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Review of the Millipede Genus *Ophrydesmus* Cook, 1896, with the Description of a New Species from Southern Vietnam (Diplopoda: Polydesmida: Cryptodesmidae)

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ABSTRACT.– A new species, *Ophrydesmus anichkini* n. sp., is described from Nam Cat Tien National Park, Dongnai Province, southern Vietnam; it also represents a new genus for the country. *Ophrydesmus* is reviewed and rediagnosed, and a provisional key to its 13 species, including putative ones, is given.

KEY WORDS: Diplopoda, Cryptodesmidae, *Ophrydesmus*, taxonomy, new species, key, Vietnam

INTRODUCTION

The small, tropical to subtropical millipede family Cryptodesmidae currently contains about 35 accepted genera, occurring from Mexico to Argentina in the Americas, on both sides of the Afrotropical realm, and in central, southern and southeastern Asia from northern Pakistan, India and Sri Lanka in the west, to Japan, Taiwan and China in the east, and, across Indonesia, to the Philippines and Papua New Guinea in the southeast (Hoffman, 1973a, 1980, 1982, 1993).

The following genera, arranged in alphabetic order, are known from Asia:

1) *Astrolabius* Verhoeff, 1931 – Papua New Guinea, 2 species (Golovatch et al., 2010b).

2) *Cryptodesmoides* Pocock, 1895 – Myanmar, monotypic; still dubious (Hoffman, 1961, 1980).

3) *Dyakryptus* Hoffman, 1961 – Eastern Malaysia, Sabah, monobasic (Hoffman, 1961, 1980).

4) *Kiusiunum* Verhoeff, 1942 (= *Leucodesminus* Takakuwa, 1943) – Japan, 5 species (Verhoeff, 1942; Miyosi, 1959; Hoffman, 1980).

5) *Niponia* Verhoeff, 1931 (= *Niponiella* Verhoeff, 1936, preoccupied, = *Niponielle* Attems, 1938, *lapsus calami*, = *Onomatoplanus* Attems, 1940) – Japan, Taiwan, 1 species (Attems, 1940; Golovatch et al., 2011a).

6) *Ophrydesmus* Cook, 1896 (= *Phenacoporus* Attems, 1914) – Western Malaysia, Singapore, Indonesia, 7–8 species (Hoffman, 1980) (see also below).

7) *Pocodesmus* Cook, 1896 – Sri Lanka, monobasic; still dubious (Cook, 1896; Hoffman, 1977, 1980).

8) *Pseudoniponiella* Verhoeff, 1942 – Vietnam, Laos and Cambodia, monobasic (Attems, 1938, 1953; Verhoeff, 1942; Hoffman, 1980).

9) *Quasidesmus* Golovatch, 1991 – Northern Pakistan, monobasic; following my *in litteris* suggestion, formally transferred by Shelley (2014) from Pyrgodesmidae, where it was originally described (Golovatch, 1991),

to Cryptodesmidae. The metaterga in *Q. puschtun* Golovatch, 1991 are not setose while the paraterga are only faintly lobulated and devoid of radii, traits that are more characteristic of Pyrgodesmidae. However, the gonocoxa is short, subcylindrical, and shows a small distomesal outgrowth subtending the cannula, while the slender unipartite telopodite exhibits a hairy pulvillus and an accessory seminal chamber. These latter features are characteristic of Cryptodesmidae and support the transfer of *Quasidesmus*.

10) *Sarissocryptus* Hoffman, 1993 – Eastern Malaysia, Sarawak, monobasic (Hoffman, 1993).

11) *Singhalocryptus* Hoffman, 1977 – Sri Lanka, 2 species (Hoffman, 1977, 1980).

12) *Trichopeltis* Pocock, 1894 (= *Otodesmus* Cook, 1896) – India (Assam and Darjeeling District), Myanmar, southern China, Indochina and Indonesia (Sumatra), 6 species (Golovatch et al., 2010a).

