The Black-tipped Leafhopper, *Bothrogonia ferruginea*

AUCT., of Japan and Formosa

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INTRODUCTION

In Japan the black-tipped leafhopper (Japanese name: Tsumaguro-ôyokobai) is known as an injurious species to the pear tree, the mulberry tree, the tea shrub, various berries, the sugarcane, etc. Since UHLER (1896) identified the Japanese specimen with *Tettigonia ferruginea* (FABRICIUS, 1794), the specific name has

been adopted by many authors to the Japanese and to the Formosan specimens, and therefore *Bothrogonia ferruginea* (FABRICIUS) has been considered a species distributed widely from Japan to the Oriental countries, further to South Africa.

Recently the author has examined the Japanese and Formosan specimens and found that they are entirely different from the *B. ferruginea* (FABRICIUS), the type-locality of which

Fig. 1. J, *Bothrogonia japonica* sp. nov. ♂ F, *B. formosana* (MATSUMURA) ♂

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is Cape of Good Hope, S. Africa. It was concluded that the Japanese species is an undescribed one and the Formosan species seems *B. formosana* (MATSUMURA, 1912).

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***Bathroogonia japonica* sp. nov.** [Figs. 1-2 : J] Japanese name: Tsumaguro-ôyokobai
Tettigonia ferruginea (nec FABRICIUS, 1794), UHLER, 1896: p. 293; ISHIHARA, 1953: p. 16 (*Megalotettigella*); ISHIHARA, 1954: p. 12 (*Bothrogonia*); ESAKI et ITO, 1954: p. 8 (*Amblycephalus*, synonymy).

Length about 13 mm (till tegminal apices), about 11mm (excluding tegmina). Body orange-

yellow (when alive, fresh green), with black markings as follows: one small marking at apex of vertex, one roundish marking placed almost contiguous with pronotum, one rectangular marking near the anterior margin of pronotum, a pair of roundish markings of pronotum placed contiguous with the posterior margin and one central roundish marking of scutellum. Apex of scutellum also infuscated. Head in the frontal view mostly orange-yellow except the following black portions: nearly distal half of frons a little inferior to the middle, a wide medio-longitudinal stripe (which is visible dorsally as a black marking at apex of vertex) of frons and clypeus except for infero-lateral portions. Tegmina concolorous with body except a small portion at base of each tegmen which is black and apical areas which are contrastingly black. Femora throughout all

Fig. 2. J, *Bothrogonia japonica* sp. nov.

F, *B. formosana* (MATSUMURA)

1, Dorsal view of whole internal genitalia of the male; 2, Lateral view of aedeagus; 3, Lateral view of the apex of the female eighth sternite; 4, Ventral view of the female seventh sternite. a, aedeagus; c, connective; s, style.

Legs black. Tibiae mostly pale yellowish, with bases and apices which are black, distal half of anterior tibia conspicuously infuscated. Tarsi pale yellowish, with black apices. Claws black. Body beneath black, with a bluish lustre. Female eighth sternite with yellowish apex [Fig. 2: J 3].

Connective thickened and short. Styles acutely pointed at base, with apices which are blunt and slightly curved outward. Aedeagus angularly curved dorsad, somewhat constricted about the middle, without any process [Fig. 2: J 1-2]. Female seventh sternite in the ventral view shallowly and roundly incised anterior, with both sides sharply pointed caudad, eighth sternite in the lateral view subtruncated, with spines comparatively small in number, of which ventral series is rather uniseriate along ovipositor [Fig. 2: J 3].

Specimens examined: holotype (♂) and allotype (♀) collected in Mt. Sara near Matsuyama, Shikoku, IX-23, 1954 by T. ISHIHARA; 23 paratypes (♂♂♀♀) collected in and around Matsuyama, Shikoku, by T. ISHIHARA et al. All the specimens now in the author's hand were collected in Shikoku, however the author had also collected not a few specimens in Honshu and in Kyushu.

