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A NEW MONOTYPIC GENUS OF THE TRIBE TENODERINI (MANTODEA: MANTIDAE: TENODERINAE) FROM THE SOUTHERN THAILAND

P. Tarapipattanakun^{1*)}, T. Unnahachote²⁾

1) Bang Bo, Bang Bo, Samut Prakan, 10560, Thailand. *Corresponding author,
E-mail: pannapattarapipattanakun@gmail.com

2) Ramintra, Kannayao, Bangkok, 10230, Thailand.

Summary. A new genus and species *Tenomaculosa hexapunctata* **gen. et sp. n.** of praying mantis (Mantodea) is described from the southern Thailand. The new genus distinguished from related genera by the presence of six distinct black spots on the internal surfaces of the profemur and, in lateral view, by widened posterior part of the pronotum. Additionally, unidentified species of the genus *Mesopteryx* Saussure, 1870 is found in Thailand for the first time. A key to the genera of the subtribe *Tenoderina* in the Oriental region is also given.

Key words: Mantodea, praying mantises, Mantidae, Tenoderinae, Tenoderini, Oriental region.

П. Тарапипаттанакун, Т. Уннахачоте. Новый монотипичный род трибы Tenoderini (Mantidae: Tenoderinae) из южного Таиланда // Дальневосточный энтомолог. 2025. N 538. С. 1-11.

Резюме. Из южного Таиланда описан новый род и вид богомолов (Mantodea) *Tenomaculosa hexapunctata* **gen. et sp. n.** Новый род отличается от близких родов наличием шести отчетливых черных пятен на внутренней поверхности

передних бедер и по переднеспинке с расширенной сбоку задней частью. Кроме того, точно не установленный вид рода *Mesopteryx* Saussure, 1870 впервые найден в Таиланде. Приведена определительная таблица родов подтрибы Tenoderina Ориентальной области.

INTRODUCTION

The Mantidae is one of the most highly diverse families of praying mantises, including more than 70 genera to date. The tribe Tenoderini of the subfamily Tenoderinae is classified by the presence of aafa and pafa, which are widely spaced apart, an elongated loa and mostly reduced sdpm. Eight genera are divided into two subtribes as Polyspilota Giglio-Tos, 1917 and Tenoderina Brunner de Wattenwyl, 1893. Among them, only three genera belonging to subtribe Tenoderina have been reported in the Oriental region: *Tenospilota* Roy et Ehrmann, 2014, *Tenodera* Burmeister, 1838, and *Mesopteryx* Saussure, 1870 (Schwarz & Roy, 2019). In Thailand, four species in two genera have been reported, namely *Tenospilota nova* Roy et Ehrmann, 2014, *Tenodera aridifolia* (Houttuyn in Stoll, 1813), *T. fasciata* (Manuel, 1797), and *T. sinensis* Saussure, 1871 (Ehrmann, 2002; Roy & Ehrmann, 2014; Schwarz *et al.*, 2018). Based on recent observations by the authors, the genus *Mesopteryx* is new for the fauna of Thailand, and a new monotypic genus is described from southern Thailand, based on differences in profemoral spots, the shape of the prothorax in lateral view, and male genitalia structures.

MATERIAL AND METHODS

The specimen was collected using a light trap at the type locality, then preserved dry in a hot air oven at 50°C for 72 hours. Measurements were taken with a digital caliper and follows Vermeersch (2018). Terminology and systematic arrangement follow Brannoch *et al.* (2017) and Schwarz & Roy (2019). Specimens were studied using an OPTIKA® microscope (OPTIKA Microscopes Italy). Photographs were taken directly from the specimens using a Canon Eos 6D attached to EF 100mm f/2.8L Macro IS USM lens. and processed in Adobe Photoshop 2023. Male genitalia images were taken with the NIS-Elements-D from a series of source images taken with a Nikon Digital Sight-Ri1 camera attached to a Nikon AZ100M stereoscope.

