

The First Record of the Genus *Tagosodes* Asche and Wilson, 1990 (Hemiptera: Auchenorrhyncha: Delphacidae) in South Korea

Sanghyo Park and Wonhoon Lee^{1*}

Department of Plant Medicine, Gyeongsang National University, Jinju 52828, Korea

¹Institute of Agriculture & Life Science, Gyeongsang National University, Jinju 52828, Korea

한국의 미기록속 *Tagosodes* Asche and Wilson, 1990 (노린재목: 매미아목: 멸구과)에 대한 보고

박상호 · 이원훈^{1*}

경상국립대학교 식물의학과, ¹경상국립대학교 농업생명과학연구원

ABSTRACT: In this study, the genus *Tagosodes* Asche and Wilson, 1990 is reported for the first time in South Korea. Species distribution, measurement, host plants, description, and illustrations of diagnostic characters of *Tagosodes pusanus* Distant, 1912 are provided.

Key words: *Tagosodes pusanus*, Delphacidae, New record, South Korea

초 록: 본 연구에서 *Tagosodes pusanus* Distant, 1912를 포함한 *Tagosodes* Asche and Wilson, 1990속을 국내에서 처음으로 보고한다. *T. pusanus*의 분포지역, 기주식물, 형태학적 정보를 제공하였다.

검색어: 초승달무늬멸구(신칭), 멸구과, 미기록, 한국

The tribe Delphacini (Hemiptera: Auchenorrhyncha: Fulgoro-morpha: Delphacidae) is one of the biggest groups in the family Delphacinae. Until now, 45 species belonging to 31 genera of the tribe Delphacini have been reported in South Korea (Park and Lee, 2021; Park and Jung, 2020, 2023).

The genus *Tagosodes* Asche and Wilson, 1990 comprised 12 species in the world (Bourgoin, 2023). Most of species in this genus feed on plants belonging to the family Poaceae including a rice. Some species such as *Tagosodes orizicolus* Muir, 1926 and *Tagosodes cubanus* Crawford, 1914 are well known vectors of hoja blanca virus of rice in South and Central America

where 50% of the yield may be lost to this disease (King and Saunders, 1984).

In this study, we report the genus *Tagosodes* for the first time from Korea with a newly recorded species, *Tagosodes pusanus* Distant, 1912, including photographs of male habitus and genitalia.

Materials and Methods

Images and measurements were taken by LEICA M205C (© Leica Microsystems, Wetzlar, HESSE, Germany). Images were stacked using the software Delta Bio Combine. To examine male genitalia segment, the abdomen soaked in 10% KOH and boiled in a heating block (70°C) for 90 minutes. After that separated genitalia from abdomen and observed under micro-

*Corresponding author: wonhoon@gnu.ac.kr

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scope (LEICA M205C and TUCSEN Dhyana 400DC) with glycerin. A specimen was deposited Institute of Agriculture & Life Science, Gyeongsang National University.

Taxonomic Accounts

Family Delphacidae Leach, 1815

Subfamily Delphacinae Leach, 1815

Genus *Tagosodes* Asche and Wilson, 1990

Tagosodes Asche and Wilson, 1990, Systematic Entomology, 15: 32.

Generic diagnosis. The genus *Tagosodes* resemble the genus *Sogatella* in coloration and external appearance including vertex to mesonotum lined with a median longitudinal whitish band. Also, their post-tibial spur foliaceous with numerous minute teeth on its hind margin like *Sogatella* species. But diaphragm in *Sogatella* is U-shape while *Tagosodes* is T-shape or other convex shape with numerous minute teeth. In addition, the