Only two cryptodesmid genera and species have been reported from Vietnam (and generally from Indochina): *Trichopeltis deharvengi* Golovatch, Geoffroy, Mauriès et VandenSpiegel, 2010, from Peak Lang Biang near Dalat, Lamdong Province (Golovatch et al., 2010a), and *Pseudoniponiella kometis* (Attems, 1938), originally described as *Niponielle* (sic!) *kometis* from several places in southern Vietnam, including Peak Lang Biang (Attems, 1938), later (Verhoeff, 1942) designated as type-species of *Pseudoniponiella*. In addition, *P. kometis* occurs in Laos (Attems, 1953).

Prompted by the discovery of still another, new cryptodesmid in southern Vietnam, earlier provisionally referred to as *Niponielle* sp. (Golovatch et al., 2011b), I take the opportunity to review the genus *Ophrydesmus* where the new species is placed. Thus *Ophrydesmus* becomes the third genus of Cryptodesmidae to be reported from Vietnam.

MATERIAL AND METHODS

The holotype of the new species was taken in 2009 by Alexandr E. Anichkin, then staff member of the Russia-Vietnam Tropical Centre, Ho Chi Minh City, Vietnam, in Nam Cat Tien National Park, a reserve of monsoon lowland tropical forest, Dongnai Province, southern Vietnam (Nguyen & Anichkin, 2011). The type is deposited in the collection of the Zoological Museum, Moscow State University (ZMUM + entry number), Russia. Digital images of the specimens were taken in the laboratory and assembled using the Zerene Stacker software.

A TAXONOMIC REVIEW OF *ORPHYDESMUS*

In his classifications, Hoffman (1973b, 1980) placed all Asian Cryptodesmidae in the subfamilies Pterodesminae and Otodesminae. The former is mainly Afrotropical – only Ophrydesmini, with the single component *Ophrydesmus*, is tropical Asian. In contrast, Otodesminae are entirely Asian, previously (Hoffman 1993b) divided into three tribes: Dyakryptini and its sole constituent genus *Dyakryptus* being confined to Eastern Malaysia, Otodesmini and *Otodesmus* and *Kiusiunum* to East and Southeast Asia, Trichopeltini and *Trichopeltis* and *Pseudoniponiella* to Indochina and Indonesia, while Niponiini and *Niponia* to China and Japan. The tribal positions of the otodesmine genera *Astrolabius*, *Cryptodesmoides* and *Pocodesmus* remained uncertain. Dyakryptini has since gained a second genus, *Sarissocryptus*,

from Sarawak (Hoffman, 1993); its sole species, *S. lienhardti* Hoffman, 1993, surprisingly shares its colour pattern with *O. anichkini* n. sp. – grey with contrasting whitish collum and segment 2.

The above arrangement was refined by Golovatch et al. (2010a) in confirming the synonymy of *Otodesmus* under *Trichopeltis*, and of Otodesmini with Trichopeltini. The new diagnosis of *Trichopeltis* admits a highly variable, species-specific distribution of ozopores, emphasizing the densely tuberculate-setose metaterga, the multilobate lateral and caudal paratergal margins, and the apically notched/branched gonopod showing a caudo-apical solenomere. The seminal groove is entirely mesal, indicating no torsion of the telopodite.

In addition, the tergal trichome in *Trichopeltis* appears to be complex, with the 2-segmented hairs similar to those characteristic of numerous Haplodesmidae as well (e.g. Golovatch et al., 2009a, 2009b); abundant micropilosity sometimes also covers the setigerous tubercles or even most of the metatergal surface. Some of these traits are shared at least with *Dyakryptus* and/or *Sarissocryptus* (cf. Hoffman, 1993).