For male genitalia preparation, the tip of the abdomen was separated from the specimen and macerated in a 10% potassium hydroxide (KOH) solution. It was then placed in a microcentrifuge vial with glycerine for long-term preservation and deposited along with the type specimen. Type specimens are deposited in the Thailand Natural History Museum, Pathum Thani, Thailand (THNHM), and the additional comparative materials are deposited in collections of the first author (PTPC) and second authors (TUPC).

TAXONOMY

Family Mantidae Latreille, 1802

Subfamily Tenoderinae Brunner de Wattenwyl, 1893

Tribe Tenoderini Brunner de Wattenwyl, 1893

Subtribe Tenoderina Brunner de Wattenwyl, 1893

Key to the genera of subtribe *Tenoderina* known from Oriental region

- 1 Hindwing transparent, without any pattern or black cross veins at costal area 2
 - Hindwing with infumate discoidal area, with pattern or stripes in the discoidal area; if transparent, with black cross-veins at costal area 3
- 2 Meso- and metafemora with apical spine, Prothorax thicker towards the end in lateral perspective, profemur with black spots at base of AvS, hindwing transparent without any pattern ***Tenomaculosa* gen. n.**
 - Head width significantly larger than its height; meso- and metafemora without apical spine; forewings shorter than abdominal length in both sexes ***Mesopteryx*** Saussure, 1870
- 3 Hindwings with wide black transverse stripes in the discoidal field; profemur always with a large black spot at the claw groove ***Tenospilota*** Roy et Ehrmann, 2014
 - Hindwings with darkened pattern at least in the discoidal area, sometime with infumate areas along the cross-veins in the discoidal area; rarely hindwings mostly transparent, always with black cross-veins at the costal area; profemur usually without black spot at the claw groove, rarely with ***Tenodera*** Burmeister, 1838

Genus *Tenomaculosa* Tarapipattanakun et Unnahachote, gen. n.

<https://zoobank.org/NomenclaturalActs/AC0ABDBB-882B-476B-B226-5E5A6C131EBE>

Type species: *Tenomaculosa hexapunctata* sp. n., here designated.

DESCRIPTION. Interior surface of the compound eyes concave; vertex arched (Fig. 1). Pronotum slender and very elongated, with indistinct lateral expansion, and without a median keel on the metazona. The pronotum is thicker towards the end in lateral view. The prozona is covered with small tubercles, while the metazona is smooth. DS and AvS of the profemur with black spot at the base. Wings are longer than the tip of the abdomen, with forewings shorter than hindwings (Fig. 2). Hindwings are transparent and without any pattern; the costal area has no black cross-veins. Male genitalia with aafa form an acute projection; pafa without spines, but presents uneven, small, spine-like tubercles under high magnification (Fig. 5).

DIFFERENTIAL DIAGNOSIS. *Tenomaculosa* gen. n. can be distinguished from *Tenospilota* by the pronotum being thicker towards the end in lateral view (in *Tenospilota*, the thickness is equal throughout the entire pronotum). The internal surfaces of the profemur presents six distinct black spots (only one large black spot is present around the tibial spur groove). The forewings without any pattern (with dark patches present in the discoidal areas), and the hindwings are transparent (with five black horizontal stripes patterns on the discoidal area).

Tenomaculosa gen. n. can be distinguished from *Mesopteryx* by being smaller in size, head indistinctly transverse (in *Mesopteryx*, distinctly transverse). The pronotum is thicker towards the end in lateral view (the thickness is equal throughout the

entire pronotum). The internal surfaces of the profemur present six distinct black spots (without any black spots). A genicular spur is present on the profemur (absence of genicular spur). Wings are longer than the tip of the abdomen (distinctly shorter than the tip of the abdomen).

