

**First record of *Myiophanes tipulina* from Taiwan  
(Hemiptera: Heteroptera: Reduviidae)**

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**Abstract** – The genus *Myiophanes* Reuter, 1881 and the species *Myiophanes tipulina* Reuter, 1881 (Hemiptera: Heteroptera: Reduviidae: Emesinae: Emesini) are recorded for the first time from Taiwan.

**Key words** – true bug, assassin bug, Palearctic, Indomalaya, faunistics

## INTRODUCTION

The reduviid subfamily Emesinae (Hemiptera: Heteroptera) or thread-legged assassin bugs includes highly specialised predators characterised by raptorial fore legs and greatly elongate pterothoracic legs and antennae. Members of the tribe Emesini occurring in Taiwan were reviewed by RÉDEI & TSAI (2010), treating two genera, *Gardena* Dohrn, 1860 with four species, and *Stenolemus* Signoret, 1858 with two species. No subsequent addition or correction to this account has been published. Recent surveys in Taiwan yielded material of an additional genus and species. This paper presents the new country record and a brief review of the published information on the genus and species.

## MATERIAL AND METHODS

Digital photographs were taken using a Nikon D90 camera equipped with an AF-S Micro Nikkor 60mm f/2.8G ED macro lens. Abbreviations for depositories: BMNH = Natural History Museum, London; NCHU = National Chung Hsing University, Taichung; USNM = Smithsonian National Museum of Natural History, Washington, D.C.; ZMHB = Naturkundemuseum Berlin (former Zoologisches Museum der Humboldt-Universität).

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## TAXONOMY

***Myiophanes* Reuter, 1881**

*Myiophanes* Reuter, 1881: 69. Type species by monotypy: *Myiophanes tipulina* Reuter, 1881.

*Myiophanes*: LETHIERRY & SEVERIN (1896: 71) (catalogue), DISTANT (1903a: 204) (fauna of British India, Ceylon and Burma), OSHANIN (1908: 508) (catalogue, Palaearctic), JEANNEL (1919: 150, 153) (in key, fauna of Africa), MCATEE & MALLOCH (1926: 134) (diagnostic characters, new species), VILLIERS (1948: 16, 35, 37, 39, 430, 440) (in key, redescription, fauna of tropical Africa), VILLIERS (1949: 277, 295) (in key, redescription, fauna of Africa), WYGODZINSKY (1956: 197, 204) (in key, fauna of Australia), WYGODZINSKY (1966: 12, 21, 23, 26, 29, 39, 43, 55, 75, 220, 221, 269) (in key, revision, morphology), LEE (1971: 330) (fauna of Korea), HSIAO & REN (1981: 399) (fauna of China), MALDONADO (1990: 88) (catalogue), LEE & KWON (1991: 18) (listed, distribution), CASSIS & GROSS (1995: 288) (catalogue, Australia), PUTSHKOV & PUTSHKOV (1996: 156) (catalogue, Palaearctic), KWON *et al.* (2001: 212) (catalogue, Korea), REN (2009: 77) (redescription, fauna of Hebei), ISHIKAWA & MIYAMOTO (2012: 244) (diagnosis, fauna of Japan), ISHIKAWA (2016: 441) (catalogue, Japan).

*Habitat and bionomics* – Several species of the genus have been reported exclusively from caves, others are apparently occasional visitors of caves but also occur outside of caves (WYGODZINSKY 1966, GHATE *et al.* 2018).

*Diversity and distribution* – The genus currently includes 21 species (WYGODZINSKY 1966, MALDONADO 1990, RÉDEI 2005, GHATE *et al.* 2018). Most of them occur in the Afrotropical Region or the Indomalaya, but one species, *Myiophanes tipulina*, is distributed in the East Palaearctic, extending to neighbouring areas of the Indomalaya, and this species has also been reported from Australia. The genus is reported from Taiwan for the first time.

***Myiophanes tipulina* Reuter, 1881**

(Figs 1–2)

*Myiophanes tipulina* Reuter, 1881: 70. Syntype(s): Japonia [= Japan]; ZMHB.

*Orthunga bivittata* Uhler, 1896: 272. Holotype: Japan; USNM. Synonymised by BERGROTH (1906: 307) (suspected), FUKUI (1926: 12) (suspected), and ESAKI (1926: 88).

*Myiophanes pilipes* Distant, 1903b: 253. Syntype(s): Australia, Richmond River; BMNH. Synonymised by WYGODZINSKY (1956: 204).

*Myiophanes tipulina*: LETHIERRY & SEVERIN (1896: 71) (catalogue, distribution), CHINA (1926: 21) (distribution, record, habitat, bionomics), ESAKI (1926: 88) (synonymy, record), FUKUI (1926: 12) (suspected synonymy), ESAKI (1932: 1652) (redescription, habitus, bionomics, distribution), VILLIERS (1948: 50) (figure), VILLIERS (1949: 271) (figure), ESAKI (1950: 245) (redescription, habitus, bionomics, distribution), TAKEUCHI (1955: 54) (photo, record, habitat, record, distribution), WYGODZINSKY (1956: 194, 204) (record, distribution, synonymy), WYGODZINSKY (1966: 51, 66, 271, 274) (in key, figures, records, habitat, distribution), LEE (1971: 330) (redescription, photo, distribution), HAN & ZHANG (1978: 243) (redescription, habitus, habitat, distribution), HSIAO & REN (1981: 400) (redescription, photo, figures, distribution), MIYAMOTO & YASUNAGA (1989: 170) (distribution), MALDONADO (1990: 89) (catalogue), ZHANG (1994: 41) (listed), CASSIS & GROSS (1995: 289) (catalogue, distribution), PUTSHKOV & PUTSHKOV (1996: 157) (catalogue, distribution), HUA (2000: 209) (listed, distribution), KWON *et al.* (2001: 212) (catalogue, distribution), GAO & CHOI (2006: 140) (listed, distribution), CAO *et al.* (2007: 23) (record, bionomics), HIRASHIMA & MORIMOTO (2008: 159) (redescription, photo, habitat, distribution), REN (2009: 77) (redescription, figures, record, distribution), ISHIKAWA & MIYAMOTO (2012: 244) (diagnosis, photo, distribution, record), LEE *et al.* (2013: 60) (catalogue), SHEN *et al.* (2014: 292) (listed, distribution), SHISHIDO *et al.* (2014: 57) (photo, records, habitat), ISHIKAWA (2016: 441) (catalogue, distribution), KOMATSU (2016: 84) (diagnosis, photo, habitat, distribution), AHN *et al.* (2018: 79) (redescription, photos, record, distribution), CHEN *et al.* (2021: 354, 360) (record, habitat), WANG & CHEN (2022: 109) (redescription, photo, distribution, bionomics).

