

RECORDS OF THE PRAYING MANTIS, *THEOPROPUS ELEGANS* (WESTWOOD) (MANTODEA: HYMENOPTODIDAE: HYMENOPTODINAE) IN SINGAPORE, WITH NOTES ON OVIPOSITION AND HATCHING

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INTRODUCTION

The praying mantis, *Theopropus elegans* (Westwood, 1832) is the type species for the genus *Theopropus* Saussure, and is widely distributed throughout Southeast Asia, having been recorded from Myanmar, Peninsular Malaysia, Sumatra, Java, and Borneo (Ehrmann, 2002). This species is most certainly a forest-dependant insect, and the few sightings of this mantis in Singapore have only been confined to the forests of the Central Nature Reserves. This species is rarely encountered, possibly because of: (1) its inherent colour patterns, which serve to camouflage it against the overall green background of the forest foliage, and (2) a possible preference for life at the upper canopy level, with occasional visits to the lower levels. Nevertheless, it is encouraging to note that this species is still breeding in Singapore's remnant forests. For this article, besides the local status of *Theopropus elegans*, we also provide an account of its ootheca and the subsequent hatching of the eggs therein.

OBSERVATIONS

Within the existing forested habitats of the Central Nature Reserves, *Theopropus elegans* has been sighted in various localities. In the MacRitchie Reservoir forest, an adult female was observed to be perched atop the flowers of a local shrub, *Leea indica* (Family Vitaceae) by Ngon Soon Kong (National Parks Board) on 29 Jun.2006 (Fig. 1). This female had a relatively flat abdomen and may have been seeking prey to hunt, such as unwary butterflies (Lepidoptera) or bees (Hymenoptera) visiting the inflorescence. This same individual was observed on the same shrub the next day.



Fig. 1. Adult female *Theopropus elegans* on the inflorescence of *Leea indica* at Bukit Kallang, Central Catchment Nature Reserve on 29 Jun.2006. (Photograph by: Ngon Soon Kong).



Fig. 2. Gravid adult female (body length: 40 mm) from Bukit Timah Nature Reserve. Note the significantly distended abdomen.



Fig. 3. Dorsal view of gravid female from Bukit Timah Nature Reserve. Note the characteristic 'smiley face' pattern on its wings.

In the Upper Peirce Reservoir forest, another female was sighted and photographed by Francis Seow-Choen on 5 Aug.2008. In Bukit Timah Nature Reserve (BTNR), an adult female (body length 40 mm) was discovered by the second author on 17 Jun.2008. Upon closer inspection, its abdomen was observed to be heavily distended and suspected to be a gravid individual (Fig. 2). From the dorsal view, a characteristic pattern of the typical 'smiley face' was clearly visible (Fig. 3).



Fig. 4. Female guarding her clutch of freshly laid eggs within an elongate ootheca. The ootheca was 90 mm long. Photographed on the morning of 26 Jun.2008.

The female mantis was then reared in captivity and nourished with a diet of wild-caught, orthopteran prey, including small crickets, grasshoppers, and katydids. On the morning of 26 Jun.2008, the female was found to be standing guard beside an elongated strand of freshly deposited eggs. Oviposition was suspected to have either occurred the night before, or in the pre-dawn hours. The eggs within an ootheca were laid on the underside of the lid of the plastic aquarium in which the female was housed. The beige ootheca was 90 mm long with a uniform width of 5 mm, and tapering at both ends (Fig. 4). The female was then promptly released back to its original locality.

On the evening of 24 Jul.2008, the entire batch of about 120 eggs hatched sequentially. Each hatchling was approximately 6–7 mm long. Unlike their parents, they were a deep orange. Their abdomens were arched upwards, as is typical of mantid nymphs (Fig. 5). The next morning, the hatchlings were released into the forest of the BTNR. A few representative voucher specimens were preserved, together with the corresponding empty ootheca, and deposited at the Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research (ZRC.6.20944).



Fig. 5. Newly emerged hatchlings (body lengths: 6–7 mm) survey their surroundings, shortly after being released at Bukit Timah Nature Reserve on 26 Jul.2008.

