

On *Thelyphonoides panayensis* gen. et sp.n. (Arachnida: Uropygi: Thelyphonidae), a new genus and a new species of whip scorpions from Panay Island (Philippines)*

О *Thelyphonoides panayensis* gen. et sp.n. (Arachnida: Uropygi: Thelyphonidae), новый род и вид телифонов с острова Панай (Филиппины)

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КЛЮЧЕВЫЕ СЛОВА: Arachnida, Uropygi, описание, таксономия, *Thelyphonoides panayensis* gen.n., sp.n.

ABSTRACT. A new whip scorpion genus and species is described from Panay Island (Philippines) on the basis of three males and a female. The new genus is diagnosed from the superficially similar *Thelyphonus* by the structure of genitalia of both sexes.

РЕЗЮМЕ. Новый род и вид телифронид описан по трем самцам и самке с острова Панай (Филиппины). Новый род отличается от внешне похожего *Thelyphonus* по структуре гениталий у обоих полов.

Introduction

The whip scorpion (Uropygi) fauna of the Philippine islands remains poorly studied, with six species recorded to date.

Two species (*Thelyphonus hansenii* Kraepelin, 1897 and *T. semperi* Kraepelin, 1897) have been discovered in Mindanao.

Three species were found in Luzon: *Thelyphonus vanoorti* Speijer, 1936, *T. luzonicus* Haupt, 2009 and *T. manilanus* C.L. Koch, 1843. The name *T. luzonicus* Haupt, 2009 was proposed by Haupt [2009] as a substitution for the homonymic *Thelyphonus manilanus* (Kraepelin, 1901); nec *Thelyponus manilanus* C.L. Koch, 1843. Speijer [1936] put the former of these

names in the genus *Abaliella* and the latter in the genus *Minbosius*. But both generic names turned out to be junior synonyms of *Thelyphonus* [see Haupt, 2009], and therefore became homonyms. The new name is *Thelyphonus luzonicus* Haupt, 2009.

A small-sized species, *Glyptoglutus augustus* Rowland, 1973, was described from Panay Island. It is the only species known from there to date. The male shows modifications at the opisthosomal segments VII and VIII, and is quite small in size (18 mm long, from the anterior of peltidium to the end of opisthosomal segment XII). The female of *G. augustus* is unknown.

The occurrence of one species (viz., *Thelyphonus vanoorti* Speijer, 1936) cannot be verified, as its specimens are absent from the collection of the ZMB.

Mimoscorpius pugnator (Butler, 1872) was considered as occurring in Philippines since the time of its original description [Butler, 1872] until its real occurrence was recently discovered in Guatemala [Armas & Viquez, 2005]. Butler apparently did not know the exact origin of the specimens he studied, and this was apparently not of importance for him. Therefore, this species is to be excluded from the Philippine fauna.

In taxonomic descriptions, the identification of segments follows Millot [1949], that of appendages follows Snodgrass [1948]. The following abbreviations were used: PNM — Philippine National Museum, Manila (curator — V.U. Samarita); ZMB — Leibniz-Institut für Evolutions- und Biodiversitätsforschung an der Humboldt-Universität zu Berlin, Abteilung Sammlung (curator — J. Dunlop).

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Table 1. Diagnostic characters of two related genera of whip scorpions.
Таблица 1. Диагностические признаки двух родственных родов телифонов.

<i>Thelyphonus</i>		<i>Thelyphonoides</i> gen.n.	
male	female	male	female
clasp equally rounded	receptacula attached to the uterus externus laterally	two clasps, the inner angular, the outer with sigmoid flexure (sinusoidal)	receptacula round, with thin canal

Taxonomy

Thelyphonoides gen.n.

Type-species: *Thelyphonoides panayensis* sp.n.

Although the new species is superficially similar with *Thelyphonus* species, it is considerably larger (43 mm without pedipalps and metasoma) than all *Thelyphonus* species (20–32 mm without pedipalps and metasoma). Besides, its genital organs are different. As it is distinguished only by genital organs, a table is added (Table 1).

COMMENTS. Because of the difference of sexual organs compared to *Thelyphonus* species, a new genus had to be established, even though specimens externally look much like *Thelyphonus*, but they are larger. In the middle, between the lateral eyes, there are two cuticular tubercles; however, these can only be interpreted as much reduced “two small eyes” surrounded by the lateral eyes as found in *G. augustus*. Maybe additional lateral eyes belong to the groundplan of Thelyphonidae.

