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Some Fulgoroids (Insecta: Hemiptera) Collected on Turtle Island, Taiwan

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Shun-Chern Tsaur (2005) Some fulgoroids (Insecta: Hemiptera) collected on Turtle Island, Taiwan. *Zoological Studies* **44**(1): 1-4. This report deals with a small collection of the Fulgoroidea made using a sweep net by the author during a short visit to Turtle I. in 2003. It represents the most recent insect faunal survey of Turtle I. Among fulgoroid hemipterans, 5 species belonging to 5 genera and 5 families were collected. They are *Geisha distinctissima* (Walker) (Flatidae), *Ugyops vittatus* (Matsumura) (Delphacidae), *Orthopagus splendens* (Germar) (Dictyopharidae), *Ricania simulans* (Walker) (Ricaniidae), and *Tonga westwoodi* (Signoret) (Issidae). *Ugyops tripunctatus* (Kato), although not in the present collection, is also included in order to allow comparison with *U. vittatus*. Apart from a few widespread or Oriental species, the fauna showed an affinity with that of Taiwan.
http://www.sinica.edu.tw/zool/zoolstud/44.1/1.pdf

Key words: Insecta, Hemiptera, Taxonomy, Turtle Island, Taiwan.

Turtle I., located between 24°49' and 24°50'N latitude and between 121°56' and 121°59'E longitude, is one of 3 major islands located off the Pacific coast of Toucheng in Ilan County, Taiwan. It is a volcanic island that sits alone in the sea with a total land area of 2.85 km^2 and 9 km of coastline. It is 3 km long, and 2 km at its widest point. On the east coast the mountains rise up steeply to 401 m, and then slope gently towards the west. The island received its name because its shape resembles a turtle emerging from water when seen from Ilan on the main island of Taiwan about 10 km away. This island, deemed one of the most distinctive landmarks of Ilan, features mountain peaks, sea-eroded caves, a freshwater lake, special cliff vegetation, and rich marine ecological resources. The first immigrants who colonized the island can be dated to the reign of Emperor Hsienfeng of the Ching dynasty in approximately 1854. Residents were forced to move to Taiwan proper in 1977 during the period when Taiwan was under martial law. The only people allowed on the island after that time were a few soldiers who were stationed there. Only in the year 2000 was the island reopened to the public for sightseeing purposes as well as scientific research. It is one of Taiwan's 3 most important fishing grounds as well as the main site in Ilan County for whale and dolphin watching. More information regarding the geography and vegetation can be found at http://www.giee.ntnu.edu.tw/island/islandweb/003.htm.

This report is concerned primarily with the superfamily Fulgoroidea as represented on Turtle I. The materials on which this study was based, with only 1 exception, *U. tripunctatus*, were collected by the author on 10 June 2003. The total number of species collected was 25, excluding those which were set free. This presents the first faunal study of the Fulgoroidea on Turtle I. The fauna is no doubt more closely related to Taiwan than to Japanese islands. As the numbers of insects collected were few, more-intensive collecting trips to this island are needed, and those would clearly help elucidate the local fauna since the island has been fairly isolated for about 20 years. All the

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materials studied are deposited at the Institute of Zoology, Academia Sinica, Taipei, Taiwan.

Family Flatidae Spinola
Genus *Geisha* Kirkaldy, 1900

Geisha Kirkaldy, 1900 33: 296.
Type species: *Poeciloptera distinctissima* Walker, 1858

Geisha distinctissima (Walker, 1858)

Poeciloptera distinctissima Walker, 1858: 114.
Geisha distinctissima: Fang, 1989: 138.

Specimens examined: 12 ♀♀, 13 ♂♂, S. C. Tsaur.

Distribution: Widespread in Palaearctic and Oriental regions.

Remarks: *G. distinctissima* was the most-abundant fulgoroid that the author saw during the trip. Around 10 individuals could sometimes be found resting on the same twig.

Family Delphacidae Leach
Subfamily Asiracinae Fieber, 1872
Genus *Ugyops* Guerin-Meneville, 1834

Ugyops Guerin-Meneville, 1834, 1: 477.
Type species: *Ugyops percheronii* Guerin-Meneville, 1834

Key to females of the species of *Ugyops* in Taiwan

1. Body length (including tegmen) greater than 9 mm: hind tibia with 3 lateral spines; vertex without transverse carina .....*vittatus*
- Body length (including tegmen) less than 8 mm; hind tibia with 2 lateral spines; vertex with transverse carina ....*tripunctatus*

Ugyops vittatus (Matsumura, 1905)

Bidis vittata Matsumura 1905, 1: 31.
Ugyops vittatus: Kato, 1933, 4: pl. 14, fig. 1.
Ugyops tripunctatus: Yang et Yang, 1986: 9, not Kato, 1931: 165 (misidentified).

General color grayish stramineous, with scattered black spots covering body, including lateral areas before eyes. Frons with black stripes adjoining outer side of each submedian carina. Antennae yellowish brown, covered with powder; rufous oblique vitta before antennae. Genae with red markings around base of antennae. Frons with dark lateral and median carinae. Tegmina hyaline, speckled with dark markings on each apical cell, with a black stripe forming on M on apical fifth, veins infuscate.

Vertex in middle line 1.6 times as long as wide at base, measured near middle of eyes; base slightly narrower than apex; with transverse carina; lateral margins almost parallel-sided; anterior margin medially convex; submedian carinae converging distad near apex, forming a common eminence. Frons 3.0 times as long as widest part, widest at basal 3/4, median carina forked in basal 2/3. Clypeus with slender median carina. Second antennal segment 1.5 times as long as basal, genae not tumid below level of antennae. Ocelli obsolete. Post-tibiae each with 3 lateral spines. Spinal formula of hind leg 4-5-4. Tegmina with Sc 3-branched anteriorly.

