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**REVIEW OF THE GENUS *AMORPHOSCELIS* STÅL, 1871 (MANTODEA: AMORPHOSCELIDAE) FROM THAILAND WITH DESCRIPTION OF A NEW SPECIES**

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**Summary.** Two species of the small bark-dwelling praying mantis genus *Amorphoscelis* Stål, 1871 are recorded from Thailand, of them *A. pathomwattananuraki* sp. n. is described from the rainforest of Southern Thailand. New species can be easily distinguished from another Thai species, *A. singaporana* Giglio-Tos, 1915, by the shape of the juxtaocular bulges, the last segment of the cerci, and the male genitalia.

**Key words:** praying mantis, taxonomy, new species, fauna, Southeast Asia.

**Т. Уннахахоте. Обзор рода *Amorphoscelis* Stål, 1871 (Mantodea: Amorphoscelidae) из Таиланда с описанием нового вида // Дальневосточный энтомолог. 2025. N 518. С. 14-21.**

**Резюме.** В Таиланде найдено 2 вида обитающих на стволах деревьев богомолов рода *Amorphoscelis* Stål, 1871. Из них *A. pathomwattananuraki* sp. n. описывается из тропических лесов Южного Таиланда. Новый вид можно легко отличить от другого тайского вида – *A. singaporana* Giglio-Tos, 1915, по форме окологлазных бугорков, последнему сегменту церок и гениталиям самца.

**INTRODUCTION**

The genus *Amorphoscelis*, a small bark-dwelling praying mantis, was described by Stål in 1871. Prior to this study, it comprised 50 species described from the Afrotropics, Palearctic Asia, and Oriental region (Wu & Liu, 2021). In Thailand, only one species, *A. singaporana* Giglio-Tos, 1915, was previously recorded (Roy, 1967, 2010; Wu & Liu, 2021). The second species of the genus is found in the rainforest of Southern Thailand. It is the first representative of the *philippina* species group in the Southeast Asian mainland. The *philippina* species group can be easily recognized by simple male genitalia, especially the ventral phallomere. The species group previously comprised three species: *A. philippina* Werner, 1926 from Mindanao, Philippines, *A. sulawesiana* Roy, 2010 from Sulawesi, Indonesia; and *A. siebersi* Werner, 1933 from Central Borneo (Werner, 1926, 1933; Roy, 2010). The review of the genus *Amorphoscelis* from Thailand and the description of a new species are given below.

## MATERIAL AND METHODS

Specimens of *Amorphoscelis* were collected using light traps or by observation during the daytime from several localities in Thailand. All specimens were preserved in a freezer before the mounting process. For male genitalia preparation, the tip of the abdomen was separated from the specimen and macerated in a 10% potassium hydroxide (KOH) solution, then rinsed with demineralized water and placed in glycerine for dissection. Afterwards, it was placed in a microcentrifuge vial with glycerine for long-term preservation and deposited with the holotype.

Observation of the external structures and male genitalia was done with an Optika microscope (Optika microscope, Italy). Both mounted specimens and male genitalia images were taken with NIS-Elements-D from a series of source images taken with a Nikon Digital Sight-R1 camera attached to a Nikon AZ100M stereoscope. The photographs of the type specimens of comparative species were provided by Dr. Beulah Garner.

The morphological nomenclature follows Brannoch *et al.* (2017) and Schwarz & Roy (2019). The distribution map was made using SimpleMappr (Shorthouse, 2010).

Abbreviations: afa – phalloid apophysis; bl – basal lobe of ventral phallomere; paa – apical process of left phallomere; pia – process posterolateral to pva; pva – process anteromesal to pia; sdpm – median secondary distal process; AvS – anteroventral spines; PvS – posteroventral spine; DS – discoidal spine; NHMUK – Natural History Museum, London, England; THNHM – Thailand Natural History Museum, Pathum Thani, Thailand; TUPC – Thornthan Unnahachote's personal collection.

