

A New Species of *Rhachisphora* (Homoptera: Aleyrodidae) from Taiwan

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ABSTRACT

Rhachisphora oblongata Ko, n. sp. is described with accompanying illustrations and photographs.

Key words: Taxonomy, Aleyrodidae, *Rhachisphora*, new species, Taiwan.

Introduction

Rhachisphora was originally used by Quaintance and Baker (1917) as a subgenus of *Dialeurodes*, to accommodate species whose puparia have a submarginal row of knobbed setae or prominent rhachis. Though it was later regarded as a full genus by Takahashi (1952) in the original description of the species *malayensis*, however, this species is not typical of *Rhachisphora* by the absence of lateral ridges or rhachis on the abdomen. Examination of all of the specimens in Taiwan has revealed that some of the species with submarginal knobbed setae, such as *R. fici* (Takahashi), *R. kurarueensis* (Takahashi), *Dialeurodes elaeagni* Takahashi, *D. tetrastigmae* Takahashi, and *D. vanieriae* Takahashi, did not appear to be congeneric with type species of *trilobitoides* by the absence of rhachis (Takahashi, 1932; Mound and Halsey, 1978). *Dialeurodes* is the largest whitefly genus, but is probably not a single evolutionary group. These 2 genera need to be considered together, their species re-examined, and then re-sorted into spec-

ies-groups on carefully considered structural characters. However, they are retained until revisionary studies of *Dialeurodes* can be made.

In the text, the following abbreviations are used for the depositories of material: (ANIC) Australian National Insect Collection, Canberra; (CDFA) California Department of Food and Agriculture, Sacramento; (NHM) Natural History Museum, London; (NMNS) National Museum of Natural Science, Taichung; (NTU) National Taiwan University, Taipei; (TARI) Taiwan Agricultural Research Institute, Taichung.

Rhachisphora oblongata Ko, n. sp. (Figs. 1-5)

Pupal case: Found along veins on the under surface of leaves, without marginal secretion, light brown in color, with marked brown pigmentation on median area of cephalothorax and abdominal segments II-V. Much elongate, narrow, nearly parallel on sides, more than twice as long as wide, lacking long setae, slightly emarginate on margin, 1.36 mm long, 0.5 mm wide, widest at about

