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New data on the Philippine oribatid mite fauna, with a contribution to knowledge of the genus *Drymobatoides* (Acari, Oribatida, Mochlozetidae)

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ABSTRACT — A list of identified oribatid mite taxa (Acari, Oribatida) from Capual, Luzon, Mindanao, Polillo, Samal and Samar Islands of the Philippines, including 54 species from 46 genera and 26 families, is presented; of these, 19 species, four genera and one family are recorded in this country for the first time. A new generic diagnosis for *Drymobatoides* (Mochlozetidae) is proposed. The taxonomic status of the mochlozetid genus *Rykella* is discussed, resulting in the proposal that *Drymobatoides* Jacot, 1936 is a senior subjective synonym of *Rykella* Balogh, 1962 (**n. syn.**) and in the following reassignments from *Rykella*: *Drymobatoides asiaticus* (Yamamoto and Aoki, 2000) **n. comb.**, *D. elamellatus* (Berlese, 1916) **n. comb.**, *D. insignis* (Balogh, 1962) **n. comb.**. A new species of *Drymobatoides* from the Phillippines is described; *D. boronganensis* **n. sp.** differs from *D. malabaricus* (Clement and Haq, 1982) by the morphology of rostral, lamellar and bothridial setae, the length of the interlamellar seta, and the presence of a ventrodistal rectangular incision on leg femur II. An identification key to the seven known species of *Drymobatoides* is provided.

KEYWORDS — Mites; fauna; list of taxa; record; systematics; new species; generic diagnosis; new synonym; new combination; key; Oriental region

ZOOBANK — DEB9D472-5B83-4465-B244-6E7639ABC77C

INTRODUCTION

This work is the final report for our study of the Philippine oribatid mites (Acari, Oribatida) based on a random set of previously unstudied materials, which were received in 2016 from the collections of the Museum of Natural History (University of the Philippines Los Baños). These materials come from the Capual, Luzon, Mindanao, Polillo, Samal and Samar Islands, where oribatids are insufficiently studied (e.g. Corpuz-Raros 1979, 2000, 2014; Corpuz-Raros and Gruèzo 2005, 2011). Our primary goal is to present a list and new findings of identified oribatid taxa except Carabodidae, Microzetidae, Oppiidae, Rhynchoribatidae and Galumnidae – data on these families were presented earlier (e.g. Ermilov and Corpuz-Raros 2016a-c).

A second goal is to describe and illustrate a new Philippine species of the genus *Drymobatoides* Jacot, 1936 of the family Mochlozetidae (see Norton and Behan-Pelletier 2009; Schatz *et al.* 2011) – *D. boronganensis* **n. sp.** – and to use this opportunity to rediagnose the genus and assess its relationship with

Rykella Balogh, 1962.

Drymobatoides was proposed by Jacot (1936) with *Drymobatoides mauritius* Jacot, 1936 as type species. Currently it comprises three paleotropical species (Subías 2004, updated 2016), including the type species of its two generic synonyms (=*Pelokylla* Clement and Haq, 1982, =*Seychellozetes* Mahunka, 1984). Below we explain why we consider the paleotropical genus *Rykella* to be yet another junior synonym, and provide an identification key to the now seven known species of *Drymobatoides*.

Material and methods

Material — Reported mites were collected from the following sites in the Philippines (extracted from samples by means of Berlese funnel extraction):

Polillo Island, Quezon Province, Polillo Municipality: 3596 (this code - hereinafter - to link specimens with data in the Museum of Natural History, University of the Philippines Los Baños); 3596 – Barangay Burdeos, 16.II.2007 (O.L. Eusebio), from sample of bamboo litter near entrance to Mapanghe cave; 5383 – Sibulan watershed, 27.IX.2003 (I.L. Lit, Jr. and O.L. Eusebio), from sample of decaying log; 5384 – Sibulan watershed, 27.IX.2003 (I.L. Lit, Jr. and O.L. Eusebio), from sample of moss; IL – Sitio Abakahan, Barangay Panukulan, 21.X.2006 (A.A. Caprichio), from sample of litter (habitat type not provided by collector); Pol – Barangay Pinaglubayan, 7-12.V2007 (I.L. Lit Jr.*et al.*), from litter sample from old growth forest.

Mindanao Island, Misamis Occidental Province, Mt. Malindang: 4923 – Mt. Malindang, Barangay Lake Duminagat, Don Victoriano Municipality, 16.VIII.2001 (W.Sm. Gruèzo), from sample of leaf litter from secondary forest; 5611 – Sibucal Hotsprings, Oroquieta City, 24.X.2004 (W.Sm. Gruèzo), from sample of leaf litter from secondary forest; 5621 – Sitio Old Liboron, Barangay Sibucal, Oroquieta City, 24.X.2004 (W.Sm. Gruèzo), from sample of mixed litter and soil from secondary forest; 5625 – Oroquieta City, 25.X.2004 (W.Sm. Gruèzo), from sample of mixed litter and soil from secondary forest.

Samal Island off Mindanao Island, Davao del Norte Province: 5741 – Pearl Farm Resort, Davao City, at sea level, 17.V.2009 (W.Sm. Gruèzo*et al.*), from sample of litter and soil taken from base of low limestone hill with coco palms and typical beach plants, about 10 m from shoreline.

Samar Island, Western Samar Province: 5186 – Mt. Huraw, San Jose de Buan Municipality, 25.X.2002 (W.Sm. Gruèzo), from sample of secondary forest litter; 5189 – Mt. Huraw, San Jose de Buan Municipality, 25.X.2002 (W.Sm. Gruèzo), from sample of secondary forest litter; 5450 – Binaloan Municipality, 6.VII.2003 (W.Sm. Gruèzo), from litter of unknown type (habitat type not provided by collector); 5516 – Barangay Bagong Silang, Basey Municipality, 7.X.2003 (W.Sm. Gruèzo), from sample of secondary forest litter over limestone; 5525 – Sitio San Isidro, Barangay Guirang, Basey Municipality, 5.X.2003 (W.Sm. Gruèzo), from sample of secondary forest litter; 5645 – Barangay Bagong Silang, Basey Municipality, 7.VII.2003 (W.Sm. Gruèzo), from sample of secondary forest litter. Eastern Samar Province: 5466 – Barangay Parina, Binaloan Municipality, 7.VII.2003 (W.Sm. Gruèzo), from secondary forest litter; 5492 – Sitio South Kamparema, Barangay Benowangan, Borongan Municipality, 17.VII.2003 (W.Sm. Gruèzo), from sample of secondary forest litter; 5584 – Sitio Napatuo, Barangay Osmeña, Dolores Municipality, 21.X.2003 (W.Sm. Gruèzo), from sample of secondary forest litter.

