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A NEW GENUS *PECTINIMURA* (LEPIDOPTERA, GELECHIOIDEA, LECITHOCERIDAE), WITH FOUR NEW SPECIES FROM THAILAND AND THE PHILIPPINES

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ABSTRACT

A new genus *Pectinimura* Park (Lepidoptera, Lecithoceridae) is described, based on the type species, *Pectinimura montiatilis* sp. nov. Three additional species, *P. crassipalpis*, *P. batubatuensis*, and *P. crinalis* are described from Thailand or the Philippine Islands. A key to species of the genus is given, with illustrations of wing venation, and the male genitalia and female genitalia when available.

Key Words: Taxonomy, Lepidoptera, Lecithoceridae, *Pectinimura*, new genus, new species

RESUMEN

Se describe un nuevo género *Pectinimura* Park en la familia Lecithoceridae, basado sobre la especie tipo *Pectinimura montiatilis*, de Tailandia y las Islas Filipinas. Tres especies adicionales, *P. crassipalpis*, *P. batubatuensi* y *P. crinalis* son descritas e incluidas en este género de Tailandia o de las Islas Filipinas. Se incluye una clave de las especies de este género con ilustraciones de la genitalia de los machos.

The new genus *Pectinimura* (Lepidoptera: Lecithoceridae) is established, based upon the type species, *Pectinimura montiatilis* Park and Byun. *Pectinimura* contains four species described herein that are distributed in a region from Thailand to the Philippine Islands. The new genus is related to *Lecithocera* Herrich-Schäffer in the venation of both wings and the structure of the male genitalia. It is considered to be a monophyletic group having a very specialized comb-like plate on the valva of the male genitalia medially. Of these four new species, *P. crinalis* has some differences in the venation of both wings with the absence of R_2 and M_2 in the forewing and CuA_1 and CuA_2 coincident in the hindwing. However, there is no doubt that this species belongs to *Pectinimura* due to the similar structure of the comb-like plate in the valva of the male genitalia. No host plants are known for these species, however, most species of Lecithoceridae feed on debris and presumably *Pectinimura* may feed similarly.

MATERIALS AND METHODS

Descriptions are based on loaned material from the Zoological Museum, Copenhagen, collected by O. Karsholt and his colleagues in Philippines in 1961 and in Thailand in 1984. Along with examination of external characters, all male and female genitalia of the species were dissected and examined. All types are deposited in the Zoological Museum, Copenhagen, Denmark. The color standard for the description of adults was based on "Methuen Handbook of Colour" by Kornerup and Wanscher (1978).

RESULTS

Genus *Pectinimura* Park, **gen. nov.**

The new genus *Pectinimura* is closely related to the genus *Lecithocera* Herrich-Schäffer in the external appearance, wing venation, and male genitalia. It can be separated from the latter by the shape of the labial palpus and male genitalia. Autapomorphies for the genus *Pectinimura* include the second segment of labial palpus thickened with rough scales or a long scale-tuft dorsally, and the male genitalia with deeply emarginate basal plate of uncus medially dividing into two lateral lobes caudally and the valva with a specialized comb-like plate medially.

Known distribution. Thailand and the Philippine Islands.

Etymology. The generic name is derived from Latin, *Pecten* (= comb) + *murus* (= wall).

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KEY TO SPECIES OF THE GENUS *PECTINIMURA* PARK

1. Forewing with R_5 and M_2 present, without long hair-pencils on under surface 2

—Forewing with R_5 and M_2 absent, with a tuft of hair-pencils in a longitudinal furrow on under surface . . . . . *P. crinalis* **sp. nov.**

2. Second segment of labial palpus brownish, thickened with roughly erect scales above; mid tibia brownish ventrally 3

—Second segment of labial palpus golden yellow, thickened with fewer rough scales above; mid tibia pale orange ventrally . . . . . *P. batubatuensis* **sp. nov.**

3. Third segment of labial palpus about 1/2 length of 2nd; 2nd segment with long hair-like scales above; forewing with R_3 approximated with R_{4+5} at base . . . . . *P. montiatilis* **sp. nov.**

—Third segment of labial palpus as long as 2nd; 2nd segment with short erect scales above; forewing with R_3 separated from R_{4+5} at base . . . . . *P. crassipalpis* **sp. nov.**

Pectinimura montiatilis Park and Byun, **new species**
(Figs. 1, 6, 6a, 11)

Diagnosis. *Pectinimura montiatilis* is very similar to *P. crassipalpis* by sharing the characteristic comb-like plate in the valva of the male genitalia, but can be externally distinguished from the latter by the 2nd segment of labial palpus more roughly scaled with dark fuscous hair-like scale-tufts dorsally, and 3rd segment shorter, about 1/2 length of 2nd, and R_3 in the forewing approximated with R_{4+5} at base.

