A NEW GENUS OF LECITHOCERIDAE (LEPIDOPTERA, GELECHIOIDEA), FROM NEW GUINEA, WITH A DESCRIPTION OF TWO NEW SPECIES

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A pdf file with supplementary material for this article in Florida Entomologist 96(1) (2013) is online at http://purl.fcla.edu/fcla/entomologist/browse

Abstract

Hannara Park **gen. nov**., related to *Crocanthes* Meyrick, 1886 (Gelechioidea, Lecithoceridae), is described from New Guinea, based on the type species, *Hannara buloloensis* Park **sp. nov.** and *H. gentis* Park **sp. nov.** Illustrations of adults, labial palpi, and genitalia for the described species are provided.

Key Words: *Hannara*, new genus, New Guinea, Taxonomy

Resumen

Hannara Park **gen. nov.,** relacionado al *Crocanthes* Meyrick, 1886 (Gelechioidea, Lecithoceridae), se describe de Nueva Guinea basado en la especie tipo *Hannara buloloensis* Park **sp. nov**. y *H. gentis* Park **sp. nov.** Se ilustran los adultos, los palpos labiales, y la genitalia de las nuevas especies

Palabras Clave: *Hannara*, Lecithoceridae, género nuevo, Nueva Guinea, taxonomía

Lecithoceridae is one of the large families in Gelechioidea, comprising more than 1,100 described species (Nieukerken et al. 2011), which occurs mostly in the Oriental and Australian Regions and partially in the Southern Palaearctic and Ethiopean Regions. It still remains uncertain whether they occur in the New World. The family has been poorly known compared to the actual number of the expected species, because they have been ignored by previous workers, due to the non-economic feeding habit of the larvae on detritus (Common 1996).

The new genus is morphologically related to the genus *Crocanthes* Meyrick, 1886, which is known mainly from New Guinea and Australian Region with more than 60 described species (Meyrick 1925; Diakonoff 1954; Common 1996; Park 2011). *Crocanthes* is easily separable from other genera in the family Lecithoceridae by the male genitalia with the gnathos absent. The genus includes an abundance of species, which have brightly colored wings and male genitalia without the gnathos. Since the genus was described by Meyrick (1886), no comprehensive study of it has been made. Moreover, no attempt has been made to place the genus into any known subfamilies (Ceuthomadarinae, Lecithocerinae, and Torodorinae) as proposed by Gozmány (1978).

Recently, Park (2011) reviewed the *Crocanthes pancala* species-complex in New Guinea and Australia, but its generic placement was not treated. The higher level classification of *Crocanthes* and the new genus described herein will be uncertain until additional groups related to these are studied in future research. The new genus proposed here can be distinguished from *Crocanthes* and its allies by morphological characters, diagnosed as described herein.

Materials and Methods

The specimens examined belong to the National Museum of Natural History (USNM), Washington, D.C., USA, and the Rijksmuseum van Natuurlijke Historie (National Museum of Natural History Naturalis) (RMNH), Leiden, the

Netherlands, collected in Papua New Guinea in the early 1900's and 1983. The wingspan was measured from the apex of the left wing to the apex of the right wing. Images of adults and genitalia were captured with the Automontage Microscopic System at Florida State of Collection of Arthropods, Division of Plant Industry, Gainesville, Florida, USA. The color standard for the description of adults follows Kornerup and Wanscher (1978). Types of the new species are deposited in USNM or RMNH on indefinite loan from Papua New Guinea.

All figures in this report are reproduced in color in the online supplementary document at http://purl.fcla.edu/fcla/entomologist/browse. The figures in the supplementary document are referred to below as Suppl. Figs. 1 and 2 and Suppl. Figs. 3-6.

