

SHORT NOTES

New distributional records of *Neolucanus taiwanus* Mizunuma, 1994 (Coleoptera: Lucanidae) from southern Taiwan

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Abstract. Historically restricted to northern and eastern Taiwan, *Neolucanus taiwanus* Mizunuma, 1994 is reported here from southern Taiwan for the first time. This significant new distributional record is documented based on a new population discovery and a careful comparison with the holotype specimen.

Coleoptera: Lucanidae: Odontolabini

Neolucanus taiwanus Mizunuma, 1994, was originally described as the subspecies *Neolucanus sinicus taiwanus* based on two males from Hualien County (Mizunuma & Nagai, 1994). Chang (2006) retained this subspecific status and added several northern Taiwan records. Yang (2007) argued for species rank, and Fujita (2010) formally elevated it to species level (*Neolucanus taiwanus*), treating it as endemic to Taiwan - a view later adopted by Chang (2024). Lin & Chou (2021) provided further nation wide collection records.

N. taiwanus belongs to the *Neolucanus sinicus* species group, which in Taiwan comprises two species: *N. taiwanus* Mizunuma, 1994 and *N. atayal* Lin & Chou, 2021.

Until recently, *N. taiwanus* was known only from low-altitude areas of northern and eastern Taiwan, chiefly the low hills flanking the Xueshan Range, with confirmed records in New Taipei City, Taoyuan City, Yilan County, and Hualien County. No populations had been recorded elsewhere. I report here the first southern record an extant population in Pingtung County revealing a strikingly disjunct geographic distribution for the species.

Type material. Holotype *Neolucanus taiwanus* Mizunuma, 1994 (Figs. 1A-D), 1 ♂, TAIWAN, Juisui, Hualien County, Taiwan 10-20 VI. 1973, T. Mizunuma leg. (KPM).

Material examined: 4 ♂♂, TAIWAN, Shizi Township 800-1300 m, Pingtung County, 16-20. V. 2026 (will be deposited in author's collection, Taipei, Taiwan). (Figs. 2A-E)

Distribution. Taiwan: New Taipei City, Taoyuan City, Yilan County, Hualien County, Pingtung County (**new record**) (300-1300 m).

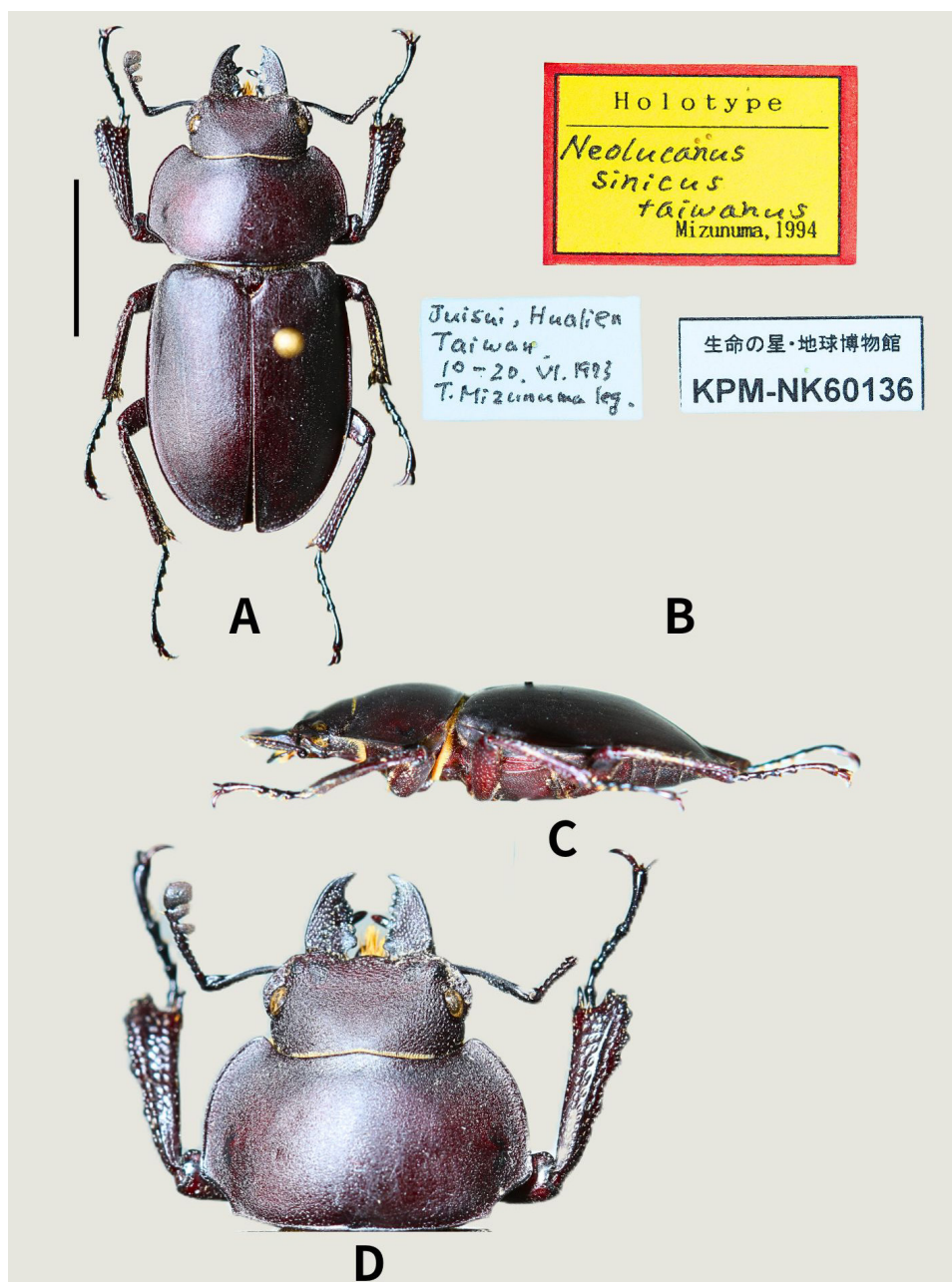


Fig. 1. Holotype of *Neolucanus taiwanus* Mizunuma, 1994: A- habitus, dorsal view; B- identification and locality labels; C- habitus, lateral view; D- detailed close-up of head and pronotum. Photo credit: Kyohei Watanabe @ Kanagawa Prefectural Museum of Natural History, Odawara, Japan (images not to scale).