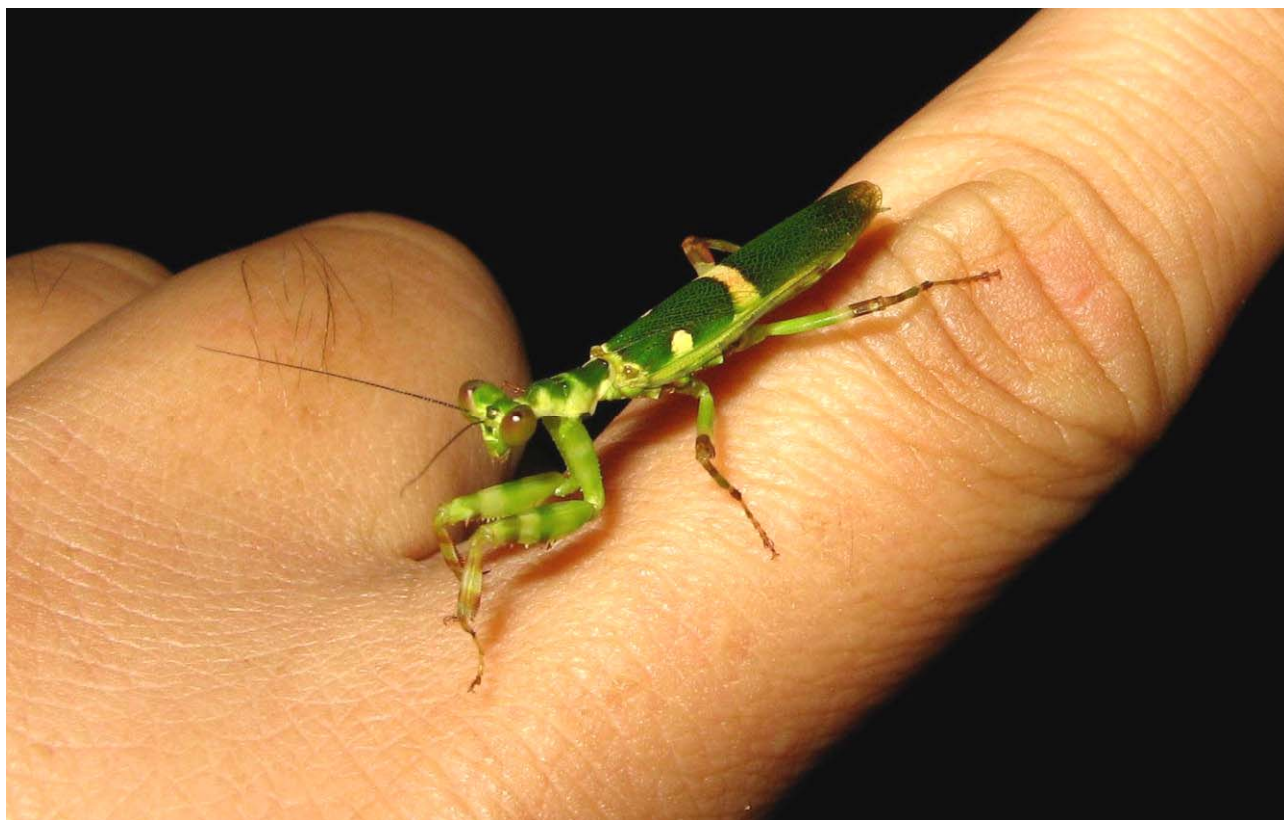


Fig. 6. A Bornean example of an adult male (body length: 20 mm), encountered at a forest field research station in Bintulu Division, Sarawak, East Malaysia on the night of 24 Mar.2007.

Thus far, adult male specimens have not been encountered in Singapore. At maturity, the males of this species are known to be about half the size of the females (Bischoff et al., 2001). Outside Singapore, the first author has encountered a male specimen in Borneo (Bintulu Division, Sarawak), with an estimated body length of 20 mm (Fig. 6). At present, our understanding of the population size and status of this, and other mantid species in Singapore, is far from complete. It is hoped that this will become clearer with increased research efforts, since praying mantids have been regarded as good keystone predators which hold ‘the fabric of arthropod assemblages together’ (Hurd, 1999).

ACKNOWLEDGEMENTS

We are grateful to Ngon Soon Kong, Derek Liew and Francis Seow-Choen for sharing their field sightings and photographic records. We thank Mishak Shunari for his assistance with the successful release of the hatchlings at Bukit Timah Nature Reserve. The encouraging comments by an anonymous reviewer were most appreciated.

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