



HAL
open science

Theramenes letiranti – a remarkable new species of Obriminae stick insects from Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae)

Hennemann Frank

► **To cite this version:**

Hennemann Frank. Theramenes letiranti – a remarkable new species of Obriminae stick insects from Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae). *Faunitaxys*, 2023, 11 (45), pp.1-9. hal-04142247

HAL Id: hal-04142247

<https://hal.science/hal-04142247>

Submitted on 26 Jun 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial - NoDerivatives 4.0
International License

Faunitaxys

*Revue de Faunistique, Taxonomie et Systématique
morphologique et moléculaire*



Volume 11
Numéro 45

Juin 2023

ISSN (Print) : 2269 - 6016
ISSN (Online) : 2970 - 4960
Dépôt légal : Juin 2023

Faunitaxys

*Revue de Faunistique, Taxonomie et Systématique
morphologique et moléculaire*

ZooBank : <http://zoobank.org/79A36B2E-F645-4F9A-AE2B-ED32CE6771CC>

Directeur de la publication, rédacteur, conception graphique et PAO:

Lionel Delaunay

Cette revue ne peut pas être vendue

Elle est distribuée par échange aux institutions (version papier)

et sur simple demande aux particuliers (format PDF)

à l'adresse suivante:

AFCFF (Association française de Cartographie de la Faune et de la Flore)

28, rue Voltaire, F- 42100 Saint Etienne

E-mail: faunitaxys.journal@gmail.com

Elle est disponible librement au téléchargement à partir du site:

<http://faunitaxys.fr/>

La parution de *Faunitaxys* est apériodique

Faunitaxys est indexé dans / *Faunitaxys* is indexed in:

- **Zoological Record**

Articles and nomenclatural novelties are referenced by:

- **ZooBank** (<http://zoobank.org>)

Online Archives:

- **HAL** (<https://hal.archives-ouvertes.fr>)

- **Internet Archive** (<https://archive.org>)

Imprimée sur les presses de SPEED COPIE, 6, rue Tréfilerie, F- 42100 Saint-Etienne

Imprimé le 25 06 2023

Theramenes letiranti – a remarkable new species of Obriminae stick insects from Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae)

FRANK H. HENNEMANN

Associate researcher for the Montréal Insectarium, 4581 rue Sherbrooke, Montréal, Québec, Canada, H1X 2B2.

- E-mail: : fhennemann@hotmail.de - Orcid: <https://orcid.org/0000-0002-6547-4704>- ZooBank: <http://zoobank.org/1981F869-917F-4173-A239-147135FAB99D>

Keywords:

Phasmida; new species;
 Areolatae; taxonomy;
 Obrimini; descriptions;
Theramenes; keys.

Abstract. – The new species *Theramenes letiranti* n. sp. from Mindanao is the smallest member of the genus *Theramenes* Stål, 1875 and is described from the female and male. An updated key is presented for the five known species of *Theramenes* along with general remarks on the genus.

Hennemann F. H., 2023. – *Theramenes letiranti* – a remarkable new species of Obriminae stick insects from Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae). *Faunitaxys*, 11(45): 1 – 9.

DOI: [https://doi.org/10.57800/faunitaxys-11\(45\)](https://doi.org/10.57800/faunitaxys-11(45))

ZooBank: <http://zoobank.org/9190A34B-B75A-4F8E-94CD-2504438880D5>

Received: 20/05/2023 – Revised: 20/06/2023 – Accepted: 21/06/2023

Introduction

The Philippines is an oceanic archipelago in the western Pacific Ocean composed of over 7.600 islands that are broadly categorized under the three main geographic divisions Luzon in the north, Visayas in the centre and Mindanao in the south. Due to its complex geography and expanding by more than 1000 kilometres from west to east and about 1800 kilometres from north to south, the region represents close to optimum conditions for a high biodiversity and is regarded as one of the world's diversity hotspots. Still, however, the Phasmatodea (stick and leaf-insects) of the archipelago are rather poorly studied and a plethora of new taxa still await discovery and formal description. A clade that has strongly radiated on these islands with the great majority of its genera and species inhabiting the Philippines is the tribe Obrimini (Heteropterygidae: Obriminae). A comprehensive study of the Philippine Obrimini was published by Rehn & Rehn (1939), which described five new genera and a new subgenus as well as 24 new species and one new subspecies. Further new taxa were described during the past few decades, and the genus *Theramenes* Stål, 1875, the perhaps most striking and distinctive representative of the tribe has had two species described recently (Zompro & Eusebio, 2001; Hennemann & Conle, 2003). Four species have so far been known of *Theramenes*, three of which are endemic in the Philippines. Now, a fifth species has been discovered on the island of Mindanao, which closes the distributional gap between the three Philippine species that were known from Panay and Cebu and the type-species from the Talaud Islands south of the Philippines. The new species is the smallest known representative of *Theramenes*.

Material and Methods

All specimens examined for this study are dried and pinned. Insects and eggs were examined using magnifying glasses with 4x and 10x magnification and a Russian MBC-10 binocular microscope. Measurements of specimens and eggs were made to the nearest 0.1

mm using digital calipers. Photos of specimens were taken with a Nikon D7000 camera equipped with a Nikon DX AF-S Macro 40 mm lens and a wireless Nikon SU-800 dual speed light system. For details of insects a Raynox® DCE250 lens was used and background lightning was provided by a 18W 6000K LED panel light plate. Photo editing was made with CorelDRAW® Graphic Suite 2021. Photos of specimens in the collection of RBINS were taken by Jérôme Constant with a Canon 700D camera equipped with a Sigma 50 mm Macro lens and the pictures were stacked with CombineZ software and optimized with Adobe photoshop CS3. The terminology and abbreviations used for naming and marking of morphological parts of the genitalia, head and thorax of the insects follows Beier (1968) and Bradler (2009). The terminology used for the spination and armature of the insects follows the acanthotaxy introduced for the subfamily Obriminae by Rehn & Rehn (1939).

Abbreviations

IMQC: Insectarium de Montréal, Montréal, Québec / Canada.

RBINS: Institute Royal des Sciences Naturelles de Belgique, Bruxelles / Belgium.

FH: Private collection of Frank Hennemann, Bad Homburg / Germany.

Genus *Theramenes* Stål, 1875

Type-species. – *Eurycantha olivacea* Westwood, 1859: 65, by monotypy.

Theramenes Stål, 1875: 46.

Stål, 1877: 68.

Kirby, 1904: 399.

Redtenbacher, 1906: 36.

Rehn & Rehn, 1939: 412.