Description. Male. Wingspan, 15.0-16.0 mm. Head mustard brown, with appressed scales dorsally. Scape of antenna slender, brownish above; flagellum orange white, with pale brownish flagellomeres, not ciliate ventrally. Second segment of labial palpus roughly scaled with dark fuscous hair-like scale-tufts above, brownish on outer surface, paler on inner surface; 3rd segment more or less stout, about 1/2 length of 2nd, dark fuscous beyond ventral half. Hind tibia brownish above. Tegula and thorax dark brown. Forewing mustard brown, speckled with dark fuscous scales sparsely throughout; costa slightly expanded anteriorly beyond 2/3; apex round; termen slightly oblique, but not concave or sinuate; fringe mustard brown with paler basal line; R_3 approximated with R_{4+5} at base; R_4 and R_5 stalked near middle; R_5 extending to termen; M_1 far from R_{4+5} at base, nearly parallel to M_2; CuA_1 and CuA_2 stalked at basal 1/5 of CuA_1. Hindwing grayish brown; apex more or less acute; fringe concolorous; M_3 and CuA_1 stalked basally.

Male genitalia (Figs. 6, 6a): Basal plate of uncus deeply incised at middle, with ovate lateral lobes; lateral margin slightly emarginate medially. Valva elongate, with round apex; costa with basal expansion anteriorly at basal one-fourth, angled on anterior corner, deeply concave; comb-like plate arising from middle of ventral margin above and extended to 3/5 length of valva; sacculus sclerotized, crescent-shaped, extending beyond middle of ventral margin; apex round. Juxta subtriangular, about 1/3 length of vinculum. Aedeagus stout, slightly shorter than valva; cornutus weakly sclerotized, spatulate with a small, round subapical process. Seventh sternite convex on caudal margin, with long lateral arms, as long as the length of 8th segment.

Female. Unknown.

Holotype: Male, Philippines, Palawan, Mantalingajan, Pinigisan 600 m, 24 IX 1961, Noona dan Exp. 61-62, gen prep. no. CIS-5448/Park. Paratypes: 6 males, same locality as the holotype, 10, 12 & 13 IX 1961, gen. prep. no. CIS-5455/Park; 3 males, same locality, 19, 23 & 24 IX 1961, gen. prep. No. CIS-5489/Park.

Distribution. Philippine Islands (Palawan).

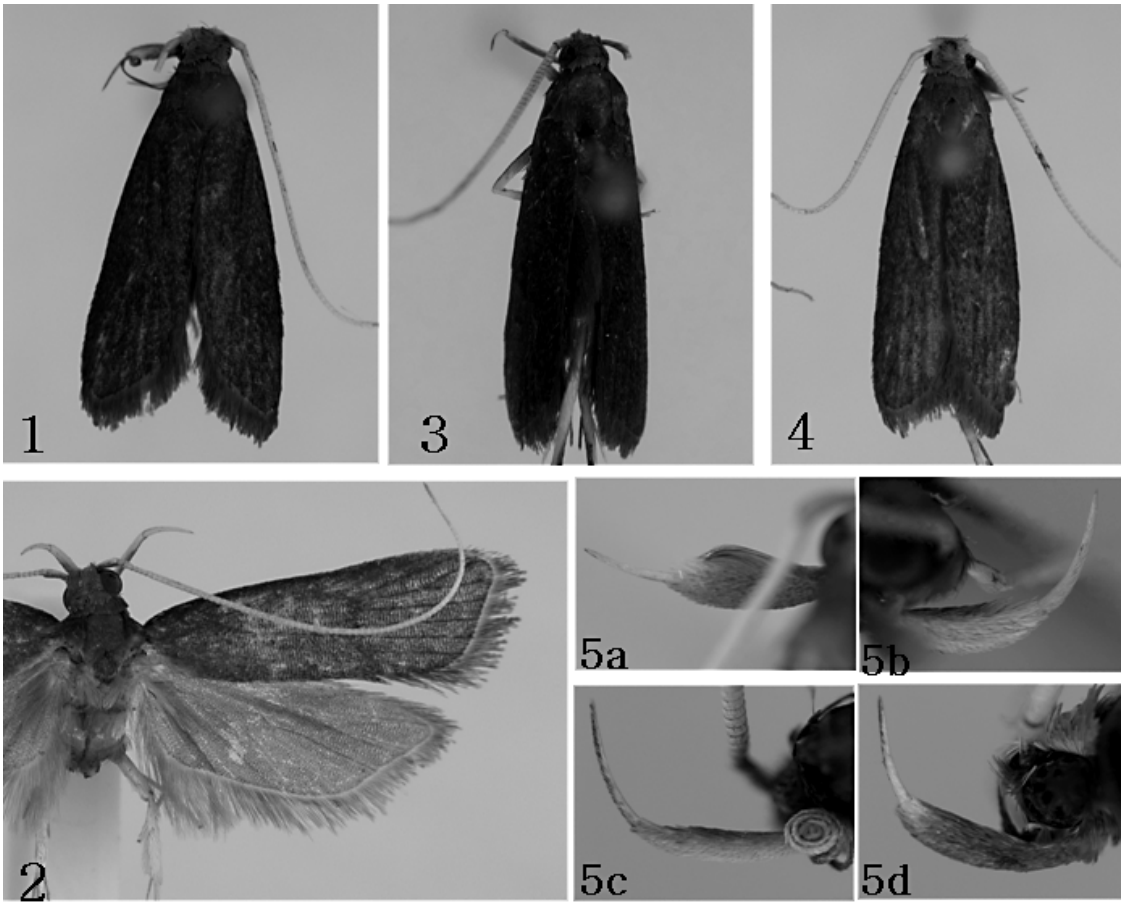
Etymology. The species name is derived from Latin, *montanus*, meaning mountain.

