

SHORT FAUNISTIC NOTES - NEW RECORDS

Checklist of *Nigidius* Macleay, 1819 of Taiwan with a key to its identification (Coleoptera: Lucanidae)

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Abstract. A checklist of the known species of Taiwanese *Nigidius* Macleay, 1819 is given with a key to identify species.

Coleoptera: Lucanidae: Lucaninae: Figulini

The genus *Nigidius* MacLeay 1819 (Coleoptera: Lucanidae: Lucaninae: Figulini), with limited sexual dimorphism, comprises 89 known species worldwide (Catalogue of Life webpage 2023; unpublished data of the author). Species in the genus are distributed throughout mainland Africa and Asia, from India and Nepal to the Korean peninsula and Sulawesi (Paulsen 2018; unpublished data of the author). This genus is generally known to be a subsocial insect, with adults and larvae often observed living together in the same decaying wood (Thierry 2020). The author considers it useful to provide an updated checklist of the genus *Nigidius* from the geographical area of Taiwan, as the information is scattered in many publications, some of which are difficult to locate.

So far, 6 species of *Nigidius* have been recorded from Taiwan (Catalogue of Life in Taiwan webpage 2023; unpublished data of the author). And there are still some questions to be answered. The *Nigidius acutangulus* Heller, 1917 is the smallest species of the genus in Taiwan. It was previously thought to be endemic to Taiwan (Chang 1993, 2003), but in recent years it has also been recorded from Hainan Island in China (Huang & Chen 2017). Due to the many cryptic species of this genus that have not been resolved, and according to the above records, they only examined the female specimens and did not examine the males, this author casts doubt on their unreasonable biogeographical distribution record. However, this author did not examine the specimens from China, so temporarily follow their records, but the author thinks that further confirmation and examination of more specimens is needed in the future.

The *Nigidius lewisi* Boileau, 1905 was recorded in Taiwan (Chang 1993, 2003; Huang & Chen 2017). Later in recent years, two new species, *Nigidius lohi* Ochi, Toguchi & Kawahara, 2019, and *Nigidius wushuae* Lin, 2022, were published in Taiwan, both of which

overlap with previous records of *N. lewisi* in Taiwan, and both species occur in the mid-elevation mountains of Taiwan and the outlying Green Island. Besides, the three species are very similar to each other. Furthermore, Ochi et al. (2019) attributed *N. lewisi* only to the Japanese fauna. This makes the author wonder if there is a defined record of *N. lewisi* in Taiwan.

In order to answer this question, the author examined the *N. lewisi* syntype specimens in the Muséum national d'Histoire naturelle, Paris, France (MNHN) and a large number of specimens from Taiwan everywhere and the same origin as the type specimens from Japan Okinawa, for diagnosis.

Based on the morphological comparisons of the diagnostic characters, this report confirms that the previous records in Taiwan should be considered as *N. lewisi*, which is actually a misidentification of *N. lohi* and *N. wushuae*, in view of the above, this report recommends that *N. lewisi* should be excluded from the Taiwanese Lucanidae list. A new checklist of 5 Taiwanese *Nigidius* is given here.

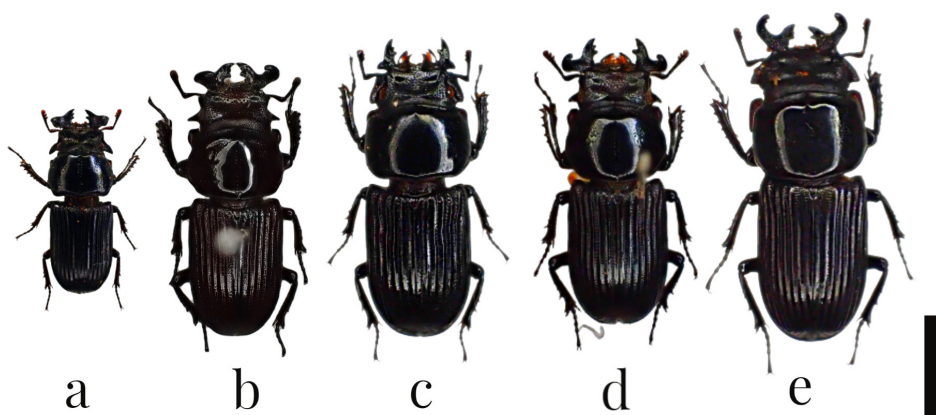


Fig. 1a-e. Dorsal habitus of *Nigidius* species: a- *N. acutangulus*; b- *N. wushuae*; c- *N. baeri*; d- *N. lohi*; e- *N. formosanus*. Scale bar = 10 mm.

List of *Nigidius* species in Taiwan

These records are based on Huang and Chen (2017), Fujita (2010), Ochi et al. (2018), Chang (2006) and the author of the present study.

Nigidius formosanus Bates, 1866

Distribution: Endemic to Taiwan (Taichung, Tainan, Kaohsiung, Pingtung, Taitung)

Nigidius baeri Boileau, 1905

Distribution: Taiwan (Lanyu Island), the Philippines

***Nigidius acutangulus* Heller, 1917**

Distribution Taiwan (New Taipei City, Taoyuan, Hsinchu, Miaoli, Taichung, Nantou, Chiayi, Kaohsiung, Pingtung, Taitung, Hualien, Yilan), China (Hainan Island) ?

***Nigidius lohi* Ochi, Toguchi & Kawahara, 2019**

Distribution: Endemic to Taiwan (Nantou, Chiayi, Kaohsiung, Pingtung, Taitung, Hualien)

***Nigidius wushuae* Lin, 2022**

Distribution: Endemic to Taiwan (Green Island)

Key to the Taiwanese species of *Nigidius*

1. Size smaller (<15mm). Pronotum with a central depression along the midline, associated with coarse punctures. Corner lobe of the pronotum sharply angled. Posterior angle of the canthus sharper (Taiwan: main island)
N. acutangulus
- Size larger (>15mm) 2
2. Canthus outer margin either waved or with a cleft. Pronotum dorsally smooth, without central depression along midline. (Lanyu Island).....*N. baeri*
- Canthus more curved as a whole. Pronotum with smaller punctures, scattered along central midline (Taiwan: main island).....*N. formosanus*
- Canthus well developed and deeply emarginate. Pronotum with well developed central punctures 3
3. Pronotum surface variable with almost impunctate and coarsely punctate areas. Elytra shorter. Female genitalia with strongly hooked and short stylus (Taiwan: main island).....*N. lohi*
- Pronotum surface is more uniformly punctate. Elytra is distinctly longer and slender. Female genitalia with stylus distinctly longer and situated at triangular distal end. Canthus with posterior margin very strongly produced outward as a fairly sharply pointed projection (Taiwan: Green Island)..... *N. wushuae*

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