## TAXONOMY

### Order Mantodea Burmeister, 1838

### Family Amorphoscelidae Stål, 1877

### Subfamily Amorphoscelinae Stål, 1877

### Genus *Amorphoscelis* Stål, 1871

Type species: *Amorphoscelis annulicornis* Stål, 1871.

**DIAGNOSIS.** Small-sized and dorso-ventrally flattened. Head wider than the pronotum, with distinct juxtaocular bulges. Compound eyes rounded with three ocelli. Lower frons narrow. Antennae long and filiform, extending beyond the tip of the abdomen. Pronotum short, longer than wide, with a more or less bumpy dorsal surface. Forecoxae smooth. Forefemur with one DS, without AvS or PvS. Foretibiae with only one tibial spur. Foretarsus longer than foretibiae. Both sexes are winged. Meso- and metathoracic femora robust. Male abdomen long and narrow. Male supra-anal plate transverse and triangular. The last segment of the cerci in both males and females is considerably enlarged and flattened. Styli present on the subgenital plate.

**REMARKS.** The *philippina* species group of *Amorphoscelis*, formerly including *A. philippina*, *A. sulawesiana* and *A. siebersi*, only been recorded from Oriental region (Roy, 2010). The *philippina* species group can be easily distinguished from *annulicornis* species group by the shape of male genitalia structures. In the *philippina* species group, the apical process of the male genitalia is more or less simple without lateral extension (in *annulicornis* species group, with lateral extension), ventral phallomere with an extension only on the left side, pointed or not (in *annulicornis* species group, always with two extensions on the left side).

***Amorphoscelis pathomwattananuraki* Unnahachote, sp. n.**

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Figs 1A-1F, 2A, 2D, 3A-3C

TYPE MATERIAL. Holotype – ♂ (THNHM-I-00029851, THNHM), **Thailand**: Yala Prov., Betong Dist., 5°53′07.5″ N, 101°01′ 17.6″ E, h=825 m, 6.V 2024, Suradet Sae-Liang leg. (deposited in THNHM).

DESCRIPTION. Male. *Head*. Large, wider than the pronotum; compound eyes rounded and protuberant, ocelli large, with lateral ocelli oval-shaped and larger than the medial ocellus; lower frons narrow, wider than long, ventral margin widely concave, dorsal margin more or less truncated. Juxtaocular bulges distinctly protruded with rounded tips. Antennae filiform and very long.

*Pronotum*. Short, distinctly longer than wide; lateral pronotal expansion rounded; metazona longer than prozona, with a nearly smooth dorsal surface except for slight bumpiness at the posterior part of the prozona and metazona, distinct metazonal medial keel, and slightly curved lateral margins.

*Prothoracic leg*. Forefemora robust and pilose, with one short discoidal spine; tibiae short and slightly curved, lacking AvS or PvS; tarsi much longer than tibiae. The first segment of the metatarsi is much longer than the total length of the other segments.

*Mesothoracic and metathoracic legs*. Robust, with setae, the first segment of the metatarsi is much longer than the total length of the other segments.

*Wings*. Forewings nearly hyaline, long, extending beyond the tip of the abdomen; narrow, mostly hyaline costal area, only semi-opaque at the distal part with many more or less simple veins; external margin of the costal area with some short setae. Forewings have a distinctly long patch and a short patch at the distal part of the discoidal area (Fig. 2A), with the anal area hyaline. Hindwings mostly hyaline, with a semi-opaque anterior distal margin.

*Abdomen*. Slender, subgenital plate trapezoidal, deeply notched, with robust styli. The last segment of the cerci is elongated, flat, more or less parallel, with a rounded tip (Fig. 1F).

*Male Genitalia*. Well-sclerotized. Left phallomere: paa curved upward, covered with some setae; afa strongly sclerotized, short, rounded, covered with small tubercles. Ventral phallomere: sdpm large, pointed at the end, turning to the right; bl with a small pointed lobe. Right phallomere: pva strongly sclerotized, elongated, with a more or less pointed end and a distinct medial bulge; pia strongly sclerotized with a blunt end. (Fig. 3A, 3B).

