

COCHYLINI (LEPIDOPTERA, TORTRICIDAE) FROM COSTA RICA

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Cochylini (Lepidoptera, Tortricidae) from Costa Rica.— Two new genera and 19 new species are described from the collection of the University of California. All species known from Costa Rica are cited. A new name *Monoceratuncus*, is proposed for *Ceratuncus* Razowski not Petersen.

Key words: Cochylini, Tortricidae, Lepidoptera, Costa Rica.

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INTRODUCTION

Although no single paper has been devoted to the Cochylini of Costa Rica, many taxa have been described in several publications dealing with the fauna of the Neotropics.

In the present paper two genera and 19 species are described as new and seven already known species are listed. The structure of the fauna is similar to that in other countries between Mexico and Brazil. Of 36 genera and 275 species of Neotropical Cochylini (five genera and ca 30 species either occurring in the southern part of USA or requiring reconsideration, are excluded), 29 genera with 178 species are Central American (including Mexico).

MATERIAL AND METHODS

The collection studied was completed in 1985 by the staff of the Division of Entomology and Parasitology, University of California, Berkeley. The holotypes and the majority of the paratypes are deposited in that institution. Some paratypes (when more than two specimens) are in the collection of the Institute of Systematics and Evolution of Animals, PAS, Kraków.

The number given in the descriptions for the labial palpus indicates the proportion of its total length to the diameter of the eye.

RESULTS

Cartagogen n. gen.

Type-species: *Cartagogen ferruminata* n.sp.

Labial palpus about 2.5; forewing slightly expanding terminally especially in male; costal fold absent; termen distinctly oblique. Venation: in forewing all veins separate, R_5 reaching costa subapically; in hindwing $Rr - M_1$ and $M_3 - Cu_1$ each originating in one point. Coloration cryptic; traces of refractive markings in forewing ground colour in one species.

Male genitalia.— Characterized by rather delicate, short tegumen; uncus vestigial, in form of minute apical prominence; socius broad, drooping, hairy; vinculum arms not coalescent ventrally, connected by means of strong membrane. Valva broad with costa well developed; sacculus large, strongly sclerotized dorsally, provided with more or less long, sharp free termination and thick base connected with ventral edge by an oblique

rod like sclerite; disc with distinct hairy area forming anteriorly an incomplete pulvinus. Lateral parts of transtilla broad, flat; median part short, bilobe, spiny; juxta, a simple and concave plate; aedeagus large, with two lateral lobes extending ventro-terminally; coecum penis large; caulis submedian, broadly connecting with juxta; cornutus strong, consisting of two partially unified parts.

Scent organs not developed. Tergite of subgenital segment large with sclerotic latero-posterior edges, anterior costa and median rod.

Female genitalia.—Ovipositor short; papilla analis simple; apophyses fairly large; strigima short, with delicate lateral lobes and variably developed sclerotic portion surrounding ostium; colliculum short, membranous; ductus bursae long, longitudinally plicate, in major part sclerotized; corpus bursae membranous; dorsal sac of ductus bursae developed; accessory bursa ventral, originating at distal part of ductus bursae; ductus seminalis lateral or dorso-lateral, anterior to base of the latter.

Biology.—No data except for dates of collection of moths.

Distribution.—Cartago Province, Costa Rica.

Comments.—The new genus is very close to *Henricus* Busck as shown by the similarities in the structures of the tegumen, socii, valva, transtilla and aedeagus. The differences are in the shape of the sacculus, simple structure of the valva, posterior situation of the ductus seminalis and the presence of a dorsal pouch of the ductus bursae. The abdomen is simple, without ventral prominences; there is no trace of scent organs neither on pregenital segments nor on the genitalia. Three species included. All specimens collected in last decade of May at the elevation of 3000 m.

Cartagogenia februa n. sp.

Alar expanse 24 mm. Labial palpus ca 3, brownish (strongly damaged), remaining parts of head probably brownish cream (tra-

ces of scales), thorax pale brownish cream. Forewing rather uniformly broad throughout; costa weakly convex; apex delicately rounded, termen distinctly oblique, moderately straight. Ground colour yellowish cream, slightly sprinkled and strigulate with brown; pattern brownish, consisting of small basal blotch, broad median fascia interrupted medially, accompanied by posterior reticulation between tornus and vein M_1 . Apical blotch interrupted by oblique fascia of ground colour before apex, with straight anterior edge and three darker spots along costa. Fringes damaged. Hindwing dirty cream, indistinctly reticulate with brownish at apex, whitish in basal and anal areas; remainders of scales whitish.

Female genitalia (fig. 32).—Strigima very short, with thin lateral arms; anterior sclerites rather delicate; distinct lobe of posterior membrane developed; ductus bursae longitudinally plicate, with small group of minute spines in ventral wall, opposite to the dorsal pouch; ductus of accessory bursa before distal end of ductus bursae.

Holotype.—Female; "C.R.: Pension La Georgina, 3000 m., Cerro de Muerte, S. border Cartago Prov., V-23/25-85, J. Powell, P.A. Opler Collectors"; genitalia slide 11831.

Cartagogenia filtrata n. sp.

Alar expanse 24; labial palpus ca 2, whitish, mixed ferruginous to middle laterally, sprinkled with black, whitish above; remaining parts of head whitish, flagellum of antenna tinged brownish grey, concolorous with thorax. Forewing slightly expanding terminally, termen less oblique than in *C. februa*. Forewing monochrome, whitish, slightly tinged with grey, indistinctly suffused with ochreous in apex area, with a few blackish scales scattered in distal half of wing. Fringes concolorous. Hindwing slightly paler than forewing, with fringes almost concolorous.

Male genitalia (figs. 1, 2).—Apical prominence of tegumen indistinct; socius elongate-ovate, with slender, tapering apical third. Distal half of valva slenter; sacculus arm with

short, curved free termination weakly extending beyond distal edge of valva; ventral portion of sacculus broad, rounded posteriorly, fairly well sclerotized. Aedeagus bent post-medially, with lateral parts rather short, tapering distally; cornutus (two almost entirely fused cornuti) short, thick. Pregenital tergite as in figure 3.

Holotype.— Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, J. Powell & P.A. Opler Collectors”; genitalia slide 11844.

Comments.— This species is easily differentiated from other species of this genus by monochrome whitish grey coloration. It is more generalized than *C. ferruminata* as having a less specialized sacculus and aedeagus. Female remains unknown.

Cartagogenia ferruminata n. sp.

Alar expanse 23-25 mm, usually 24 mm. Labial palpus over 2.5 (in holotype damaged) ferruginous or ferruginous brown, mixed with cream distally, scaled with dark brown laterally, provided with long ventral scales in distal half of median joint; remaining parts of head brownish cream; antennal flagellum and thorax brownish; collar darker. Forewing costa uniformly convex; termen distinctly oblique. Ground colour pale brownish cream, delicately suffused and diffusely strigulated with dark rust-brown; pattern dark, rust-brown, consisting of small basal blotch, rather weak median fascia, distinct costally, diffuse and broader dorsally, followed by suffusion at end of discal cell; subapical blotch with paler transverse fascia and concave anterior edge; fringes concolorous with ground colour, with browner basal line. Hindwing pale brownish cream suffused with brown on periphery, reticulate with same colour in apical area; fringes concolorous with middle of wing. Variation distinct; some specimens with dense, occasionally coalescent transverse strigulation; pattern often weak, in some examples represented by weak median suffusion; basal blotch usually visible. In two specimens refractive shades on ground colour

among strigulation. Two females with whitish cream blotches of ground colour at costa.

