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Review of the Blastobasinae of Costa Rica (Lepidoptera: Gelechioidea: Blastobasidae)

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Table of contents

Abstract

The Blastobasinae (Lepidoptera: Gelechioidea: Blastobasidae) of Costa Rica are reviewed. Five new genera, *Barbaloba*, *Hallicis*, *Koleps*, *Pheos*, and *Pseudokoleps*, and 101 new species are described. They include: *Barbaloba jubae*, *B. meleagrisellae*, *Hallicis bisetosellus*, *H. calvicula*, *Koleps angulatus*, *Pheos aculeatus*, *Pseudokoleps akainae*, *Blastobasis abollae*, *B. achaea*, *B. aedes*, *B. babae*, *B. balucis*, *B. beo*, *B. caetrae*, *B. chanes*, *B. custodis*, *B. dapis*, *B. deae*, *B. deliciolarum*, *B. dicionis*, *B. echus*, *B. erae*, *B. fax*, *B. furtivus*, *B. iuanae*, *B. lex*, *B. litis*, *B. lygdi*, *B. manto*, *B. neniae*, *B. nivis*, *B. orithyia*, *B. paludis*, *B. phaedra*, *B. rotae*, *B. rotullae*, *B. tapetae*, *B. thyone*, *B. usurae*, *B. vesta*, *B. xiphiae*, *Hypatopa actes*, *H. acus*, *H. agnae*, *H. arxcis*, *H. bilobata*, *H. caedis*, *H. caepae*, *H. cladis*, *H. cotis*, *H. cotytto*, *H. crux*, *H. cyane*, *H. dicax*, *H. dolo*, *H. dux*, *H. edax*, *H. eos*, *H. erato*, *H. fio*, *H. gena*, *H. hecate*, *H. hera*, *H. hora*, *H. io*, *H. ira*, *H. leda*, *H. limae*, *H. lucina*, *H. joniella*, *H. juno*, *H. manus*, *H. mora*, *H. musa*, *H. nex*, *H. nox*, *H. phoebe*, *H. pica*, *H. plebis*, *H. rabio*, *H. rea*, *H. rego*, *H. rudis*, *H. sais*, *H. scobis*, *H. semela*, *H. solea*, *H. styga*, *H. texla*, *H. texo*, *H. umbra*, *H. verax*, *H. vitis*, *H. vox*, *Pigritia dido*, *P. faux*, *P. gruis*, *P. haha*, *P. sedis*, *P. stips*, and *P. ululae*. Diagnoses, descriptions, and type data are provided for each species. Photographs of imagos, illustrations of wing venation for selected species, male and female genitalia, and distribution maps are furnished. Keys to all genera in Blastobasinae and keys to all species within each genus are provided to assist with identifications. In addition, scanning electron micrographs of the inner surface of the dilated first antennal flagellomere and associated sex scales for all *Blastobasis* are provided. *Blastobasis coffeaella* (Busck, 1925), *B. graminea* Adamski, 1999, *Hypatopa tapadulcea* Adamski, 1999, and *Pigritia marjoriella* Adamski, 1998 are redescribed.

Key Words: Central America, Costa Rica, Lepidoptera Survey, INBio, morphology, taxonomy

Resumen

Blastobasidea se revisa de Blastobasinae (Lepidoptera: Gelechioidea: Blastobasidae) de Costa Rica. Se describen 5 nuevos géneros, *Barbaloba*, *Hallicis*, *Koleps*, *Pheos*, y *Pseudokoleps*, y 101 nuevas especies. Ellas incluyen: *Barbaloba jubae*, *B. meleagrisellae*, *Hallicis bisetosellus*, *H. calvicula*, *Koleps angulatus*, *Pheos aculeatus*, *Pseudokoleps akainae*, *Blastobasis abollae*, *B. achaea*, *B. aedes*, *B. babae*, *B. balucis*, *B. beo*, *B. caetrae*, *B. chanes*, *B. custodis*, *B. dapis*, *B. deae*, *B. deliciolarum*, *B. dicionis*, *B. echus*, *B. erae*, *B. fax*, *B. furtivus*, *B. iuanae*, *B. lex*, *B. litis*, *B. lygdi*, *B. manto*, *B. neniae*, *B. nivis*, *B. orithyia*, *B. paludis*, *B. phaedra*, *B. rotae*, *B. rotullae*, *B. tapetae*, *B. thyone*, *B. usurae*, *B. vesta*, *B. xiphiae*, *Hypatopa actes*, *H. acus*, *H. agnae*, *H. arxcis*, *H. bilobata*, *H. caedis*, *H. caepae*, *H. cladis*, *H. cotis*, *H. cotytto*, *H. crux*, *H. cyane*, *H. dicax*, *H. dolo*, *H. dux*, *H. edax*, *H. eos*, *H. erato*, *H. fio*, *H. gena*, *H. hecate*, *H. hera*, *H. hora*, *H. io*, *H. ira*, *H. leda*, *H. limae*, *H. lucina*, *H. joniella*, *H. juno*, *H. manus*, *H. mora*, *H. musa*, *H. nex*, *H. nox*, *H. phoebe*, *H. pica*, *H. plebis*, *H. rabio*, *H. rea*, *H. rego*, *H. rudis*, *H. sais*, *H. scobis*, *H. semela*, *H. solea*, *H. styga*, *H. texla*, *H. texo*, *H. umbra*, *H. verax*, *H. vitis*, *H. vox*, *Pigritia dido*, *P. faux*, *P. gruis*, *P. haha*, *P. sedis*, *P. stips*, y *P. ululae*. Se presentan las diagnosis, descripciones y datos de los tipos para cada especie. Fotografías de imagos, ilustraciones de venación de las alas de especies seleccionadas y de los genitales de macho y hembra, y los mapas de distribución son proporcionados. Claves para todos los géneros de Blastobasinae y las claves para todas las especies dentro de cada género son proveídos para asistir en las identificaciones. En adición, la superficie interior del primer flagelómero antenal dilatado y de las escamas sexuales asociadas para todas las especies de *Blastobasis*, obtenidas a partir de micrografías con el microscopio electrónico de barrido, son suministrados. *Blastobasis coffeaella* (Busck, 1925), *B. graminea* Adamski, 1999, *Hypatopa tapadulcea* Adamski, 1999 y *Pigritia marjoriella* Adamski, 1998 son redescritas.

Key words: Blastobasidae, Central America, Costa Rica, Lepidoptera Survey, INBio, morphology, taxonomy

Introduction

The thoroughness of a study of any taxon is dependent upon the amount of field work that has been conducted over its geographical range. Field work is almost always geographically disproportionate, leaving gaps in our knowledge contributing to inaccurate portrayals of distribution and poorly resolved hypotheses of relationships among species and species groups. Although global studies are critical for validating monophyly and providing accurate numbers regarding species richness, well organized regional surveys can contribute to the overall completeness of both paths of inquiry.

The Lepidoptera Survey of Costa Rica is part of a larger mission to collect and identify the biota of Costa Rica. It is managed by Instituto Nacional de Biodiversidad (INBio), Santo Domingode Heredia, Costa Rica. This present

work is a contribution to that larger mission and concludes the documentation of the Blastobasidae of Costa Rica from collections obtained from surveys conducted primarily by parataxonomists thoroughout the country during a period of time starting in the early 1990 to 2000. Eighty-three new Holcocerinae of Costa Rica were treated by Adamski (2002). And in this study, 101 new species of Blastobasinae are proposed, totaling 184 Blastobasidae discovered from Costa Rica. Not surprisingly, this total represents the greatest number of species of Blastobasidae collected from any faunal survey conducted elsewhere.

Meyrick (1894) was the first to propose the monophyly of the Blastobasidae. Adamski and Brown (1989) and Hodges (1998) corroborated Meyrick's notion, using modern cladistic methodology and a much greater sample size. Since Adamski and Brown (1989) and Hodges (1999), the monophyly of Blastobasidae remains undisputed, however, the relationship of the Blastobasidae to other taxa within the Gelechioidea remains problematic, (Kaila 2004; Bucheli and Wenzel 2005).

Adamski and Brown (1989) recognized two subfamilies within the Blastobasidae, Holcocerinae and Blastobasinae. They defined Blastobasinae by the following apomorphies: M_2 and M_3 divergent from M_1 in forewing; $Sc+R_1$ and Rs of hindwing united greater than 2/3 length of frenulum; CuA_2 shorter than width of discal cell in forewing; tornus of forewing reduced; posterior margin of tegumen straight or slightly curved inwardly; proximal margin of apical wall of valva deeply emarginate; angle of valva less than 45°; anus facing posteriorly; vinculum wide (except for *Koleps*); sockets of tergal setae present; juxta ventrolaterally folded around phallus; anellus bearing conical or macrosetae; arms of gnathos projecting ventrolaterally; anellus free from juxta; ovipositor with four membranous subdivisions; and ostium bursae approximate to seventh abdominal segment.

Materials and methods

Over 2,000 pinned specimens were examined during this study. Of them, nearly 1,500 pinned adult specimens were arranged by geographic locality and dissected. Most of the species treated herein are represented by one sex only, and of them most are known from single specimens. In cases where distinct wing patterns are possessed by unique females, these specimens were selected as holotypes and features of their wing patterns were considered autapomorphies. The author follows Nieukerken et al., (2011), recognizing Blastobasidae as a family-level taxon within Gelechioidea.

Kornerup and Wanscher (1978) was used as a color standard for the descriptions of adult moths. Genitalia were dissected as described by Clarke (1941), except mercurochrome and chlorazol black were used as stains. Pinned specimens were examined with a dissecting microscope. Genitalia and wing preparations were examined and illustrated using dissecting and compound microscopes. Measurements were made using a calibrated ocular micrometer. Terminology for wing venation follows Common (1970) and that of genitalia follows Klots (1970), modified by Adamski and Brown (1989). Plant names and their authors were checked using the Germplasm Resources Information Network (GRIN, 2012).

For scanning electron microscopic studies of the sex scales of male *Blastobasis*, antennae were detached from the head and affixed to specimen stubs using carbon paste. The apical portion of the flagellum was broken off near the fourth or fifth flagellomere to decrease charging of the specimens during observation at an accelerating voltage of 10 kV. Specimens were coated with gold-palladium prior to SEM study.

Some of the proposed specific epithets are feminine in the genitive case, are randomly assigned to complete the bionomial for all new taxa, and usually have no descriptive meaning associated with any features of the taxa they represent. Other specific epithets were chosen at random using Brown (1956) as a reference.

Acronyms for depositories of specimens are as follows: INBio, Instituto Nacional de Biodicersidad, Santo Domingo de Heredia, Costa Rica; and USNM, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA. All holotypes are deposited in INBio. Paratypes are deposited in INBio and USNM.

Abbreviated words on label data for all holotypes are completed within brackets. Abbreviations used in the paratype sections are as follows: A. = Area; B. or Biol. = Biologica; C. = Conservación; Carta. = Cartago; Est. or Esta. = Estación; Fca. = Finca; G., Guan., or Guana. = Guanacaste; G.N.P. = Guanacaste National Park; Here. = Heredia; P.N. = Parque Nacional; Prov. = Provincia; Punt. or Punta. = Puntarenas; R. or Ref. = Refugio; Res. = Reserva; Sta. = Santa; Silv. = Silvestre; and Vol. = Volcan. In the paratypes sections, months of the year are indicated by the first three letters. INBio prefixes for barcode labels are written in full for all specimens included herein.

Results

Blastobasinae Meyrick, 1894

Key to the genera of Blastobasinae of Costa Rica based on males

1. First flagellomere dilated, forming a notchlike space between dilated part and flagellomeres 2–4 (Figs. 76–311) . . *Blastobasis*
- First flagellomere not modified as above 2
2. Labial palpus diminutive or extending slightly beyond midlength of frontoclypeus . . . . . *Pigritia*
- Labial palpus extending to or beyond vertex 3
3. Juxta present 4
- Juxta absent . . . . . *Koleps*
4. Juxta bandlike or platelike (ex. Fig. 55) 5
- Juxta divided mesially (ex. Fig. 53) . . . . . *Pseudokoleps*
5. Proximal flange present 6
- Proximal flange absent 8
6. Apical process of ventral part of valva elongate, directed inwardly and overlapping . . . . . *Pheos*
- Apical process of ventral part of valva not directed inwardly and overlapping 7
7. Proximal flange protuberant from inner surface of dorsal part of valva . . . . . *Hypatopa*
- Proximal flange not protuberant from inner surface of dorsal part of valva . . . . . *Pigritia*
8. Basal region of dorsal part of valva developed laterally into a large upturned lobe bearing 1–2 large, spinelike, apical setae (Figs. 57, 59) . . . . . *Hallicis*
- Middle region of dorsal part of valva developed into a large, ventrally projecting lobe (Figs. 61, 63) . . . . . *Barbaloba*

Koleps Adamski, new genus

Type species.—*Koleps angulatus* Adamski, by present designation. *Koleps* is known only from Costa Rica.

Description and Diagnosis.—*Koleps* possesses a unique combination of male features unlike those possessed by other Blastobasinae. They include: valva with basal 1/2 narrow and parallelsided, apical 1/2 widening, with dorsal and ventral processes forming an irregular and angular apical part; costa acutely angled basally about 45°; middle part of costa with a row of setae along ventral margin; ventral margin with straight setae, longer than width of middle part; a slightly recurved digitate process juxtaposed ventrolaterally by a pair of upturned, slightly divergent, spinelike processes; ventrolateral margin with a spinelike process extending beyond a widened lobe bearing a densely packed cluster of straight and elongate, apicomarginal setae; and juxta absent. This combination of features differentiates *Koleps* from all other Blastobasinae.

Etymology. The generic name is derived from the Greek *koleps*, a masculine noun meaning bent knee, and refers to the acutely angled base of the costa of the male genitalia.

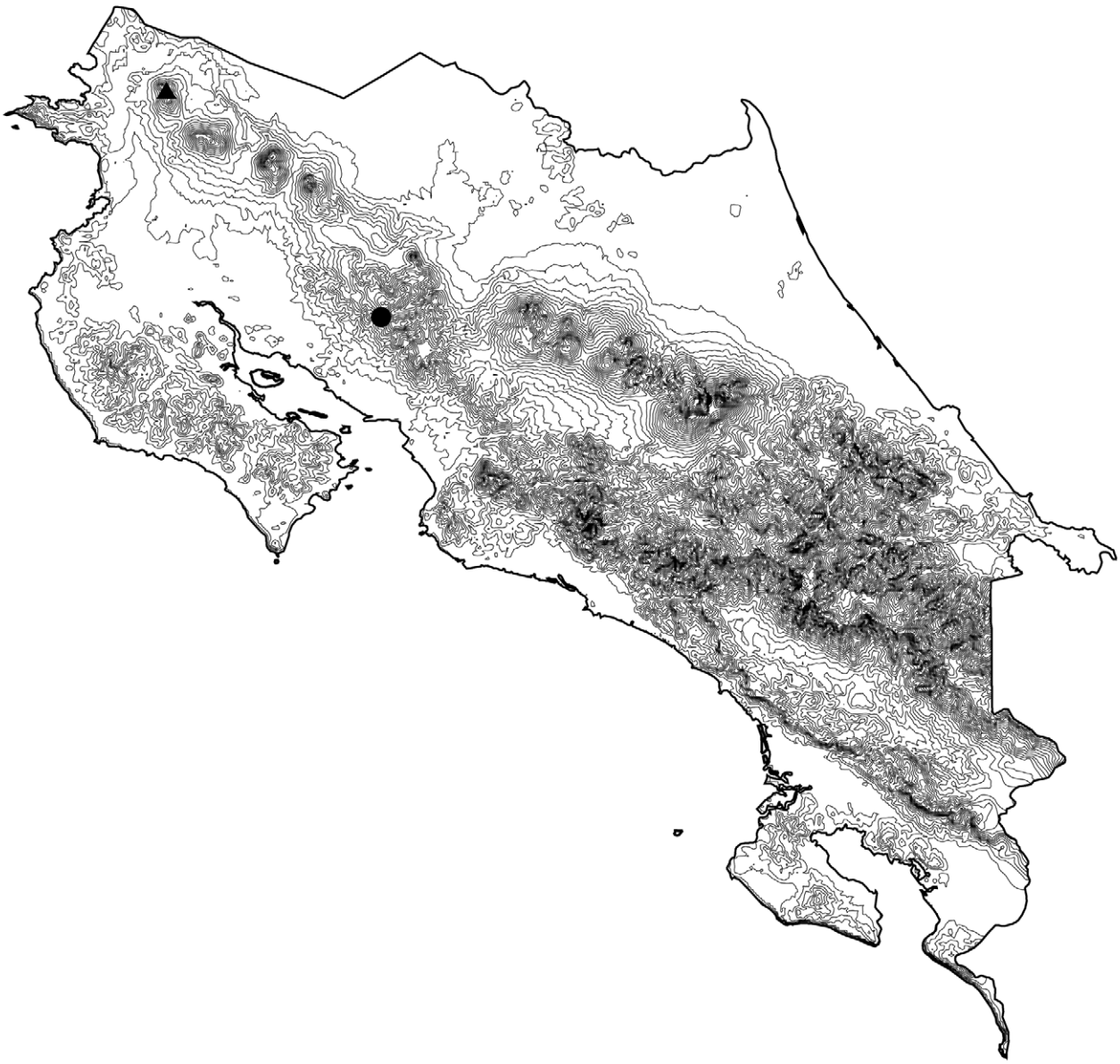
Koleps angulatus Adamski, new species

(Figs. 51–52, 312, Map 1)

Diagnosis.—*Koleps angulatus* is the only species in the genus and can be distinguished from other Blastobasinae by the features listed in the description and diagnosis of the genus.

Description.—Head: Vertex and frontoclypeus pale grayish yellow. Outer surface of labial palpus with basal segment brown, second segment brown intermixed with pale grayish-yellow scales along apical margin, terminal segment pale grayish yellow; inner surface pale grayish yellow intermixed with few brown scales. Antennal scape and pecten pale grayish yellow, flagellum brownish gray. First flagellomere in male unmodified. Proboscis brown. Thorax: Tegula and mesonotum agouti-patterned, with brown on basal and apical 1/3s, pale grayish yellow on middle 1/3. Legs dark brown intermixed with pale-brown scales near midtibia and along apical margins of tibia and tarsomeres. Forewing (Fig. 312): Length 6.3 mm (n = 1), brown intermixed with pale grayish-yellow and dark-brown scales; pattern paler in and around region of cell, interrupted by a faint submedian fascia; cell with three dark-brown spots, one spot near middle, two spots on apical end along crossvein; marginal spots dark brown. Undersurface brown. Hindwing: Translucent brown.

Abdomen: Male genitalia (Figs. 51–52): Uncus parallelsided from base to subapical region, gradually narrowed to a rounded apex, straight, sparsely setose; shorter than width of anal opening. Dorsal strut absent. Gnathos confluent with tegumen, with lateral arms narrowing from base, fused mesially forming Y-shaped, anteriorly directed process. Sockets of tergal setae not extending to midlength of tegumen. Distance between articulations of tegumen and vinculum shorter than length of valva. Valva with basal 1/2 narrow, parallelsided, apical 1/2 widening, with dorsal and ventral processes, forming irregular angular apical part; basal part of costa acutely bent about 45°, extending to inwardly setose apical part; middle part of costa nearly straight, with row of setae along ventral margin, ventral margin setose; setae straight, longer than width of middle part; apical end of costa developed into short, setose, digitate process, juxtaposed ventrolaterally by pair of upturned, spinelike processes; ventral stem of scalloped part of paired apical processes extending ventrally, fusing with moderately elongate, cylindrical and laterally directed process; process above ventrolaterally projecting lobe bearing densely packed cluster of straight and elongate, apicomarginal setae; proximal flange absent. Juxta absent. Phallus and sclerite of phallus about as long as valva, shallowly curved from middle; sclerite of phallus acutely curved basally, slightly curved apically; anellus gradually narrowed from base, setose throughout most of length. Female Genitalia: Unknown.



MAP 1. Distribution of *Koleps angulatus* (●) and *Pseudokoleps akainae* (▲).

Holotype, ♂, “San Luis, Monteverde, Prov[incia] Punta[renas], COSTA RICA, 1000−1350 m, Jul[io] 1994, Z. Fuentes, L-N-250850, 449250”, “INBio: COSTA RICA: CRI002, 025727” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 2731” [yellow label].

Distribution (Map 1). *Koleps angulatus* is known from a single male collected from a site along the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *angulatus* is derived from the Latin *angulus* meaning angle, and refers to the acutely angled base of the costa of the male valva.

Pseudokoleps Adamski, new genus

Type species.—*Pseudokoleps akainae* Adamski, by present designation. *Pseudokoleps* is known only from Costa Rica.

Description.—*Pseudokoleps* possesses a unique combination of male features unlike those possessed by other Blastobasinae. They include: gnathos absent; ventral part of valva with ventral margin upturned to middle, forming a wide fold beneath proximal flange of dorsal part; apical part developed into bulbous lobe, bearing a bifurcate process; base of process with a densely packed setal cluster on apical margin; proximal flange subtriangular, pointed ventrally; digitate process of dorsal part of valva apically dilated; juxta divided; and anellus with mesial and marginal setae subequal in length. This combination of features differentiates *Pseudokoleps* from all other Blastobasinae.

Etymology. The generic name is formed from two Greek words, *pseud* meaning false and *koleps* meaning bent knee, and refers to the dissimilarity of *Koleps* and *Pseudokoleps* in genital characters despite sharing bifurcate apices of the ventral part of the valva.

Pseudokoleps akainae Adamski, new species

(Figs. 53–54, 313, Map 1)

Diagnosis.—*Pseudokoleps* is monotypic, and the single included species, *P. akainae*, can be distinguished from other Blastobasinae by the features listed in the description and diagnosis of the genus.

Description.—Head: Vertex and frontoclypeus with brown scales tipped with pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface of labial palpus pale brown. Antennal scape brown intermixed with few pale-brown scales, pecten pale brown, flagellum gray; flagellum with basal 1/2 brown, apical 1/2 pale brown; first flagellomere unmodified in male. Proboscis brown.

Thorax: Tegula and mesonotum with basal 1/2 brown, apical 1/2 pale brown. Legs brown intermixed with pale-brown scales near midtibia and apical margins of tibia and tarsomeres. Forewing (Fig. 313): Length 3.9–4.8 mm (n = 3), brownish orange intermixed with few brown scales; submedian fascia faint; cell with three faint spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent brown.

Abdomen: Male genitalia (Figs. 53–54): Uncus gradually narrowing from base, forming rounded apex, setose. Dorsal strut absent. Gnathos absent. Sockets of tergal setae not extending to midlength of tegumen. Distance between articulations of tegumen and vinculum about equal to length of valva. Valva divided, ventral part broadly rounded ventrally, elongate, upturned to middle beneath large subtriangular process of dorsal part, forming rounded fold; apical part developed into bulbous lobe, apically developed into bifurcate process; base of process with densely packed setal cluster on apical margin; bulbous part juxtaposed basally by wartlike setose lobe along margin above marginal fold; dorsal part with apical portion of costa geniculate, extending dorsally, forming apically swollen, setose, digitate process; basal ridge of digitate process extending ventrolaterally fusing with lateral margin of proximal flange; proximal flange subtriangular, widened basally, gradually narrowed apically to pointed apex; proximal flange sparsely setose on basal 1/2, densely setose on apical 1/2. Juxta divided mesially forming two large angular plates. Phallus and sclerite of phallus slightly longer than valva; phallus bulbous basally, slightly curved near middle; sclerite of phallus slightly curved basally, acutely curved at 2/3, gradually widened apically; anellus slightly longer than wide, bearing several shortened mesial setae and three pairs of longer marginal setae. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, Prov[incia] Guan[acaste], COSTA RICA, C. Moraga & P. Rios, Nov[iembre] 1990, L-N-330200, 380200”, “INBio: COSTA RICA: CRI000, 313712” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 2086” [yellow label].