Bradley & Galil, 1977: 199.

Bragg, 2001: 644.

Zompro, 2004: 209, 322. (Tribe Eubulidini).

Otte & Brock, 2005: 332.

Bollens, Krijns & Bresseel, 2010: 23.

Hennemann, Conle, Brock & Seow-Choen, 2016: 18. (Tribe Obrimini, *Theramenes*-group).

Brock & Büscher, 2022: 521.

Eurycantha, Westwood, 1859: 65, pl. 2: 8.

Reviewer :

Paul D. Brock (Natural History Museum, London, GB) - <https://orcid.org/0000-0003-0590-0414> - <http://zoobank.org/ECA2637E-994E-4EA2-B1DB-2ABB678D7D7D>



This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

Copyright 2023 The Authors. *Faunitaxys* published by Lionel Delaunay on behalf of the AFCFF (Association française de Cartographie de la Faune et de la Flore).

Differentiation. – This very characteristic genus is well characterised by the specialization of the thoracic armature and strongly incrassate metafemora of ♂, which readily distinguish it from all other representatives of the entire subfamily. The prominent hump or wart-like posteromedian swelling of the meso- and metanotum are unique within the Obriminae, as are the strikingly unequal abdominal segments of the ♂ of certain species. Females have these posteromedian meso- and metanotal swellings much less distinct to almost wanting but are characteristic for being the plumpiest and stockiest of all Obriminae with the abdominal segments more than 3x wider than long.

Remarks. – Stål (1875) originally established this very distinctive genus for a species described in the Papuan genus *Eurycantha* Boisduval, 1835 (Lonchodidae: Eurycanthinae) and originating from the Talaud Islands by Westwood (1859) and described a second Philippine species subsequently (Stål, 1877). A third Philippine species was described from the island of Cebu by Zompro & Eusebio (2001) and a fourth Philippine species from the island of Panay by Hennemann & Conle (2003). Hennemann *et al.* (2016: 19) have clarified the erroneous synonymy of *Theramenes dromedarius* Stål, 1877 under the type-species *T. olivaceus* (Westwood, 1859) introduced by Günther (1934: 75) and have re-established this distinctive species. The description of a new species from the island of Mindanao closes the distributional gap between the more northern Visayas Islands group and the Talaud Islands in the south.

Zompro (2004) included *Theramenes* in the tribe Eubulidini together with seven other genera. Hennemann *et al.* (2016: 18) have shown that there was no morphological support for a separation of Eubulidini as a distinct tribe and grouped the genus together with *Eubulides* Stål, 1877, *Heterocopus* Redtenbacher, 1906 and *Mearnsiana* Rehn & Rehn, 1939 in the *Theramenes*-group of the tribe Obrimini. This generic group was characterized among Obrimini by the increasing simplicity of the body armature, lack of posterior mesonotal and metanotal spines, flattened and weakly armed to unarmed head as well as the increasingly thickened metafemora of ♂ in particular. Moreover, Hennemann *et al.* (2016) presumed close relation to *Eubulides* and *Heterocopus* in particular because these three genera share are strongly up-curved ovipositor in ♀. In a molecular analysis of the Obriminae by Bank *et al.* (2021) however, *Theramenes* resulted as the sister group of the genus *Tisamenus* Stål, 1875, which Hennemann *et al.* (2016) had placed in the *Tisamenus*-group of Obrimini.

Distribution. – Talaud Islands and Philippines (Mindanao, Panay and Cebu).

Species included

1. *Theramenes dromedarius* Stål, 1877: 68.

Distribution: Philippines.

2. *Theramenes exiguus* Hennemann & Conle, 2003: 104, Fig. 1-3.

Distribution: Panay.

3. *Theramenes letiranti* n. sp.

Distribution: Mindanao.

4. *Eubulides mandirigma* Zompro & Eusebio, 2001: 23, Fig. 1-3.

Comments: As already pointed out by Hennemann *et al.* (2016:19) this species is very similar to *T. dromedarius* Stål, 1877 and merely differs by the smaller size, smaller anterior mesonotal swelling and less developed armature of the meso- and metapleurae. Thus, it is possible that this species may sometime prove to be a synonym of Stål's species, for which no exact locality is known. Originally described from the ♂ only, the ♀ and egg were described and illustrated by Seidenschwarz (2018).

Distribution: Cebu.

5. *Theramenes olivaceus* (Westwood, 1859: 65, pl. 2: 8).

Distribution: Talaud Islands.

Theramenes letiranti n. sp.

(Fig. 1-3)

ZooBank: <https://zoobank.org/NomenclaturalActs/120F1CD9-970D-4376-971D-00A60CB82A6D>

Theramenes sp., Bollens, Krijns & Bresseel, 2010: 23, fig. (penultimate instar ♀).

Bank *et al.*, 2021: 13, fig. 6 (in molecular tree).

Holotype, ♂, Philippinen, Mindanao Id., Lanao del Sur Prov., Kapatagan Munip., local collector II.2012 [IMQC, ex coll. FH].

Paratypes

- 2 ♂, Philippinen, Mindanao Id., Lanao del Sur Prov., Kapatagan Munip., local collector II.2012 [FH, No's 1290-1 & 2].

- 1 ♀, 1 ♂, Philippinen, Mindanao Id., Lanao del Sur Prov., Kapatagan Munip., local collector IX.2011 [FH, No's 1290-3 & 4].

- 1 ♂, Philippinen, Mindanao Id., Lanao del Sur Prov., Kapatagan Munip., local collector VII.2012 [FH, No's 1290-5].

- 1 ♀, 1 ♂, 1 ♀ (juvenile), Philippinen, Mindanao Id., South Cotabato Prov., Kidapawan, ca. 30 m, local collector IX.2012 [FH, No's 1290-6 to 8].

- 1 ♂, Philippinen, Mindanao Id., South Cotabato Province, T'Boli, Daguma Mts., Mount Parker, local collector III.2013 [FH, No's 1290-9].

- 1 ♀, Philippines, Mindanao, Mt Apo, Lake Agco Area, Apr, 2010 [RBINS].

- 1 ♀, Philippines, Mindanao, Bukidnon, Valencia, IV.2011, I. Lumawig, Local collector [RBINS].

- 1 ♂, Philippines, Mindanao, Surigao del Sur, Barobo, dec. 2013, I. Lumawig [RBINS].

- 1 ♂, Philippines, Mindanao, Davao del Sur, Cabagayan, II.2011 [RBINS].

- 1 ♂, Philippines, Mindanao, Mt. Apo, trail from basecamp, leg T. Buckley, 9.VII.2010, gift S. Bradler, SB0286 [RBINS].

