

Diplopoda from Borneo in the Muséum d'Histoire naturelle de Genève. 1. A new genus and species of cryptodesmoid milliped from Sarawak (Polydesmida: Cryptodesmidae)

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Diplopoda from Borneo in the Muséum d'Histoire naturelle de Genève. 1. A new genus and species of cryptodesmoid milliped from Sarawak (Polydesmida: Cryptodesmidae). – The new genus and species *Sarissocryptus lienhardti* is described from southern Sarawak (Bau District) and referred to the cryptodesmid tribe Dyakryptini as the second member of this family known from Borneo. Corrections to the original description of *Dyakryptus grandis* (Hoffman, 1961) and several supplementary illustrations, are provided for that taxon.

Key-words: Diplopoda - Polydesmida - Cryptodesmidae - *Sarissocryptus* n. gen. - Sarawak

INTRODUCTION

The family Cryptodesmidae is known to be represented in southeast Asia and the East Indies by 11 genera, one of them referred to the subfamily Pterodesminae, the others to the Otodesminae (HOFFMAN 1980). Despite this level of diversity, over a range extending east to New Guinea and north to Palawan, only one species has so far been recorded from the entirety of Borneo: *Dyakryptus grandis* (Hoffman, 1961) which occurs at Mount Kinabalu. It is therefore a matter of considerable interest to establish the presence of an additional cryptodesmid for the island's fauna, this one obtained in southern Sarawak by an expedition from the Geneva museum in 1987. While clearly to be placed in the so-far monotypic tribe Dyakryptini, the species under consideration is sufficiently different from *D. grandis* to merit separate generic status as is here proposed.

I express my best thanks to my friend and colleague Bernd Hauser (Muséum d'Histoire naturelle de Genève), organizer of the several museum expeditions to Sarawak and Sabah, for providing the opportunity to study diplopod material

accumulated during these excursions. I am also grateful to Jonathan Coddington (U.S. National Museum, Washington, D.C.) for loaning the holotype of *Dyakryptus grandis* for re-examination.

FAMILY CRYPTODESMIDAE

No revisionary work published during the past 18 years modifies the classification of Cryptodesmidae that I suggested in 1973, one admitted at the time to be highly provisional. The four subfamilies thought to be justifiable were distinguished in a key based partly on genitalic and partly on peripheral characters, the best that could be done in the absence of adequate comparative studies of male genitalia throughout the group.

The specimen from Sarawak is clearly referable to the Otodesminae on the basis both of the gonopod aperture and prominent lobation of the paranota. Within the subfamily, a close association with *Dyakryptus* on the basis of gonopodal and peripheral characters is evident, as discussed in a subsequent paragraph.

TRIBE DYAKRYPTINI

Sarissocryptus, gen. nov.

Type species: *S. lienhardti*, sp. nov.

D i a g n o s i s : An otodesmine genus characterized by the metatergal tubercles with two kinds of setae, absence of ozopores, prominent transverse groove on front edge of gonopod aperture, and long bladelike process near midlength of gonopod femur.

D i s t r i b u t i o n : Known only from the type locality of the type species, in extreme southern Sarawak.

N a m e : From the Greek *sarissa*, a long Macedonian spear + *cryptus*, a suffix frequently used in this family, in allusion to the large setose projection on posterior side of the gonopod telopodite.

Sarissocryptus lienhardti, sp. nov.

