



## First records of the subfamily Ortheziolinae (Hemiptera: Ortheziidae) in Japan, with descriptions of two new species

HIROTAKA TANAKA & HIROSHI AMANO

Laboratory of Applied Entomology and Zoology, Faculty of Horticulture, Chiba University, Matsudo, Chiba, Japan.

E-mail: scale@graduate.chiba-u.jp

### Abstract

The adult females of *Ortheziola mizushimai*, **n. sp.** and *Ortheziolamameti maeharai* **n. sp.** are described and illustrated from specimens extracted using Berlese funnels from Japanese forest litter. *Ortheziola mizushimai*, **n. sp.** resembles the Korean species *O. peregovitsi* but differs in the shape of the wax plates and structure of the disc pores. *Ortheziolamameti maeharai* **n. sp.** resembles the Nepalese species *Om. loebli* and the Taiwanese species *Om. taipensiana*, but differs from *Om. loebli* in the distribution of multilocular pores and from *Om. taipensiana* in the shape of wax plate 9. These are the first formal records of the subfamily Ortheziolinae from Japan.

**Key words:** morphology, ensign scale insect, taxonomy

### Introduction

The subfamily Ortheziolinae Kozár (2004) is a subfamily within Ortheziidae, whose species are mainly distributed in the soil and have extremely hard wax plates that have a distinctive pattern among the Ortheziidae. Thirty species of the subfamily are known and these have been recorded from the Ethiopian, Oriental and Palaearctic Regions (Kozár, 2004). However, no species within this subfamily has been reported from Japan.

In the course of our Japanese ensign scale study, we had an opportunity to examine Ortheziidae collected from forest litter taken from several areas of Japan. We found two undescribed species belonging to the subfamily Ortheziolinae, one in the genus *Ortheziola* Šulc (1895) and the other in *Ortheziolamameti* Kozár (2004). These are described and illustrated below as species new to science.

The mounting method adopted here mostly followed Kawai (1980), except that treatment in 10% KOH solution was extended from 30–60 minutes to 2–6 hours. The morphology of the slide-mounted specimens was examined under a phase-contrast light microscope. We have followed Kozár (2004) for terminology in preparing the manuscript. Specimens examined in this study are deposited in Department of Zoology, National Science Museum, Tokyo (NSMT) and Kawai scale insect collection at The Tokyo University of Agriculture, Tokyo (TUA).

### Ortheziolinae Kozár

*Ortheziolinae* Kozár, 2004: 429

Type genus: *Ortheziola* Šulc, 1895

#### Subfamily diagnosis based on adult female.

Distinguished from other subfamily of Ortheziidae in having three segmented antennae, and the fusion of each pseudobasal antennal segment with associated eye-stalks.