Etymology. – This distinctive new species is named in honour of Stéphane Le Tirant (collection manager of the Montréal Insectarium IMQC, Canada) for his tremendous support and generosity in obtaining specimens as well as the friendship over several years, but also for his huge contribution to the knowledge of leaf-insects (Phasmatodea: Phylliidae). His versatile efforts are an eminent gift to modern entomology and have also notably contributed to the present paper, why the author is obliged of being able to name such a remarkable stick insect after a great and exceptional personality in entomology.

Differentiation. – This striking new species is readily separated from all other congeners by its small size, with ♀ being < 60.0 mm and ♂ < 40.0 mm in body length. Moreover, it is the so far only recorded representative of *Theramenes* from the island of Mindanao. Morphologically, it comes closest to the type-species *T. olivaceus* from the Talaud Islands, although a pre-median mesonotal swelling is only shared with *T. mandirigma*. In this latter species however, there is a prominent pair pre-median pair of conical mesonotal spines, whereas there is only an obtuse bi-gibbose swelling in *letiranti* n. sp., and *mandirigma* also has the abdominal segments very strikingly unequal in length and the metafemora much more prominently inflated than this new species. Males may also be separated from those of *olivaceus* by the presence of the aforementioned bi-gibbose pre-median swelling of the mesonotum (Fig. 3E-G) and different colouration, being basically ochraceous to testaceous with the head, prothorax and tibiae olive and the femora dark purple, whereas *olivaceus* is mostly olive-green

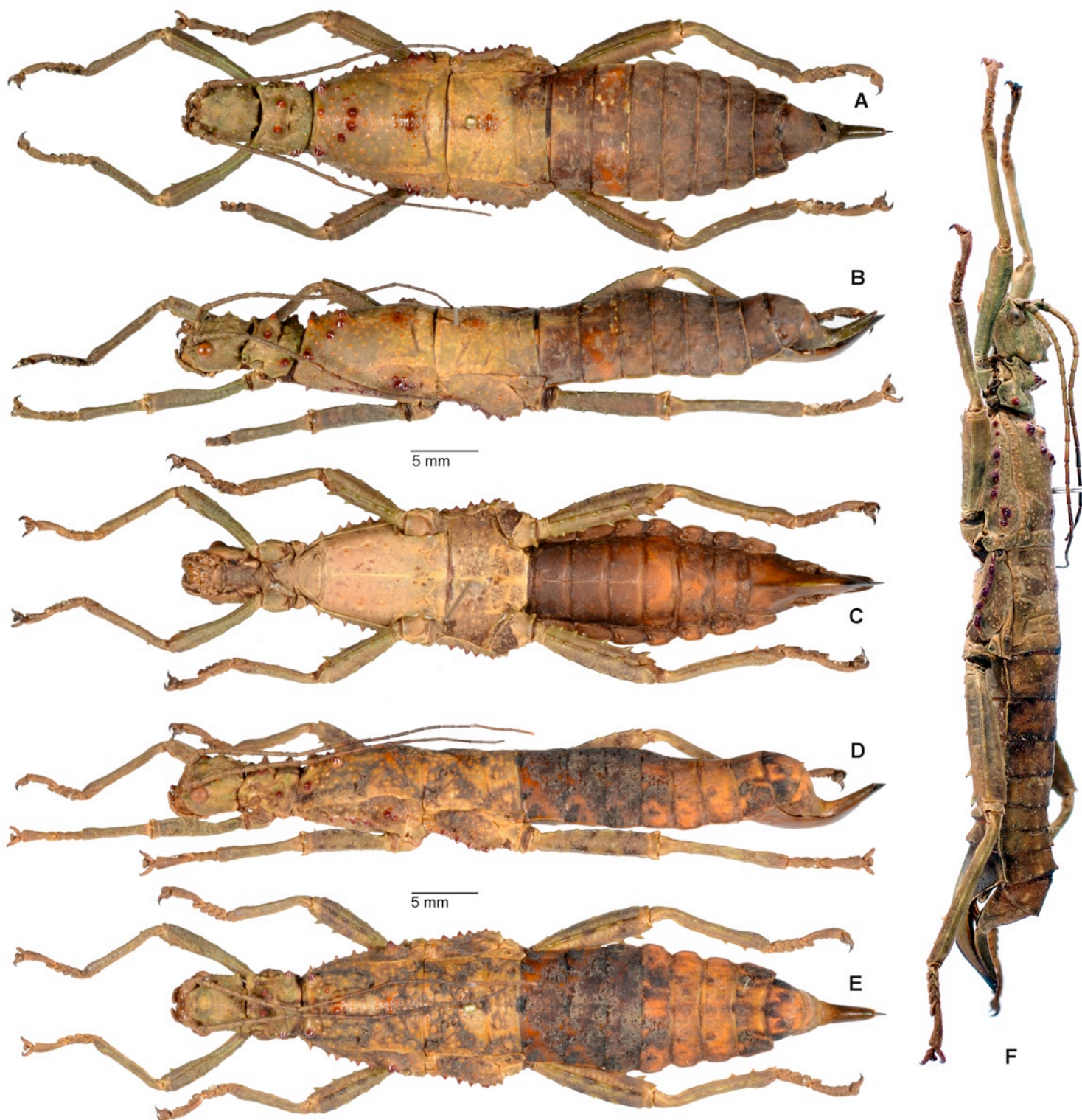


Fig. 1. *Theramenes letiranti* n. sp., ♀.

A. Paratype, dorsal view [FH 1290-2]. B. Paratype, dorsolateral view [FH 1290-2]. C. Paratype, ventral view [FH 1290-2]. D. Paratype, dorsolateral view [FH 1290-1]. E. Paratype, dorsal view [FH 1290-1]. F. Paratype, lateral view [RBINS © Jérôme Constant].

with the meso- and metafemora red. Females can be distinguished from *olivaceus* by the somewhat stockier shape, somewhat more pronounced tubercles of the mesonotum and having only two small teeth in the apical half of the two lower carinae of the metatibiae (Fig. 2G-H).

Description

Rather typical for the genus but the smallest known member. The colouration is described from dried and relaxed dried specimens.

♀ (Fig. 1-2).

Small (body length 59.6-59.8 mm) and very heavy-bodied for the genus with comparatively pronounced meso- and metathoracic tubercles.

