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New Brachelytrous Cerambycine Beetle (Coleoptera, Cerambycidae) from Northern Borneo

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Abstract A new genus and species of brachelytrous cerambycid beetle is described from northern Borneo. It is characterized mainly by the large though narrow eyes, pectinate antennae, presence of a pair of oblong lateral swellings on pronotum, densely pubescent elytra, and peculiar concavity of hind femur. Though somewhat similar to the genera of the Molorchini in its general appearance, this new genus most probably belongs to the Stenopterini of the Cerambycinae in view of the structure of the venter of thorax, the wing venation and the male genital organ.

Brachelytrous cerambycid beetles are known in various tribes and genera of the subfamily Cerambycinae. Of those, the tribes Molorchini and Stenopterini are especially well known, and are mainly composed of brachelytrous species. Though closely similar to each other, the two groups are radically different in the conformation of elytra. Brachelytrous forms in the Stenopterini always have narrowed acute elytra, and have so far been unknown to include ones with reduced rounded elytra as in the Molorchini. Such elytral differentiation has been regarded as an important character for discriminating the two groups, since no exceptions to this diagnosis have been known until now. It is, therefore, most unexpected that a very interesting species belonging to the Stenopterini was collected by Mr. Shinji NAGAI during his residence in Sabah of Borneo in 1984.

In the spring of 1986, Mr. Nobuo OHBAYASHI submitted a strange brachelytrous cerambycid beetle resembling a molorchine collected by Mr. NAGAI to me for taxonomic study. At first, I considered it to belong to the Molorchini, since the cerambycid has reduced rounded elytra as in *Epania* and its allied groups. However, my comparative study of its body conformation revealed that it most probably belongs to the tribe Stenopterini. To my surprise, the brachelytrous cerambycid has pectinate antennae as in *Cyriopalus* PASCOE (1866, p. 530) of the Cerambycini. Such an advanced structure of antennae has so far been unknown in any members of the Stenopterini. In short, it has no relatives in the tribe, and seems to form an isolated group.

In the present paper, I am going to introduce this interesting cerambycid into science, and to discuss its systematic status. The abbreviations used in the present paper are as follows: HW - maximum width of head, measured across eyes; FL - length of frons; FA - apical width of frons; PL - length of pronotum; PW - maxi-

mum width of pronotum; PA – apical width of pronotum, PB – basal width of pronotum; EL – length of elytra; EW – humeral width of elytra.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his constant guidance and reading through the manuscript, and to Messrs. Nobuo OHBAYASHI and Shinji NAGAI for their offer of interesting material.

Genus *Pectinocallimus* nov.

Type species: *Pectinocallimus sericeus* sp. nov.

A brachelytrous cerambycine genus with pectinate antennae, most probably belonging to the tribe Stenopterini, but evidently differing from all the known genera of the tribe in the peculiar structure of head, elytra and male genital organ.

Body medium-sized though short and broad, rather depressed; integument moderately sclerotized; head and prothorax small, hind body large and broad; antennae slender though short, pectinate on segments 3–10; legs short and rather stout, distinctly arcuate. Colour black, with reddish or paler appendages, more or less polished; mouth-parts yellowish to reddish brown, except for infuscate margins of mandibles. Body densely clothed with pale recumbent pubescence and blackish erect hairs; elytra densely with recumbent pubescence; antennae rather densely with erect hairs, and with dense recumbent minute pubescence on segments 3–11; legs rather densely with long erect blackish hairs.

Head small, a little wider than long, well convex; frons quadrate, moderately longer than wide, distinctly convex, with a deep median longitudinal furrow; clypeus rather long, distinctly narrowed apicad, with truncate apical margin; occiput large, strongly convex, subparallel-sided, slightly constricted just behind eyes; eyes large and prominent though narrow in profile, distinctly separated from each other, fairly apart from bases of mandibles, moderately emarginate by antennal cavities; genae rather large, convex. Labrum slightly narrowed apicad, with subtruncate apical margin. Mandibles broad and relatively short, bluntly hooked at the extremities, provided with short setae on dorsum. Maxilla elongate and narrow, bearing long setae; cardo quadrate and rather broad, bearing several setae on the surface; lacinia short, slightly arcuate on inner margin, with bluntly rounded apex, densely bearing long setae; galea clavate, distinctly elongate and slender, with rounded apex and moderately bearing long setae; palpi very long, bearing very long setae, with terminal segment not so elongate, blunt at the apex. Antennae short and slender, with segments 3–10 pectinate, each process being elongated spatular and slightly longer than or almost as long as the stem segment; scape very short and rounded, nearly equal in length to segment 3, segment 2 much reduced, segment 3 distinctly shorter than segment 4, which is a little shorter than segment 5, terminal segment simply acute.

