

[研究文章 Research Article]

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Paraphytus dentifrons (Lewis, 1895): A New Record for the Species and Genus in Taiwan (Coleoptera: Scarabaeidae)

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Abstract. This is the first report of *Paraphytus dentifrons* (Lewis, 1895), a coprophagous species, in Taiwan, and the first reliable record of a *Paraphytus* sp. in Taiwan. The record of this species from Vietnam is also discussed.

Key words: *Paraphytus*, Scarabaeinae, Ateuchini, coprophagous beetle, new record, Shiraki collection, Taiwan

Introduction

With 14 described species, *Paraphytus* (Coleoptera: Scarabaeidae) is a relatively small genus known from the Palearctic, Oriental and Afrotropical regions (Ochi & Kon, 2015).

Lewis (1895) described a new species from Oshima (=Amami-Oshima island) as *Maraxes dentifrons* Lewis, 1895, and erected a new genus *Maraxes* Lewis, 1895 for this species based on various characters, including its distinct body shape, clypeus and the protibiae, however, Gillet (1911) later synonymized *Maraxes* with *Paraphytus* Harold, 1877.

Paraphytus dentifrons (Lewis, 1895) was first recorded in Taiwan by Miwa (1930) from Kotosho (= Lanyu Island, Taitung County), with Miwa's voucher specimen deposited in the Taiwan Agricultural Research Institute (TARI). However, because this voucher specimen bears "Shiraki collection" on its collection label, its provenance is suspect. This casts doubt on whether this species occurs on Lanyu Island, and until now, there have been no reliable record of this species in Taiwan. In April 2019, the first author (Ho) and his colleague collected a *Paraphytus* sp. from Southeast Taiwan. Based on Lewis (1895), Paulian (1936) and Kawai *et al.* (2005), and an examination of determined collection specimens, Ho identified this specimen as *P. dentifrons*, providing the first Taiwanese record of this species, as well as the first detailed information regarding this species' habitat.

Materials and methods

The specimen was examined using an Olympus SZ51 stereomicroscope. All photographs were taken using an Olympus OM-D E-M5 Mark II digital mirrorless camera and an Olympus M. ZUIKO DIGITAL ED 60mm F2.8 Macro lens with two Kawasaki DF-480 SPEEDLITE flashguns. Focus stacking was done with the software Helicon Focus 7.

The specimens cited in this paper are deposited in the Masumoto Collection of the National Museum of Nature and Science, Tsukuba, Japan (NSMT); Taiwan Agricultural Research Institute, Taichung, Taiwan (TARI) and B.-H. Ho's private collection, Taipei, Taiwan (BHPC). Collection label information for each specimen is separated by "//". Supplementary data use "[]" to remark.

Results

Paraphytus dentifrons (Lewis, 1895)

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(Figs. 1–4, 6–7)

Maraxes dentifrons Lewis, 1895: 376. Type locality: Oshima.