Colouration. – The three paratypic ♀ at hand differ notably in colouration. Two are basically dark olive with an ochraceous wash and the abdomen rather mid brown, which however is most certainly caused by the preservation (Fig. 1A-B, F). The other is buff to ochre with an olive wash on the head, prothorax and limbs and all over flecked with greyish brown (Fig. 1D-E). Ventral surface pale ochre and rather plain in colour (Fig. 1C). All major thoracic tubercles dark orange to dark red, the granulations rather mid orange (Fig. 2A-C). Cephalic tubercles tipped with green. Femora with irregular faint washed darker markings. Eyes dark ochraceous. Antennae brown with a slight olive hue and becoming gradually darker towards the tip.

Head (Fig. 2A-B). – Sub-quadrate in dorsal aspect (Fig. 2B) with the vertex weakly rounded. Diameter of eye contained less than 2x in length of gena. Median coronals obtusely conical and roughly equal in size to lateral coronals and anterior pair of occipital medials. Median supra-orbitals and supra-antennals only represented by small tubercles. Genae unarmed. Antennae consisting of 26 joints and reaching to abdominal segment II; joints gradually increasing length towards tip.

Thorax (Fig. 2A-C). – Pronotum relatively large, transverse with anterior margin notably concave. In anterior half with a prominent pair of obtuse, conical anterior pronotals; a small pair of medial pronotals present and consisting of 2-3 compound tubercles. Lateral margins with 2-3 sub-globose laterals. Mesothorax distinctly trapezoidal in dorsal aspect and sparsely set with fairly distinct, low granules. Anterior mesonotals prominent, conical; anterior mesal tubercles notably smaller. Two pairs of pre-medial tubercles present, of which the posterior pair is more pronounced and situated close to the median line; the anterior pair more widely spaced. Posterior of mesonotum with a fairly distinct but low and sub-globose pair of swellings medially. Mesopleurae with about eight variably sized obtusely spiniform laterals; a compound supra-coxal present. Metanotum transverse and with a fairly small median pair of swellings that is surrounded by a few somewhat enlarged granules. Metapleurae with about seven blunt laterals; the supra-coxal indistinct. Meso- and metasternum with a fine but distinct medio-longitudinal line and a few paired low tubercles; these more pronounced on mesosternum.

Abdomen (Fig. 2D-F). – Median segment unarmed. All terga smooth except for a few small median granules on II; IV-VII with lateral margins somewhat deflexed and rounded; III-VII on average 5x wider than long. VII and VIII with a small and obtuse posteromedian swelling. Sterna smooth. Posterior margin of sternum VII weakly bi-labiate with a median indentation (= praeopercular organ). Tergum IX strongly convex with the posterior margin somewhat elevated medially. Anal segment strongly declining and narrowing towards the posterior; the posterior margin weakly concave. Epiproct somewhat longer than anal segment, strongly up-curved, the apex obtusely rounded and with a few minute denticles. Subgenital plate strongly-up-curved, deeply keeled medio-longitudinally and tapering towards a narrow and acutely pointed tip, that projects somewhat beyond the epiproct.

Legs (Fig. 2G-H). – All relatively short and stout; no medioventral carina. Two ventral carinae of meso- and metafemora with five teeth that increase in size towards apex of femur (more distinct on metafemora); dorsal carinae only with five small teeth. Meso and metatibiae smooth dorsally, the two ventral carinae with three (mesotibiae) or 4-5 teeth, of which only the two apical ones are well developed. Profemora with

dorsal carinae only with five very indistinct teeth indicated, anteroventral carina with only a distinct sub-apical tooth and posteroventral carina without noteworthy dentations; protibiae wholly unarmed. Tarsi short, stout and more than half the length of corresponding tibiae.

♂ (Fig. 3).

Small for the genus (body length 31.2-33.8 mm) with distinct posteromedian swellings on meso- and metanotum and a small pair of pre-medial swellings.

Colouration. – Colourful insects; basic colour of body ochre with a slight olive hue on the terminal abdominal segments; head, prothorax, all coxae and all tibiae olive green; all femora dark purple with the base and apex green; ventral surface dark orange except for an olive prosternum. Meso- and metapleurae dark red. Prothoracic and anterior of mesonotum orange tipped; the posteromedian swellings of the meso- and metanotum and the pair of pre-medial mesonotals swellings black. Antennae orangey pale brown with the two to five basal joints green.

Head (Fig. 3F-G). – Basically, as in ♀ but rather flattened and all tubercles lower and more obtuse. Antennae as in ♀ but relatively longer and reaching to posterior margin of abdominal segment V.

Thorax (Fig. 3F-G). – Pronotum as in ♀ but sub-quadrate in shape and all tubercles less pronounced, the laterals except for the posterolaterals wanting; only the pair of anterior pronotals similarly distinct as in ♀. Mesonotum less than twice the length of pronotum with the posterior half widened and notably inflated. Anterior mesonotals moderately distinct but very obtuse, the antero-laterals indistinct. In anterior half with a narrowly spaced pair of fairly distinct sub-globose pre-medial swellings close to mid-line. Posterior portion with a very prominent basically bi-globose but compound median swelling. A similar but slightly larger post-medial swelling on metanotum. Meso- and metapleurae only with about five (mesopleurae) or four (metapleurae) obtuse tubercles; supra-coxal of mesopleurae compound and fairly distinct, that of the metapleurae simple and very flat. Meso- and metasternum with a shallow medio-longitudinal carina and set with a few very low paired tubercles; a somewhat more pronounced posteromedian tubercle on metasternum.

Abdomen (Fig. 3H-K). – Notably narrower than thorax. Median segment with anterior margin convex medially. Segments II-VI noticeably decreasing in length, VII about as long as VI and almost 4x wider than long. II trapezoidal and slightly wider than long, III sub-quadrate, IV -VI increasingly transverse. All unarmed except for a very indistinct post-medial pair of granules close to the fine medio-longitudinal line. Sterna smooth. Terga VIII and IX with a slight posteromedian swelling, IX strongly convex. Anal segment notably longer than IX, declining and somewhat narrowing towards the roundly angular and weakly concave posterior margin; anterolateral angles protruded into an obtuse-tooth-like projection. Epiproct fairly large, transversely shield-shaped and projecting notably beyond anal segment. Vomer basically triangular in shape with a short terminal hook. Poculum distinctly bulgy, cup-shaped with the posterior margin entire, broadly rounded and almost reaching to tip of anal segment; the inclining posterior portion with a weak medio-longitudinal carina. Cerci very small and hidden under anal segment.

Legs. – Generally, as in ♀ but all teeth, but the ventral ones of the meso and metafemora much more distinct with the apical two (mesofemora) or three (metafemora) represented by strong spines. Lower carinae of mesotibiae only with weakly indicated tooth-like swelling; metatibiae with two moderately distinct teeth in apical half.

