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## Notes on Some Species of the Genus *Atholus* Thomson, 1859 (Coleoptera: Histeridae) in Taiwan 【Scientific note】

### 台灣地區閻魔蟲科 *Atholus* 屬 (Coleoptera: Histeridae) 種類之增述【科學短訊】

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#### Abstract

The occurrence of some *Atholus*-species in Taiwan is discussed. *Atholus confinis* was for the first time reported from Taiwan. *Atholus ixion* (Lewis, 1892) has been synonymized with *A. pirithous* (Marseul, 1873). Lecto- and paralectotypes for *A. confinis* (Erichson, 1834) and *A. rothkirchi* (Bickhardt, 1919) are designated. A key to species of *Atholus* from Taiwan is given.

#### 摘要

本文討論台灣地區閻魔蟲科 *Atholus* 屬的部份種類。 *Atholus confinis* 為首次紀錄。 *Atholus ixion* (Lewis, 1892) 為 *A. pirithous* (Marseul, 1873) 之同物異名，並指定 *A. confinis* (Erichson, 1834) 以及 *A. rothkirchi* (Bickhardt, 1919) 之選模標本及複選模標本。本文並提供台灣地區 *Atholus* 屬檢索表。

**Key words:** Histeridae, Taiwan, *Atholus*, synonymy, distribution

**關鍵詞:** 閻魔蟲科、台灣、*Atholus*、同物異名、分布。

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## Notes on Some Species of the Genus *Atholus* Thomson, 1859 (Coleoptera: Histeridae) in Taiwan

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### ABSTRACT

The occurrence of some *Atholus*-species in Taiwan is discussed. *Atholus confinis* was for the first time reported from Taiwan. *Atholus ixion* (Lewis, 1892) has been synonymized with *A. pirithous* (Marseul, 1873). Lecto- and paralectotypes for *A. confinis* (Erichson, 1834) and *A. rothkirchi* (Bickhardt, 1919) are designated. A key to species of *Atholus* from Taiwan is given.

**Key words:** Histeridae, Taiwan, *Atholus*, synonymy, distribution

### Introduction

The genus *Atholus* Thomson, 1859 contains 73 species nearly world widely distributed (excluding Australia) (Mazur, 1997) from which 31 species are known to occur in the Oriental Region, 16 in tropical Africa, 15 in the Palearctis, 8 in North and 2 in Central America and one species, *A. bimaculatus* (Linnaeus, 1758) is almost subcosmopolitan in distribution. Six species of *Atholus* have been recorded from Taiwan as yet. Ôhara (1999) recorded and erected a key to five species, and the sixth species was reported lately by Mazur (2008). In this paper new data are presented concerning distributional records, some morphological characteristics as well as notes on the taxonomic status of some species. The paper is based mainly on the

materials collected by Dr Jerzy Borowski during his stay in Taiwan, kept at the author's collection (CHSM) as well as on the materials loaned from the following institutions: The British Museum of Natural History, London (BMNH) and Museum für Naturkunde der Humboldt-Universität zu Berlin (MNHUB).

### Systematic account

#### *Atholus bifrons* (Marseul, 1854)

#### Material examined

TAIPEI: Guanshi, 9.IV.2008, J. Borowski leg., 1 ex. [CHSM].

#### Distribution

India, Indonesia (Sumatra), Thailand, Vietnam, China (Hong Kong), Taiwan.

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### Remarks

Previous record: recorded so far only from one locality: Taipei: Taishan (Mazur, 2008).