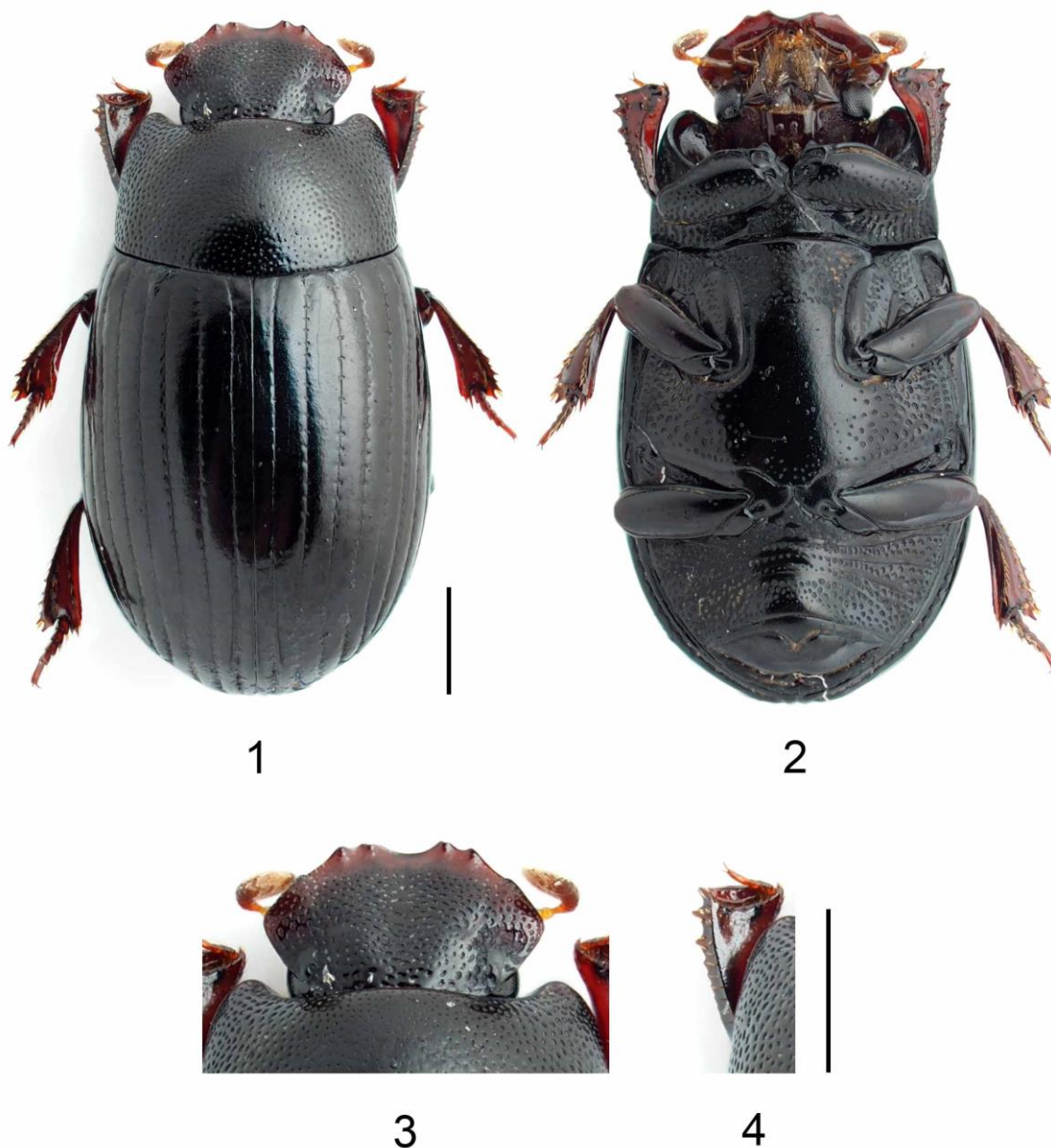
Materials examined. 1 ♀, TAIWAN: Taitung Co., Zhiben forest rd. 7km (知本林道), Beinan Township, alt. 400m, 4.IV.2019, B.H. Ho & F.S. Hu leg.// BHPC 000-0530// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (BHPC); 2 exs., JAPAN: Akusekijima island, 25.VII.1986, K. Akita leg.// Coll. Masumoto 2001// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (NSMT); 2 exs., JAPAN: Amami-Oshima island, Hatsuno, 10.IV.1963, N. Obayashi leg.// Coll. Masumoto 2001// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (NSMT); 1 ex., JAPAN: Amami-ô shima Is., Sumiyô, 29.IV-6.V.2010, K. Takahashi leg.// Coll. Masumoto 2015// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (NSMT); 6 exs., JAPAN: Amami-ô shima Is., Santarô-tôge Pass, 2-4.V.2010, K. Masumoto & K. Takahashi leg.// Coll. Masumoto 2015// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (NSMT); 2exs in BHPC); 1ex, JAPAN: Amami, Sumiyô, Kawauchi, 7.VII.2013, M. Nishi leg.// Coll. Masumoto 2013// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (NSMT); 1 ex., JAPAN: Amami-ô shima Is., Kinsakubaru,

28.VII.2013, 青木淳一 採集// Coll. Masumoto 2015// *Paraphytus dentifrons* (Lewis, 1895) det. B.H. Ho, 2019 (NSMT); 1ex, JAPAN: Ryukyus, Amami-Ō shima Is., Sumiyō, Mt. Akabachiyama, 4.IV.2015, Masahiro Nishi leg.// K. AKITA Collection KAC 100612// *Paraphytus dentifrons* (Lewis, 1895) det. K. Akita, 2019 (BHPC).