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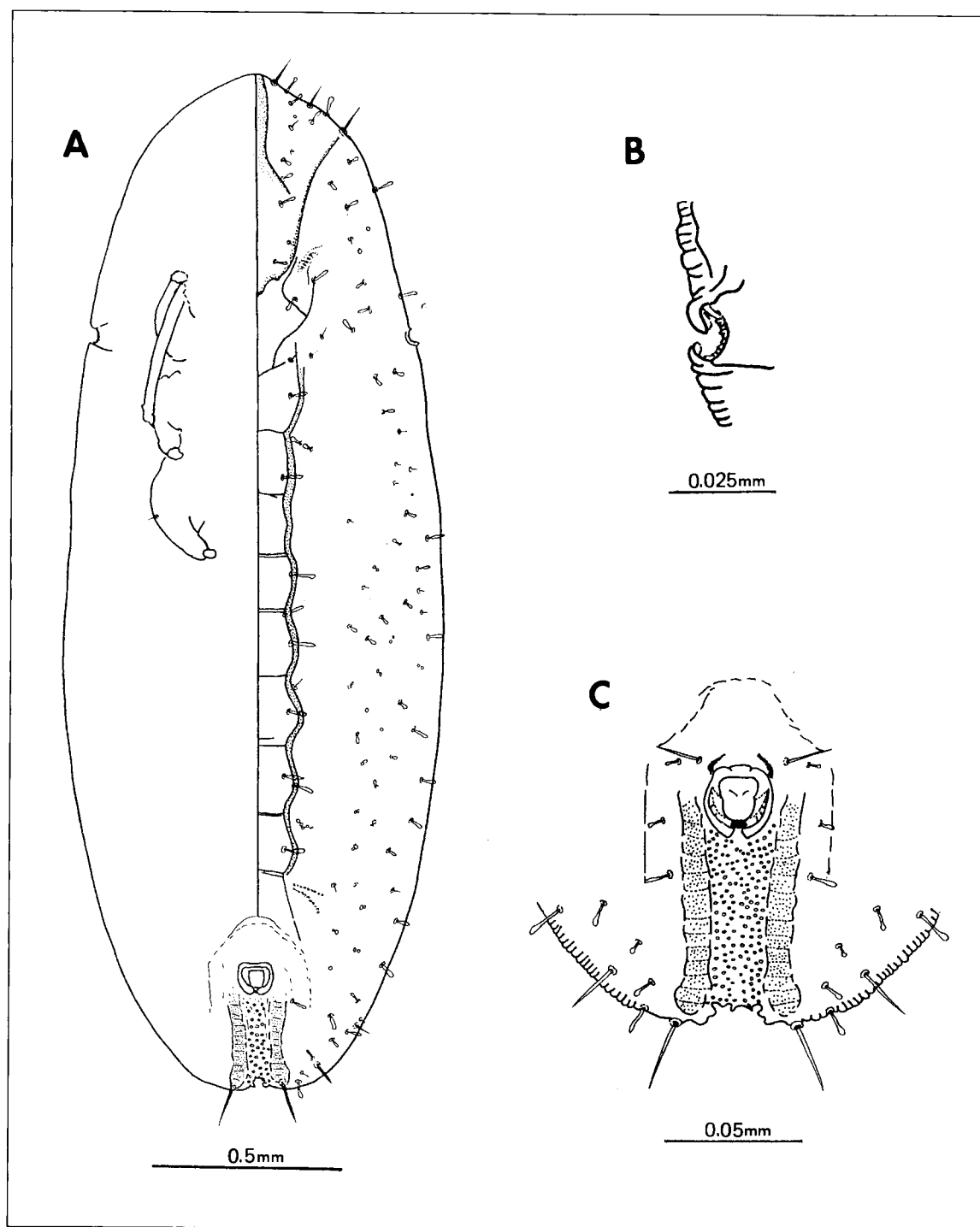


Fig. 1. *Rhachisphora oblongata* n. sp.-A, Fourth instar; B, tracheal pore area; C, posterior area.