Paratypes (2 ♂♂): 1 ♂, same data as for holotype except, “Dic. 1990”, “CRI000, 652943”, “Slide No. 2081”, “USNM 83879”; 1 ♂, “Abr. 1995, P. Rios, # 4814”, “CRI002, 336655”, “Slide No. 2094” [1 in INBio, 1 in USNM].

Distribution (Map 1). *Pseudokoleps akainae* is known from one collecting site along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *akainae* is derived from the Greek *akaina* meaning thorn or spine, and refers to the downward pointed, thornlike proximal flange of the dorsal part of the valva.

Pheos Adamski, new genus

Type species.—*Pheos aculeatus* Adamski, by present designation. *Pheos* is known only from Costa Rica.

Diagnosis.—*Pheos* possesses a unique combination of male features unlike those possessed by other Blastobasinae. They include: spinelike apical process of ventral part of valva forming an elongate, inwardly directed spinelike process; spinelike process bearing a basal, ventrally directed (nearly 90°) spinelike process; digitate process of dorsal part of valva extending from near base of costa; proximal flange with three clusters of spinelike setae; and ventral articulation setose. This combination of features differentiates *Pheos* from all other Blastobasinae.

Etymology. The generic name is derived from the Greek *pheos*, a masculine noun meaning a spiny plant, and refers to the many spinelike setae and spinelike processes of the male valva of the genitalia.

Pheos aculeatus Adamski, new species
(Figs. 55–56, 314, Map 2)

Diagnosis.—*Pheos* is monotypic, and the single included species, *P. aculeatus*, can be distinguished from other Blastobasinae by the features listed in the description and diagnosis of the genus.

Description.—Head: Vertex, frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with few brown scales on first and second segments, inner surface pale brown. Antennal scape pale brown intermixed with few brown scales, pecten brown, flagellum pale brown; fiest flagellomere unmodified in male. Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near segments and along apical margins of all segments and tarsomeres. Forewing (Fig. 314): Length 5.9–6.5 mm (n = 3), pale brownish yellow intermixed with few brown scales; submedian fascia faint or absent; discal spots present or absent, cell with two brown spots, one spot near middle, one spot on apical end along crossvein. Undersurface brown in area from costa to cubitus, pale brown from cubitus to posterior margin. Hindwing: Translucent pale brownish yellow gradually darkening to apex.

Abdomen: Male genitalia (Figs. 55–56): Uncus, gradually narrowed from widened base, rounded apically, acutely curved ventrally from subapical region, sparsely setose, shorter than width of anal opening. Dorsal strut absent. Gnathos, a wide band confluent with tegumen, posteroventral margin slightly raised mesially, narrowly emarginate. Sockets of tergal setae extending beyond midlength of tegumen. Distance between articulations of tegumen and vinculum longer than length of valva. Valva divided; ventral part broadly rounded ventrally, abruptly narrowed apically forming an elongate, inwardly directed, spinelike process; spinelike process fused basally with second, shorter, ventrally directed (near 90°), spinelike process bearing small, setose cluster near base; lobelike basal articulation finely setose; dorsal part with apical portion of costa extending dorsolaterally from near base, forming digitate process; basal ridge of digital process protracted ventrally fusing with dorsolateral ridge of proximal flange; proximal flange subquadrate, bearing three spinelike setal clusters, one along lateral margin, one along ventral margin, and one along ventromesial margin. Phallus and sclerite of phallus longer than valva; phallus and sclerite of phallus broadly curved near middle, abruptly curved subapically; anellus apically notched, setose on basal 2/3. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Cafrosa, Est[ación] Las Mellizas, P[arque] N[acional] Amistad, 1300 m, Prov[incia] Punt[eranas], COSTA RICA, M.M. Chavarria & G. Mora, Ene[io] 1991, L-S-316100, 596100”, “INBio: COSTA RICA: CRI000, 539412” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 2617” [yellow label].

Paratypes (2 ♂♂): 1 ♂, same data as for holotype except,“CRI000, 539484”, “Slide No. 2615”, “USNM 83880”; 1 ♂, “CRI000, 380615”, “Slide No. 2616” [1 in INBio, 1 in USNM].

MAP 2. Distribution of *Pheos aculeatus* (●) and *Hallicis bisetosellus* (▲).

Distribution (Map 2). *Pheos aculeatus* is known from one collecting site along the eastern most part of the Cordillera de Talamanca near the western border of Panama.

Etymology. The specific epithet is derived from the Latin *aculeatus* meaning provided with prickles and stings, and refers to the many spinelike setae and spinelike processes of the valva of the male genitalia.

Hallicis Adamski, new genus

Type species.—*Hallicis bisetosellus* Adamski, by present designation. *Hallicis* is known only from Costa Rica.

Description.—*Hallicis* possesses a unique combination of male features that include: base of dorsal part of valva developed into a large upturned lobe, bearing 1−2 large, spinelike, apical setae; phallus and sclerite of phallus acutely curved from middle; and proximal flange absent. This combination of features differentiates *Hallicis* from all other Blastobasinae.

Etymology. The generic name *Hallicis* is derived from the Latin *hallex*, a masculine noun meaning a great toe, and refers to the digitate process originating from the base of the male valva of the genitalia.

Hallicis bisetosellus Adamski, new species

(Figs. 1, 57–58, 251, 315, Map 2)

Diagnosis.—*Hallicis bisetosellus* is similar to *H. calviculus* in facies but differs from the latter by having a larger uncus. In addition, *H. bisetosellus* has an emarginate posteroventral margin of the gnathos; a broadly curved apical process of the ventral part of the valva; a densely microtrichiate angular lobe of the middle region of the ventral part of the valva; a large, laterally directed, upturned lobe with 2 spinelike setae from the base of the dorsal part of the valva; and a bandlike juxta that are lacking in *H. calviculus*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale brownish gray. Outer surface of labial palpus brown intermixed with pale-brown scales on apical margin of segment 2, inner surface pale brown. Antennal scape and pecten pale grayish brown, flagellum brownish gray on basal 2/3, pale brown on apical 1/3; first flagellomere unmodified in male. Proboscis pale brown.

Thorax: Tegula and mesonotum grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 315): Length 4.0–5.9 mm (n = 80), basal 1/3 pale brown except for brown costa or base brown gradually brightening to 1/3; apical 2/3 brown gradually brightening to apical end of cell; apex darker than middle 1/3 with no distinct markings. Undersurface brown. Venation (Fig. 1) with R_5 straight, CuA_1 and M_3 arising from a common point on distoposterior part of cell, and CuA_2 arising about 2/3 length from of cell. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 1) with cubitus 4-branched, M_2 broadly arched toward $M_{1,}$ and CuA_1, with M_3 divergent about 1/4 from margin.

Abdomen: Male genitalia (Figs. 57–58): Uncus wide basally, abruptly narrowed at 2/3 forming broadly rounded, sparsely setose, apical lobe; uncus shorter than width of anal opening. Dorsal strut absent. Gnathos, a widened band, posteroventral margin mesially notched, forming two dentate processes. Sockets of tergal setae not extending beyond 1/2 length of tegumen. Distance between articulations of tegumen and vinculum shorter than length of valva. Valva divided; ventral part broadly rounded basally from ventral articulation, apically developed into inwardly curved, spinelike process; process with inner surface planate; dorsal part with inner surface developed into finely microtrichiate, angular lobe; lobe with row of setae along dorsal margin; costa developed dorsolaterally, forming sparsely setose, digitate process; basilateral part developed into upturned lobe bearing two large apical setae, proximal flange absent. Juxta bandlike. Phallus and sclerite of phallus acutely curved from middle; anellus parallelsided throughout most of length, broadly rounded apically, setose on apical 3/4. Female Genitalia (Fig. 251): Apophyses posteriores at least 3 1/2X longer than apophyses anteriores. Ostium bursae within membrane slightly posterior to seventh segment; antrum cuplike, as wide as long. Posterior margin of seventh sternum setose. Ductus bursae slightly shorter than apophyses posteriores, densely spinulate within anterior 1/4, gradually becoming sparser posteriorly; inception of ductus seminalis slightly posterior to anterior margin of seventh sternum. Corpus bursae small, ovoid, spinulate anteriorly; signum elongate, acuminate on each end, formed from a compact cluster of spinules.

Holotype, ♂, “Est[ación] Cacao, 1000−1400 m, Lado suroeste del Volcan Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, 25 Set[iembre] 11 Oct[ubre] 1990, L-N-323300, 375700”, “INBio: COSTA RICA: CRI000, 577688” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 2189” [yellow label].

Paratypes (70 ♂♂, 9 ♀♀): 9 ♂♂, 3 ♀♀, same data as for holotype except, “CRI000, 390426”, “Slide No. 2151”; “CRI000, 590739”, “Slide No. 2152”, “USNM 84107”; “CRI000, 390297”, “Slide No. 2153”; “CRI000, 577686”, “Slide No. 2155”; “CRI000, 590729”, “Slide No. 2162”; “CRI000, 590745”, “Slide No. 2175”; “CRI000, 590732”, “Slide No. 2181”; “CRI000, 390378”, “Slide No. 2183”; “CRI000, 390046”, “Slide No. 2208”, “USNM 84109”; “CRI000, 590713”, “♀ Slide No. 4516”, “USNM 84110”; “CRI000, 390360”, “♀ Slide No. 4561”,

"USNM 84111"; "CRI000, 390085", "♀ Slide No. 4562", "USNM 84112"; 2 ♂♂, 1 ♀, "M. Ortiz, 21−29 May. 1992", "CRI000, 420053", "Slide No. 2261", "USNM 84113"; "CRI000, 420116", "Slide No. 2270", "USNM 84114"; "CRI000, 420024", "♀ Slide No. 4515" ,"USNM 84108"; 6 ♂♂, "A. Gutierrez, 21−29 May. 1992", "CRI000, 416735", "Slide No. 2305"; "CRI000, 416775", "Slide No. 2307"; "CRI000, 416741", "Slide No. 2310"; "CRI000, 416770", "Slide No. 2313"; "CRI000, 716017", "Slide No. 2316"; "CRI000, 416768", "Slide No. 2330"; 5 ♂♂, "C. Cano", "CRI000, 448389", "Slide No. 2262"; "CRI000, 448382", "Slide No. 2282", "USNM 84115"; "CRI000, 448395", "Slide No. 2275", "USNM 84116"; "CRI000, 448379", "Slide No. 2278", "USNM 84117"; "CRI000, 448381", "Slide No. 2383, "USNM 84134"; 3 ♂♂, "C. Moraga", "CRI000, 411930", "Slide No. 2381"; "CRI000, 411928", "Slide No. 2335"; "CRI000, 411954", "Slide No. 2269"; 5 ♂♂, "D. Garcia", "CRI001, 290666", "Slide No. 2331"; "CRI001, 290669", "Slide No. 2327"; "CRI001, 290732", "Slide No. 2280", "USNM 84118"; "CRI001, 290715", "Slide No. 2267", "USNM 84119"; "CRI001, 290718", "Slide No. 2329"; 2 ♂♂, "E. Lopez", "CRI000, 684403", "Slide No. 2272"; "CRI000, 684393", "Slide No. 2281", "USNM 84120"; 3 ♂♂, "21−29 May. 1992, D. Garcia", "CRI001, 290668", "Slide No. 2306"; "CRI001, 290707", "Slide No. 2334"; "CRI001, 290664", "Slide No. 2324"; 1 ♂, "A. Martin", "CRI000, 684374", "Slide No. 2276", "USNM 84121"; 3 ♂♂, "F. Araya", "CRI000, 426084", "Slide No. 2382"; "CRI000, 426082", "Slide No. 2379"; "CRI000, 426072", "Slide No. 2268", "USNM 84122"; 1 ♂, 1 ♀, "D. Brenes", "CRI000, 488011", "♀ Slide No. 4564"; "CRI000, 487985", "Slide No. 2319", "USNM 84123"; 1 ♂, "III Curso Parataxon., May. 1992", "CRI000, 426531", "Slide No. 2279"; 2 ♂, 1 ♀, "C. Chaves, 23 Oct.-9 Nov. 1990", "CRI000, 315971", "Slide No. 2186"; "CRI000, 576704", "Slide No. 2202"; "CRI000, 576623", "♀ Slide No. 4563", "USNM 84124"; 3 ♂♂, 2 ♀♀, "CRI000, 645767", "Slide No. 2301"; "CRI000, 645648", "Slide No. 2249", "USNM 84125"; "CRI000, 645705", "Slide No. 2243", "USNM 84126"; "CRI000, 645643", "♀ Slide No. 4566"; "CRI000, 645713", "♀ Slide No. 4565"; 2 ♂♂, "C. Chaves, Jun. 1991", "CRI000, 623402", "Slide No. 2224"; "CRI000, 613381", "Slide No. 2254", "USNM 84127"; 1 ♂, "C. Chaves, Dic. 1990", "CRI000, 655977", "Slide No. 2197", "Wing Slide No. 7008"; 2 ♂♂, "D. Garcia, 11 Set.-11 Oct. 1991", "CRI000, 349696", "Slide No. 2386"; "CRI000, 349692", "Slide No. 2214", "USNM 84128"; 2 ♂♂, "C. Chaves, Set. 1991", "CRI000, 357366", "Slide No. 2289", "USNM 84129"; "CRI000, 356686", "Slide No. 2283"; 3 ♂♂, "C. Chaves, Jun. 1991", "CRI000, 623431", "Slide No. 2298"; "CRI000, 623562", "Slide No. 2287", "USNM 84130"; "CRI000, 623422", "Slide No. 2299", "USNM 84131"; 1 ♂, "D. Garcia, Jun.-Jul. 1991", "CRI000, 571623", "Slide No. 2295", "USNM 84132"; 1 ♂, "II Curso Parataxon., Jun. 1990", "CRI000, 609276", "Slide No. 2187"; 1 ♂, 1 ♀, "1100 m, 12–17 Feb. 1995, S. Avila, # 5858", "CRI002, 337001", "♀ Slide No. 4567"; "CRI002, 336994", "Slide No. 2370"; 1 ♂, "2 km SW de Cerro Cacao, 1100–1200 m, 11–17 Feb. 1995, M.A. Camacho", "CRI00, 2386659", "Slide No. 2347"; 1 ♂, "SO de Volcan Cacao, 1000 m, 21–29 May. 1992, K. Taylor, # 1257", "CRI001, 641697", "Slide No. 2378"; 1 ♂, "11– 8 Feb. 1995, E. Navarro, L-N-323100, 375800, # 4666", "CRI002, 184456", "Slide No. 2371"; 1 ♂, "2 km SW del Cerro Cacao, 1000–1200 m, Feb. 1995, E. Phillips, # 5448", "CRI002, 403962", "Slide No. 2350", "USNM 84133"; 7 ♂♂, Estac. Mengo, 1100 m, SW side Volcan Cacao, Guanacaste Prov., COSTA RICA, Feb. 1989, GNP Biodiversity Survey, W85°28'10", N10°55'43", "CRI001, 054939", "Slide No. 2492", "USNM 84135"; "CRI001, 054935", "Slide No. 2498", "USNM 84136"; "CRI001, 054946", "Slide No. 2499", "USNM 84137"; "CRI001, 055019", "Slide No. 2508"; "CRI001, 054878", "Slide No. 2509"; "CRI001, 054883"; "Slide No. 2510"; "CRI001, 054877", "Slide No. 2516" [48 in INBio, 31 in USNM].

Distribution (Map 2). *Hallicis bisetosellus* is known from two closely adjacent collecting sites in the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *bisetosellus* is derived from the Latin *saeta* meaning bristle or stiff hair, and refers to the two apical setae of the digitate process originating from the base of the valva of the genitalia.

Hallicis clavicula Adamski, new species

(Figs. 2, 59–60, 316, Map 3)

Diagnosis.—*Hallicis clavicula* is similar to *H. bisetosellus* in facies but differs from the latter by having a smaller uncus; an entire posterioventral margin of the gnathos; and an acutely curved apical process of the ventral part of the valva. *H. clavicula* also has an elongate, setose lobe overlying the base of the costa, originating from the inner surface of the dorsal part of the valva; a large, laterally directed, upturned lobe with a spinelike seta originating from the base of the dorsal part of the valva; and a platelike juxta that are lacking in *H. bisetosellus*.

MAP 3. Distribution of *Hallicis clavicula* (●) and *Barbaloba meleagrisellae* (▲).

Description.—Head: Vertex, frontoclypeus brown. Outer surface of labial palpus dark brown intermixed with few pale-brown scales, with pale-brown scales along apical margin of segments 1–2; terminal segment dark brown basally, pale brown apically; inner surface with same pattern but paler. Antennal scape and pecten pale brown, flagellum brownish gray; first flagellomere unmodified in male. Proboscis brown.

Thorax: Tegula dark brown on basal 1/2, pale brown on apical 1/2; mesonotum pale brown. Legs dark brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 316): Length 4.6 – 5.7 mm (n = 6), brown intermixed with pale-brown scales and dark-brown scales; area from base to submedian fascia pale brown, costa and anal margin dark brown; basal 1/3 pale brown, apical 2/3 brown; submedian fascia complete or incomplete, faint, with few dark-brown scales; cell with three dark-brown spots, one spot near middle, two spots near apical end along crossvein; marginal spots brown. Undersurface brown. Venation (Fig. 2) with CuA_1 and M_3 arising from a common point on distoposterior part of cell and CuA_2 arising about 1/3 length from distoposterior part of cell. Hindwing: Translucent pale brown, gradually darkening to apex. Venation (Fig. 2) with cubitus 4-branched with M_2, M_3, with CuA_1 arising from part of cubitus extending slightly beyond cell; M_2 stalked slightly basal to branching M_3 and CuA_1.

Abdomen: Male genitalia (Figs. 59–60): Uncus wide basally, abruptly constricted near middle, forming sparsely setose apical lobe, shorter than width of anal opening. Dorsal strut absent. Gnathos, a thin band, confluent with tegumen; posteroventral margin entire. Sockets of tergal setae not extending beyond 1/2 length of tegumen. Distance between articulations of tegumen and vinculum shorter than length of valva. Valva divided; ventral part of valva broadly rounded basally, apically narrowed, forming inwardly curved spinelike process; process acutely curved near midlength, with planate inner surface; small setose marginal ridge near base of apical process; dorsal part with apical portion of costa developed distolaterally into sparsely setose, digitate process; inner surface with elongate, setose lobe overlying base of costa; basilateral part developed into upturned lobe bearing large apical seta, proximal flange absent. Juxta subtrapezoidal. Phallus and sclerite of phallus acutely curved from middle; anellus gradually narrowed from base, rounded apically, setose throughout most of length. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Marirza, 600 m, Lado oeste del Volcan Orosi, Prov[incia] Guan[acaste], COSTA RICA, II curso Parataxonomos, Ago[sto] 1990, L-N-326900, 373000", "INBio: COSTA RICA: CRI000, 668102" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 2524" [yellow label].

Paratypes (5 ♂♂): 3 ♂♂, same data as for holotype except, "CRI000, 668111", "Slide No. 2527", "Wing Slide No. 7009"; "CRI000, 391736", "Slide No. 2528", "USNM 83890"; "CRI000, 668105", "Slide No. 2530"; 1 ♂, "San Luis, 1040 m, R.B. Monteverde, Prov. Punt., COSTA RICA, Mar. 1993, Z. Fuentes, L-N-250850, 449250", "CRI001, 195888", "Slide No. 2639", "USNM 83891"; 1 ♂, "Est. Cacao, Prov. Guan., COSTA RICA, 1100 m, 11–18 Feb. 1995, E. Navarro, L-N-323100, 375800, # 4606", "CRI002, 184455", "Slide No. 2365" [3 in INBio, 2 in USNM].

Distribution (Map 3). *Hallicis clavicula* is known from two collecting sites along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica and a single collecting site along the southwestern part of the Cordillera de Tilarán in the west-central part of the country.

Etymology. The specific epithet is derived from the Latin *clavicula* meaning a tendril of a vine, and refers to the tapering digitate process originating from the base of the valva of the genitalia, which terminates with a single seta.

Barbaloba Adamski, new genus

Type species.—*Barbaloba meleagrisellae* Adamski, by present designation. *Barbaloba* is known only from Costa Rica.

Description.—*Barbaloba* possesses a unique combination of male features that include: absence of a proximal flange and middle region of dorsal part of valva developed into a large, ventrally projecting, setose lobe.

Etymology. The generic name *Barbaloba* is derived from two Latin words, *barba* a femanine noun meaning beard, and *lobus*, a masculine noun meaning a rounded projection, and refers to the setose lobelike process originating from the ventral part of the valva of the male genitalia.

Barbaloba meleagrisellae Adamski, new species

(Figs. 61–62, 317, Map 3)

Diagnosis.—*Barbaloba meleagrisellae* is similar to *B. jubae* in facies but differs from the latter by having a narrower uncus; fewer tergal setae of the tegumen. *B. meleagrisellae* also has an acutely curved (from 1/3) apical process of the ventral part of the valva; an anteriorly directed and entire posteroventral margin of the gnathos; a densely microtrichiate region near base of the dorsal part the of valva; a laterally projecting lobe with a densely packed cluster of long, inwardly curved setae originating from the base of dorsal part of valva; a bandlike juxta; and a broadly curved phallus and sclerite of phallus that are lacking in *B. jubae*.

Description.—Head: Scales on vertex and frontoclypeus brown tipped with pale brown. Outer surface of labial palpus dark brown intermixed with pale-brown scales, segments 1–2 pale brown along apical margins; terminal segment with basal 2/3 dark brown, apical 1/3 pale brown; inner surface of labial palpus paler. Antennal scape brown intermixed with pale-brown scales along apical margin, pecten pale brown, flagellum brown; first flagellomere unmodified in male. Proboscis pale brown.

Thorax: Tegula with basal 1/3 dark brown, apical 2/3 pale brown; mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 317): Length 5.1 mm (n = 1), pale brown intermixed with dark-brown scales and few brownish-orange scales; basal 1/3 mostly pale brown, apical 2/3 slightly darker (with more brownish-orange and dark-brown scales); submedian fascia dark brown, complete; cell with three dark-brown spots, one spot near middle (combined with submedian fascia), and two spots on apical end along crossvein; marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 61–62): Uncus wide basally, narrowed near 1/3, forming parallelsided, ventrally curved, sparsely setose, apical part; apical part longer than width of anal opening. Dorsal strut absent. Gnathos, a anteriorly directed thin band confluent with tegumen. Sockets of tergal setae not extending beyond 1/2 lateral length of tegumen. Distance between articulations of tegumen and vinculum shorter than length of valva. Valva divided, ventral part of valva broadly rounded basally, gradually narrowed, forming inwardly curved spinelike process; process acutely curved from 1/3, with planate inner surface, setose on outer surface; ventral margin upwardly curved, forming round fold beneath dorsal part, terminating near setose ridge at base of apical process; dorsal part with apical portion of costa developed distolaterally, forming sparsely setose, digitate process; basal ridge of digitate process extending ventrally fusing with basal part; basal part densely microtrichiate, developed ventrally into elongate, laterally projecting lobe; lobe with densely packed cluster of elongate, inwardly curved setae. Proximal flange absent. Juxta bandlike. Phallus and sclerite of phallus broadly curved from midlength; anellus parallelsided from wide base, broadly rounded apically, setose on apical 2/3. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Las Pailas, 800 m, P[arque] N[acional] Rincón de la Vieja, Prov[incia] Guanacaste, COSTA RICA, 21 a 30 Nov[iembre] 1992, D. Garcia, L-N-306300, 388600", "INBio: COSTA RICA: CRI000, 818642" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 2105" [yellow label].

Distribution (Map 3). *Barbaloba meleagrisellae* is known from one collecting site on the western part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet, *meleagrisellae* is derived from the Greek *Meleagris*, the genus that includes the turkey, a bird in which males have a beardlike process on the anterior part of the breast, and refers to the setose lobelike process originating from the ventral part of the valva of the male genitalia.