*Myiophanes birittata* [incorrect subsequent spelling]: FUKUI (1926: 12) (redescription, figures, distribution, suspected synonymy)

*Material examined* – TAIWAN: Nantou County, Ren'ai (Jenai) Township, Wanda Power Station of Taiwan Power Company, 23.976°N, 121.130°E, 16.III.2022, at light, leg. Yi-Chang Liao, Hsuan Chang & Shih-Syuan Wang; 1 male (Figs 1–2), deposited in NCHU.

*Identification* – Readily recognised within the genus *Myiophanes* based on the light brown ground colour of the body, the lack of conspicuous pattern elements on the fore wings, the presence of a free, proximally directed branch of *Cu* emitted from the posterodistal margin of the discal cell, and the lack of a subbasal cell (= a cell proximad of the discal cell) of the fore wing. Diagnostic characters were abundantly illustrated by WYGODZINSKY (1966). It is immediately recognised among the species of Emesinae occurring in Taiwan by its large size and peculiar habitus (Figs 1–2).



Figs 1–2. *Myiophanes tipulina* Reuter, 1881, male from Taiwan, 1 = dorsal view, 2 = lateral view. Scale bar = 10 mm (photo by Dávid Rédei)

*Bionomics* – The species is rarely collected and its bionomics is poorly known; most of its published records are from Japan, but the number of its reports has been declining since the 1960s (SHISHIDO *et al.* 2014). It apparently prefers dark microhabitats; in China and Japan it has been reported from inhabited or abandoned houses and log cabin stores (ESAKI 1932, 1950, TAKEUCHI 1955, HAN & ZHANG 1978, SHISHIDO *et al.* 2014, KOMATSU 2016), and on one occasion from a cave (CHEN *et al.* 2021). It is also attracted to light (ESAKI 1932, 1950,

TAKEUCHI 1955, present study). It has been reported from wetland habitats in northern China without further details (CHINA 1926). It is apparently a generalist predator, CAO *et al.* (2007) listed larvae of *Helicoverpa armigera* (Hübner, [1808]) and *Helicoverpa assulta* (Guenée, 1852) (Lepidoptera: Noctuidae), *Anomis flava* (Fabricius, 1775) (Lepidoptera: Erebidae), and unspecified species of Miridae and Cicadellidae (Hemiptera) as its preys in Shanxi, China.

*Distribution* – An East Asian species extending from the Korean Peninsula to southern China, also occurring in Japan and Taiwan (new country record). Its distribution is imperfectly known due to its apparent rarity and cryptic habits. The northern border of its distribution is likely Manchuria; it was recorded from the Chinese side of Changbai Mountains by GAO & CHOI (2006), and the report of CHINA (1926), without explicitly mentioning any locality, probably also pertains to Liaoning. Although records are only available from South Korea, it must occur all over the Korean Peninsula. The precise locality of the specimen collected at the “China-Tibet border” in 1930, reported by WYGODZINSKY (1966), is uncertain, but considering the subsequent border changes it probably pertains to eastern parts of the current Tibet Autonomous Region, or alternatively to Sichuan; the species nevertheless does not enter the Himalayas or the Tibetan Plateau. It was reported from the Richmond River in New South Wales, Australia, by DISTANT (1903*b*) (as *Myiophanes pilipes*) and WYGODZINSKY (1966), based on specimens from different collecting events; due to the scarcity of data it is not clear whether the species is native in Australia or rather the above records are based on sporadic introductions, and whether it currently still occurs in the continent. It was listed from Africa by HSIAO & REN (1981), HUA (2000) and WANG & CHEN (2022), but without referring to any source, apparently in error. The available information on the distribution of the species is summarised below.

**China:** Liaoning: env. of Kuangning [now Beizhen] (?) (CHINA 1926); Beijing; Tianjin; Hebei; Shanxi; Shaanxi; Jiangxi; Shanghai; Zhejiang; Henan; Hubei; Sichuan; Yunnan; Hainan (ZHANG 1994, CAO *et al.* 2007, WANG & CHEN 2022); Tibet? (“China-Tibet border”) (WYGODZINSKY 1966). **South Korea:** Seoul; Gyeonggi-do; Gangwon-do; Daegu; Jeollanam-do (KWON *et al.* 2001, AHN *et al.* 2018). **Japan:** Honshu; Shikoku; Kyushu; Miyake Island; Sado Island (ISHIKAWA & MIYAMOTO 2012, ISHIKAWA 2016). **Taiwan:** (new country record, see above). **Australia:** New South Wales (introduced?) (WYGODZINSKY 1956).

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