Capual Island, Sulu Province: 5593 – Luuk Municipality, 13.XII.2003 (C. Espanola), from litter in mangrove forest.

Luzon Island, Camarines Sur Province: 5639 – Mt. Isarog, Barangay Panicuason, Naga City, 1.XI.2004 (D. General), from leaf litter in secondary forest. Quezon Province: 5752 – Barangay Capas-Capas, Pagbilao Municipality, 2007 (no specific date given) (I.L. Lit, Jr.*et al.*), from sample of secondary forest litter; 5757 – Quezon National Park, Atimonan Municipality, 2007 (no specific date given) (I.L. Lit, Jr.*et al.*), from sample of secondary forest litter; 5758 – Quezon National Park, Atimonan Municipality, 4th Quarter 2007 (I.L. Lit, Jr.*et al.*), from sample of secondary forest litter; 5762 – Ash Pond in Power Plant Station, Pagbilao Municipality, 2-4.V.2008 (I.L. Lit, Jr.*et al.*), from sample of waste coal fired from power plant; 5769 – Quezon National Park, Atimonan Municipality, 2-4.V.2008 (I.L. Lit, Jr.*et al.*), from sample of secondary forest litter; 5772 – Ash Pond in Power Plant Station, Pagbilao Municipality, 29.VIII.-1.IX.2008 (I.L. Lit, Jr.*et al.*), from sample of waste coal fired from power plant; 5779 – Ash Pond in Power Plant Station, Pagbilao Municipality, 22.X.2008 (I.L. Lit, Jr.*et al.*), from sample of waste coal fired from power plant; 5790 – Quezon National Park, Atimonan Municipality, 2-4.V.2008 (I.L. Lit, Jr.*et al.*), from sample of secondary forest litter with soil. Isabela Province: 1S – Ilagan City, July 2010 (collected by staff of Non-Target Organisms project, funded by Monsanto chemical company), from sample of beaten off corn leaves in the field. Benguet Province, La Trinidad Municipality: 5728 – Sitio Bidena, Barangay Bineng, 23.VII.2008 (R.C. Garcia), from sample of litter of napier grass (*Pennisetum purpureum*); 5729 – Sitio Japos, Barangay Bineng, 23.VIII.2008 (R.C. Garcia), from sample of litter (habitat type not provided by collector); 5823 – Puff Cliff, Benguet State University campus, 13.II.2010 (R.C. Garcia), from sample of litter from pine (*Pinus kesiya*) forest.

Methods — Specimens were mounted in lactic acid on temporary cavity slides for measurement and illustration. The body length was measured in lateral view, from the tip of the rostrum to the posterior edge of the ventral plate. Notogastral width refers to the maximum width in dorsal aspect. Lengths of body setae were measured in lateral aspect. All body measurements are presented in micrometers. Formulas for leg setation are given in parentheses according to the sequence trochanter-femur-genu-tibia-tarsus (famulus included). Formulas for leg solenidia are given in square brackets according to the sequence genu-tibia-tarsus.

Morphological terminology used in this paper follows that of F. Grandjean: see Travé and Vachon (1975) for general references, Norton (1977) for leg setal nomenclature, and Norton and Behan-Pelletier (2009), for overview.

Drawings were made with a camera lucida using a Carl Zeiss transmission light microscope "Axioskop-2 Plus".

List of identified taxa

This list indicates the specific localities where oribatid mites were collected, and notes new records and general known distribution (mostly from Subías (2004, updated 2016)). Data on ptyctimous mites, Carabodidae, Microzetidae, Oppiidae, Rhynchoribatidae and Galumnidae and also well as taxa that are not identified are not included in list. All specimens are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia. References for original descriptions of species are not presented in the "References" section.

Hypochthoniidae

Eohypochthonius vermicularis Hammer, 1979. Localities: 3596, 5621. Distribution: Indonesia. First record of the species in the Philippines.

Lohmanniidae

Meristacarus gapudi Corpuz-Raros and Lit, 2009. Localities: 5450, 5466, 5584, 5639, 5645. Distribution: Philippines.

Trhypochthoniidae

Archegozetes longisetosus Aoki, 1965. Locality: 5450, 5466, 5525. Distribution: Tropics, Oriental and Neotropical regions.

Malaconothridae

Malaconothrus dorsofoveolatus Hammer, 1979. Localities: 3596, 5384, 5584, 5611, 5625. Distribution: Oriental region. First record of the species in the Philippines.

Tyrphonothrus foliatus (Aoki, 1994). Locality: 5450, 5492, 5645, 5772. Distribution: Micronesia. First record of the species in the Philippines.

Tyrphonothrus variosetosus (Hammer, 1971). Locality: 5384, 5492, 5516, 5584, 5611, 5625, 5645, 5790. Distribution: Fiji and Vietnam. First record of the species in the Philippines.

Nanhermanniidae

Cyrthermannia luminosa Hammer, 1971. Localities: 5466, 5611, 5621, 5625. Distribution: Australian region. First record of the species in the Philippines.

Dendrohermannia monstruosa (Aoki, 1977). Localities: 5625, 5729. Distribution: Australian and Oriental regions.

Masthermannia mammillaris (Berlese, 1904). Localities: 5189, 5450, 5757. Distribution: Tropical and Subtropical regions.
Nanhermannia thaiensis Aoki, 1965. Localities: 5186, 5611. Distribution: Oriental region. First record of the species in the Philippines.

Hermanniellidae

Hermanniella picea (Koch, 1839). Localities: 5186, 5492, 5516, 5525, 5584. Distribution: Holarctic and Oriental region.

Plasmobatidae

Plasmobates asiaticus Aoki, 1973. Localities: 3596, 5186, 5189, 5383, 5525, 5621, 5728, 5741. Distribution: Japan and Oriental region.

Astegistidae

Cultroribula bicuspidata Mahunka, 1978. Localities: 3596, 5625. Distribution: Ethiopian, Neotropical and Oriental regions. First record of the species in the Philippines.

Gustaviidae – First record of the family in the Philippines

Gustavia oceanica Pérez-Íñigo, 1987. Localities: 5611, 5621. Distribution: southern Palaearctic region and India. First record of the genus and species in the Philippines.