Male genitalia (figs. 4-6).— Apical protuberance of tegumen distinct, hairy; socius tapering in distal part but without differentiated distal portion. Valva broad, with short terminal portion; free end of sacculus long, extending beyond caudal edge of valva. Median part of transtilla small; juxta as in preceding species; aedeagus longer than in *C. filtrata*, with slenderer, somewhat asymmetric lateral parts, and much longer cornutus.

Female genitalia (figs. 33, 34).— Papilla analis slender; apophyses rather strong; ostium bursae surrounded by short sclerite; ductus bursae with large, sclerotic lobes and folds, followed by short membranous portion; dorsum of ductus membranous extending anteriorly into a curved pouch; ductus of accessory bursa ventro-lateral.

Holotype.— Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, J. Powell & P.A. Opler Collectors”; genitalia slide 11830. Paratypes.— 13 males and three females with identical data.

Comments.— Externally resembling *C. februa* from which it differs mainly in dense strigulation of the forewing in the majority of the specimens and more ferruginous basal blotch. Those differing characters are, however, insufficient for determination. The female genitalia show some variation as one can see in figures 33 and 34.

Henricus Busck, 1943

Bull. S. California Acad. Sci., 42: 38.

This genus includes 20 described species distributed in North and Central America. Apart of the species mentioned below in Costa Rica occur *H. platina* (Clarke, 1968) and *H. ademonius* (Clarke, 1968).

Henricus exploratus Razowski & Becker, 1986

Acta zool. cracov., 29(20): 448, figs. 22-24, 148.

Five specimens collected 8 km N of Vara

Blanca, Volcan Poas, 1500 m, Alajuela Prov., 26 V 85, by J.A. Powell and in Monte Verde, Puntarenas Prov., 1450 m, 18-19 V 85, and on 20 V 85 at the altitude of 1300 m by J. Doyen. Both localities are in the cloud forest.

Henricus ellampus n. sp.

Alar expanse 19 mm. Labial palpus ca 2, pale ochreous to beyond middle of median joint, cream otherwise; remaining parts of head whitish cream, vertex and flagellum pale brownish; thorax brownish cream, tegula partially cream. Forewing not expanding terminally; costa curved outwards except for concave median proportion; termen straight, oblique. Ground colour whitish cream, indistinctly strigulated with cream, suffused with pale brownish cream at base and subdorsally; dorsum more brown, brown spotted; pale ochreous dots at costa and near tornus. Fringes whitish cream. Hindwing pale cream grey; fringes paler.

Female genitalia (fig. 35).—Papilla analis broad; sterigma large, with broad lateral arms and distinctly sclerotized anterior cup-shaped portion, followed by small, membranous lobe; ductus bursae slender, plication rather well sclerotized; corpus bursae provided with numerous spines; ductus seminalis in large lateral concavity of corpus bursae; accessory bursa originating posterior to middle of ductus bursae, laterally. Posterior part of intersegmental membrane attached to sterigma, rather rigid.

Holotype.—Female; "C.R.: Monteverde, Cloud For. Res. HQ, Puntarenas Prov., 1450 m, V-18-85, Blacklight, J. Powell, P. Opler & J. A. Chemsak coll."; genitalia slide 11849.

Comments.—Externally resembling *H. cognatus* (Walsingham), but certainly more closely related to *H. exploratus* as the structure of the female genitalia shows. It differs from it mainly in having the anterior part of sterigma broader, expanding distally. The male is unknown.

Henricus ophyrodes (Meyrick)

Phtheochroa ophyrodes Meyrick, 1927, *Exotic Microlepidopt.*, 3: 368.

Six specimens from: Monteverde, Puntarenas Prov. Cloud Forest Reservation, 1450 m, 18-19 V 85, J. Powell & P.A. Opler coll.; Rio Aquiares near Santa Cruz, Cartago Prov., 1500 m, 13 V 85, J. Powell coll.; 8 km. N of Vara Blanca, Volcan Poas, Alajuela Prov., 1500 m, 11 V 85, J. Powell, P. Opler & J. A. Chemsak coll.

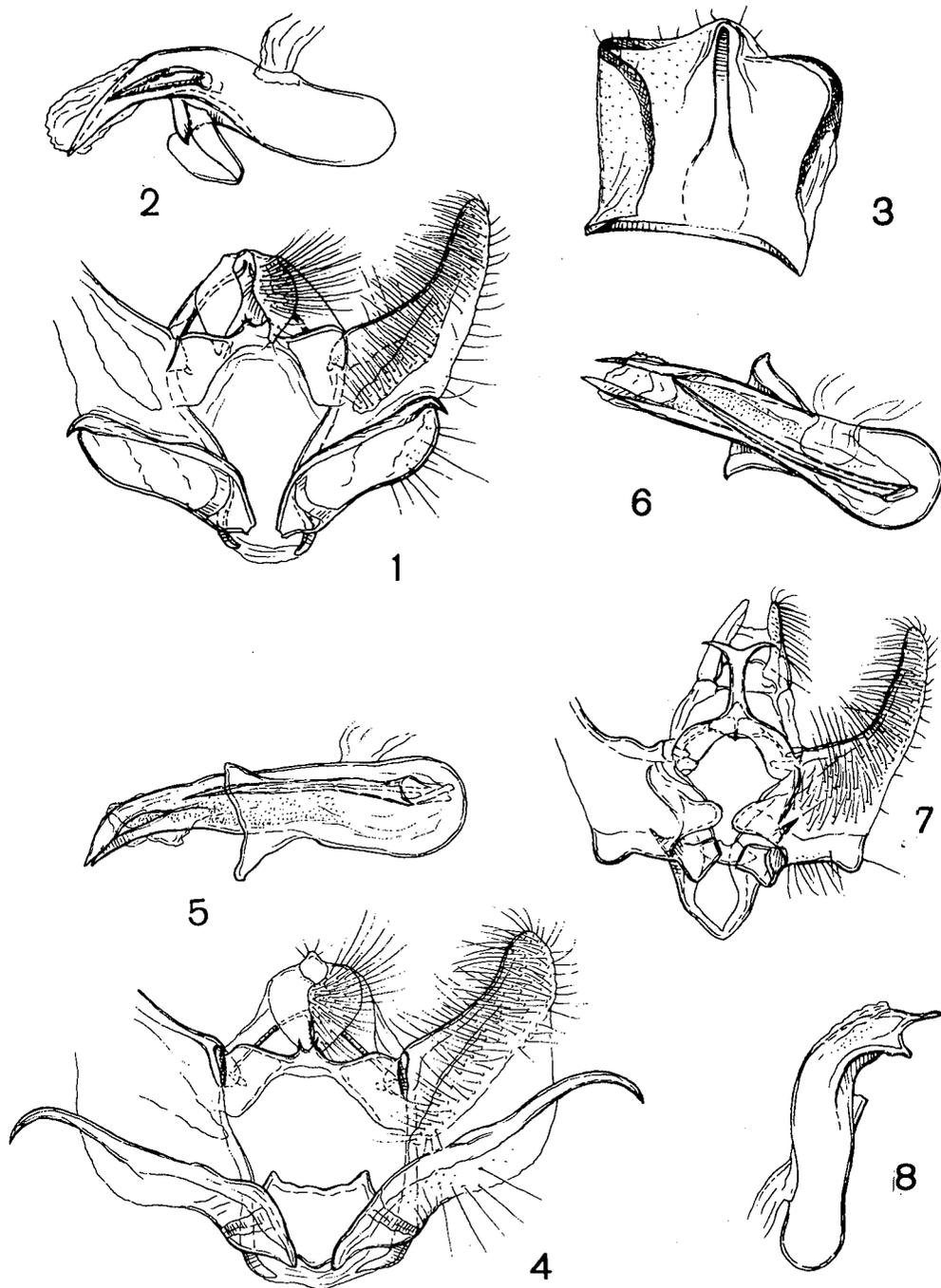
Saphenista Walsingham, 1914

Biologia cent.-am. Zool., Lepid. Heterocera, 4: 296.