The tribally unassigned Papuan genus *Astrolabius* has also been reassessed and shown to resemble *Niponia* in a number of characters (Golovatch et al., 2010b). However, the basal process arising mesally from the gonopodal prefemur at the origin of the seminal groove brings *Astrolabius* close to both *Dyakryptus* and *Sarissocryptus*. This process can be completely mesal (*Astrolabius*) or be twisted laterad (*Dyakryptus* and *Sarissocryptus*). The tribal position of this trio awaits clarification. For now, uniting them in Dyakryptini seems reasonable because of the strong synapomorphy in gonopod structure, i.e. the presence of a basal prefemoral process, coupled with a coherent distribution pattern. Still, because of the numerous morphological transitions between the tribes of Otodesminae (= ex-Trichopeltinae, cf. Golovatch et al., 2010a) as delimited by Hoffman (1973b, 1980), I refrain from classifying Asian Cryptodesmidae to the tribal level. Even the assignment of *Ophrydesmus* within the primarily Afrotropical Pterodesminae seems problematic, because the deeply lobulated paraterga in the new species make it highly distinct from more typical pterodesmines, not only among congeners.

Ophrydesmus had been characterized by the presence of an enlarged, glandular ♂ femur 3 and a sternal tooth near each coxa, coupled with the anterior position of the ozopores (Cook, 1896; Attems, 1940), until Jeekel (1955) synonymized *Phenacoporus* under *Ophrydesmus*, and *P. weberi* with *O. gede*. This erodes the above clear-cut diagnosis so strongly that at present, no meaningful superficial distinctions between *Ophrydesmus*, *Niponia* and *Trichopeltis* can be drawn (cf. Golovatch et al., 2010a, 2011a). Only the gonopod structure provides a clue.

Ophrydesmus Cook, 1896 (= *Phenacoporus* Attems, 1914, synonymized in Jeekel (1955), based on Hoffman's *in litteris* observations) is currently known to include the following species, arranged alphabetically.

1) *O. concolor* (Pocock, 1894) – Indonesia, Java (Pocock, 1894); originally described in *Cryptodesmus* Peters, 1864, included in *Aporodesminus* Silvestri, 1904 (Attems, 1914), in *Phenacoporus* (Attems, 1940), and automatically transferred to *Ophrydesmus* when Jeekel (1955) placed *Phenacoporus* in synonymy.

2) *O. exilis* Hoffman, 1973 – Philippines, Palawan Island (Hoffman, 1973).

3) *O. kedahensis* (Wang & Tang, 1965) – Western Malaysia, Singapore; originally described in *Phenacoporus* despite Jeekel's (1955) earlier placement of *Phenacoporus* in synonymy, included in *Ophrydesmus* by Decker (2013).

4) *O. pugnus* Cook, 1896 – Indonesia, Java (Cook, 1896); maintained in *Ophrydesmus* by Attems (1940).

5) *O. scaurus* Cook, 1896 – Indonesia, Java (Cook, 1896); maintained in *Ophrydesmus* by Attems (1940).

6) *O. sumatranus* (Pocock, 1894) – Indonesia, Sumatra (Pocock, 1894); originally described in *Cryptodesmus*, included in *Aporodesminus* (Attems, 1914), in *Phenacoporus* (Attems, 1940), and automatically transferred to *Ophrydesmus* when Jeekel (1955) placed *Phenacoporus* in synonymy.

7) *O. tengger* Cook, 1896 – Indonesia, Java (Cook, 1896); maintained in *Ophrydesmus* by Attems (1940).

8) *O. weberi* (Pocock, 1894), type-species of *Phenacoporus* (= *O. gede* Cook, 1896, the type species of *Ophrydesmus*, synonymized by Jeekel (1955)) – Western Malaysia, Singapore, Indonesia, Java (Pocock, 1894; Decker, 2013); originally described in *Cryptodesmus*, included in *Aporodesminus* (Attems, 1914), in *Phenacoporus* (Attems, 1940), and automatically transferred to *Ophrydesmus* when Jeekel (1955) placed *Phenacoporus* in synonymy.

Because of their close superficial resemblances to *O. weberi* or *O. sumatranus*, Attems (1914, 1940) assigned the following three "insecure" species to *Phenacoporus*: *Cryptodesmus modestus* Silvestri, 1895, from New Guinea (Silvestri, 1895a), *C. modiglianii* Silvestri, 1895, and *C. simillimus* (Silvestri, 1895), the latter two from Indonesia, Sumatra (Silvestri, 1895b). Attems (1914, 1940) considered *C. triseriatus* Carl, 1912, from Indonesia, northern Sulawesi, a dubious cryptodesmid.