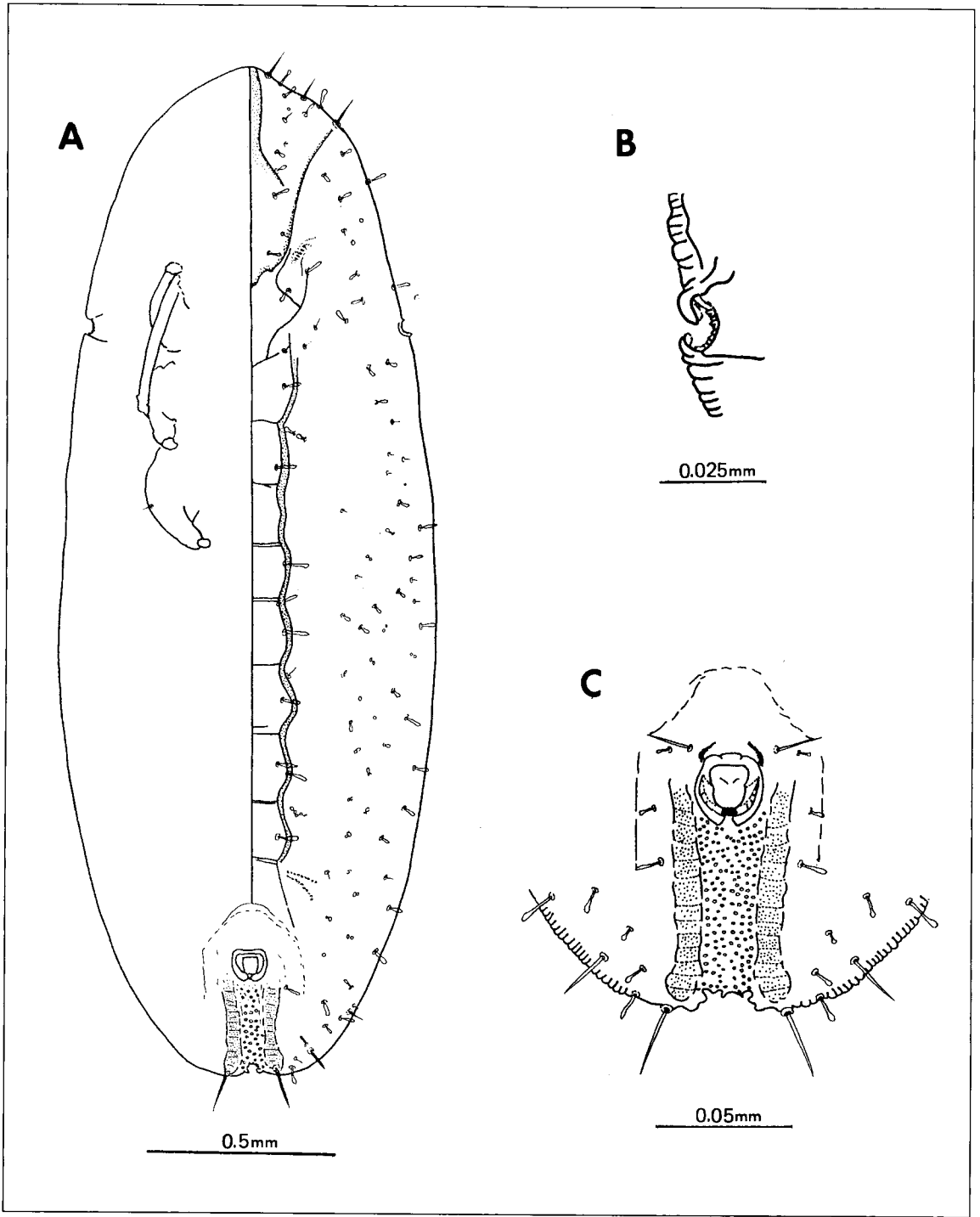