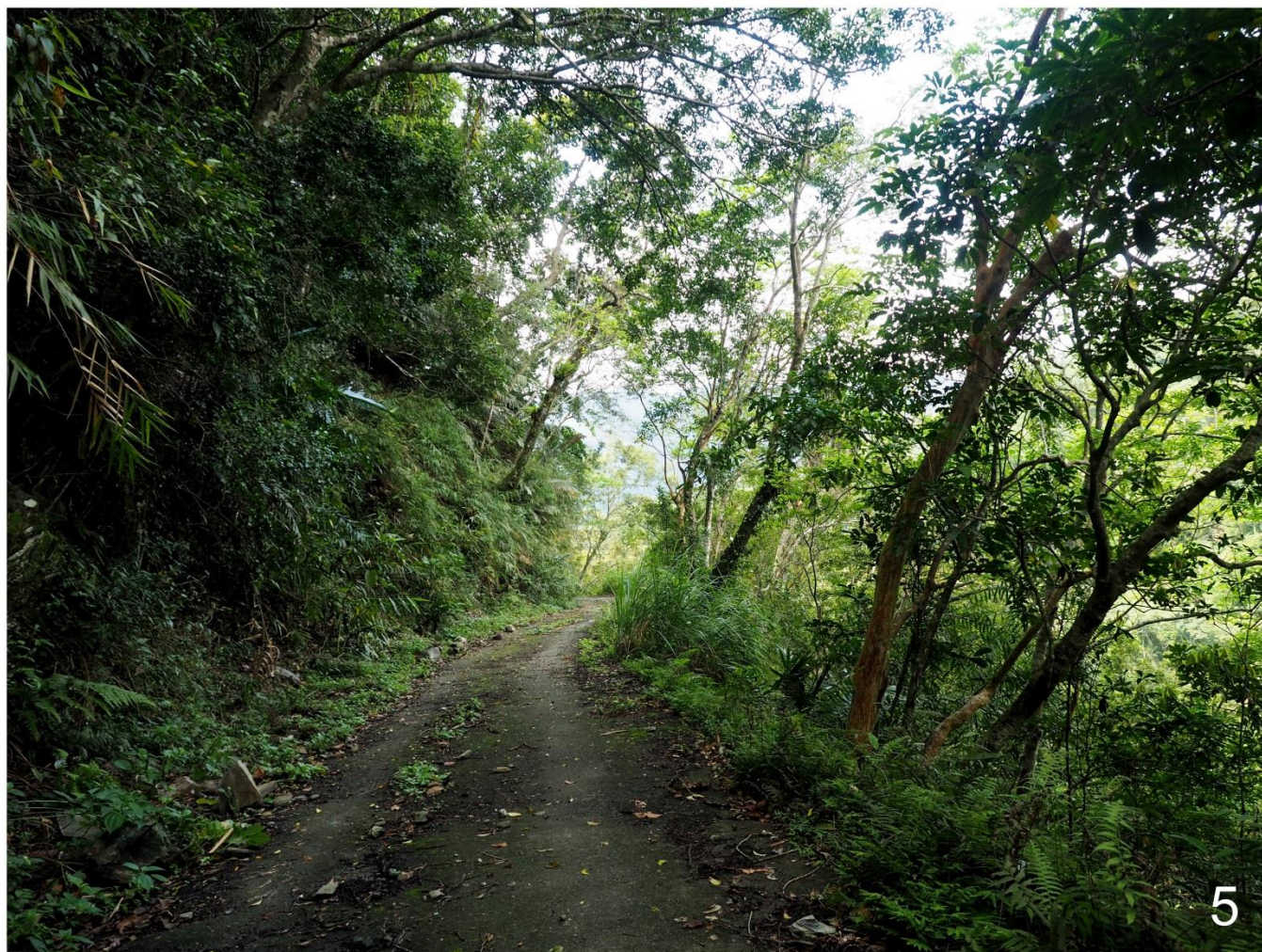
“Shiraki collection” material examined. 1ex., Kotosho [= Lanyu island, Taitung, TAIWAN], COL. T. Shiraki. [no collection date] // *Paraphytus dentifrons* (Lewis, 1895) det. T. Shiraki // *Paraphytus dentifrons* Lewis. One of the co-author, Masumoto, confirmed that this specimen is actually one of multiple syntypes previously deposited in the British Museum (Natural History), London. [15.III.2007 (Jing-Fu Tsai, Chinese writing)] (TARI).

Distribution. Japan (Ryukyu Islands); Taiwan (new record).

Habitat. High humidity deadwood in low altitude evergreen natural forest (Fig. 5).



Figures 1–4. Female habitus of *Paraphytus dentifrons* (Lewis, 1895). 1. dorsal view; 2. ventral view. 3. head and pronotum, dorsal view. 4. left protibia, dorsal view. Scale bar: 1 mm.



Figures 5–7. Habitat of *Paraphytus dentifrons* (Lewis, 1895) and a live specimen of *Paraphytus dentifrons* (Lewis, 1895). 5. Zhiben forest road 7 km, Taitung, Taiwan. 6–7. Female habitus of *P. dentifrons* (Lewis, 1895) in the deadwood. 6. dorsal view. 7. dorsal-lateral view.

Discussion

Boucomont (1923) examined a single specimen of “*Paraphytus dentifrons*” from Hoa Binh, Lac Tho (Tonkin) deposited in the Muséum National d’Histoire Naturelle (MNHN) in Paris, subsequently confirming this identification despite noting minute differences in elytral striae between this specimen and Japanese *P. dentifrons* specimens known to him. This Vietnamese specimen was later examined by Paulian (1936), who also noted its elytral striae. More recently, second author (Masumoto) examined this

same specimen while visiting the MNHN, determining that it was not in fact *P. dentifrons*, and thus, we herein amend this record of *P. dentifrons* occurring in Vietnam.

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四齒長卵蜚蠊：一種臺灣新紀錄屬、新紀錄種糞金龜（鞘翅目：金龜子科：蜚蠊亞科：首蜚蠊族）

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摘要: 本研究首次報導四齒長卵蜚蠊 *Paraphytus dentifrons* (Lewis, 1895) 在臺灣被發現，同時這也是本屬在臺灣的首次正式紀錄。亦討論該物種在越南的紀錄。

關鍵詞: 長卵蜚蠊屬、蜚蠊亞科、首蜚蠊族、食糞群甲蟲、新紀錄、素木標本、臺灣