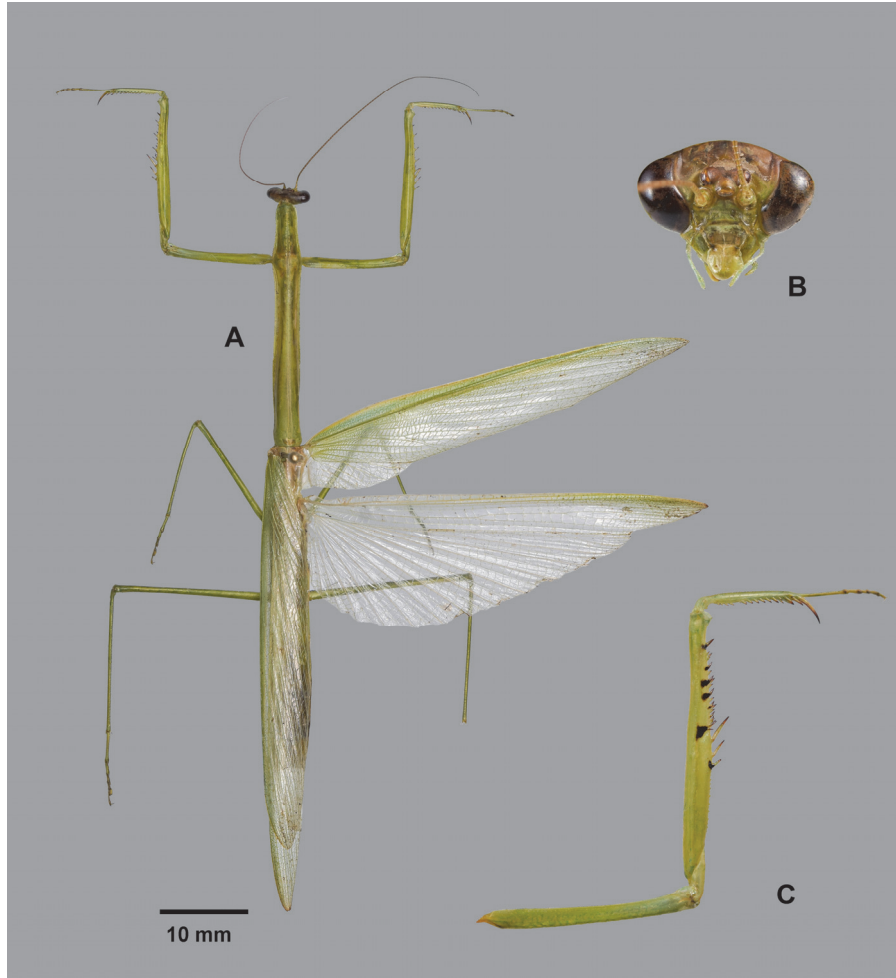


Fig 1. *Tenomaculosa hexapunctata* gen. et sp. n.: A – holotype male in dorsal view; B – head in frontal view; C – inner side of prothoracic leg.

Tenomaculosa gen. n. distinguished from *Tenodera* by the rounded metazonal tergite (in *Tenodera*, longitudinal keeled at the middle). The pronotum is thicker towards the end in lateral view (the thickness is equal throughout the entire pronotum). The internal surfaces of the profemur present six distinct black spots (lack of any

spots, rarely present but less than six). The costal areas of the forewings in male is sub-opaque (opaque in both sexes). The hindwings are transparent (in *Tenodera*, with dark pattern present in the discoidal area, or if transparent, always with black transverse cross-veins at the costal areas).

ETYMOLOGY. The genus name is a combination of the word “Teno” referring to the related genus *Tenodera*, which shares some characteristics, and the Latin word “*maculosa*”, meaning spotted, in reference to the black spots on the profemur.