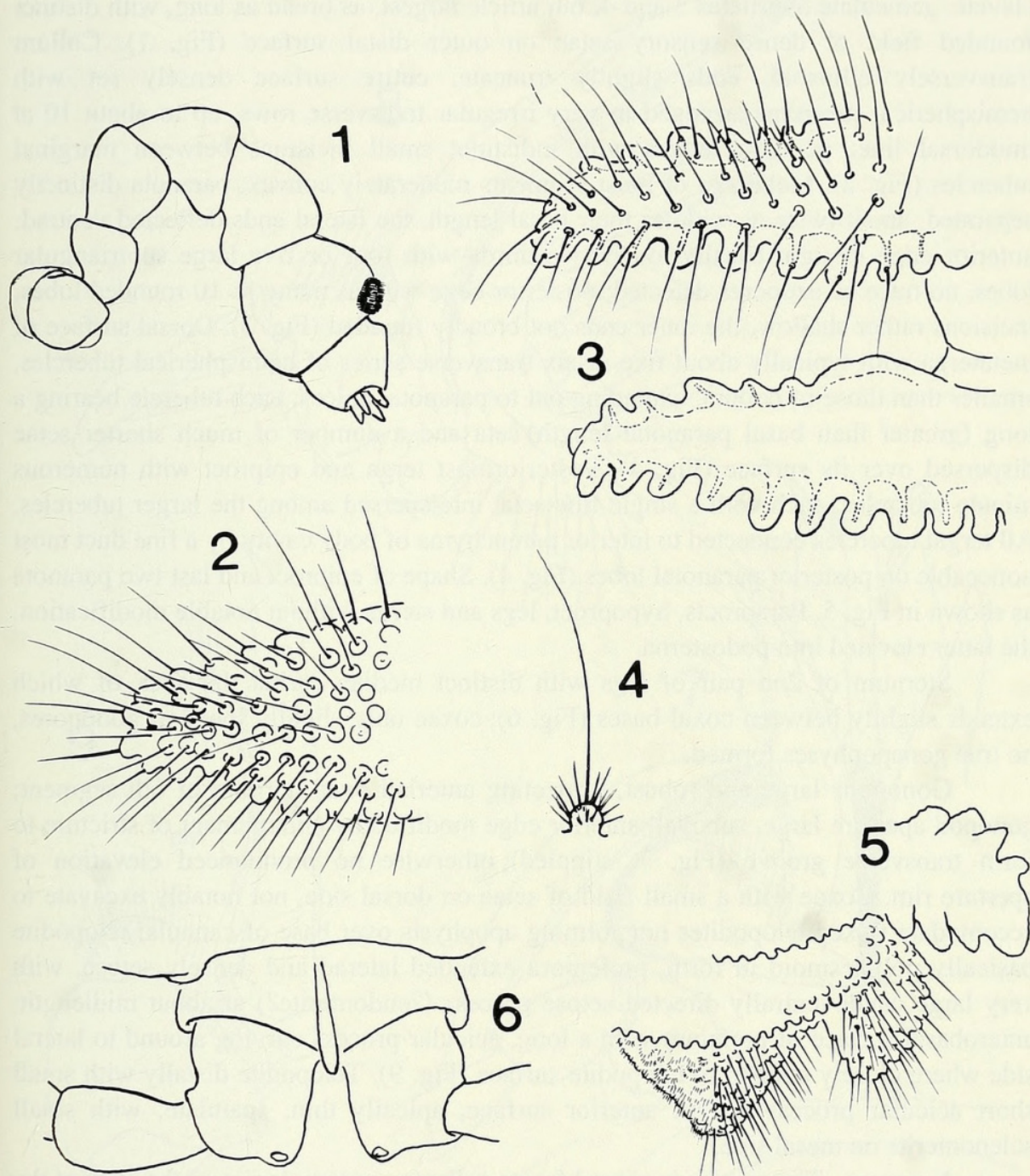
Figures 1-9

M a t e r i a l : Male holotype (Mus. Genève) from vicinity of Fairy Cave, 100 m., Bau District, Sarawak; Charles Lienhardt leg. 3 December 1987.

D i a g n o s i s : With the characters of the genus.

H o l o t y p e : Adult male, body length 14.6 mm, width across selected metaterga: 1 - 2.6 mm, 2 - 3.3 mm, 4 - 3.8 mm, 6 - 4.1 mm, 8 - 4.0 mm, 10 - 4.0 mm, 12 - 4.0 mm, 14 - 3.9 mm, 16 - 3.8 mm, 18 - 3.0 mm; W/L ratio at midbody 27%.

Color uniformly medium gray dorsally except collum and 2nd metatergum (nearly white); antennae pinkish-brown; epicranium reddish-brown; basal podomeres colorless, distal light reddish-brown.



FIGS 1-6.

Structural details, *Sarissocryptus lienhardti* – Fig. 1: Left antenna, setae omitted. – Fig. 2: Left side of collum, dorsal aspect. – Fig. 3: Left paranota of segments 10 and 11, setae omitted from 11 and outline of internal parenchymatous area indicated by dotted line. – Fig. 4: Dorsal tubercle showing apical macroseta and small secondary setae characteristic of this genus. – Fig. 5: Epiproct and right paranota of segments 18 and 19; macrosetae omitted from left side of epiproct to show investiture of minute setae not associated with tubercles. – Fig. 6: sternum and coxae of 2nd pair of legs, anterior aspect.