Peloppiidae

Ceratoppia filipina Corpuz-Raros and García, 2011. Locality: 5823. Distribution: Philippines.

Zetorchestidae

Zetorchestes saltator Oudemans, 1915. Localities: 3596, 5189, 5621, 5823. Distribution: Oriental and Palaearctic regions.

Eremulidae

Eremulus avenifer Berlese, 1913. Localities: 5450, 5741. Distribution: southern Palaearctic and Oriental regions, and Polynesia.

Damaeolidae

Fosseremus laciniatus (Berlese, 1905). Locality: 5621. Distribution: Cosmopolitan.
Gressittolus marginatus Balogh, 1970. Locality: 5525. Distribution: Oriental and Australian regions.

Eremobelbidae

Eremobelba okinawa Aoki, 1987. Localities: 5383, 5450, 5525, 5645, 5741, 5758, 5823. Distribution: Japan and Philippines.
Eremobelba perrugosa Balogh and Mahunka, 1968. Locality: 5466. Distribution: Java. First record of the species in the Philippines.
Eremobelba bella Hammer, 1982. Locality: 5823. Distribution: Oriental region. First record of the species in the Philippines.

Basilobelbidae

Xiphobelba mindanensis Corpuz-Raros, 1980. Locality: 5186. Distribution: Philippines.

Suctobelbidae

Allosuctobelba malakipinae (Corpuz-Raros, 1979). Locality: 5525. Distribution: Philippines.
Fenestrobelba nondivisa (Hammer, 1966). Locality: 5645. Distribution: Australian region. First record of the species in the Philippines.
Suctobelbella elegantissima (Hammer, 1979). Locality: 5645. Distribution: Oriental region. First record of the species in the Philippines.
Suctobelbella lineata (Balogh, 1970). Locality: 5625. Distribution: New Guinea. First record of the species in the Philippines.
Suctobelbella variosetosa (Hammer, 1961). Localities: 5466, 5611, 5621, 5625. Distribution: Tropic region.
Suctobelbila quinquenodosa Balogh, 1968. Locality: 5186. Distribution: New Guinea and Philippines.

Oxyameridae

Oxyamerus polilloensis Corpuz-Raros and Lit, 2005. Localities: 5492, 5584. Distribution: Philippines.

Tectocepheidae

Tectocepheus velatus (Michael, 1880). Localities: 5189, 5621. Distribution: Cosmopolitan.
Tegeozetes tunicatus Berlese, 1913. Localities: 3596, IL. Distribution: Tropical region, Hungary and Japan.

Microtegeidae

Microtegeus reticulatus Aoki, 1965. Localities: 3596, 5186, 5584, 5645. Distribution: Oriental and western Palaearctic region.

Scheloribatidae

Hemileius lagunensis (Corpuz-Raros, 1979). Localities: 5384, 5492. Distribution: Philippines.
Perscheloribates baluktotus Corpuz-Raros, 1980. Localities: 5189, 5492, 5762. Distribution: Philippines.
Perscheloribates lumotus Corpuz-Raros, 1980. Localities: 5492, 5741. Distribution: Philippines.

Scheloribates multirepetitus Subías, 2004. Locality: 5625. Distribution: Philippines.
Scheloribates praeincisus (Berlese, 1910). Localities: 3596, 5584, 5611, 5621, 5625, 5741, 5757, 5762, 1S. Distribution: Tropical and southern Holarctic regions.
Tuberemaeus perforatus (Willmann, 1931). Localities: 5189, 5466, 5525, 5584, 5621, 5625, 5611, 5741, 5790, IL. Distribution: Oriental and Australian regions.

Mochlozetidae

Drymobatoides boronganensis **n. sp.** Localities: 5492, 5639. Distribution: Philippines. First record of the genus in the Philippines.
Unguizetes keralensis (Balakrishnan, 1989). Localities: 5584, 5761, 5762, 5772, 5779. Distribution: India. First record of the species in the Philippines.

Haplozetidae

Acutozetes javensis Hammer, 1979. Locality: 5584. Distribution: Oriental region. First record of the genus and species in the Philippines.
Indoribates corpusrarosae (Mahunka, 1987). Localities: 5186, 5189, 5450, 5492, 5525, 5584, 5645, 5757, 5790. Distribution: Borneo. First record of the species in the Philippines.
Haplozetes furtadoi Balogh and Mahunka, 1974. Localities: 5189, 5466, 5584. Distribution: Malaysia. First record of the species in the Philippines.
Magyaria filipina Corpuz-Raros, 1979. Localities: 5383, 5525, 5621, 5790. Distribution: Philippines.
Protoribates magniporosus Corpuz-Raros, 2013. Locality: 5450, 5466, 5492, 5525. Distribution: Philippines.
Protoribates paracapucinus (Mahunka, 1988). Localities: 5189, 5450, 5466, 5516, 5593, 5621, 5625, 5645. Distribution: Oriental and Neotropical regions, Iran, Congo.
Trachyoribates cf. *ovulum* Berlese, 1908. Localities: 5186, 5189, 5383, 5450, 5466, 5492, 5516, 5584, 5611, 5621, 5639, 5645, 5757, 5762, 5769, 5790. Distribution: Tropic and Subtropic regions.

Oripodidae

Birobates makinisus Corpuz-Raros, 1979. Localities: 5384, 5621. Distribution: Philippines.

Punctoribatidae

Allozetes pusillus (Berlese, 1913). Localities: 5383, 5621, 5639, IL. Distribution: Oriental region. First record of the species in the Philippines.
Lamellobates molecula (Berlese, 1916). Localities: 5383, 1S, IL. Distribution: Tropical and Subtropical regions.

Parakalummidae

Neoribates kontschani Ermilov and Corpuz-Raros, 2015. Localities: IL, Pol. Distribution: Philippines.

Galumnellidae

Porogalumnella reducta Mahunka, 1995. Localities: 5186, 5384. Distribution: Borneo.
Trypogalumnella densoporosa Mahunka, 1995. Localities: 5186, 5466, 5779. Distribution: Borneo. First record of the genus and species in the Philippines.

