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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

- *E. sabahensis* Zelenka, 1994
- 8 All punctures on the elytra placed serially in longitudinal lines. Intercostal process of the prosternum with anterior margin produced medially, Sulawesi *E. jaechi* Zelenka, 1993
- Some punctures on the elytra placed irregularly, not serially in longitudinal lines. Intercostal process of the prosternum with anterior margin rather flat 9 (*E. matsuii* group)
- 9 Outline of elytra in lateral view unevenly rounded or obtusely angled, with anterior half more arched than posterior half. Sumatra *E. barriesi* Zelenka, 1993
- Outline of elytra in lateral view rather evenly rounded, not more arched at anterior half than at posterior half 10
- 10 Pair of cavities on the metasternum just behind the mesocoxae oblique. Sulcus on mentum indistinct. Parameres very long, almost reaching the distal end of the pigmented part of medial lobe of parameres (not counting the distal sclerite of medial lobe of parameres). Malay Peninsula *E. matsuii* (Araya, 1993)
- Pair of cavities on the metasternum just behind the mesocoxae almost longitudinal. Sulcus on mentum clearly marked. Parameres short and remote from the distal end of the pigmented part of medial lobe of parameres (not counting the distal sclerite of medial lobe of parameres) 11
- 11 Parameres markedly shorter than the width of the medial lobe of parameres in dorsal or ventral view. Medial lobe of parameres wider and globe-like in basal portion and contracted in distal portion 12
- Parameres markedly longer than the width of the medial lobe of parameres in dorsal or ventral view. Medial lobe of parameres nearly even in width in dorsal view 13
- 12 Elytra longer than wide. 9th abdominal segment of male more elongate. Well pigmented part of medial lobe of parameres longer. Thailand ... *E. dharmia* (Araya, Matsui, Nabhitabhata, & Panha, 1995)
- Elytra nearly as long as wide. 9th abdominal segment of male stouter. Well pigmented part of medial lobe of parameres shorter. Malay Peninsula, Borneo *E. yongii* (Araya, 1993)
- 13 Size larger. Elytra nearly as long as wide. Insertion of the bristle placed centrally in the puncture on dorsal surface of the body. Bristles on elytra not placed serially. Medial lobe of parameres with most part of dorsal surface less pigmented, and with distal sclerite continuous. Borneo *E. arayai* Huang & Imura, 2011
- Size smaller. Elytra longer than wide. Insertion of the bristle placed anteriorly in the puncture on dorsal surface of the body. Bristles on elytra placed serially. Medial lobe of parameres with only distal half of dorsal surface less pigmented, and with distal sclerite interrupted. Taiwan *E. chungii* Huang & Chen

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References cited

- Araya, K. (1993) Two new species of tropical *Aesalus* (Coleoptera, Lucanidae) from the Malay Peninsula. *Japanese Journal of Entomology*, 61, 697–710.
- Araya, K. & Hamid, A.A. (1996) Discovery of *Aesalus yongii* from Borneo. *Elytra*, 24, 329–330.
- Araya, K., Kon, M. & Johki, Y. (1993) A new species of the genus *Aesalus* (Coleoptera, Lucanidae) from the Malay Peninsula. *Elytra*, 21, 93–107. [Tokyo]
- Araya, K., Kon, M., Matsui, M., Nabhitabhata, J. & Panha, S. (1995) A new bristly *Aesalus* (Coleoptera, Lucanidae) from Peninsular Thailand. *Giornale Italiano di Entomologia*, 7, 73–77.
- Holloway, B.A. (1997) Elytral surface structures as indicators of relationships in stag beetles, with special reference to the New Zealand species (Coleoptera Lucanidae). *New Zealand Journal of Zoology*, 24, 47–64.
<http://dx.doi.org/10.1080/03014223.1997.9518105>
- Holloway, B.A. (1998) A re-evaluation of the genera of New Zealand Aesaline stag beetles (Coleoptera: Lucanidae). *Journal of the Royal Society of New Zealand*, 28, 641–656.
<http://dx.doi.org/10.1080/03014223.1998.9517578>
- Huang, H., Imura, Y. & Wu, L. (2011) Description of three new taxa of *Echinoaesalus* Zelenka from Borneo and Java (Coleoptera, Lucanidae). *Kogane*, 12, 97–107. [Tokyo]
- Huang, H. & Chen, C.-C. (2013) *Stag beetles of China 2*. Formosa Ecological Company, Xinbei, Taiwan, 716 pp.
- Krikken, J. (1975) *Aesalus timidus* sp.nov., a remarkable addition to the Indonesian stag-beetle fauna. *Entomologische Berichten (Amsterdam)*, 35, 49–51.
- Krikken, J. (2008) *Zelenkaesalus* subgen. n. for three Southeast Asian species of *Echinoaesalus* Zelenka, including *E. javanus* sp. n. (Coleoptera: Lucanidae: Aesalinae). *Koleopterologische Rundschau*, 78, 275–284.
- Zelenka, W. (1993) *Echinoaesalus* gen. n. eine neue Lucaniden-Gattung aus Sudostasien (Coleoptera, Lucanidae). *Koleopterologische Rundschau*, 63, 235–237.
- Zelenka, W. (1994) Zwei neue *Echinoaesalus*-Arten aus Sudostasien (Coleoptera, Lucanidae). *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen*, 46, 56–61.