The original descriptions of the previous 12 species are highly concise and mostly primarily anecdotal. The illustrations, if any, are usually poor, sometimes contradict the text (e.g. Pocock's (1894), as noted by Cook (1896) who himself provided no drawings whatever), while at least *O. concolor*, *O. exilis* and *C. triseriatus* were based on ♀ material alone (Pocock, 1894; Carl, 1912; Hoffman, 1973a). All these shortcomings seriously hinder attempts at reliably diagnosing *Ophrydesmus* and providing a meaningful key to its species. Consequently, the diagnosis below and the concluding key are provisional. For completeness and in order to incorporate *C. triseriatus* in the key, I formally transfer this species to *Ophrydesmus*, comb. n.

Since the gonopods of *O. anichkini* n. sp. are particularly similar to those of *O. weberi*, despite the very apparent differences in peripheral characters, such as long and abundant hairs and clearly lobed paraterga in the new species, I do not hesitate to assign it to *Ophrydesmus*. Based largely on the description of *O. anichkini* n. sp., however provisionally, the following new diagnosis of this genus can be offered.

***Ophrydesmus* Cook, 1896**

Type-species: *O. gede* Cook, 1896, by original designation.

= *Phenacoporus* Attems, 1914

Type-species: *Cryptodesmus weberi* Pocock, 1894, by original designation.

Diagnosis.– Cryptodesmidae with gonopod telopodite devoid of a prefemoral process at

base, usually stout, clearly twisted and tripartite, with an anterior and a posterior branch/lobe, normally between these also with a considerable, simple, spiniform, recurved solenomere terminating a strongly sigmoid seminal groove; neither an accessory seminal chamber nor a hairy pulvillus.

Description.– Small- to medium-sized Cryptodesmidae (adults 10–23 mm long and 2.2–6.7 mm wide) with 20 segments; a flabellate collum covering the head from above; antennae usually clearly clavate, antennomere 6 usually largest; paraterga very short and broad, subhorizontal to only slightly declined, nearly squarish to clearly attenuating laterad, lobulate/lobate/radiate at least laterally and, especially, caudally; ozopores present, but inconspicuous, usually lying inside fore margin at base of paraterga, pore formula often untreaceable; middle parts of metaterga with seriate transverse rows of abundant setigerous bosses/knobs/tubercles partly extending onto paraterga; tergal setae very short to very long, up to hair-like, simple or differentiated; often a sharp sternal tooth near each coxa; ♂ femur 3 often strongly enlarged; gonopod aperture transversely ovoid, at least sometimes with elevated edges; gonopod coxite poorly setose, subcylindrical, stout, shorter than telopodite, typically without a mesal extension subtending the usual, long, slender, strongly falcate cannula; telopodite without a prefemoral process at base, usually stout, clearly twisted and tripartite, with an anterior and a posterior branch/lobe, normally between these also with a considerable, simple, spiniform, recurved solenomere terminating a strongly sigmoid seminal groove. Neither an accessory seminal chamber nor a hairy pulvillus.

Remarks.– Considering that the gonopod conformation is completely unknown in *O. concolor*, *O. exilis*, *O. pugnus*, *O. scaurus*, *O. tengger* and *O. triseriatus*, and only crudely depicted in the remaining congeners, including *O. weberi*, the key concluding the paper is based primarily on peripheral characters. Moreover, the identities of most species will remain obscure until the respective ♂ types have been restudied and/or new topotypical material properly described.

***Ophrydesmus anichkini* n. sp.**

(Figs. 1, 2)

Niponielle sp.: Golovatch et al., 2011b: 82.

Holotype.– ♂ (ZMUM ρ2585), Vietnam, Dongnai Prov., Cat Tien National Park, forest near Lake Bau Sau (Crocodile Lake), 17.12.2009, leg. A. Anichkin.

Diagnosis.– Differing from the most similar *O. weberi* (Pocock, 1894) by the presence of a colour pattern, the absence of tergal radii, the laterally narrow paraterga, the unmodified, not swollen ♂ femur 3, and the posterior process (**cp**) of the gonopod femorite being shorter than the anterior process (**ap**). In addition, *O. anichkini* n. sp. is distinguished from all congeners by long and dense tergal hairs and deeply lobed paraterga.