Barbaloba jubae **Adamski, new species**

(Figs. 3, 63–64, 318, Map 4)

Diagnosis.—*Barbaloba jubae* is similar to *B. meleagrisellae* in facies but differs from the latter by having a broader uncus; and a more densely packed cluster of tergal setae of the tegumen. *B. jubae* also has a tuft of piliform sex scales originating from an area slightly beyond base of the frenulum above a swollen bulla of the hindwing; a tuft with outwardly curved sex scales originating from the base of the anal fold of the hindwing; an apical process of ventral part of valva curved near 2/3; a mesially emarginate ventroposterior margin of the gnathos; a setose, angular plate overlying the dorsal articulation of the dorsal part of the valva; a basal ridge of the digitate process extending ventrolaterally, forming a densely setose lobe; a lobe from the middle of the dorsal part of valva, extending ventrally, bearing a densely packed cluster of spinelike setae on the apical part; a divided juxta; and a shallowly curved phallus and sclerite of phallus from 2/3 that are lacking in *B. meleagrisellae*.

Description.—Head: Vertex, frontoclypeus dark brown [pale brown on worn specimens]. Outer and inner surfaces of labial palpus dark brown or brown intermixed with pale-brown scales near apical margins of segments 1–2, terminal segment pale brown apically. Antennal scape, pecten and flagellum dark brown; first flagellomere unmodified in male. Proboscis dark brown.

Thorax: Tegula, mesonotum, and legs pale brown. Forewing (Fig. 318): Length 5.6–6.0 mm (n = 7), pale brown intermixed with brownish-gray scales. Undersurface brown. Venation (Fig. 3) with R_4 and R_5 curved to costa, M_3 and CuA_1 separate, and CuA_2 acutely curved basally. Hindwing: Pale brown, with two tufts of sex scales; one gray tuft of piliform scales originating from area slightly beyond base of frenulum above a swollen bulla, each scale extending beyond middle; bulla overlaid by imbricate scales; a second pale-brown tuft with outwardly curved scales originating from base of anal fold. Venation (Fig. 3) with crossvein of cell weak, cubitus 3-branched with CuA_1 absent and M_2+M_3 slightly longer than CuA_2.

MAP 4. Distribution of *Barbaloba jubae* (●) and *Blastobasis paludis* (▲).

Abdomen: Male genitalia (Figs. 63–64): Uncus gradually narrowed from widely rounded base, forming sparsely setose, narrowly rounded, apical lobe; lobe longer than width of anal opening. Dorsal strut absent. Gnathos, a thin band confluent with tegumen, mesially protuberant, narrowly emarginate lobe. Sockets of tergal setae not extending beyond 1/2 length of tegumen. Distance between articulations of tegumen and vinculum shorter than length of valva. Valva divided, ventral part of valva broadly rounded basally, abruptly narrowed, forming elongate spinelike process; process inwardly curved near 2/3; ventral margin setose on lateral part; margin greatly upturned, forming widened fold, extending to base of apical process; dorsal part of valva with costa developed distolaterally, forming sparsely setose digitate process; dorsal articulation overlaid by angular, setose plate; plate with serrate dorsal margin; basal ridge of digitate process extending ventrolaterally, forming densely setose lobe; lobe with deeply crenulate margin; a second larger lobe beneath, arising from middle, extending ventrally, with densely packed cluster of spinelike setae on apical 1/3. Juxta divided mesially forming two angular plates. Phallus and sclerite of phallus shallowly curved near 2/3; anellus parallelsided from a broadened base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Las Pailas, P[arque] N[acional] Rincón de la Vieja, Prov[incia] Guana[caste], COSTA RICA, 800 m, 21–25 Mar[zo] 1993, D. Garcia, L-N-306300, 388600, # 2765", "INBio: COSTA RICA: CRI001, 684323" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 2130" [yellow label].

Paratypes (6 ♂♂): 4 ♂♂, same data as for holotype except, “CRI001, 684230”, “Slide No. 2117”, “USNM 83892”; “CRI001, 684264”, “Slide No. 2122”; “CRI001, 684174”, “Slide No. 2124”; “CRI001, 749660”, “Slide No. 2141”, “USNM 83893”; 1 ♂, “21–30 Nov. 1992”; “CRI000, 818764”, “Slide No. 2110”; 1 ♂, “19–27 Ene. 1993”, “CRI001, 304004”, “Slide No. 2116”, “Wing Slide No. 7018” [4 in INBio, 2 in USNM].

Distribution (Map 4). *Barbaloba jubae* is known from one collecting site near the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet, *jubae* is derived from the Latin word for *mane*, and refers to the setose lobelike process originating from the ventral part of the valva of the male genitalia.

Blastobasis Zeller, 1855

Blastobasis is the largest genus of Blastobasinae with over 160 species described worldwide. They are distributed throughout all faunal regions of the world, except Antartica, with the majority of species from the New World, including many undescribed taxa from North America (unpublished data). Synapomorphies listed by Adamski and Brown (1989) for *Blastobasis* include: first flagellomere of male dilated, forming a subconical process with an inner surface bearing palmate sex scales; ventroposterior margin of gnathos unidentate or bidentate mesially; and inner surface of proximal flange overlaid by microtrichiate membrane. These features need reevaluation as they were based primarily on species from the New World. However, the feature of the first flagellomere of the antennal flagellum in the male appears to be a reliable synapomorphy.

Hosts of *Blastobasis* are varied and include living and decaying plant tissue and decomposing animal matter. In eastern North America and in Europe, *Blastobasis glandulella* (Riley), feeds within maturing and fallen seeds of *Quercus* spp. (Fagaceae), (Adamski and Brown, unpublished data) , and *B. yuccaecolella* Dietz feeds within decaying seed pods of *Yucca baccata* Torrey (Liliaceae), (Adamski and Pellmyr 2003). In addition, at least five species of *Blastobasis* are known to feed within seed pods of *Parkinsonia aculeata* L. (Fabaceae) in Mexico (Adamski, unpublished data), and Busck (1925) reported *Blastobasis coffeaella* feeding within beans of *Coffea arabica* L. (Rubiaceae) in Brazil. Dietz (1910) described *Blastobasis quaintancella* from a small series of moths reared from the fruits of *Malus* sp. (Rosaceae). And two species of stem-boring *Blastobasis* are reported from grasses: *B. graminea* Adamski from *Spartina alterniflora* Loisel (Poaceae) in Louisiana (Adamski 1999), and *B. repartella* Dietz from *Panicum virgatum* L. (Poaceae) in South Dakota and Illinois (Adamski et al., 2010a).

In Europe, Karsholt and Sinev (2004) recorded five species of *Blastobasis* with host associations. Of them four species were known to feed from living and decaying plant tissue, and one species was reported to feed from decaying insects, in addition to, inducing spongy galls on twigs of *Quercus* sp. In Africa, Adamski et al., (2010b) reported eight *Blastobasis* species and documented their fruit associations totaling nearly 60 plant species among 40 plant families.

In the Indo-Asian region, Meyrick (1916) reported *Blastobasis spermologa* feeding within seeds of *Camellia sinensis* (L.) Kuntze (Theaceae), and *B. ochromorpha* (Meyrick 1925) and *B. molinda* (Meyrick 1925) feeding within seeds of *Shorea robusta* Gaertner f. (Dipterocarpaceae). Meyrick (1918) also reported *Blastobasis transcripta* feeding within twigs of *Pinus longifolia* Salisb. (Pinaceae). In Australia, Turner (1947) reported *Blastobasis tanyptera* feeding within the fruits of *Eugenia paniculata* (Gaertner) Britten (Myrtaceae), and Meyrick (1902) reported a rearing of *B. sarcophaga* from dried animal skins.

Key to the Species of *Blastobasis* of Costa Rica

1. Male 2
- Female 37
2. Gnathos a narrow and bandlike (Figs. 77, 95, 111) 3
- Gnathos platelike (Figs. 65, 67, 69, 71, 73, 75, 79, 81, 83, 85, 87, 89, 91, 93, 97, 99, 101, 103, 105, 107, 109, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133. 135) 5
3. Sockets of tergal setae extending beyond midlength of tegumen (Fig. 111); sclerite of phallus apically recurrent (Fig. 112) ..... *Blastobasis custodis*
- Sockets of tergal setae not extending beyond midlength of tegumen (Figs. 77, 95); sclerite of phallus sigmoid-shaped or nearly so (Figs. 78, 96) 4

4. Sockets of tergal setae extending to midlength of tegumen (Fig. 77); anellus broadly rounded apically (Fig. 78) ..... *Blastobasis deae*
- Sockets of tergal setae not extending to midlength of tegumen (Fig. 95); anellus narrowly rounded apically (Fig. 96) ..... *Blastobasis thyone*
5. Median part of gnathos not pigmented (Figs. 109, 123, 133) 6
- Median part of gnathos pigmented (Figs. 65, 67, 69, 71, 73, 75, 79, 81, 83, 85, 87, 89, 91, 93, 97, 99, 101, 103, 105, 107, 113, 115, 117, 119, 121, 125, 127, 129, 131, 135) 8
6. Digital process of dorsal part of valva recurved apically (Fig. 123) ..... *Blastobasis phaedra*
- Digital process of dorsal part of valva not recurved apically (Figs. 109, 133) 7
7. Dorsal strut present (Fig. 133); sclerite of phallus acutely curved at 2/3 (Fig. 134) ..... *Blastobasis dicionis*
- Dorsal strut absent (Fig. 109); sclerite of phallus sigmoid-shaped (Fig. 110) ..... *Blastobasis rotullae*
8. Midwidth of pigmented part of gnathos shorter than midwidth of uncus (Figs. 67, 73, 83, 91, 93, 99, 101, 113, 115, 121, 125, 129) 9
- Midwidth of pigmented part of gnathos equal to or longer than midwidth of uncus (Figs. 65, 69, 71, 75, 79, 81, 85, 87, 89, 97, 103, 105, 107, 117, 119, 127, 131, 135) 20
9. Length of pigmented part of gnathos at least 3X longer than width (Figs. 99, 113, 212, 129) 10
- Length of pigmented part of gnathos less than 3X width (Figs. 67, 73, 83, 91, 93, 101, 115, 125) 13
10. Area beneath costa of dorsal part of valva sparsely microtrichiate (Fig. 129); sclerite of phallus acutely curved from midlength (Fig. 130) ..... *Blastobasis rotae*
- Area beneath costa of dorsal part of valva densely microtrichiate (Figs. 99, 113, 121); sclerite of phallus not acutely curved from midlength (Figs. 100, 114, 122) 11
11. Anellus broadly rounded apically (Fig. 114) ..... *Blastobasis deliciolarum*
- Anellus not broadly rounded apically (Figs. 100, 122) 12
12. Base of sclerite of phallus straight; anellus broadly notched apically (Fig. 100) ..... *Blastobasis echus*
- Base of sclerite of phallus curved; anellus narrowly notched apically (Fig. 122) ..... *Blastobasis nivis*
13. Sockets of tergal setae extending beyond midlength of tegumen (Figs. 91, 93, 101, 115) 14
- Sockets of tergal setae not extending beyond midlength of tegumen (Figs. 67, 73, 83, 125) 17
14. Base of sclerite of phallus straight; anellus broadly rounded apically (Fig. 92) ..... *Blastobasis orithyia*
- Base of sclerite of phallus curved; anellus not broadly rounded apically (Figs. 94, 102, 116) 15
15. Digitate process of valva lobelike (Fig. 115); basal width of anellus 3X width of apex (Fig. 116) ..... *Blastobasis abollae*
- Digitate process of valva not lobelike (Figs. 93, 101); basal width of anellus less than 3X of apical width (Figs. 74, 102) .. 16
16. Phallus shorter than length of valva (Figs. 93); apex of anellus rounded (Fig. 94) ..... *Blastobasis babae*
- Phallus longer than length of valva (Figs. 101); apex of anellus truncate (Fig. 102) ..... *Blastobasis litis*
17. Dorsal strut of tegumen present (Figs. 83, 125) 18
- Dorsal strut of tegumen absent (Figs. 67, 73) 19
18. Uncus 3-tiered (Fig. 125); sclerite of phallus sigmoid-shaped (Fig. 126) ..... *Blastobasis aedes*
- Uncus not 3-tiered (Fig. 83); sclerite of phallus curved from 2/3 Fig. 84) ..... *Blastobasis xiphiae*
19. Ridge of proximal flange of valva produced from base of ventral margin (Fig. 67); anellus much wider apically than basally (Fig. 68) ..... *Blastobasis lygdi*
- Ridge of proximal flange of valva produced from midlength of basal margin (Fig. 73); anellus slightly wider apically than at base (Fig. 74) ..... *Blastobasis caetrae*
20. Width of pigmented part of gnathos longer than its length (Figs. 85, 97, 105, 127) 21
- Width of pigmented part of gnathos equal to or shorter than its length (Figs. 65, 69, 71, 75, 79, 81, 87, 89, 103, 107, 117, 119, 131, 135) 24
21. Sockets of tergal setae extending beyond midlength of tegumen (Figs. 85, 105, 127) 22
- Sockets of tergal setae not extending beyond midlength of tegumen (Fig. 97) ..... *Blastobasis usurae*
22. Pigmented part of gnathos 2X wider than long (Fig. 127); anellus with a pair of recurved apical barblike processes (Fig. 128) ..... *Blastobasis tapetae*
- Pigmented part of anellus not 2X wider than long (Figs. 85, 105) 23
23. Costa of valva wider than microtrichiate region beneath (Fig. 105); apex of anellus truncate (Fig. 6) ..... *Blastobasis fax*
- Costa of valva not wider than microtrichiate region beneath (Fig. 85); apex of anellus rounded (Fig. 86) ..... *Blastobasis graminea*
24. Sockets of tergal setae extending beyond midlength of tegumen (Figs. 65, 69, 75, 81) 25
- Sockets of tergal setae not extending beyond midlength of tegumen (Figs. 71, 79, 87, 89, 103, 107, 117, 119, 131, 135) .. 28
25. Lateral margin of proximal flange of valva narrowly rounded (Fig. 69); anellus apically wider than basally (Fig. 70) ..... *Blastobasis dapis*
- Lateral margin of proximal flange of valva broadly rounded (Figs. 65, 75, 81) 26
26. Dorsal strut of tegumen present (Fig. 65); anellus slightly constricted basally (Fig. 66) ..... *Blastobasis paludis*
- Dorsal strut of tegumen absent (Figs. 75, 81); anellus not constricted basally (Figs. 76, 82) 27
27. Base of bidentate margin of gnathos protuberant (Fig. 75); base of sclerite of phallus acutely curved (Fig. 76) ..... *Blastobasis furtivus*
- Base of bidentate margin of gnathos not protuberant (Fig. 81); base of sclerite of phallus slightly curved (Fig. 82) ..... *Blastobasis iuanae*

28. Phallus acutely curved at 2/3 (Figs. 132, 136) 29
- Phallus not acutely curved at 2/3 (Figs. 72, 80, 88, 90, 104, 108, 118, 120) 30
29. Pigmented part of gnathos wider than long (Fig. 131); base of sclerite of phallus straight (Fig. 132) . . . . . *Blastobasis manto*
- Pigmented part of gnathos longer than wide (Fig. 135); base of sclerite of phallus curved (Fig. 136) . . . . . *Blastobasis beo*
30. Base of sclerite of phallus straight (Figs. 88, 90, 118) 31
- Base of sclerite of phallus curved (Figs. 72, 80, 104, 108, 120) 33
31. Anellus about 1/2 length of phallus; anellus apically narrowed (Fig. 118) . . . . . *Blastobasis lex*
- Anellus about 1/3 length of phallus; anellus narrowed apically (Figs. 88, 90) 32
32. Proximal flange of valva 2X wider apically than basally (Fig. 89) . . . . . *Blastobasis achaea*
- Proximal flange of valva only slightly wider apically than basally (Fig. 87) . . . . . *Blastobasis neniae*
33. Base of phallus bulbous (Figs. 72, 120) 34
- Base of phallus not bulbous (Figs. 80, 104, 108) 35
34. Basal part of ventral margin of proximal flange greatly cleft (Fig. 71); anellus wider apically than basally (Fig. 72) . . . . . *Blastobasis balucis*
- Basal part of ventral margin of proximal flange slightly cleft (Fig. 119); anellus narrower apically than basally (Fig. 120) . . . . . *Blastobasis vesta*
35. Uncus 4X longer than wide, parallelsided; proximal flange densely microtrichiate (Fig. 79) . . . . . *Blastobasis erae*
- Uncus less than 3X longer than wide, narrowed from base (Figs. 103, 107); proximal flange not densely microtrichiate (Figs. 103, 107) 36
36. Ventrolateral margin of proximal flange serrate (Fig. 107); anellus notched apically (Fig. 108) . . . . . *Blastobasis coffeaella*
- Ventrolateral margin of proximal flange setose (Fig. 103); anellus broadly rounded apically (Fig. 104) . . . *Blastobasis chanes*
37. Seventh tergum with a darkly pigmented median longitudinal streak (Figs. 253, 254, 256–258) 38
- Seventh tergum without a pigmented streak (Figs. 252, 255, 259, 260) 42
38. Posterior margin of seventh sternum emarginate laterally (Figs. 253–254, 256) 39
- Posterior margin of seventh sternum not emarginate laterally (Figs. 257–258) 41
39. Internal platelets within anterior 2/3 of ductus bursae (Fig. 253) . . . . . *Blastobasis caetrae*
- Internal platelets within less than anterior 1/2 of ductus bursae (Figs. 254, 256) 40
40. Internal platelets within anterior 1/3 of ductus bursae (Fig. 256) . . . . . *Blastobasis iuanae*
- Internal platelets within anterior 1/4 of ductus bursae (Fig. 254) . . . . . *Blastobasis furtivus*
41. Antrum wider than long; signum spinate (Fig. 257) . . . . . *Blastobasis graminea*
- Antrum not present; signum short, conical (Fig. 258) . . . . . *Blastobasis coffeaella*
42. Posterior margin of seventh segment mesially emarginate (Figs. 259–260) 43
- Posterior margin of seventh sternum laterally emarginate (Figs. 252, 255) 44
43. Inception of ductus seminalis slightly anterior to posterior margin of seventh sternum (Fig. 259) . . . . . *Blastobasis vesta*
- Inception of ductus seminalis midway between posterior and anterior margin of seventh sternum (Fig. 260) . . . . . *Blastobasis dicionis*
44. Antrum wider than long; signum spinate (Fig. 252) . . . . . *Blastobasis balucis*
- Antrum not present; signum short, conical (Fig. 255) . . . . . *Blastobasis deae*

Blastobasis paludis **Adamski, new species**

(Figs. 4, 65–66, 276, 319, Map 4)

Diagnosis.—*Blastobasis paludis* is similar to *B. lygdi* in facies but differs from the latter by having a wider gnathos; a more inwardly curved apical process of the ventral part of the valva; and a longer phallus. *B. paludis* also has a dorsal strut of the tegumen that is lacking in *B. lygdi.*

Description.—Head: Vertex and frontoclypeus pale brown or brownish gray. Outer surface of labial palpus pale brown intermixed with few brown scales or brownish gray intermixed with pale brownish-gray scales along apical margin of second segment; inner surface pale brown or brownish gray. Antennal scape pale brown or brownish gray, pecten pale brown, flagellum gray; first flagellomere in male dilated, inner surface of dilated part with 39 palmate sex scales (n=1), (Fig. 276). Proboscis brownish gray.

Thorax: Tegula brown on basal 1/2, pale brown or brownish gray on apical 1/2; mesonotum pale brown or brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 319): Length 5.0–6.9 mm (n = 23), pale brown intermixed with few brown and brownish-yellow scales or pale brownish gray on basal 2/5, brownish gray on apical 3/5; submedian fascia present or absent, if present fascia complete or incomplete, faint or dark; cell with three spots, one near midcell, two on apical end along crossvein; marginal spots faint or dark. Undersurface brown. Venation (Fig. 4) with M_3 and CuA_1 originating from common point along distoposterior part of cell, CuA_1 straight, CuA_2 slightly curved basally. Hindwing (Fig. 4): Translucent pale brown or translucent pale brown darkening to apex. Venation (Fig. 4) with cell closed, cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 65–66): Uncus gradually narrowed from widened base, rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen linear, fused with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos about equal to midwidth of uncus. Sockets of tergal setae extending to midlength of tegumen. Valva divided; ventral part broadened basally, gradually narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose beyond base, upturned slightly near 1/3, forming narrow fold, to near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process slightly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; flange bearing conical setae intermixed with densely packed microtrichiae, ventral margin slightly cleft basally, extending laterally, forming broadly-rounded ridge. Juxta bandlike. Vinculum semicircular. Phallus longer than valva, bulbous basally; sclerite of phallus shorter than valva, forming apical ring from a linear stem; anellus wider apically than basally, setose along margins. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, F.A. Quesada, Jun[io] 1991, L-N-323300, 375700”, “INBio: COSTA RICA: CRI000, 613375” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3057” [yellow label].

Paratypes (22 ♂♂): 2 ♂♂, same data as for holotype except, “CRI000, 613290”, “Slide No. 3133”; “CRI000, 613369”, “Slide No. 3138”, “USNM 83554”; 1 ♂, “C. Chaves, & R. Espinoza, Nov.-Dic.”, “CRI000, 321936”, “Slide No. 3049”; 1 ♂, “C. Chaves, 25 Set.-11 Oct. 1990”, “CRI000, 390268”, “Slide No. 3089”, “USNM 83555”; 1 ♂, “CRI000, 316220”, “Slide No. 3163”, “USNM 83556”; 1 ♂, “Abr. 1991”, “CRI000, 319609”, “Slide No. 3052”, “USNM 83557”; 1 ♂, “Jun.”, “CRI000, 623324”, “Slide No. 3185”; 1 ♂, “D. Garcia, Jun.-Jul.”, “CRI000, 571624”, “Slide No. 3026”; 1 ♂, “M. Araya, Jul.”, “CRI000, 359478”, “Slide No. 3108”; 1 ♂,“C. Chaves, Set.”, “CRI000, 357324”, “Slide No. 3067”, “USNM 83558”; 1 ♂, “K. Flores, 21–28 May., 1992”, “CRI000, 708495”, “Slide No. 3029”, “USNM 83559”; 1 ♂, “E. Lopéz, 21–29 May.”, “CRI000, 684411”, “Slide No. 3056”; 1 ♂, “A. Gutierrez, 21–29 May.”, “CRI000, 716025”, “Slide No. 3199”; 1 ♂, “K. Taylor”, “CRI000, 697701”, “Slide No. 3273a”; 1 ♂, “21–28 May.”, “CRI000, 708478”, “Slide No. 3076”; 1 ♂, “21–29 May., D. Garcia”, “CRI001, 290730”, “Slide No. 3113”; 1 ♂, “D. Brenes, 27 Feb.-11 Mar”, “CRI000, 695062”, “Slide No. 3503”; 3 ♂, “1100 m, 7–18 Feb. 1995, A. Prado, # 4534”, “CRI002, 139718”, “Slide No. 3371”; “CRI002, 139774”, “Slide No. 3215”; “CRI002, 139790”, “Slide No. 3218”, “USNM 83560”; 1 ♂, “11–18 Feb., E Navarro, # 4606”, “CRI002, 184505”, “Slide No. 3238”, “USNM 83561”; “Wing Slide No. 7044”, “USNM 83561”; 1 ♂, “17–18 Feb., E. Alfaro, # 4584”, “CRI002, 334672”, “Slide No. 3241”, “USNM 83562” [13 in INBio, 9 in USNM].

Distribution (Map 4). *Blastobasis paludis* is known from two collecting sites along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *paludis* is derived from the Latin *palus*, meaning swamp or marsh.

Blastobasis lygdi **Adamski, new species**

(Figs. 5, 67–68, 277, 320, Map 5)

Diagnosis.—*Blastobasis lygdi* is similar to *B. paludis* in facies but differs from the latter by having a narrower gnathos; a less inwardly curved apical process of the ventral part of the valva; and a shorter phallus.