Until now 45 species of this Neotropical genus were known and further 11 species are described below. Besides, the following species are known from Costa Rica: *S. orichalca* Razowski & Becker, 1986, *S. imaginaria* Razowski & Becker, 1986, *S. onychina* Razowski & Becker, 1986, *S. gilva* Razowski & Becker, 1986, *S. praia* Razowski & Becker, 1986, *S. eranna* Razowski & Becker, 1986, *S. dexia* Razowski & Becker, 1986, *S. praefasciata* (Meyrick, 1932), *S. consulta* Razowski, 1986, *S. incauta* Razowski & Becker, 1986 and *S. lathridia* Razowski & Becker, 1986.

Saphenista ephimera n. sp.

Alar expanse 16 mm. Labial palpus ca 1.5, whitish, slightly mixed with ochreous anteriorly remaining parts of head cream, flagellum concolorous with palpus base. Forewing expanding posteriorly, costa bent at 2/3; apex gently rounded; termen distinctly oblique, straight. Ground colour white-cream, in distal half mixed with pale ochreous, weak, concolorous suffusion along dorsum and in discal cell. Pattern blackish, preserved as costal spot representing median fascia, followed by a weak concolorous shade in discal cell and subdorsally; dorsum sparsely spotted with



Figs. 1-8. Male genitalia: 1, 2. *Cartagogenafiltrata* n. sp., holotype; 3. Same species, pregenital tergite; 4-6. *C. ferruminata* n. sp., holotype; 7, 8. *Saphenista ephimera* n. sp., holotype.

black, some black dots along termen and subterminally. Fringes paler than distal portion of wing. Hindwing whitish, slightly suffused with pale ochreous cream at apex; fringes whitish.

Male genitalia (figs. 7, 8).—Socius fairly long; vinculum large, provided with lateral sharp process of proximal surface. Valva broad basally, slender in distal half; sacculus long with well developed but short anterior lobe of ventral edge and distinct ventro-terminal prominence. Median part of transtilla strong; juxta small. Aedeagus large, distinctly curved in posterior portion, provided with ventral process and rather short termination; cornutus absent.

Holotype.—Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, Blacklight; J. Powell Collector”; genitalia slide 11840. Paratype.—Male with an identical data.

Comments.—The female remains unknown. This species certainly belongs to the group of *S. praefasciata*, as the presence of the basal lobe of the sacculus and the process of the ventral surface of the aedeagus show, but it is distinct by the ventro-terminal prominence of the sacculus.

Saphenista eneilema n. sp.

Alar expanse 19 mm; labial palpus more than 2, cream suffused and spotted with brownish; remaining parts of head cream, vertex slightly yellower, antenna more ochreous; thorax pale ochreous cream, tegula suffused with blackish. Forewing uniformly expanding posteriorly, costa straight; apex rather rounded; termen less oblique than in preceding species, tolerably straight. Ground colour pale yellowish cream with indistinct admixture of pale ochreous cream, sprinkled with scattered black scales especially along dorsum; costa suffused with grey to middle, also sparsely black dotted; pattern in form of atrophying median fascia originating at 1/3 of dorsum, represented by ochreous groups of scales mixed with black scales and black spot in middle of

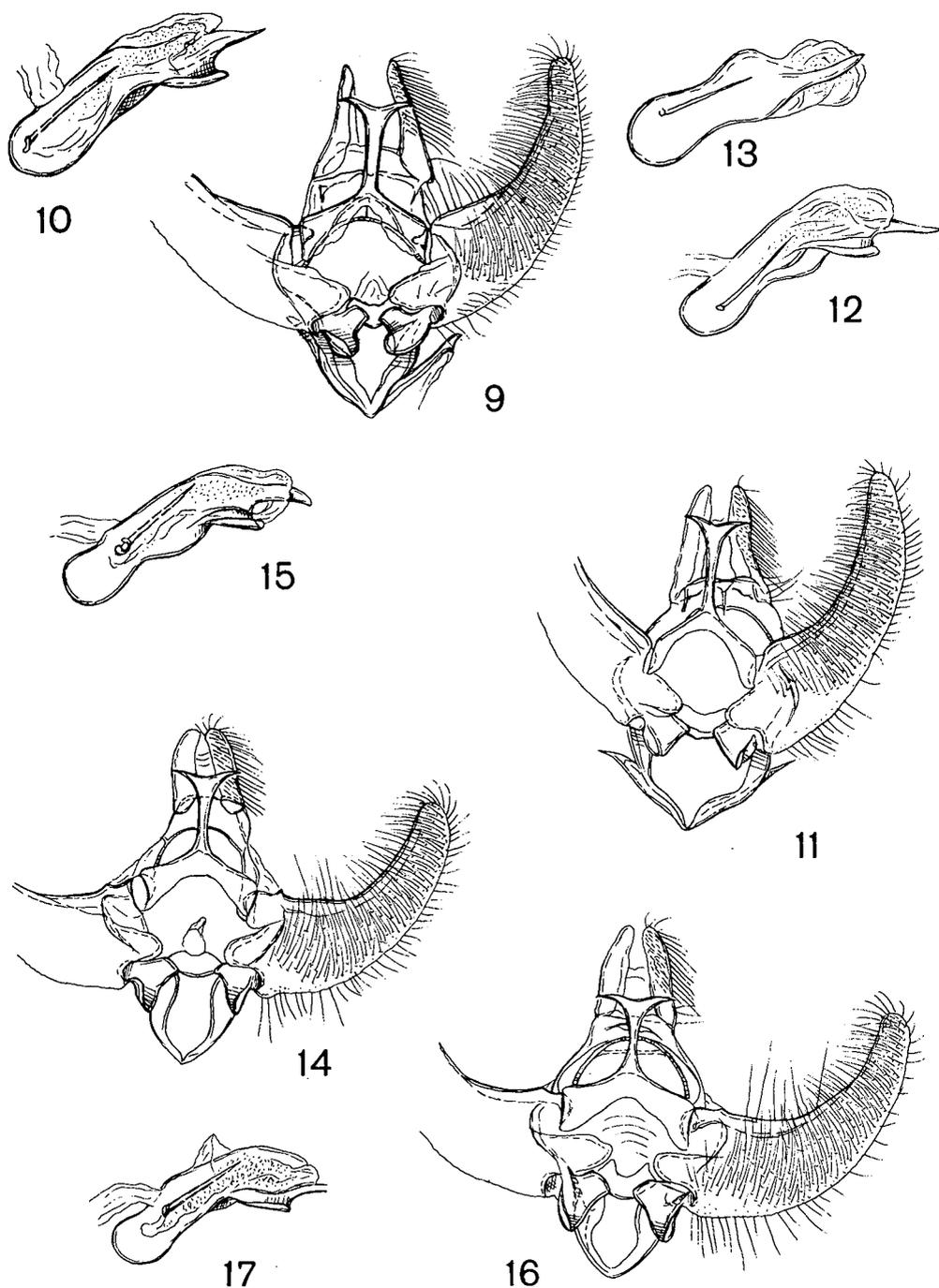
costa; subapical blotch in form of subsquare black spot followed by two concolorous dots near apex. Fringes whiter than ground colour. Hindwing greyish white, paler basally, with some diffused darker spots towards apex; fringes whitish. Variation: paratypes without grey costal suffusion, one with darker, more ochreous posterior portion of wing.

