

[研究文章 Research Article]

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Record of the Reptile Tick *Amblyomma helvolum* Koch, 1844 (Ixodidae: Amblyomminae) Collected from Sorsogon Province (Luzon Island), with a List of Squamate Hosts in the Philippines

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Abstract. *Amblyomma helvolum* Koch is a reptile-associated bont tick native to the Oriental and Australasian regions. This account reports host records of *A. helvolum* collected during the 2017 herpetological expedition in Sorsogon province. In addition, tick specimens from a dead king cobra collected in 2023 were included representing the first record of *A. helvolum* parasitizing *Ophiophagus hannah* (Elapidae) in the Philippines. Also, this paper represents the first published account of reptile-associated tick collected in Sorsogon province, Luzon Island, the Philippines. An updated list of squamate hosts of *A. helvolum* in the Philippines is also provided.

Keywords: Bicol, Ixodida, Reptilia, Sorsogon

Introduction

Sorsogon is located at the southern portion of the Bicol Peninsula and is considered the southernmost province on Luzon Island. Its mountainous terrain and remaining forests serve as the home to a variety of native and endemic species of flora (Pelser et al., 2023). Additionally, Sorsogon is home to several Philippine endemic herpetofauna such as *Gonocephalus sophiae* (Gray), *Limnonectes woodworthi* (Taylor), and *Tropidophorus grayi* (Günther) (Binaday et al., 2017). On the other hand, reptile-associated ectoparasites, especially ticks in this province, are poorly known. This account represents the first published record of reptile-associated *Amblyomma* in Sorsogon province.

Materials and methods

On 23 January to 05 February 2017, a herpetological expedition was conducted in Barangay Cawayan, Irosin municipality, Sorsogon province, Luzon Island, Philippines (12.70141°N, 124.07820°E). Collected reptiles were thoroughly examined for the presence of ticks which were carefully removed using fine-tipped forceps and preserved on vials containing 95% ethanol. Additional specimens collected in 2023 from a juvenile dead king cobra by a local resident were also included. Tick specimens were examined using Leica S9D stereomicroscope. Following the descriptions provided by Voltzit & Keirans (2002), the specimens were identified as *Amblyomma helvolum* Koch, a reptile-associated tick inhabiting the Oriental and Australasian region.

Results

Order Ixodida
Superfamily Ixodoidea
Family Ixodidae
Subfamily Amblyomminae
Genus *Amblyomma*

Amblyomma helvolum Koch
(Figure 1A)

Material examined. PHILIPPINES: LUZON: On *Tropidophorus grayi* (RMB 23124, 23125, 23190): 1♂, 1♀, Brgy. Cawayan, Irosin municipality, Sorsogon province, 01-II-2017, coll. AK Amarga; 2♂♂, 1♀, same loc., 04-II-2017, coll. AK Amarga; On *Ptyas luzonensis* (RMB 22780): 1♂, 1♀, Brgy. Cawayan, Irosin municipality, Sorsogon province, 01-II-2017, coll. AK Amarga, On *Varanus dalubhasa* (RMB 23077, 23079): 10♂♂, 10♀♀, Brgy. Cawayan, Irosin municipality, Sorsogon province, 03-II-2017, coll. AK Amarga; On *Ophiophagus hannah*: 1♂, 2 nymphs, Brgy. Magsaysay, Bulan municipality, Sorsogon province, VIII.2023, local collector.

Amblyomma helvolum is a widespread polyxenous reptile tick recorded in several countries in mainland Southeast Asia, including Indonesia, the Philippines, Taiwan, and Timor Leste (Petney et al. 2019; Oda et al. 2023; Amarga et al. 2022, 2023; Amarga & Lin 2023). The primary host group of *A. helvolum* is squamate reptiles, and it is rarely recorded on mammals and testudines. Recently, Kwak et al. (2023) reported the first case of human infestation. Additionally, *A. helvolum* is known to co-occur with other ecologically sympatric tick species, utilizing the same host (Amarga & Robbins 2023). In the Bicol Peninsula, accounts of *A. helvolum* and its associated hosts were first reported by Auffenberg (1988) based on specimens collected in Camarines Sur province. Subsequently, Amarga et al. (2022) documented *A. helvolum* in Albay province. This documentation is the first record of *A. helvolum* in Sorsogon province.

Furthermore, the recorded squamate host species in the Philippines for *Amblyomma helvolum* are as follows: *Dasia grisea* (Gray tree skink), *Eutropis multifasciata* (Many-lined sun skink), *Gonocephalus sophiae* (Negros forest dragon), *Hydrosaurus pustulatus* (Philippine sailfin lizard), *Lycodon capucinus* (Common wolf snake), *Malayopython reticulatus* (Reticulated python), *Otosaurus cumingii* (Cuming's sphenomorphus), *Ptyas luzonensis* (Smooth-scaled mountain rat snake) (Figure 1B), *Tropidophorus grayi* (Gray's keeled skink) (Figure 1C), *Varanus dalubhasa* (Enteng's monitor lizard) (Figure 1D), *V. mabitang* (Panay monitor) *V. marmoratus* (Marbled water monitor) *V. nuchalis* (Large-scaled water monitor) *V. olivaceus* (Gray's monitor) *V. palawanensis* (Palawan water monitor). In addition, due to its polyxenous nature and widespread geographic distribution, *A. helvolum* is also expected to be ectoparasitic on other Philippine native squamates.

