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A Confirmation of the Distribution of *Melandrya* (*Bonzicus*) *incostata* Fairmaire, 1889 (Coleoptera: Melandryidae) in Taiwan

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ABSTRACT

The tenebrionoid family Melandryidae is a small beetle group with more than 420 described species in approximately 60 genera worldwide, with only 13 species in seven genera recorded in Taiwan to date. Among the documented species, *Melandrya* (*Bonzicus*) *incostata* Fairmaire, 1889 was listed in the Taiwanese entomofauna but lacked traceable voucher specimens. In this study, we confirm the distribution of *M.* (*B.*) *incostata* in Taiwan by examining local specimens, comparing them with relevant taxonomic literature and identified specimens from China and Japan. High-resolution photographs of the habitus and diagnostic characters are provided, thereby enriching knowledge of Taiwanese biodiversity.

Key words: Biodiversity, False darkling beetle, Faunistic record, Melandryini, Taiwanese entomofauna, Tenebrionoidea

Tenebrionoidea is one of the largest coleopteran superfamilies, encompassing over 33,000 species in 30 families (Bouchard *et al.*, 2024; Cosandey *et al.*, 2024; Hsiao *et al.*, 2026). Within Tenebrionoidea, Melandryidae Leach, 1815 represents a small family, comprising approximately 60 genera and over 420 described species worldwide (Nikitsky and Pollock, 2010). In Taiwan, the melandryid fauna remains poorly studied, with only 13 species in seven genera currently recorded (Yang and Zeng, 2025). Among these, although *Melandrya* (*Bonzicus*) *incostata* Fairmaire, 1889 is included in the Taiwanese entomofauna (Sasaji, 1985; Hsu *et al.*, 2016; Yang and Zeng, 2025), no traceable voucher specimen was cited. Furthermore, such a faunistic record was omitted in other relevant taxonomic literature (Nikitsky and Pollock, 2008; Gusakov, 2009; Nikitsky, 2020a, b). Therefore, the presence of *M.* (*B.*) *incostata* in Taiwan remains to be verified.

Recently, we examined Taiwanese specimens of Melandryidae. By comparing these specimens with relevant taxonomic literature (Fairmaire, 1889; Sasaji, 1985; Gusakov, 2009; Hsu *et al.*, 2016; Yang and Liu, 2024) and identified material from China and Japan, we confirm the distribution of *M.* (*B.*) *incostata* in Taiwan. High-resolution photographs of the habitus and diagnostic characters are provided

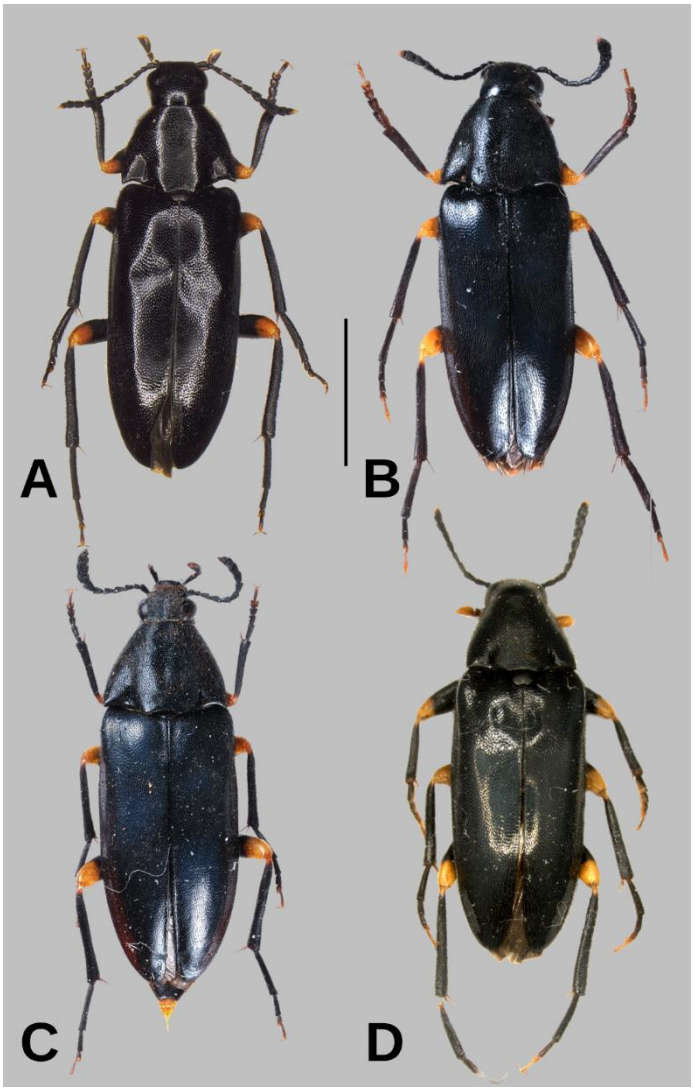

Fig. 1. **Habitus of *Melandrya* (*Bonzicus*) *incostata* Fairmaire, 1889, dorsal view.** A. Taiwan: Hualien. B. Japan: Yamanashi. C. Japan: Tottori. D. China: Sichuan. Scale bar = 5.0 mm (for A only); B–D not to scale.

herein. All examined materials are deposited in the following collections: National Museum of Natural Science, Taichung, Taiwan (NMNS), Ehime University Museum, Matsuyama, Japan (EUMJ), and Sun Yat-sen University, Guangzhou, China (SYSU). Photographs were taken and stacked using a SOPTOP DMSZ3D digital camera system (NINGBO SUNNY INSTRUMENTS Co., Ltd., Zhejiang, China) and edited with the freeware Photopea (https://www.photopea.com, accessed on 25 October 2026). Unsexed specimens are labelled as "ex."