Earlier, several lists on oribatid taxa from different Islands of the Philippines were presented (e.g. Corpuz-Raros 1979; 1992; Corpuz-Raros and Raros 1999; Corpuz-Raros and Gruèzo 2005, 2009; Ermilov and Corpuz-Raros 2015). In the course of our taxonomic identification of new materials from the Capual, Luzon, Mindanao, Polillo, Samal and Samar Islands we found 54 species from 46 genera and 26 families. Of these, one species is new to science; 19 species, four genera (*Gustavia*, *Drymobatoides*, *Acutozetes*, *Trypogalumnella*) and one family (Gustaviidae) are recorded in the Philippines for the first time.

Drymobatoides – New diagnosis and synonymy with *Rykella*

Genus *Drymobatoides* Jacot, 1936

Type species: *Drymobatoides mauritius* Jacot, 1936, p. 397

Adult — Mochlozetidae (Grandjean 1960; Norton and Behan-Pelletier 2009). Large mites, length: 737 – 1330. Integument without ornamentation. Rostrum rounded. Lamella well-developed, cusp absent or present, minute, truncate or with lateral tooth. Translamella absent. Sublamella present. Prolamella absent. Tutorium linear. Rostral, lamellar, interlamellar and bothridial setae long (but lengths of *ro*, *le* and *in* are unknown (broken) in *Drymobatoides insignis* (Balogh, 1962)), setiform, barbed or unilaterally ciliate, rarely smooth, *ro* distanced from end of tutorium. Pedotecta I and

II represented by small lamina. Porose areas *Al*, *Am* and *Ah* present, *Ad* absent. Anterior margin of notogaster complete medially, posterior margin rounded. Pteromorph well-developed, immovable (see Remarks section below). Dorsophragma and pleurophragma present. Notogaster with numerous (about 20-50 pairs) small, rounded porose areas. Ten pairs of notogastral setae represented only by alveoli. Axillary saccule on subcapitulum absent. Subcapitular setae long, setiform. Discidium and circumpedal carina present, custodium usually present. Typical epimeral setal formula: 3-1-3-3[2]. Four, five or six pairs of genital, one pair of aggenital, two pairs of anal and three pairs of adanal setae, ad_1 in postanal position. Adanal lyrifissure located close to anal plate, paraanal. Marginoventral porose area band present. Porose area on leg femora and trochanters III and IV well visible, and absent from postero-ventral part of leg tarsi and antero-ventral part of leg tibiae. Tarsus I with 20 setae (including l'' and v'). Sexual dimorphism absent.

Juvenile instars — Unknown.

Remarks — Based on data from Mahunka (1994), *Seychellozetes benoiti* Mahunka, 1984 has movable pteromorph. We could not study the type material of this species, but in Mahunka's original figure (Fig. 17, p. 675), the supposed hinge follows the line of the ventral plate exactly, and we consider-believe that he confused the lines and was wrong in the observation. This has happened before. For example (pers. com. from Prof. Dr. Roy A. Norton), the mochlozetid genus *Uracrobates* Balogh and Mahunka, 1967 was originally described as having movable pteromorph and was included in Haplozetidae by Balogh and Mahunka (1967). It became clear that they had made an error in observation, regarding the pteromorph. Mahunka (1988) reillustrated the type species (*Uracrobates magniporosus* Balogh and Mahunka, 1967), showing clearly the absence of a 'hinge'; he did not specifically state that the pteromorph was immovable, but it is implied. And in Balogh and Balogh 2002 (part 1, p. 300-301) the type species is clearly keyed in a group that is characterized by immovable pteromorph. So, in the case of *Uracrobates* both original authors indirectly tell us that there was an original error, even if that word was not used. We suspect that the same is true of *S. benoiti*.

Taxonomic status of *Rykella* Balogh, 1962

Balogh (1962) proposed the genus *Rykella* with *Rykella insignis* Balogh, 1962 from Central Africa as type species. Later, Clement and Haq (1982) proposed the genus *Pelokylla* with *Pelokylla malabaricus* Clement and Haq, 1982 from India, and Mahunka (1984) described *Seychellozetes* with *Seychellozetes benoiti* Mahunka, 1984 from the Seychelles. These three genera are morphologically similar to each other and to *Drymobatoides,* differing mainly by the number of genital setae (six pairs in *Rykella*, five pairs in *Pelokylla* and four pairs in *Seychellozetes* and *Drymobatoides*). Balogh and Balogh (1992) proposed that *Pelokylla* and *Seychellozetes* are junior subjective synonyms of *Drymobatoides* without explanation, but they supported the taxonomic independence of *Rykella*, possibly because of the presence of well-developed lamellar cusps in *Rykella* (vs. absent in *Drymobatoides*) (Mahunka 1984). However, *Pelokylla malabaricus* (see Clement and Haq 1982) and *D. boronganensis* **n. sp.** (see below) also have lamellar cusps as in *Rykella* species. Therefore, if *Drymobatoides* includes species with four and five pairs of genital setae and some species of this genus have lamellar cusps, then in the absence of other distinguishing features the number of genital setae (six pairs) and the presence of lamellar cusps in *Rykella* are best regarded as species traits. Since *Rykella* species match all other traits of *Drymobatoides*, we propose that *Rykella* Balogh, 1962 is a junior subjective synonym of *Drymobatoides* Jacot, 1936 (**n. syn.**). Hence, the known representatives of *Rykella* should be recombined in *Drymobatoides*: *D. asiaticus* (Yamamoto and Aoki, 2000) **n. comb.**, *D. elamellatus* (Berlese, 1916) **n. comb.**, *D. insignis* (Balogh, 1962) **n. comb.**

Drymobatoides boronganensis n. sp. (Figures 1-5)

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Diagnosis — Body size: 664 – 747 × 514 – 564. Rostral and lamellar setae setiform, densely ciliate unilaterally. Interlamellar seta setiform, sparsely