### *Atholus confinis* (Erichson, 1834) *Atholus rothkirchi* Bickhardt, 1919

#### Type material

Lectotype of *Atholus confinis* (Erichson, 1834): partially damaged, 1) [white, printed] 48964, 2) [green, printed] Hist.-Coll. (Coleoptera) Nr. 48964, *Hister conformis* Er. Cuba, Müll. Zool. Mus. Berlin, 3) [red, printed] Syntypus, *Hister conformis* Erichson, 1834, labeled by MNHUB 2008, 4) [green, handwritten] *conformis* Er., Cuba. Müll. 5) [white, printed] *Atholus confinis* (Erichson, 1834), Det. S. Mazur 2009, 6) [white, printed] Lectotypus, 7) [white, printed] Des. S. Mazur 2009 [MNHUB]. Paralectotypes: I, ♀, 1) [green, printed] Hist.-Coll. (Coleoptera) Nr. 48964, *Hister conformis* Er., Cuba, Müll. Zool. Mus. Berlin, 3) Syntypus, *Hister conformis* Erichson, 1834, labeled by MNHUB, 4) [white, printed] *Atholus confinis* (Erichson, 1834), Det. S. Mazur 2009, 5) [white, printed] Paralectotypus, 6) [white, printed] Des. S. Mazur 2009; II, ♂, 1 - 5, as in the paralectotype I, III, sex undetermined, 1 - 5, as in the paralectotype I [MNHUB].

Note attached by the MNHUB: "The name *conformis* on the hist.[orical] [green, printed] label was obviously confused with *confinis* described from Cuba".

Lectotype of *Atholus rothkirchi* Bickhardt, 1919: ♀, 1) [white, printed] [Cameroon]: Joko, Kamerun, 2) [red, printed] Type, 3) [white, printed] coll. Schmidt-Bickhardt, 4) [white, handwritten] *Atholus Rothkirchi* n. sp., Bickhardt det., 5) [red, printed] Syntypus, *Atholus rothkirchi* Bickhardt, 1919, labeled by MNHUB 2008, 6) [white, printed] *Atholus rothkirchi* Bickhardt, 1919 = *A. confinis* Er., 7) [white, printed] Lectotypus, 8) [white, printed] Stat. S. Mazur 2009 [MNHUB]. Paralectotypes:

I, ♀, 10 [white, printed; Cameroon]: Joko, Kamerun, 2 - 5, as in the lectotype, 6) [white, printed] Paralectotypus, 7) Stat. S. Mazur 2009; II, ♀, 1) [white, printed] [Ethiopia/North Kenya]: Boran Galla, Alto Daa, V.[18]93, V. Boltego, 2) [yellow, printed] Museo. Civ. Genova, 3) [red, printed] Type, 4) [white, printed] coll. Schmidt-Bickhardt, 5) [red, printed] Syntypus, *Atholus rothkirchi* Bickhardt, 1919, labeled by MNHUB, 6) [white, printed] *Atholus rothkirchi* Bickhardt, 1919 = *A. confinis* Er., 7) [white, printed] Paralectotypus, 8) [white, printed] Stat. S. Mazur 2009, III, ♀, 1) [white, printed] [Ethiopia]: Abyssinia, Kovács, 2) [white, printed] Vallis, Error, 3) [white, printed] M.N. Muzeum Budapest, 4) [red, printed] Type, 5) [white, printed] coll. Schmidt-Bickhardt, 6) [red, printed] Syntypus, *Atholus rothkirchi* Bickhardt, 1919, labeled by MNHUB 2008, 7) [white, printed] *Atholus rothkirchi* Bickhardt, 1919 = *A. confinis* Er., 8) [white, printed] Paralectotypus, 9) [white, printed] Des. S. Mazur 2009 [MNHUB].

Note. *Atholus confinis* is an African species which has been introduced to Central America and Hawaii (Summerlin *et al.*, 1987: 136) and from Hawaii to Taiwan. Such an explanation of its occurrence in Taiwan is most likely because there is any record of this species as yet east of Africa, including India and South East Asia.