Pectinimura crassipalpis Park and Byun, **new species**
(Figs. 2, 7, 7a)

Diagnosis. This new species is externally similar to *Pectinimura montiatilis*, but is differentiated from the latter by the 2nd labial palpus with fewer short scales dorsally, and 3rd segment longer.

Description. Wingspan, 17.0 mm. Head, tegula, and thorax mustard brown. Scape of antenna slender, dark brown above. Second segment of labial palpus thickened, roughly scaled dorsally, brownish yellow on outer surface speckled with dark-brown scales, and orange white on inner surface; 3rd segment nearly as long as 2nd. Hind tibia brownish with dense setae dorsally and ventrally. Forewing mustard brown; a dark fuscous discal spot at upper corner of cell, distinct or inconspicuous; costa nearly straight; apex round; termen slightly oblique, not sinuate; fringe yellowish brown, with narrow pale gray basal line; R_3 divergent from R_{4+5} at base; R_4 and R_5 stalked near 3/5; R_5 extending to or below the wing apex; M_1, M_2 and M_3 near parallel; CuA_1 and CuA_2 stalked at basal one-fourth. Hindwing grayish brown; apex rather obtuse; Rs and M_1 divergent from beyond cell; M_3

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Figs. 1-5. Adults, labial palpus, forewing venation of *Pectinimura* spp. (1) *P. montiatilis*, (2) *P. crassipalpis*, (3) *P. batubatuensis*, (4) *P. crinalis*, (5) Lateral aspect of head with labial palpus: (a) *P. montiatilis*, (b) *crassipalpis*, 5c) *P. batubatuensis*, (d) *P. crinalis*.

and CuA_1 stalked at basal 2/5; fringe dark brown, with pale orange gray basal line.

Male genitalia (Figs. 7, 7a): Basal plate of uncus deeply emarginate at middle, divided into two triangular lateral lobes, slightly concave on lateral margin. Valva with costa deeply concave medially; comb-like plate arising from middle of ventral margin, extended to about 3/5 length of valva towards termen; sacculus heavily sclerotized, extended to 2/3 of ventral margin; apex round. Juxta subtriangular, about 1/2 length of vinculum; caudal margin slightly concave. Aedeagus stout, slightly shorter than valva; cornutus spatulate, weakly sclerotized, truncate on caudal margin, with a small subapical protrusion; and with a short, broad plate medially and a large patch of spinules internally.

Female. Unknown.

Holotype: Male, Loei, Phu Luang Wildlife Sanc. 8-14 X 1984, 700-900 m (Karsholt, Lamholdt, & Nielsen), gen. prep. no. CIS-4773/Park. Paratype: 1 male, same data as the holotype, gen. prep. no. CIS-5500/Park.

Distribution. Thailand (Loei Province).