*Coloration*. Generally greenish brown with spots. Head and pronotum have dark longitudinal bands at the margins and a tawny band in the middle (Fig. 2D). Antennae are entirely black on proximal part (approximately first 13 segments), with the rest having a light color at the proximal half and alternating black towards the end. Lower frons is tawny. Forecoxae are tawny, and the fore femora and foretibiae are the same color as the coxae, with dark brownish areas near the DS and on the femoral brush area; foretibiae have two small dark brown spots internally and are black at the tip. Mid and hind femora are greenish brown, with the middle and hind tibiae and all tarsi the same color as the femora but with some transverse dark brown bands. Forewings have a distinctly long brownish patch and a short patch at the distal part of the discoidal area, with the anal area hyaline. Hindwings are mostly hyaline, yellowish iridescent, with a semi-opaque anterior distal margin (Fig. 2A). The ventral surface of the abdomen is greenish brown. Cerci are brownish, with each segment dark-colored at the distal part. Genitalia are strongly infusate.

Female. Unknown.

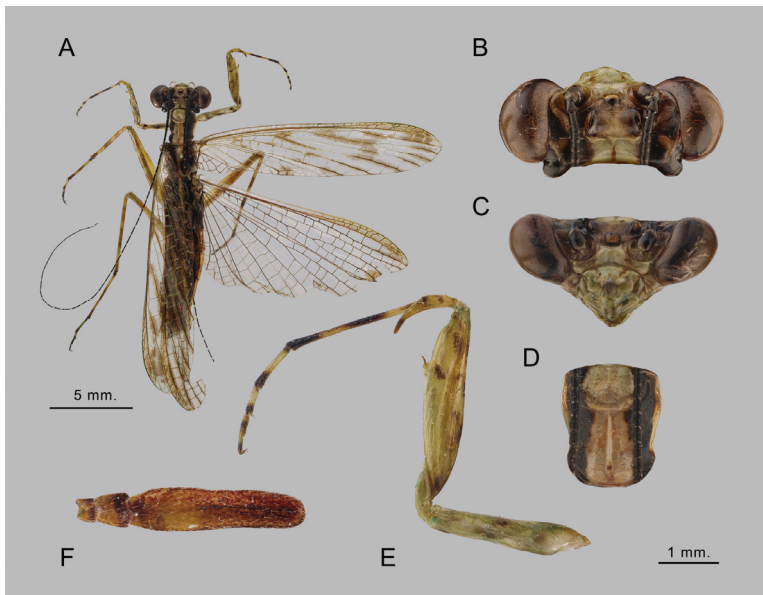


Fig 1. *Amorphoscelis pathomwattananuraki* sp. n., holotype, male. A – habitus, dorsal view; B – head, dorsal view; C – head, frontal view; D – prothorax, dorsal view; E – foreleg, internal view; F – apical three segments of cerci, lateral view.

