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Philippine phasmids from the collection of the Staatliches Museums für Tierkunde, Dresden (Insecta: Phasmatodea)

With 15 figures

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Abstract. The male and egg of *Hoploclonia armadillo* (REDTENBACHER, 1906) are described and figured for the first time. A new genus of Phylliidae, *Microphyllium* gen. n., is erected for *Microphyllium spinithorax* sp. n., the smallest member of the family. The new genus is closest related to *Chitoniscus* STÅL, 1875. A lectotype is designated for *Dares haematacanthus* REDTENBACHER, 1906, which is transferred to *Hoploclonia* STÅL, 1875. The egg of *Lonchodes mindanaense* (BRUNNER v. WATTENWYL, 1907) is described for the first time.

Key words Phasmatodea, *Hoploclonia*, *Microphyllium*, *Hoploclonia*, *Dares*, *Lonchodes*, new genus, new species, lectotype designation, egg, Philippines.

Introduction

While re-arranging the phasmid collection of the Staatliches Museum für Tierkunde in Dresden, Germany and cataloguing its types, the author was able to trace so far undescribed Philippine specimens of this order.

A male and a fully developed egg inside the lectotype's ovipositor were traced besides the two typical females of *Hoploclonia armadillo* (REDTENBACHER, 1906). This species has not been recorded since REDTENBACHER's description. An adult male and two female nymphs were found among numerous undetermined Phylliidae nymphs, representing a new genus and species of this striking phasmids.

The egg and variety of *Lonchodes mindanaense* (BRUNNER v. WATTENWYL, 1907) are described and figured.

The material discussed in this paper again shows the richness in species and morphology of the so far poorly known phasmid fauna of the Philippine Islands.

Hoploclonia armadillo (REDTENBACHER, 1906) (figs 1–6)

Acanthomenus armadillo REDTENBACHER, 1906: 44, pl. 1 fig. 8.
Hoploclonia armadillo: REHN & REHN, 1939: 467, 477.

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L e c t o t y p e (by present designation): ♀, Philippinen, Schadenberg 694. – P a r a l e c t o t y p e: ♀, same data as lectotype. Furthermore, an egg out of the lectotype's ovipositor and a ♂ with same data.

M a l e Body tuberculated. General colouration dark brown, not shiny except for apical antennal segments.
Head rounded rectangular, below eyes with a prominent, broad carina. Genae with two parallel rows of several gulars. Supraorbital series produced as high, triangular projection with several small, lateral apices. Occipital medials lacking except for a prominent one posteriorly. Median coronals distinct. Eyes projecting slightly more than hemispherically. Left antenna consisting of 26 segments, right one broken behind pedicellus. Scapus triangular in cross section, broad, dilating anteriorly, with broad lateral margins and broad elevation dorsally. Pedicellus two thirds as wide as scapus, cylindrical, with blunt tooth exterobasally. Third segment as long as pedicellus, considerably narrower. Fourth and fifth segment as long as wide, the following increasingly longer, from the fifteenth segment on shiny. Terminal segment elongate and acute.
Prothorax quadrate, with deep transversal furrow. Anterior pronotals considerably risen, divided in two large apices. Further spination produced as indistinct tubercles.
Mesothorax trapezoid, dilated posteriadly, with distinct antero- and posterolateral mesonotals. In the anterior half with elevated triangle, median carina also elevated, in the posterior third with rising carinae laterally.
Metathorax also dilating posteriadly, with anterolateral stigma which is broadly marginated and directed upward. Posterior metanotals developed as long, acute spines.
Pro-, meso- and metasternum smooth, with flat median carina.
Profemora curved basally, trapezoid in cross section, broadly marginated interodorsally, with several prominent teeth exterodorsally, with a prominent interoventral spine apically. Tibiae also trapezoid in cross section, probasitarsus as long as following three tarsites combined, these increasingly shorter, terminal segment including unguis almost as long as four previous segments combined. Meso- and Metafemora subquadrate in cross section, strikingly flat dorsally, with few teeth dorso- und ventrolaterally, these more distinct in the metafemora. Metatibiae with several teeth ventrally. All tibiae with long area apicalis. Tarsi as protarsi.
Median segment up to segment VII with broad median carina, II to IV with a posterolateral spine, which is considerably shorter on V and VI, missing on VII. Segments II to VII of equal length and width. Segment VIII longer than IX, X longer than VIII, these three terminal segments with distinct median carina, which is elevated posteriadly. Segment X elongated in two lobes posterolaterally. Supraanal plate projecting rectangularly. Subgenital plate bulgy, with broad and flat posterior margin. Cerci broad, short.
Measurements (mm): Body: 33.6; head: 3.9; prothorax: 3.8; mesothorax: 6.9; metathorax: 4.2; mediansegment: 1.3; profemora: 6.0; protibiae: 7.0; mesofemora: 5.6; mesotibiae: 4.8; metafemora: 7.8; metatibiae: 6.9.