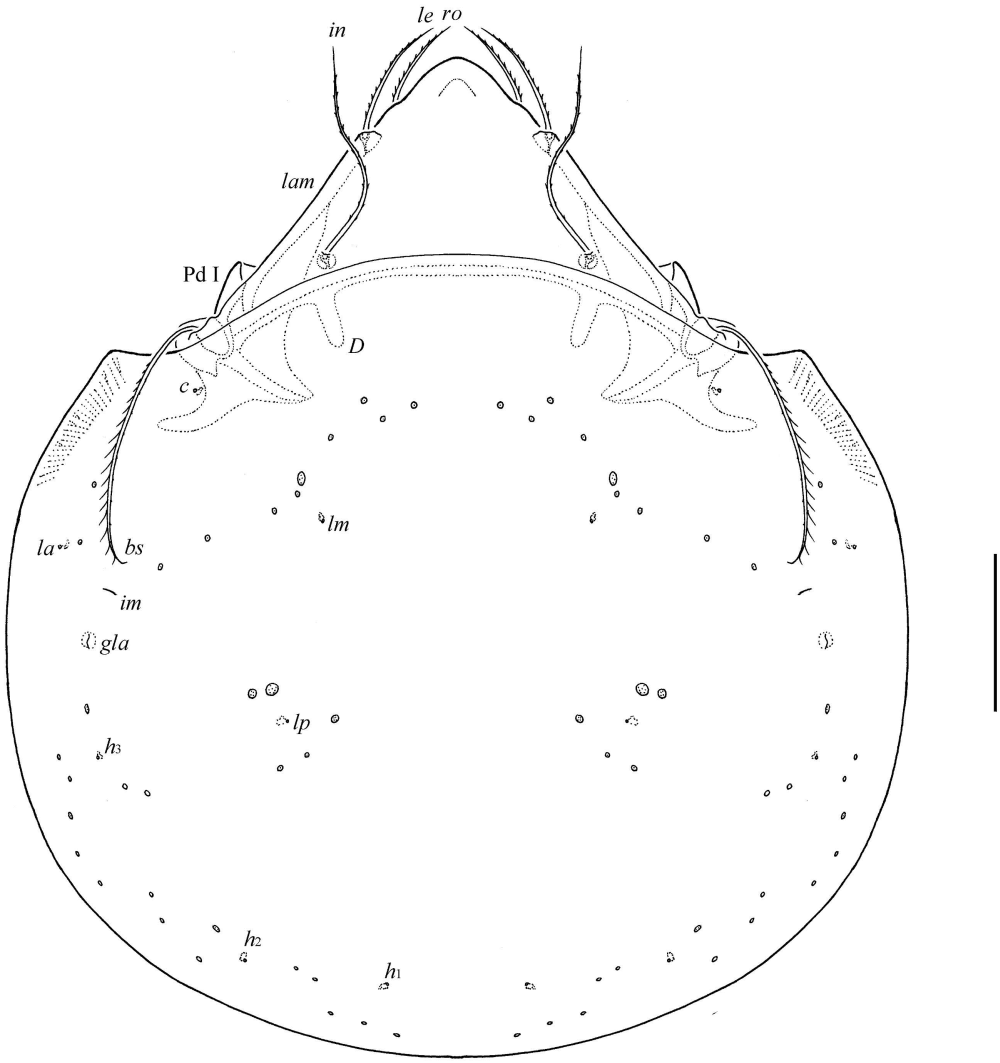

FIGURE 1: *Drymobatoides boronganensis* **n. sp.**: dorsal view (legs not illustrated). Scale bar 100 μm.

barbed. Bothridial seta setiform, with strong cilia unilaterally and several indistinct barbs on opposite side. About 45 pairs of notogastral porose areas. Epimeral setae setiform, slightly barbed, *1a*, *2a*, *3a* and *4c* shorter than other setae. Custodium present, curved laterally. Five pairs of genital setae. Marginoventral porose areas numerous. Leg femur II with rectangular emargination (*em*) ventrodistally.

Measurements — Body length: 713 (holotype: male), 664 – 747 (four paratypes: three females and one male); notogaster width: 547 (holotype), 514 – 564 (four paratypes).

Integument (Fig. 3) — Body color light brown to dark brown. Surface microporose, lateral side of prodorsum densely microgranulate (diameter of granule up to 1) and tuberculate (diameter of tubercle up to 4).

Prodorsum (Figs 1, 3A) — Rostrum rounded. Lamella (*lam*) longer than half of prodorsum, with minute, distally truncate cusp. Sublamella (*slam*) shorter than half of lamella, very thin. Sublamellar porose area oval (*Al*, 20 × 12 – 16). Tutorium (*tu*) well-developed. Rostral (*ro*, 61 – 65) and lamellar (*le*, 98 – 102) setae setiform, densely ciliate unilaterally. Interlamellar seta (*in*, 217 – 233) setiform,