SYSTEMATICS

Genus *Hannara* Park **gen. nov.**

Type species: *Hannara buloloensis* Park **sp. nov.**

Diagnosis

Hannara Park **gen. nov.** is one of the genera related to *Crocanthes* Meyrick, 1886, based on the absent gnathos in the male genitalia. The following morphological characters distinguish this genus from *Crocanthes* and its allies: 1) both wings brightly colored with similar maculation, especially with a large deep orange patch medially, 2) forewing with R_2 connate or short-stalked with R_{3+4}, 3) flagellum of the antenna uniquely specialized with long scales along posterior margin, except in the apical part, sometimes appressed or short rough scales on anterior margin, 4) labial palpus with third segment very slender, longer than second segment, and 5) male genitalia with variable shaped valva and elongated juxta.

Description

Adult. Head dark brown or purplish dark brown dorsally. Antenna uniquely specialized with long scales along posterior margin and appressed or short scales on anterior margin; second segment of labial palpus moderately thickened, third segment very slender, usually longer than second. Forewing ground color dark brown or purplish dark brown, usually shiny, purplish green scales scattered in basal zone, with large, deep orange or pale orange rounded patch medially. Hindwing with same color maculation as forewing, with large orange patch medially. Hind tibia with rough scales dorsally. Abdomen: abdomen clothed with dark-brown scales on I-II segments and VII-VIII segments and orange between them dorsally or with dark brown bands on median segments; abdominal tergites with spinous zones, mostly placed along posterior margin.

Male genitalia. Uncus slender, broadened in base; tegumen weakly sclerotized, more or less narrow, with round anterior margin; valva with dense bristles on cucullus posteriorly, especially along margin; sacculus broadly developed; juxta elongate, usually longer than width of valva; aedeagus stout, with fine spines in apical portion. Female genitalia with abdominal sternite VIII deeply emarginated in U-shape on caudal margin, densely setose; ostium bursae also deeply emarginated in U-shape, with broad caudal lobes; antrum membranous, funnel-shaped or tubular; ductus bursae rather broad, more than 1/3 width of corpus bursae; corpus bursae ovate, large; signum plate small, weakly scobinate, with heavily sclerotized sclerite medially.

Distribution

Papua New Guinea.

Etymology

The generic name is derived from a Korean term, *hannara*, meaning a great country.

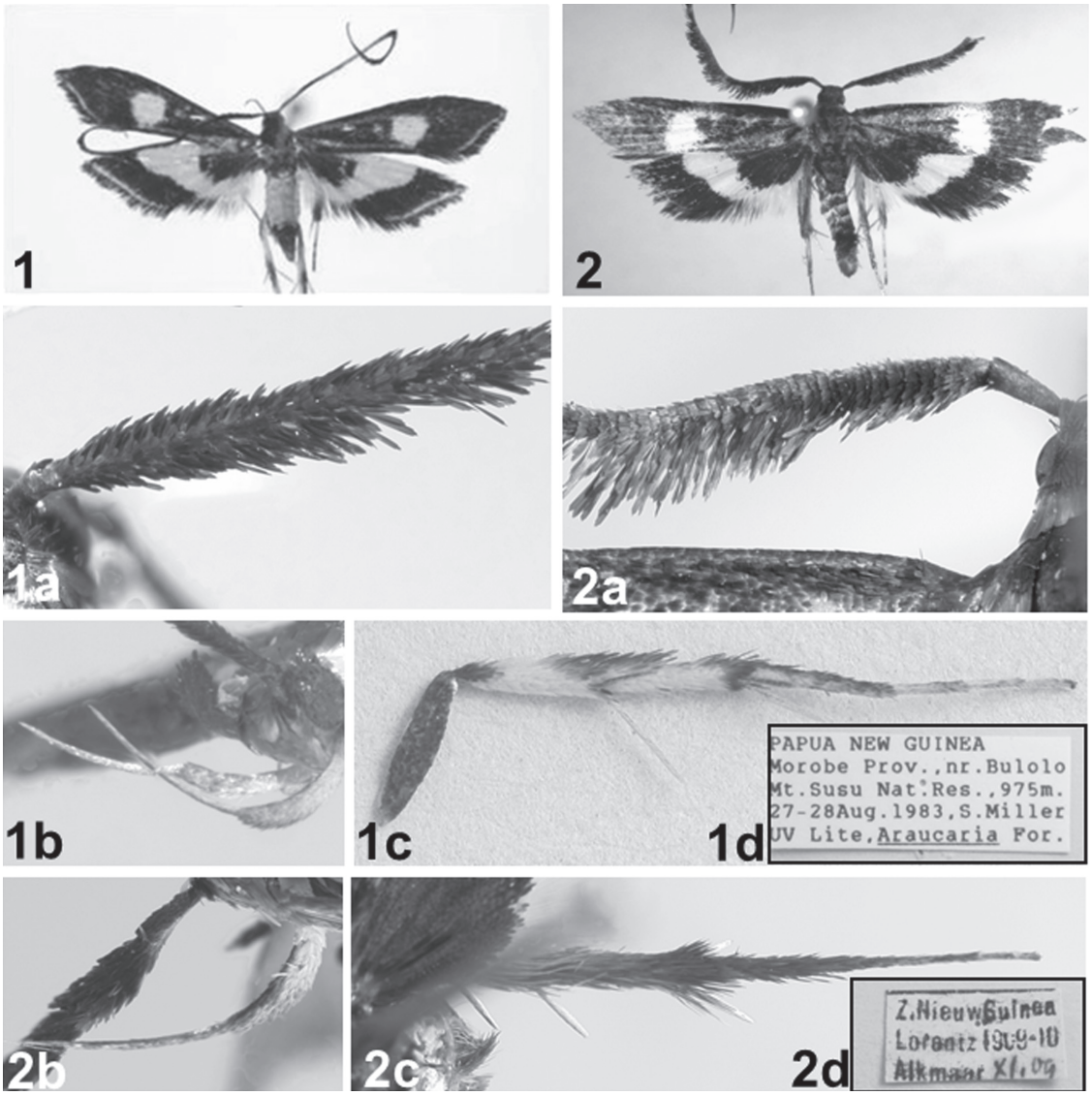
Hannara buloloensis Park **sp. nov.** (Figs. 1, 1a-c, 3, 3a-c, 5 and 5a-b; and corresponding Suppl. Figs.)