Description.—Head: Vertex pale gray, pale brown, or dark brown; frontoclypeus pale brown. Outer and inner surfaces of labial palpus brown intermixed with pale-brown scales along apical margin of second segment or second segment dark brown intermixed with pale-brown scales along apical margin, terminal segment paler. Antennal scape and pecten pale brown, flagellum brownish gray; first flagellomere in male dilated, inner surface of dilated part with 14 palmate sex scales (n=1), (Fig. 277). Proboscis pale brown.

Thorax: Tegula with basal 1/2 brown or dark brown, apical 1/2 pale brown; mesonotum dark brown or pale brown, or basal 1/2 dark brown, apical 1/2 pale brown. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and on apical margins of all segments and tarsomeres. Forewing (Fig. 320): Length 4.2–6.1 mm (n = 30), pale brown intermixed with brown and brownish-yellow scales; submedian fascia present or absent, if present fascia complete or incomplete, faint or dark; cell with three spots, one near middle, two near

apical end along crossvein. Undersurface brown. Venation (Fig. 5) with M_3 slightly curved and CuA_1 and CuA_2 near parallel. Hindwing: Translucent brown or translucent brown gradually darkening to apex. Venation (Fig. 5) with cell closed anteriorly, open posteriorly; cubitus 4-branched with all veins arising submarginally from cubitus.

MAP 5. Distribution of *Blastobasis lygdi* (●) and *B. dapis* (▲).

Abdomen: Male genitalia (Figs. 67–68): Uncus gradually narrowed from base, slightly downcurved, sparsely setose; apically rounded; about equal in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos, a narrow band, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented part of gnathos slightly narrower than midwidth of uncus. Sockets of tergal setae nearly extending to 1/2 length of tegumen. Valva divided; ventral part broadened basally, gradually narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/2, slightly upturned from middle, forming narrow fold to near base of slightly widened setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; flange extending ventrolaterally, forming semicircular ridge bearing conical setae intermixed with densely packed

microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; sclerite of phallus abruptly curved at 2/3; anellus wider apically than at base, setose along margins. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, F.A. Quesada, Jun[io] 1991, L-N-323300, 375700", "INBio: COSTA RICA: CRI000, 613311" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3031" [yellow label]. Paratypes (34 ♂♂): 1 ♂, same data as for holotype except, "CRI000, 613292", "Slide No. 3012", "USNM 83563"; 3 ♂♂, "C. Chaves", "CRI000, 623544", "Slide No. 3180", "USNM 83564"; "CRI000, 623327", "Slide No. 3204", "CRI000, 585968", "Slide No. 3174"; 2 ♂♂, "D. Garcia, Jun.-Jul.", "CRI000, 571732", "Slide No. 3151"; "CRI000, 571743", "Slide No. 3753"; 6 ♂♂, "C. Chaves, 25 Set.-11 Oct.", "CRI000, 390330", "Slide No. 3131"; "CRI000, 390226", "Slide No. 3142"; "CRI000, 390027", "Slide No. 3143", "USNM 83565"; "CRI000, 390035", "Slide No. 3144", "USNM 83566"; "CRI390183", "Slide No. 3147"; "CRI000, 577711", "Slide No. 3159"; 4 ♂♂, "23 Oct.-9 Nov.", "CRI000, 576444", "Slide No. 3039", "USNM 83567"; "CRI000, 316090", "Slide No. 3009", "USNM 83568"; "CRI000, 576503", "Slide No. 3020"; "CRI000, 315811", "Slide No. 3062"; 1 ♂, "C. Chaves & R. Espinoza, Nov.-Dic.", "CRI000, 321462", "Slide No. 3073", "USNM 83574a"; 1 ♂, "II Curso Parataxon., Jun.", "CRI000, 609269", "Slide No. 3034", "USNM 83569"; 3 ♂♂, "C. Chaves, Abr. 1991", "CRI000, 319766", "Slide No. 3101", "USNM 83570"; "CRI000, 434654", "Slide No. 3053"; "CRI000, 434691", "Slide No. 3754"; 1 ♂, "8–12 Oct. 1991", "CRI000, 350242", "Slide No. 3750"; 1 ♂, "A. Guadamuz, Jun.-Ago.", "CRI000, 338516", "Slide No. 3078", "Wing Slide No. 7054"; 1 ♂, "K. Flores, 21–28 May. 1992", "CRI000, 708489", "Slide No. 3027"; 1 ♂, "C. Cano", "CRI000, 448373", "Slide No. 3021"; 1 ♂, "M. Ortiz", "CRI000, 420071", "Slide No. 3127"; 4 ♂♂, "III Curso Parataxon., May. 1992", "CRI000, 416882", "Slide No. 3749"; "CRI000, 416912", "Slide No. 3064", "USNM 83571"; "CRI000, 417059", "Slide No. 3146"; "CRI000, 416909", "Slide No. 3107", "USNM 83572"; 2 ♂♂, "1100 m, 7–18 Feb. 1995, M. Madrigal, # 4709", "CRI002, 187165", "Slide No. 3227"; "CRI002, 187111", "Slide No. 3229"; 1 ♂, "San Luis, Monteverde, A.C.Arenal, Prov. Punt., COSTA RICA, 1000–1350 m, Jul. 1994, Z. Fuentes, L-N-250850, 449250, # 3074", "CRI002, 013946", "Slide No. 3860"; 1 ♂, "1040 m, R.B. Monteverde, Mar. 1993", "CRI001, 195887", "Slide No. 3868", "USNM 83573" [22 in INBio, 12 in USNM].

Distribution (Map 5). *Blastobasis lygdi* is known from two collecting sites; one in the western most part of the Cordillera de Guanacaste in northwestern Costa Rica and one along the western part of the Cordillera de Tilarán in the west-central part of the country.

Etymology. The specific epithet *lygdi* is derived from the Latin *lygdos*, meaning white marble.

Blastobasis dapis **Adamski, new species**

(Figs. 6, 69–70, 278, 321, Map 5)

Diagnosis.—*Blastobasis dapis* is similar to *B. balucis* in facies but differs from the latter by having a wider gnathos; a narrower anal opening; a shorter apical process of the ventral part of the valva; a more protuberant ventral margin of the proximal flange of the dorsal part of the valva; and a shorter anellus.

Description.—Head: Vertex gray or pale gray; frontoclypeus pale brown. Outer and inner surfaces of labial palpus brownish gray intermixed with pale brownish-gray scales along apical margin of second segment, or pale brown intermixed with few brown scales, or pale brown. Antennal scape and pecten pale brown, flagellum brownish gray. Proboscis pale gray.

Thorax: Tegula with basal 1/2 brownish gray, apical 1/2 pale brownish gray, or agouti patterned, with brownish gray on basal and apical 1/3s, and pale brownish gray middle 1/3; mesonotum with basal 1/5 brownish gray, apical 4/5 pale brownish gray, or agouti patterned. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 321): Length 4.5–7.2 mm (n = 294), pale brown intermixed with few brown and brownish-yellow scales; submedian fascia complete or incomplete, faint or dark; cell with three spots, one near middle, one near apical end along crossvein; marginal spots faint or dark. Undersurface brown. Venation (Fig. 6) with CuA_1 straight, CuA_1 and CuA_2 divergent from base. Hindwing: Translucent pale brown or translucent pale brown gradually darkening to apex. Venation (Fig. 6) with crossvein of cell weak; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 69–70): Uncus gradually narrowed from base, broadly rounded apically,

slightly downcurved, sparsely setose, longer than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos greater than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadened basally, gradually narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/3, slightly upturned, forming narrow fold, extending to near base of slightly raised setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; base of proximal flange extending laterally, forming protuberant ridge; ventrolateral margin of membrane above proximal flange bearing few hairlike setae intermixed with densely packed microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus longer than valva; sclerite of phallus about equal to length of valva, slightly curved subapically and basally; anellus apically wider than at base, setose along margin. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000−1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, C. Chaves & R. Espinosa, Nov[iembre]-Dic[iembre] 1990, L-N-323300, 375700", "INBio: COSTA RICA: CRI000, 321399" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3066" [yellow label].

Paratypes (293 ♂♂): 2 ♂♂, "II Curso Parataxon., Jun. 1990", "CRI000, 661536", "Slide No. 3134"; "CRI000, 661468", "Slide No. 3284", "USNM 83592"; 9 ♂♂, "C. Chaves, 25 Set.-11 Oct. 1990", "CRI000, 390310", "Slide No. 3261"; "CRI000, 390319", "Slide No. 3262", "USNM 83593"; "CRI000, 390228", "Slide No. 3083", "USNM 83594"; "CRI000, 390099", "Slide No. 3084", "USNM 83595"; "CRI000, 390395", "Slide No. 3123"; "CRI000, 390082", "Slide No. 3164"; "CRI000, 390109", "Slide N. 3145"; "CRI000, 390169", "Slide No. 3140"; "CRI000, 390233", "Slide No. 3141"; 2 ♂♂, "23 Oct.-9 Nov. 1990", "CRI000, 316250", "Slide No. 3160"; "CRI000, 576484", "Slide No. 3038"; 8 ♂♂, "Est. Cacao, 1000–1400 m, Lado SO Volcan Cacao, P.N.G., Prov. Guan., C. Chaves & R. Espinoza, Nov.-Dic. 1990", "CRI000, 321380", "Slide No. 3166", "USNM 83596"; "CRI000, 321959", "Slide No. 3050"; "CRI000, 321334", "Slide No. 3063"; "CRI000, 321512", "Slide No. 3105"; "CRI000, 321466", "Slide No. 3100"; "CRI000, 321622", "Slide No. 3000", "USNM 83597"; "CRI000, 321415", "Slide No. 3070", "USNM 83598"; "CRI000, 321342", "Slide No. 3074"; 1 ♂, "Dic.", "CRI000, 655956", "Slide No. 3046", "USNM 83599"; 3 ♂♂, "Mar. 1991", "CRI000, 317481" "Slide No. 3161"; "CRI000, 645673", "Slide No. 3193"; "CRI000, 645675", "Slide No. 3194"; 13 ♂♂, "Abr.", "CRI000, 319523", "Slide No. 3072"; "CRI000, 319590", "Slide No. 3061"; "CRI000, 319725", "Slide No. 3016", "Wing Slide No. 7025"; "CRI000, 319492", "Slide No. 3059"; "CRI000, 328824", "Slide No. 3155"; "CRI000, 434757", "Slide No. 3156"; "CRI000, 319842", "Slide No. 3158", "USNM 83600"; "CRI000, 319484", "Slide No. 3100"; "CRI000, 319548", "Slide No. 3091"; "CRI000, 434703", "Slide No. 3277"; "CRI000, 434682", "Slide No. 3275"; "CRI000, 319490", "Slide No. 3269"; "CRI000, 319777", "Slide No. 3264"; 4 ♂♂, "Jun.", "CRI000, 586048", "Slide No. 3168", "USNM 83601"; "CRI000, 623351", "Slide No. 3183", "USNM 83602"; "CRI000, 623326", "Slide No. 3184"; "CRI000, 586075", "Slide No. 3173"; 2 ♂♂, "F.A. Quesada, Jun.", "CRI000, 613370", "Slide No. 3058"; "CRI000, 613326", "Slide No. 3280"; 3 ♂♂, "D. Garcia, Jun.-Jul.", "CRI000, 571655", "Slide No. 3025"; "CRI000, 571683", "Slide No. 3028"; "CRI000, 571630", "Slide No. 3035"; 2 ♂♂, "A. Guadamuz, Jun.-Ago.", "CRI000, 338520", "Slide No. 3097"; "CRI000, 338521", "Slide No. 3081"; 1 ♂, "C. Chaves, Ago.", "CRI000, 633159", "Slide No. 3190", "USNM 83603"; 9 ♂♂, "Set.", "CRI000, 357270", "Slide No. 3250", "USNM 83604"; "CRI000, 357226", "Slide No. 3252"; "CRI000, 357218", "Slide No. 3253"; "CRI000, 356674", "Slide No. 3077"; "CRI000, 356704", "Slide No. 3085"; "CRI000, 357332", "Slide No. 3087", "USNM 83605"; "CRI000, 356657", "Slide No. 3124"; "CRI000, 356708", "Slide No. 3125"; "CRI000, 356696", "Slide No. 3132"; 5 ♂♂, "8–12 Oct.", "CRI000, 350285", "Slide No. 3093"; "CRI000, 350220", "Slide No. 3079", "USNM 83606"; "CRI000, 350317", "Slide No. 3254"; "CRI000, 350284", "Slide No. 3258", "USNM 83607"; "CRI000, 350163", "Slide No. 3103"; 3 ♂♂,"D. Garcia, 11 Set.-11 Oct.", "CRI000, 349657", "Slide No. 3603", "USNM 83608"; "CRI000, 349590", "Slide No. 3128"; "CRI000, 349615", "Slide No. 3129", "USNM 83609"; 6 ♂♂, "III Curso Parataxon., May 1992", "CRI000, 417084", "Slide No. 3265"; CRI000, 417036", "Slide No. 3259"; "CRI000, 417098", "Slide No. 3256"; "CRI000, 417046", "Slide No. 3092"; "CRI000, 416832", "Slide No. 3095"; "CRI000, 416958", "Slide No. 3098", "USNM 83610"; 3 ♂♂, "D. Brenes, 21–29, May.", "CRI000, 488050", "Slide No. 3189"; "CRI000, 487976", "Slide No. 3002"; "CRI000, 488031", "Slide No. 3188", "USNM 83611"; 1 ♂, "F. Araya, 21–29 May.", "CRI000, 426073", "Slide No. 3022";

1 ♂, “C. Cano, 21–29 May.”, “CRI000, 448380”, “Slide No. 3023”; 1 ♂, “M. Ortiz”, “CRI000, 420112”, “Slide No. 3126”; 1 ♂, “A. Gutierrez”, “CRI000, 416763”, “Slide No. 3004”; 1 ♂, “G. Rodriguez”, “CRI000, 708485”, “Slide No. 3075”; 1 ♂, “21–28 May.”, “CRI000, 684310”, “Slide No. 3276”; 1 ♂, “A. Martin”, “CRI000, 684381”, “Slide No. 3051”; 1 ♂, “CRI000, 413299”, “Slide No. 3047”; 5 ♂♂, “D. Garcia”, “CRI001, 290740”, “Slide No. 3115”, “USNM 83612”; “CRI001, 290711”, “Slide No. 3116”; “CRI001, 290696”, “Slide No. 3118”; “CRI001, 290688”, “Slide No. 3120”; “CRI001, 290724”, “Slide No. 3114”; 2 ♂♂, “Estación Cacao, SO de Volcan Cacao, Prov. Guan., COSTA RICA, 1000 m, 21–29 May. 1992, K. Taylor, L-N-323300, 375700, # 1257”, “CRI001, 641706”, “Slide No. 3122”; “CRI001, 641705”, “Slide No. 3283”, “USNM 83577”; 2 ♂♂, “1100–1650 m, 8–18 Feb. 1995, R. Villalobos, L-N-323100, 375800, # 4443”, “CRI002, 183619”, “Slide No. 3244”; “CRI002, 183632”, “Slide No. 3245”, “USNM 83578”; 2 ♂♂, “1100 m, 8–18 Feb. 1995, F. Alvarado, # 4452”, “CRI002, 195794”, “Slide No. 3221”, “USNM 83581”; “CRI002, 195778”, “Slide No. 3216”, “USNM 83582”; 8 ♂♂, “1100 m, 7–18 Feb. 1995, # 4534”, “CRI002, 139738”, “Slide No. 3468”; “CRI002, 139725”, “Slide No. 3396”; “CRI002, 139754”, “Slide No. 3370”; “CRI002, 139759”, “Slide No. 3220”; “CRI002, 139757”, “Slide No. 3214”; “CRI002, 139728”, “Slide No. 3230”; “CRI002, 139767”, “Slide No. 3235”, “USNM 83579”; “CRI002, 139777”, “Slide No. 3239”, “USNM 83580”; 3 ♂♂, “11–18 Feb. 1995, E. Navarro, # 4606”, “CRI002, 184489”, “Slide No. 3400”; “CRI002, 184458”, “Slide No. 3399”; “CRI002, 184480”, “Slide No. 3240”; 5 ♂♂, “8–18 Feb. 1995, M. Moraga, # 4623”, “CRI002, 185208”, “Slide No. 3247”; “CRI002, 185229”, “Slide No. 3394”; “CRI002, 185250”, “Slide No. 3395”; “CRI002, 185207”, “Slide No. 3373”; “CRI002, 185216”, “Slide No. 3206”; 5 ♂♂, “8–18, Feb. 1995, L. Angulo, L-N-323700, 376700, # 4673”, “CRI002, 185617”, “Slide No. 3013”, “USNM 83583”; “CRI002, 185595”, “Slide No. 3223”, “USNM 83584”; “CRI002, 185616”, “Slide No. 3178”, “USNM 83584”; “CRI002, 185601”, “Slide No. 3177”, “USNM 83585”; “CRI002, 185622”, “Slide No. 3205”; 5 ♂♂, “CRI002, 187115”, “Slide No. 3231”; “CRI002, 187166”, “Slide No. 3226”; “CRI002, 187129”, “Slide No. 3228”; “CRI002, 187134”, “Slide No. 3219”, “USNM 83586”; “CRI002, 187120”, “Slide No. 3211”; 3 ♂♂, “11–18 Feb. 1995, B. Gamboa, # 4737”, “CRI002, 187634”, “Slide No. 3207”; “CRI002, 187635”, “Slide No. 3212”; “CRI002, 187624”, “Slide No. 3213”; 1 ♂, “7–18 Feb. 1995, A. Azofeifa, # 5283”, “CRI002, 205175”, “Slide No. 3249”, “USNM 83589”; 4 ♂♂, “2 km SW de Cerro Cacao, 1100–1200 m, 11–17 Feb. 1995, M.A. Camacho, # 5356”, “CRI002, 386658”, “Slide N. 3041”; “CRI002, 386647”, “Slide No. 3042”; “CRI002, 386668”, “Slide No. 3043”; “CRI002, 386655”, “Slide No. 3044”, “USNM 83588”; 2 ♂♂, “800–1400 m, 7–17 Feb. 1995, M. Lobo, # 5320”, “CRI002, 235041”, “Slide No. 3217”; “CRI002, 235038”, “Slide No. 3246”; 3 ♂♂, “1000–1200 m, Feb. 1995, E. Phillips, # 5448”, “CRI002, 403963”, “Slide No. 3243”, “USNM 83590”; “CRI002, 212773”, “Slide No. 3234”, “USNM 83591”; “CRI002, 212771”, “Slide No. 3225”; 3 ♂♂, “Fca. Cafrosa, Est. Las Mellizas, P.N. Amistad, 1300 m, Prov. Punt., COSTA RICA, M. Ramirez & G. Mora, Set. 1990, L-S-316100, 596100”, “CRI000, 666152”, “Slide No. 3711”, “USNM 83615”; “CRI000, 666194”, “Slide No. 3714”; “CRI000, 666147”, “Slide No. 3709”, “USNM 83616”; 11 ♂♂, “Oct.”, “CRI000, 575491”, “Slide No. 3689”, “USNM 83617”; “CRI000, 575336”, “Slide No. 3690”; “CRI000, 575324”, “Slide No. 3691”; “CRI000, 068063”, “Slide No. 3692”; “CRI000, 575334”, “Slide No. 3693”; “CRI000, 182646”, “Slide No. 3613”; “CRI000, 496391”, “Slide No. 3611”; “CRI000, 575340”, “Slide No. 3635”; “CRI000, 575335”, “Slide No. 3646”; “CRI000, 496491”, “Slide No. 3629”; “CRI000, 496410”, “Slide No. 3680”; 11 ♂♂, “Nov.”, “CRI000, 636626”, “Slide No. 3675”; “CRI000, 636658”, “Slide No. 3725”; “CRI000, 521738”, “Slide No. 3634”, “USNM 83618”; “CRI000, 636559”, “Slide No. 3608”, “USNM 83619”; “CRI000, 636691”, “Slide No. 3676”; “CRI000, 636617”, “Slide No. 3672”, “USNM 83620”; “CRI000, 636703”, “Slide No. 3671”; “CRI000, 300532”, “Slide No. 3677”; “CRI000, 521707”, “Slide No. 3694”; “CRI000, 521905”, “Slide No. 3700”, “USNM 83621”; “CRI000, 521887”, “Slide No. 3701”; 3 ♂♂, “M.M. Chavarria & G. Mora, Ene., 1991”, “CRI000, 539485”, “Slide No. 3742”; “CRI000, 380661”, “Slide No. 3617”; “CRI000, 380521”, “Slide No. 3633”, “USNM 83622”; 13 ♂♂, “M. Ramirez, Mar.”, “CRI000, 679582”, “Slide No. 3728”; “CRI000, 679646”, “Slide No. 3729”; “CRI000, 679664”, “Slide No. 3730”; “CRI000, 679651”, “Slide No. 3731”; “CRI000, 679624”, “Slide No. 3732”, “USNM 83623”; “CRI000, 679675”, “Slide No. 3733”, “USNM 83624”; “CRI000, 679601”, “Slide No. 3726”, “USNM 83625”; “CRI000, 301669”, “Slide No. 3674”; “CRI000, 301688”, “Slide No. 3652”, “USNM 83626”; “CRI000, 301660”, “Slide No. 3651”; “CRI000, 301727”, “Slide No. 3649”; “CRI000, 301548”, “Slide No. 3463”; “CRI000, 679594”, “Slide No. 3727”; 3 ♂♂, “G. Mora”, “CRI000, 461749”, “Slide No. 3734”; “CRI000, 461753”, “Slide No. 3653”; “CRI000, 461752”, “Slide No. 3654”; 1 ♂, “M. Ramirez”, “CRI000, 301676”, “Slide No. 3695”; 13 ♂♂, “Abr.”, “CRI000, 474650”, “Slide No. 3648”; “CRI000, 474757”, “Slide No. 3659”, “USNM 83627”; “CRI000, 474692”, “Slide No. 3619”; “CRI000, 475090”, “Slide No. 3610”; “CRI000,

