



Taxonomic notes and redescriptions of some Japanese erythroneurine leafhoppers (Hemiptera, Cicadellidae, Typhlocybinae)

NAOMICHI OHARA

Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka, 812-8581 Japan.

E-mail: n-ohara@agr.kyushu-u.ac.jp

Abstract

In the Japanese typhlocybinae fauna, three already known and three newly recorded species of the genera *Anufrievia*, *Empoasca*, and *Anzygina* are redescribed and reported with brief notes on their taxonomy and biology: *A. akazu* (Matsumura), *A. ciconia* Dworakowska, *E. bisignatella* (Matsumura) **comb. nov.**, **new record**, *E. kotoshonis* (Matsumura) **new record**, *E. sonani* (Matsumura) and *A. honiloa* (Kirkaldy) **new record**. Male specimens of *A. akazu* and *E. bisignatella* are described for the first time.

Key words: Auchenorrhyncha, taxonomy, new synonymy, new combination, key

Introduction

Taxonomic study of Japanese Erythroneurini was started by Matsumura (1932). Although about 25 species were described in his study, most were described based only on female morphological characters. Since then, some Japanese species were revised by Dworakowska (1970a), Anufriev (1972) and others. But until now, no male specimens of some species had been recognized and their male genitalia, the most important characters for distinguishing species, have never been described or illustrated. Therefore, the identities of these species have remained uncertain. In the course of my taxonomic study on the Japanese erythroneurine leafhoppers, male specimens of two species have been recognized for the first time and three species are newly recorded from Japan. I herein redescribe and record these species belonging to three genera, with some brief notes on taxonomy and biology.

In this study, the body measurements are from apex of vertex to tip of fore wing. The depositories of the examined material are abbreviated in the text as follows: [SEHU] Systematic Entomology, Faculty of Agriculture, Hokkaido University, Sapporo; [ELKU] Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka; no abbreviation is indicated for the material preserved in the Department of Biology, Faculty of Education, Saitama University, Saitama. In addition, new localities are indicated by an asterisk (*) in the distribution range.

Genus *Anufrievia* Dworakowska, 1970

Type species: *Anufrievia rolikae* Dworakowska, 1970

Anufrievia Dworakowska, 1970, Bull. Acad. polon. Sci. [II], 18: 761.

Distribution. Palearctic, Oriental regions.

Diagnosis. Pygofer without ventral process; style with apophysis long, bifurcated apically; aedeagus with pair of apical processes often asymmetrical and unpaired ventral process well separated from shaft; gonopore situated subapical at ventral surface.

Body pale yellow. Eye pale grey to greyish black; vertex creamy white tinged with pale yellow anteriad. Pronotum creamy white tinged with yellow at posterior half; fore wing semitransparent, smoky white, often tinged with yellow at clavus and costal margin, with yellow stripe on corium; hind wing transparent.

Head as wide as pronotum; vertex roundly produced, 1.6 times as wide as median length, 0.8 times as long as mesonotum; coronal suture short, 0.2–0.3 times as long as median length. Pronotum twice as wide as long, slightly longer than mesonotum. Male abdominal sternal apodemes broad and short, exceeding slightly posterior margin of 3rd sternite.

Body length (mean): ♂, 2.3–2.4 mm (2.4 mm); ♀, 2.5–2.6 mm (2.6 mm).

Male genitalia. Pygofer with lobe rounded caudally, bearing numerous setae scattered; dorsal process of pygofer short, slightly curved ventrad, sinuate in ventrad of apical half, obtuse apically. Subgenital plate with lateral margin angulate, bearing 4–5 basal macrosetae in oblique row and rigid marginal setae forming continuous row. Style widened and truncate apically, with preapical lobe distinct and apophysis short, 0.1–0.2 times as long as style. Connective roundly hexagonal, with posterior margin concave. Aedeagus compressed, strongly curved dorsad near base and gently re-curved, with elongate dorsal apodeme and pair of apical processes slender, extending laterally, slightly curved ventrad; shaft in caudal view broad, narrowed basal 1/3, concave in apical 2/3; gonopore subapex on caudal surface. Anal tube with basal process slender.

Specimens examined. [Okinawa Is.] 1♂, Chinen-jōshi, Nanjō, 15. XII. 2009, M. Hayashi *et al.*; 2♂ 2♀, Tatana-jōshi, Yaese, 27. V. 2013, N. Ohara leg. (ELKU); [Miyako Is.] 2♂ 2♀, Higashi-nakasonezoe, Hirara, 25. VI. 2008, M. Hayashi *et al.*; 3♂, Mt Nobaru-dake, Ueno, 24. VI. 2008, M. Hayashi *et al.*; [Yonaguni Is.] 1♀, Tindahana, 16. IV. 2005, M. Hayashi *et al.*; 1♂ 1♀, Tabaru, 22. VI. 2004, M. Hayashi *et al.*

Distribution. Japan* (Ryukyus: Okinawa, Miyako, Yonaguni); Australia (Queensland, New South Wales).

Remarks. This species is similar to *A. medioborealis* (Ghuri, 1980) described from Papua New Guinea in the shape of the male genitalia, but is distinguished by the following characters: aedeagal shaft in caudal view widened at basal 1/3 (not tapering from base to apex), with apical process slightly sinuate.

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