Male genitalia (figs. 9, 10).—Tegumen high, with rather small socii; process of vinculum with small apical portion. Valva long slender, up-curved; sacculus provided with large ventral lobe followed by delicate concavity of disc surface at ventral edge of valva. Median process of transtilla strong. Aedeagus proportionally short, with large lateral lobe in middle and fairly long ventral process and proportionally small ventroterminal portion; cornutus long, slender.

Female genitalia (fig. 36).—Arms of sternigma slender; collicolum bulbous; collar-shaped sclerite of ductus bursae large, almost complete, with two ventral lobes; left side of corpus bursae almost entirely sclerotized, slightly plicate as far as to collar-shaped sclerite, anteriorly membranous and forming a short sac; remaining parts of corpus membranous, sparsely spined; ductus seminalis originating anterior to middle, ventro-laterally; accessory bursa very small extending from delicately sclerotized prominence anterior to right lobe of the collar.

Holotype.—Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, J. Powell, P. A. Opler Collectors”; genitalia slide 11841. Paratypes.—One female, and one male with abdomen missing, with identical data.

Comments.—Externally very similar to *S. ephimera* but with straight costa of forewing; in the male genitalia it resembles several species of this group but differs in the shape of the process of the vinculum, proportions of aedeagus and valva parts, and in the transtilla. The female differs from those species in having a slenderer, almost complete collar-shaped sclerite and lateral portion of the corpus bursae.



Figs. 9-17. Male genitalia of *Saphenista* Walsm.: 9, 10. *S. eneilema* n. sp., holotype; 11-13. *S. gnathmocera* n. sp., holotype; 14, 15. *S. erasmia* n. sp., holotype; 16, 17. *S. epipolea* n. sp., holotype.

Saphenista gnathmocera n. sp.

Alar expanse 17 mm. Labial palpus as in preceding species, more ochreous cream, front white-cream; thorax pale ochreous cream. Forewing as in *S. eneilema* but costa somewhat convex and apex more rounded. Ground colour pale ochreous cream, slightly darker suffused especially in posterior and dorsal parts; costa weakly so with grey to middle, indistinctly dotted with black; stronger dots along dorsum and a group of scattered black scales before mid-termen. Median fascia browner than in previously mentioned species, mixed with grey at dorsum, with black-grey at costa; subapical blotch black-grey, black dotted, accompanied by brown spot on base of vein R_5 . Fringes concolorous with ground colour. Hindwing white-grey, in distal third darker, grey diffusely spotted; fringes whitish. Variation: in paratype pattern is dark, subapical blotch clear black.

Male genitalia (figs. 11-13).—Smaller than in *S. eneilema*, with proportionally longer socius, slenderer median part of transtilla, and sharp, longer tip of the process of vinculum; also differing in having larger basal portion of the sacculus, smaller posterior lobe of the sacculus and a somewhat shorter cornutus.

Holotype.—Male; “C.R. Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85; Blacklight, J. Powell collector”; genitalia slide 11836.

Saphenista erasmia n. sp.

Alar expanse 14 mm. Labial palpus shorter than 2, color similar to that in *S. gnathmocera*, remaining parts of head and thorax paler than palpus. Forewing expanding terminally; costa weakly bent; apex weakly rounded; termen distinctly oblique, almost straight. Ground colour whitish cream, indistinctly suffused with paler ochreous in terminal area of wing; a few dots in basal part of costa, spot in mid-costa and before apex black. Remainder of subcostal part of median fascia brownish. Fringes paler than ground colour, Hind-

wing whitish grey; fringes whiter. Variation: one paratype more intensely coloured, with distinct black dots along dorsum.

Male genitalia (figs. 14, 15).—As in *S. gnathmocera* but socius somewhat shorter, median part of transtilla much shorter, valva broader, less tapering terminally, with distinct basal prominence of costa. Proportions of eadeagus and cornutus also different.

Holotype.—Male; “Costa Rica: 7 km SE El Canon, Cartago Prov., 2500 m, V-28-85, J. Powell, J. T. Doyen Collectors”; genitalia slide 11843. Paratypes.—Two males with identical data.

Comments.—Externally very similar to the three preceding species especially to *S. eneilema*; in male genitalia differing from them mainly in the presence of basal prominence of costa known at present only in *S. juvenca* Razowski and the following species.

Saphenista epipolea n. sp.

Alar expanse 15 mm; labial palpus ca 2, whitish, densely sprinkled with brown; remaining parts of head dirty cream, flagellum brown ringed; thorax darker than head, with tegula suffused with brown. Forewing expanding posteriorly; costa slightly convex; termen oblique, very weakly concave beyond apex. Ground colour whitish cream with olive-brown suffusion and diffuse strigulation except for dorsal area and partially at costa above median fascia; brown-grey spots along costa, weaker spots along termen, some concolorous dashes medially before termen. Pattern brown-grey with olive hue, somewhat darker than suffusions, consisting of almost complete median fascia, darkest at costa, and subapical blotch fused with terminal pattern. Fringes pale yellowish cream with brownish grey basal line. Hindwing greyish, paler basally; fringes concolorous with wing base. Variation slight: there are some paler and darker specimens with the pattern more or less distinct and complete.

Male genitalia (figs. 16, 17).—As in preceding species but with valva broader and more

strongly up-curved, with smaller basal prominence of costa, larger lobe of sacculus and slenderer aedeagus.

Holotype.— Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, Blacklight, J. Powell, P. A. Opler Collectors”; genitalia slide 11845. Paratypes.— Four males with same data.

Comments.— This species differs from *S. erasmia* mainly in the coloration which is much darker, with brownish olive hue and without blackish costal elements of the pattern.

Saphenista juvenca Razowski & Becker, 1986

Acta zool. cracov., 29(20): 455, figs. 54, 55.

One example collected in Rio AQUIARES near Santa Cruz, Cartago Prov., on 16 V 85 by J. Powell & P.A. Opler.

Saphenista chloromixta n. sp.

Alar expanse 15 mm; labial palpus over 2, pale ochreous laterally, creamer dorsally, with terminal joint whitish; remaining parts of head olive-cream with distinct green admixture; thorax concolorous with head, darker anteriorly. Forewing slightly broadening terminally, similar in shape to that in *S. epipolea*. Ground colour cream, in ternal area mixed with ferruginous, distinctly suffused with green in basal and costal areas, refractive oblique fasciae between greenish pattern elements in posterior third of wing; blackish spots and shades in terminal area, last, of them, darkest, near apex. Pattern darker than ground colour, especially at costa where marked by black-green dots. Median fascia atrophied but some brown-black scales present mainly medially and subdorsally; an indistinct, convex line of dark scales from before subapical marking to before tornus. Fringes yellowish cream, with median line in ternal half brownish. Hindwing whitish grey, brownish grey on periphery, darkest at apex;

fringes greyish with indistinct, darker basal line.