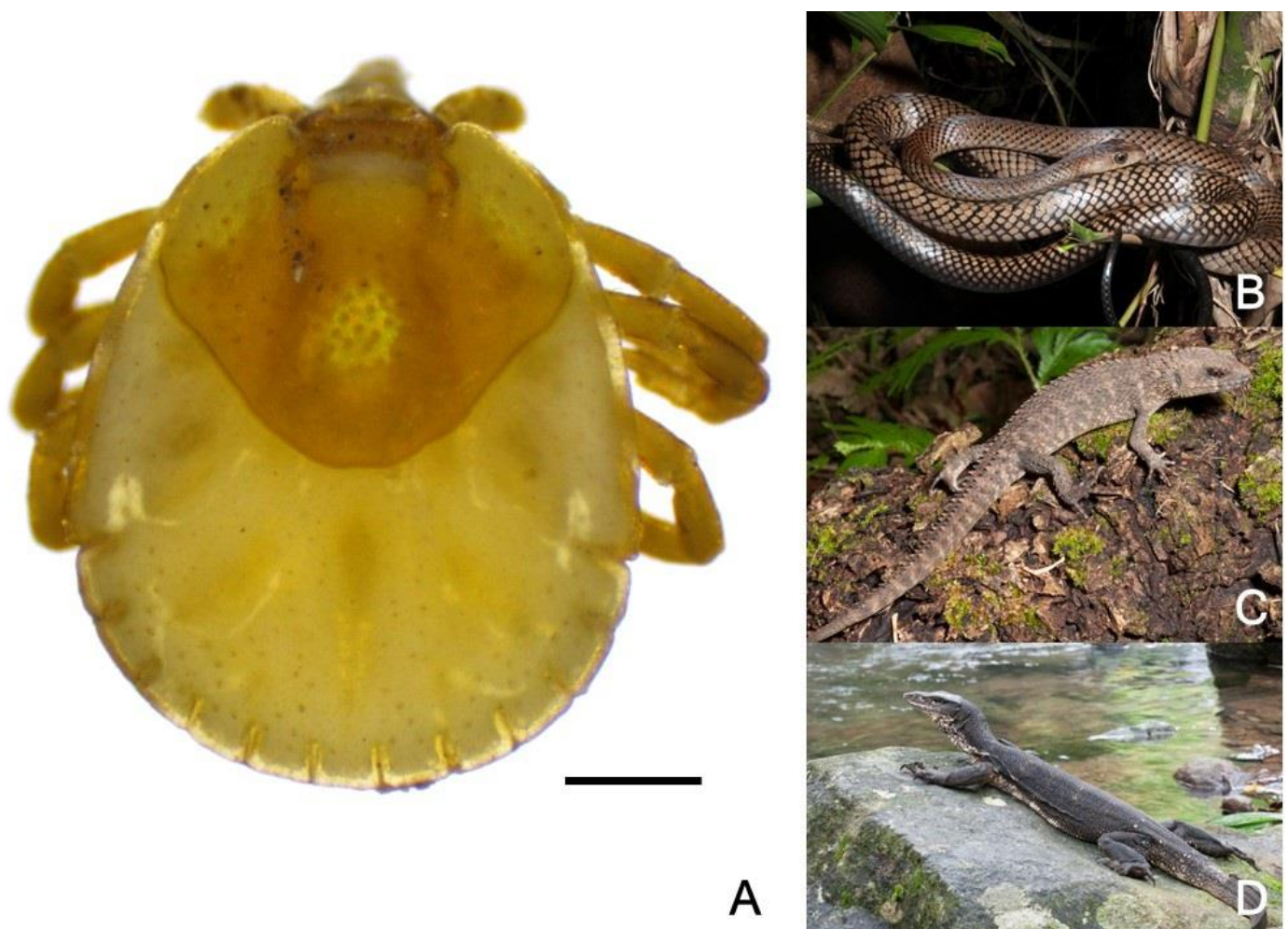


Figure 1. *Amblyomma helvolum* (A, dorsal view, unengorged ♀; scale= 1mm) and its reptile hosts collected during the 2017 expedition: (B) Smooth-scaled mountain rat snake (*Ptyas luzonensis*), (C) Gray's keeled skink (*Tropidophorus grayi*), and (D) Enteng's monitor lizard (*Varanus dalubhasa*). Host images were provided by Dr. Rafe Brown (Kansas University).

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寄生於爬蟲類的南蛇花蜱（硬蜱科：花蜱亞科）之索索貢省（呂宋島）紀錄，與菲律賓的有鱗目宿主列表

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摘要：南蛇花蜱(*Amblyomma helvolum* Koch) 是一種與爬蟲類相關的硬蜱，分佈於東方和澳洲地區。本文報告在 2017 年菲律賓呂宋島索索貢省爬蟲類調查期間收集的南蛇花蜱宿主紀錄，與首次發表在索索貢省與爬行動物相關的蜱蟲的紀錄，包含 2023 年收集的寄生於眼鏡王蛇 (*Ophiophagus hannah*) 的蜱標本，為菲律賓首次紀錄。此外提供菲律賓的南蛇花蜱之有鱗目宿主列表。

關鍵詞：比科爾、真蜱目、爬蟲類、索索貢