475032", "Slide No. 3620"; "CRI000, 474743", "Slide No. 3622"; "CRI000, 474777", "Slide No. 3623"; "CRI000, 475095", "Slide No. 3660", "USNM 83628"; "CRI000, 475030", "Slide No. 3628"; "CRI000, 474997", "Slide No. 3661"; "CRI000, 474963", "Slide No. 3686"; "CRI000, 474989", "Slide No. 3685"; "CRI000, 474822", "Slide No. 3684"; 3 ♂♂, "May.", "CRI000, 355438", "Slide No. 3614"; "CRI000, 355388", "Slide No. 3707"; "CRI000, 355417", "Slide No. 3702"; 6 ♂♂, "G. Mora, May.", "CRI000, 319953", "Slide No. 3721", "USNM 83629"; "CRI000, 320107", "Slide No. 3722"; "CRI000, 319901", "Slide No. 3715", "USNM 83630"; "CRI000, 319906", "Slide No. 3716"; "CRI000, 319926", "Slide No. 3718"; "CRI000, 319904", "Slide No. 3719"; 6 ♂♂, "Jun.", "CRI000, 663675", "Slide No. 3647"; "CRI000, 355352", "Slide No. 3679"; "CRI000, 456891", "Slide No. 3673"; "CRI000, 456872", "Slide No. 3663", "USNM 83631"; "CRI000, 355214", "Slide No. 3665", "USNM 83632"; "CRI000, 355250", "Slide No. 3666", "USNM 83633"; 2 ♂♂, "San Luis, 1040 m, R.B. Monteverde, Prov. Punt., COSTA RICA, Jul. 1992, Z. Fuentes, L-N-250850, 449250", "CRI000, 729569", "Slide No. 3845"; "CRI000, 729524", "Slide No. 3846"; 4 ♂♂, "Ene. 1993, Z. Fuentes", "CRI001, 195885", "Slide No. 3867"; "CRI001, 367671", "Slide No. 3951"; "CRI001, 195879", "Slide No. 3866", "USNM 83634"; "CRI001, 367679", "Slide No. 3843"; 4 ♂♂, "1000–1350 m, Mar. 1994, Z. Fuentes, # 2771", "CRI001, 756715", "Slide No. 3900"; "CRI001, 756707", "Slide No. 3901"; "CRI001, 756719", "Slide No. 3903", "USNM 83635"; "CRI001, 756713", "Slide No. 3903"; 1 ♂, "685 m, Abr. 1994, G. Ridriguez, # 2826", "CRI001, 787132", "Slide No. 3587", "USNM 83636"; 6 ♂♂, "1000–1350 m, Abr. 1994, Z. Fuentes, # 2845", "CRI001, 796736", "Slide No. 3908", "USNM 83637"; "CRI001, 796755", "Slide No. 3904", "USNM 83638"; "CRI001, 796711", "Slide No. 3905"; "CRI001, 796753", "Slide No. 3907", "USNM 83639"; "CRI001, 796751", "Slide No. 3909"; "CRI001, 796707", "Slide No. 3910", "USNM 83640"; 7 ♂♂, "Jul.", "CRI002, 025747", "Slide No. 3924"; "CRI002, 025695", "Slide No. 3862"; "CRI002, 025712", "Slide No. 3863"; "CRI002, 013943", "Slide No. 3847"; "CRI002, 013880", "Slide No. 3848"; "CRI002, 013930", "Slide No. 3849", "USNM 83641"; "CRI002, 025716", "Slide No. 3865"; 8 ♂♂, "Feb. 1995, # 4393", "CRI002, 165584", "Slide No. 3839", "USNM 83642"; "CRI002, 165583", "Slide No. 3840"; "CRI002, 165600", "Slide No. 3841", "USNM 83643"; "CRI002, 165585", "Slide No. 3842", "USNM 83644"; CRI002, 165581", "Slide No. 3850"; "CRI002, 165582", "Slide No. 3852"; "CRI002, 165578", "Slide No. 3853"; "CRI002, 165540", "Slide No. 3855", "USNM 83645"; 2 ♂♂, "Dic. 1994, de luz, Z. Fuentes, # 3380", "CRI002, 119302", "Slide No. 3854"; "CRI002, 119353", "Slide No. 3856", "USNM 83646"; 1 ♂, "Ago., # 3168", "CRI001, 990958", "Slide No. 3864"; 1 ♂, "20 Mar.-14 Apr. 1995, M. Segura, # 4410", "CRI002, 191557", "Slide No. 3858", "USNM 83647"; 1 ♂, "Est. Pitilla, 700 m, 9 km S Santa Cecilia, Prov. Guan., COSTA RICA, Nov. 1989, C. Moraga & P. Rios, L-N-330200, 380200", "CRI000, 141489", "Slide No. 3580"; 2 ♂♂, "C. Moraga, 10 Set.-22 Oct. 1990", "CRI000, 183543", "Slide No. 3545"; "CRI000, 579892", "Slide No. 3541"; "; 1 ♂, "C. Moraga & P. Rios, Nov. 1990", "CRI000, 313588", "Slide No. 3533"; 1 ♂, "3–18 Oct. 1991", "CRI000, 356297", "Slide No. 3544", "USNM 83648"; 1 ♂, "23–28 Ene., E. Phillips", "CRI000, 812613", "Slide No. 3531", "USNM 83649"; 2 ♂♂, "1–22 Jul. 1992, C. Cano, L-N-306300, 388600", "CRI000, 719013", "Slide No. 3337"; "CRI000, 718976", "Slide No. 3338"; 4 ♂♂, "D. Garcia", "CRI000, 689992", "Slide No. 3353"; "CRI000, 689930", "Slide No. 3356"; "CRI000, 689925", "Slide No. 9357"; "CRI000, 689997", "Slide No. 3350"; "27 Jul.-15 Ago.", "CRI000, 825802", "Slide No. 3402"; 1 ♂, "23 Set.-12 Oct.", "CRI000, 863331", "Slide No. 3369"; 5 ♂♂, "24 Oct.-12 Nov.", "CRI000, 946672", "Slide No. 3363"; "CRI000, 946580", "Slide No. 3362"; "CRI000, 946668", "Slide No. 3364"; "CRI000, 946500", "Slide No. 3365"; "CRI000, 946677", "Slide No. 3372"; 1 ♂, "21–30 Nov.", "CRI000, 818502", "Slide No. 3375"; 6 ♂♂, "Est. Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guan., COSTA RICA, 23 Oct.-12 Nov. 1992, C. Cano, L-N-306300, 388600", "CRI000, 920567", "Slide No. 3288"; "CRI000, 920548", "Slide No. 3287"; "CRI000, 920547", "Slide No. 3289"; "CRI000, 920454", "Slide No. 3290", "USNM 83613"; "CRI000, 920406", "Slide No. 3322"; "CRI000, 920412", "Slide No. 3323"; 2 ♂♂, "23 Set.-12 Oct., D. Garcia", "CRI000, 863274", "Slide No. 3295"; "CRI000, 863270", "Slide No. 3324"; 1 ♂, "24 Oct.-12 Nov., D. Garcia", "CRI000, 946633", "Slide No. 3300"; 1 ♂, "1–22 Jul., C. Cano", "CRI000, 718988", "Slide No. 3327", "USNM 83614"; 1 ♂, "24 Nov.-26 Ene, 1993, J. Sihezar & G. Rodriguez", "CRI001, 211951", "Slide No. 3428"; 1 ♂, "9–25 Feb., D. Garcia", "CRI001, 215004", "Slide No. 3417" "USNM 83650"; 1 ♂, "21–25 Mar., # 2765", "CRI001, 684154", "Slide No. 3418"; 1 ♂, "19 Jun.-1 Jul., # 2189", "CRI001, 967858", "Slide No. 3368"; 1 ♂, "14–29 Set, # 2353", "CRI001, 616612", "Slide No. 3374", "USNM 83651"; 1 ♂, "6–19 Set., P. Rios, # 2345", "CRI001, 613409", "Slide No. 3555"; 1 ♂, "700 m, 23–26 Jun., Taller Microlepidoptera, # 2183", "CRI001, 836093", "Slide No. 3578", "USNM 83652"; 1 ♂, "10–13 Mar. 1994, D. Garcia, # 2767", "CRI001, 738453", "Slide No. 3304"; 1 ♂, "800 m, 7–23 Ene. 1994, K.E. Taylor, # 2567", "CRI001, 831278", "Slide No. 3320"; 5

♂♂, “2 km N Colonia Blanca, 800 m, P.N. Rincón de la Vieja, Prov. Alajuela, COSTA RICA, 13–28 Jun. 1992, III Curso Parataxon., L-N-308800, 397800”, “CRI000, 703411”, “Slide No. 3982”; “CRI000, 703873”, “Slide No. 3985”; “CRI000, 703871”, “Slide No. 3986”; “CRI000, 703869”, “Slide No. 3987”, “USNM 83653”; “CRI000, 703865”; “Slide No. 3988”; 3 ♂♂, “Est. Biol. Las Alturas, 1500 m, Coto Brus, Prov. Punt., COSTA RICA, M. Ramirez, Set. 1991, L-S-322500, 591300”, “CRI000, 491709”, “Slide No. 4025”, “USNM 83654”; “CRI000, 491789”, “Slide No. 4026”, “USNM 83655”; “CRI000, 523423”, “Slide No. 3916”; 1 ♂,“F[in]ca San gabriel, 2 km SW Dos Rios, 600 m, Prov. Alajuela, COSTA RICA, I Curso Microlepidoptera, Jul. 1990, L-N-318800, 383500”, “CRI000, 475382”, “Slide No. 3980”; 1 ♂, “Est. La Carsona, 1520 m, Res. Biol. Monteverde, Prov. Punt., COSTA RICA, Ene. 1993, N. Obando, L-N-253250, 449700”, “CRI001, 369120”, “Slide No. 3783”, “USNM 83656”; 1 ♂, “Est. Maritza, 600 m, lado O Volcan Orosi, Prov. Guanacaste, COSTA RICA, K. Taylor, 28 Feb.-10 Mar. 1992, L-N-326900, 373000”, “CRI000, 702374”, “Slide No. 3509” [213 in INBio, 80 in USNM].

Distribution (Map 5). *Blastobasis dapis* is known from several collecting sites along the Cordillera de Guanacaste and the Cordillera de Tilarán in western and west-central Costa Rica, and two collecting sites along the eastern most part of the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *dapis* is derived from the Latin *dap*, meaning sacrifice.

Blastobasis balucis Adamski, new species

(Figs. 7, 71–72, 252, 279, 322, Map 6)

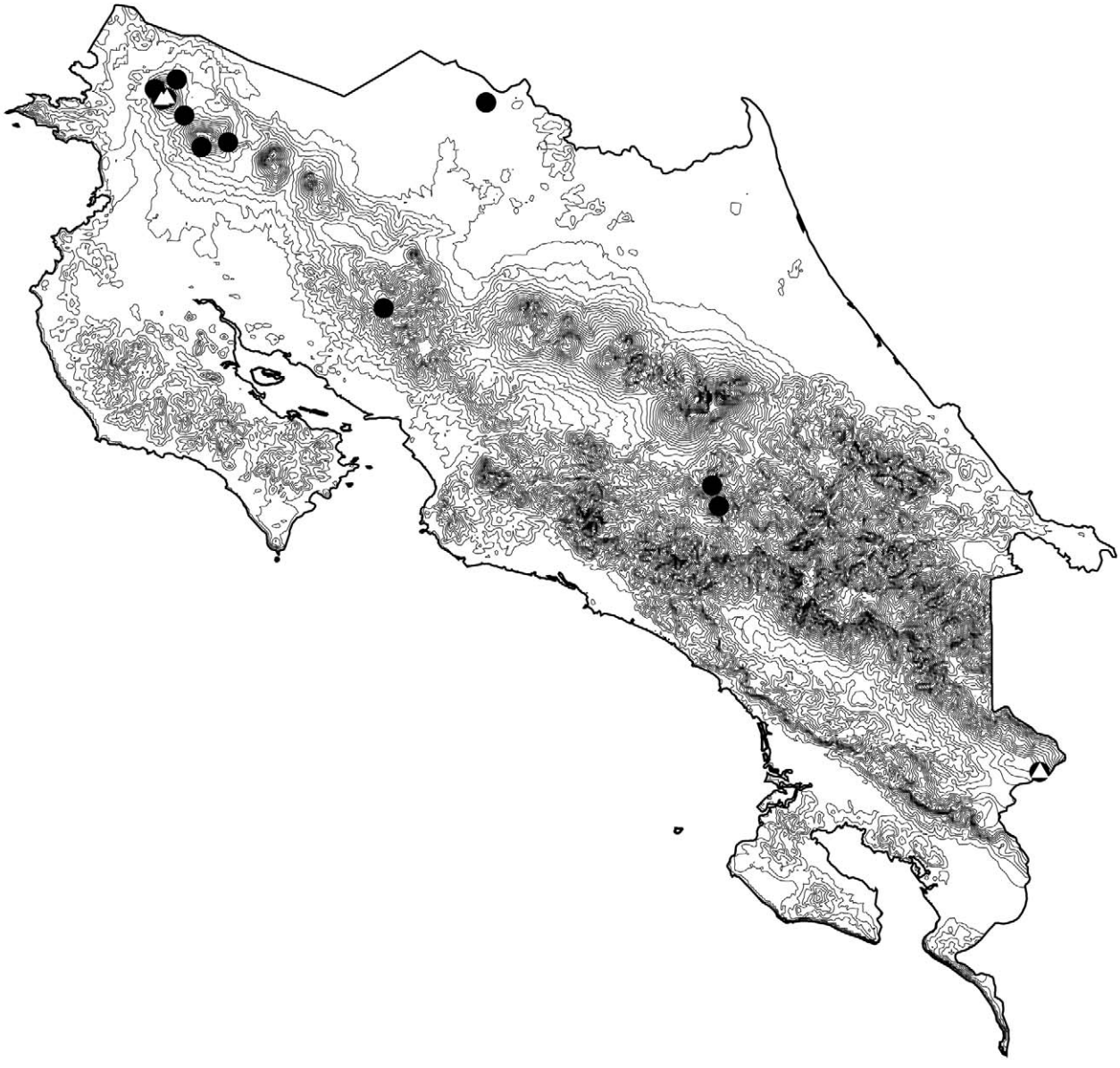
Diagnosis.—*Blastobasis balucis* is similar to *B. dapis* in facies but differs from the latter by having a narrower gnathos; a wider anal opening; a longer apical process of the ventral part of the valva; a less protuberant ventral margin of the proximal flange of the dorsal part of the valva; and a longer anellus.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer and inner surfaces of labial palpus brownish gray intermixed with brownish-gray scales tipped with pale brownish-gray and pale brownish-gray scales along apical margins of segments 1–2. Antennal scape pale brownish gray intermixed with brownish-gray scales, pecten brownish gray, flagellum grayish brown gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 52 palmate sex scales (n=1), (Fig. 279). Proboscis pale brownish gray.

Thorax: Tegula with brownish-gray scales tipped with pale brownish gray; mesonotum with basal 1/4 brownish gray, apical 3/4 with scales brownish gray tipped with pale brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 322): Length 4.8–8.9 mm (n = 220), brownish gray intermixed with brownish-gray scales tipped with pale brownish gray and pale brownish-gray scales; basal 1/3 pale brownish gray except, costa brownish gray; or base dark gradually brightening to 1/3; submedian fascia complete or incomplete; apical 2/3 pale brownish gray or dark at 1/3, brightening to apex; cell with three spots, one near middle, two on apical end along crossvein; marginal spots large and coalescent or small and separate. Undersurface brown. Venation (Fig. 7) with M_3 slightly curved; cubital veins divergent from bases with CuA_1 straight and CuA_2 slightly curved. Hindwing: Translucent pale brown. Venation (Fig. 7) with crossvein of cell weak, cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 71–72): Uncus gradually narrowed from base, slightly downcurved, sparsely setose, narrowly rounded apically, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos about equal to midwidth of uncus. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part broadened basally, gradually narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/3, slightly upturned from middle, forming narrow fold, extending to base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; phallus longer than valva, bulbous basally; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; base of proximal flange deeply cleft, abruptly widened ventrolaterally, forming semiellipsoid, protuberant ridge; membrane above proximal flange bearing conical setae intermixed with

densely packed microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus longer than valva, slightly bulbous basally; sclerite of phallus sigmoid-shaped, about equal in length to valva; anellus broadly rounded apically, wider than at base, setose mostly along lateral margins. Female Genitalia (Fig. 252): Apophyses posteriores about 3X longer than apophyses anteriores. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment; antrum cuplike, wider than long. Posterior margin of seventh sternum emarginate laterally, forming broad, truncate, median lobe. Ductus bursae about as long as apophyses posteriores, with small dilated part bearing inception of ductus seminalis anterior to shortened part; inception of ductus seminalis slightly posterior to posterior margin of seventh sternum; two rows of imbricate platelets within anterior 1/3, gradually becoming sparser posteriorly. Corpus bursae ovoid, spinulate throughout, with moderately sized bulla on posterior end; signum spinate, arising from small, rounded base, slightly posterior to middle.



MAP 6. Distribution of *Blastobasis balucis* (●) and *B. caetrae* (▲).

Holotype, ♂, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Puntarenas, Costa Rica, N. Obando, Feb[rero] 1992, L-N-253250, 449700", "INBio: COSTA RICA: CRI000, 794606" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3807" [yellow label].

Paratypes (214 ♂♂, 9 ♀♀): 13 ♂♂, same data as for holotype except, "CRI000, 801533", "Slide No. 3816"; "CRI000, 794622", "Slide No. 3819"; "CRI000, 801556", "Slide No. 3821", "USNM 83657"; "CRI000, 801523",

"Slide No. 3822", "USNM 83658"; "CRI000, 801566", "Slide No. 3823"; "CRI000, 801612", "Slide No. 3824", "USNM 83659"; "CRI000, 801625", "Slide No. 3825", "USNM 83660"; "CRI000, 801630", "Slide No. 3826"; "CRI000, 801577", "Slide No. 3827"; "CRI000, 801639", "Slide No. 3828"; "CRI000, 801574", "Slide No. 3829", "USNM 83661"; "CRI000, 801640", "Slide No. 3830", "USNM 83662"; "CRI000, 801623", "Slide No. 3831", "USNM 83663"; 3 ♂♂, "Nov. 1991", "CRI000, 898412", "Slide No. 4008", "USNM 83664"; "CRI000, 898414", "Slide No. 4007", "USNM 83665"; "CRI000, 486932", "Slide No. 4006", "USNM 83666"; 3 ♂♂, "Jun. 1992", "CRI000, 691671", "Slide No. 3837"; "CRI000, 691679", "Slide No. 3835"; "CRI000, 691677", "Slide No. 3834", "USNM 83668"; 26 ♂♂, "Ago. 1992", "CRI000, 947137", "Slide No. 3746", "USNM 83667"; "CRI000, 947050", "Slide No. 3995"; "CRI000, 947095", "Slide No. 3996", "USNM 83669"; "CRI000, 947134", "Slide No. 3997", "USNM 83670"; "CRI000, 947178", "Slide No. 3998"; "CRI000, 947191", "Slide No. 3999"; "CRI000, 970295", "Slide No. 4022"; "CRI000, 947174", "Slide No. 4000"; "CRI000, 947125", "Slide No. 4001"; "CRI000, 947070", "Slide No. 4005", "USNM 83671"; "CRI000, 970221", "Slide No. 4003", "USNM 83672"; "CRI000, 947074", "Slide No. 4004"; "CRI000, 947138", "Slide No. 4009"; "CRI000, 947141", "Slide No. 4017", "USNM 83673"; "CRI000, 947146", "Slide No. 4010", "Wing Slide No. 7043"; "CRI000, 947151", "Slide No. 4011", "USNM 83674"; "CRI000, 947189", "Slide No. 4012"; "CRI000, 947058", "Slide No. 4013"; "CRI000, 947154", "Slide No. 4014", "USNM 83675"; "CRI000, 970265", "Slide No. 4015"; "CRI000, 947130", "Slide No. 4016"; "CRI000, 970278", "Slide No. 4023", "USNM 83676"; "CRI000, 947156", "Slide No. 4018"; "CRI000, 947195", "Slide No. 4019"; "CRI000, 947150", "Slide No. 4020"; "CRI000, 947179", "Slide No. 4021"; 1 ♂, "Set.", "CRI000, 947016", "Slide No. 4002"; 1 ♂, "J.C. Saborio, Oct. 1991", "CRI000, 567753", "Slide No. 3736"; 4 ♂♂, "Ene. 1993, N. Obando", "CRI001, 369010", "Slide No. 3785"; "CRI001, 369068", "Slide No. 3787"; "CRI001, 369100", "Slide No. 3786"; "CRI001, 369105", "Slide No. 3784", "USNM 83677"; 30 ♂♂, "Jul. 1993, N. Obando", "CRI001, 130554", "Slide No. 3820", "USNM 83678"; "CRI130556", "Slide No. 3832"; "CRI001, 130550", "Slide No. 3833", "USNM 83679"; "CRI001, 130558", "Slide No. 3836"; "CRI001, 130650", "Slide No. 3871"; "CRI001, 130572", "Slide No. 3870", "USNM 83680"; "CRI001, 130658", "Slide No. 3869", "USNM 83681"; "CRI001, 130651", "Slide No. 3872"; "CRI001, 130653", "Slide No. 3873"; "CRI001, 130661", "Slide No. 3874"; "CRI001, 130662", "Slide No. 3875", "USNM 83682"; "CRI001, 130667", "Slide No. 3877", "USNM 83683"; "CRI001, 130664", "Slide No. 3878"; "CRI001, 130665", "Slide No. 3879"; "CRI001, 130671", "Slide No. 3880", "USNM 83684"; "CRI001, 130704", "Slide No. 3881", "USNM 83685"; "CRI001, 130579", "Slide No. 3882"; "CRI001, 130672", "Slide No. 3883"; "CRI001, 130575", "Slide No. 3884"; "CRI001, 130577", "Slide No. 3811", "USNM 83686"; "CRI001, 130566", "Slide No. 3812", "USNM 83687"; "CRI001, 130548", "Slide No. 3818", "USNM 83688"; "CRI001, 130555", "Slide No. 3817"; "CRI001, 130648", "Slide No. 3814", "USNM 83689"; "CRI001, 130569", "Slide No. 3815", "USNM 83690"; "CRI001, 130657", "Slide No. 3790"; "CRI001, 130656", "Slide No. 3791", "USNM 83691"; "CRI001, 130573", "Slide No. 3792"; "CRI001, 130574", "Slide No. 3793"; "CRI001, 130553", "Slide No. 3788"; 5 ♀♀, same data as above except, "CRI001, 130580"; "CRI001, 130551"; "CRI001, 130549"; "CRI001, 130526"; "CRI001, 130524"; 4 ♂♂, "Abr. 1994, N. Obando, # 2820", "CRI001, 781879", "Slide No. 3755", "USNM 83692"; "CRI001, 781902", "Slide No. 3757"; "CRI001, 781829", "Slide No. 3758"; "CRI001, 781897", "Slide No. 3889", "USNM 83693"; 1 ♂, "Ene. 1994, N.G. Obando, # 2606", "CRI001, 867227", "Slide No. 3789"; 4 ♂♂, "Mar. 1994, N. Obando, # 2819", "CRI001, 764685", "Slide No. 3764", "USNM 83694"; "CRI001, 764677", "Slide No. 3760"; "CRI001, 764771", "Slide No. 3759"; "CRI001, 764664", "Slide No. 3756"; 12 ♂♂, "Agos. 1993, N.G. Obando, # 2295", "CRI001, 910172", "Slide No. 3888"; "CRI001, 910164", "Slide No. 3887"; "CRI001, 910059", "Slide No. 3801"; "CRI001, 910111", "Slide No. 3802", "USNM 83707"; "CRI001, 910115", "Slide No. 3803"; "CRI001, 910116", "Slide No. 3804"; "CRI001, 910135", "Slide No. 3805", "USNM 83708"; "CRI001, 910184", "Slide No. 3806"; "CRI001, 910231", "Slide No. 3808"; "CRI001, 910303", "Slide No. 3809", "USNM 83709"; "CRI001, 910306", "Slide No. 3810", "USNM 83710"; "CRI001, 909974", "Slide No. 3813"; 4 ♀♀, same data as above except, "CRI001, 910290", "♀ Slide No. 6010"; "CRI001, 910323", "♀ Slide No. 6011"; "CRI001, 910324"; "CRI001, 910260"; 23 ♂, "R.B. Monteverde, Prov. Punt., COSTA RICA, 1520 m, Oct. 1993, N. Obando, L-N-253250, 449700, # 2454", "CRI001, 162934", "Slide No. 3767"; "CRI001, 162950", "Slide No. 3768"; "CRI001, 162849", "Slide No. 3769"; "CRI001, 369102", "Slide No. 3770", "USNM 83695"; "CRI001, 162838", "Slide No. 3771"; "CRI001, 162847", "Slide No. 3772"; "CRI001, 162872", "Slide No. 3773", "USNM 83696"; "CRI001, 162863", "Slide No. 3774"; "CRI001, 162960", "Slide No. 3776"; "CRI001, 162931", "Slide No. 3777", "USNM 83697"; "CRI001, 162932", "Slide No. 3779", "USNM 83698"; "CRI001, 162865", "Slide No. 3780"; "CRI001, 162935", "Slide No. 3781", "USNM 83699";