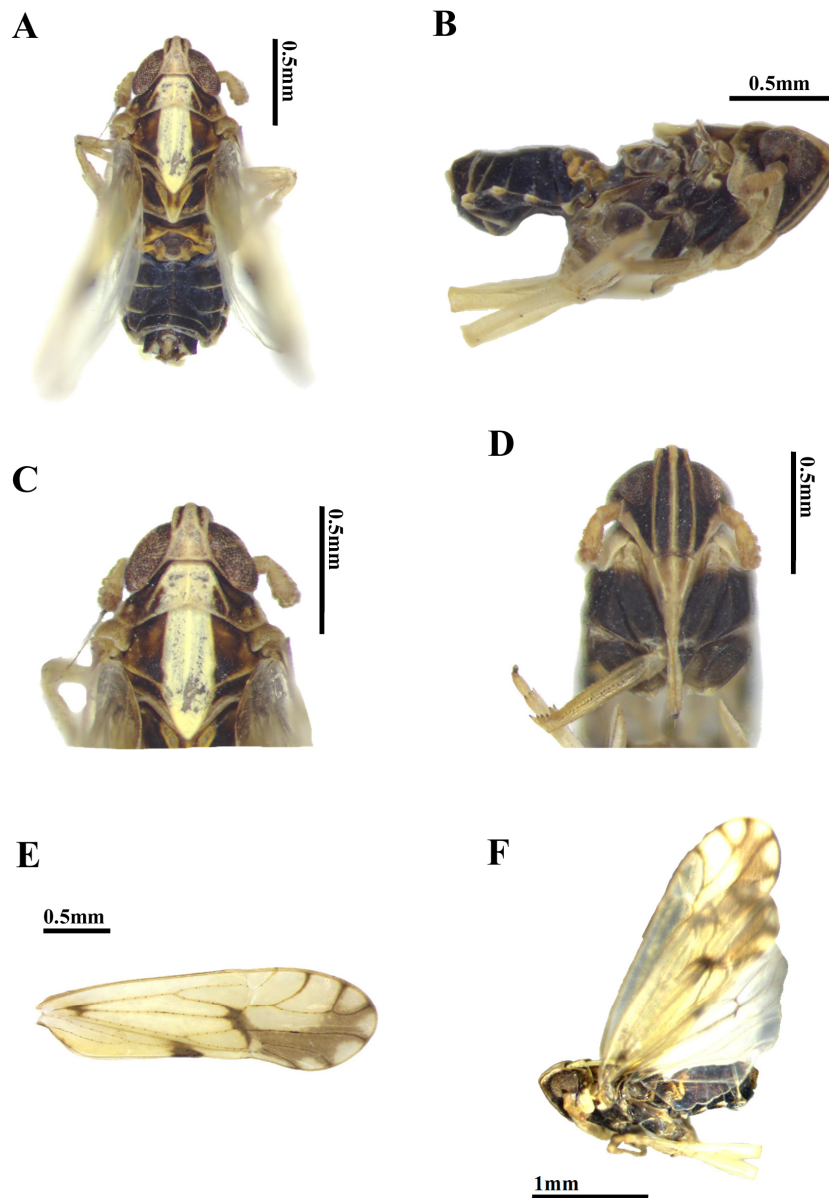


Fig. 1. *Tagosodes pusanus*. A. Male habitus, dorsal view; B. Male habitus, lateral view (without forewings); C. Head and Thorax, dorsal view; D. Face; E. Forewing; F. Male habitus.

aedeagus is not only much less compressed but also, is not twisted shape compared to *Sogatella*. See Asche and Wilson, 1990 for original description.

***Tagosodes pusanus* Distant, 1912 초승달무늬멸구(신칭)**

(Figs. 1-2)

Sogata pusana Distant, 1912: 191 [Type locality: India]

Kelisia fieberi Muir, 1917: 331 [Type locality: Philippines]

Unkana formosella Matsumura, 1935: 72 [Type locality: Tawian]

Himeunka chibana Kuoh et al., 1981: 193 [Type locality: China]

Sogatodes assimilis Yang, 1989: 178 [Type locality: Tawian]

Diagnosis. Body length 3.0 mm. Vertex pale yellow about 1.5 times as long as its basal width, lateral sides subparallel, carina yellow, outer areas from mediolateral carinae dark brown; frons and genae below eyes dark brown with pale yellow carinae; clypeus brown with pale yellow carinae; pronotum

with light yellow carinae, similarly pale yellow medially with a pair of dark impressions, laterally dark brown but paler along posterior margin; mesonotum as long as combined length of vertex and pronotum, pale yellow medially, dark brown laterally; forewings pale brown and subhyaline, distinctly tinged at apex of clavus, middle to apex crescently brown pattern, four arch patterns markings in apex cells; apical veins dark brown; abdominal segments dark brown, pale yellow posteriorly (Fig. 1).