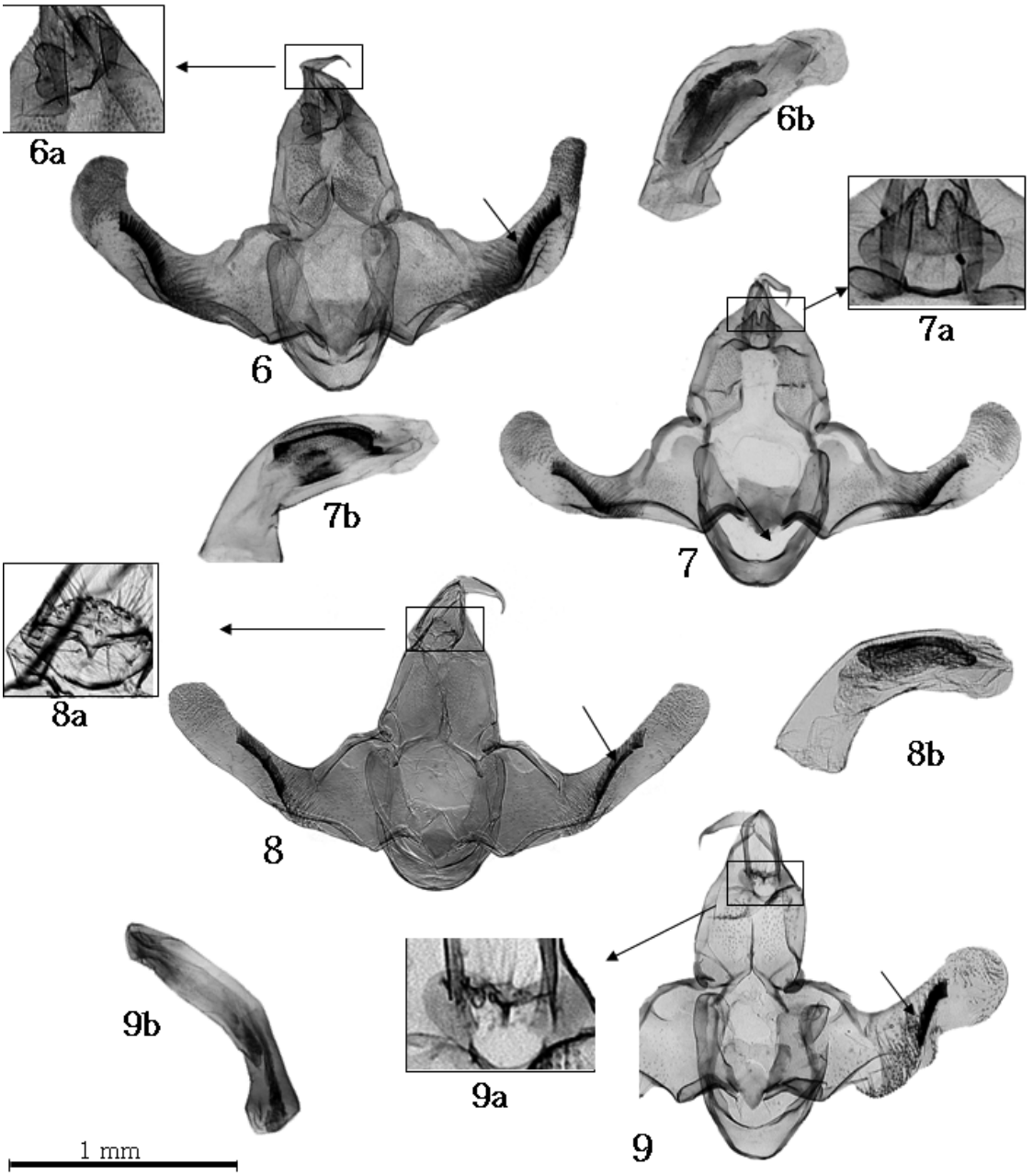
Etymology. The species name is derived from Latin, *crassus*, meaning thick, and referring to abnormally thickened 2nd segment of the labial palpus.

Pectinimura batubatuensis Park and Byun, **new species** (Figs. 3, 8, 8a, 10, 12)

Diagnosis. *Pectinimura batubatuensis* differs from the 2 preceding species by the normally thickened, golden yellow 2nd segment of labial palpus, with less rough scales above.