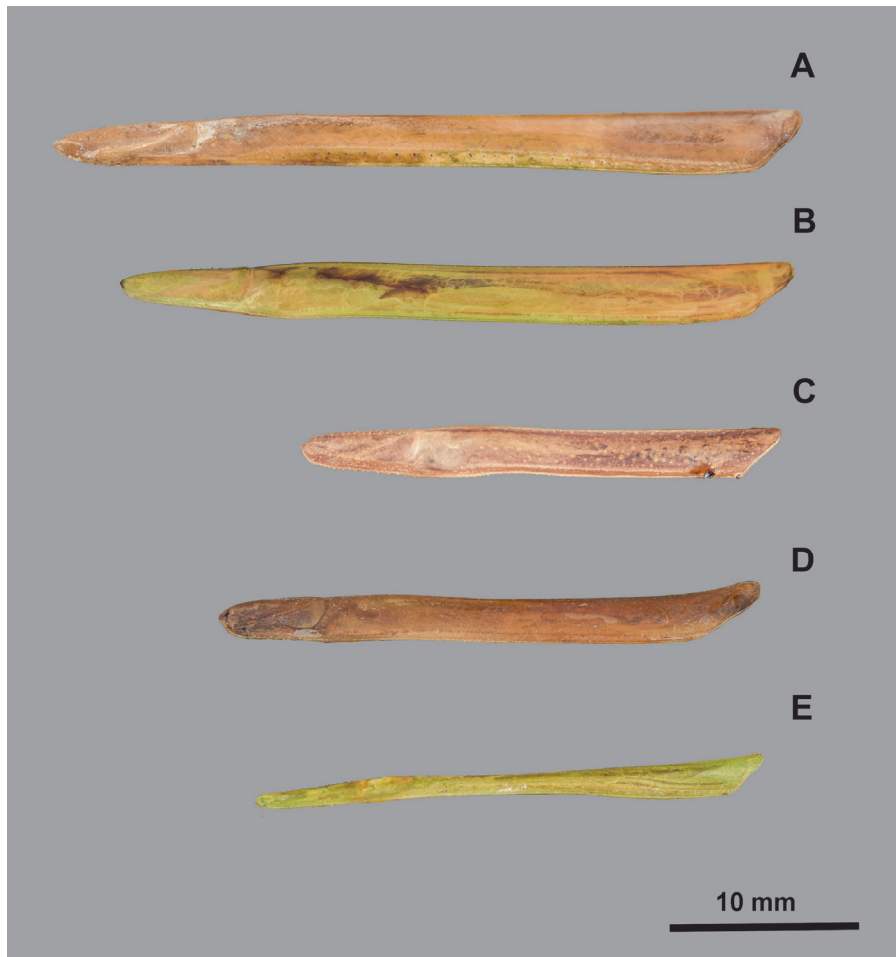


Fig 2. Pronotum of the subtribe Tenoderina genera, lateral view: A – *Mesopteryx* sp.; B – *Tenodera* cf. *fasciata*; C – *Tenodera* *aridifolia*; D – *Tenospilota* *nova*; E – *Tenomaculosa* *hexapunctata* gen. et sp. n.

***Tenomaculosa hexapunctata* Tarapipattanakun et Unnahachote, sp. n.**

<https://zoobank.org/NomenclaturalActs/18D9CB94-7121-416F-943F-99E43E8117D7>

Figs 1, 2E, 3E–F, 4E, 5

TYPE MATERIAL. Holotype – ♂ (THNHM-I-00030486), Thailand, Nakhon Si Thammarat Prov., Phrom Khiri Dist., Na Riang Subdist., 22.IV 2025, leg. local collector [THNHM].