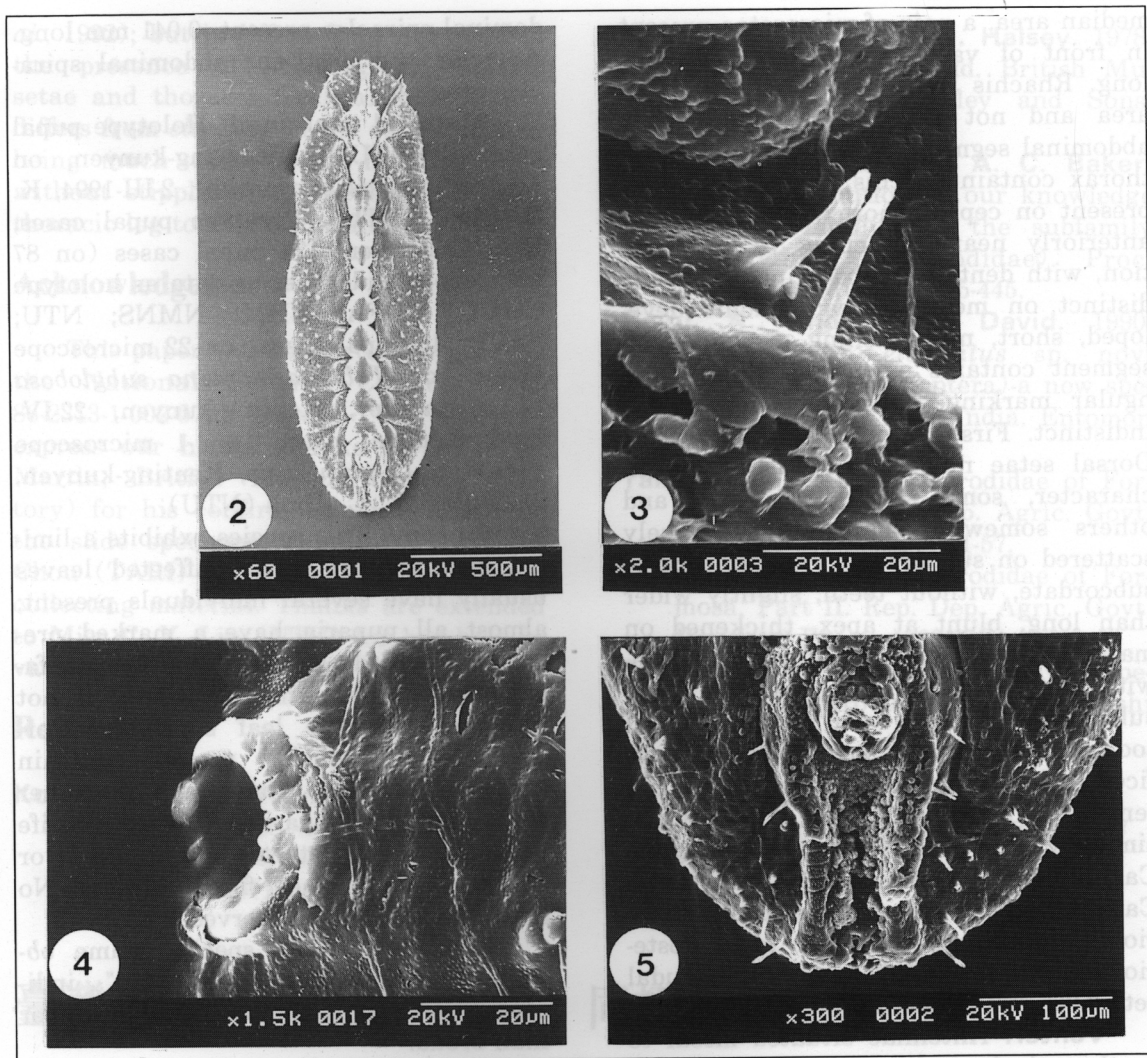