Male body length: 10.5 mm; tegmen, 9.0 mm.

Female body length: 9.8 mm; tegmen, 8.3 mm.

Specimens examined: 1 ♂, S. C. Tsaur. Also 1 ♂, 1 ♀, 30-IX-1985, Orchid I. (Botel Tobago), Taitung, S. C. Tsaur.

Remarks: This species was first described by Matsumura in 1906. Although a relatively recent revision of the Delphacidae of Taiwan was carried out (Yang and Yang 1986), *U. vittatus* was misidentified as *U. tripunctatus* (nec Kato, 1931) in their collection. Redescriptions are therefore made here.

Distribution: Japan, Taiwan.

Ugyops tripunctatus (Kato, 1931)

Bidis tripunctatus Kato, 1931, 2: 9.
Ugyopus [sic] *tripunctatus*: Esaki et Ishihara, 1943: 6.

General color yellowish brown, with scattered black spots on vertex and pronotum. Frons laterad of submedian carinae in basal tenth with light-yellow area above frontoclypeal suture, fuscous area invaded on each side by a close row of pallid round spots. Rufous vitta before eye. Genae with fuscous markings before antennae. Frons with dark lateral and median carinae. Tegmina hyaline, speckled with dark markings on each apical cell, a black stripe on M, veins infuscate.

Vertex in middle line 1.6 times as long as wide at base, measured near middle of eyes; base slightly narrower than apex; no transverse carina; lateral margins almost parallel-sided; anterior margin convex medially; submedian carinae converging distad near apex, forming a common eminence. Frons 2.8 times as long as widest part, widest at basal nine-tenths, median carina forked

at basal two-thirds. Clypeus with slender median carina. Second antennal segment 1.5 times as long as basal, genae not tumid below level of antennae. Ocelli obsolete. Post-tibia with 2 lateral spines. Spinal formula of hind leg 4-5-4. Tegmina with 3- or 4-branched Sc anteriorly.

Female body length: 7.1 mm; tegmen, 5.7 mm.

Specimen examined: 1 ♀, Orchid I., 6-XI-1989, S. F. Shiao.

Remarks: No specimens of this species were found in the present collection, but as a female from Lanyu (Orchid I.) in the author's collection is at hand, the opportunity is hereby taken to compare it with the preceding species. *Ugyops tripunctatus* and *U. vittatus* are the only 2 *Ugypos* species which are known to occur in Taiwan. These 2 species resemble each other but can be easily separated by their body length, the number of lateral spines on the post-tibiae, and the transverse carina on the vertex. This species has so far only been reported from Orchid I.

Distribution: Taiwan (Orchid I.).

Family Dictyopharidae Spinola
Genus *Orthopagus* Uhler, 1896

Orthopagus Uhler, 1896, 19: 278.
Type species: *Flata splendens* Germar, 1830.

Orthopagus splendens (Germar, 1830)

Flata splendens Germar, 1830, 2(2): 48.
Orthopagus splendens: Yang et Yeh, 1994: 116.

Specimen examined: 1 ♂, S. C. Tsaur.
Distribution: Japan, Oriental region.

Family Ricaniidae Amyot and Serville
Genus *Ricania* Germar, 1818

Ricania Germar, 1818, 3: 221.
Type species: *Cercopis fenestrata* Fabricius, 1775

Ricania simulans (Walker, 1851)

Pochazia simulans Walker, 1851, 2: 431.
Ricania simulans: Yang, 1989: 188.

Specimens examined: 3 ♂♂, 1 ♀, S. C. Tsaur.

Distribution: Japan, Mainland China, Taiwan.

Family Issidae Spinola
Genus *Tonga* Kirkaldy, 1900

Tonga Kirkaldy, 1900, 33: 242.
Type species: *Cyrene guttulata* Westwood, 1845

Tonga westwoodi (Signoret, 1862)

Cyrene westwoodi Signoret, 1862, 2: 124.
Tonga westwoodi (Signoret): Cheng et Yang 1991: 235.
Tonga westwoodi (Signoret): Chan et Yang 1994: 77.

Specimen examined: Fifth instar nymph: 1, S. C. Tsaur.

Distribution: Japan, Mainland China, Taiwan.

DISCUSSION

After some 20 years of access being highly restricted, Turtle I. was reopened to the public in 2000. In order to protect the island's natural environment and maintain the safety and security of visitors, some regulations were established. For example, the visiting period is restricted to between 1 Mar. and 31 Oct. Visitors are not allowed to stay overnight on the island, and have to leave before 16:00. Also, the hiking trail that allows access to the local flora and fauna is currently limited to visitors from schools and academic institutes that come on Mondays. These policies are an effort to keep the island nearly unchanged from its original scenery. From the 5 fulgoroids collected in a 5 h trip to the island, it is intriguing to find the rare delphacid species, *Ugyops vittatus*, that was previously only recorded from Orchid I. (one of the 3 offshore islands off the eastern coast of Taiwan, and about 270 km south of Turtle I.) were also collected. This suggests the possibility that the 2 insular species may also be found in areas along the east coast of Taiwan. The fauna certainly was not limited by the numeration which presented here. The collection presented in this study reflects a rough survey by the author who collected planthoppers during a very limited time frame. To apply malaise traps and light traps would help us better understand the insect fauna on the island if the present policy of limiting visitation remains in effect.

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