F e m a l e Considerably larger and more compact than the male. Basically showing the same characters as the male. Antennae consisting of 21 (left) and 24 (right) segments. Abdominal segments from median segment to IV of equal width, V to VII increasingly narrowed. Segments VIII to X of same width, but more narrow than VII. Segment VIII as long as IX, X longer. Segment X with high median carina. Supraanal plate nearly as long as segment VIII, from the middle curved downward. Subgenital plate acute, slightly projecting supraanal plate, especially in the posterior half with pointed median carina. Cerci short, broad, triangular.
Measurements (mm): (Lectotype / Paralectotype): Body: 53.4 / 50.1; head: 5.9 / 5.5; prothorax: 5.5 / 4.9; mesothorax: 8.5 / 8.0; metathorax: 3.9 / 3.1; median segment: 2.7 / 2.4; profemora: 9.1 / 8.2; protibiae: 7.8 / 7.3; mesofemora: 7.9 / 7.1; mesotibiae: 6.7 / 6.3; metafemora: 10.0 / 9.8; metatibiae: 10.8 / 9.6.

E g g Capsule brown, punctured (50×), oval from lateral view, flat in the area of the operculum,

Figs 1–2: *Hoploclonia armadillo* (REDTENBACHER, 1906); ♀, lectotype (above); ♂ (below).

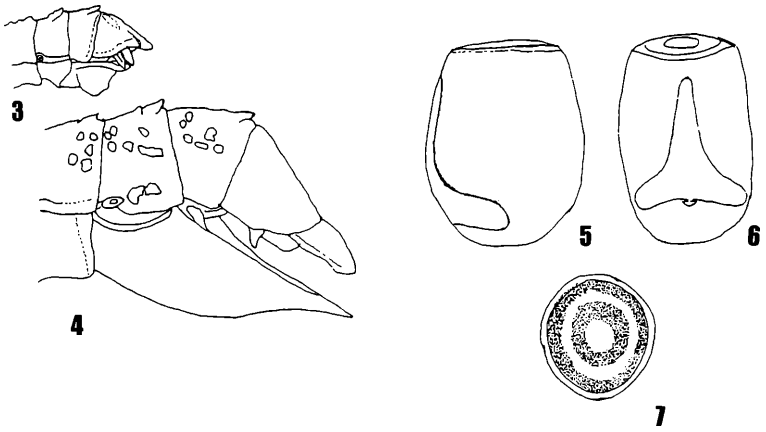
with elongated, triangular and black marginated area dorsally, its corners rounded. Micropylar cup small, indistinct, positioned in the middle of the triangle. Operculum flat, almost round, with one larger circle and a smaller one inside of bristle-like structures.
Measurements (mm): Length: 3.3; width: 2.3; height: 2.8.

The lectotype's left hindleg is missing, as are the paralectotype's antennae.

Key to genera of Phylliidae

The new member of Phylliidae described below differs considerably from the genera known, so that the introduction of a new genus is necessary. For the genera hitherto known, a key is given here:

1.	Visible part of mesothorax in front of tegmina quadrate.	2
–	Visible part of mesothorax in front of tegmina transverse.	3
2.	Protibiae with exterior lobes only.	***Phyllium*** ILLIGER
–	Protibiae with interior and exterior lobes.	***Phyllium* (*Pulchriphyllium*** GRIFFINI)
3.	Prosternum with distinct median hump.	4
–	Prosternum without distinct median hump.	***Nanophyllium*** REDTENBACHER
4.	Profemora with distinct, serrated lobes dorsally.	***Chitoniscus*** STÅL
–	Profemora without distinct appendices dorsally.	***Microphyllium* gen. n.**



Figs 3–7: *Hoploclonia armadillo* (REDTENBACHER, 1906); 3: ♀, terminal abdominal segments, lateral; 4: ♂, terminal abdominal segments, lateral; 5: egg, lateral; 6: egg, dorsal; 7: egg, operculum, anterior.