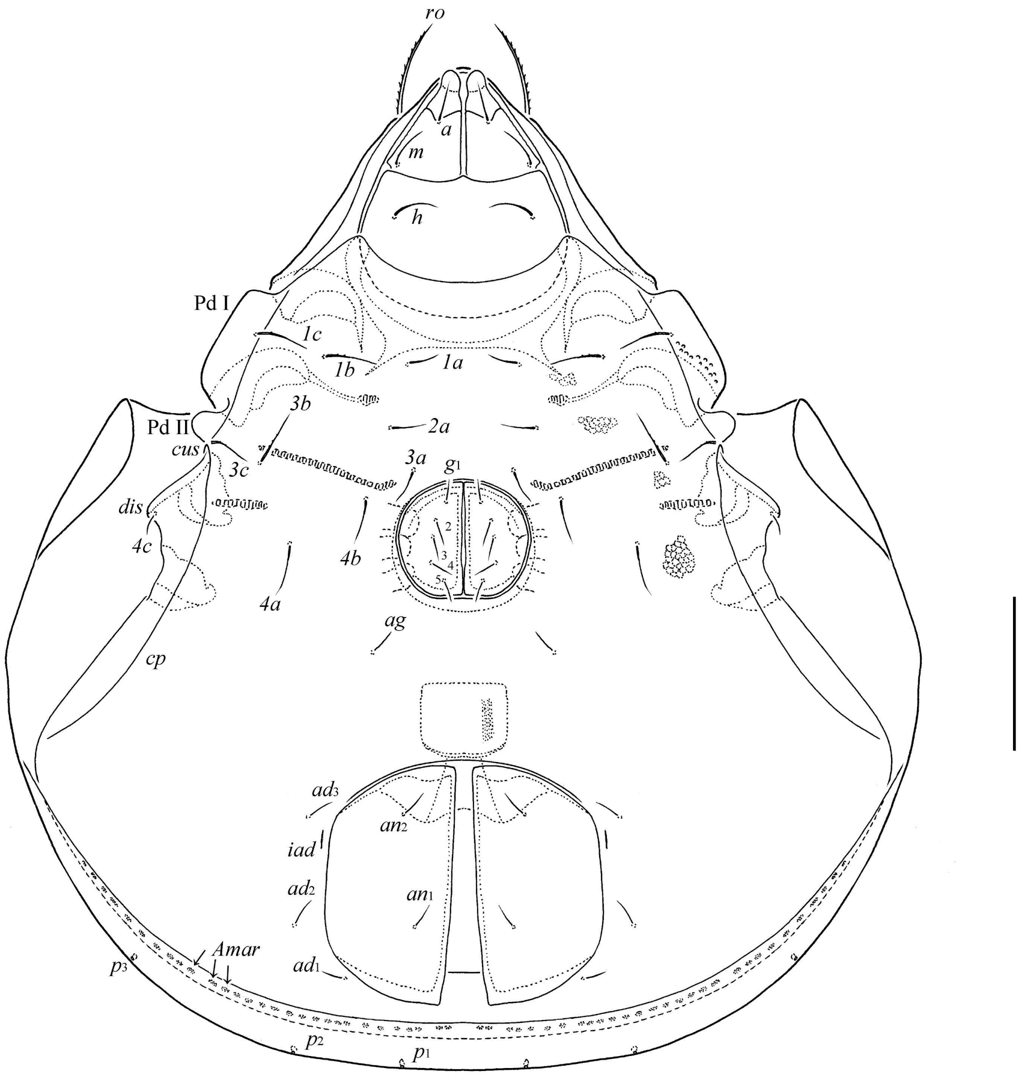

FIGURE 2: *Drymobatoides boronganensis* **n. sp.**: ventral view (legs not illustrated). Scale bar 100 μm.

sparsely barbed, thicker than *ro* and *le*. Exobothridial seta (*ex*, 12 – 16) setiform, thin, indistinctly barbed. Bothridial seta (*bs*, 217 – 233) setiform, with strong cilia unilaterally and several indistinct barbs on opposite side. Dorsophragma (*D*) elongated longitudinally.

Notogaster (Figs 1, 3) — Pteromorph broadly rounded laterally. About 45 pairs of porose areas small, rounded (diameter of area up to 12). All lyrifissures (*ia*, *im*, *ip*, *ips*, *ih*) and opisthonotal gland opening (*gla*) clearly visible.

Gnathosoma (Figs 2, 4) — Subcapitulum longer than wide (159 – 168 × 143 – 147). Three pairs of subcapitular setae setiform, *h* (53 – 61) longer than *m* (45 – 53) and *a* (32 – 36), *h* and *m* distinctly barbed, *a* sparsely and indistinctly barbed. Two pairs of adoral setae (or_1, or_2, 16) thickened, heavily ciliate. Palp (90) with formula 0-2-1-3-9(+ω). Chelicera (176 – 184) with two setiform setae, *cha* (57 – 61) ciliate unilaterally, *chb* (28 – 32) heavily ciliate.

Epimeral and lateral podosomal regions (Figs 1, 3A) — Epimeral setal formula: 3-1-3-3. All setae setiform, slightly barbed, *1a*, *2a*, *3a* and *4c* (49 – 53) shorter than other setae (53 – 57). Humeral porose

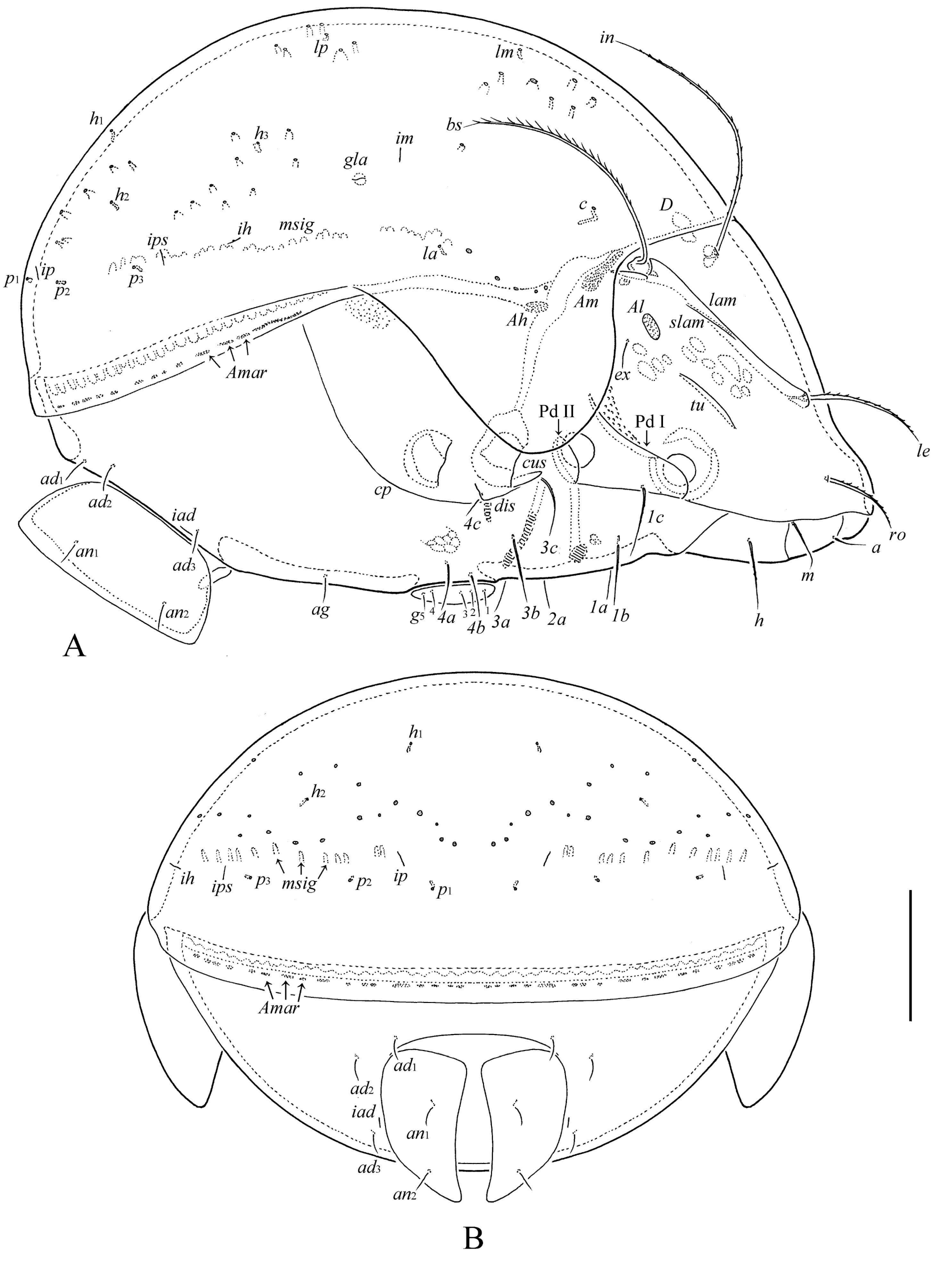

FIGURE 3: *Drymobatoides boronganensis* **n. sp.**: A – lateral view (legs not illustrated), *msig* – muscle sigillae; B – posterior view. Scale bars 100 μm.