Name.– Honours Alexandr E. Anichkin, the collector.

Description.– Length ca 11 mm, width of midbody pro- and metazonae 1.0 and 4.0 mm, respectively. General coloration in alcohol grey-brown with contrasting whitish paraterga on collum and segment 2, all metatergal edges also narrowly whitish and translucent; legs, tips and bases of antennae, as well as epiproct tip light greyish (Fig. 1).

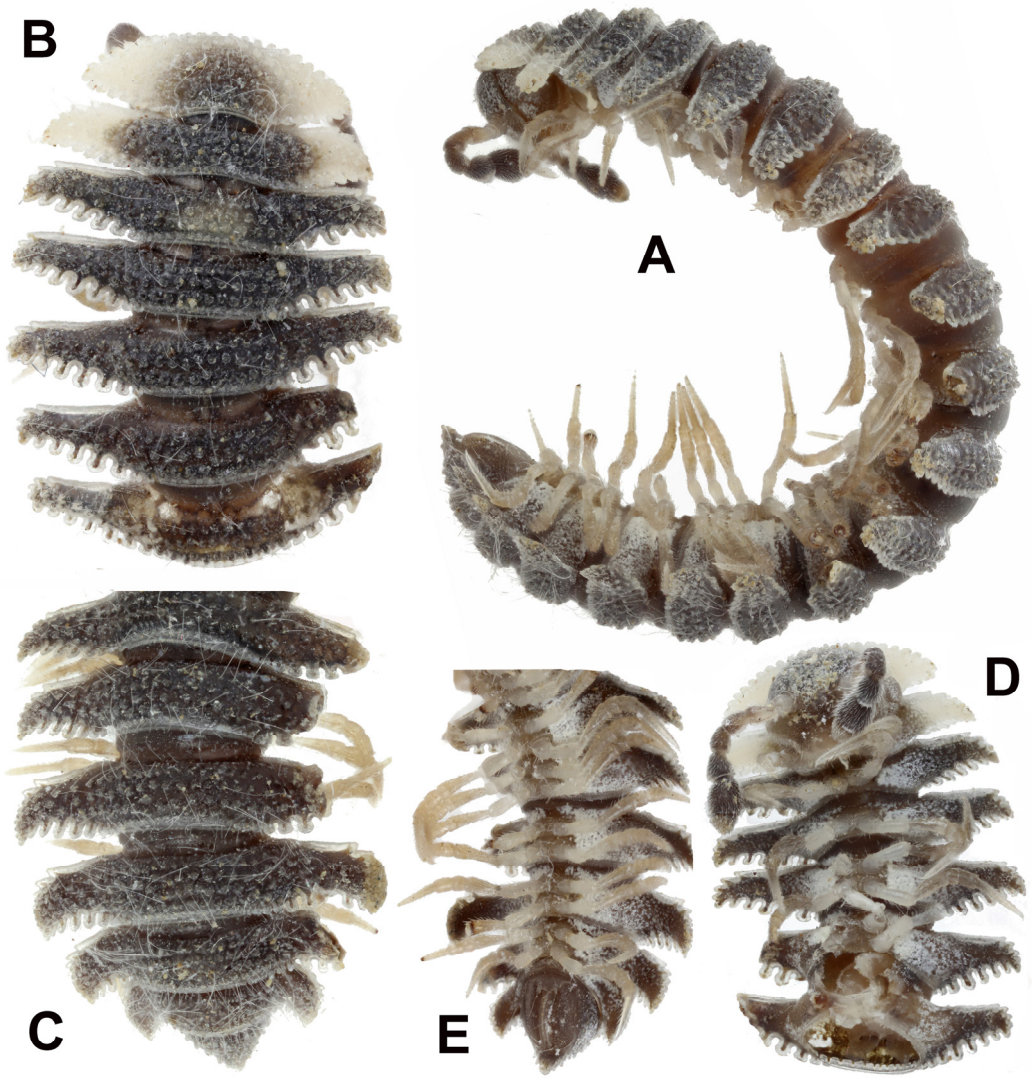

FIGURE 1. *Ophrydesmus anichkini* n. sp., ♂ holotype: (A) habitus, lateral view; (B, D) anterior part of body, dorsal and ventral views, respectively; (C, E) posterior part of body, dorsal and ventral views, respectively. Pictures by K. Makarov, not taken to scale.

