



The rediscovery of the holotype of *Kotonisia kanoi* Matsumura, 1938 with notes on Matsumura's type specimens of Fulgoroidea (Insecta: Hemiptera: Fulgoromorpha)

SHUN-CHERN TSAUR

Biodiversity Research Center, Academia Sinica, Taipei 115, Taiwan, Republic of China. E-mail: sctsauro@sinica.edu.tw

Shonen Matsumura (1872–1960), the founder of entomology in Japan, is no doubt among the most influential and prolific entomologists. He produced a series of works, illustrated lists of the insects and described as many as 1200 new species. Unfortunately, most of the types he named and collected from Taiwan were brought to Japan in the late 1940s, and were hard to access by foreign students until relatively recently. Matsumura's type depositions contain brief descriptions and, sometimes, only female specimens were available for his types. This prevented sound revisionary work in Taiwan. In addition, Matsumura did not designate holotypes in his early works but simply indicated how many specimens he had.

Twelve out of 14 Fulgoroidea families have been revised by C.T. Yang's group in the past two decades (eg. Yang & Yang 1986; Yang 1989, Chan & Yang 1993; Wu & Yang 1994). While this represents nearly a three-fold increase in numbers of species, the major species determinations were not based on direct comparison with Matsumura's type specimens. This leaves some of the recorded species in doubt and occasionally misidentified (Tsauro 2005). Liang and Suwa (1998) designated 87 lectotypes for Matsumura's collection in 10 Fulgoroidea families with a few gender misidentifications (Tsauro, unpublished data). Validation of Liang and Suwa's (1998) efforts needs a more comprehensive, descriptive investigation. This study is hereby the first attempt to re-visit Matsumura's type collections in Fulgoroidea and is part of a larger revision matching Matsumura's collections with his original descriptions.

The Meenoplidae comprises a small, distinct and interesting group of insects with 157 described species mainly distributed in the Old World. Prior to this study six genera and 11 species have been recorded from Taiwan (Tsauro *et al.* 1986; Tsauro 1989). They may be identified by the following combination of characters: One or both claval veins tuberculate; second hind tarsomere with apical spines, and abdominal terga divided medially into two plates (O'Brien & Wilson 1985).

The Cixiidae has a worldwide distribution and is one of the largest families of Fulgoroidea with 172 genera and more than 2048 species presently described. The cixiids can be identified by a membranous tegmen, usually bearing tubercles set with small setae along the veins, long and sword-shaped ovipositor, or slender, ventral to caudally directed wax plate on the ninth segment (O'Brien & Wilson 1985).

The genus *Kotonisia* was erected by Matsumura in 1938 to include the irreconcilable *Kotonisia kanoi* Matsumura within Meenoplidae. It was then excluded from the Meenoplidae based on Matsumura's original description (Emeljanov 1985; Tsauro *et al.* 1986). Yet, no certain family was assigned to accommodate this species due to the failure in identifying the original material in its presumed depository. In order to verify the identity, unsuccessful efforts have been made to locate the type specimen (Tsauro *et al.* 1986; Liang & Suwa, 1998). It was only after a recent trip to Hokkaido University, that the author had the chance to look for this mysterious specimen in person and herein assign the species to the proper status.

Family Cixiidae Spinola 1839

Tribe Bennini Metcalf 1938

Genus *Benna* Walker 1857

Benna Walker 1857, 90; Tsauro 1988, 76

Bennaria Melichar 1914, 175, synonymised by Fennah 1970, 46