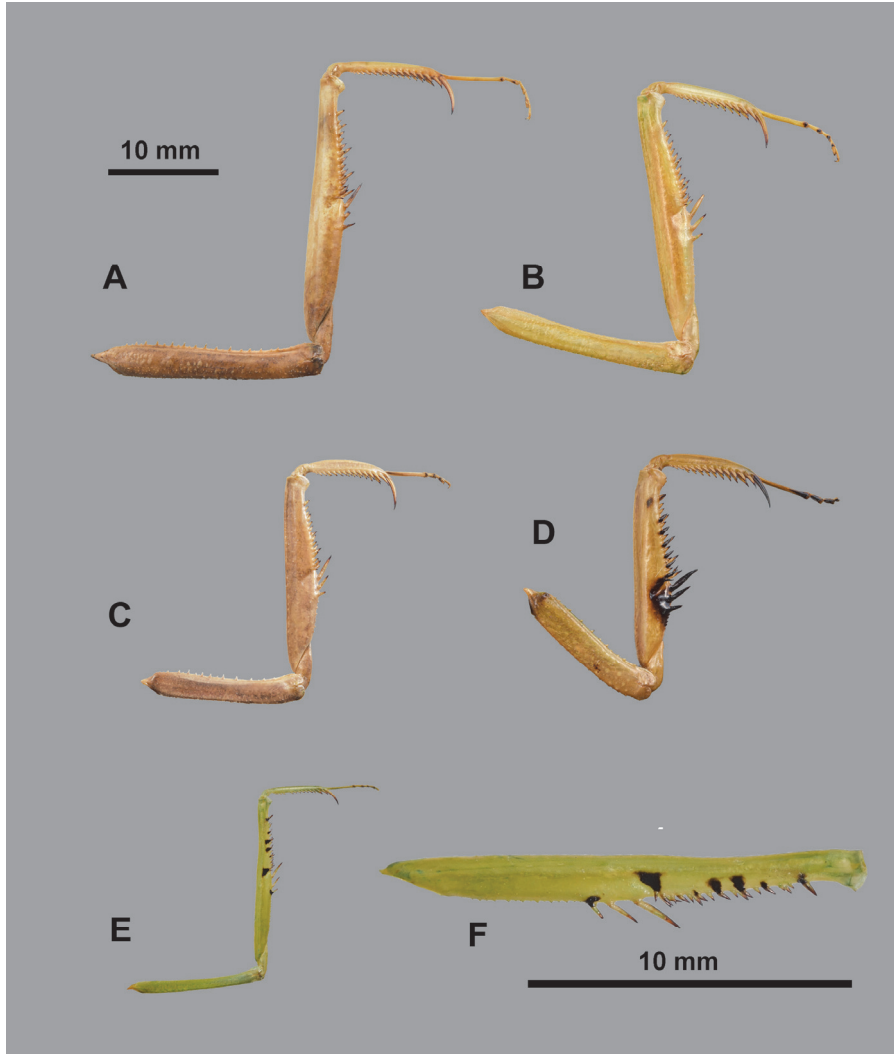


Fig 3. Fore legs of the subtribe Tenoderina genera: A – *Mesopteryx* sp.; B – *Tenodera* cf. *fasciata*; C – *Tenodera aridifolia*; D – *Tenospilota nova*; E, F – *Tenomaculosa hexapunctata* gen. et sp. n.

DESCRIPTION. Male. *Head* (Fig. 1B). Wider than long, compound eyes oval with a concave interior surface, vertex arched. Ocelli large with elevated ocellar tubercle, antenna filiform. Lower frons transverse, surface smooth without vertical ridges at the middle but lateral margins with ridges. Clypeus and labrum smooth surface with medial ridges.

Thorax (Fig. 2E). Pronotum rounded, slender and long. Metazona longer than the prozona with a ratio $MzL:PzL = 4.0$. Lateral margins of the metazona are parallel to each other. Lateral expansions are indistinct, with small tubercles at the lateral margins; more prominent in prozona. Lateral expansions of the metazona are deflexed ventrally. The surfaces of the prozona are covered with small tubercles, while the metazona is smooth. The pronotum is thicker towards the end in lateral view. Intercervical sclerites are connected to each other and distinctly concave at the middle. Lateral cervical sclerite are longer than wide. A single slender uninterrupted ventral cervical sclerite is present. The surfaces of the postcervical plate is covered with small tubercles; a distinct median groove is present with lateral elevations. Paramedian carinae are long and tuberculated. Metathorax with a DK ear (Yager & Svenson 2008).