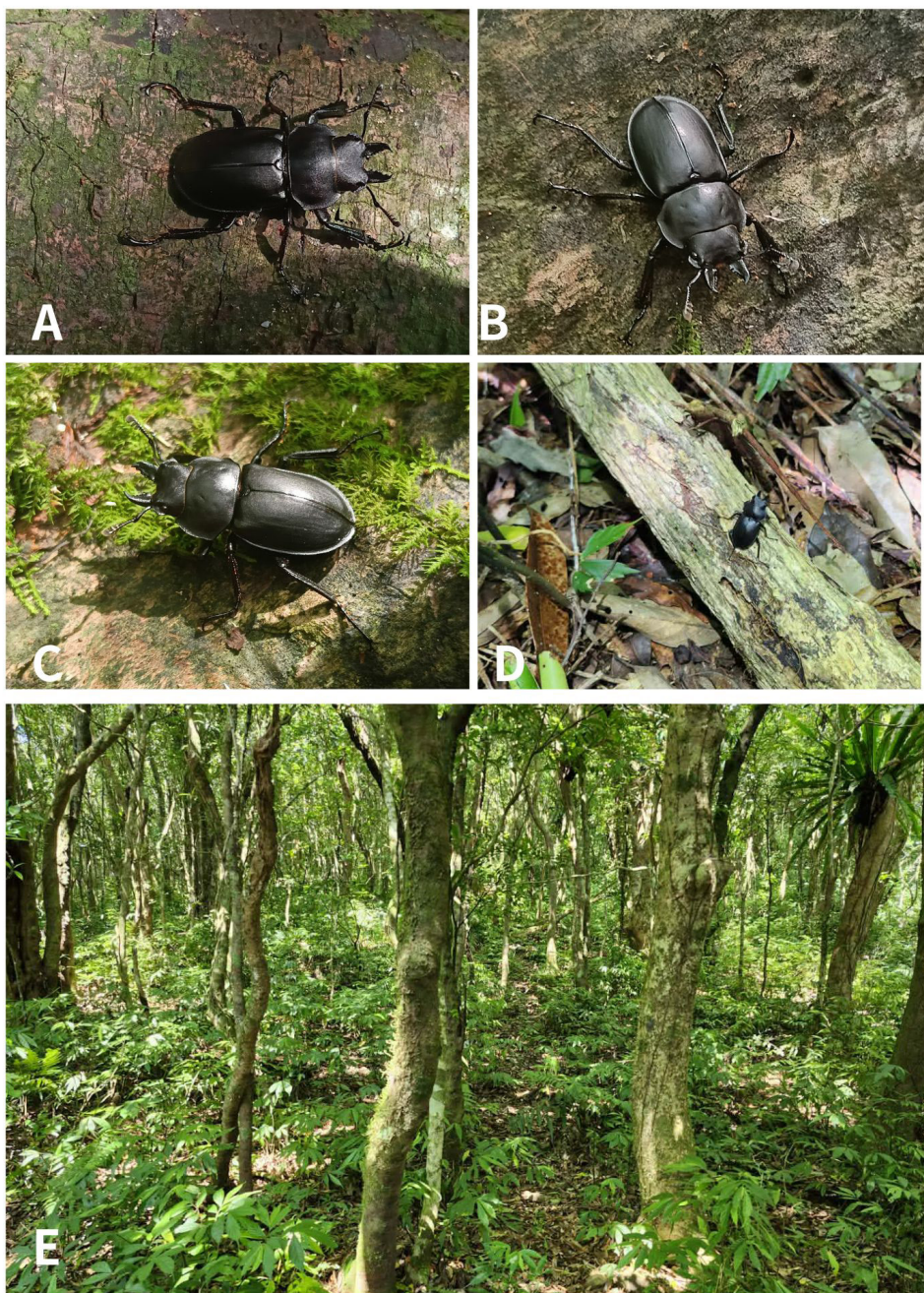


Fig. 2. Field observations of *Neolucanus taiwanus* Mizunuma, 1994, males in southern Taiwan: A-D- wild male individuals; E- natural habitat environment of the southern population (*Machilus Castanopsis* forest zone).

The specimens used in this study are deposited at the Kanagawa Prefectural Museum, Odawara, Japan. (KPM), and in the private collection of the author (JZLC), Taipei, Taiwan.

When first encountered, the southern population was tentatively considered a possible undescribed species; detailed morphological comparison with northern material, however, revealed no diagnosable differences, and the southern population is therefore treated here as *N. taiwanus*. Its occurrence so far from previously known localities may reflect a relict population persisting in a glacial refugium: Pleistocene cycles have strongly influenced the phylogeography of related taxa in Taiwan (e.g., Tsai et al., 2021), and barriers such as the Central Mountain Range likely contributed to lineage fragmentation. *N. taiwanus* may also be present but undetected in central Taiwan. To resolve the biogeographic and evolutionary history of this disjunct distribution, targeted sampling of central and southern populations and molecular phylogenetic analyses (population genetics, coalescent dating) are strongly recommended.

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