“CRI001, 162878”, “Slide No. 3782”, “USNM 83700”; “CRI001, 162889”, “Slide No. 3885”, “USNM 83701”; “CRI001, 162879”, “Slide No. 3886”, “USNM 83702”; “CRI001, 162938”, “Slide No. 3795”, “USNM 83703”; “CRI001, 162901”, “Slide No. 3796”, “USNM 83704”; “CRI001, 162968”, “Slide No. 3794”; “CRI001, 162887”, “Slide No. 3800”, “USNM 83705”; “CRI001, 162824”, “Slide No. 3799”, “USNM 83706”; “CRI001, 162888”, “Slide No. 3798”; “CRI001, 162903”, “Slide No. 3797”; 3 ♂♂, “COSTA RICA, Puntarenas, Estación Biológica Monteverde, 1500 m, 02–11–2001, Col. Kenji Nishida, Luz en la noche”, “Slide No. 4032”, “USNM 83712”; “Slide No. 4033”, “USNM 83711”; 1 ♂, “11-XI-2001, night at lights”, “Slide No. 4025”, “USNM 83713”; 1 ♂, “Est. Cacao, 1000–1400 m, Lado SO del Volcan Cacao, Prov. Guan., COSTA RICA, II Curso Parataxon., Jun. 1990, L-N-323300, 375700”, “CRI000, 661492”, “Slide No. 3278”; 5 ♂♂, “C. Chaves, 25 Set.-11 Oct. 1990”, “CRI000, 590631”, “Slide No. 3200”; “CRI000, 390159”, “Slide No. 3260”; “CRI000, 390270”, “Slide No. 3082”, “USNM 83714”; “CRI000, 390359”, “Slide No. 3088”; “CRI000, 390083”, “Slide No. 3139”; 1 ♂, “C. Chaves, 23 Oct.-9 Nov. 1990”, “CRI000, 576486”, “Slide No. 3037”, “USNM 83715”; 7 ♂♂, “C. Chaves & R. Espinoza, Nov.-Dic. 1990”, “CRI000, 321350”, “Slide No. 3165”, “USNM 83716”; “CRI000, 321537”, “Slide No. 3255”, “USNM 83717”; “CRI000, 321518”, “Slide No. 3257”; “CRI000, 321574”, “Slide No. 3001”, “USNM 83718”; “CRI000, 321572”, “Slide No. 3006”; “CRI000, 321534”, “Slide No. 3094”, “USNM 83719”; “CRI000, 321520”, “Slide No. 3102”; 13 ♂♂, “C. Chaves, Abr. 1991”, “CRI000, 434846”, “Slide No. 3045”; “CRI000, 319455”, “Slide No. 3060”; “CRI000, 319572”, “Slide No. 3080”; “CRI000, 319521”, “Slide No. 3112”; “CRI000, 434672”, “Slide No. 3135”; “CRI000, 319482”, “Slide No. 3169”, “USNM 83720”; “CRI000, 319659”, “Slide No. 3170”; “CRI000, 319643”, “Slide No. 3268”; “CRI000, 319752”, “Slide No. 3266”; “CRI000, 434693”, “Slide No. 3272”; “CRI000, 434687”, “Slide No. 3273”; “CRI000, 434666”,“Slide No. 3274”; 1 ♂, “Jun.”, “CRI000, 623394”, “Slide No. 3181”, “USNM 83721”; 1 ♂, “Ago.”, “CRI000, 633156”, “Slide No. 3191”; 4 ♂♂, “Mar.”, “CRI000, 317467”, “Slide No. 3251”, “USNM 83722”; “CRI000, 645710”, “Slide No. 3197”; “CRI000, 645676”, “Slide No. 3195”; “CRI000, 317541”, “Slide No. 3010”; 3 ♂♂, “CRI000, 357217”, “Slide No. 3086”; “CRI000, 357291”, “Slide No. 3090”, “USNM 83723”; “CRI000, 357246”, “Slide No. 3111”; 2 ♂♂, “F.A. Quesada, Jun.”, “CRI000, 613351”, “Slide No. 3030”; “CRI000, 613382”, “Slide No. 3014”, “USNM 83724”; 1 ♂, “M. Araya, Jul.”, “CRI000, 359467”, “Slide No. 3285”; 3 ♂♂, “D. Garcia, Jun.-Jul.”, “CRI000, 571648”, “Slide No. 3036”; “CRI000, 571726”, “Slide No. 3152”; 6 ♂♂, “III Curso Parataxon., May 1992”, “CRI000, 416931”, “Slide No. 3011”, “USNM 83725”; “CRI000, 416880”, “Slide No. 3248”, “USNM 83726”; “CRI000, 417025”, “Slide No. 3263”; “CRI000, 416863”, “Slide No. 3267”; “CRI000, 416927”, “Slide No. 3096”; 2 ♂♂, “M. Ortiz, 21–29 May.”, “CRI000, 420041”, “Slide No. 3007”; “CRI000, 420087”, “Slide No. 3008”; 2 ♂♂, “A. Gutierrez”, “CRI000, 715998”, “Slide No. 3198”, “USNM 83727”; 1 ♂, “CRI000, 416749”, “Slide No. 3003”; 2 ♂♂, “21–29 May., D. Garcia”, “CRI001, 290723”, “Slide No. 3119”; “CRI001, 290672”, “Slide No. 3117”; 1 ♂, “P. Campos”, “CRI000, 925505”, “Slide No. 3201”; 1 ♂, “C. Cano”, “CRI000, 448427”, “Slide No. 3024”; 1 ♂, “D. Brenes”, “CRI000, 488041”, “Slide No. 3203”; 1 ♂, “Est. Cacao, Prov. Guan., COSTA RICA, 1100 m, 7–18 Feb. 1995, F. Avarado, L-N-323100, 375800, # 4452”, “CRI002, 195803”, “Slide No. 3224”, “USNM 83728”; 2 ♂♂, “A. Picado, # 4534”, “CRI002, 139734”, “Slide No. 3232”; “CRI002, 139773”, “Slide No. 3236”; 2 ♂♂, “M. Madrigal, L-N-323100, 375800, # 4709”, “CRI002, 187131”, “Slide No. 3462”; “CRI002, 187149”, “Slide No. 3222”; 1 ♂, “1400 m, 13–17 Feb., E. Fetes, L-N-323700, 376700, # 4766”, “CRI002, 143096”, “Slide No. 3179”; 2 ♂♂, “2 km SW del Cerro Cacao, 12–17 Feb., S. Avila, L-N-323100, 375800, # 5858”, “CRI002, 336993”, “Slide No. 3208”; “CRI002, 336990”, “Slide No. 3209”; 2 ♂♂, “Fca. Cafrosa, Est. Las Mellizes, P.N. Amistad, 1300 m, Prov. Punt., COSTA RICA, M. Ramirez & G. Mora, Oct. 1990, L-S-316100, 596100”, “CRI000, 575528”, “Slide No. 3643”; “CRI000, 575532”, “Slide No. 3640”; 1 ♂, “M. Ramirez & G. Mora, Oct.”, “CRI000, 575423”, “Slide No. 3645”; 3 ♂♂, “1300 m, Nov.”, “CRI000, 521857”, “Slide No. 3637”; “CRI000, 521799”, “Slide No. 3644”, “USNM 83729”; “CRI000, 521743”, “Slide No. 3638”; 1 ♂, “1300 m, Est. Las Mellizas, P.N. Amistad, G. Mora, May. 1991”, “CRI000, 532872”, “Slide No. 3639”; 1 ♂, “Nov. 1989, M. Ramirez & G. Mora”, “CRI000, 156956”, “Slide No. 3641”, “USNM 83730”; 3 ♂♂, “2 km N Colonia Blanca, 800 m, P.N.Rincón de la Vieja, Prov. Alajuela, COSTA RICA, 13–28 Jun. 1992, III Curso Parataxon., L-N-308800, 397800”, “CRI000, 703870”, “Slide No. 3984”; “CRI000, 888820”, “Slide No. 3989”; “CRI000, 888822”, “Slide No. 3990”; 2 ♂♂, “Ref. Nac. Fauna Silv., Tapanti, 1250 m, Prov. Cartago, COSTA RICA, G. Mora, Ago. 1991, L-N-194000, 559800”, “CRI000, 360241”, “Slide No. 3993”; “CRI000, 360278”, “Slide No. 3992”; 2 ♂♂, “Est. Maritza, 600 m, Lado O Volcan Orosi, Prov. Guan., COSTA RICA, R. Vargas, 27 Feb.-10 Mar. 1992, L-N-326900, 373000”, “CRI000, 468680”, “Slide No. 3497”; “CRI000, 695236”, “Slide No. 3491”, “USNM 83731”; 1 ♂, “Estac. Mengo, 1100 m, SW side Volcan

Cacao, Prov. Guan., COSTA RICA, Feb. 1989, GNP Biodiversity Survey, 85°28'10"W, 10°55'43"N", "CRI001, 054905", "Slide No. 3606", "USNM 83732"; 1 ♂, "Estación Pitilla, 9 km sur Santa Cecilia, P.N. Guanacaste, Prov. Guan, COSTA RICA, 700 m, 19–23 Jun. 1993, P. Rios, L-N-330200, 380200, # 2175", "CRI001, 835043", "Slide No. 3526"; 1 ♂, "C. Moraga & P. Rios, Nov. 1990", "CRI000, 686126", "Slide No. 3560", "USNM 83733"; 1 ♂, "Sector Las Pailas, P.N. Rincón de la Vieja, Prov. Guan., COSTA RICA, 800 m, 12 Jun. 1994, D. Garcia, L-N-307300, 388600, # 3048", "CRI001, 966692", "Slide No. 3592"; 1 ♂, "P.N. Tapanti, A.C. Amistad, Prov. Cartago, COSTA RICA, 1150 m, Ene. 1994, G. Mora, L-N-194000, 559800, # 2578", "CRI001, 830454", "Slide No. 3991"; 1 ♂, "Fca. San Gabriel, 2 km SW Dos Rios, 600 m, Prov. Alajuela, COSTA RICA, I Curso Microlepidoptera, Jul. 1990, L-N-318800, 383500", "CRI000, 475413", "Slide No. 3978"; 1 ♂, "Buen Amigo, San Luis Monteverde, Prov. Punt., COSTA RICA, 1000–1350 m, Ago. 1994, Z. Fuentes, L-N-250850, 449250, # 3168", "CRI001, 990909", "Slide No. 3851"; 1 ♂, "COSTA RICA, Cartago, Tapanti, La Reserva, 1700 m, 10-VI-1998, DR20-22L, F, Col. Kenji Nishida", "Slide No. 4037"; 1 ♂, "COSTA RICA, San José, El Zurqui, La Fonda, 1450 m, 05-VI-1999, Col. Kenji Nishida, Trampa de luz", "Slide No. 4035", "USNM 83734" [150 in INBio, 78 in USNM].

Distribution (Map 6). *Blastobasis balucis* is known from several collecting sites in western and west-central Costa Rica along the Cordillera de Guanacaste and the Cordillera de Tilarán, east along the eastern most part of the Cordillera de Talamanca near the border of Panama, and a collecting site in the north-central part of the country near the border of Nicaragua.

Etymology. The specific epithet *balucis* is derived from the Latin *balux*, meaning gold dust.

Blastobasis caetrae **Adamski, new species**

(Figs. 8, 73–74, 253, 280, 323, Map 6)

Diagnosis.—*Blastobasis caetrae* is similar to *B. furtivus* in facies but differs from the latter by having a longer uncus; a more protuberant bidentate median process on posteroventral margin of the gnathos; a longer proximal flange; a shorter phallus; and a shorter ductus bursae in the female.

Description.—Head: Vertex and frontoclypeus pale brown. Outer and inner surfaces of labial palpus pale brown intermixed with few brown scales or brown intermixed with pale-brown scales along apical margin of second segment. Antennal scape and pecten pale brown, flagellum brownish gray; first flagellomere in male dilated, inner surface of dilated part with 23 palmate sex scales (n=1), (Fig. 280). Proboscis pale brown.

Thorax: Tegula with basal 1/2 brown, apical 1/2 pale brown; mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 323): Length 4.9–6.5 mm (n = 6), pale brown intermixed with brown scales; submedian fascia incomplete; cell with three spots, one near middle, two near apical end along crossvein; marginal spots present or absent. Undersurface brown. Venation (Fig. 8) with M_3 and CuA_1 arising from distoposterior part of cell; cubital veins divergent from bases with CuA_1 curved from base and CuA_2 broadly curved. Hindwing: Translucent brown or translucent brown gradually darkening to apex. Venation (Fig. 8) with cell closed anteriorly, open posteriorly; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 73–74): Uncus nearly parallelsided throughout most of length, gradually narrowed from 4/5, narrowly rounded apically, slightly downcurved, sparsely setose; slightly shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented part of gnathos slightly shorter than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadened basally, gradually narrowing apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose and slightly upturned, forming narrow fold from slightly beyond 1/3, abruptly narrowed apically to near setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; base of ventral margin of proximal flange slightly cleft, widening ventrolaterally, forming subsemicircular, protuberant ridge; membrane above proximal flange bearing conical setae intermixed with shortened spinules and densely packed microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; sclerite of phallus sigmoid-shaped;

anellus broadly rounded apically, slightly wider than base, setose along apical margin. Female Genitalia (Fig. 253): Apophyses posteriores more than 2 1/2X longer than apophyses anteriores. Eighth tergum with darkly pigmented, median longitudinal streak. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment; short, parallelsided duct, connecting with slightly dilated part of ductus bursae and ductus seminalis from common point. Posterior margin of seventh sternum shallowly emarginate laterally, forming broad, slightly protuberant, truncate, median lobe. Ductus bursae slightly longer than apophyses posteriores; with two rows of imbricate platelets within anterior 2/3, gradually becoming sparser posteriorly. Corpus bursae ovoid, spinulate throughout; signum spinate, arising from small, rounded base near middle.

Holotype, ♂, "Est[ación] Cacao, 1000−1400 m, Lado SO Vol[can] Cacao, P[arque] N[aciónal] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, Jun[io] 1991, L-N-323300, 375700", "INBio: COSTA RICA: CRI000, 623465" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3186" [yellow label].

Paratypes (5 ♂♂, 3 ♀♀): 1 ♂, same data as for holotype except, "Mar.", "CRI000, 317540", "Slide No. 3312", "USNM 83774"; 3 ♀♀, same data as above except, "Abr.", "CRI000, 319417", "Slide No. 6017"; "CRI000, 319779", "Slide No. 6018"; "CRI000, 434742"; 2 ♂♂, "III Curso Parataxon., May. 1992", "CRI000, 426528", "Slide No. 3172", "Wing Slide No. 7052"; "CRI000, 416820", "Slide No. 3065"; 1 ♂, "1100 m, 8–18 Feb. 1995, M. Moraga, # 4623", "CRI002, 185230", "Slide No. 3237", "USNM 83775"; 1 ♂, "Fca. Cafrosa, Est. Las Mellizas, P.N. Amistad, 1300 m, Prov. Punt., COSTA RICA, M. Ramirez, Mar. 1991, L-S-316100, 596100" "CRI000, 301645", "Slide No. 3650" [6 in INBio, 2 in USNM].

Distribution (Map 6). *Blastobasis caetrae* is known from two distant collecting sites; one along the western most part of the Cordillera de Guanacaste in western Costa Rica and one along the eastern most part of the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *caetrae* is derived from the Latin *caetra*, meaning a Spanish shield.

Blastobasis furtivus **Adamski, new species**

(Figs. 9, 75–76, 254, 281, 324, Map 7)

Diagnosis.—*Blastobasis furtivus* is similar to *B. caetrae* in facies but differs from the latter by having a shorter uncus; a less protuberant bidentate median process on posteroventral margin of the gnathos; a shorter proximal flange of the dorsal part of the valva; a longer phallus; and a longer ductus bursae in the female.

Description.—Head: Vertex brown; frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2, inner surface paler. Antennal scape and pecten pale brown, flagellum grayish brown gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 18 palmate sex scales (n=1), (Fig. 281). Proboscis pale brown.

Thorax: Tegula brown or pale brown; mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of segments and tarsomeres. Forewing (Fig. 324): Length 4.0–6.2 mm (n = 44), pale brown intermixed with brown scales; basal area near costa and submedian fascia brown; submedian fascia complete or incomplete; cell with three spots, one near middle, two near apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 9) with R_5 straight or slightly curved; cubital veins separate with M_3 nearly straight and cubital veins divergent from bases, with CuA_1 nearly straight and CuA_2 broadly curved. Hindwing: Translucent brown or translucent brown gradually darkening to apex. Venation (Fig. 9) with cell closed with posterior part of crossvein weak; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 75–76): Uncus gradually narrowed from 1/3, narrowly rounded apically, sparsely setose, longer than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented part of gnathos about equal to midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadened basally, gradually narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose, slightly upturned from 1/4, forming narrow fold to elongate, slightly raised, setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; base of ventral

margin of proximal flange slightly cleft, extending laterally, forming ellipsoid and protuberant ridge; membrane above proximal flange bearing conical setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus parallelsided throughout length from base, broadly rounded apically, setose along margin. Female Genitalia (Fig. 254): Apophyses posteriores slightly more than 3X longer than apophyses anteriores. Eighth tergum with elongate, darkly pigmented, median longitudinal streak. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment; a short, parallelsided duct, connecting with widened part of ductus bursae and inception of ductus seminalis from shared point. Posterior margin of seventh sternum emarginate laterally, forming broad and protuberant, truncate, median lobe. Ductus bursae slightly more than 2X length of apophyses posteriores; with two rows of imbricate platelets within anterior 1/4, gradually becoming sparser posteriorly. Corpus bursae ovoid, spinulate; signum spinate, arising from small, rounded base near middle.

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, COSTA RICA, C. Moraga, 3-9 Feb[rero] 1992, L-N-330200, 380200", "INBio: COSTA RICA: CRI000, 537644" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3579" [yellow label].

Paratypes (43 ♂♂, 4 ♀♀): 3 ♂♂, same data as for holotype except, "Jan. 1991", "CRI000, 616378", "Slide No. 3536", "USNM 83735"; "CRI000, 700045", "Slide No. 3571", "USNM 83736"; "CRI000, 700158", "Slide No. 3570"; 1 ♂, "P. Rios, Mar.", "CRI000, 450495", "Slide No. 3573"; 1 ♂, "C. Moraga, Apr.", "CRI000, 484754", "Slide No. 3528"; 1 ♀, same data as above except, "19 May-8 June 1993", "CRI001, 354085"; 2 ♀♀, 23–26 June, # 2183", "CRI001, 835938", "Slide No. 6013"; "CRI001, 835688", "Slide No. 6014"; 1 ♂, "P. Rios, Set.", "CRI000, 610050", "Slide No. 3552", "USNM 83737"; 1 ♂, "A. Moraga", "CRI000, 460370", "Slide No. 3548", "USNM 83738"; 1 ♀, "6–19 Set., # 2345", "CRI001, 613439";1 ♂, "P. Rios, 3–18 Oct.", "CRI000, 336959", "Slide No. 3561"; 1 ♂, "C. Moraga", "CRI000, 356325", "Slide No. 3559"; 1 ♂, "4–13 Dic.", "CRI000, 527200", "Slide No. 3551", "USNM 83739"; 2 ♂♂, "Dic. 1989, C. Moraga & P. Rios", "CRI000, 133642", "Slide No. 3572"; "CRI000, 190612", "Slide No. 3529" 1 ♂, "Malaise Trap, GNP Biod. Survey", "CRI000, 111724", "Slide No. 3577", "USNM 83740"; 1 ♂, "C. Chaves, Set. 1990", "CRI000, 626485", "Slide No. 3546", "USNM 83741"; 1 ♂, "P. Rios & C. Moraga, 10 Set.-22 Oct", "CRI000, 182095", "Slide No. 3530"; 2 ♂♂, "C. Moraga, Nov.", "CRI000, 313719", "Slide No. 3542"; "CRI000, 313618", "Slide No. 3534"; 1 ♂, "Dic.", "CRI000, 652739", "Slide No. 3954"; 3 ♂♂, "19 May.-3 Jun. 1993, P. Rios", "CRI001, 354115", "Slide No. 3525"; "CRI001, 354030", "Slide No. 3550", "Wing Slide No. 7046"; "CRI001, 354093", "Slide No. 3549"; 1 ♂, "6–9 Set., # 2345", "CRI001, 613393", "Slide No. 3554", "USNM 83742"; 1 ♂, "23–26 Jun. 1993, Taller Microlepidoptera, # 2183", "CRI001, 835730", "Slide No. 3538"; 1 ♂, "C. Moraga, 3–9 Feb. 1993", "CRI000, 537696", "Slide No. 3576", "USNM 83743"; 2 ♂♂, "Est. Sirena, P.N. Corcovado, 0–100 m, Prov. Punt., COSTA RICA, G. Fenseca, Abr. 1992, L-S-270500, 508300", "CRI000, 794341", "Slide No. 3918"; "CRI000, 288762", "Slide No. 3926"; 1 ♂, "May.", "CRI000, 588166", "Slide No. 3927"; 1 ♂, "Jul.", "CRI000, 334930", "Slide No. 3932"; 1 ♂, "Jul. 1992, G. Fonseca, # 1318", "CRI001, 741679", "Slide No. 3935", "USNM 83744"; 1 ♂, "Cerro Tortuguero, P.N. Tortugoero, 0–100 m, Prov. Limón, COSTA RICA, J. Solano, Mar. 1991, L-N-285000, 588000", "CRI000, 197661", "Slide No. 3956"; 1 ♂, "Abr.", "CRI000, 596186", "Slide No. 3961"; 1 ♂, "Jul.", "CRI001, 314603", "Slide No. 3955"; 1 ♂, "Est. Cuatro Esquinas, 0 m, P.N. Tortuguero, Prov. Limón, COSTA RICA, Mar. 1993, R. Delgado, L-N-280000, 590500", "CRI001, 358791", "Slide No. 3959"; 2 ♂♂, "Quepos, 120 m, P.N. Manuel Antonio, Prov. Punt., COSTA RICA, G. Varela & R. Zuniga, Nov. 1990, L-S-370900, 449800", "CRI000, 180536", "Slide No. 3940", "USNM 83745"; "CRI000, 228052", "Slide No. 3946", "USNM 83746"; 2 ♂♂, "Est. Queb. Bonita, 50 m, Res. Biol. Carara, Prov. Punt., COSTA RICA, R. Zuniga, Jun. 1991, L-N-194500, 469850", "CRI000, 433568", "Slide No. 3897"; "CRI000, 349050", "Slide No. 3893"; 2 ♂♂, "Est. Biol. Las Alturas, 1500 m, Coto Brus, Prov. Punt., COSTA RICA, M. Ramirez, Nov. 1991, L-S-322500, 591300", "CRI000, 523411", "Slide No. 3917"; "CRI000, 523404", "Slide No. 3914"; 1 ♂, "Est. Magsasay, P.N. Braulio Carrillo, 200 m, Prov. Heredia, COSTA RICA, A. Fernandez, Nov. 1990, L-N-264600, 531100", "CRI000, 453171", "Slide No. 3977"; 1 ♂, "Fca. San Gabriel, 2 km SW Dos Rios, 600 m, Prov. Alaj., COSTA RICA, I Curso Microlepidoptera, Jul. 1990, L-N-318800, 383500", "CRI000, 475388", "Slide No. 3979"; 1 ♂, "San Luis, Monteverde, R.B. Monteverde, A.C. Arenal, Prov. Punt., COSTA RICA, 1000–1350 m, Ene. 1994, Z. Fuentes, L-N-449250, 250850, # 2609", "CRI001, 857131", "Slide No. 3912", "USNM 83747"; 1 ♂, "05/L/00/16, ALAS, Ceibo, II.2003", "INB000, 3229653" "Slide No. 4028", "USNM 83748" [33 in INBio, 14 in USNM].

MAP 7. Distribution of *Blastobasis furtivus* (●).

Distribution (Map 7). *Blastobasis furtivus* is known from three collecting sites in western Costa Rica along the Cordillera de Guanacaste and the Cordillera de Tilarán; a site north of the Cordillera Central; a site along the eastern most part of the Cordillera de Talamanca near the border of Panama; two collecting sites along the Pacific Coast; and two coastal sites in the north. The distribution of this species appears to be throughout all of Costa Rica.