Fig. 1. *Rhachisphora oblongata* n. sp.-A, Fourth instar; B, tracheal pore area; C, posterior area.



Figs. 2-5. *Rhachisphora oblongata* -2, Fourth instar; 3, *do.*, capitae setae; 4, *do.*, tracheal pore area; 5, *do.*, posterior area.

abdominal segment III. Margin crenulate, sutures in marginal band not evident. Thoracic tracheal openings small, complete, distinctly separated from margin, slightly chitinized, with small teeth. Eye spots absent. Caudal tracheal opening irregular, with teeth. Anterior and posterior marginal setae present.

Dorsum: Submargin not separated from dorsal disk. Longitudinal moulting suture reaching margin and transverse

moulting suture reaching submarginal area, forming a distinct segment on metathorax, mesothoracic suture turning forward, reaching submarginal furrow. Thoracic tracheal pores very small, nearly complete, just within margin, with 6 very small pointed teeth. Dorsum with some paired very minute scattered circular pores, many irregular transverse furrow-like lines on median segmented area, abdominal segments discernible on

median area, a pair of microsetae present in front of vasiform orifice, 0.033 mm long. Rhachis well developed in median area and not reaching margin. All 8 abdominal segments and meso- and metathorax contain rhachis. A pair of ridges present on cephalothorax, which diverge anteriorly nearly reaching its culmination, with denticles. Abdominal segments distinct on median area; rhachis developed, short, not reaching margin, each segment contains a small median rectangular marking, submedian depressions indistinct. First abdominal setae absent. Dorsal setae numerous and different in character, some slightly knobbed and others somewhat lanceolate, sparsely scattered on subdorsum. Vasiform orifice subcordate, without teeth, slightly wider than long, blunt at apex, thickened on margin, slightly indented at hind margin, with median tubercle, separated from submarginal area, with some lateral tooth-like sculptures, space between orifice and submarginal area equal in length. Pocket indistinct. Operculum similarly shaped and obscuring lingula. Caudal ridge distinct, with markings. Caudal furrow wide, with markings. Anterior marginal seta 0.036 mm long. Posterior marginal seta 0.032 mm long. Caudal seta 0.055 mm long.

Venter: Antennae situated mesal to prothoracic legs, directed caudomedially, 0.19 mm long, reaching beyond middle of mesothoracic leg, with a short apical process. Prothoracic legs directed anteromedially and meso- and metathoracic legs directed caudomedially, 2-segmented, microrseta present at base of metathoracic leg. Adhesive sac not prominent. Thoracic tracheal folds present, not prominent, without stipples. Abdominal tracheal folds indistinct. Ventral surface bearing only one pair of setae: a cephalothoracic pair anterior to mouthparts absent; a 2nd abdominal pair mesal to anterior abdominal spiracles absent, and an 8th abdominal pair anterior to posterior ab-

dominal spiracles present, 0.041 mm long. Anterior and posterior abdominal spiracles present.

Material examined: Holotype pupal case, PINGTUNG: Kenting-kunyen, on *Leea guineensis* (Leeaceae), 2-III-1994, K. C. Chou (NTU). Paratype pupal cases, Kenting-kunyen, 174 pupal cases (on 87 microscope slides), same data as holotype (ANIC; CDFA; NHM; NMNS; NTU; TARI); 45 pupal cases (on 22 microscope slides), on *Tabernaemontana subglobosa* (Apocynaceae), Kenting-kunyen, 22-IV-1994; 8 pupal cases (on 1 microscope slide) on *L. guineensis*, Kenting-kunyen, 21-III-1996, K. C. Chou (NTU).

Biology: This species exhibits a limited geographical range. Affected leaves usually have several individuals present; almost all puparia have a marked preference for feeding sites along undersurfaces of leaf veins, and the outline is not influenced by the leaf structure. Dorsal wax is probably present as thin transparent sheets that have no other wax secretions. Puparia are cryptic in life and not easy to detect. No parasitoids or adults were obtained from cultures. No ant attendance was observed.

Etymology: The specific name *oblongata* is derived from "oblong", indicating that the pupal case is much longer than broad.

Remarks: This species answers the description of *Rhachisphora*, being well characterized with submarginal setae and ridges. It is readily interpretable by the pupal case being much elongated in outline, more than twice as long as wide, as well as by the presence of submarginal capitate setae. A pair of ridges present on cephalothorax diverge anteriorly. Abdominal ridges are a little developed on median area, not reaching the culmination. There is a connecting affinity with *R. reticulata* (Takahashi, 1933) and *R. elongata* Regu and David, 1990 in the shape of pupal case, rhachis, and presence of capitate and lanceolate setae (Ko *et*

al., 1992); but it differs from *reticulata* in the presence of submarginal capitate setae and thoracic tracheal fold. It also differs from *elongata* in the caudal furrow being much wider, with markings and without stipples from the base of meta-thoracic leg to vasiform orifice.

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臺灣產脊粉蝨屬之一新種 (同翅目：粉蝨科)

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摘要

本文描述台灣產脊粉蝨屬一新種：*Rhachisphora oblongata* n. sp. 狹長脊粉蝨。文中並輔以圖繪及電顯圖。

關鍵詞：分類、粉蝨科、脊粉蝨屬、新種、台灣。