The generic classification of *Bonzicus* Lewis, 1895 and *Melandrya* Fabricius, 1801 varies among recent works. Gusakov (2009) treated *Bonzicus* as a subgenus of *Melandrya*, a classification subsequently adopted by Hsu *et al.* (2016), and Yang and Liu (2024) and Yang and Zeng (2025) also placed this species under *Melandrya*. Conversely, both Nikitsky and Pollock (2008) and Nikitsky (2020a) treated them as distinct genera. Herein, we adopt the former, widely used scheme, treating *Bonzicus* as a subgenus of *Melandrya* and spelling the name as *M.* (*B.*) *incostata*.

***Melandrya* (*Bonzicus*) *incostata* Fairmaire, 1889** (Figs. 1–2)

Chinese vernacular name: 無脊長朽木蟲

Melandrya incostata Fairmaire, 1889: 46.

Melandrya (*Bonzicus*) *incostata*: Gusakov, 2009: 6.

Bonzicus hypocrita Lewis, 1895: 271; synonymised by Gusakov, 2009: 6.



Fig. 2. **Comparison of male genitalia between Taiwan and China.** A. Taiwan: Hualien, ventral view. B. Ditto, lateral view. C. China: Sichuan, ventral view. D. Ditto, lateral view. Scale bar = 0.5 mm.

Bonzicus hypocrita var. *notata* Pic, 1934: 28; synonymised by Gusakov, 2009: 6.

Material examined. CHINA: 1 ♂, 1 ♀: Sichuan Province, Emeishan, Xixinsuo-Jiulinggang, 1600–1800m, 7–10.VI.2014, Y. Living Li leg. (SYSU). JAPAN: 1 ex.: Hirayu, Gifu Pref., 24.VII.1946, K. Ohbayashi leg. (NMNS – NMNS ENT 4881-34317); 1 ♀: Mt. Daisen, Yokote pass, Tottori Pref., 27.VI.1976, Y. Kurota leg., identified by M. Sakai, 1999 (EUMJ – Melandryidae 3927); 1 ex.: Kitagawa, Shimobe, Yamanasi [=Yamanashi] Pref., 4.VII.2005, K. Keyaki leg. (EUMJ). TAIWAN: 1 ♂: Hsiulin, 2200m, Hualien County, 10.VI.2017, Y.-C. Chiu leg. (NMNS 009171-00001); 1 ♂: same locality, 15.VI.2025, Y.-C. Chiu leg. (NMNS 009171-00002).

Remarks. This species can be diagnosed by the following combination of characters: large body size (>10 mm); long oval body shape, ca. 3.1–3.2 time as long as wide; colour pattern: head, prothorax, elytra completely black, antennae, maxillary palpi and legs mostly black, with the apical margin of the terminal maxillary palpomere, apex of antennomere 11, apical portions of femora, basal portions of tibiae and apical margins of terminal tarsomeres orange, abdomen orange, with a pair of black markings situated near the lateral margins of each ventrite; dorsal surface of body shiny; aedeagus: elongate and stout, dorsal plate of parameres trilobed with setose lateral lobes, median lobe elongate and tapering apicad. Preliminary comparisons among specimens from China, Japan, and Taiwan (Fig. 1; Gusakov, 2009; Hsu *et al.*, 2016; Yang and Liu, 2024) reveal that specimens from Japan and Taiwan share more blackish terminal maxillary palpomeres and terminal tarsomeres than those from China. Citizen science records from China (Beijing: pushengtong, 2025; Hubei: lu_s_w, 2023) and Japan (Fukushima: abzorba, 2018, 2023; Yamanashi: sho_sugita, 2023) available on iNaturalist (iNaturalist, 2026) further support these morphological observations. Additionally, the median lobe of specimens from Taiwan is longer and extends distinctly beyond the parameres (Fig. 2). However, because of the limited sample size, we treat these differences as intraspecific variation at this stage, pending more comprehensive studies.

Traceable voucher specimens are crucial for verifying faunistic records and maintaining the accuracy of regional biodiversity databases. The present study provides confirmed records of *M.* (*B.*) *incostata* in Taiwan based on verifiable

voucher specimens, along with high-resolution photographs of the habitus and salient characters. These findings resolve earlier uncertainties in the literature and improve understanding of Taiwanese entomofauna.

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無脊長朽木蟲（鞘翅目，長朽木蟲科）在臺灣分布之重新確認

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摘　　要

長朽木蟲科（Melandryidae）是擬步行蟲總科下的一個小科，全球共計約 60 個屬別與超過 420 個已描述種，臺灣至今僅記錄 7 屬 13 種。其中，無脊長朽木蟲（*Melandrya* (*Bonzicus*) *incostata* Fairmaire, 1889）雖被列入臺灣產昆蟲名錄，但過去缺乏可追溯的存證標本。本研究藉由檢視臺灣在地標本，並與相關分類學文獻及來自中國與日本的定名標本進行比對，確認無脊長朽木蟲在臺灣的分布。文中亦提供高解析度的標本全體照與診斷性特徵，以豐富對臺灣生物多樣性之瞭解。

關鍵詞：生物多樣性、長朽木蟲、物種相紀錄、長朽木蟲族、臺灣昆蟲相、擬步行蟲總科