Female genitalia (fig. 37).— Sterigma and colliculum as in other species of this group; collar-shaped sclerite of ductus bursae large, almost complete, atrophying on right side, followed by weaker posterior sclerotization of the ductus; base of ductus bursae plicate, more sclerotized on left side than medially; left lobe of corpus bursae membranous; minute, dispersed spines on remaining area; accessory bursa originating in large, well sclerotized, folded prominence of right side.

Holotype.— Female; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, Blacklight, J. Powell, P. A. Opler Collectors”; genitalia slide 11846.

Comments.— Comparable with *S. illimis* Razowski and *S. juvenca* Razowski & Becker, but distinct by the shapes of the collar like sclerite of the ductus bursae, prominence of the base of the ductus of the accessory bursa and in the forewing coloration.

Saphenista storthingoloba n. sp.

Alar expanse 21 mm; labial palpus 2, pale ochreous, cream from beyond middle and dorsally; remaining parts of head concolorous with base of palpus, lower part of front cream, flagellum of antenna brownish; thorax brownish cream, with olive hue anteriorly. Forewing somewhat expanding terminally, with costa weakly convex, apex rather rounded and termen slightly convex, fairly oblique. Ground colour pale ochreous cream with olive hue, distinctly refractive in posterior half of wing, suffused with olive-brown basally and costally, with darker dots along edges, more ochreous in postmedian and partially costal areas, suffused with blackish brown terminally. Pattern brown with rust hue in costal parts, olive brown in dorsal portions; median fascia with distinct costal part and submedian spot similar in colour; subapical markings divided in some parts; blackish, diffuse blotch beyond end of discal cell. Frin-

ges ochreous. Hindwing pale grey with similar fringes. Variation: pattern and ground colour more or less dark, dark spot on median fascia and postdiscal blotch distinct.

Male genitalia (figs. 18,19).— As in *S. praefasciata* (Meyrick) but with very small ventral lobe of sacculus, and with cornutus almost three times shorter, and the process of vinculum much shorter. There are further differences in the proportions and shapes of the aedeagus and valva.

Holotype.— Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, Blacklight, J. Powell, P. A. Opler Collectors”; genitalia slide 11820. Paratypes.— Three females with same data, two of them without abdomens.

Comments.— This species is easily distinguished by the minute lobe of the sacculus but externally reminds *S. praefasciata*. That species also known from Costa Rica is also represented in this collection but the specimens show some variation in the male genitalia and differ from the type. Thus they are not included in this paper.

Saphenista ereba n. sp.

Alar expanse 18 mm; labial palpus ca 3, dirty ferruginous, brown scaled, grey terminally; front greyish, vertex ferruginous, antenna brown-grey; thorax black-grey, base of tegula and patagia blackish. Forewing somewhat expanding terminally; costa gently convex, slightly concave medially; apex rounded, very short; termen weakly oblique, indistinctly convex. Ground colour pale ochreous cream densely sprinkled and suffused with black-brown, in dorsal half of wing and beyond discal cell; in dorsal and postmedian parts of wing groups of dark scales less frequent, paler, more brown. Remaining area black-brown; a fascia from discal cell to tornus and costal suffusion beyond middle blackish brown; traces of dorsal blotch much paler. Fringes paler than ground colour, grey beyond apex and before tornus, with remainder of median line brown grey. Hindwing grey-

ish, with fringes and cubito-anal area paler, hardly tinged with pink; costal fold to 2/3.

Male genitalia (figs. 20, 21).— As in *S. storthingoloba* but with large lobe of sacculus and short, sharp process of vinculum. Aedeagus with slender ventral termination and weak cornutus.

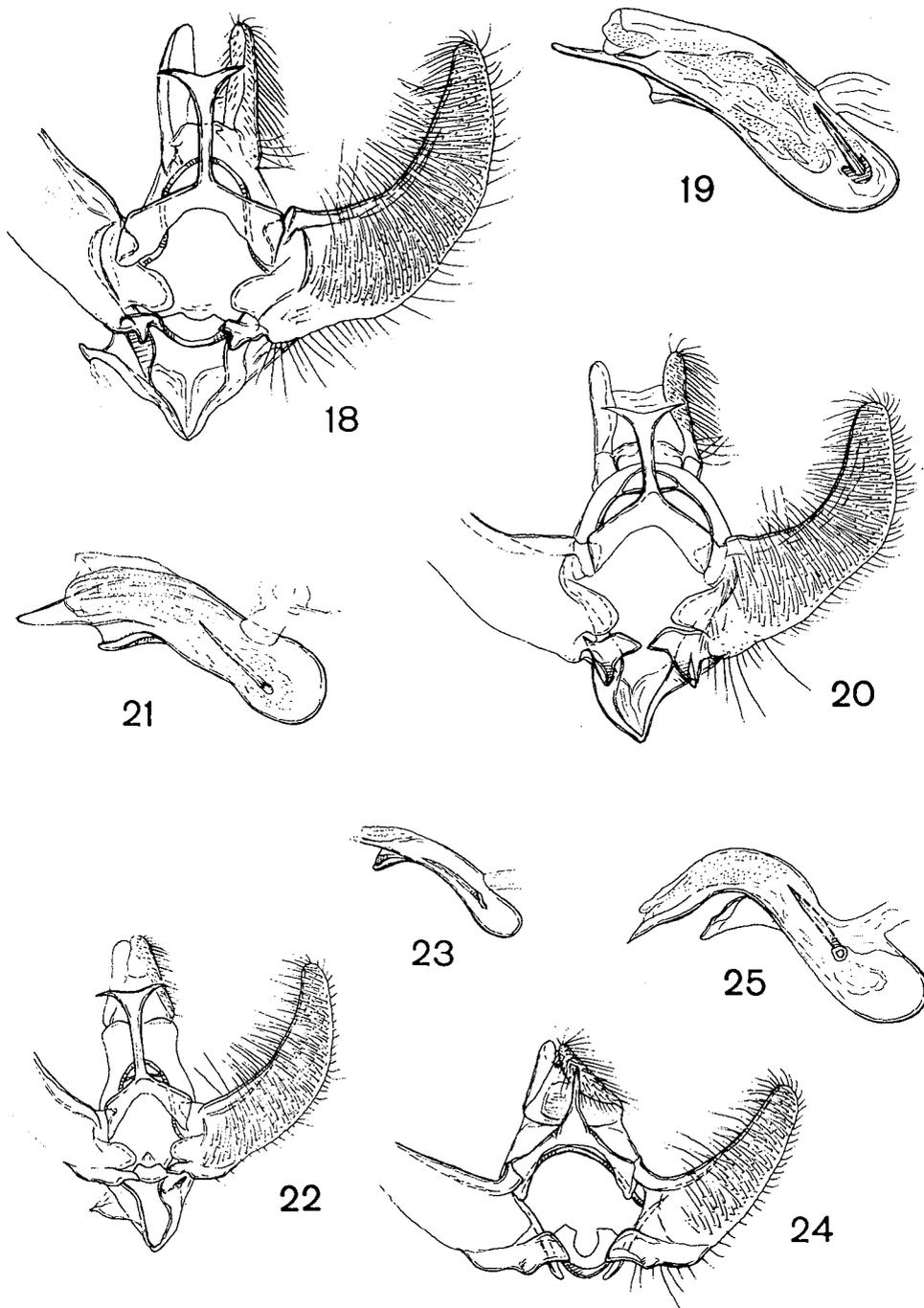
Holotype.— Male; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, Blacklight, J. Powell collector”; genitalia slide 11851.

