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## Notes on the genus *Echinoaesalus* Zelenka, 1993 (Coleoptera: Lucanidae), with the description of a new species from the Malay Peninsula

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### Abstract

*Echinoaesalus cechovskyi* **new species** is described from the Malay Peninsula. *Echinoaesalus hidakai borneoensis* Huang & Imura, 2011 is elevated to the species level as *E. borneoensis* **new status**. The male or female genitalia of *Echinoaesalus timidus* (Krikken, 1975), *E. hidakai* (Araya, Kon, & Johki, 1993), *E. borneoensis*, and *E. sabahensis* Zelenka, 1994 are described and illustrated for the first time. The intraspecific variation of *E. timidus* is discussed.

**Key words:** Coleoptera, Lucanidae, Aesalini, *Echinoaesalus*, new species, new status, Malaysia, Borneo

### Introduction

The genus *Echinoaesalus* Zelenka, 1993 (Coleoptera: Lucanidae: Aesalinae: Aesalini) is distributed in Thailand, Malaysia, Indonesia, and Taiwan, with 13 species described (Huang & Chen 2015). Recently, we had a chance to examine more than 40 specimens of *Echinoaesalus* mainly collected by Mr. P. Cechovsky (Czech Republic) from Malaysia and Indonesia. Among this material both sexes of *Echinoaesalus timidus* (Krikken, 1975), *E. hidakai* (Araya, Kon, & Johki, 1993), and *E. borneoensis* Huang & Imura, 2011 (**new status**) and a male of *E. sabahensis* Zelenka, 1994 are presented, with male or female genitalia examined and illustrated herein for the first time. In addition, a new species from the *E. timidus* group described.

### Material and methods

More than 40 specimens were collected from the field as adults. 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 dorsal surfaces of head, pronotum, and elytra in Aesalini are not in a straight line in natural shape and are often variable in length when the adult is alive.

To examine the male and female genitalia, the last two abdominal segments were removed and treated with a weak solution of potassium hydroxide and then preserved in 70% ethanol. Photographs were taken with Olympus C-5050 camera mounted on Olympus SZX12 stereoscope.

Terminology follows Holloway (1997, 1998) and Huang *et al.* (2011).

The specimens studied in this work are mainly deposited in the private collection of Petr Cechovsky, Czech Republic, and a unique number (from L01 to L40) is given for each specimen in this collection. Such specimen numbers are stated in “Material” of the text and figure captions.

The following abbreviations are used in the text or figures: