a transfer fluid, mounted on stubs, sputter-coated with a gold-palladium alloy, and examined with a scanning electron microscope (JEOL JSM-5600, Japan) in the