Head and mouthparts without notable modification; antennae massive, distally clavate, geniculate at articles 3 and 4, 6th article largest, as broad as long, with distinct rounded field of dense sensory setae on outer distal surface (Fig. 1). Collum transversely ellipsoid, ends slightly truncate, entire surface densely set with hemispherical tubercles arranged in very irregular transverse rows, up to about 10 at middorsal line; posterior edges with indistinct small incisions between marginal tubercles (Fig. 2). Metaterga of most segments moderately convex, paranota distinctly separated, about twice as wide as their basal length, the lateral ends deflected ventrad; anterior edge straight basally, outer two-thirds with four or five large subtriangular lobes, no trace of ozopores detected; posterior edge with as many as 10 rounded lobes, incisions rather shallow, the inner ends not broadly rounded (Fig. 3). Dorsal surface of metaterga with typically about five or six transverse series of hemispherical tubercles, smaller than those of collum, extending out to paranotal apices; each tubercle bearing a long (greater than basal paranotal length) seta and a number of much shorter setae dispersed over its surface (Fig. 4). Posteriormost terga and epiproct with numerous minute tubercles, each with a single fine seta, interspersed among the larger tubercles. All tergal tubercles connected to interior parenchyma of body cavity by a fine duct most noticeable on posterior paranotal lobes (Fig. 4). Shape of epiproct and last two paranota as shown in Fig. 5. Paraprocts, hypoproct, legs and sterna without notable modification, the latter elevated into podosterna.

Sternum of 2nd pair of legs with distinct median carina the apex of which extends slightly between coxal bases (Fig. 6); coxae only slightly lobed at gonopores, no true gonapophyses formed.

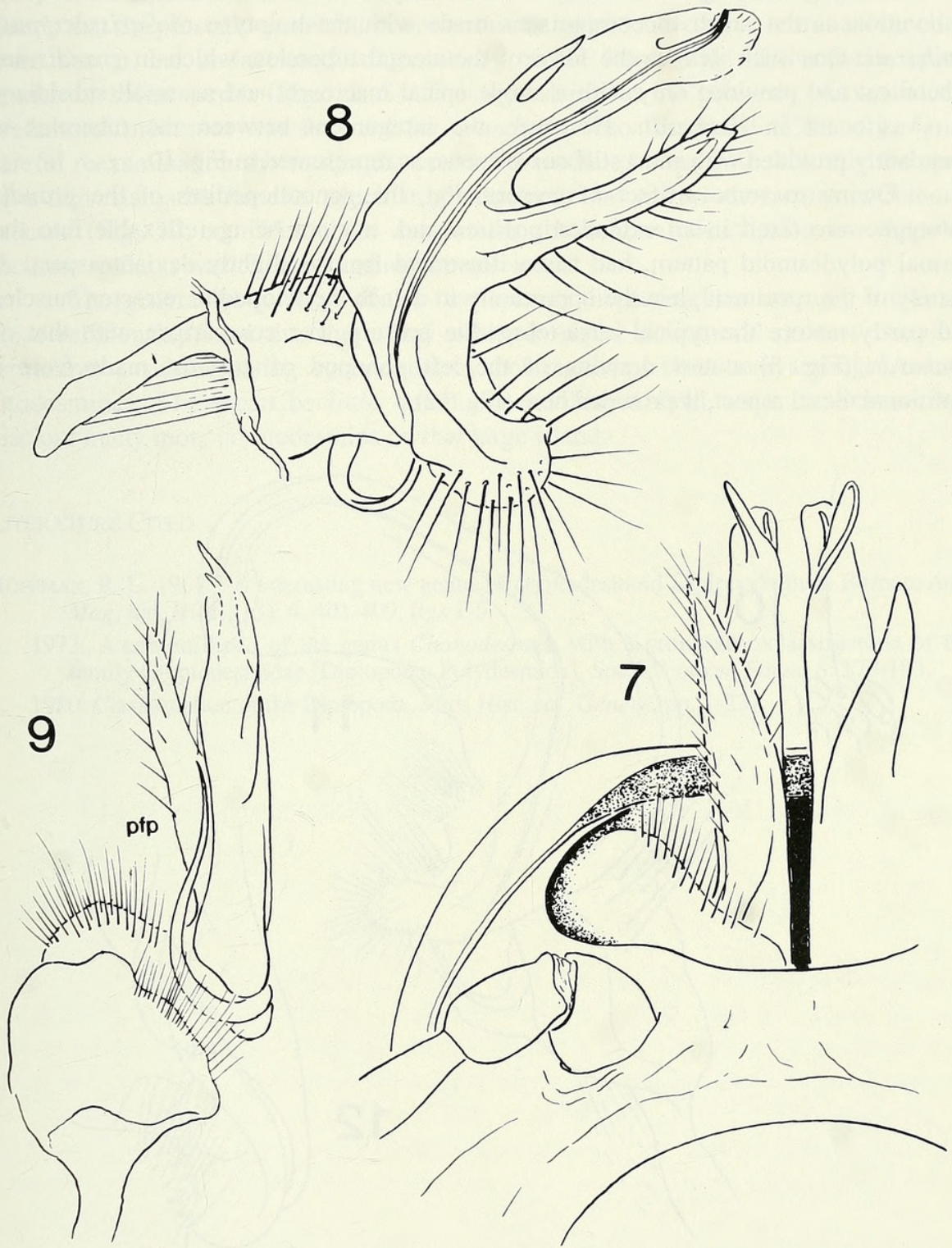
Gonopods large and robust, projecting anteriad over sternum of 6th segment; gonopod aperture large, suboval, anterior edge modified by enlargement of stricture to form transverse groove (Fig. 7, stippled); otherwise no pronounced elevation of aperture rim. Coxae with a small field of setae on dorsal side, not notably excavate to accomodate flexed telopodites nor forming apophysis over base of cannula; telopodite basically polydesmoid in form, prefemora extended laterad and densely setose, with very large caudoventrally directed setose process (?endomerite?) at about midlength; anterobasal surface of prefemur with a long, acicular process curving around to lateral side where closely applied to telopodite surface (Fig. 9). Telopodite distally with small short acicular process (x) on anterior surface, apically thin, spatulate, with small solenomerite on mesal side.