Remarks. – Eggs unknown and nothing is known about the habits and host-plants.

Distribution. – Mindanao, endemic. S-Mindanao: Province Davao del Sur (Kapatagan [IMQC; FH]; Cabagayan [RBINS]); Province South Cotabato (Kidapawan [FH]; Mount Apo, Lake Agco area [RBINS]; T'Boli, Daguma Mountains, Mount Parker [FH]). Central Mindanao: Province Bukidnon (Valencia [RBINS]).

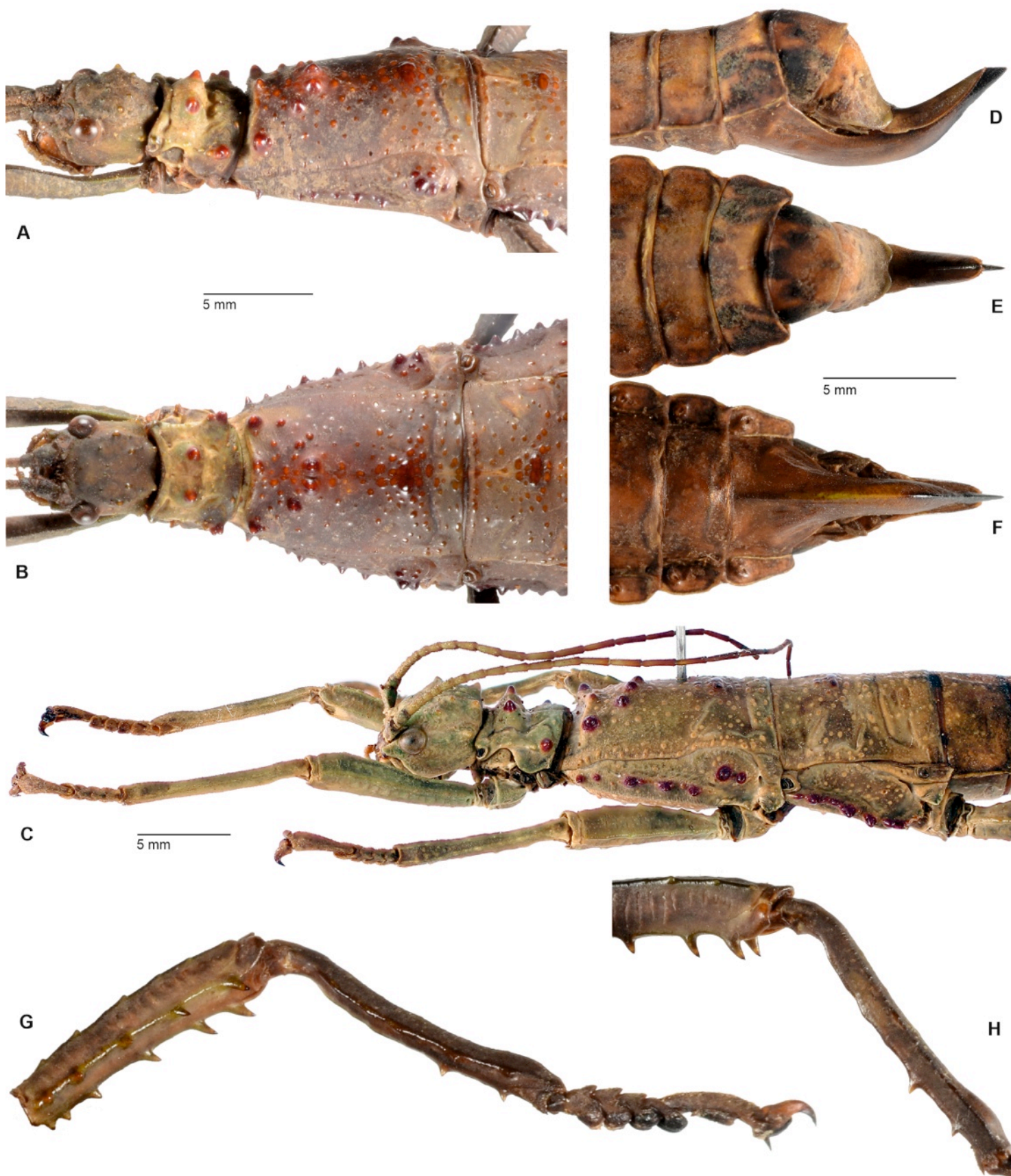


Fig. 2. *Theramenes letiranti* n. sp., ♀.

A. Paratype, dorsolateral view of head, pro-, meso- and metathorax [FH 1290-2]. **B.** Paratype, dorsal view of head, pro-, meso- and metanotum [FH 1290-2]. **C.** Paratype, lateral view of head, pro-, meso- and metathorax [RBINS © Jérôme Constant]. **D.** Paratype, terminalia lateral view [FH 1290-1]. **E.** Paratype, terminalia dorsal view [FH 1290-1]. **F.** Paratype, terminalia ventral view [FH 1290-1]. **G.** Left hind leg in ventro-lateral view [FH 1290-1]. **H.** Left hind leg in intero-lateral view [FH 1290-1].

Table 1. Measurements of *Theramenes letiranti* n. sp.

	♂, HT [IMQC]	♂, PT	♀, PT
Body	33.8	31.2-32.5	59.6-59.8
Pronotum	2.7	2.6-2.7	4.8
Mesonotum	6.5	6.4-6.5	10.6-10.8
Metanotum	3.4	3.4	5.3
Median segment	2.3	2.3	2.8
Profemora	5.9	5.8-5.9	9.3
Mesofemora	5.7	5.4-5.6	7.2-7.4
Metafemora	6.8	6.8-6.9	10.2-10.6
Protiibiae	6.0	5.8-6.1	8.3-8-6
Mesotibiae	5.4	5.1-5.3	7.2-7.7
Metatibia	7.3	7.2-7.8	11.1-12.2
Antennae	27.0	25.5-28.5	29.5-30.0

Keys to the species of *Theramenes*

♂

1. Meso- and metapleurae granulose to obtusely tuberculose 2
— Meso- and metapleurae with prominent conical spines *dromedarius*
2. Mesonotum with one prominent posteromedian swelling 3
— Mesonotum with two median swellings, one posteriorly and a smaller one (may be paired) pre-medially 4
3. Green; meso- and metapleurae with distinct, blunt black tubercles; abdominal segments II-VI slightly gradually decreasing in length; Talaud Islands *olivaceus*
— Brown; meso- and metapleurae only with small tubercles; abdominal segments II-IV just slightly unequal in length, IV with anterior and posterior margins strongly arched, VI and VII less than one-third the length of II-IV; Philippines (Panay Island) *exiguus*
4. Body length > 40.0 mm; mesonotum with antero-lateral very strong and with a prominent pair of conical pre-medial spines; abdominal segments II-VII distinctively unequal in length and IV with anterior and posterior margins strongly arched; Cebu *mandirigma*
— Smaller (body length < 35.0 mm); mesonotum only with a single, obtusely bi-gibbose pre-medial swelling; Abdominal segments II-VI rather gradually decreasing in length and anterior and posterior margins of IV almost straight; Mindanao *letiranti* n. sp.