Diagnosis

This and the following species have similar wing maculation and uniquely specialized flagellum with long scales, but the former can be distinguished by the forewing with a rounded median patch and a light orange terminal line along termen in both wings. The male genitalia are easily distinguished from each other by the shape of valva.

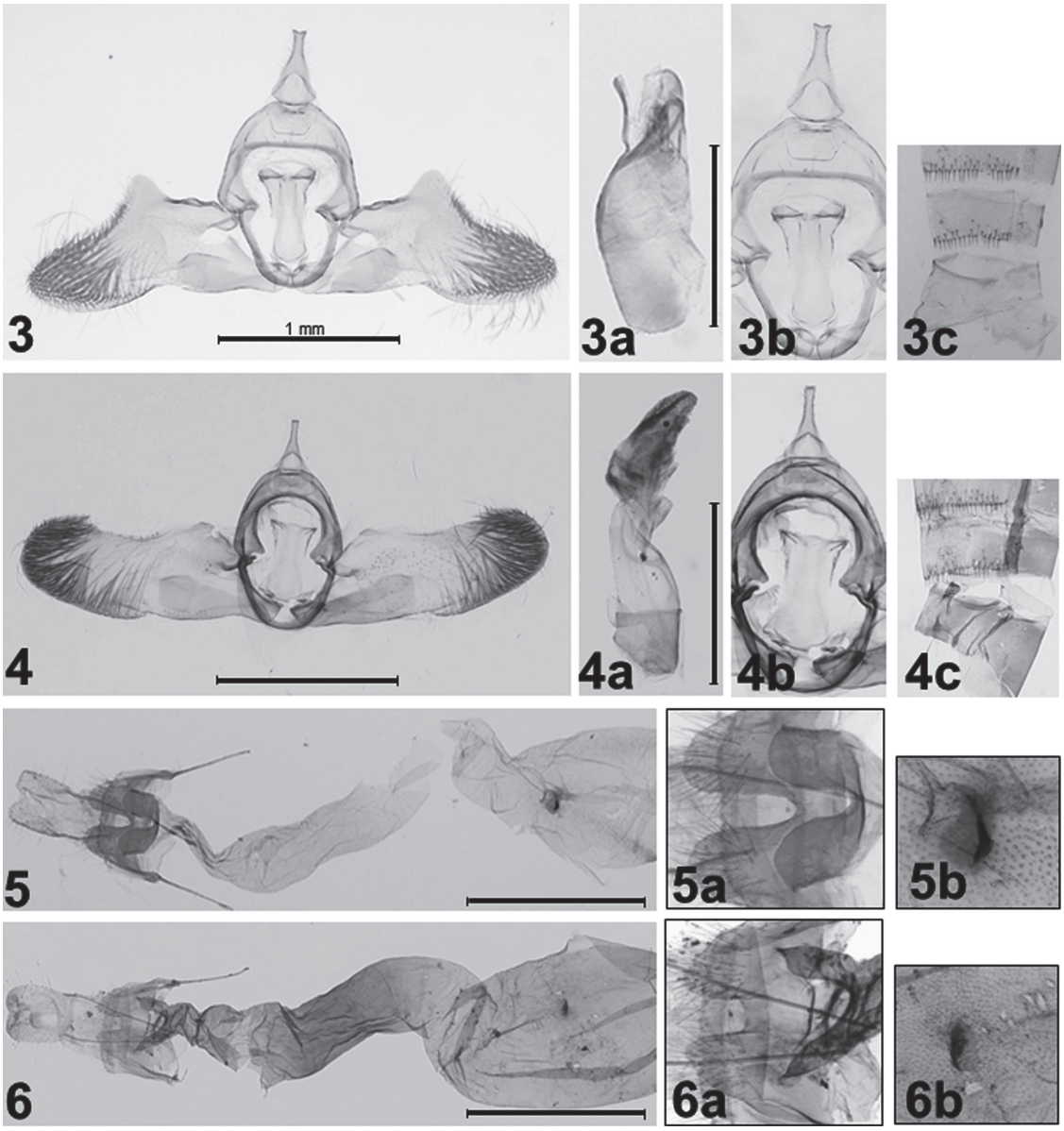
Description

Male (Figs. 1, 1a-c and 3c; and corresponding Suppl. Figs.). Wingspan, 21-22 mm. Head purplish dark brown. Antenna with slender basal joint; flagellum dark brown throughout, with rough dark brown scales along posterior margin, length of scales about twice of diameter of flagellum. Second segment of labial palpus moderately thickened, with appressed scales ventrally, gently curved, brownish yellow on lateral surfaces, dark brown ventrally; third segment very slender, longer than second, yellowish brown dorsally, dark brown latero-ventrally. Tegula and thorax purplish dark brown. Fore and mid tibia with dark brown scales dorsally. Hind tibia pale orange, with dark-brown rough scales at base, beyond middle, and at apex; first segment of



Figs. 1 and 2. Adults, antenna, labial palpus, and hind tibia of *Hannara*. 1, Adult of *H. buloloensis* Park **sp. nov.**; 1a, antenna of female; 1b, labial palpus; 1c, hind tibia; 1d, label of the holotype. 2, Adult of *H. gentis* Park **sp. nov.**; 2a, antenna of male; 2b, labial palpus; 1c, hind tibia; 1d, label of the holotype.

tarsi long, clothed with dark brown rough scales throughout dorsally; second to fourth segments pale orange, speckled with blackish scales. Forewing elongate, dilate distally; ground color dark purplish brown with large, orange, round patch beyond middle; costa arched beyond 2/3; apex more or less sharply produced; termen oblique, concave medially, with narrow orange line along termen; fringe concolorous with ground color; venation with R_1 arising from middle; R_2 connate with R_{3+4}; R_3 and R_4 stalked beyond middle; R_5 absent; M_1 remote from R_{3+4}, connected by strong cross vein; M_2 absent; M_3 connate with CuA_{1+2}; CuA_1 and CuA_2 stalked at basal 1/5 length. Hindwing broader than forewing, about 1.5 times width, purplish dark brown, median orange patch broadly occupied, narrower towards inner margin, width on costa about 3 times wider than on inner margin; narrow orange line well presented along termen; apex acute; termen oblique, slightly sinuate; fringe concolorous with ground color, but the part connected to orange median patch of forewing orange. Abdomen dark brown in I and VII-VIII segments, but deep orange between II-VI segments; abdominal tergites with dense spines broadly in I-II segments, but along posterior margin beyond; VIII tergite with sclerotized anterior margin.