Pronotum small and short, a little narrower than head, moderately contracted

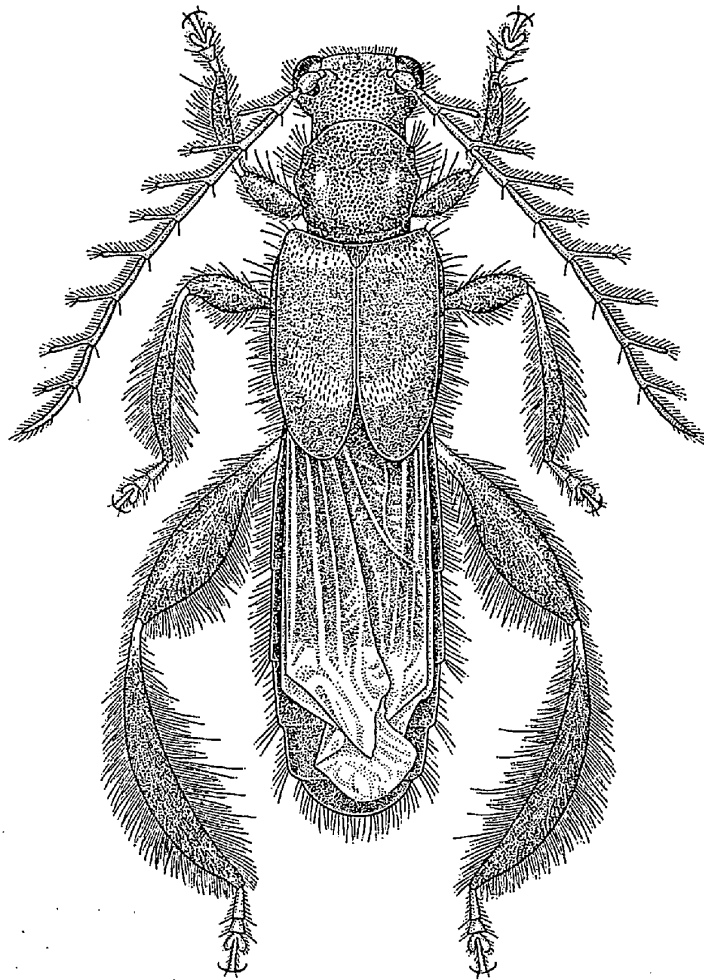


Fig. 1. *Pectinocallimus sericeus* gen. et sp. nov., holotype male. (Scale 3 mm.)

at apex and base; sides weakly constricted just behind apex and before base, roundly and weakly tuberculate just behind middle, with basal angles rounded; apical margin slightly arcuate, not marginated, basal one moderately arcuate and marginated; disc weakly convex, though concave behind apex and before base, provided with a pair of oblong prominent swellings behind the middle of the sides, rugose except for the lateral swellings. Scutellum fairly large, longitudinally concave along the median line.

Elytra rather strongly abbreviated, barely reaching the 3rd abdominal tergite, distinctly dehiscent, narrowly marginated throughout; sides with prominent humeri, arcuate and narrowed towards rounded apices; basal margin strongly oblique and weakly emarginate; disc feebly convex, declined to base, longitudinally impressed just behind scutellum. Hind wings not so elongate and wide, with jugal area well developed; media moderately produced inwards; cubitus less developed, reaching neither base nor margin of wing; anal represented by two complete longitudinal

veins, which are connected with short cross vein near the middle; jugal bar recognizable.