Etymology. The specific epithet is derived from the Latin *furtivus*, meaning a secret.

Blastobasis deae **Adamski, new species**

(Figs. 10, 77–78, 255, 282, 325, Map 8)

Diagnosis.—*Blastobasis deae* is similar to *B. erae* in facies but differs from the latter by having a wider uncus; a narrower gnathos; a more inwardly curved digitate process of the dorsal part of the valva; and a narrower proximal flange of the dorsal part of the valva. *B. deae* also has a an anteriorly directed posteroventral margin of the gnathos; a bulbous base of the phallus; a sigmoid-shaped sclerite of the phallus; and an anellus that is apically setose that are lacking in *B. erae.*

Description.—Head: Vertex and frontoclypeus with grayish-brown scales tipped with pale grayish brown. Outer surface of labial palpus grayish brown intermixed with pale grayish-brown scales along apical margin of second segment, inner surface paler. Antennal scape and pecten pale brown, flagellum brown; first flagellomere in male dilated, inner surface of dilated part with 47 palmate sex scales (n=1), (Fig. 282). Proboscis pale grayish brown.

Thorax: Tegula and mesonotum agouti patterned, with brown on basal and apical 1/3s, and pale brown on middle 1/3. Legs brown intermixed with pale grayish-brown scales near midsegments and apical margins of segments and tarsomeres. Forewing (Fig. 325): Length 5.9–7.5 mm (n = 27), pale grayish brown intermixed with grayish-brown scales and grayish-brown scales tipped with pale grayish brown, darker along basal 2/3 of costa and anal margin; submedian fascia absent; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 10) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent with CuA_1 straight and CuA_2 acutely curved basally. Hindwing: Translucent brown gradually darkening to apex. Venation (Fig. 10) with cell closed, cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 77–78): Uncus gradually narrowed from a slightly widened base to subapical area, abruptly narrowed, forming narrowly rounded apex, slightly downcurved, sparsely setose, nearly equal to width of anal opening. Dorsal strut of tegumen absent. Gnathos narrow, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate. Sockets of tergal setae extending slightly beyond midlength of tegumen. Valva divided; ventral part parallelsided, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose, greatly upturned from base, forming large fold, narrowing abruptly to near base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly rounded basally, gradually narrowing to apicolateral margin, forming slightly narrowed and elongate ridge; membrane above proximal flange densely microtrichiate. Juxta bandlike. Vinculum semicircular. Phallus bulbous basally; phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus parallelsided throughout most of length from base, broadly rounded apically, setose on apical 1/3. Female Genitalia (Fig. 255): Apophyses posteriores slightly more than 3X longer than apophyses anteriores. Ostium bursae within densely packed microtrichiate membrane, slightly posterior to seventh segment. Posterior margin of seventh sternum slightly emarginate laterally, forming broad, slightly protuberant, truncate, median lobe. Ductus bursae slightly longer than apophyses posteriores; with two rows of imbricate platelets within anterior 1/2, gradually becoming less dense posteriorly. Inception of ductus seminalis arising from ductus bursae posterior to anterior margin of seventh sternum. Corpus bursae ovoid, spinulate; signum spinate, arising from small, rounded base near middle.

Holotype, ♂, “Est[ación] Cacao, 1000–1400 m, Lado suroeste del Volcan Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, Set[iembre] 1989, L-N-323300, 375700”, “INBio: COSTA RICA: CRI000, 671267” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3017” [yellow label].

Paratypes (26 ♂♂, 4 ♀♀): 1 ♂, same data as for holotype except, “D. Garcia, 11 Set.-11 Oct. 1991”, “CRI000, 349665”, “Slide No. 3005”; 1 ♂, “III Curso Parataxon., May. 1992”, “CRI000, 417003”, “Slide No. 3148”; 1 ♂, 1 ♀ “8–18 Feb. 1995, L. Angulo, # 4673”, “185600”, “Slide No. 3176”, “USNM 83749”; “CRI002, 185597”, “Slide No. 6000”; 1 ♀, same data as above except, “R. Villalobos, # 4443”, “CRI002, 183641”, “Slide No. 6001”; 1 ♀, “7–18 Feb., M. Lolo, # 5320”, “CRI002, 235052”, “Slide No. 6002”; 1 ♀, Feb., E. Phillips, # 5448”, “CRI002, 212768”, “Slide No. 6003”; 1 ♂, “Est. Pitilla, 700 m, 9 km S Santa Cecilia, Prov. Guan., COSTA RICA, Oct. 1989, C. Moraga & P. Rios, L-N-330200, 380200”, “CRI000, 133628”, “Slide No. 3547”, “USNM 83750”; 3 ♂♂, “Dic. 1989, C. Moraga & P. Rios”, “CRI000, 081212”, “Slide No. 3566”; “CRI000, 190643”, “Slide No. 3557”; “CRI000, 081241”, “Slide No. 3565”; 1 ♂, “19 May.-8 Jun. 1993, P. Rios”, “CRI001, 354089”, “Slide No. 3527”; 1 ♂, “Est. Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guan., COSTA RICA, 24 Oct.-12 Nov. 1992, D. Garcia, L-N-306300, 388600”, “CRI000, 946524”, “Slide No. 3346”, “USNM 83751”; 1 ♂, “21–25 Mar. 1993, D. Garcia, # 2765”, “CRI001, 684340”, “Slide No. 3404”, “USNM 83752”; 11 ♂♂, “Estación Magsasay, Prov. Heredia, COSTA RICA, 0–200 m, May. 1991, R. Aguilar, L-N-264600, 531000, # 2035”, “CRI001, 904002”, “Slide No. 3966”; “CRI001, 904033”, “Slide No. 3968”; “CRI001, 904041”, “Slide No. 3969”; “CRI001, 903980”,

"Slide No. 3971", "Wing Slide No. 7038"; "CRI001, 903930", "Slide No. 3972", "USNM 83753"; "CRI001, 903919", "Slide No. 3973", "USNM 83754"; "CRI001, 904030", "Slide No. 3964", "USNM 83755"; "CRI001, 904036", "Slide No. 3965"; "CRI001, 903979", "Slide No. 3974", "USNM 83756"; "CRI001, 904037", "Slide No. 3975", "USNM 83757"; "CRI001, 904038", "Slide No. 3976"; 1 ♂, "Est. Maritza, 600 m, Lado O Volcan Orosi, Prov. Guan., COSTA RICA, K. Martinez, 27 Feb.-10 Mar. 1992, L-N-326900, 373000", "CRI000, 744678", "Slide No. 3489"; 1 ♂, "28 Feb.-10 Mar.", "CRI000, 702377", "Slide No. 3523"; 1 ♂, "Cerro Tortuguero, P.N. Tortuguero, 0–100 m, Prov. Limón, COSTA RICA, J. Solano, Mar. 1991, L-N-285000, 588000", "CRI000, 197651", "Slide No. 3957"; 1 ♂, "Fca. Pasmompa, Estación Pitilla, 400 m, 5 km SW Santa Cecilia, Prov. Guan., COSTA RICA, Mar. 1989, GNP Biodiversity Survey, L-N-333500, 380600", "CRI000, 095483", "Slide No. 3598"; 1 ♂, "COSTA RICA, Prov. Heredia, El Ceibo, Estación Parque Nacional, 10 km SE La Virgen, 10°20'N, 84°05'W, 500 m, 23-II-2003, Col. Kenji Nishida, night, on MV light", "INB000, 3229649", "Slide No. 4029", "USNM 83758" [20 in INBio, 10 in USNM].

MAP 8. Distribution of *Blastobasis deae* (●).

Distribution (Map 8). *Blastobasis deae* is known from five collecting sites in western Costa Rica along the Cordillera de Guanacaste, two sites north of the Cordillera Central, and one site in the northeast along the Caribbean coast.

Etymology. The specific epithet *deae* is derived from the Latin *dea*, meaning goddess.

***Blastobasis erae* Adamski, new species**
(Figs. 11, 79–80, 283, 326, Map 9)

Diagnosis.—*Blastobasis erae* is similar to *B. deae* in facies but differs from the latter by having a narrower uncus; a wider gnathos; a less inwardly curved digitate process of the dorsal part of the valva; a wider proximal flange of the dorsal part of the valva; and a narrower base of the phallus. *B. erae* also has a posteroventral margin of the gnathos that is not anteriorly directed; a dorsal strut; a shallowly sigmoid-shaped sclerite of phallus; and an anellus that is setose along its lateral margins that are lacking in *B. deae*.

Description.—Head: Scales on vertex and frontoclypeus pale brown, narrow. Outer surface of labial palpus pale brown intermixed with few brown scales, inner surface pale brown. Antennal scape and pecten pale brown, flagellum brownish gray; first flagellomere in male dilated, inner surface of dilated part with 13 palmate sex scales (n=1), (Fig. 283). Proboscis pale brown intermixed with few brown scales.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 326): Length 5.4–6.5 mm (n = 12), pale brown intermixed with brown scales; costa brown near base and near 1/3; submedian fascia absent; cell with three spots, one near middle, two on apical end along crossvein; apical area from apical part of cell to apex mostly brown intermixed with pale-brown scales; marginal spots present. Undersurface brown. Venation (Fig. 11) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 slightly curved and CuA_2 broadly curved. Hindwing: Translucent brown gradually darkening to apex. Venation (Fig. 11) with crossvein of cell weak; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 79–80): Uncus parallelsided for most of length, narrowly rounded apically, slightly downcurved, sparsely setose, slightly longer than width of anal opening. Dorsal strut of tegumen linear, fused with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos much wider than midwidth of uncus. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part wide, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose, slightly upturned basally, forming narrow fold, extending to base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; basal margin of proximal flange slightly cleft, extending linearly to rounded and protuberant ridge; membrane above proximal flange bearing many conical setae intermixed with densely packed microtrichiae and short spinules. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus parallelsided throughout most of length from base, broadly rounded apically, setose along margin. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilla, Prov[incia] Guan[acaste], COSTA RICA, C. Moraga, Abr[il] 1991, L-N-330200, 380200”, “INBio: COSTA RICA: CRI000, 484793” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3556” [yellow label].

Paratypes (11 ♂♂): 1 ♂, same data as for holotype except, “Dic. 1989, C. Moraga & P. Rios”, “CRI000, 081169”, “Slide No. 3562”; 1 ♂, “C. Moraga, Jun. 1991”, “CRI000, 699944”, “Slide No. 3569”; 1 ♂, “P. Rios, Jul. 1991”, “CRI000, 346817”, “Slide No. 3543”, “USNM 83759”; 1 ♂, “22 Set.-14 Oct. 1992”, “CRI000, 824351”, “Slide No. 3553”, “USNM 83760”; 1 ♂, “Sector Cerro Cocori, Fca. de E. Rios, 150 m, Prov. Limón, COSTA RICA, E. Rios, May. 1992, L-N-286000, 567500”, “CRI000, 373613”, “Slide No. 3962” ,“USNM 83761”; 1 ♂, “2 km N. Colonia Blanca, 800 m, P.N. Rincón de la Vieja, Prov. Alajuela, COSTA RICA, 13–23 Jun. 1992, III Curso Parataxon., L-N-308800, 397800”, “CRI000, 703386”, “Slide No. 3983”; 1 ♂, “Buenos Aires, La Amistad, Sector Altamira, Prov. Punt., COSTA RICA, Nov. 1993, R. Delgado, L-S-572100, 331700, # 2455”, “CRI001, 166381”, “Slide No. 3952”, “Wing Slide No. 7040”; 1 ♂, “Fca. San Gabriel, 2 km SW Dos Rios, Prov. Alajuela, COSTA RICA, 600 m, May. 1989, GNP Biodiv. Survey, L-N-318800, 383500”, “CRI000, 081066”, “Slide No. 3981”; 1 ♂, “Ref. Nac. Fauna Silv. Tapanti, 1250 m, Prov. Cartago, COSTA RICA, G. Mora, Set. 1991, L-N-194000, 559800”, “CRI000, 441698”, “Slide No. 3994”, “USNM 83762”; 1 ♂, “Estación Magsasay, Prov. Heredia, COSTA RICA, 0–200 m, May. 1991, R. Aguilar, L-N-264600, 531000, # 2035”, “CRI001, 903984”, “Slide No. 3970”; 1 ♂, “Est. Sirena, 0–100 m, P.N. Corcovado, Prov. Punt., COSTA RICA, May. 1993, G. Fonseca, L-S-270500, 508300”, “CRI001, 205177”, “Slide No. 3925” [7 in INBio, 4 in USNM].

MAP 9. Distribution of *Blastobasis erae* (●) and *B. iuanae* (▲).

Distribution (Map 9). *Blastobasis erae* is known from three collecting sites along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica, two collecting sites north of the Cordillera Central, two sites along the eastern and western ends of the Cordillera de Talamanca; and a single site on the Osa Peninsula.

Etymology. The specific epithet *erae* is derived from the Latin *era*, meaning mistress.

Blastobasis iuanae Adamski, new species

(Figs. 12, 81–82, 256, 284, 327, Map 9)

Diagnosis.—*Blastobasis iuanae* is similar to *B. xiphiae* in facies but differs from the latter by having a less protuberant median lobe of the posteroventral margin of the gnathos; a wider ventral part of the valva; and a wider proximal flange of the dorsal part of the valva. *B. iuanae* also has and a bulbous base of the phallus that is lacking in *B. xiphiae*.

Description.—Head: Vertex and frontoclypeus with scales grayish brown tipped with pale grayish brown. Outer surface of labial palpus grayish brown intermixed with few brown scales, inner surface pale grayish brown. Antennal scape with scales grayish brown tipped with pale grayish brown, pecten brown, flagellum grayish brown; first flagellomere in male dilated, inner surface of dilated part with 21 palmate sex scales (n=1), (Fig. 284). Proboscis grayish brown.

Thorax: Tegula agouti patterned, with basal and apical 1/3s grayish brown, and middle 1/3 with grayish-brown scales tipped with pale grayish brown; mesonotum with basal 1/4 grayish brown, apical 3/4 pale grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 327): Length 5.2–7.2 mm (n = 13), pale grayish-brown scales intermixed with grayish-brown scales tipped with pale grayish brown and grayish brown scales; base dark, gradually brightening to submedian fascia; submedian fascia complete or incomplete; cell with three spots, one near middle, two on apical end along crossvein; marginal spots slightly elongate forming short streaks. Undersurface brown. Venation (Fig. 12) with M_2 and M_3 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 slightly curved near base and CuA_2 acutely curved basally. Hindwing: Translucent pale brown. Venation (Fig. 12) with anterior part of cell closed, posterior part open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 81–82): Uncus parallelsided for most of length, broadly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos about equal to midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part wide, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 2/3, slightly upturned basally, forming narrow fold to near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange extending ventrolaterally, forming subellipsoid and protuberant ridge; membrane above proximal flange bearing conical setae intermixed with densely packed microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus longer than valva, bulbous basally; sclerite of phallus about equal in length to phallus, sigmoid-shaped; anellus broadly rounded, setose along margin. Female Genitalia (Fig. 256): Apophyses posteriores nearly 3X longer than apophyses anteriores. Eighth tergum with slightly elongate, darkly pigmented, median longitudinal streak on posterior end. Ostium bursae within densely packed microtrichiate membrane, slightly posterior to seventh segment; short, parallelsided duct, connecting widely dilated part of ductus bursae and inception of ductus seminalis from shared point; inception of ductus seminalis posterior to posterior margin of seventh sternum; posterior margin of seventh sternum greatly emarginate laterally, forming protuberant and truncate, median lobe. Ductus bursae slightly longer than apophyses posteriores; with two rows of imbricate platelets within anterior 1/3, gradually becoming sparser posteriorly. Corpus bursae ovoid, spinulate throughout, with small bulla on posterior end; signum spinate, arising from small, rounded base near middle.

Holotype, ♂, “R[eserva] B[iológica] Monteverde, Prov[incia] Punta[renas], COSTA RICA, 1520 m, Oct[ubre] 1993, N. Obando, L-N-253250, 449700, # 2454”, “INBio: COSTA RICA: CRI001, 162926” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3778” [yellow label].

Paratypes (12 ♂♂, 1 ♀): 1 ♂, same data as for holotype except, “Nov. 1993, N. Obando, # 2478”, “CRI001, 636530”, “Slide No. 3775”; 4 ♂♂, “Est. La Casona, R.B. Monteverde, Prov. Punta., COSTA RICA, 1520 m, Mar. 1994, N. Obando, L-N-253250, 449700, # 2819”, “CRI001, 764765”, “Slide No. 3761”, “USNM 83763”; “CRI001, 764701”, “Slide No. 3762”, “USNM 83764”; “CRI001, 764794”, “Slide No. 3765”, “USNM 83766”; “CRI001, 764731”, “Slide No. 3766”; 1 ♀, “July, # 2287”, “CRI001, 130552”, “Slide No. 6012”; 1 ♂, “Ago. 1992, N. Obando”, “CRI000, 970257”, “Slide No. 3742”; 1 ♂, “Dic. 1992”, “CRI000, 896040”, “Slide No. 3735”, “USNM 83765”; 1 ♂, “Fca. Cafrosa, Est. Las Mellizas, P.N. Amistad, 1300 m, Prov. Punt., COSTA RICA, M. Ramirez, Abr. 1991, L-S-316100, 596100”, “CRI000, 474934”, “Slide No. 3687”; 3 ♂♂, “COSTA RICA, Puntarenas, Estación Biolóica Monteverde, 1500 m, 11-XI-2001, Col. Kenji Nishida, night at lights”, “Slide No. 4024”, “USNM 83768”; “Slide No. 4026”, “USNM 83769”; “Slide No. 4027”, “USNM 83770, “Wing Slide No.

7045", "USNM Slide No. 83770"; 1 ♂, "02-II-2001, Luz en la noche", "Slide No. 4034", "USNM 83767" [6 in INBio, 7 in USNM].

Distribution (Map 9). *Blastobasis iuanae* is known from two collecting sites; one along the Cordillera de Tilarán in west-central Costa Rica, and one along the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *iuanae* is derived from the Latin *iuana*, meaning door.

Blastobasis xiphiae Adamski, new species

(Figs. 83–84, 286, 328, Map 10)

Diagnosis.—*Blastobasis xiphiae* is similar to *B. iuanae* in facies but differs from the latter by having a more protuberant median lobe of the posteroventral margin of the gnathos; a narrower ventral part of the valva; and a narrower proximal flange of the dorsal part of the valva. *B. xiphiae* also has and a base of the phallus that is unmodified and a dorsal strut of the tegumen that is lacking in *B. iuanae*.

Description.—Head: Scales on vertex and frontoclypeus brown tipped with pale brown. Outer and inner surfaces of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2. Antennal scape and pecten pale brown, flagellum brownish gray gradually darkening apically; first flagellomere in male dilated, inner surface of dilated part with 13 palmate sex scales (n=1), (Fig. 286). Proboscis pale brown.

Thorax: Tegula agouti patterned, with brown on basal and apical 1/3s, and pale brown on middle 1/3; mesonotum brown on basal 1/5, pale brown on apical 4/5. Legs with scales brown tipped with pale brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 328): Length 4.5–5.2 mm (n = 3), with pale-brown scales tipped with white intermixed with brown scales tipped with pale brown and few dark-brown scales; base brown, area beyond paler than apical 2/3; median fascia faint, complete or incomplete; cell with three dark-brown spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

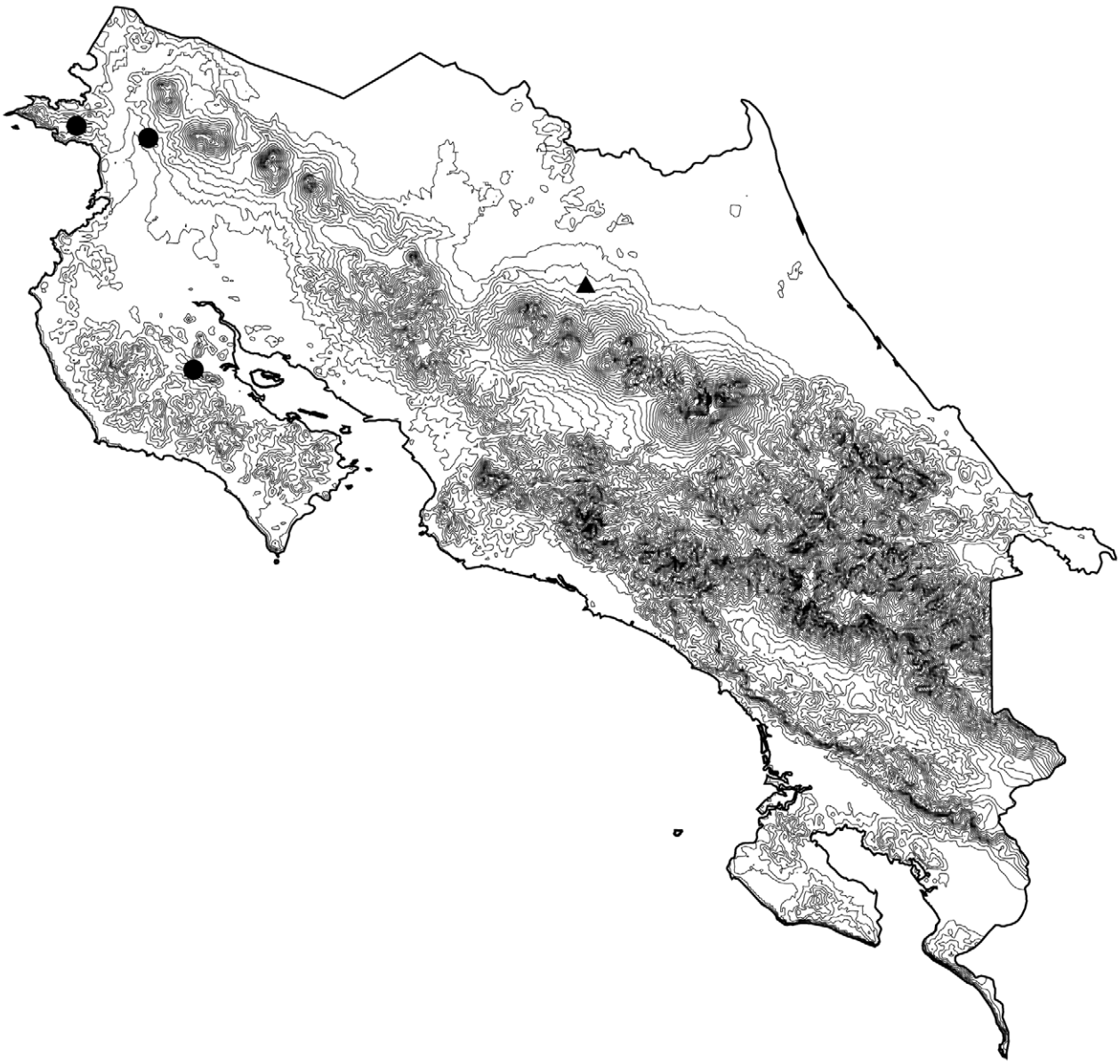
Abdomen: Male genitalia (Figs. 83–84): Uncus gradually narrowed from base, narrowly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen linear, fusing with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented area of gnathos shorter than midwidth of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part nearly parallelsided, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from slightly beyond base, upturned slightly beyond base, forming narrow fold to near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; digitate process broadly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; base of proximal flange cleft, extending laterally, forming angular and protuberant ridge; membrane above proximal flange bearing several conical setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and valva nearly equal in lengths; sclerite of phallus shorter than valva, broadly curved near midlength; anellus slightly narrowed from base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "3 km NO de Nacaome, 100 m, P[arque] N[aciónal] Barra Honda, Prov[incia] Guan[acaste], COSTA RICA, 3 a 30 May[o] 1993, M. Reyes, L-N-239000, 386000", "INBio: COSTA RICA: CRI001, 400773" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3599" [yellow label].