ETYMOLOGY. *Thelyphonoides* means being «just like *Thelyphonus*».

Thelyphonoides panayensis sp.n.

Figs 1–4, 6–9.

TYPE MATERIAL. The ♂ holotype (PNM), Philippines, Panay Island, Antique, Libertad, Cubai, low elevation rain forest, in dry riverbed, under log, 14.11.2007, H. Krehenwinkel.

Paratypes: 2 ♂♂ (ZMB), together with the holotype; 1 ♂ subadult (ZMB), same locality and habitat, 11.2008, J. Tacud; 1 ♀ (ZMB), Panay Island, Aklan, Buruanga, Malumpati, 13.03.2006, D. Bellhoff; 4 juvenile residues (ZMB), same locality, from the stomach of *Bufo marina*, 13.09.2006, D. Bellhoff; 1 juvenile (ZMB), Panay isl., Aklan, Buruanga, Malumpati, low elevation rainforest, inside limestone cave, under stone, 9.11.2007, H. Krehenwinkel.

ETYMOLOGY. The name *panayensis* is originated from the type locality, Panay Island.

DIAGNOSIS. Body (peltidium, pedipalps, opisthosomal tergites 1–3) almost black, appendages (except pedipalps) and ventral side dark brown. Male with inflated pedipalpal tibia and long, slender, acute patellar apophysis. Genital plate convex, with a longitudinal depression, at the end almost triangular and covered by hairs.

COMPARISON. The newly discovered species exceeds species from the Philippines in size, its fourth tooth on the trochanter of the pedipalps is larger and more slender in males, and it has more complicated genital organs than in *Thelyphonus* (see Table 1). Fe-

male genital organs show globular receptacula with a fine canal, in contrast to *Thelyphonus* which has receptacula located parallel to the uterus externus and inserting laterally to it.

Thelyphonus manilanus has the rather lengthy pedipalpal coxae (Fig. 11), with a total of five spines: one spine directed in frontal direction, the forth spine is significantly shorter than that in the male of *Thelyphonoides panayensis* sp.n. The latter species possesses two spines anteriorly, of which the largest one is directed at 45°, and three other spines directed in median direction. Besides, the total body length of *T. manilanus* is considerably smaller (27 mm without pedipalps) than that of *T. panayensis* sp.n. In Koch's adult male specimen the genital plate proved to lack genital organs, therefore, new material has to be obtained to compare sexual organs. The other specimen of the syntype series is a juvenile.

Thelyphonus luzonicus is just 25 mm long, with no “ommatidia”. To date, a single female has been known.