Description. Male and female. Wingspan, 15.0-16.0 mm. Head, tegula, and thorax dark brown. Antenna with dark brown scape dorsally; flagellum yellowish white with pale brownish flagello-

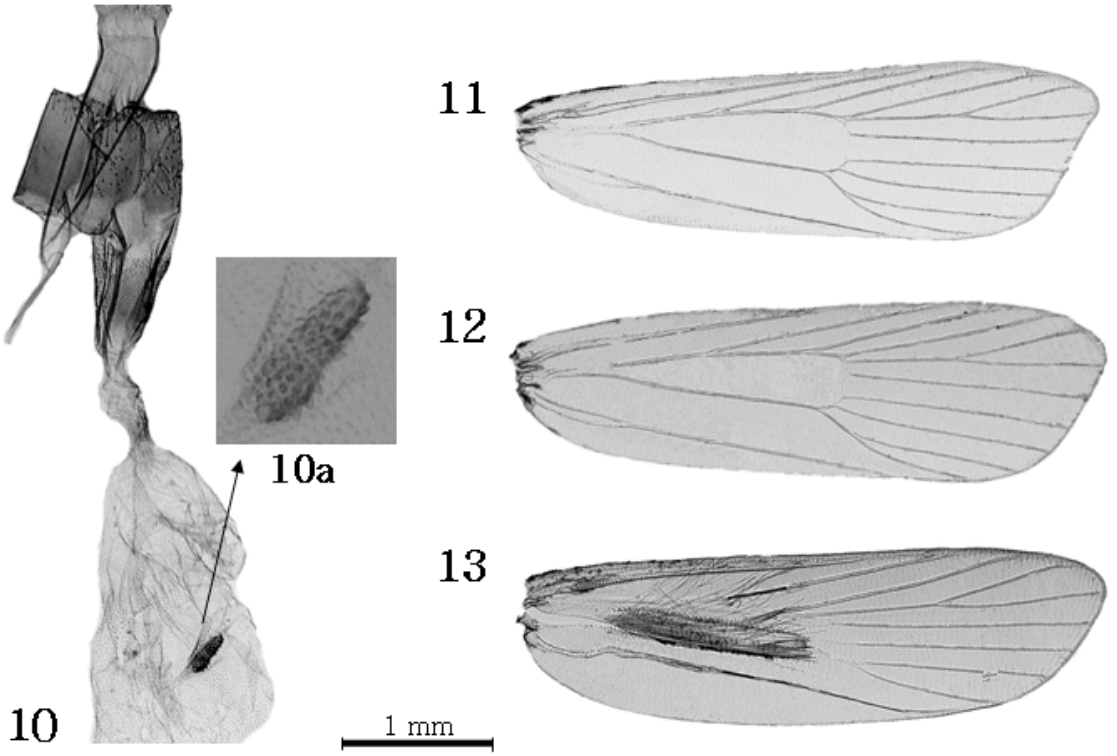
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Figs. 6-9. Male genitalia of *Pectinimura* spp: (a) Magnification of the basal plate of uncus, (b) Aedeagus, (6) *P. montiatilis*, (7) *P. crassipalpis*, (8) *P. batubatuensis*, (9) *P. crinalis* (arrows indicate the comb-like pectinate plate). Scale bar: 1 mm.

meres. Second segment of labial palpus somewhat slender, normally thickened, smooth scaled above, golden yellow outer surface, paler on inner surface; 3rd segment slender, slightly shorter than 2nd, dark fuscous ventrally. Mid tibia grayish orange ventrally; hind tibia dark brown on ventral surface. Forewing dark brown; apex obtuse; termen oblique, slightly sinuate; fringe dark brown with pale brownish gray basal line; R_3 divergent from R_{4+5} at base; R_4 and R_5 stalked before middle; R_5 extending to termen; M_1 far from R_3 at base, nearly parallel to M_2; CuA_1 and CuA_2 stalked at basal 1/5 of CuA_1; Hindwing dark brown, with silvery white scales between costa and Sc vein; apex more or

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Figs. 10-13. Female genitalia and wing venations of *Pectinimura* spp. (10) Female genitalia of *P. batubatuensis*, (10a) Magnification of signum, (11) Forewing venation of *P. montiatilis* sp. nov., (12) Forewing venation of *P. batubatuensis*, (13) Forewing venation of *P. crinalis*. Scale bar: 1 mm.

less acute; termen oblique; fringe brown; M_3 and CuA_1 stalked before middle.

Male genitalia (Figs. 8, 8a): Basal plate of uncus roundly convex on caudal margin. Valva slender; costa concave medially, then almost straight; a comb-like plate, nearly extending to costa. Juxta subtriangular, about 1/2 length of vinculum, with nearly straight caudal margin. Aedeagus slender, narrower than width of distal part of valva, with a narrow plate.