Prosternum distinctly reduced, hardly convex, weakly emarginate in profile; prosternal process rather narrow and depressed, arcuately dilated towards apex, which is slightly narrowed by epipleural process; fore coxal cavities moderately angulate externally. Mesosternum slightly vertical posteriorly, with mesosternal process arcuately narrowed towards apex which is bilobed and resting on the anterior margin of metasternum; mid coxal cavities broadly open to mesepimera. Metasternum moderate, well convex; metepisternum fairly broad. Abdomen tongue-shaped, broad, hardly convex even in basal sternites, with a pair of slight rounded impressions on sternites 3-6, anal sternite arcuately rounded in male.

Legs short and stout; femora strongly clavate, with the basal parts of fore and mid ones compressed; hind femur provided with a distinct fusiform concavity on the undersurface; tibiae flattened and strongly arcuate, with spurs very short and acute.

Median lobe of male genitalia reduced, arcuate, with short median struts; ventral plate simple, more or less heavily sclerotized than the dorsal one, basal orifice broad. Tegmen elongate, with rather small paramere which is almost mono-lobed though slightly dehiscent at the extremity, and bearing several setae.

Range. Borneo.

Notes. The true affinity of this peculiar new genus is not certain, since it has convex head with large though narrow eyes and pectinate antennae, and abbreviated and densely pubescent elytra. The type species of *Pectinocallimus* is somewhat similar in general appearance to *Epania* PASCOE (1858, p. 237) or *Molorchoepania* PIC (1949, p. 9) of the Molorchini, though its true systematic position is fairly apart from them. In the wing venation, this genus is almost identical with the North American genus *Hybodera* LÉCONTE (1873, p. 191) of the Hyboderini (LINSLEY, 1940, p. 371), and is different from the genera of the Molorchini. Some genera of the Molorchini such as *Molorchus* FABRICIUS (1792, p. 356) are common with *Pectinocallimus* in the inwardly produced medial vein, but this character is considerably variable among the molorchine genera. In the conformation of male genital organ, this genus may resemble the genus *Lampropterus* MULSANT (1863, p. 214) of the Hyboderini (sensu LINSLEY, 1940) or the Stenopterini (s. lat.) (VILLIERS, 1978) occurring in Europe and North America. The broad apical lobe and the short median struts of median lobe and the almost mono-lobed paramere are common between the two genera. This genitalic character is also similar to that of *Stenhomalus* WHITE (1855, p. 243) of the Oabriini. It is well known that there are many common characters between the Stenopterini (or Hyboderini) and the Oabriini. However, *Pectinocallimus* had better be placed in the Stenopterini (s. lat.) than in the Oabriini, because of the external characteristics mentioned above.

It is no doubt that *Pectinocallimus* has no close relatives among the members of the Stenopterini or its allied groups. Of special interest is the pectinate antennae,

an advanced structure that has never been found in the members of the Stenopterini. The deeply concave hind femora and the slightly impressed sides of abdominal sternites are also unique, though these may prove to secondary sexual characters.