Male genitalia. Pygofer subcircular or oval, medioventral area slightly concave; parameres broad base, slender in middle and widens toward the apex, moderately concave at apex; diaphragm raised, T-shaped and many black spots; aedeagus basally wide and subglobose, slender and cylindrical at apical half, with two on each side at middle and eight spines apically; Anal segment with two slender processes (Fig. 2).

Measurements. Male macropterous form (n=1). Body length without tegmina: 2.0 mm; body length with tegmina: 3.0 mm; body width: 0.81 mm; head length: 0.23 mm; head width (including eyes): 0.54 mm; 1st antennal segment length: 0.11

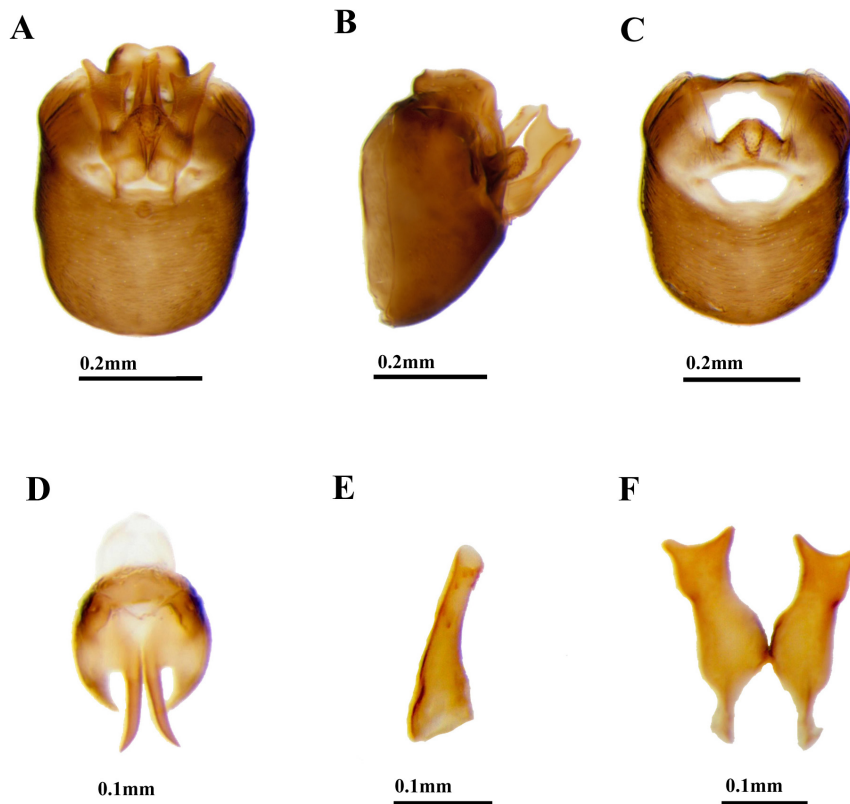


Fig. 2. *Tagosodes pusanus*. A. Pygofer, ventral view; B. Pygofer, lateral view; C. Pygofer, caudal view; D. Male anal segment, ventral view; E. Aedeagus, lateral view; F. Parameres, caudal view.

mm; 2nd antennal segment length: 0.2 mm; vertex length: 0.11 mm; vertex width: 0.15 mm; frons length: 0.46 mm; frons width: 0.19 mm; pronotum length: 0.18 mm; pronotum width: 0.62 mm; mesonotum length: 0.54 mm; mesonotum width: 0.6 mm.

Specimens examined. 1♂, 832 Gwanmaedo-ri, Jodo-myeon, Jindo-gun, Jeollanam-do, Korea 14. vii. 2022.

Host plant. *Eleusine indica* (L.) Gaertn (Poaceae).

Distributions. Korea (new record), China, India, Sri Lanka, Philippines, Taiwan, Indonesia, Malaysia.

Remark. This species resembles *Sogatella furcifera* but it is distinguished from that species by the pattern of the dark markings of the forewings (Fig. 1E) and by the male genitalia (Fig. 2A). The forewings have distinctly pattern, four arch patterns markings in apex cells. Diaphragm of male genitalia is T-shape and many black spots.

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Statements for Authorship Position & Contribution

Park, S.: Gyeongsang National University, Student in M.S;
Designed the research, wrote the manuscript and examined specimens

Lee, W.: Gyeongsang National University, Professor, Ph.D;
Examined specimens and designed the research

All authors read and approved the manuscript.

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