♀

1. Meso- and metapleurae spinose 2
— Meso- and metapleurae granulose to obtusely tuberculose 3
2. Body length < 75.0 mm; pair of median pronotals, anterior and pre-medial mesonotals very prominent; antero-lateral of mesopleurae not larger than proceeding mesopleural spines; posteromedian protuberance of meso- and metanotum distinct; Cebu *mandirigma*
— Larger (body length > 80.0 mm); median pronotals, anterior and pre-medial mesonotals moderate; antero-lateral of mesopleurae notably larger than proceeding mesopleural spines; posteromedian protuberance of Meso- and metanotum indistinct *dromedarius*
3. Large (body length > 75.0 mm) 4
— Small (body length < 65.0 mm); Mindanao *letiranti* n. sp.
4. Green; meso- and metapleurae with prominent obtuse tubercles; Talaud Islands *olivaceus*
— Brown; tubercles of meso- and metapleurae less numerous, smaller and rather spiniform; Philippines (Panay Island) *exiguus*

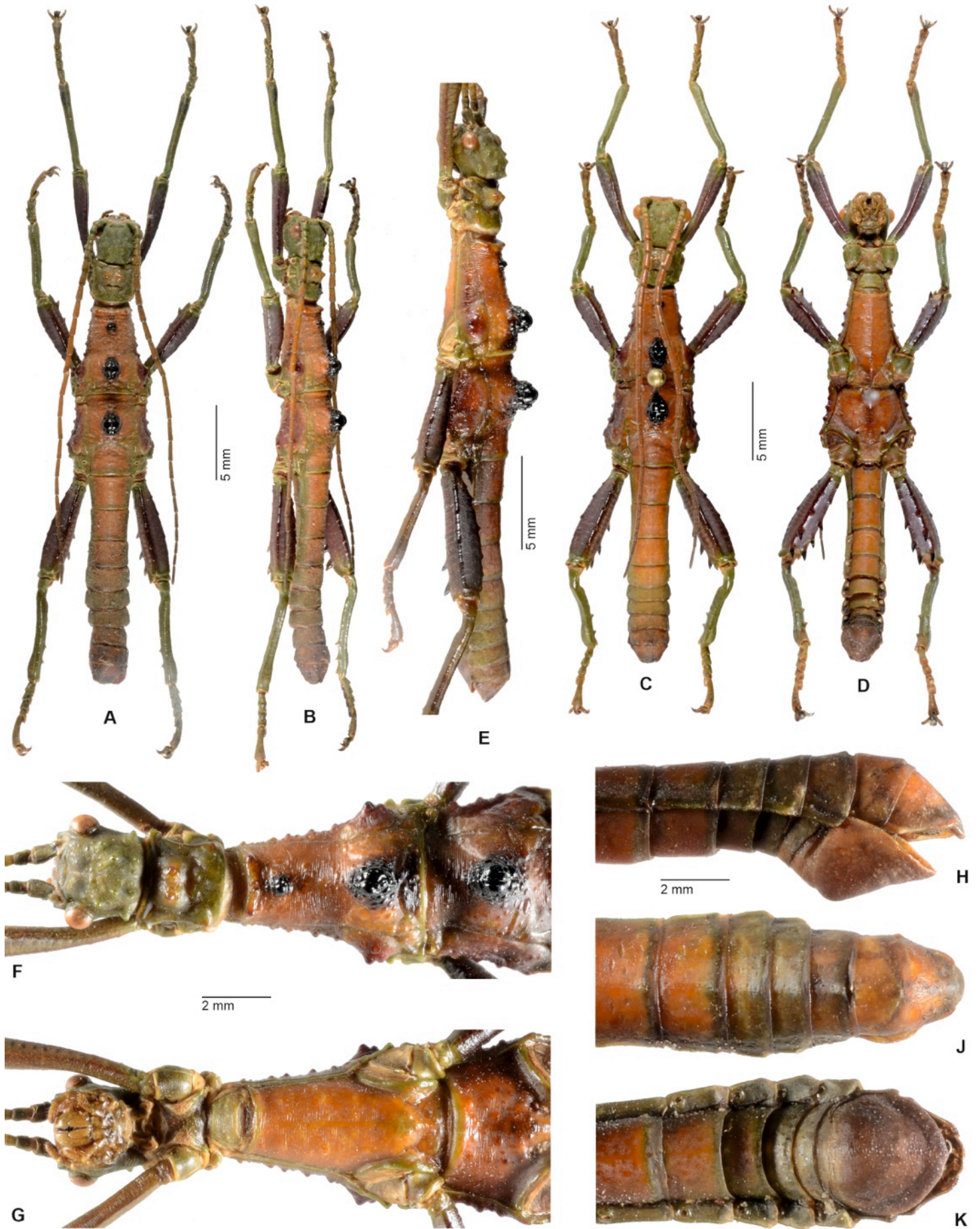


Fig. 3. *Theramenes letiranti* n. sp., ♂.

A. Holotype, dorsal view [IMQC]. B. Holotype, dorsolateral view [IMQC]. C. Paratype, dorsal view [FH 1290-6]. D. Paratype, ventral view [FH 1290-6]. E. Paratype, lateral view of body [FH 1290-6]. F. Paratype, dorsal view of head, pro-, meso and metathorax [FH 1290-6]. G. Paratype, ventral view of head, pro-, meso- and metanotum [FH 1290-6]. H. Paratype, terminalia lateral view [FH 1290-6]. J. Paratype, terminalia dorsal view [FH 1290-6]. K. Paratype, terminalia ventral view [FH 1290-6].