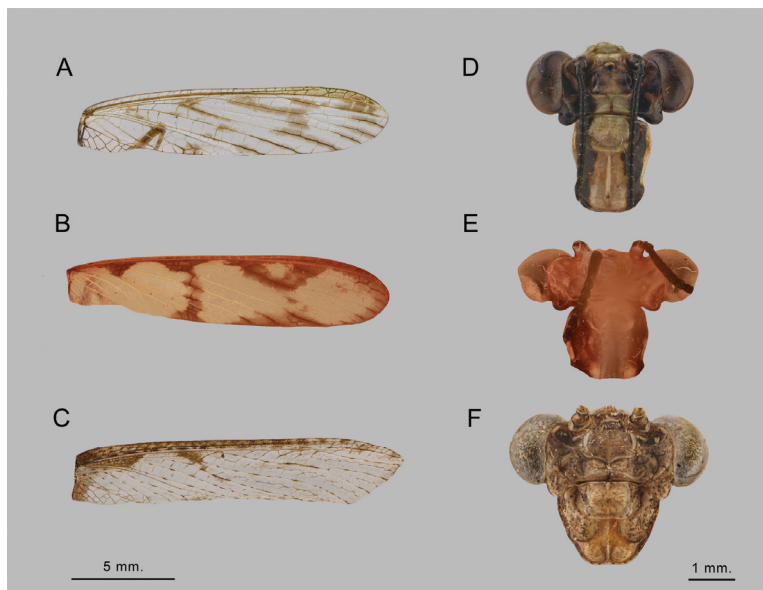


Fig 2. Forewings, head and prothorax of *Amorphoscelis* spp. A, D – *A. pathomwattananuraki* sp. n.; B, E – *A. sulawesiana*; C, F – *A. singaporana*.

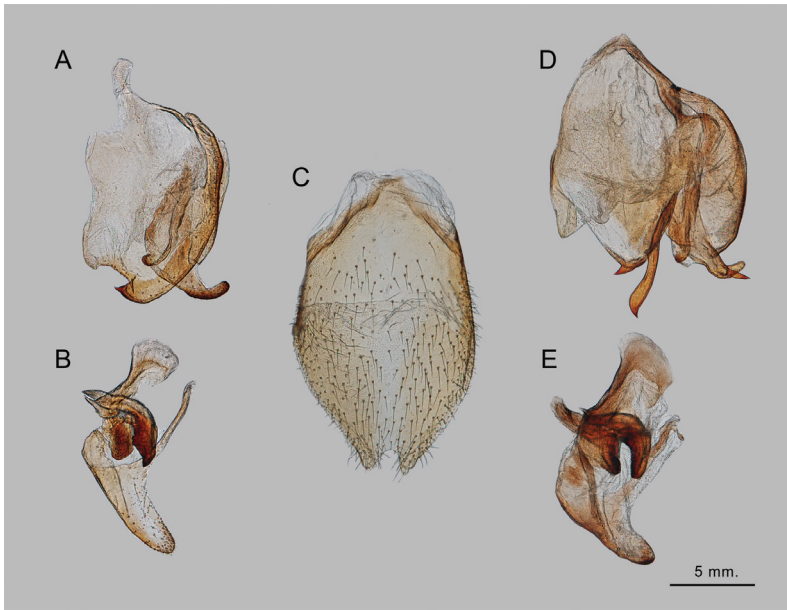


Fig 3. Male genitalia and subgenital plate of Thai *Amorphoscelis* spp. A-C – *A. pathomwattananuraki* sp. n.; D, E – *A. singaporana*.