Body with 20 segments. In width, head << collum < segment 2 < 3 < 4 < 5=15; thereafter body rather rapidly tapering towards telson.

Clypeolabral region densely setose, vertigial region granulate; epicranial suture rather distinct, starting between antennal sockets (Fig. 1A, D). Antennae short, strongly clavate due to a particularly enlarged antennomere 6, the latter subequal in length to antennomere 3. Tegument dull, mostly rough, surface below paraterga

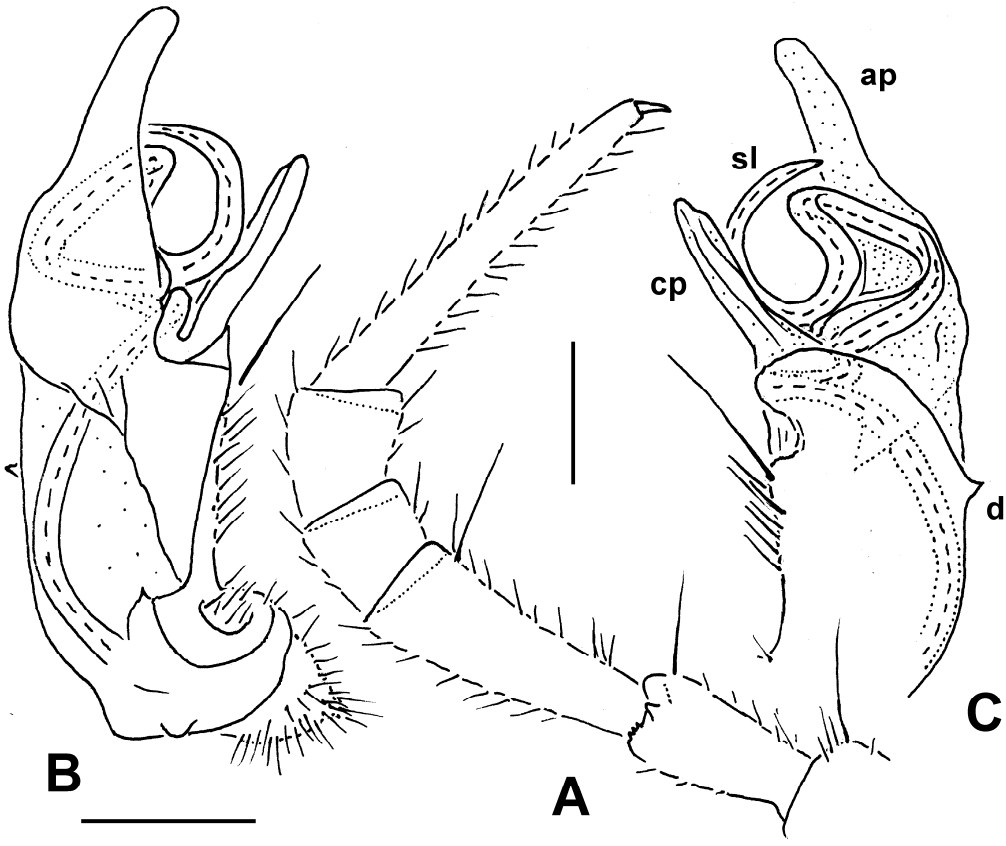

FIGURE 2. *Ophrydesmus anichkini* n. sp., ♂ holotype: (**A**) leg 9, lateral view; (**B, C**) left gonopod, mesal and lateral views, respectively. Scale bars: 0.2 mm.
Designations: cp – posterior process, ap – anterior process, sl – solenomere, d – anterodistal prefemoral denticle.

