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Author: Hsiung, Chia-Chi

Source: Journal of Orthoptera Research, 22(1) : 67-68

Published By: Orthopterists' Society

URL: https://doi.org/10.1665/034.022.0110

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Journal of Orthoptera Research 2013, 22(1): 67-68

SCIENTIFIC NOTE:

The identity of Japanese *Megacrania* Kaup (Phasmatodea: Phasmatidae)

Chia-Chi Hsiung

Lyman Entomological Museum and Research Laboratory, Department of Natural Resource Sciences, McGill University, Macdonald Campus, 21111 Lakeshore Road, Ste Anne de Bellevue, Quebec, Canada H9X 3V9. Email: georgehsiung@hotmail.com

Abstract

The identity of Japanese *Megacrania* Kaup is clarified. Yamasaki"s *Megacrnia alpheus adan* is a synonym of *Megacrania tsudai* Shiraki.

Key words

Stick insects, taxonomy, Phasmatidae, *Megacrania*

Introduction

Hsiung (1991) stated that several aspects of the biology of a species of *Megacrania* from Taiwan had been studied by various authors under the name *Megacrania alpheus* (Westwood) (Willemse 1955; Yeh & Chu 1891; Wan & Chu 1982; Chow & Lin 1986). Following a comparison of Shiraki's Taiwanese specimens with other related *Megacrania* species in the British Museum (Natural History), it became apparent that the species was misidentified. The late Dr. D.K. McE Kevan examined the related species in the British Museum (Natural History) on the author's behalf. Hsiung (1991) concluded that the Taiwanese species was *Megacrania tsudai* Shiraki, 1933 and redescribed it. Sixteen years later Hsiung (2007) completed a revision of the genus. There were minor mistakes in those two papers: the hind wings of *M. tsudai* reaches a little beyond the hind margin of the 2nd abdominal tergum, not the 3rd, and the posterior margin of the anal segment is slightly cleft medially.

Hsiung (2007) mentioned that Yamasaki (1991) discovered that a *Megacrania* species occurs in Japan and described it as subspecies *Megacrania alpheus adan* (Otte & Brook 2005). The author examined the photographs of Japanese *Megacrania* on the internet (www.stickinsect.info) and considered it was similar to *Megacrania tsudai*. The author wrote Dr. Yamasaki several times expressing his doubts and requesting the Japanese specimens for further study. Unfortunately he never received any response. Subsequently the author found that the photos of the Japanese *Megacrania* had been relabelled as "a subspecies of *M. tsudai*" on the internet, but there was no official publication of the change. Suzuki (2010) studied the Japanese stick insects and mentioned that *Megacrania* occurs in Iriomote Island (one of Okinawa Islands in Japan). He did not specifically indicated what kind of species in his paper. The author eventually received two female specimens and several eggs from Sigetake Suzuki as a gift. They were deposited in the Lyman Entomological Museum & Research Laboratory, McGill University, Quebec, Canada.

The author then compared *M. tsudai* from Taiwan with the Japanese M*egacrania* specimens and discovered that they were identical except for minor differences (see Table 1). He also compared the eggs of the Japanese *Megacrania* with Wang and Chu's (1982) description and illustration of the eggs of Taiwanese *Megacrania tsudai* and found that they were identical. Further, he compared the Japanese eggs of *Megacrania* with Yasumatsu's (1942) illustration of the egg of *Megacrania tsuda*i from Taiwan as well as with a closely related species, *Megacrania batesii* collected from Palau Island. The eggs from Japanese specimens also showed no difference from Yasumatsu's illustration of the egg of *M. tsudai* from Taiwan, and were only partially similar to his illustration of *Megacrania batesii* (see Fig. 1B). There is no particular reason to place the Japanese *Megacrania* species as a subspecies of either *M. tsudai* or even *alpheus*. The Japanese *Megacrania* is therefore, of the same species as *Megacrania tsudai* from Taiwan, and Yamasaki's (1991) *Megacrania alpheus adan* becomes a synonym of *M. tsudai*.