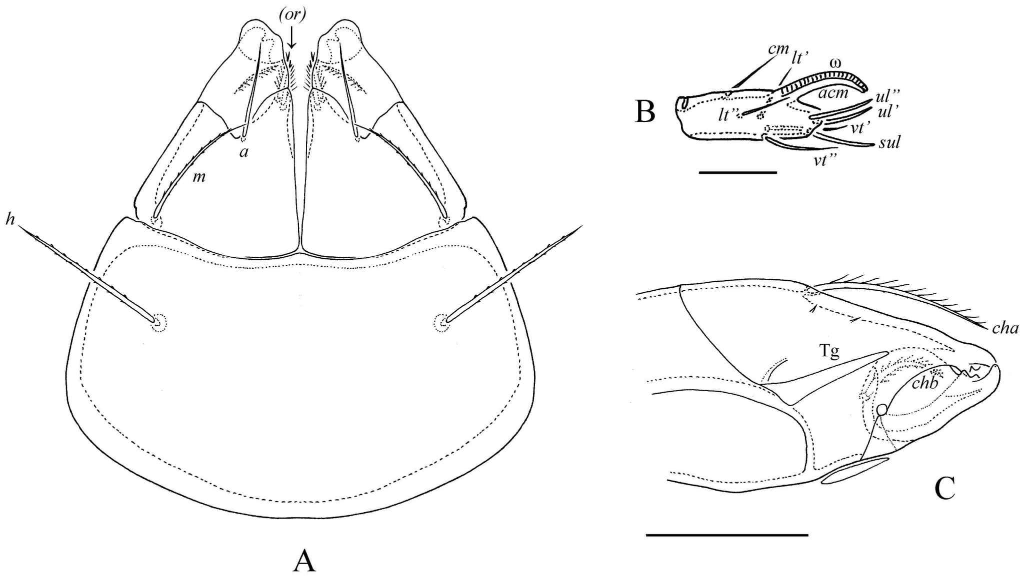

FIGURE 4: *Drymobatoides boronganensis* **n. sp.**: A – subcapitulum, ventral view; B – palptarsus, right, antiaxial view; C – medio-anterior part of chelicera, left, paraxial view. Scale bars (A, C) 50 μm; scale bar (B) 20 μm.

areas well separated, *Am* diffuse, elongate oval, *Ah* oval, with distinct border. Custodium (*cus*) present, minute, curved laterally. Discidium (*dis*) triangular, bears seta *4c*. Circumpedal carina (*cp*) connected to *cus*.

Anogenital region (Figs 2, 3B) — Five pairs of genital (g_1-g_5, 16), one pair of aggenital (*ag*, 20), two pairs of anal (an_1, an_2, 20) and three pairs of adanal (ad_1-ad_3, 20) setae setiform, thin, indistinctly barbed. Adanal lyrifissure (*iad*) well visible. Seta ad_1 postanal, ad_2 in lateral position, ad_3 inserted anterior or anterolateral to *iad*. Marginoventral porose areas (*Amar*) numerous, rounded, oval or oblong.

Legs (Fig. 5) — Median claw sparsely serrate dorsally, laterals heavily serrate dorsally. Femur II with rectangular emargination (*em*) ventrodistally. Formulas of leg setation and solenidia: I (1-5-3-4-20) [1-2-2], II (1-5-3-4-15) [1-1-2], III (2-3-1-3-15) [1-1-0], IV (1-2-2-3-12) [0-1-0]; homology of setae and solenidia indicated in Table 1. Solenidion ω_1 on tarsus I, ω_1 and ω_2 on tarsus II and σ on genu III distally blunt, other solenidia longer, pointed.

Material examined — Holotype (male) and two paratypes (one female and one male): 5492 – Philippines, Samar Island, Eastern Samar Province, Sitio South Kamparema, Barangay Benowangan, Borongan Municipality, 17.VII.2003 (W.Sm. Gruèzo), from sample of secondary forest litter. Two paratypes (both females): 5639 – Luzon Island, Camarines Sur Province, Mt. Isarog, Barangay Panicuason, Naga City, 1.XI.2004 (D. General), from leaf litter in secondary forest.

Type deposition — The holotype (alcohol) is deposited in the collection of the Senckenberg Institute, Görlitz, Germany; one paratype (alcohol) in the collection of the Museum of Natural History (University of the Philippines Los Baños), three paratypes (alcohol) are in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia.

Etymology — The specific name *boronganensis* refers to the Philippine Municipality, Borongan (Eastern Samar Province, Samar Island), where the holotype and some paratypes were collected.

Remarks — *Drymobatoides boronganensis* **n. sp.** is morphologically most similar to *D. malabaricus* (Clement and Haq, 1982) from India in body size (about 700) and in having five pairs of genital setae.