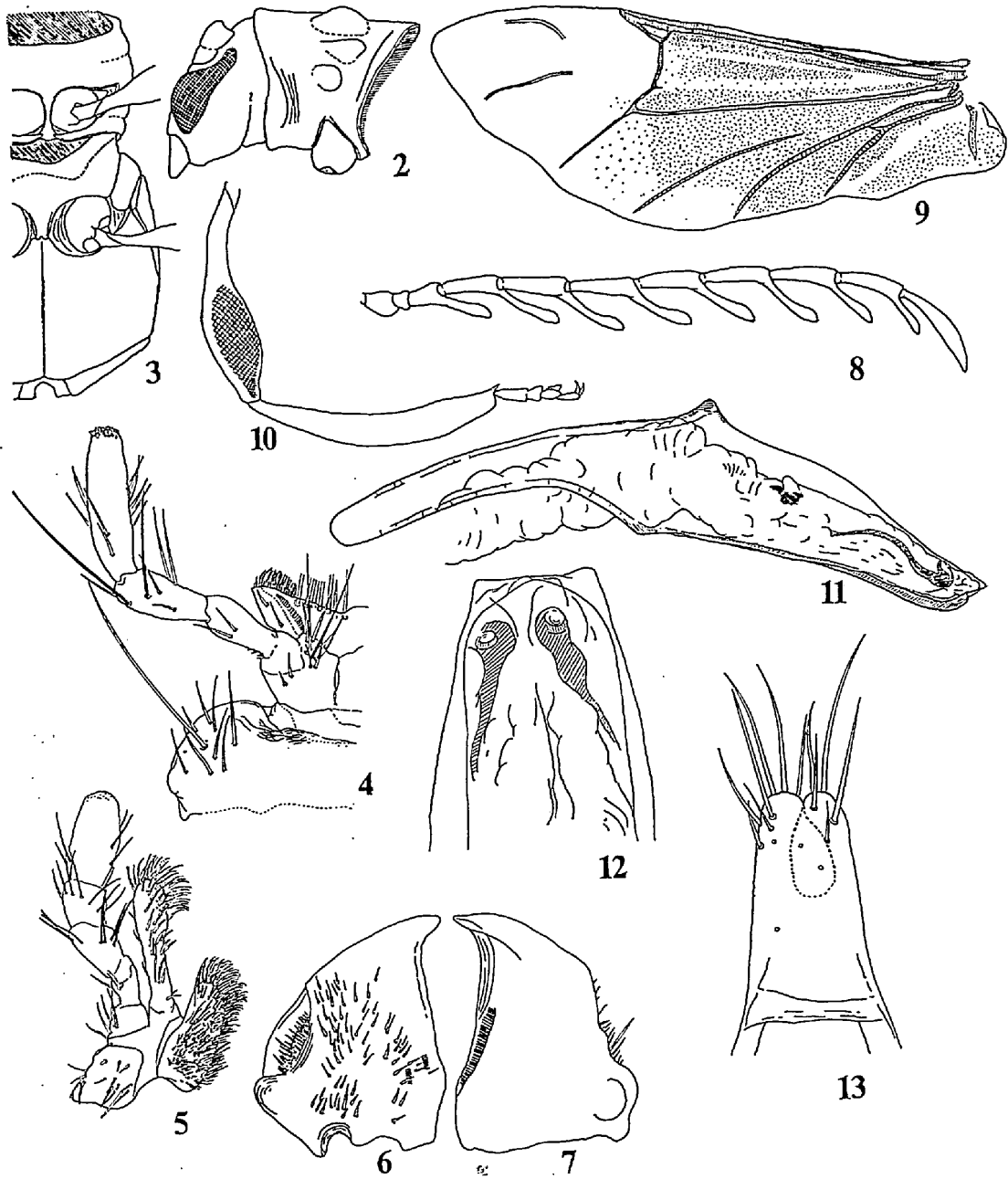
Pectinocallinus sericeus sp. nov.

(Figs. 1-13)

Male. A medium-sized species of broad and depressed habitus, with small head and prothorax; appendages short. Colour black, shiny; elytra yellowish brown, each apical two-thirds decorated with black bands whose anterior margins are arcuately emarginate, and also slightly infuscate at bases and near suture just behind scutellum; hind wings bicoloured, the basal three-fifths largely black and the rest tending to yellowish brown to white towards apices, tinged with iridescence throughout; basal margin of mesosternum and abdomen dark yellowish brown, the sides of the latter being blackish; antennae dark reddish brown though the basal two segments and the ventral surface of the processes of pectination on segments 3-6 are yellowish brown; legs black with bluish tinge, whitish yellow in basal third of hind femora and basal parts of tibiae, and dark yellowish brown on coxae, trochanters, bases of fore and mid femora, and tarsi.

Head fairly small, not so transverse, HW/PA 1.13, strongly convex even at the centre of vertex, strongly and rather coarsely rugose throughout, densely clothed with pale yellow pubescence and partially with erect black hairs near eyes; frons rather broad, FB/FL 1.25, well convex, with lateral sides weakly arcuate and a median longitudinal groove narrow though deep, glabrous on the anterior triangular portion; clypeus fairly long, nearly a half as long as the basal width, pubescent in basal four-fifths, with basal margin strongly arcuate; genae large and swollen, seven-tenths the maximum depth of eye-lobes; eyes moderately prominent, separated from each other by a half the maximum width of head; antennae short and thin, scape rounded, widest near the middle, one and two-fifths the maximum width, micro-sculptured, segment 2 nearly twice as wide as long, segment 3 nearly a half the length of segment 4, with the process twice as long as the stem segment, segments 4 and 5 slightly shorter than the length of their processes, terminal segment weakly arcuate, distinctly longer than the preceding segment.