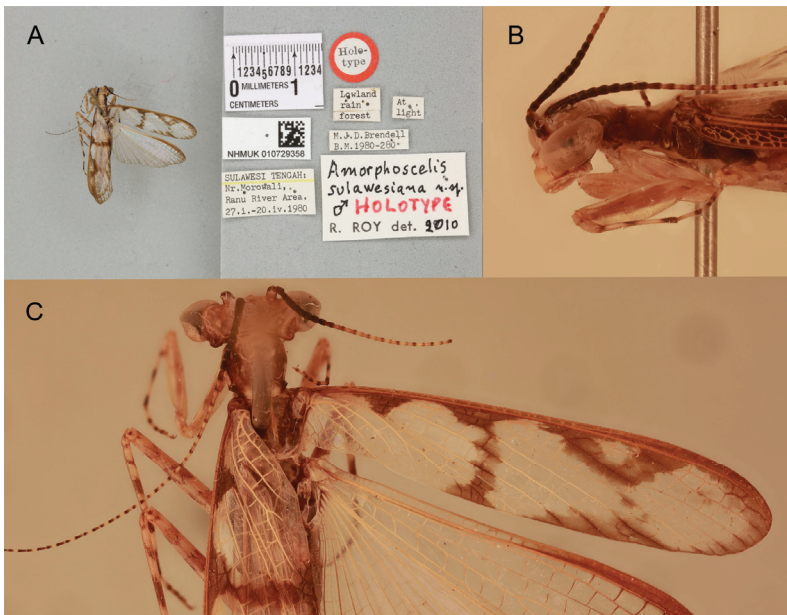


Fig 4. *Amorphoscelis sulawesiana*, holotype (NHMUK 010729358). A – habitus, dorsal view and label; B – anterior part of body, lateral view; C – same, dorsal view.

MEASUREMENTS (in mm). Body length: 19.5; head length: 1.55; head width: 3.62; pronotum length: 2.1; pronotum width: 1.73; forecoxa length: 2.7; forefemur length: 3.39; middle femur length: 4.2; hind femur length: 4.5; forewing length: 14.3; forewing width: 3.0 hindwing length: 13.3; cerci length: 2.87; cerci width: 0.72.

COMPARISON. New species is similar to *A. sulawesiana* from Sulawesi, Indonesia (Figs 2B, E, 4, 5). However, it can be easily distinguished from the latter species by a combination of the following characteristics: 1) coloration of the head (darkened areas extending from lateral margins to the lateral ocelli vs. darkened areas restricted to juxtaocular bulges in *A. sulawesiana*); 2) compound eye shape from dorsal view (rounded vs. more or less angulated at lateral margin); 3) color pattern of the forewing; 4) costal margin of the forewing (mostly hyaline except the distal part vs. entirely opaque); 5) length of the last segment of the cerci (noticeably longer in the new species); 6) medial notch between the styli (deeply notched vs. slightly concave to nearly truncate); 7) median secondary distal process (sdpm more expanded at the posterior margin before the pointed tip vs. sdpm sharply curved, fang-like shape); 8) basal lobe (more or less pointed vs. rounded).

REMARKS. A new species represents the first occurrence of the *philippina* species group of the genus *Amorphoscelis* on the Asian mainland.

ETYMOLOGY. The species is named after a Thai entomologist, Wuttiapon Pathomwattanurak, who has consistently been a valuable collaborator and has provided assistance during our entomological surveys.

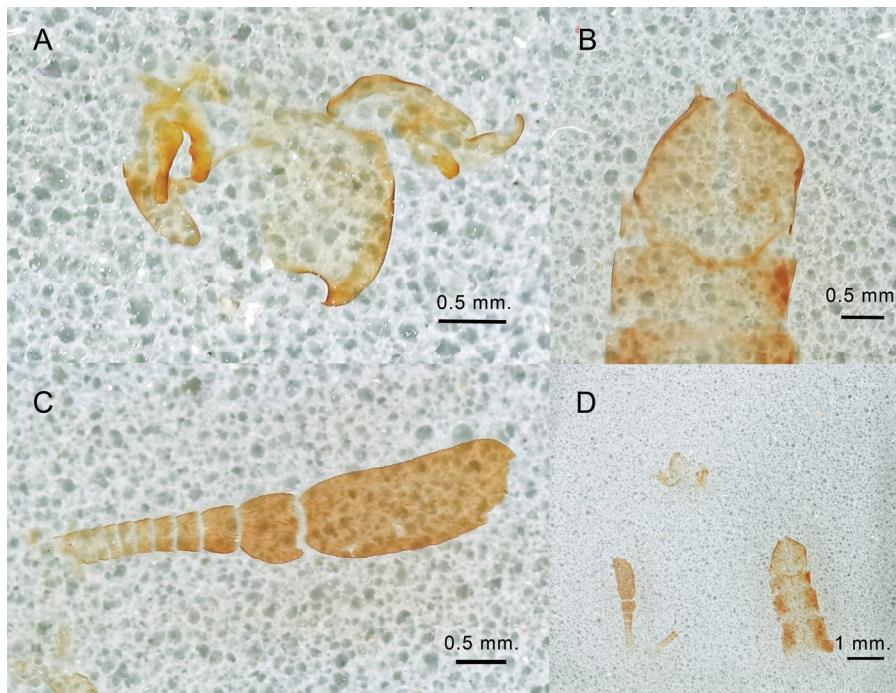


Fig 5. *Amorphoscelis sulawesiana*, paratype (NHMUK 016033080), male. A – genitalia; B – subgenital plate; C – cerci; D – whole preparation under cover slide.