Morphological study

I have compared the Japanese *Megacrania* specimens with *Megacrania tsudai* (for the morphological description and measurements please see Hsiung 1991 & 2007) and found that there were no significant differences between those two (Table 1, Figs 1, 2). Though the hind wings in one of the Japanese specimens were slightly longer, they did not extend beyond the hind margin of the 3rd abdominal tergum.

Measurements of Japanese Megacrania species.— (In mm) ♀♀: length of body: 99 to 116; median length of pronotum: 7; median length of mesonotum: 15 to 17; length of tegmen: 14 to 18; length of hind wing: 32 to 40; length of femora: anterior 27, middle 13 to 15, hind 14 to 18; length of tibiae: anterior 19 to 22, middle 10 to 14, hind 16; length of egg: 7.6.

Specimens examined.— 2 ♀♀, Iriomote Island (one of Okinawa Islands), Japan.

Acknowledgment

The author is indebted to Dr. R. Manuel for a critical review of the manuscript. Thanks are also due Ms. Stéphanie Boucher for photographic and computer assistance. I am also very grateful to Mr. Sigetake Suzuki for his generous gift of the specimens from Japan.

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Table 1. The minor differences between *Megacrania tsudai* of Taiwan and Japanese *Megacrania* species.

Character	*M. tsudai* (Taiwan)	*Megacrania* species (Japan)
Body length	103-130 (mm)	99-116 (mm)
Number of granules on mesonotum	about 70	About 60
Hing wings	Moderate size, about 2.0 × as long as the tegmina	Moderate size about 2.2 × as long as the tegmina

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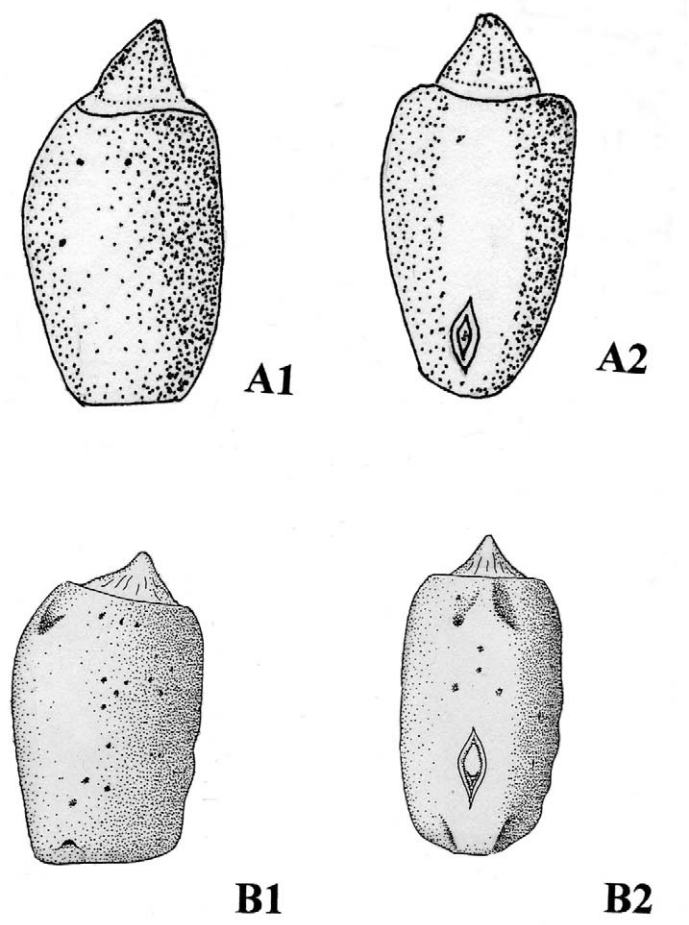


Fig.1. A. The egg of *Megacrania tsudai* Shiraki from Japan. A1, ventral view; A2, dorsal view. B. The egg of *Megacrania batesii* Kirby from Palau (=Belan) Is. (one of Caroline Islands). B1, ventral view; B2, dorsal view (after Yasumatsuk 1942).



Fig. 2. Dorsal view of *Megacrania tsudai* Shiraki from Japan.

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