Female genitalia (Fig. 10): Eighth sternite weakly sclerotized, slightly emarginate on caudal margin medially. Antrum cup-shaped, about 2/5 length of ductus bursae; ductus bursae narrow; ductus seminalis arising from conjunction of corpus bursae. Corpus bursae ovate; signum elliptical, and denticulate on surface.

Holotype: Male, Philippine, Tawi Tawi, Tarawakan, north of Batu Batu, 16 X 1961, Noona Dan Exp. 61-62, gen. prep. No. CIS-5493/Park. Paratype: 11 males and females, same locality, 13-16 IX 1961, gen. prep. No. CIS-5452/Park (male); -5454/Park (female); 25 males and females, same locality, 22-30 X 1961, gen. prep. no. CIS-5453/Park; 12 males and females, same locality, 7 XI 1961.

Distribution. Philippine Islands (Batu Batu).

Etymology. The species name is derived from the type locality.

Pectinimura crinalis Park and Byun, **new species**
(Figs. 4, 9, 9a, 13)

Diagnosis. *Pectinimura crinalis* differs from the 3 preceding species by the forewing with R_3 and M_2 absent, with specialized long hair-pencils in a longitudinal furrow in the cell and cubital pectins on under surface, hindwing with CuA_2 absent, and 3rd segment about 2/3 as long as 2nd.

Description. Male. Wingspan, 14.5-15.5 mm. Head yellowish brown, with more or less erect scales laterally. Antenna with slender, yellowish white scape; flagellum yellowish white with pale brown flagellomeres. Second segment less roughly scaled than *P. montiatilis* or *P. crassipalpis*, light brown on outer surface, speckled with dark-brown scales; 3rd segment of labial palpus about 2/3 length of 2nd. Mid tibia creamy white on ventral surface; Hind tibia black. Forewing yellowish brown, speckled with dark-fuscous scales; with a tuft of long hair-pencils in a furrow along central line from basal 1/3 to end of cell; with cubital pectin on under surface; R_2 absent; R_4 and R_5

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stalked near middle; R_5 extending to or below the wing apex; M_2 absent; CuA_1 and CuA_2 stalked near 1/5. Hindwing grayish brown; cell closed with strong cross veins; M_2 and M_3 close at base; CuA_1 and CuA_2 absent.

Male genitalia (Figs. 9, 9a): Basal plate of uncus small, with some irregular caudal margin. Valva short, roundly expanded in distal part; costa concave medially; ventral margin emarginate at middle; comb-like plate well-developed. Juxta subtriangular, about 3/5 length of vinculum. Aedeagus slender, narrower than 1/2 width of valva, with 2 subtriangular process preapically and a weakly sclerotized narrow plate before basal half.

Female. Unknown.

Holotype: Male, Philippine, Palawan, Mantalingajan, Pinigisan 600 m, 24 IX 1961, Noona Dan Exp. 61-62, gen prep. no. CIS-5450/Park. Paratypes: 4 males, same locality as the holotype, gen prep. no. CIS-5451/Park; 3 males, same locality, 9-11 IX 1961; same locality, gen. prep. no. CIS-5487/Park; 2 males, same locality, 13 IX 1961, gen. prep. no. CIS-5488/Park.

Distribution. Philippine Islands (Palawan).

Etymology. The species name is derived from Latin, *crini*, meaning hair.

Remarks. Although this species has different venation than the preceding species, it shares the specialized genital structure of a comb-like plate in the valva, and is considered to be congeneric with them.

Discussion

Pectinimura Park, **n. gen.** has a very specialized comb-like plate in the valva of the male genitalia, which is not known in any other genera, and is considered to be an autapomorphic character. The external appearance and the venation of both wings of the species are similar to those of the genus *Lecithocera*, but R_3 in the forewing of these species is not stalked with R_{4+5}. Of the 4 described species, the first 3 new species have similar wing venations, but *P. crinalis* differs from them in wing venation as noted in the introduction. However, there is no doubt that *P. crinalis* belongs to *Pectinimura* due to the similar structure of the male genitalia with a specialized comb-like plate on the valva. Because some infraspecific variations of the venation within certain genera of the family Lecithoceridae were previously noted by Park (1999), emphasizing that the venation can not always be a main reliable character for a genus in the family, with some different opinions from previous workers (Gozmány 1978; Wu 1997).

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