***Amorphoscelis singaporana* Giglio-Tos, 1915**

Figs 2C, 2F, 3D, 3E

Type locality: Singapore (Giglio-Tos, 1915).

**MATERIAL EXAMINED. Thailand:** Nan Prov., Bo Klua Dist., 2.VIII 2019, 1♂, T. Unnahachote leg. (TUPC); Uthai Thani Prov., Lan Sak Dist., 15°28'50" N, 99°17' 37" E, h=420 m, 16-20.XII 2020, 1♂, 1♀, T. Unnahachote leg. (TUPC); Chanthaburi Prov., Khao Khitchakut Dist., 20-22 II 2020, 1♂, W. Pathomwattananurak leg. (TUPC); Bangkok, Bang Khen Dist., Kasetsart University, 6.VIII 2019, 2♂, T. Unnahachote leg. (TUPC).

**COMPARISON.** This species can be superficially distinguished from *A. pathomwattananuraki* sp. n. by a combination of the following characteristics: 1) shape of juxtaocular bulges (more or less conical vs. rounded); 2) shape of pronotum (wider than long vs. longer than wide); 3) color pattern of forewing; 4) shape of the last segment of the cerci (more or less oval vs. distinctly elongated).

**REMARKS.** This species can frequently be found even in urban areas. *A. singaporana* is an abundant species in Thailand.

**DISCUSSION**

Members of the *annulicornis* species group of the genus *Amorphoscelis* occurring mainly on the mainland of Southeast Asia, with other species groups found on the surrounding islands (Roy, 2010). *A. guaduna* Wu et Liu, 2021, described from Fujian, China, represents the only member of the *borneana* species group on the mainland and is distribution northward. This discovery suggests that other species groups could also exist on the mainland of Southeast Asia. Here the first confirmed representative of the *philippina* species group, *A. pathomwattananuraki* sp. n., is described from Thailand. Since the localities of this species group is quiet far from each other (Fig. 6), more undescribed species might be waiting for further discovery, especially on the Southeast Asian mainland.

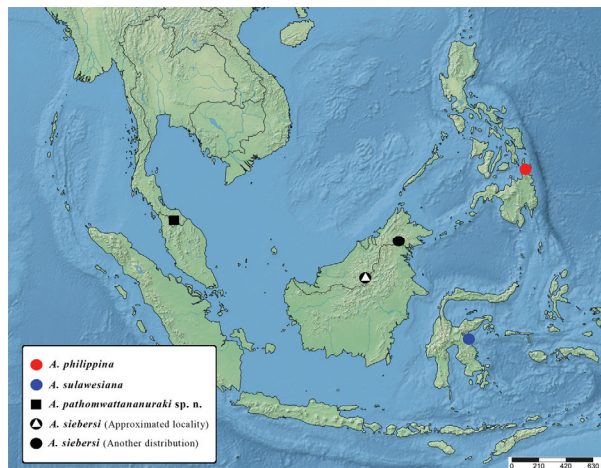


Fig. 6. Distribution map of *philippina* species group of the genus *Amorphoscelis*. Red circle – *A. philippina* (type locality); blue circle – *A. sulawesiana* (type locality); black square – *A. pathomwattananuraki* sp. n.; black circle with white triangle – *A. siebersi* (type locality); black circle – *A. siebersi*, specimen collected from Sabah.

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