#### Material examined

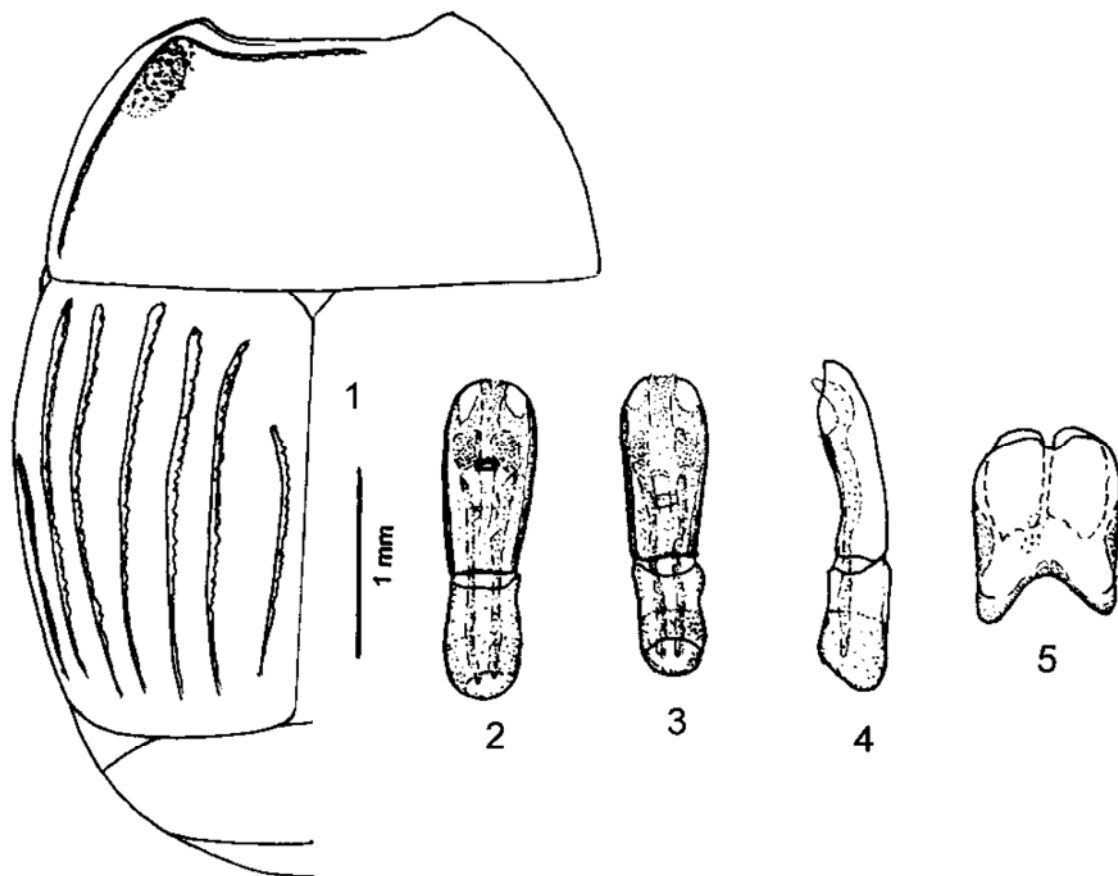
NANTOU: Jhushan, 15-24.IV.2008, J. Borowski leg., 1 ♂, 1 ♀ [CHSM].

#### Distribution

Central America (Cuba, Guadeloupe, Puerto Rico, St. Vincent, San Domingo), USA (Hawaii) and tropical Africa. New to Taiwan.

#### Remarks

The finding of this species in Taiwan was a big surprise, so the author compared



Figs. 1-5. *Atholus confinis*. 1, upper side; 2, aedeagus, dorsal view; 3, aedeagus, ventral view; 4, aedeagus, lateral view; 5, 8th tergite, dorsal view (All figures share the same scale).

the Taiwanese specimens with the type-species of *A. confinis* (Central America) and *A. rothkirchi* (a synonymous species from Africa) confirming all of them being identical. *A. confinis* and *A. rothkirchi* have been describes from the type-series, so a designation of the lecto- and paralectotypes is needed. Additionally, to a better recognition, the general appearance and the male genital structure are figured (Figs. 1-5).

***Atholus pirithous* (Marseul, 1873)**  
***Atholus ixion* (Lewis, 1892) syn. nov.**

#### **Type material**

type, ♀, [Myanmar]: Carin Asciiü Ghecù, 1400-1500 m, L. Fea, III-IV.[18]88 / Museo Civ. Genova / Type / Hister Ixion Lewis, Type, / G. Lewis Coll., B.M. 1926 - 369 / *Atholus ixion* Lew. = *pirithous* Mars. Det. S. Mazur, 2009 [BMNH].