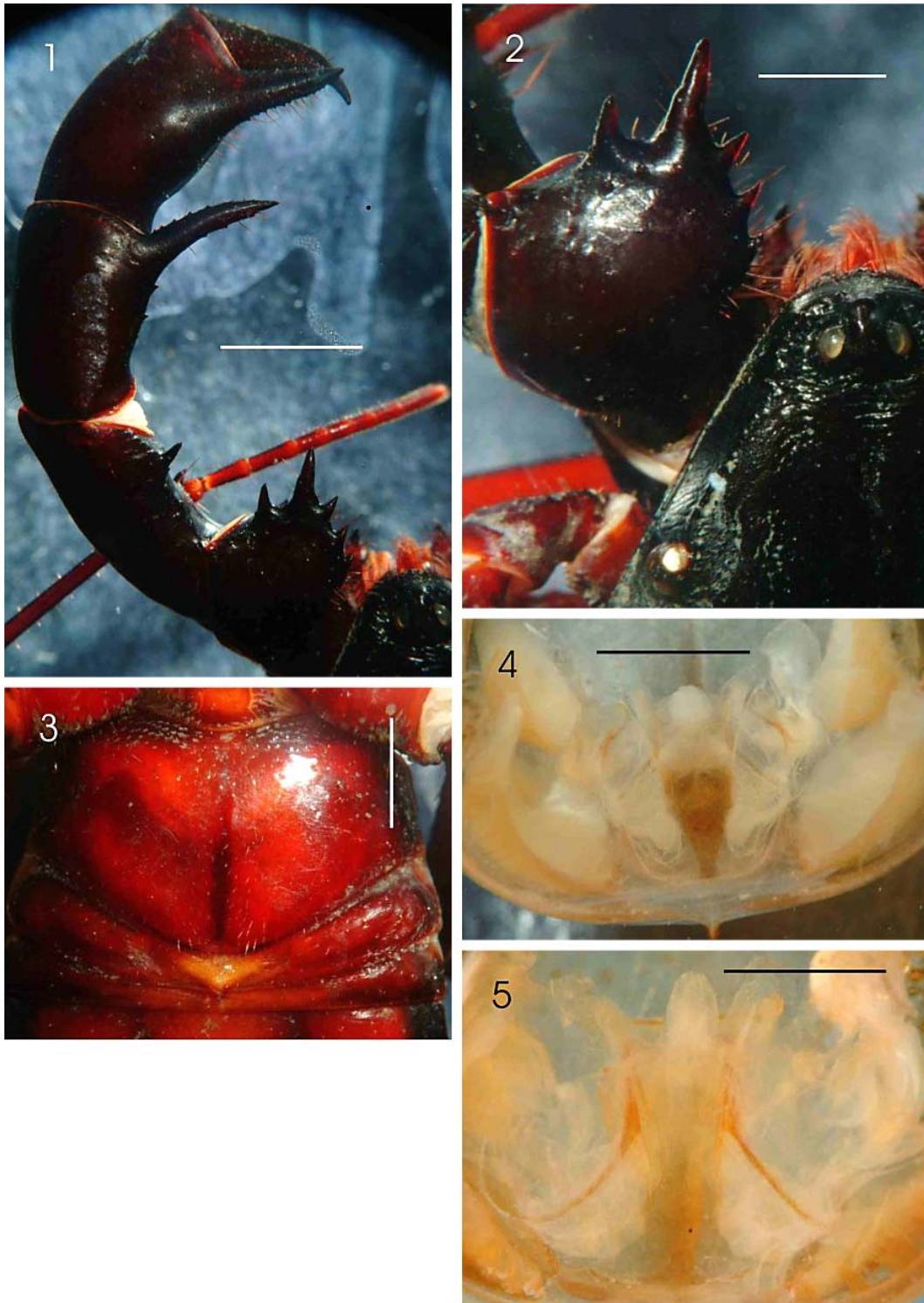
Thelyphonus vanoorti is 20–23.5 mm long. All data are taken from the literature, for the ZMB has no material for comparison.

Glyptoglutheus augustus: Although this species occurs on the same island with *T. panayensis* sp.n., it can easily be separated by the roundish pedipalpal coxae with small spines and some modifications on sternite VII and two lateral excavations on sternite VIII. The patellar apophysis is similar, but less acute. *G. augustus* is only 18 mm long. Moreover, there are only three lateral eyes in *T. panayensis* sp.n.

COMMENTS. The records of *Thelyphonus manilanus* from Panay Island by Haupt [2007] were mistaken and belong to *T. panayensis* sp.n. Since original Koch's syntypes were discovered in the ZMB, the situation has become clear: the pedipalpal trochanters of *T. manilanus* are much longer, while the species itself is much smaller. The genital organ of *T. manilanus* has not yet been found in the ZMB. The second syntype specimen is a juvenile.

DESCRIPTION of the ♂ holotype. Size: Peltidium 15 mm long, 9 mm wide, opisthosoma (including metasoma) 22 mm long, 10 mm wide. Total length: 47 mm (52 mm with extended pedipalps).

Median eyes separated by very prominent ridge (Fig. 2), therefore exposure of median eyes almost lateral. Keel between lateral and median eyes about 2/3 of the distance as seen from the lateral eyes. Beyond the keel a rather steep lateral descent.



Figs 1–5. Somatic and genital characters of *Thelyphonus panayensis* sp.n. (1–4) and *T. seticauda* (5): 1 — left pedipalp; 2 — median eyes with ridge, lateral eyes with keel in the direction of median eyes; 3 — genital plate with median groove and third segment with thorn directed posteriorly (ventral view); 4 — male genital organ; 5 — the genital organ of *T. seticauda*. Scale bars: 1 — 3.9 mm; 2 — 2.0 mm; 3 — 2.5 mm; 4 — 3.5 mm; 5 — 1.5 mm.