Prothoracic leg (Figs 1C, 3E–F). Coxa slender, with slightly curved dorsal margins with small spines presented along the margins; coxal lobe divergent. The ventral antero-distal apical lobe of the coxa is rounded. Femur with slightly concave dorsal

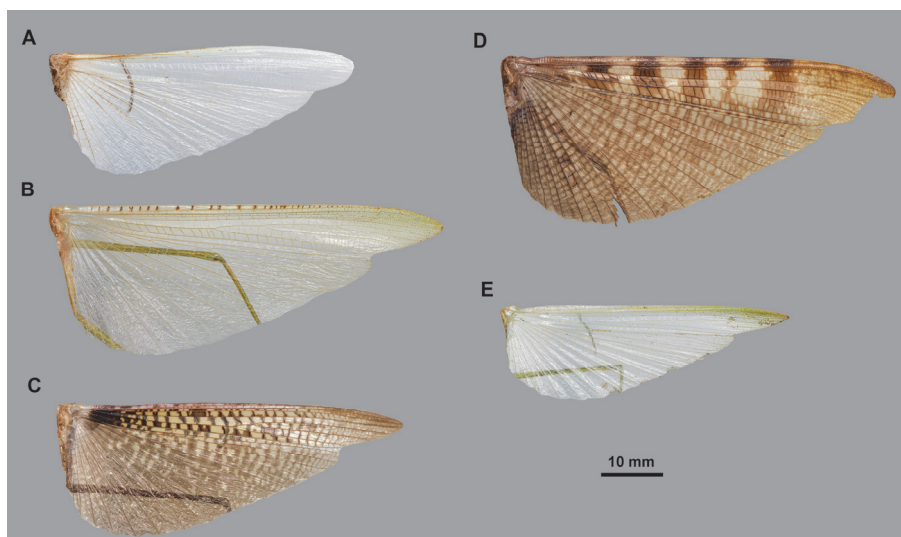


Fig 4. Hindwings of the subtribe Tenoderina genera: A – female *Mesopteryx* sp.; B – female *Tenodera* cf. *fasciata*; C – female *Tenodera* *aridifolia*; D – male *Tenospilota nova*; E – male *Tenomaculosa hexapunctata* gen. et sp. n.

margins at the distal half, ventral margins toothed at the proximal half before the first DS. Spine configuration i l i l i l i l i l i l i l (left and right respectively, right side possibly not well developed). 1st, 2nd, 4th, 6th, 8th, 10th, 12th and 15th spines are ifuscated while the 3rd, 5th, 7th, 9th, 11th, 13th, 14th spines are black at the tip, DS and PvS darken at the tip. Internal surfaces with six distinct and one indistinct black spots, three large spots presented at base of 1st (the largest and more or less expanding reached to the middle of femoral width), 8th and 10th AvS, another three medium spots presented at base of 1st DS, 12th and 15th AvS, the indistinct one presented at