#### **Materials examined**

NANTOU: Heshe, 2-17.VI.2008, J. Borowski leg., 12 ex., TAICHUNG: Wufeng, Wushi (Riv.), 100 m, 21.V.[19]90, A. Smetana leg., 1 ex. [CHSM]

## Remarks

Describing *A. ixion* from Myanmar Lewis (1892) pointed out the mesosternum being broader in front, the metasternal stria widening more behind and the first sternite having a lateral stria more oblique as the characters differentiating it from *A. pirithous*. These features have been, however, emphasized from a very subjective point of view, therefore Desbordes (1917: 323) replaced them in his key by others: "Fovéoles du pronotum bien marquées. Pas de trace de strie subhumérale interne. Dent apicale des tibias antérieurs pas plus forte que les autres".

All the Taiwanese specimens being determined as "*A. pirithous*" corresponded to these features, especially having the pronotal foveae distinctly marked. Thus, there was a supposition they might have been belonged to *A. ixion*, all the more so as *A. ixion* appeared to be more Oriental whereas *A. pirithous* more Palearctic in distribution.

To resolve this question the author examined the type-specimen from the Lewis' collection. The detailed examination clearly showed that both these species are identical, agreeing with a perfect description of *A. pirithous*, given by Ôhara (1993: 141-147, Figs. 13A-H, 14A-F).

All the differences previously noted are in normal individual variation being met among the specimens from various parts of its distribution.

Thus, *Atholus ixion* (Lewis, 1892) = *A. pirithous* (Marseul, 1873), syn. nov., and the name "pirithous" has a priority.

## Key to the Taiwanese species of the genus *Atholus*

Summarizing we can say that the number of the species of the genus *Atholus* known to occur in Taiwan has risen up to 7. They may be separated as in the following key: (after Ôhara, 1999: 31, modified)

- 1(2) Lateral pronotal stria present on apical half, apical end of 3rd dorsal

stria strongly bent inwardly .....

..... *A. coelestis* (Marseul, 1857)

- 2(1) Lateral pronotal stria nearly entire, third elytral stria not strongly bent.

- 3(8) Fifth dorsal and sutural elytral stria present on apical half.

- 4(7) Fourth elytral dorsal stria nearly complete, external subhumeral stria short and present medio-basally. Denticles on apical angle of protibia oppressed together

- 5(6) Frons longitudinally incised at middle, anterior margin of pronotum outwardly and acutely arcuate, pygidium coarsely punctured .....

..... *A. bifrons* (Marseul, 1854)

- 6(5) Frons flat. Anterior margin of pronotum feebly emarginated, pygidium finely punctate .....

..... *A. pirithous* (Marseul, 1873)

- 7(4) Fourth elytral dorsal stria abbreviated basally, external subhumeral stria long, shortly abbreviated on apical fourth, denticles on apical angle of Protibia sparsely present .....

..... *A. philippinensis* (Marseul, 1854)

- 8(3) Fifth elytral dorsal and sutural stria complete or sutural stria a little abbreviated basally.

- 9(10) Lateral disc of metasternum with long hairs, external subhumeral stria present medially, usually united with internal one. Propygidium evenly and coarsely punctate .....

..... *A. depistor* (Marseul, 1873)

- 10(9) Lateral disc of metasternum without hair, external subhumeral stria wanting, propygidial punctation becoming coarser basally

- 11(12) Pronotal fovea present in antero-lateral angles .....

..... *A. confinis* (Erichson, 1834)

- 12(11) Pronotum without foveae in antero-lateral angles .....

..... *A. duodecimstriatus* (*quatuordecimstriatus*) (Gyllenhal, 1808)

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# 台灣地區閻魔蟲科 *Atholus* 屬 (Coleoptera: Histeridae) 種類之增述

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## 摘 要

本文討論台灣地區閻魔蟲科 *Atholus* 屬的部份種類。*Atholus confinis* 為首次紀錄。*Atholus ixion* (Lewis, 1892) 為 *A. pirithous* (Marseul, 1873) 之同物異名，並指定 *A. confinis* (Erichson, 1834) 以及 *A. rothkirchi* (Bickhardt, 1919) 之選模標本及複選模標本。本文並提供台灣地區 *Atholus* 屬檢索表。

**關鍵詞：**閻魔蟲科、台灣、*Atholus*、同物異名、分布。