Figs. 3-6. Male and female genitalia of *Hannara*. 3, Male genitalia of *H. buloloensis* Park **sp. nov.**; 3a, aedeagus; 3b, close-up of uncus and juxta; 3c, abdominal segments. 4, Male genitalia of *H. gentis* Park **sp. nov.**; 4a, aedeagus; 4b, close-up of uncus and juxta; 4c, abdominal segments. 5, Female genitalia of *H. buloloensis* Park **sp. nov.**; 5a, close-up of ostial part; 5b, close-up of uncus and juxta; 5c, abdominal segments. 6, Female genitalia of *H. gentis* Park **sp. nov.**; 6a, close-up of ostial part; 6b, close-up of uncus and juxta; 6c, abdominal segments. Scale bar: 1 mm.

Male genitalia (Figs. 3 and 3a-b; Suppl. 3 and 3a-b): Uncus broadened in basal half, with large concavity ventrally, then slender; apex slightly broadened, concave medially. Gnathos absent. Tegumen weakly sclerotized; anterior margin rounded, band-shaped. Valva with semiovater protrusion at middle of costa, basal half nearly parallel sided; ventral margin concaved beyond middle; cucullus produced apically, with dense strong bristles in posterior part and shorter ones along margin before 3/4 of costa; sacculus broadly developed, terminated with round apex. Juxta elongate, longer than tegumen, broadened from middle, with free rounded, sclerotized caudal lobes. Vinculum heavily sclerotized, band-shaped. Aedeagus stout, more broadened in basal 2/3, about 3/4 length of valva, bifurcated, rounded apically; cornuti consist of two short lines of fine spines in apical portion.

Female genitalia (Figs. 5 and 5a-b; and Suppl. Figs. 5 and 5a-b): Abdominal sternite VIII weakly sclerotized, deeply emarginated in U-shape caudally, densely setose. Apophyses anteriores longer than half of apophyses posteriors. Ostium bursae also deeply emarginated in U-shape, with broad latero-caudal lobes bearing fine spine at each apical corner. Antrum membranous, funnel-shaped. Ductus bursae narrow in distal 1/5 length, broad in remain, more than 1/3 width of corpus bursae, ductus seminalis arising from 2/3 length of ductus bursae. Corpus bursae ovate, large, finely scobinate on dorsal and ventral surface; signum plate small, weakly sclerotized, located posteriorly, with triangular heavily sclerotized plate medially.

Material Examined

HOLOTYPE. Male, Papua New Guinea, nr Bulolo, Mt. Susu Nat. Res., 975m, 11-15 VIII 1983, S. Miller; UV light, *Araucaria* For., gen. prep. No. CIS-5634/Park (Label figured in 1d) (USNM).

PARATYPE. 1♂, same data as the holotype (USNM).

Distribution

Papua New Guinea.

Etymology

The species name is derived from the name of the type locality, "Bulolo".

Hannara gentis Park **sp. nov.** (Figs. 2, 2a-c, 4, 4a-c, 6 and 6a-b; corresponding Suppl. Figs.)

Diagnosis.

This new species has similar wing pattern and maculation with that of *Hannara buloloensis* Park **sp. nov.**, but it can be easily distinguished by the larger median patch connected to inner margin, R_2 shortly stalked with $R_{3+}R_4$, the absence of the orange lines along termen in both wings, and the abdomen with broad dark-brown bands on deep orange on median segments dorsally. The male genitalia are easily distinguished from each other, especially by the shape of valva and juxta.

Description.