KIRBY (1904: 422) designated *Phyllium scythe* GRAY, 1835, as type-species of *Pulchriphyllium* GRIFFINI, 1898. This is not valid, as GRIFFINI himself designated *Phyllium pulchrifolium* AUDINET-SERVILLE, 1839, as type-species.

Microphyllium gen. n.

Type species *Microphyllium spinithorax* sp. n.

Diagnosis The new genus includes only one species with the smallest members of the whole family. It is endemic to the Philippines. It seems to be closer related to *Chitoniscus* STÅL, 1875, which is distributed from New Guinea to Fiji, than to *Phyllium* ILLIGER, 1798, and *Nanophyllium* REDTENBACHER, 1906.
♂: Antennal segments round in cross section, without lateral apendices as in *Phyllium*. Their terminal segments in the anterior part flattened spoon-like. Prothorax slightly shorter and narrower than head. Mesothorax distinctly spinose laterally and prominent elevation dorsally. Pro- and mesosternum tuberculated medially. Tegmina and alae present. Abdominal segments II to VIII of similar width. Profemora with broad, serrated lobe ventrally. Meso- and metafemora dilated dorsally and ventrally, ventral lobe considerably more prominent and serrated. Tibiae in both sexes without metamorphoses.
♀, nymph: Antennae broken in the present material. Tegmina not developed, margins of alae parallel in the middle, not overlapping. Armation of thorax not as prominent as in the male.

Microphyllium spinithorax sp. n. (figs 7–12)

Holotype ♂, Luzon, St. Thomas (coll. Staatliches Museum für Tierkunde, Dresden); paratypes ♀ L-5, ♀ L-4, data as holotype (coll. Staatliches Museum für Tierkunde, Dresden).

Very small species. Colour yellowish-green, in live supposely green. Sternum with lighter tubercles.

Male Head rounded quadrate, depressed dorsoventrally, especially in the posterior half irregularly with short spines. Genae bounded dorsally by an indistinct furrow. Scapus broad, de-

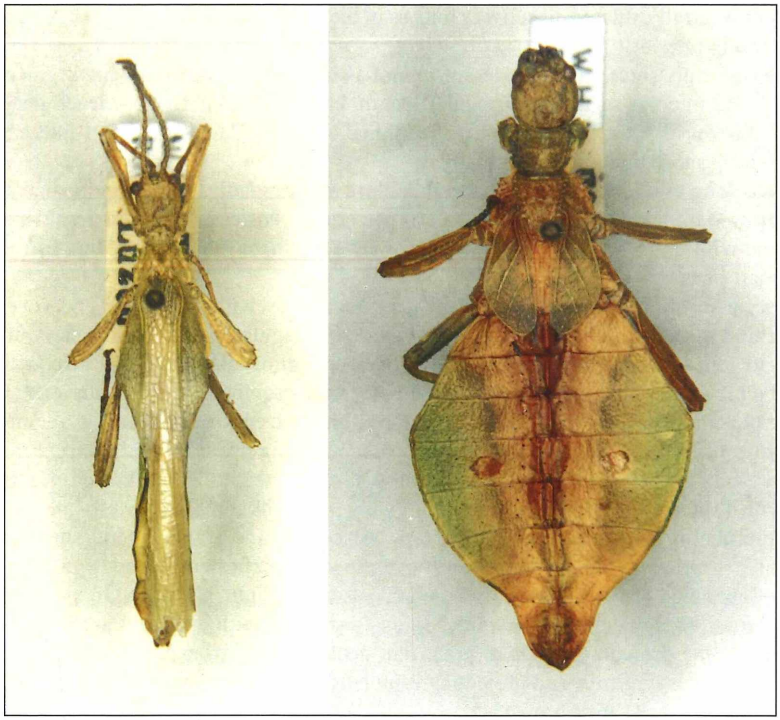
pressed dorsoventrally, dilated distadly, as long as in the middle wide, with an acute edge exteriorly and a blunt one interiorly.
Pedicellus strikingly short, disc-like, less than half as long as scapus. Following segments (18 all together) round in cross section, of irregular length, elongated, slightly broadened distally, with long, dark brown bristles. Anterior part of terminal segment flat, with spoon-like excavation. Eyes projecting more than hemispherically.
Prothorax as long as wide in middle, trapezoid, narrowed caudadly, with deep median and transversal furrow. Margin anteriorly twice as wide as posteriorly. Posterior half with irregular spination, anterior one with transversal furrows. Sternum with prominent, blunt spine, this surrounded by several small ones.
Mesothorax also trapezoid, dilated caudadly, on both sides with four large and several small spines, behind them with broad carina. With rounded triangular elevation anteriorly, this showing three to four blunt spines laterally and another elevation medianly, this also with a blunt spine and a broad and high median carina, the latter with prominent spine posteriorly. Elevation with two submedian carinae leading to the tegmina, and a deep furrow laterally. Tegmina reaching posterior margin of abdominal segment IV. Alae reaching posterior margin of segment VIII.
Profemora with broad, ventral carina with three saw-like teeth. Tibiae keeled ventrally, area apicalis with a spine. Probasitarsi as long as following segments combined. Meso- and metafemora of same morphology, flat and broad, with four to six prominent and several smaller saw-like teeth. Basitarsi one third shorter than length of following tarsites combined.
Margins of abdomen parallel, segments II and III of same length, with fine, lighter median line. Tergite X broad, triangular, lateral margins turned downward, with indistinct impression dorsally, broad median line present. Subgenital plate flat, posterior half triangular. Cerci flat, hollowed ventrally, as long as tergite X and projecting it by half of its length, dark brown, bristled. Vomer triangular, acute, green, apex brown.
Measurements (mm): Body: 24.2; head: 1.8; prothorax: 1.3; mesothorax: 1.3; profemora: 4.1; protibiae: 3.0; mesofemora: 4.0; mesotibiae: 2.9; metafemora: 4.8; metatibiae: 4.0.

