Discovery of a second species of Aesalini from Taiwan, with description of the new species of the genus *Echinoaesalus* Zelenka, 1993 (Coleoptera: Lucanidae)

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Abstract

*Echinoaesalus chungi* Huang & Chen, new species is described from Pingtung, Taiwan. It is the second species of the tribe Aesalini known from Taiwan. This new species is similar to the Bornean species *Echinoaesalus arayai* Huang & Imura, 2011, but can be distinguished mainly by the smaller size of the entire body, the laterally hooked sulcus on mentum of male, the separated sulci on mentum of female, the bristles inserted anteriorly in the wall of the punctures on dorsal surface of the body, the 9th abdominal segment of male with relatively larger paired pleurites, the medial lobe of parameres with weakly pigmented dorsal surface on distal half and with the pigmented distal sclerite interrupted on dorsal surface, and female genitalia with longer styli, thinner hemisternites and shorter bursa copulatrix. A key to the males of *Echinoaesalus* species is given. Female genitalia are described in detail for the new species and *Echinoaesalus arayai*.

Key words: Coleoptera, Lucanidae, *Echinoaesalus*, Aesalini, new species, Taiwan

Introduction

The genus *Echinoaesalus* Zelenka, 1993 of the tribe Aesalini (Coleoptera: Lucanidae: Aesalinae) is restricted to Thailand, Malaysia, and Indonesia, with 12 species described (Huang et al. 2011). It is separable from the genus *Aesalus* Fabricius, 1801 not only by the smaller ratio of body-length to body-width, but also by the free lacinia of the maxilla, the brush-like galea of the male maxilla, the bilobed ligula of male, and the widely separated palp insertions on prementum of male. A new species of this genus was unexpectedly discovered by a colleague from Taiwan and it is described herein.

Only one species of the tribe Aesalini was previously recorded from Taiwan, *Aesalus imanishii* Inahara & Ratti, 1981. With the discovery of *Echinoaesalus chungi* new species, Taiwan becomes the first locality inhabited by both the genera *Aesalus* and *Echinoaesalus*. The presence in Taiwan of the genera *Aesalus* and *Echinoaesalus* in contrast to the absence of the genus *Himaloaesalus* Huang & Chen, 2013 is interesting in terms of the biogeography of the tribe. More fieldwork needs to be done in the future for a thorough understanding of the aesaline fauna of Taiwan.

It is very interesting that *Echinoaesalus chungi* is the first known *Echinoaesalus* species showing significant sexual dimorphism in the width of the head, size of the labrum, length of the apical spine of the protibia, size and shape of the mentum, appearance of the sulci on the mentum, and shape of the prosternal process. The study of *Echinoaesalus chungi* has made us aware that all species of *Echinoaesalus* may have strong sexual dimorphism in the galea of the maxilla, the appearance of the ligula and the distance between palp insertions on the prementum.

Material and methods

Specimens were collected from the decayed logs in the field as adults, pupae, and larvae; and were reared in the laboratory. Specimens of adults were killed with ethyl acetate and dried.

All measurements are in mm. We measured the pronotum-elytra length instead of body length because the
Acknowledgements

We thank Mr. Yi-Ting Chung (Taiwan) for collecting the type specimens of the new species, and Dr. M. J. Paulsen (USA) for loaning material.

References cited