Discussion

The description of a fifth species of the striking genus *Theramenes* from the island of Mindanao is evidence for the still poor degree of exploration of the phasmid fauna of the Philippines Islands, but Mindanao in particular. Within the scope of a more extensive study of the Philippine Obriminae several further new species could be identified and will be dealt with in a forthcoming paper. It is known that still a plethora of new species of Phasmatodea from throughout the Philippines await formal description, many of which are endemics of individual islands or certain isolated habitats on islands. The impressive biodiversity of Philippine Phasmatodea however, is badly threatened by an increasing destruction and loss of forest, which becomes obvious by some alarming figures. From 2002 to 2021, the Philippines lost 158kha of humid primary forest, making up 12% of its total tree cover loss and the total area of humid primary forest in the Philippines decreased by 3.4% in this time period of less than twenty years. About 92% of this loss occurred in areas where the main reason is deforestation by human (Source: <https://globalforestwatch.org>, accessed 20.05.2023). Since small and isolated island faunas are particularly vulnerable, such massive degrees of deforestation have severe impact on the biodiversity. It is known that protected forests experience the lowest deforestation and thus it must be hoped that there will rapidly be efforts to protect the remaining forest areas of the Philippines to help retain as much as possible of the highly threatened endemic biodiversity of the archipelago. Therefore, it is hoped that the description of new species such as this striking new *Theramenes* stick-insect will support considerations that ensure the survival and protection of endangered areas within the Philippines.

Our still poor knowledge not only concerns to the diversity of Philippine Phasmatodea but also to all other aspects. Thus, little is known about the biology, habits and host plants of species of *Theramenes*. The only available information was presented by Seidenschwarz (2018), who stated *Th. mandirigma* Zompro & Eusebio, 2001 feeds on *Diospyros philippinensis* and two other *Diospyros* spp. (Ebenaceae) as well as *Swietenia macrophylla* (Meliaceae) in its natural habitats on the island of Cebu. As typical for members of the Obrimini, ♀ deposit the bullet-shaped eggs several millimetres deep in soil and even dead soft wood or bark and Seidenschwarz (2018: 5) reported that in *Th. mandirigma* the first hatchlings emerged after 83 days.

Acknowledgements

The author wants to thank Joachim Bresseel (Zermst, Belgium) and Jérôme Constant (RBINS) for generously providing specimens, information, pictures and data for the present study and Wouter Dekoninck (RBINS) for arranging the loan of specimens from the collection of the Royal Belgian Institute of Natural Sciences, Brussels. Ismael O. Lumawig (Bulacan, Luzon, Philippines) is thanked for his tremendous help in obtaining specimens for several years. Two unknown referees are thanked for their helpful and constructive comments on the manuscript.

References

Bank S., Buckley T.R., Büscher T.H., Bresseel J., Constant J., de Haan M., Dittmar D., Dräger H., Kahar R.S., Kang A., Kneubühler B., Langton-Myers S.S. & Bradler S., 2021. – Reconstructing the nonadaptive radiation of an ancient lineage of ground-dwelling

- stick insects (Phasmatodea: Heteropterygidae). *Systematic Entomology*, 46: 487 - 507. <https://doi.org/10.1111/syen.12472>
- Beier M. 1968. – Handbuch der Zoologie. 4(2)/10, pp. 1 - 56. *Berlin*.
- Bollens T., Krijns R. & Bresseel J., 2010. – Collectietrip op de Filipijnen: vervolg. *Phasma Newsletter*, 20(79): 22-26.
- Bradler S., 2009. – Phylogenie der Stab- und Gespenstschrecken (Phasmatodea). *Species, Phylogenie and Evolution*, 2: 3-139.
- Bradley J.C. & Galil B.S., 1977. – The taxonomic arrangement of the Phasmatodea with keys to the subfamilies and tribes. *Proceedings of the Entomological Society of Washington*, 79: 176 - 208.
- Bragg P.E., 2001. – Phasmids of Borneo. *Natural History Publications (Borneo)*, Kota Kinabalu, 772 pp.
- Brock P.D. & Büscher T.H., 2022. – Stick and Leaf-Insects of the world, Phasmids. *N.A.P. Editions*. 609 pp.
- Hennemann F.H. & Conle O.V., 2003. – A new species of *Theramenes* Stål, 1875 (Phasmatodea: Heteropterygidae: Obriminae: Obrimini) from Panay Island, Philippines. *Entomologische Zeitschrift*, 113(4): 104-106.
- Hennemann F.H., Conle O.V., Brock P.D. & Seow-Choen F., 2016. – Revision of the Oriental subfamily Heteropteryginae Kirby, 1896, with a re-arrangement of the family Heteropterygidae and the descriptions of five new species of *Haamiella* Kirby, 1904 (Phasmatodea: Areolatae: Heteropterygidae). *Zootaxa*, 4159(1): 1 - 219. <http://doi.org/10.11646/zootaxa.4159.1.1>
- Kirby W.F., 1904. – A synonymic catalogue of Orthoptera. *British Museum, London*, Vol. I.
- Otte D. & Brock P.D., 2005. – Phasmida Species File: Catalog of Stick and Leaf Insects of the world, 2nd Edition. *The Insect Diversity Association at the Academy of Natural Sciences, Philadelphia*. CafePress.com, 414 pp.
- Redtenbacher J., 1906. – Die Insektenfamilie der Phasmiden. I. Phasmidae Areolatae. *Leipzig*. pp. 1-180, pls. 1-6.
- Rehn J.A.G. & Rehn J.W.H., 1939. – The Orthoptera of the Philippine Islands, Part 1. – Phasmatidae: Obriminae. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 90: 389-487.
- Seidenschwarz F., 2018. – Description of the female and egg of *Theramenes mandirigma* Zompro & Eusebio, 2001 (Phasmatodea: Heteropterygidae: Obriminae: Obrimini). *Phasmid Studies*, 19: 2-7.
- Stål C., 1875. – Recensio Orthopterorum. *Revue critique des Orthoptères décrits par Linné, de Geer et Thunberg*, 3, 4-105. *A. Norstedt & Söner, Stockholm*.
- Stål C., 1877. – Espèces nouvelles de Phasmides. *Annales de la Société entomologique de Belgique*, 20: 62-69.
- Westwood J.O., 1859. – Catalogue of Orthopterous insects in the collection of the British Museum. Part 1: Phasmidae. *British Museum, London*.
- Zompro O., 2004. – Revision of the genera of the Areolatae, including the status of *Timema* and *Agathemera* (Insecta, Phasmatodea). *Abhandlungen des naturwissenschaftlichen Vereins in Hamburg*, (NF) 37, 327 pp, 161 figs.
- Zompro O. & Eusebio O.L., 2002. – A new species of stick insect (Phasmatodea: Heteropterygidae: Obriminae: Obrimini) from Cebu Island, Philippines. *Philippine Entomologist*, 15(1), 23-26.