F e m a l e The forelegs and the antennae from the fifth and sixth segment are missing in the present fifth-instar-nymph. The description is completed from the fourth-instar-nymph. The female differs from the male in the following characters:
Head with broad impression, eyes less projecting. Scapus and pedicellus more flat. Antennae shorter than half legth of head. Antennite III as long as scapus, following segments very short, disc-like, their length combined slightly longer than I to III combined. Terminal antennite as long as the previous, disc-like ones combined.
Prothorax subquadrate, with irregular spination, anterior and lateral margins distinct. Triangular structure of anterior mesothorax leading between alae, margins with prominent spines. Tegmina absent in the nymph. Alae projecting beyond half of abdominal segment II, not overlapping medianly.
Profemora with triangular lobe interiorly, meso- and metafemora broader than in male.
Abdomen rhombic, widest between segments IV and V. Segment V with transparent spot on each side. Segments I to VII with median and smaller submedian carina. Segment X as in male, but broader and not as acute.
Measurements (mm): Body: 29.2; head: 3.2; prothorax: 2.2; mesothorax: 2.7; mesofemora: 4.7; mesotibiae: 3.7; metafemora: 6.2; metatibiae: 5.0.

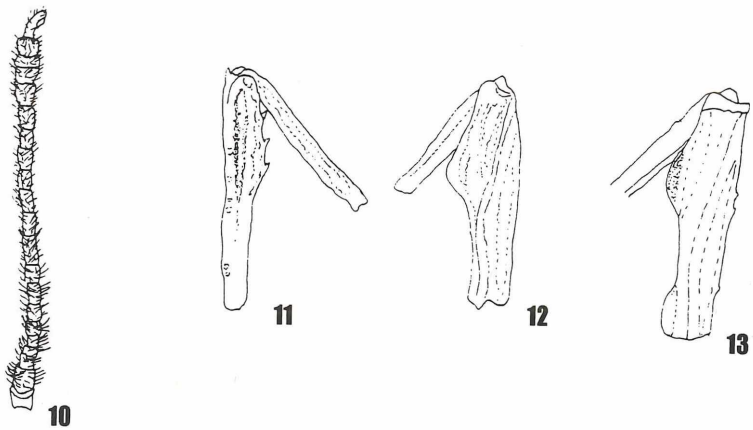
Hoploclonia haematacantha (REDTENBACHER, 1906) **comb. n.**

Dares hämatacanthus REDTENBACHER, 1906: 54.