Adult (Figs. 2, 2a-c and 4c; Suppl. Figs. 2, 2a-c and 4c). Wingspan, 23-24 mm. Head purplish brown dorsally. Antenna with basal segment rather short, shiny, purplish brown, dilated apically; flagellum with purplish-brown rough scales along posterior margin throughout, with appressed scales on anterior margin. Labial palpus removed in male; female with second segment moderately thickened, gently arched upward, grayish-orange brown in basal 1/3 length and brownish beyond; third segment slender, longer than second, purplish brown all around. Tegula and thorax dark purplish brown. Hind tibia clothed with dark brown scales throughout; first segment of tarsi long, dark brown dorsally, second to fourth segments pale brownish. Forewing, elongate, slightly dilated distally; ground color dark purplish brown, with large, orange white median patch, not reaching costa, but reach on inner margin; apex sharply produced; termen strongly oblique; fringe concolorous with ground color; venation with R_1 arising from middle; R_2 shortly stalked with R_{3+4}; R_3 and R_4 stalked beyond middle; R_5 absent; M_2 absent; M_3 connate with CuA_{1+2}; CuA_1 and CuA_2 short-stalked. Hindwing ground color dark purplish brown, with orange median patch occupying from 2/5 to 2/3 on costa and narrowed on inner margin; apex acute; termen strongly oblique, sinuate; fringe concolorous with ground color, but the part connected to median orange patch of forewing orange. Hind tibia with clothed with dark purplish-brown scales; tarsi also clothed with scales of same color with tibia. Abdomen clothed with dark-brown scales on I-II segments and VII-VIII segments, deep orange between II-VI segments with broad dark brown band posteriorly; abdominal tergites with dense strong spines.

Male genitalia (Figs. 4 and 4a-b; Suppl. Figs. 4 and 4a-b): Uncus slender, broadened towards base, with concavity basally; apex rounded. Gnathos absent. Tegumen weakly sclerotized; anterior margin rounded, band-shaped. Valva with trapezoidal protrusion before middle of costa, then slightly concave; cucullus with rounded outer margin, bearing dense bristles in posterior part, especially along margin; sacculus broadly developed. Juxta elongate, longer than tegumen, slightly dilated distally, triangularly acute at latero-apical corners. Vinculum heavily sclerotized, band-shaped. Aedeagus stout, tubular, about 3/5 length of valva, obliquely truncated apically; cornuti consist of fine spines in apical portion.

Female genitalia (Figs. 6 and 6a-b; Suppl. Figs. 6 and 6a-b): Abdominal sternite VIII weakly sclerotized, deeply emarginated in U-shape caudally, depth less than half of length of sternite. Apophyses anteriores more than half of apophyses posteriors. Ostium bursae also deeply emarginated in U-shape, latero-caudal lobes rather narrow with stronger spine at apex, comparing with that of the preceding new species. Antrum membranous, tubular. Ductus bursae broad, as long as length of corpus bursae, ductus seminalis arising from 2/3 length of ductus bursae. Corpus bursae very large, finely scobinate on surface; signum plate small, weakly sclerotized, located near middle, with heavily sclerotized plate medially.

Material Examined

HOLOTYPE. Male, Central New Guinea, Lorentz, 1909-10, Alkmaar, xi. (19)09, gen. slide no. CIS-6041/Park (Label figured in 2d) (RMNH).

PARATYPE. 1♀, same data as the holotype (RMNH).

Distribution

Papua (Indonesia).

Etymology

The species name is derived from Latin, *gens* (= belonging to a kind, race).

Acknowledgments

We thank John Brown (Systematic Entomology Laboratory, U.S. Department of Agriculture, National Museum of Natural History [USNM], Washington DC, USA) and E. J. van Nieukerken (Rijksmuseum of Naturlijke Historie [RMNH], Leiden, the Netherlands) for the loan of material for this study. We are grateful to John B. Heppner (McGuire Center for Lepidoptera and Biodiversity, Florida State Collection of Arthropods [FSCA], Gainesville, USA) for his support in various ways.

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