N a m e : The species is named for its collector, entomologist on the staff of the Geneva Museum.

Dyakryptus.

Dyakryptus Hoffman, 1961, *Ann. Mag. nat. Hist.*, ser. 13, v. 4, p. 401. Monobasic with a new species. Type species: *D. grandis* Hoffman.

This genus remains known, after three decades, only from the two specimens of *D. grandis* mentioned in the original description, both from Mount Kinabalu.

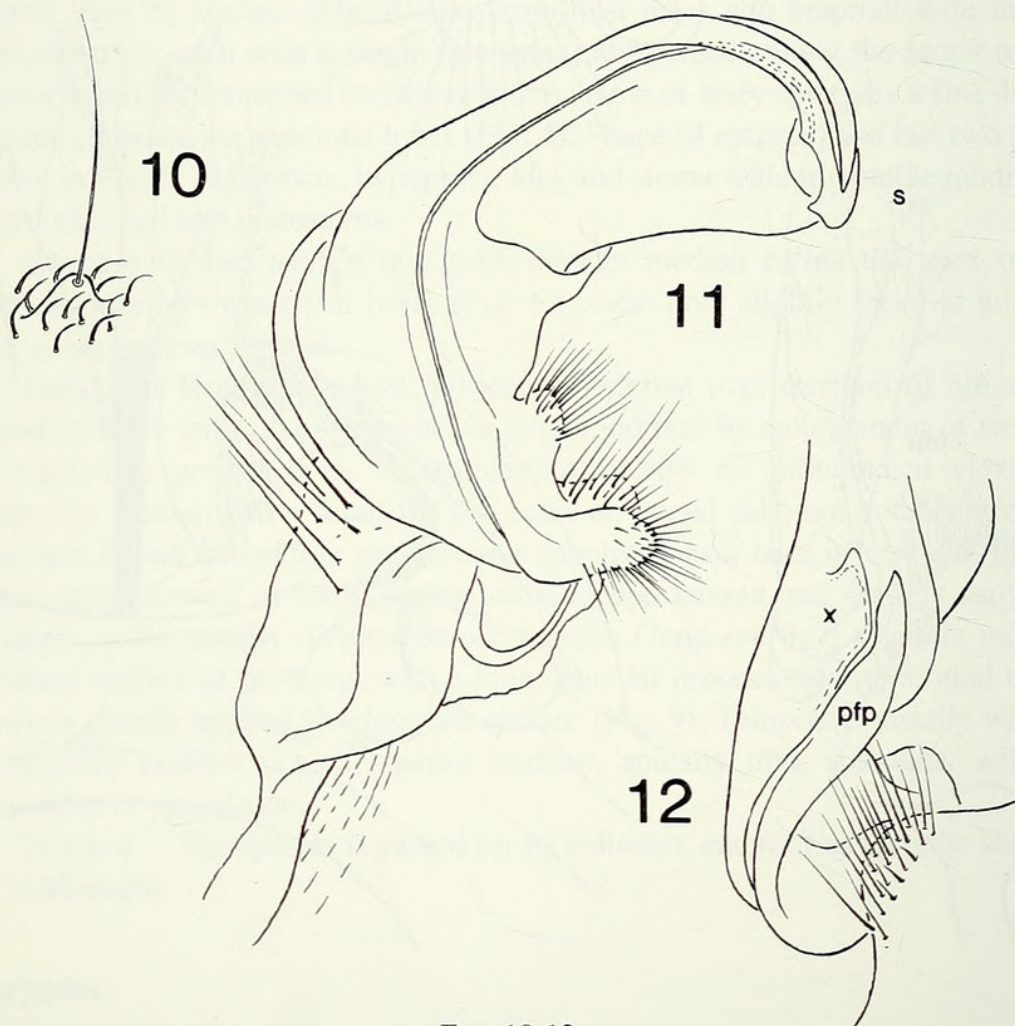


FIGS 7-9.

Gonopods, *Sarissocryptus lienhardti* – Fig. 7: caudoventral aspect of 7th segment with gonopods shown *in situ*, left gonopod incomplete. – Fig. 8: Left gonopod, mesal aspect. – Fig. 9: Left gonopod, anteroventral aspect, showing prefemoral process (pfp).

Although that species was rather carefully described, several points require elaboration as the result of comparisons made with the holotype of *Sarissocryptus lienhardti*. One such item is the form of metatergal tubercles, which in *grandis* are subconical and provided only with a single apical macroseta and no small subsidiary hairs as occur in *lienhardti*. However, the integument between the tubercles is abundantly provided with short stiff curved setae as represented in Fig. 10.

Owing to some artifact of preservation, the gonotelopodites of the *grandis* holotype were fixed in an extended position and, not not being reflexable into the normal polydesmoid pattern, had to be illustrated from a slightly deviant aspect. A restudy of the specimen gave the opportunity to detach the telopodite retractor muscles and partly restore the typical coxa-telopodite posture. For comparison with that of *lienhardti* (Fig. 8) a new drawing of the left gonopod of *grandis*, made from a traditional mesal aspect, is provided here (Fig. 12).



FIGS 10-12.

Structural details, *Dyakryptus grandis* – Fig. 10: Tergal tubercle with apical seta only, with short curved setae typical of this genus shown. – Fig. 11: Left gonopod, mesal aspect. – Fig. 12: femoral region of the gonopod, ventrolateral aspect to show course of prefemoral process (pfp) and small apically acute flange (x).

Two emendations must be made to the original drawings (1961, figs 4 and 5). One is that the prostatic groove does not terminate on a slender acute terminal branch as there shown, but in fact ends subterminally on the lateral side of the major apical branch or solenomerite (Fig. 11, S). The second is that the presence of two falcate prefemoral processes was asserted for *grandis* and so illustrated (1961, fig. 4). A careful reexamination shows that the presumed second process is in fact only the apex of a thin triangular lamella which originates near the end of the actual prefemoral process (Fig. 12, x). With these corrections the original description is otherwise accurate so far as was checked against the specimen.

The general body form of the two species discussed here strongly implies a close relationship, and the shape and position of the prefemoral process certainly represents a substantiating synapomorphy not recurring elsewhere amongst known Otodesminae. There can be little doubt that additional field work on Borneo will disclose many more cryptodesmids on that large island.

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