Résumé

Hennemann F. H., 2023. – *Theramenes letiranti* – une nouvelle espèce remarquable de phasme Obriminae de Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae). *Faunitaxys*, 11(45): 1 – 9.

La nouvelle espèce *Theramenes letiranti* n. sp. de Mindanao est le plus petit membre du genre **Theramenes** Stål, 1875. Elle est décrite à partir de la femelle et du mâle. Une clé mise à jour est présentée pour les cinq espèces connues de *Theramenes* ainsi que des remarques générales sur le genre.

Mots-clés. – Phasmida, Areolatae, Obrimini, *Theramenes*, nouvelle espèce, taxonomie, descriptions, clé.

Derniers articles publiés

Delahaye N., Marazzi G. & Marazzi V., 2023. – Quelques remarques sur le genre *Xixuthrus* Thomson, 1864 avec la description de deux nouvelles espèces (Coleoptera, Cerambycidae, Prioninae, Macrotomini, Xixuthrina). *Faunitaxys*, 11(34): 1 – 9. [https://doi.org/10.57800/faunitaxys-11\(34\)](https://doi.org/10.57800/faunitaxys-11(34))

Lourenço W. R. & Velten J., 2023. – Confirmation of the validity of the genus *Cretaceousbuthus* Lourenço, 2022 and description of a new species from Burmite (Scorpiones: Buthoidea: Buthidae). *Faunitaxys*, 11(35): 1 – 6. [https://doi.org/10.57800/faunitaxys-11\(35\)](https://doi.org/10.57800/faunitaxys-11(35))

Théry T., 2023. – Description of *Derolathrus foveiceps* n. sp. from Florida (Coleoptera: Jacobsoniidae). *Faunitaxys*, 11(36): 1 – 4. [https://doi.org/10.57800/faunitaxys-11\(36\)](https://doi.org/10.57800/faunitaxys-11(36))

Bate R. & Bate M. D., 2023. – New synonymies and distribution records of some longhorn beetles (Coleoptera, Cerambycidae) occurring in South Africa. *Faunitaxys*, 11(37): 1 – 9. [https://doi.org/10.57800/faunitaxys-11\(37\)](https://doi.org/10.57800/faunitaxys-11(37))

Háva J. & Coache A., 2023. – *Anthrenus (Anthrenodes) sarahae* sp. nov., a new species from Benin (Coleoptera: Dermestidae). *Faunitaxys*, 11(38): 1 – 3. [https://doi.org/10.57800/faunitaxys-11\(38\)](https://doi.org/10.57800/faunitaxys-11(38))

Keith D. & Coache A., 2023. – Sur *Phaeochrous thomensis* Arrow, 1909 (Coleoptera, Scarabaeoidea, Hybosoridae). *Faunitaxys*, 11(39): 1 – 5. [https://doi.org/10.57800/faunitaxys-11\(39\)](https://doi.org/10.57800/faunitaxys-11(39))

Vlasak J. & Santos-Silva A., 2023. – Cerambycidae (Coleoptera) from Ecuador and Central America: new species and new country records. *Faunitaxys*, 11(40): 1 – 12. [https://doi.org/10.57800/faunitaxys-11\(40\)](https://doi.org/10.57800/faunitaxys-11(40))

Gouverneur X. & Chemin G., 2023. – Description d'une nouvelle espèce du genre *Erythresthes* Thomson, 1864 du Laos (Coleoptera, Cerambycidae). *Faunitaxys*, 11(41): 1 – 3. [https://doi.org/10.57800/faunitaxys-11\(41\)](https://doi.org/10.57800/faunitaxys-11(41))

Devesa S. & Vlasak J., 2023. – New species and new country records in Neotropical Cerambycidae (Coleoptera). *Faunitaxys*, 11(42): 1 – 10. [https://doi.org/10.57800/faunitaxys-11\(42\)](https://doi.org/10.57800/faunitaxys-11(42))

Drumont A., Komiya Z., Do C., Toan Phan Q., Constant J. & Ripaille C., 2023. – Revision of the genus *Hystatoderes* Lameere, 1917 (Part I): species from Vietnam (Coleoptera, Cerambycidae, Prioninae, Anacolini). *Faunitaxys*, 11(43): 1 – 11. [https://doi.org/10.57800/faunitaxys-11\(43\)](https://doi.org/10.57800/faunitaxys-11(43))

Le Tirant S. & Santos-Silva A., 2023. – Description of two new species of Cerambycidae (Coleoptera) and notes on *Macrodonia crenata* and *Deltaspis cyanipes*. *Faunitaxys*, 11(44): 1 – 13. [https://doi.org/10.57800/faunitaxys-11\(44\)](https://doi.org/10.57800/faunitaxys-11(44))

Faunitaxys est échangée avec les revues suivantes (« print versions ») :

- Annali del Museo Civico di Storia Naturale G. Doria (Italie)
- Boletín de la Asociación española de Entomología (Espagne)
- Boletín de la Sociedad Andaluza de Entomología (Espagne)
- Bollettino del Museo di Storia Naturale di Venezia (Italie)
- Bulletin de la Société linnéenne de Lyon (France)
- Bulletin of Insectology (Italie)
- Heteropterus Rev. Entomol. (Espagne)
- Israel Journal of Entomology (Israël)
- Klapalekiana (République Tchèque)
- Koleopterologische Rundschau (Allemagne)
- Memorie del Museo Civico di Storia Naturale di Verona (Italie)
- Nova Supplementa Entomologica (Allemagne)
- Proceedings of the Entomological Society of Washington (USA)
- Revue suisse de Zoologie (Suisse)
- Spixiana (Allemagne)
- Stuttgarter Beiträge zur Naturkunde A, Biologie (Allemagne)
- Zoosystematica Rossica (Russie)

Faunitaxys

Volume 11, Numéro 45, Juin 2023

SOMMAIRE

Theramenes letiranti – une nouvelle espèce remarquable de phasme Obriminae de Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae).

Frank H. Hennemann 1 – 9

CONTENTS

Theramenes letiranti – a remarkable new species of Obriminae stick insects from Mindanao, Philippines (Insecta: Phasmatodea: Heteropterygidae).

Frank H. Hennemann 1 – 9



Illustration de la couverture :

Mont Apo, île de Mindanao, point culminant des Philippines (2 954 m) (Bro. Jeffrey Pioquinto, SJ).

Crédits:

Frank H. Hennemann : Fig. 1A-E, 2A-B, 2D-H, 3.

Jérôme Constant : Fig. 1F, 2C.