

Cyclommatus taiwanus Bomans, a New Synonym of *C. asahinai* Kurosawa (Coleoptera: Lucanidae)

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ABSTRACT

Cyclommatus taiwanus Bomans was described based on the specimens obtained from central Taiwan. By examining its types and the holotype of *Cyclommatus asahinai* Kurosawa, we agree that *C. taiwanus* is a junior synonym of *C. asahinai*, and the allotype female of *C. taiwanus*, in fact, belongs to *C. scutellaris* Möllenkamp.

The family Lucanidae in Taiwan is diverse. More than 50 species have been known from the island and its islets, and several additional species are awaiting identification. Three *Cyclommatus* species, *C. scutellaris* Möllenkamp, *C. asahinai* Kurosawa, and *C. mniszechi* (Thomson), were recognized from Taiwan after several decades of extensive collecting by Japanese and Taiwanese researchers and enthusiasts (Sakaino, 1980; Wang, 1990, 1994; Chang, 1993, 1999; Mizunuma and Nagai 1994; Sakaino *et al.*, 1994; anonymous, 2002). Bomans (1990) described *Cyclommatus taiwanus* based on the type series of six specimens obtained (probably purchased) from Puli Township, Nantou County, central Taiwan. He gave a detailed comparison, including illustrations of the male genitalia, between this species and *C. scutellaris* Möllenkamp. Since then the identity of *C. taiwanus* has been little

understood, and a few authors suspected that it is a synonym of *C. asahinai* (Tanikado, 1992; Araya, 1996; anonymous, 2002).

Recently we were able to examine the type specimens of *C. taiwanus* and *C. asahinai*. The holotype of *C. taiwanus* has a patch of hairs near the apex of each front tibia; its elytra are smooth and very weakly punctate. These traits are shared with *C. asahinai*. Further, the male genitalia of *C. taiwanus* illustrated by Bomans (1990) exactly match those of *C. asahinai*. The mandibles of the holotype of *C. taiwanus* are similar to the form of *C. asahinai* shown in Fig. N₂-3 in Chang (1993, p.29). Accordingly we agree that *C. taiwanus* is a junior synonym of *C. asahinai*. The allotype of *C. taiwanus* is featured with two short black stripes on the humeri and this character is identical in *C. scutellaris*.

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Cyclommatus asahinai Kurosawa, 1974

Cyclommatus arbersi asahinai Kurosawa, 1974: 103. Sakaino, 1980: 24. Wang, 1990: 65; 1994: 85. Chang, 1993: 67. Sakaino *et al.*, 1994: 122.

Cyclommatus strigiceps asahinai Kurosawa: Lacroix, 1988: 7.

Cyclommatus asahinai Kurosawa: Mizunuma and Nagai, 1994: 231. Chang, 1999: 46; 2000: 116.

Cyclommatus taiwanus Bomans, 1990: 263. (**syn. nov.**) Tanikado, 1992: 25. Araya, 1996: 22.

Type material of *C. asahinai* examined: holotype ♂, "10 VIII 1936 Taiheizan TAIHEIZAN/ HOLOTYPE *Cyclommatus albersi asahinai* Y. KUROSAWA 1974" (in the National Science Museum, Tokyo); types of *C. taiwanus* examined: holotype ♂, "Holotype/ H. Bomans det., 1974. *Cyclommatus taiwanus* n.sp./ TAIWAN- Puli- iv-1972 coll. H. Bomans/ 5176a/ H.E. Bomans BMNH(E) 1999-248"; allotype ♀, with identical data except "Allotype" and "5176b"; paratypes: 1 ♂, "Paratype/ TAIWAN- Puli-iv-1972 coll. H. Bomans/ 5177a/ H.E. Bomans BMNH(E) 1999-248"; 1 ♀, "Paratype/ TAIWAN- Puli- iv-1972 coll. H. Bomans/ 5178a/ H.E. Bomans BMNH(E) 1999-248" (in the Natural History Museum of London).

Acknowledgments

We are grateful to S.H. Yen, M. Satô, S. Nomura and M. Tomokuni for their kind assistance in helping us examine the type materials.

References

Anonymous. 2002. An introduction to Formosan stag beetles. *Lucanus World* 33: 18-29. (in Japanese)

Araya, K. 1996. Book review "The Lucanid Beetles of the World". *Gekkan-*

Mushi 309: 15-23. (in Japanese)

Bomans, H. E. 1990. Description d'une nouvelle espece de *Cyclommatus* Parry de Taiwan (Col. Lucanidae) (64e contribution a l'etude des coleopteres lucanides). *Nouvellle Revue d'Entomologie* 6: 263-264.

Chang, Y. R. 1993. *Lucanidae of Taiwan*. Newton Publisher, Taipei. (in Chinese)

Chang, Y. R. 1999. *Insects of Taiwan: Beetles*. Holiday Publisher, Taipei. (in Chinese)

Chang, Y. R. 2000. Beetles of the Yushan National Park. Administration of the Yushan N. P., Shuili, Taiwan. (in Chinese)

Kurosawa, Y. 1974. A stag-beetle new to the Formosan fauna (Coleoptera: Lucanidae). *Bull. Natl. Sci. Mus.*, Tokyo 17: 103-104.

Lacroix, J. P. 1988. Descriptions de Coleoptera Lucanidae nouveaux ou peu connus. (6ème note). *Bulletin de la Société Sciences Nat* 59: 5-7.

Mizunuma, T., and S. Nagai. 1994. *The Lucanid Beetles of the World*. Mushi Sha, Tokyo.

Sakaino, H. 1980. Illustrated guide to the Formosan stag beetles (II). *Gekkan-Mushi* 116: 24-30. (in Japanese)

Sakaino, H., C. K. Yu, and Y. I. Chu. 1994. Name lists of Insects in Taiwan -- Coleoptera: Lucanidae. *Chinese J. Entomol.* 14: 121-124.

Tanikado, M. 1992. News on the Formosan stag beetles. *Gekkan-Mushi* 256: 22-25. (in Japanese)

Wang, H. Y. 1990. *Illustrations of Stag Beetles in Taiwan*. Taiwan Museum, Taipei. (in Chinese)

Wang, H. Y. 1994. *Guide Book to Insects in Taiwan (5)-Lucanidae*. Shu-Shin Publisher, Taipei. (in Chinese)

Received: June 26, 2003

Accepted: Aug. 20, 2003

Cyclommatus taiwanus Bomans 爲 *C. asahinai* Kurosawa 的新異名 (鞘翅目：鍬形蟲科)

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摘 要

Bomans 依據得自南投縣埔里的標本描述 *Cyclommatus taiwanus*。經檢查其正模式 (holotype) 標本後，確認該名爲艷細身赤鍬形蟲 *C. asahinai* Kurosawa 之次異名，而其別模式 (allotype) 雌蟲標本實爲細身赤鍬形蟲 *C. scutellaris* Möllenkamp。