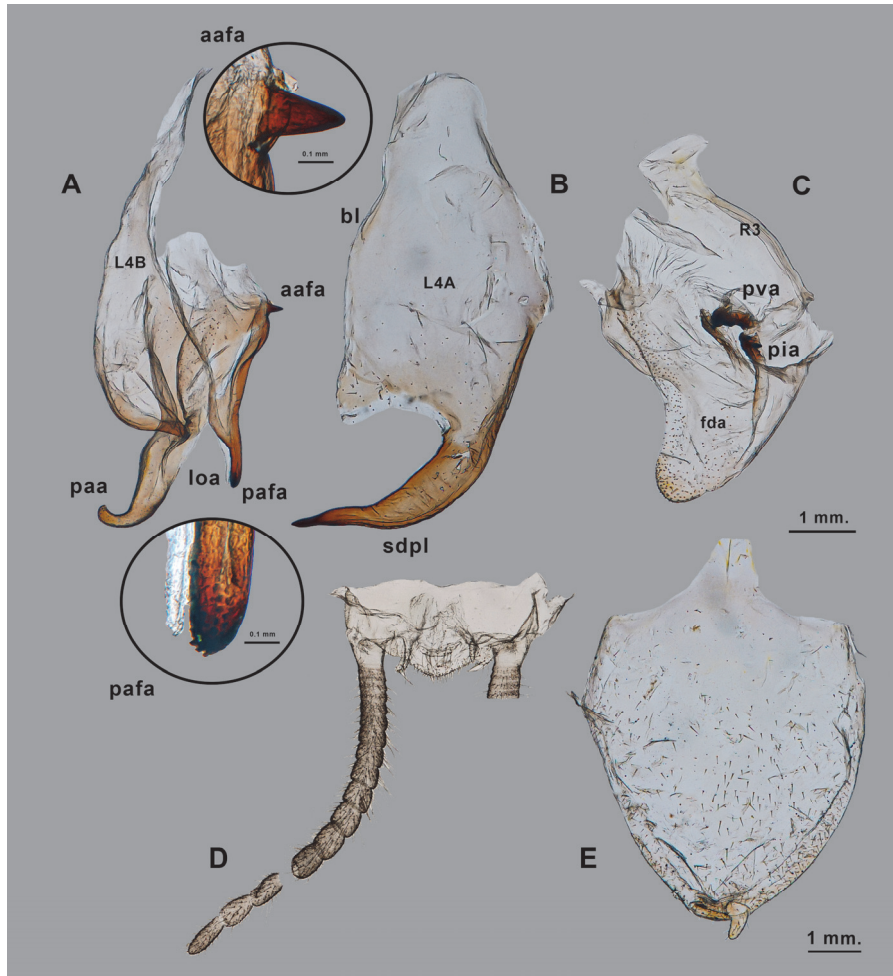


Fig 5. *Tenomaculosa hexapunctata* gen. et sp. n., male genitalia and terminalia. A – ventral view of left phallomere; B – ventral view of ventral phallomere; C – ventral view of right phallomere; D – supraanal plate and cerci; E – subgenital plate.

base of 6th AvS. Tibia with nine to ten AvS, thirteen to fourteen PvS, the first PvS is presented far from the proximal end. The first segment of the protarsi is longer than the rest combined.

Meso- and metathoracic legs. Long and slender, simple without any lobes, femoral apical spines and genicular spurs present. First tarsal segment shorter than the rest combined.

Wings (Fig. 4E). Macropterous, wings longer than the tip of the abdomen, apex pointed and narrow. Forewings distinctly shorter than hindwings. Costal areas narrow, slightly convex at the proximal part, greenish and sub-opaque, costal margins smooth with yellowish line along its length, narrower towards the end. Hindwings transparent and unpatterned.

Abdomen (Fig. 5D–E). Elongated, lateral margins parallel to each other. Supra anal plate transverse, with hair on the posterior margin. Cerci cylindrical-shaped with 15 segments, each segment with hairs. Subgenital plate longer than wide, covered with hairs, styli cylindrical-shaped and covered with small hairs.

Genitalia (Fig. 5A–C). Ventral phallomere of left phallic complex with a thick and well sclerotised sdpl. Paa long and hook-shaped. Aafa acute, and widely separated from pafa, both are strongly sclerotised, especially at the tip. Pafa without spine, but with uneven, small spine-like tubercles under high magnification, not flattened in lateral view. Loa elongated, almost as long as pafa. Fda with small hairs, particularly at the tip. Pva and pia are very well sclerotised.

Female. Unknown.

MEASUREMENTS (in mm). Males: TL = 74.9, HW = 4.9, HH = 3.8, PL = 25.2, PW = 3.3, PnW = 2.8, PzL = 5.0, MzL = 20.0, TgL = 40.5, AL = 41.7, PCL = 11.5, PFL = 14.9, PTL = 7.2, PtL = 6.0, MsFL = 12.9, MsTL = 10.6, MstL = 5.4, MtFL = 16.9, MtTL = 15.8, MttL = 8.2

ETYMOLOGY. The specific name “*hexapunctata*” is a combination of the word “*hexa*” meaning six, and the word “*punctata*” which is a Latin word meaning points. The name refers to the six black points on the inner side of the profemur of a new species.