granulate, only prozona smooth. Dorsum regularly convex; paraterga situated at about upper 1/3 of body, very strongly developed (Fig. 1), beginning with collum. Collum fully covering the head from above, biconvex, clearly lobulate anteriorly and caudolaterally, but not mediocaudally, paraterga rather narrowly rounded on sides (Fig. 1B, D). Middle parts of metaterga 2–14 with three, of following metaterga with four, transverse, rather irregular rows of small, round, setigerous knobs/tubercles in addition to caudalmost, regular row of minute, likewise setigerous grains in front of limbus. Paraterga very broad, mostly rather regularly continuing outline of dorsum, increasingly extending back behind caudal tergal margin only on segments 15–19, only slightly declined, each more or less narrowly rounded laterally and deeply lobulate/lobate (Fig. 1): anterolateral lobulations (= anterolaterals) on each side relatively small, located only near lateral end while front margin largely entire and

straight, 2–3 on most paraterga, increasing in number up to 4 on 19th; lateral lobulations (= laterals) likewise small, but distinct, 1–5 and also increasing in number towards segment 19; caudolateral lobulations (= caudolaterals) clearly largest, lobe-shaped, 6–8 on each side, gradually decreasing in size mesad. Dorsal surface of paraterga with only 1–3 transverse, mostly irregular, setigerous knobs like those placed mid-dorsally. Tergal hairs abundant, about ½–⅔ as long as length of metatergum. Limbus densely microspiculate. Neither axial line nor radii, nor pleurosternal carinae. Pore formula untraceable, but ozopores present, very small, poorly visible in anterodosal view at the very base of paraterga at least on segments 15 and 16, lying inside a small pit at anterior margin near median end of a straight callus of paratergum. Stricture dividing pro- and metazonae narrow, rather shallow and smooth. Epiproct (Fig. 1C, E) rather short, conical, narrowly rounded at apex. Hypoproct (Fig. 1E) subtriangular, 1+1 setae caudal, clearly separated, borne on evident knobs; knobs flanking a similarly distinct, median, marginal tooth.

Sternites narrow (Fig. 1D), deeply impressed along main axis, clearly broadened and flattened only between coxae 7. Legs long and slender (Figs 1, 2A), ca 1.4–1.5 times as long as midbody height (♂) (Fig. 1A, E); gonapophyses on coxae 2 small cones; femora 3 unmodified, not swollen ventrally (Fig. 1D); neither adenostyles nor tarsal brushes.

Gonopod aperture transversely ovoid, caudal and lateral margins thin, somewhat elevated (Fig. 1D). Gonopods (Fig. 2A, B) fairly simple, short and stout; coxite short, subcylindrical, with an evident distomesal outgrowth subtending the cannula; prefemoral part as usual, densely setose, with a small, but evident subapical tooth (**d**) on anterior face, about half the length of acropodite; the latter slightly curved caudad, distinctly tripartite, with a lower, simple, lobe-shaped, rounded, posterior process (**cp**), a higher, likewise simple and rounded, finger-shaped, anterior process (**ap**), and an unusually prominent, long, strongly twisted, spine-shaped, recurved solenomere (**sl**) lying between **ap** and **cp**. Neither an accessory seminal chamber nor a hairy pulvillus.

KEY TO *OPHRYDESMUS* SPECIES, INCLUDING SOME PUTATIVE CONGENERS

1(2) Middle parts of metaterga 2–5 with only three transverse rows of setigerous tubercles or bosses; paraterga with subrectangular sides. …… 3
2(1) Middle parts of most metaterga with 4–5 transverse rows of setigerous tubercles or bosses; paratergal caudomarginals if any only rarely 5+5 and forming distinct lobes. …..…. 5
3(4) Antennomeres 5–7 strongly enlarged; body ca 14 mm long and 3.5 mm wide (♀); coloration uniformly grey-brown, venter nearly white. Indonesia, Sulawesi. ….. *O. triseriatus*
4(3) Antennal club consisting only of antennomeres 5 and 6; body ca 23 mm long and 6.7 mm wide (♀); coloration uniformly medium brown, venter paler. Philippines, Palawan. …… *O. exilis*
5(6) ♂ femur 3 strongly inflated; sternal cones evident. Indonesia, Java. ……..…. 7
6(5) ♂ femur 3 unmodified; sternal cones wanting. ……...…… 13

