



## Two new species of *Rhagophthalmus* Motschulsky (Coleoptera: Rhagophthalmidae) from Matzu Archipelago, Taiwan with biological commentary

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### Abstract

Two new species of *Rhagophthalmus* Motschulsky, *R. beigansis* Ho **sp. nov.** and *R. giallolateralus* Ho **sp. nov.** collected in a vulnerable environment in two small islets of Matzu Archipelago, Lienchiang County are described and illustrated. This brings the total number of species in this genus to 35, and the number known from small off shore islets and islands to 10. Their importance to the conservation of such small and fragile island habitats is discussed.

**Key words:** Rhagophthalmidae, *Rhagophthalmus*, new species, Matzu Archipelago

### Introduction

*Rhagophthalmus* spp. are unusual because of the preservation of the incompletely larviform stage in the female (Kawashima *et al.*, 2010), the distribution of paired light organs along the sides of the body, and the luminescent signals of their mating system (Suzuki, 1997; Ohba, 2004). Li *et al.* (2008) gave an historical review of the genus *Rhagophthalmus*, indicated the various forms in which the family has been considered, and listed 33 species from SE Asia (Li *et al.*, 2008). They emphasized the important characters of male genitalia for taxonomy. Most species occur in China with the greatest diversity in Southern China. Only eight species from islands and islets adjacent to the continent have been reported: *R. confusus* Olivier (Sri Lanka), *R. filiformis* Olivier (Sri Lanka), *R. formosanus* Kawashima *et* Sugaya (Taiwan), *R. jenniferae* Kawashima *et* Satô (Taiwan), *R. motschulskyi* Olivier (Hong Kong, China), *R. notaticollis* Pic (Sri Lanka), *R. ohbai* Wittmer (Japan & Taiwan), and *R. sumatrensis* Olivier (Sumatra) (Olivier, 1911; Wittmer and Ohba, 1994; Wittmer, 1997; Kaeashima and Satô, 2001; Kawashima and Sugaya, 2003; Li *et al.*, 2008). Three species of *Rhagophthalmus* are known from Taiwan (Chen & Ho, 1998; Kawashima & Satô, 2001; Kawashima & Sugaya, 2003), but no *Rhagophthalmus* species have been found in other affiliated islands or islets.

Matzu Archipelago is in Lienchiang County near the Fujian province, and the islands are scattered over the coastal estuary of the Min Jiang River. The archipelago consists of 36 islands and islets, between 119°51' to 120°31'E, and 25°55' to 26°44'N (Figs 1–3).

Here we describe two new species of *Rhagophthalmus* found in Matzu Archipelago, viz. *R. beigansis* Ho **sp. nov.** and *R. giallolateralus* Ho **sp. nov.** By agreement of all the authors of this paper the species are attributable to Ho alone.

### Material and methods

#### Collection and identification

Specimens were collected on the islets of Beigan and Dongjyu in Matzu Archipelago, Lienchiang County. Collectors searched for luminous adult females at night, and at the same time used Malaise traps, sex-attraction, and