Comments.— This species is distinct by blackish coloration of the forewing. The genital differences are slight, as among the majority of species of this group of *Saphenista*. The female is unknown.

Saphenista melema n. sp.

Alar expanse 17 mm; labial palpus ca 2, whitish laterally, tinged ochreous cream from base to middle; remaining parts of head white, flagellum of antenna and thorax cream. Forewing weakly expanding terminally, costa bent at 2/3, termen oblique, rather straight. Ground colour white cream in distal third of wing suffused with pale ochreous. Large, brown, diffuse dorsal blotch with costal edge straight, oblique, terminating subcostally; distal edge almost vertically to tornus; costal brownish blotch submedially; brown suffusion at tornus and beyond discal cell; traces of subapical blotch ochreous, with anterior edge almost vertical to costa. Fringes cream mixed with ferruginous at apex. Hindwing whitish, cream on periphery, darker apically; fringes white.

Female genitalia (fig. 39).— Sterigma lobes large; posterior portion of colliculum slender, tubular, well sclerotized, basal part strongly expanding, asymmetrical, sclerotized sublaterally, membranous medially and anteriorly; collar like structure of ductus bursae forming a complete ring, distinctly sclerotized except for dorsum; anterior part of ductus bursae weakly sclerotized; corpus bursae minutely spined except retractable part on left side in middle from which orientes duc-



Figs. 18-25. Male genitalia: 18, 19. *Sphenista storthingoloba* n. sp., holotype; 20, 21. *S. ereba* n. sp., holotype; 22, 23. *S. epiera* n. sp., holotype; 24, 25. *Phalonidia rufoatra* n. sp., holotype.

tus seminalis; accessory bursa extending from a convexity hidden in anterior, bowl like part of colliculum.

Holotype.— Female; “C.R.: Pension La Georgina, 3000 m, Cerro de Muerte, S. border Cartago Prov., V-23/25-85, Blacklight, J. Powell, P.A. Opler”; genitalia slide 11865. Paratype.— Male with identical data, with abdomen missing.

Comments.— This new species is easily recognized by presence of large, diffuse dorsal blotch. The shape of its forewing is similar to that of *S. ephimera* but the latter (known from male only) is more narrow-winged and the anterior edge of its subapical blotch is distinctly oblique, being right angle to costa in this species.

Saphenista endomycha n. sp.

Alar expanse 12 mm (in paratype ca 14 mm); labial palpus ca 2, pale ochreous-yellow, cream terminally; front cream, remaining parts of head ochreous cream with, vertex more ochreous, flagellum brownish; thorax yellow-brown, rust anteriorly. Forewing slightly expanding terminally; costa weakly convex; termen fairly oblique, weakly convex. Ground colour glossy yellowish cream; some black dots scattered in distal part of wing; suffusions among pattern more brown, distinct especially beyond discal cell and at wing base where costal blotch and wedge-shaped dorsal marking; posterior edge of dorsal marking almost parallel to dorsal blotch; the latter accompanied by small, somewhat darker costal spot; subapical blotch elongate, reaching termen; small spot at apex, broad spots beyond discal cell and at tornus. Fringes concolorous with ground colour, partially mixed with ochreous. Hindwing grey, gradually paler basally; fringes grey. Variation: in paratype ground colour and pattern paler, both with olive hue.

Female genitalia (fig. 38).— Papilla analis large; lateral arms of sterigma moderate; bulbous part of colliculum completely membranous; collar-shaped sclerite of ductus bursae

incomplete, broadest ventro-laterally (left side), followed by weak sclerotization; corpus bursae minutely spined, with several folds at ductus bursae and elongate dorso-lateral pouch; accessory bursa very small, originating on sclereotic wart.

Holotype.— Female; “C.R.: Monteverde, Puntarenas Prov., 1300 m, V-17 to V-20-85, Blacklight, J. Powell, P. Opler, J.A. Chemsak coll.”; genitalia slide 11861. Paratype.— Female, with identical data.

Comments.— This species certainly belongs to the praeposita group, as identified by the structure of the ductus bursae and the accessory bursa, but strongly differs from its other representatives in the pattern of the forewing.

Saphenista epiera n. sp.

Alar expanse 18 mm; labial palpus 1.5, ochreous cream, whitish posteriorly; remaining parts of head cream, flagellum tinged with brown; thorax concolorous with head, the latter brownish anteriorly. Forewing not expanding terminally; costa convex throughout; termen obliquely convex. Ground colour cream suffused and sparsely sprinkled with ochreous and brownish; costa at base ochreous brown, dorso-basal triangle paler; median fascia represented by brownish triangular blotch at costa and much paler suffusion near midwing; dorsal parts of fascia rudimentary, a trace of brownish marking extending from middle of wing towards tornus; subapical blotch elongate, not reaching termen, ochreous brownish. Fringes concolorous with ground colour. Hindwing brownish grey; fringes cream. Variation: in paratypes the pattern elements grey-olive in shade, more or less distinct.

Male genitalia (figs. 22, 23).— Tegumen elongate; socii moderately long; process of vinculum short, partially membranous; valva up-curved, rather slender, specially in distal portion; sacculus simple, moderately long; median part of transtilla long; aedeagus slender; cornutus in proportion to aedeagus long.

Holotype.— Male: “C.R.: Alajuela Prov., N. slope Volcan de Rincon, 2 km W Dos Rios, 550 m, V-22-85, J. Powell, P.A. Opler Collectors”; genitalia slide 11866. Paratype.— Female with abdomen missing; “Costa Rica, Catie, 3 km SE Turrialba, Cartago Prov., 600 m, V-13-85, J. Powell, P.A. Opler Collectors”.

Comments.— Very similar to *S. gilva* Razowski & Becker from Costa Rica but distinct by the shape of aedeagus and its relatively long cornutus.

Phalonidia Le Marchand, 1933

Amat. Papill., 6: 242.

This cosmopolitan genus is in Neotropics represented by 25 described species of which *Ph. synucha* Razowski & Becker, 1986 and *Ph. hapalobursa* Razowski & Becker, 1986 are known from Costa Rica. Two further species are described below.

Phalonidia deliphrobursa n. sp.

Alar expanse 8.5 mm; head white, antenna brownish (labial palpus missing); thorax cream white, base of tegula yellower. Forewing very slender, not expanding terminally; costa almost straight; termen distinctly oblique, straight, short. Ground colour pearl white; pattern also glossy, pale ochreous yellow, in form of basal and submedian suffusions, median fascia perpendicular to costa; subapical marking accompanied by more proximal suffusion; terminal markings weak. Fringes rather concolorous with ground colour. Hindwing greyish, with paler fringes.

Female genitalia (fig. 40).— Papilla analis proportionally large; sterigma in form of short, broad, well sclerotized cup embracing ostium bursae, concave in middle dorsally, followed by two membranous lobes in scobinate area. Corpus bursae elongate, sparsely spined; ductus bursae very short; ductus seminalis dorsal, originating postmedially; accessory bursa not evident.

Holotype.— Female: “C.R.: Puntarenas Prov., Cloud For. Res., Monteverde, 1450 m, V-18/19-85, J. Doyen”; genitalia slide 11870.