Pronotum small and fairly short, distinctly narrower than the humeral width of elytra, moderately contracted towards apex and base, coarsely and closely rugose, densely clothed with pale pubescence mainly at sides and base, and moderately with long erect black hairs; PL/PA 1.18, PL/PW 1.03, PB/PA 0.94, PB/EW 0.64; sides feebly arcuate in apical sixth, moderately and roundly tuberculate at a level between apical sixth and basal third, then rounded and subparallel towards basal angles, which are weakly oblique; base slightly arcuate; disc weakly convex in apical five-sixths, slightly impressed at the sides near apex and flattened in basal sixth, with a pair of lateral swellings between apical and basal third, which are



Figs. 2-13. *Pectinocallimus sericeus* gen. et sp. nov., holotype male. — 2, Head and prothorax, lateral view; 3, thoraces, ventral view; 4, labium; 5, maxilla; 6, left mandible, dorsal view; 7, ditto, ventral view; 8, antenna; 9, hind wing; 10, hind leg; 11, median lobe of male genitalia, lateral view; 12, ditto, apical part in dorsal view; 13, paramere, dorsal view.

distinctly raised and feebly oblique inwards.

Elytra broad and strongly abbreviated, reaching the base of 3rd abdominal tergite, EL/EW 1.40, dehiscent in apical half, slightly exposing the sides of meta-

thorax; sides rather strongly produced forwards at humeri, feebly arcuate in apical five-eighths, then arcuately narrowed to apices, which are completely rounded; disc feebly convex, obliquely and weakly concave near each middle, slightly raised in apical three-tenths; surface provided with coarse punctures, densely clothed with recumbent pubescence, whose colour becomes reddish brown in basal half, pale yellow near middle and black on the apical black bands, and also partially with sparse erect black hairs near base. Hind wings wide, widest at apical fifth, seven-twelfth the maximum width, with sinuate hind margins.

Prosternum very sparsely scattered with punctures, moderately pubescent, with hind margin of epipleural process moderately arcuate. Venters of meso- and metathoraces hardly punctured, clothed with long erect black hairs, and partially with dense pale yellow pubescence at the sides of mesosternum. Abdomen moderately punctured, clothed with long erect black hairs mainly at the sides, and with pale yellow ones in transverse rows at the middle of each segment.

Legs fairly short, densely clothed with long erect black hairs, and partially with golden yellow ones along the external margin of each hind tibia; hind femur strongly clavate in apical two-thirds, the concavity occupying nearly a half the length of femur; hind tibia distinctly arcuate and compressed; 1st hind tarsal segment nearly as long as the following two segments combined.

Male genital organ small and rather lightly sclerotized. Median lobe a little less than one-sixth the length of hind body, moderately arcuate; dorsal plates slightly longer than the ventral ones, gradually narrowed to apex which is almost truncate, with the dorsal margin slightly sinuate; ventral plates slightly shorter than the dorsal, bluntly produced apicad; median struts rather short though slender, nearly one-third the length of median lobe; inner sac armed with a pair of long sinuate sclerites, the apices of which form distinct callosities. Tegmen elongate and rather narrow, seven-tenths the length of median lobe; paramere fairly small, three-tenths the length of tegmen, gradually narrowed to apex, which is slightly bilobed, rounded at each extremity, bearing several long and a few moderate setae near apex.

Body length: 8.9 mm.

Holotype male, Crocker Range (1,000–1,400 m alt.), on the Kimanis Road leading from Kimanis to Keningau, Sabah in East Malaysia, northern Borneo, 5. V. 1984, S. NAGAI leg. (preserved in the National Science Museum (Nat. Hist.), Tokyo).

Notes. Almost nothing has been known about the habitat and habits of *P. sericeus*. According to Mr. S. NAGAI, the unique holotype of this interesting species was caught flying on a peak along the Kimanis Road.

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