Рис. 1–5. Соматические и генитальные признаки *Thelyphonus panayensis* sp.n. (1–4) и *T. seticauda* (5): 1 — левая педипальпа; 2 — средние глаза с гребнем, латеральные глаза с килем в направлении средних глаз; 3 — генитальная пластинка со средней выемкой и третьим сегментом с шипом, направленным назад (вид снизу); 4 — половой орган самца; 5 — генитальный орган *T. seticauda*. Масштаб: 1 — 3,9 мм; 2 — 2,0 мм; 3 — 2,5 мм; 4 — 3,5 мм; 5 — 1,5 мм.



Figs 6–11. Somatic and genital characters of *Thelyphonoides panayensis* sp.n. (6–9), *T. caudatus* (10) and *T. manilanus* (11): 6 — opisthosomal tergites divided; 7 — female pedipalpi; 8 — female pedipalpal trochanters; 9 — female genital organ of female of *T. caudatus*; 11 — shape of pedipalpal trochanter of syntype of *T. manilanus*. Scale bars: 6 — 7.0 mm; 7 — 5.0 mm; 8 — 2.0 mm; 9 — 2.4 mm; 10 — 1.5 mm; 11 — 3.4 mm.

Рис. 6–11. Соматические и генитальные признаки *Thelyphonoides panayensis* sp.n. (6–9), *T. caudatus* (10) и *T. manilanus* (11): 6 — разделенный эпистомальный тергит; 7 — педипальпы самки; 8 — бедра педипальп самок; 9 — генитальный орган самки; 10 — генитальный орган самки *T. caudatus*; 11 — форма бедра пальпы у синтипа *T. manilanus*. Масштаб: 6 — 7,0 мм; 7 — 5,0 мм; 8 — 2,0 мм; 9 — 2,4 мм; 10 — 1,5 мм; 11 — 3,4 мм.

Pedipalps (Fig. 1): Tibia inflated, rounded. Patellar apophysis straight, long with acute tip. Trochanter at median side with three spines increasing in length, followed by a very prominent spine and a spine about half of its length, directed in frontal direction. Trochanters sparsely punctured, peltidium a little bit more.

Genital plate (second sternite, Fig. 3): convex, with a longitudinal depression, at the end triangular and covered by hairs. Only punctured at anterior margin and the sides. Third sternite with median process. Cuticular parts of genital organ of paratype (Fig. 4) more complicated than in *Thelyphonus*. For comparison genital organ of *Thelyphonus seticauda* (Fig. 5).

Tergites 1–9 of the opisthosoma all divided (Fig. 6), from the 4th tergite brown with black terminal margin. “Ommatoids” very small and round.

PARATYPES. 1) ♂ Peltidium 14 mm long, 8.5 mm wide, opisthosoma 20 mm long, 9 mm wide, total length 42 mm (46 with extended pedipalps); collected together with the holotype, 14.11.2007, H. Krehenwinkel. Cuticular parts of the genital organ (Fig. 5).

2) ♂ Peltidium 14.5 mm long, 8.5 mm wide, opisthosoma 24 mm long, 9.5 mm wide, total length 41 mm (55 mm with extended pedipalps); collected together with the holotype, 14.11.2007, H. Krehenwinkel.

3) Subadult ♂ Peltidium 15 mm long, 9 mm wide, total length 40 mm; collected 11.2008, J. Tacud.

4) ♀ Peltidium 16.5 mm long, total length 44 mm (without pedipalps); collected from Malumpati (Panay Isl.), 13.09.2006, D. Bellhoff. The pedipalps are much shorter than in the male (Fig. 7). Moreover, the female has more roundish trochanters of pedipalps, and the forth tooth is not as long as in the male (Fig. 8). The punctures are more dense, the same as on the peltidium. The sides of the genital plate are punctured. Genital organs globular with fine canal (Fig. 9). For the comparison of genital organs of *Thelyphonus caudatus* see Fig. 10.

5) Four residues of juveniles from stomach of *Bufo marinus*; collected from Malumpati, 13.09.2006, D. Bellhoff.

6) 1 juvenile: peltidium 9.5 mm, total length 27 mm; collected from Malumpati, 09.11.2007, H. Krehenwinkel.

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