Fig. 3. *Bothrogonia ferruginea* (FABRICIUS)

The numbers and letters are explained in Figure 2, except *p* which designates the process of aedeagus. [from S. R. CAPCO, 1959]

Distribution: Japan (Honshu, Shikoku and Kyusyu).

The present new species entirely differs from known species of the genus in the internal characters of the male genitalia and the seventh and eighth sternites of the female. The characteristics of *B. ferruginea* (FABRICIUS) with which the Japanese specimen identified are fundamentally different from those of the present species [Fig. 3].

In Japan, this species injures various cultivated plants as above-mentioned. The imago appears once a year, at the beginning of September and hibernates among bushes in the same stage.

Bothrogonia formosana (MATSUMURA, 1912) [Figs. 1-2: F]

Japanese name: Taiwan-tsumaguro-ôyokobai *Tettigonia formosana* MATSUMURA, 1912: p. 34 (1♀, Gyochi bei Horisha); ESAKI et ITO, 1954: p. 12 (*Amblycephalus*, cat.).

Although the size and coloration are similar to the previous species, the body is slightly slenderer and the black markings or black portions of head and thorax are usually less developed.

Black roundish markings on vertex, pronotum and on scutellum small. Head in the frontal view with a black marking usually recognizable only at base of frons and both basal sides of clypeus which are black. Femora and tibiae throughout all legs pale yellowish except basal and distal portions, which are black, anterior tibia apically infuscated only in one-fifth.

Connective conspicuously slender, with a small reflection at each base. Styles similar to those of previous species except bases which are clearly rounded. Aedeagus with bluntly pointed apex, somewhat weak constriction and a small basal arm. Female seventh sternite in the ventral view so deeply incised that both sides long developed caudad, with apices not pointed but rounded, eighth sternite rounded, with spines comparatively large in number, the series along

ovipositor not uniseriate.

Specimens examined: 1♂, Nanzan-kei, Formosa, VI-24, 1961; 4♂♂5♀♀, Rimogan-Magan, Formosa, VII-10, 1961; 1♀, Urai-Agyoku, Formosa, VII-11, 1961. All collected by T. SHIROZU.

Distribution: Formosa.

The species of Genus *Bothrogonia* are known to have so extensive variation in the coloration of vertex, pronotum or of tegmina as DISTANT reported six varieties in *B. ferruginea* (FABRICIUS) (DISTANT, 1908) and they are very similar in appearance so that a critical study of the genitalia is essential to separating them to species (CAPCO, 1959). The Prof. MATSUMURA's type specimen of the present species is a single female which seems to have an aberrant coloration. Judging by the MATSUMURA's description, "Letztes Bauchsegment in der Mitte deutlich tiefer ausgebuchtet als bei *T. ferruginea*, so-

dass seitlichen Vorrangungen viel länger und spitziger erscheinen", and variable coloration in the genus besides, the author decided to identify the Formosan specimen with the present species.

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摘 要

日本および台湾産のいわゆるツマグロオオヨコバイについて

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ナシ、クワ、チャ、種々の漿果類、サトウキビなどを加害する多食性の害虫として、本邦でよく知られているツマグロオオヨコバイは、これまで *Bothrogonia ferruginea* (FABRICIUS) の学名が用いられ、本州以南東洋熱帯地方、更にアフリカにかけて広い分布をする種とされてきた。

今回、日本産と台湾産の標本を研究したところ、いずれもそれとは縁の近くない別種で、日本産のものは新種とすべきものであり、台湾産のものも日本産にきわめて近縁ではあるが、明らかに別種であることがわかった。したがって *Bothrogonia ferruginea* (FABRICIUS) は日本

列島には分布せず、日本産には *Bothrogonia japonica* ISHIHARA、台湾産には、色彩の異常な個体をタイプベシメンとしたものであるが、*Bothrogonia formosana* (MATSUMURA) を当てるべきことを明らかにした。なお、和名は、日本産にはツマグロオオヨコバイをこれまでどおり用いるべきであるが、台湾産には原記載に示されているホソツマグロオオヨコバイより、種小名に準拠してタイワンツマグロオオヨコバイと呼ぶほうが妥当と思ひ改称した。