Comments.— Probably closest to *Ph. hapalobursa* Razowski & Becker but differing in less sclerotized sterigma and shorter ductus bursae. The forewing pattern also differs in the new species in being subdivided into transverse bands.

Phalonidia rufoatra n. sp.

Alar expanse 10 mm. Labial palpus ca 2, whitish, remaining parts of head and thorax concolorous. Forewing slender, not expanding terminally; costa straight; apex acute; termen oblique, straight. Ground colour pale ochreous, beyond blackish costal suffusion indistinct ferruginous, median fascia whitish; subapical blotch elongate, almost reaching mid-termen, ferruginous. Remainder of fringes cream. Hindwing pale grey with white-grey fringes. Female paratype darker; ground colour more ochreous, in distal half refractive; suffusion of costa weaker; median pattern broadly diffuse, ochreous-ferruginous, mixed with black to middle costally; spots in apical area rust-brown; fringes yellowish cream.

Male genitalia (figs. 24, 25).— Tegumen rather short; socii on broad basal sclerite, with short free ends; vinculum arms not fused ventrally. Valva broadest in basal third, then tapering apicad; sacculus well developed, with distinct submedian convexity of ventral edge, rounded distally. Base of median part of transtilla broad, apical portion slender, sharp, not bifurcate terminally; juxta concave dorsally, fairly small. Aedeagus fairly large, curved, with large coecum penis and elongate, acute ventro-apical portion; caulis large, median; cornutus thick but short.

Holotype.— Male: “CR: Puntarenas Prov., Cloud For. Reg., Monteverde, 1450 m, V-18/19-85, J. Doyen”; genitalia slide 11864. Paratype.— Female with abdomen missing: “CR: Rio Aquiares, nr. Santa Cruz. Cartago Prov., 1500 m, 9 km NW Turrialba, V-16-85, J. Powell, P.A. Opler collectors”.

Lasiothyris Meyrick, 1917

Trans. ent. Soc. London, 1917: 4.

Of 14 described species distributed in South America and Central America northwards as far as Veracruz in Mexico, three species are known of Costa Rica. Two are listed below, and the third species is *L. cerastes* Razowski & Becker, 1986.

Lasiothyris cnestovalva Razowski & Becker, 1986

Acta zool. cracov., 29(20): 463, figs. 79-82.

Two specimens taken on north slope of Volcan de Rincon, 2 km W Dos Rios, 550 m, on 22 V 85 by J. Powell & P.A. Opler. Described from Braulio Carrillo, Costa Rica.

Lasiothyris micida Razowski & Becker, 1986

Acta zool. cracov., 29(20): 463, figs. 83, 84, 171.

One example collected in Rio Sarapiquí some 6 km S of San Miguel, 800 m, 27 V 85 by J. Powell. Described from Costa Rica (Turrialba).

Platphalonidia Razowski, 1985

Nota lepid., 8(1): 58.

Until now 17 species have been described from the New World and none of Costa Rica.

Platphalonidia stibeutes n. sp.

Alar expanse 12 mm; thorax pale ferruginous. Forewing not expanding terminally; costa weakly convex; termen convex, oblique. Ground colour pale ochreous cream, refractive shades among more ferruginous suffusions and spots, distinct especially at costa near median markings and in subapical area. Pattern darker, rust-brown; dorsal portion of dorsal blotch marked with grey-black, black dot before end of discal cell and near middle

from disc to termen. Costal portion of median fascia and subapical blotch dark, the latter reaching termen postmedially. Fringes darker than ground colour; basal line ferruginous. Hindwing grey, mixed cream grey at apex; fringes greyish.

Female genitalia (fig. 41).—Lateral lobes of sterigma broad, not fused with apophyses anteriores; short roof formed above ostium bursae between the latter parts medially; anterior portion of sterigma broad, rounded proximally, other parts membranous. Ductus bursae partially slightly sclerotized posteriorly, strongly so in anterior portion where dense plication appears; corpus bursae minutely spinde, forming an incomplete collar subterminally; ductus seminalis from middle of folded area of ductus bursae; ductus of accessory bursa from before its end, ventrally. Subgenital sternite broad, with dense scales arranged in curved lines, weakly concave posterior edge and submembranous anterior portion.

Holotype.—Female; "CR: Aquiares, nr. Santa Cruz, Cartago Prov., 1500 m, 9 km NW Turrialba, V-16-85", genitalia slide 18865.

Comments.—This species is genitally similar to *P. mimosina* Razowski but differs in having smaller roof-shaped part of the sterigma beyond the ostium bursae and broader ductus bursae and submedian position of the ductus seminalis.

Aethes Billberg, 1820

Enumeratio Insect.: 90.

This genus is known of all zoogeographical regions but Australian and in the Neotropics is represented by 21 described species of which four are known from Costa Rica. These, besides *Ae. affinis* cited below, are *Ae. monera* Razowski, 1986, *Ae. agelasta* Razowski, 1967 and *Ae. turrialba* (Busck, 1920).

Aethes affinis Razowski, 1967

Acta zool. cracov., 12(8): 190, fig. 56, pl. 15, fig. 12.

One female collected in Rio AQUIARES near Santa Cruz, Cartago Province, at an altitude of 1500 m on 15 V 85 by J. Powell. Known until now from a single specimen, also female, described from Costa Rica (Palo Verde) without more exact data.

Coristaca n. gen.

Type-species: *Coristaca capsularia* n. sp.

Labial palpus short (more than 1), broad; forewing broad, dark, almost black, with ground colour refractive especially in distal portion and some groups of erect scales; costal fold absent. Venation: in forewing median cell broad, $R_1 - R_5$ originating from common point, the latter to apex; remaining veins separate; base of R_1 more proximal than base of Cu_2 ; in hindwing $Rr - M_1$ stalked to beyond $3/4$, M_2 distant from strongly approached bases of $M_3 - Cu_1$.

Male genitalia.— With tegumen large, strongly fused with socii and uncus, the latter directed distally, not curved; valva elongate; costa well developed, rigid; sacculus with small free termination; pulvinus slender, not reaching base of valva; central part of transtilla slender; aedeagus simple, with long coecum penis and caulis; cornuti absent; juxta produced dorso-laterally.

Biology.— No data except for those of the holotype of the type-species.

Distribution.— Costa Rica.

Comments.— The systematic position of this taxon is uncertain as the genitalia are highly specialized and so synapomorphy with any known genus is found. The sclerotization of the socii was observed in some genera, but their shape and position are different. The process of the sclerotization of the socii certainly appeared convergently in some evolutionary lineages within the cochylinae moths. The presence of the uncus is plesiomorphic but its position on the tegumen and its shape are autapomorphic. The shape of the valva resembles that in some primitive Cochylini. For the time being this genus is being placed between

the groups of genera close to *Phalonidia* and *Cochylis*. The name is an anagram of Costa Rica.

Coristaca capsularia n. sp.

Alar expanse 13 mm; head and anterior part or thorax blackish, posterior portion of thorax paler, more brown-grey. Forewing broad, expanding terminally; costa hardly concave medially, slightly convex at base, bent subapically; apex rounded; termen fairly oblique, almost straight. Ground colour blackish grey, whitish at costa beyond median marking and discal cell, several concolorous or slightly darker scales more anteriorly; remaining area suffused and diffusely strigulated with blackish. Pattern hardly visible, diffuse, represented by costal portion of median fascia and subapical blotch; costal area of wing dark. Fringes slightly paler than wing. Hindwing whitish, suffused with black-grey on periphery, strigulated with similar colour; fringes whitish grey, with weak, grey-black median line and terminations.