DISTRIBUTION. Currently known from the type locality.

NEW RECORD

Genus *Mesopteryx* Saussure, 1870

REMARKS. This genus is clearly different from other genera by its strongly transverse and flattened head, as well as by its shortened wings, which never reach the tip of the abdomen. There are currently three species described from India and Philippines. After the authors examined the Thai specimens from central Thailand, our specimen fits to the genus *Mesopteryx*; therefore, the genus is recorded from this country. Unfortunately, the identification of Thai species is still doubtful at this moment, future revision of this genus is needed.

***Mesopteryx* sp.**

Figs 2A, 3A, 4A, 6

MATERIAL EXAMINED. Thailand: Chai Nat Prov., Manorom Dist., Khung Samphao Subdist., 10.X 2023, 1♀, 1♂, leg. Nachanon Chotimongkol [TUPC].

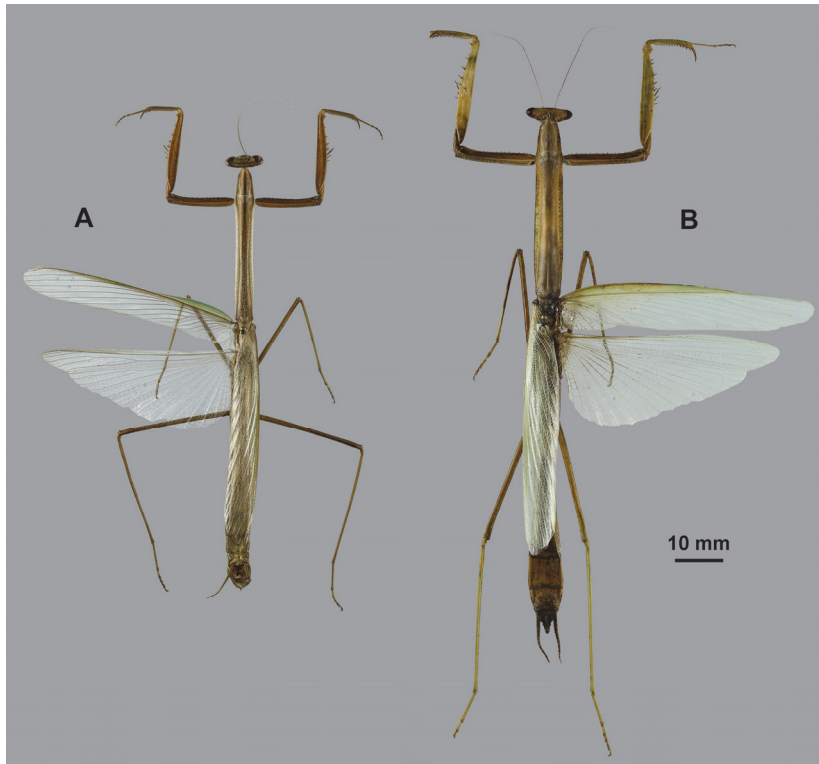


Fig 6. *Mesopteryx* sp. A – male, dorsal view; B – female, dorsal view.

DISCUSSION

The discovery of *Tenomaculosa hexapunctata* gen. et sp. n. in areas used for rubber and oil palm plantations in southern Thailand reveals that Thai Mantodea biodiversity is still far from being completed. Even cultivated areas can still harbor previously undocumented taxa, including those at the genus level. Despite being part of a major biodiversity hotspot, Mantodea fauna of southern Thailand remains underexplored, not only in the protected areas like National parks or wildlife sanctuaries, but also in disturbed areas like agricultural plantations which are still waiting for intensive observations. We know very little about the biology and distribution of *Tenomaculosa hexapunctata* gen. et sp. n.; the female is still unknown due to a lack of specimens. Lastly, the species identification of the genus *Mesopteryx* in this work is still doubtful, due to being poorly studied and having a lack of specimens. The revision of the genus is needed for solving its taxonomic problem.

ACKNOWLEDGMENTS

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