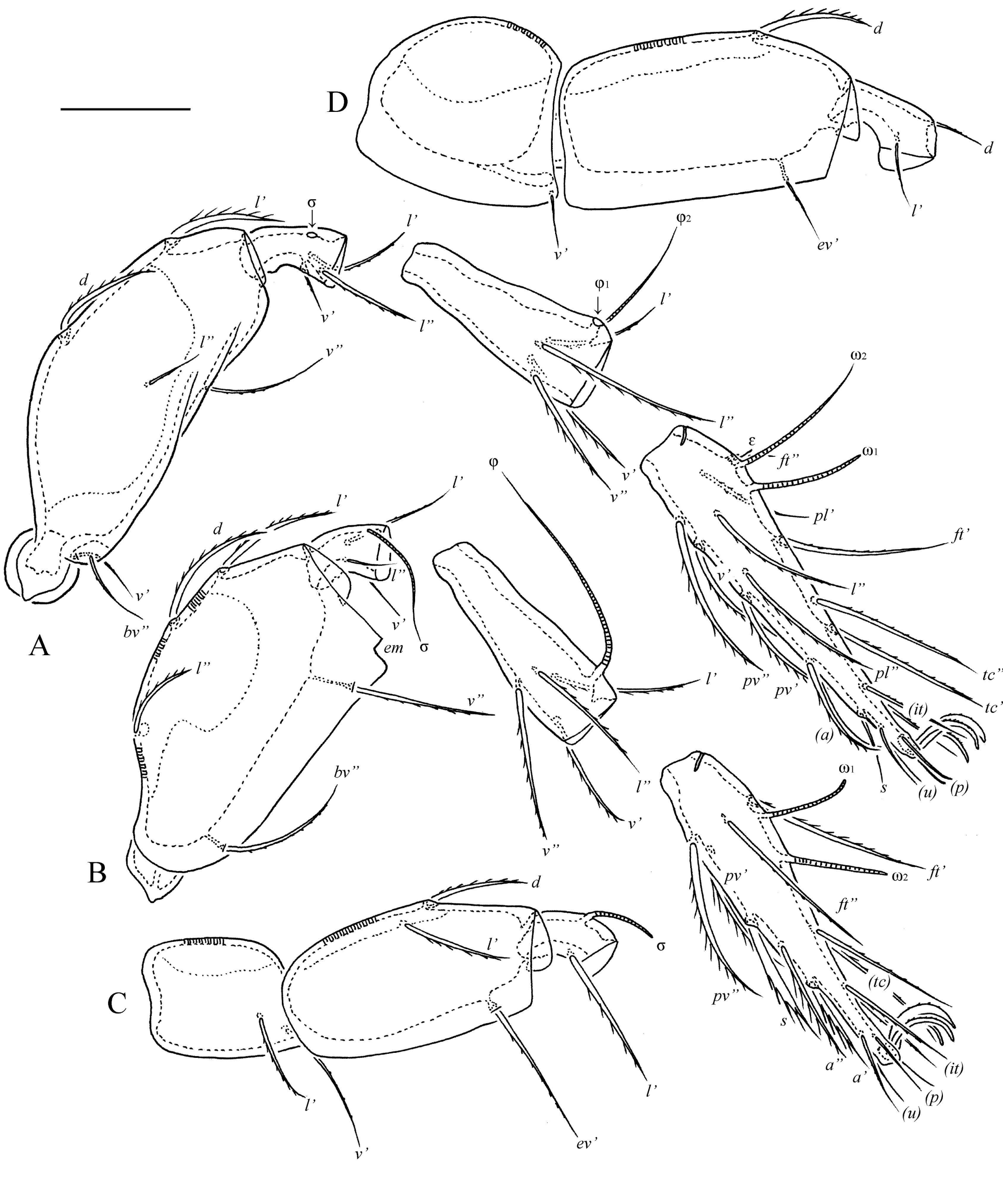

FIGURE 5: *Drymobatoides boronganensis* **n. sp.**: A – leg I, right, antiaxial view (solenidia σ and φ_1 broken); B – leg I, without trochanter, right, antiaxial view; C – trochanter, femur and genu of leg III, left, antiaxial view; D – trochanter, femur and genu of leg IV, left, antiaxial view. Scale bar 50 μm.

TABLE 1: Leg setation and solenidia of adult *Drymobatoides boronganensis* **n. sp.**

Leg	Tr	Fe	Ge	Ti	Ta
I	*v′*	*d, (l), bv′′, v′′*	*(l), v′,* σ	*(l), (v),* φ_1, φ_2	*(ft), (tc), (it), (p), (u), (a), s, (pv), v′, (pl), l′′,* ε, ω_1, ω_2
II	*v′*	*d, l′, bv′′, v′′*	*(l), v′,* σ	*(l), (v),* φ	*(ft), (tc), (it), (p), (u), (a), s, (pv),* ω_1, ω_2
III	*l′, v′*	*d, l′, ev′*	*l′,* σ	*l′, (v),* φ	*(ft), (tc), (it), (p), (u), (a), s, (pv)*
IV	*v′*	*d, ev′*	*d, l′*	*l′, (v),* φ	*ft′′, (tc), (p), (u), (a), s, (pv)*

Note: Roman letters refer to normal setae, Greek letters to solenidia (except ε = famulus). Single prime (′) marks setae on the anterior and double prime (″) setae on the posterior side of a given leg segment. Parentheses refer to a pair of setae. Tr – trochanter, Fe – femur, Ge – genu, Ti – Tibia, Ta – tarsus.

However, the new species differs from the latter by the rostral, lamellar and bothridial setae being ciliate unilaterally (vs. barbed completely), by the interlamellar seta being two times the length of the lamellar seta (vs. 1.4 times), and by the presence of a ventrodistal rectangular emargination on leg femur II (vs. emargination absent).

Key to known species of *Drymobatoides*

1. Genital plate with four setae 2
— Genital plate with five or six setae 3

2. Interlamellar seta longer than lamellar seta; body length: 850 – 988 × 672 – 735 . . . . *D. benoiti* (Mahunka, 1984). Distribution: Seychelles
— Interlamellar and lamellar setae similar in length; body length: 1310 . . . . *D. mauritius* (Jacot, 1936). Distribution: Mauritius

3. Genital plate with five setae 4
— Genital plate with six setae 5

4. Interlamellar seta not shorter than length of prodorsum, two times the length of lamellar seta; leg tarsus II with rectangular incision ventrodistally; body length: 664 – 747 × 514 – 564 . . . . *D. boronganensis* **n. sp.** Distribution: Philippines
— Interlamellar seta shorter than length of prodorsum, 1.4 times the length of lamellar seta; ventroanterior part of leg tarsus II rounded; body length: 737 – 767 × 565 – 646 . . . . *D. malabaricus* (Clement and Haq, 1982). Distribution: India

5. Lamellar cusp with lateral tooth; body length: 1222 – 1330 × 1080 – 1114 . . . . *D. insignis* (Balogh, 1962). Distribution: Ethiopia
— Lamellar cusp truncate, without lateral tooth . . 6

6. Bothridial seta barbed; interlamellar seta longer than lamellar seta; body length: 1064 – 1144 × 952 – 1024 . . . . *D. asiaticus* (Yamamoto and Aoki, 2000). Distribution: Oriental region
— Bothridial seta without clear barbs; interlamellar and lamellar setae similar in length; body length: 750 × 650 . . . . *D. elamellatus* (Berlese, 1916) (see also Mahunka 1994). Distribution: Ethiopian region

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