7(8) Smaller and more slender: length 10 mm, width 2.2 mm. Indonesia, Java, Pengelengang (= Parahyangan, West Java Province). …….. *O. pugnus*
8(7) Larger and stouter. …… 9
9(10) Body 16–20 mm long and 4.0–5.0 mm wide; coloration uniformly brown with contrasting whitish to yellowish antennae and legs; middle parts of metaterga with five transverse rows of setigerous knobs; paraterga subhorizontal, scarcely narrowed laterad, latero- and caudomarginals (7+7) more lobulate/radiate than clearly and deeply lobate; gonopod anterior and posterior processes/branches subequal in height. Western Malaysia, Singapore, Indonesia: Java. ……..... *O. weberi*
10(9) Smaller: length 13–15 mm, width 3.5 mm. ……..…… 11
11(12) Coloration lighter brown; paraterga slightly declined; sternal axial impression between prominent cones thin and deep. Indonesia, Java, West Java Province, Gede Volcano. ……..…… *O. scaurus*
12(11) Coloration dark brown; paraterga subhorizontal; sternal axial impression between small cones wider and weaker. Indonesia, eastern Java Tengger Massif. ……. *O. tengger*
13(14) Body entirely pallid, relatively stout: 14.8 mm long and 5.3 mm wide (♂); middle parts of metaterga with four serial rows of setigerous grains; paratergal marginals poorly incised, delimited only by radii; gonopod telopodite tripartite, dilated and concave. Papua New Guinea, Central Province, Bartholomew Mountains, Moroka (= Meroka) near Mount Wori-Wori (= Vori Vori Bluff), 09°25'S, 147°41'E. ……..…….. *O. modestus*
14(13) Body pigmented, smaller: width ≤ 4.0 mm; middle parts of metaterga mostly with four serial rows of setigerous tubercles or bosses. ……. 15
15(16) Colour pattern vivid: background coloration dark grey-brown, but paraterga on collum and segment 2 contrasting whitish (Fig. 1); body ca 11 mm long and 4.0 mm wide; middle parts of metaterga with 3–4 serial rows of setigerous knobs, setae being very long and hair-like (Fig. 1); paratergal marginals mostly clearly lobate (Fig. 1); gonopod as in Fig. 2B, C. Southern Vietnam. Dongnai Province ……..… *O. anichkini* n. sp.
16(15) Mostly monochrome, a vivid colour pattern absent; middle parts of metaterga with four serial rows of setigerous tubercles or bosses; paratergal marginals usually radiate. ….. 17
17(18) Body brown, 12–13 mm long; collum with 19 radii, paraterga with 10–13 caudal radii; 4–5 lateral lobulations; gonopod very deeply bi- or tripartite, anterior process much higher than posterior one. Western Malaysia and Singapore. ……..…….. *O. kedahensis*
18(17) Indonesia, Java or Sumatra. ……...…. 19
19(20) Smaller: length 11.5 mm, width 2.7 mm (♀). Java, Tjibodas (7°15'35"S, 08°11'13"E), ……..…..... *O. concolor*
20(19) Larger: 14.5–16.0 mm, width 3.8–4.0 mm. Sumatra. ……...….. 21
21(22) Length 15 mm, width 4.0 mm (♀); middle parts of metaterga with four serial rows of setigerous subquadrate fields. West Sumatra Province, Maninjau. ……...……. *O. sumatranus*
22(21) Middle parts of metaterga with four serial rows of round setigerous knobs or tubercles. ..23
23(24) Both posterior and anterior processes of gonopod stout and broadly rounded, but the former considerably longer than the latter. North Sumatra Province, Si-Rambé near Lake Toba. ……. *O. modiglianii*
24(23) Posterior process of gonopod long, slender, apically trilobate, but slightly shorter than anterior process. North Sumatra Province, Balighe near Lake Toba. …….. *O. simillimus*

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