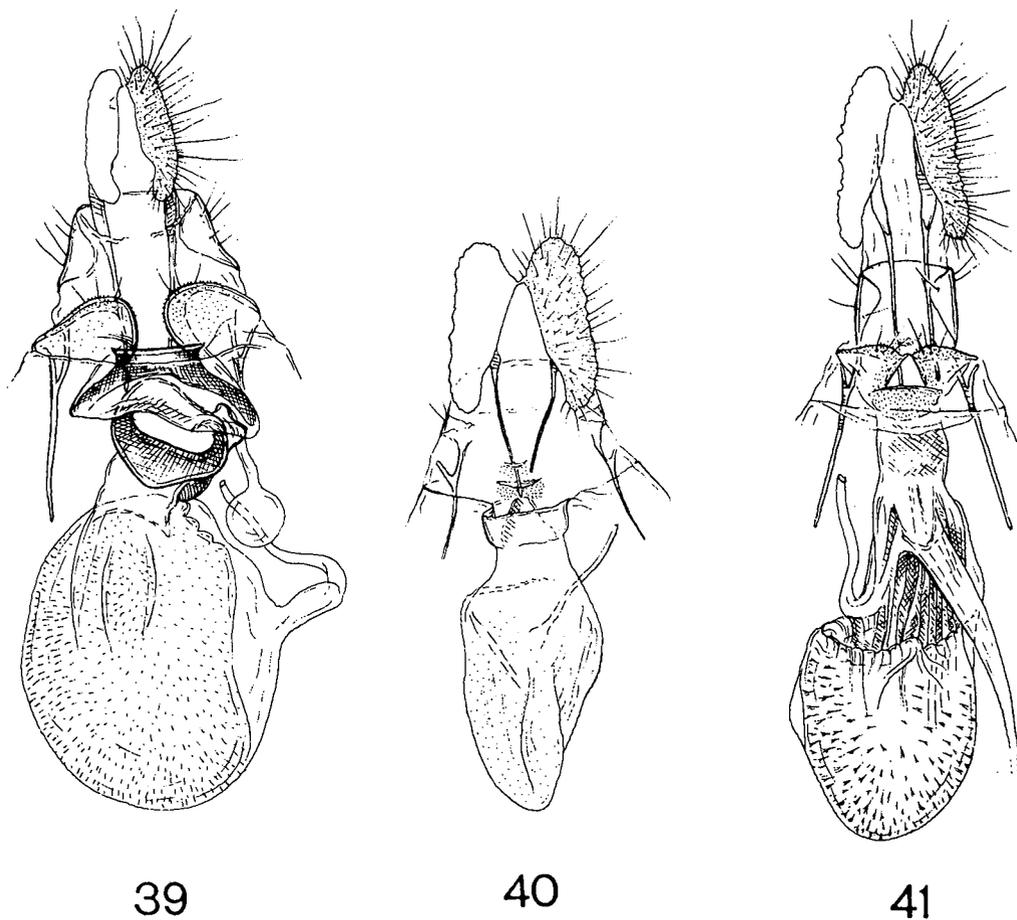
Male genitalia (figs. 26-31).— As described with the genus. Uncus flat, broadest medially, concave along middle dorsally, rounded apically, strengthened by pair of ridges extending from tegumen (to which fix muscle 1 as seen in figure 28 in the ventral view); socius long, sclerotic, sparsely hairy; median part of transtilla broad basally, slender in distal half, rounded apically. Costa of valva dorsally curved at base, long; sacculus broad in basal third. Aedeagus slender, bent, extending ventroterminally; coecum penis up-curved basally, with distinct apodeme of retractor of aedeagus; juxta large, concave dorsally.

Holotype.— Male; "Costa Rica: 7 km SE El Canon, Cartago Prov., 2500 m, V-28-85, J. Powell, J. T. Doyen Collectors"; genitalia slide 11867.

Spinipogon Razowski, 1967

Acta zool. cracov., 12(8): 199.

Besides the species mentioned below in



Figs. 39-41. Female genitalia: 39. *Saphenista melema* n. sp., holotype; 40. *Phalonidia deliphrobursa* n. sp., holotype; 41. *Platphalonidia stibeutes* n. sp., holotype.

Costa Rica occurs *S. ialtris* Razowski, 1986 known also from Mexico. The genus is Neotropical in distribution and has six described representatives.

Spinipogon elaphroterus Razowski & Becker, 1986

Acta zool. cracov., 19(20): 468, figs. 109, 110, 178, 179.

Four specimens collected in Catie near

Turrialba in mid-May at altitude of 600 m and 8 km W. Atenas, at altitude of 1000 m in Alajuela Province by J.A. Chemsak, J. Powell & P.A. Opler. Known from Costa Rica and Eastern Mexico (Veracruz).

Monoceratuncus n. nom.

Ceratuncus Razowski, 1986, *Acta zool. cracov.*, 29(16): 382 – nom. praec. by *Ceratuncus* Petersen, 1957, in Lepidoptera, Tineidae.

In *Monoceratuncus*, the new proposed name, belong five species: *M. autolytus* (Razowski, 1986) – n. comb., *M. cristatus* (Razowski & Becker, 1986) – n. comb., *M. eriodens* (Razowski, 1986) – n. comb., *M. lugens* (Razowski, 1986) – n. comb., and *M. tantulus* (Razowski & Becker, 1986) – n. comb.

DISCUSSION

Until now 14 genera and 52 species of Cochylini are known of Costa Rica. Three of them (*Enallicoehylis* Razowski & Becker, 1986, *Cartagogenia* n. gen. and *Coristaca* n. gen.) are known exclusively of that country.

Some genera with very broad distribution might easily be found in Costa Rica. Examples of such findings are: *Carolella* Busk known of rather high number of species in North America (13 species in Mexico) and South America (five species), or *Cochylis* Treitschke, 1835 (11 species in Mexico, seven in South America).

Some genera (*Rigidsociaria* Razowski, 1986, *Lincicoehylis* Razowski, 1986, *Mimcoehylis* Razowski, 1985, *Cochylidichnium* Razowski, 1986, *Geitocohylis* Razowski, 1984, *Revertuncaria* Razowski, 1986, *Gryposcleroma* Razowski, 1986, *Monoceratuncus* n. nom.) known until now from Mexico or other countries of Central America may be discovered as well in Costa Rica.

Saphenista is the genus most abundant in

species also in Costa Rica (12 are treated in this paper). *Phtheochroa* Stephens, 1829 has the most northern distribution and reaches Guatemala in the south but there is a chance of its discovery in the country under consideration.

There are several genera known until now from the South American continent the occurrence of which in Costa Rica is rather doubtful. These are: *Aphalonia* Razowski, 1984, *Tambomachaya* Razowski, 1989, *Papirazona* Razowski, 1984, *Acarolella* Razowski & Becker, 1983, *Aniella* Razowski & Becker, 1983, *Amallectis* Meyrick, 1917 and *Marylinka* Razowski & Becker, 1983.

Judging by the distribution of the species in the Neotropical region our present knowledge is far from complete. The list of Neotropical Cochylini is in the checklist of the "Atlas of Neotropical Lepidoptera" (RAZOWSKI, in press.).

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