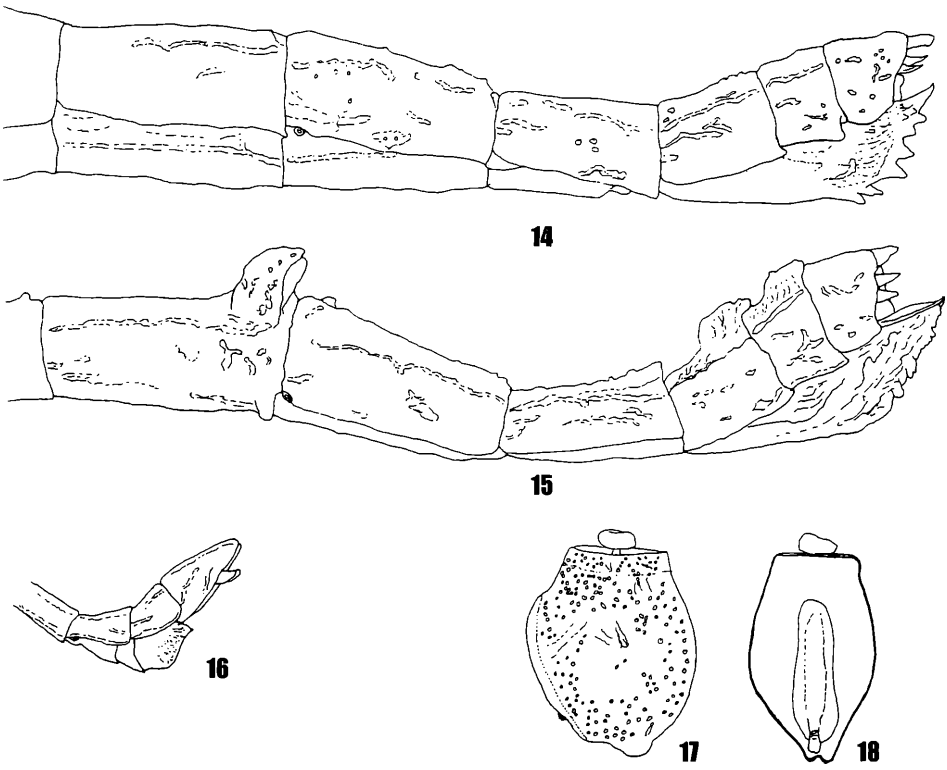
L e c t o t y p e (by present designation): ♂, British Nord Borneo (Padas Fluss), H. Fruhstorfer misit / Museum 15. 6. 1891 (coll. Staatliches Museum für Tierkunde, Dresden).



Figs 8–9: *Microphyllium spinithorax* sp. n.; ♂, holotype (left); ♀, L-5, paratype (right).



Figs 10–13: *Microphyllium spinithorax* sp. n.; 10: ♂, holotype, right antenna, lateral; 11: ♂, holotype, left profemur, interiodorsolateral; 12: ♂, holotype, right metafemur, exteriolateral; 13: ♀, L-5, paratype, right profemur, dorsal.



Figs 14–18: *Lonchodes mindanaense* (BRUNNER v. WATTENWYL, 1907); 14: ♀, abdomen, lateral; 15: ♀, abdomen, lateral; 16: ♂, terminal abdominal segments, lateral; 17: egg, lateral; 18: egg, dorsal.

P a r a l e c t o t y p e ♂, Type; *Dares hamatacanthus* Redt.; 47; Neu Guinea Fruhstorfer; *Hoploclonia haematacanthus* (Redt.) K. Günther det.; Zool. Mus. Berlin. (coll. Zoologisches Museum der Humboldt-Universität, Berlin).

REDTENBACHER recorded in error the Dresden specimen to be in the Zoologisches Museum der Universität, Hamburg.

Lonchodes mindanaense (BRUNNER v. WATTENWYL, 1907) (figs 14–18)

Prisomera mindanaense BRUNNER v. WATTENWYL, 1907: 286.
Lonchodes mindanaense: BRAGG, 1996: 44.

L e c t o t y p e (designated by BRAGG, 1996: 44): ♀; p a r a l e c t o t y p e ♂, Dapitan, Mindanao (coll. Staatliches Museum für Tierkunde, Dresden).

BRAGG (1996: 44) records the male as "not located", in fact the specimen is present in the collection as mentioned by BRUNNER v. WATTENWYL (1907: 287).
This species shows a large variability in the female sex. The main colour is brown, but it is often interrupted by white, black or grey spots of irregular size. The tergite of abdominal segment V often bears large lobes. Similar lobes are also present on tergites IX and X. Ventral part of the

subgenital plate of the female shows considerable variety in its morphology. Median carina often smooth, sometimes distinctly serrated.
The specific identity of all specimens examined was veryfied by cultures.

E g g Surface of capsule brown, punctured, depressed laterally, bulgy dorsally. Polar area elevated hump-like, the hump emarginated medianly. Micropylar plate elongated, light brown, dilated posteriorly. Capitulum orange to brown, smooth, impressed anteriorly, on short stalk. Measurements (mm): Total length: 4.1; Length: 3.8; width: 2.2; height: 3.0.

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