Paratypes (2 ♂♂): 1 ♂, "Fca. Jenny, 30 km N de Liberia, P.N. Guanacaste, Prov. Guan., COSTA RICA, R. Espinosa, Jun. 1991, L-N-316200, 364400", "CRI000, 323818", "Slide No. 3453"; 1 ♂, "Est. Murciélago, 8 km SO de Cuajiniquil, Prov. Guan., COSTA RICA, 100 m, 7–25 Abr. 1994, C. Cano, L-N-320300, 347200, # 2808", "CRI001, 764084", "Slide No. 3589", "USNM 83773" [1 in INBio, 1 in USNM].

Distribution (Map 10). *Blastobasis xiphiae* is known from three collecting sites in western Costa Rica; two in the northwestern dry forest region, and one in the south on the Nicoya Peninsula.

Etymology. The specific epithet *xiphiae* is derived from the Latin *xiphias*, meaning sword fish.



MAP 10. Distribution of *Blastobasis xiphiae* (●) and *B. graminea* (▲).

***Blastobasis graminea* Adamski, 1999**
(Figs. 13, 85–86, 257, 285, 329, Map 10)

Diagnosis.—*Blastobasis graminea* is similar to *B. neniae* but differs from the latter by having a pale forewing with dark-brown scales overlaid on the wing veins, forming a streaked pattern [in most specimens]; a wider uncus; a narrower pigmented part of the gnathos; and a shorter anellus.

Re-description.—Head: Vertex and frontoclypeus orange gray. Outer surface of labial palpus brown intermixed with few pale orange-gray scales along apical margins of segments 1–2, segment 3 pale orange gray intermixed with few brown scales; inner surface pale orange gray. Antennal scape brown intermixed with pale orange-gray scales along basal and apical margins, pecten pale orange gray, flagellum brownish gray on basal 1/2, pale brownish gray on apical 1/2; first flagellomere in male dilated, inner surface of dilated part with 38 palmate sex scales (n=1), (Fig. 285). Proboscis pale orange gray.

Thorax: Tegula with basal 1/3 brown, apical 2/3 pale orange gray; mesonotum brown intermixed with dark-brown scales. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all

segments and tarsomeres. Forewing (Fig. 329): Length 8.9–9.0 mm (n = 3), pale orange brown intermixed with brown scales; costa and veins overlaid with dark-brown scales forming narrow streaks, or streaks faint or absent [in few specimens]; cell with three spots, one near middle, two on apical end along crossvein. Undersurface brown. Venation (Fig. 13) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases, about as long as crossvein. Hindwing: Translucent pale brown. Venation (Fig. 13) with cell closed, cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 85–86): Uncus gradually narrowing from widened base, abruptly widened subapically, forming slightly rounded and protuberant margin, gradually narrowed apically, forming broadly rounded apex, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos wider than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part nearly parallelsided basally, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from beyond base, upturned slightly near 2/3, forming narrow fold to near a setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; basal margin of proximal flange linear, extending to a rounded and protuberant ridge; proximal flange bearing many conical setae intermixed with short, sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus subsigmoid-shaped; anellus wide basally, extending to broadly rounded apex, setose along apical 2/3. Female Genitalia (Fig. 257): Apophyses posteriores nearly 3X longer than apophyses anteriores. Eighth tergum with a slightly elongate, darkly pigmented, median longitudinal streak throughout most of length. Ostium bursae within membrane, slightly posterior to seventh segment. Antrum, wide, shallow. Ductus bursae about as long as apophyses posteriores, with short, parallelsided duct connecting dilated part of ductus seminalis and inception of ductus seminalis from a shared point. Inception of ductus seminalis slightly anterior to posterior margin of seventh sternum; posterior margin of seventh sternum nearly straight. Ductus bursae nearly 2X length of apophyses posteriores; with two rows of imbricate platelets within anterior 1/4, gradually becoming sparser posteriorly. Corpus bursae ovoid, sparsely spinulate, with small bulla on posterior end; signum spinate, arising from small, rounded base near middle.

Type examined: Holotype, ♀, “Colombia: Instituto Colombiano Agropecuario, Experiment Station “Palmira,” Cauca Valley, 1 March-15 March 1991, Ex. Sugar cane, Coll. Lucero Cárdenas Duque, Emerged 21 April-1 May 1991” [USNM].

Other Specimens Examined: (1 ♂, 2 ♀♀): Costa Rica: Alajuela Province, Grecia: Reared specimens from sugar cane: ♂ USNM Slide No. 83574; ♀ USNM Slide No. 83573; ♀ USNM Wing Slide No. 83226 [USNM].

Distribution (Map 10). *Blastobasis graminea* was described from Colombia and Venezuela Adamski (1999a) and has been recorded from Mexico (Autlan and Veracruz) and the southeastern United States (Jefferson and LaFourche Parishes in southern Louisiana). In Costa Rica it is known from one collecting site in the north-central part of the country along the Cordillera Central.

Remarks: This species is a stem borer feeding on *Saccharum officinarum* L., *Sorghum aethiopicum* Hackel Ruprecht ex Stapf., *Zea mays* L., *Coix lacryma-jobi* L., *Setaria paniculifera* Fournier, and *Spartina alterniflora* Loisel. (Poaceae). The biology of *B. graminea* is documented by Cárdenas et al., (1985) from Colombia, and Guagliumi (1962) recognized it in Venezuela. *B. graminea* was reported from Mexico by Villanueva-Jimenez et al., (2002), and from Mexico, Central America, and the Caribbean by Adamski et al., (2002), and from the United States by White et al., (2005). In Costa Rica, *B. graminea* is known to feed only on sugar cane.

Blastobasis neniae **Adamski, new species**

(Figs. 14, 87–88, 287, 330, Map 11)

Diagnosis.—*Blastobasis neniae* is similar to *B. graminea* but differs from the latter by having a narrower uncus; a wider pigmented part of the gnathos; and a longer anellus. *B. neniae* also lacks a forewing with a streaked pattern of dark scales overlaid on the major veins; and has a dorsal strut of the tegumen that is lacking in *B. graminea*.

Description.—Head: Vertex and frontoclypeus brown. Outer surface of labial palpus brown, intermixed with pale-brown scales along apical margins of segments 1–2; inner surface paler. Antennal scape and pecten pale brown, flagellum brown gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 37 palmate sex scales (n=1), (Fig. 287). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 330): Length 5.7 mm (n = 1), pale-brown intermixed with brown scales or pale-brown scales tipped with white intermixed with brown scales tipped with pale brown and few dark-brown scales; base brown; area beyond paler than apical 2/3; median fascia faint, complete or incomplete; cell with three dark-brown spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Venation (Fig. 14) with M_3 and CuA_1 nearly straight, arising from a common point on distoposterior part of cell; CuA_1 and CuA_2 nearly straight, divergent from bases. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 14) with anterior part of cell closed, posterior part open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 87–88): Uncus nearly parallelsided from widened base, slightly truncate apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen linear, fusing with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos equal to midwidth of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part nearly parallelsided, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose, upturned beyond base, forming narrow fold to near slightly to setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process broadly curved inwardly; area beneath costa with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally, forming narrowly ellipsoid and protuberant ridge; proximal flange bearing densely packed microtrichiae intermixed with few hairlike setae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus about equal in length to valva; sclerite of phallus sigmoid-shaped; anellus wide basally, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Murciélago, 8 km SO de Cuajiniquil, Prov[incia] Guana[caste], COSTA RICA 100 m, 7–25 Abr[il] 1994, C. Cano, L-N-320300, 347200, # 2808”, “INBio: COSTA RICA: CRI001, 764096” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3590” [yellow label].

Paratypes (21 ♂♂): 2 ♂♂, “Est. Las Pailas, P.N. Rincón de la Vieja, Prov. Guana. COSTA RICA, 800 m, 9–20 Abr. 1994, D. Garcia, L-N-306300, 388600, # 2835”, “INBio: COSTA RICA: CRI001, 784756”, “Slide No. 3455”, “INBio: COSTA RICA: CRI001, 784772”, “Slide No. 3383”; 1 ♂, “10–13 Mar. 1994, K. Taylor, L-N-306300, 388600, # 2764”, “INBio: COSTA RICA: CRI001, 749655”, “Slide No. 3302”; 1 ♂, 10–18 Abr. 1994”, “INBio: COSTA RICA: CRI001, 793492”, “Slide No. 3297”; 1 ♂, “1–22 Jul. 1992, D. Garcia, L-N-306300, 388600”, “INBio: COSTA RICA: CRI000, 689949”, “Slide No. 3331”, “USNM 83776”; 1 ♂, “21–30 Nov. 1992, L-N-306300, 388600”, “INBio: COSTA RICA: CRI001, 818730”, “Slide No. 3376”; 1 ♂, “19–27 Ene. 1993, D. Garcia, L-N-306300, 388600”, “INBio: COSTA RICA: CRI001, 303983”, “Slide No. 3367”; 1 ♂, “24 Nov.-26 Ene. 1993, J. Sihezar & G. Rodriguez, L-N-306300, 388600”, “INBio: COSTA RICA: CRI001, 211904”, “Slide No. 3423”, “USNM 83777”; 1 ♂, “Estac. Pitilla, 700 m, 9 km S Santa Cecilia, Guanac. Pr., COSTA RICA, Mar. 1989, GNP Biodiversity Survey, W85º25'40", N10º59'26"”, “INBio: COSTA RICA: CRI001, 054901”, “Slide No. 3607”; 4 ♂♂, “I Curso Microlepidop., Jul. 1990, L-N-313000, 359800”, “INBio: COSTA RICA: CRI000, 306877”, “Slide No. 3483”, “USNM 83778”; “INBio: COSTA RICA: CRI000, 306871”, “Slide No. 3321”; “INBio: COSTA RICA: CRI000, 306768”, “Slide No. 3484”, “USNM 83779”; “INBio: COSTA RICA: CRI000, 306874”, “Slide No. 3601”; 3 ♂♂, “Tierras Morenas, Prov. Guana., COSTA RICA, 685 m, Mar. 1994, G. Rodriguez, L-S-283950, 424500, # 2762”, “INBio: COSTA RICA: CRI001, 683750”, “Slide No. 3586”; “INBio: COSTA RICA: CRI001, 683798”, “Slide No. 3583”; “INBio: COSTA RICA: CRI001, 683791”, “Slide No. 3584”; 2 ♂♂, “Est. Los Almendros, P.N. Guanacaste, Prov. Guanacaste, COSTA RICA, Ene. 1992, E. Lopez, L-N-334800, 369800”, “INBio: COSTA RICA: CRI000, 713016”, “Slide No. 3597”, “USNM 83780”; 1 ♂, “300 m, 29 Mar.-2 Abr. 1995, E. Lopez, L-N-334850, 369500, # 4791”, “INBio: COSTA RICA: CRI002, 188846”, “Slide No. 3593”; 1 ♂, “Est. Maritza, 600 m, Lado oeste del Volcan Orosi, Prov. Guan., COSTA RICA, II Curso Parataxonomos, Ago. 1990, L-N-326900, 373000”, “INBio: COSTA RICA: CRI000, 668061”, “Slide No. 3514”, “Wing Slide No. 7055”; 1 ♂,

"Est. La Casona, 1520 m, Res. Biol. Monteverde, Prov.Puntarenas, COSTA RICA, Dic. 1992, N. Orbando, L-N-253250, 449700", "INBio: COSTA RICA: CRI000, 895975", "Slide No. 3602", "USNM 83781"; 1 ♂, "Playa Naranjo, P.N. Sta. Rosa, Prov. Guan., COSTA RICA, E. Alcazar, May 1991, L-N-309300, 354200", "INBio: COSTA RICA: CRI000, 563947", "Slide No. 3600" [15 in INBio, 6 in USNM].

MAP 11. Distribution of *Blastobasis neniae* (●) and *B. achaea* (▲).

Distribution (Map 11). *Blastobasis neniae* is known from eight collecting sites from the western part of Costa Rica; three along the Cordillera de Guanacaste, two along the Cordillera de Tilarán, and three along or near the Pacific Coastal dry-forest region.

Etymology. The specific epithet *neniae* is derived from the Latin *nenia*, meaning a mournful song.

***Blastobasis achaea* Adamski, new species**

(Figs. 89–90, 288, 331, Map 11)

Diagnosis.—*Blastobasis achaea* is similar to *B. orithyia* in facies but differs from the latter by having the tergal

setae not extending to the midlength of the tegumen; a more sparsely spinose apicoventral margin of the proximal flange of the dorsal part of the valva; and a narrower apical margin of the phallus.

Description.—Head: Scales on vertex, frontoclypeus brown tipped with pale brown. Outer surface of labial palpus dark brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler [many scales missing]. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically first flagellomere in male dilated, inner surface of dilated part with 38 palmate sex scales (n=1), (Fig. 288). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs with dark-brown scales intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 331): Length 5.9 mm (n = 1), pale brown intermixed with brown scales tipped with pale brown and dark-brown scales; base brown; basal area beyond brown base paler than apical 2/3; median fascia faint, complete; cell with three dark-brown spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 89–90): Uncus gradually narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen wide, fusing with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented area of gnathos slightly greater than midwidth of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part nearly parallelsided, narrowing apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose from beyond base, slightly upturned basally, forming narrow fold near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; base of proximal flange broadly cleft, extending ventrolaterally, forming broadly rounded protuberant ridge; proximal flange bearing several conical setae intermixed with hairlike setae and sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus about equal in length to valva; sclerite of phallus abruptly curved near 2/3; anellus wide basally, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Las Pailas, 800 m, P[arque] N[acional] Guan[acaste] Rincón de la Vieja, Prov[incia] Guan[acaste], COSTA RICA, 24 Nov[iembre] a 26 Ene[io] 1993, J. Sihezar & G. Rodríguez, L-N-306300, 388600”, “INBio: COSTA RICA: CRI001, 211942” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3421” [yellow label].

Paratypes (4 ♂♂): 1 ♂, “Est. Las Pailas, P.N. Rincón de la Vieja, Prov. Guana., COSTA RICA, 21–25 Mar. 1993, D. Garcia, L-N-306300, 388600, # 2765”, “INBio: COSTA RICA: CRI001, 684296”, “Slide No. 3456”, “USNM 83782”; 2 ♂♂, “Fca. Jenny, 80 km N de Liberia, P.N. Gaunacaste, Prov. Guan., COSTA RICA, Mar. 1991, R. Espinosa, L-N-316200, 364400”, “INBio: COSTA RICA: CRI001, 326434”, “Slide No. 3448”; “INBio: COSTA RICA: CRI000, 324015”, “Slide No. 3449”; 1 ♂, “Costa Rica, San José, Cuidad Colon, El Rodeo, 950 m, 21-VI-1998, C19-2221, F, Col. Kenji Nishida”, “Slide No. 4039”, “USNM 83783” [2 in INBio, 2 in USNM].

Distribution (Map 11). *Blastobasis achaea* is known from two collecting sites along the western most part of the Cordillera de Guanacaste in northwest Costa Rica.

Etymology. The specific epithet *achaea* is derived from the Roman province of Achaea, which included the whole of Greece, except Thessaly.

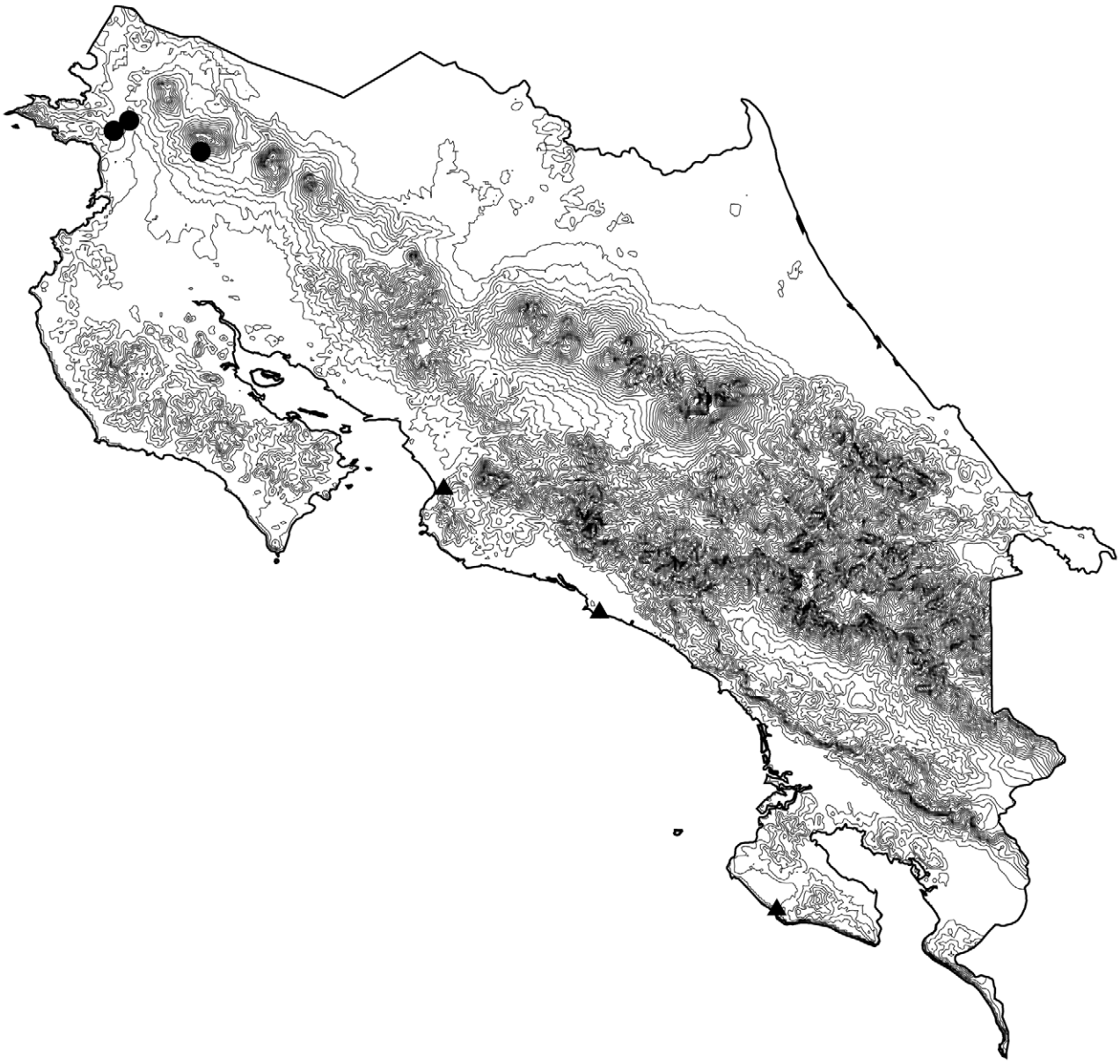
Blastobasis orithyia **Adamski, new species**

(Figs. 15, 91–92, 289, 332, Map 12)

Diagnosis.—*Blastobasis orithyia* is similar to *B. achaea* in facies but differs from the latter by having the tergal setae extending to near the midlength of the tegumen; a more densely spinose apicoventral margin of the proximal flange of the dorsal part of the valva; and a more broadly rounded apical margin of the phallus.

Description.—Head: Scales on vertex and frontoclypeus brown tipped with pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler [many

scales missing]. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 42 palmate sex scales (n=1), (Fig. 289). Proboscis pale brown.



MAP 12. Distribution of *Blastobasis orithyia* (●) and *B. babae* (▲).

Thorax: Scales on tegula brown tipped with pale brown; mesonotum pale brown [many scales missing]. Legs with dark-brown scales tipped with pale brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 332): Length 5.0–5.3 mm (n = 8), pale brown intermixed with brown scales tipped with pale brown and dark-brown scales; cell with three brown spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Venation (Fig. 15) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 15) with anterior part of cell closed, posterior part open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 91–92): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos slightly narrower than midwidth of uncus. Sockets of tergal setae extending to near midlength of

tegumen. Valva divided; ventral part near parallelsided from base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from about 1/5, upturned slightly from middle, forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process broadly curved inwardly; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally to a broadly rounded ridge; proximal flange bearing many conical setae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus slightly longer than valva; sclerite of phallus curved near 2/3; anellus wide basally, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Las Pailas, 800 m, P[arque] N[acional] Rincón de la Vieja, Prov[incia] Guan[acaste], COSTA RICA, 19 a 27 ene[io] 1993, D. García, L-N-306300, 388600", "INBio: COSTA RICA: CRI001, 304036" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3398" [yellow label].

Paratypes (7 ♂♂): 2 ♂♂, same data as for holotype except, "24 Nov. a 26 Ene. 1993, J. Sihezar & G. Rodriguez, L-N-306300, 388600", "INBio: COSTA RICA: CRI001, 212067", "Slide No. 3392", "USNM 83784"; "INBio: COSTA RICA: CRI001, 211900", "Slide No. 3422", "USNM 83785"; 1 ♂, "21–25 Mar. 1993, D. Garcia, L-N-306300, 388600, # 2765", "INBio: COSTA RICA: CRI001, 684205", "Slide No. 3405"; 1 ♂, "21 a 30 Nov. 1992, D. Garcia, L-N-306300, 388600", "INBio: COSTA RICA: CRI000, 818519", "Slide No. 3385"; 2 ♂♂, "Abr. 1991, R. Espinoza, L-N-316200, 364400", "INBio: COSTA RICA: CRI000, 649295", "Slide No. 3465"; "INBio: COSTA RICA: CRI000, 649427", "Slide No. 3466"; "Wing Slide No. 7053"; 1 ♂, "Est. Santa Rosa, Prov. Guana., COSTA RICA, 300 m, 25 Feb.-7 Mar. 1995, M. Madrigal, L-N-313300, 359300, # 4705", "INBio: COSTA RICA: CRI002, 187251", "Slide No. 3473" [5 in INBio, 2 in USNM].

Distribution (Map 12). *Blastobasis orithyia* is known from three collecting sites in northwestern Costa Rica; one along the Cordillera de Guanacaste, and two in the dry-forest region.

Etymology. The specific epithet *orithyia* is chosen in honor of Orithyia, daughter of Erechtheus, a king of Athens.

Blastobasis babae **Adamski, new species**

(Figs. 16, 93–94, 290, 333, Map 12)

Diagnosis.—*Blastobasis babae* is similar to *B. thyone* in facies but differs from the latter by having a shorter uncus; a wider gnathos; the sockets of tergal setae extending beyond the midlength of the tegumen; a more broadly curved apical process of the ventral part of the valva; a more spinose apicoventral margin of the proximal flange of the dorsal part of the valva; and a slightly shorter phallus.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler [some scales missing]. Antennal scape and pecten pale brown, flagellum brown; first flagellomere in male dilated, inner surface of dilated part with 24 palmate sex scales (n=1), (Fig. 290). Proboscis pale brown.

Thorax: Scales on tegula and mesonotum brown tipped with pale brown. Legs with dark-brown scales tipped with pale brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 333): Length 4.8–5.0 mm (n = 10), pale brown intermixed with few brown and dark-brown scales; submedian fascia incomplete, faint; cell with three dark-brown spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Venation (Fig. 16) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases; CuA_1 straight, CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 16) with anterior part of crossvein weak, posterior part of cell open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 93–94): Uncus slightly narrowed from single-tiered base, gradually narrowed, forming broadly rounded apex, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented part of gnathos wider than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part gradually narrowing from beyond base, abruptly

narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from about 1/5, upturned slightly, forming narrow fold to near slightly raised, setose, lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process abruptly curved inwardly at 2/3; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending laterally, forming broadly rounded, apicoventral ridge; proximal flange bearing many hairlike setae intermixed with few conical setae, and sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; sclerite of phallus sigmoid-shaped; anellus slightly narrowed from base, broadly rounded apically, setose mostly on apical 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Quepos, 120 m, P[arque] N[aciónal] Manuel Antonio, Prov[incia] Punt[arenas], COSTA RICA, G. Varela & R. Zuniga, Dic[iembre] 1990, L-S-370900, 449800", "INBio: COSTA RICA: CRI000, 228278" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3939" [yellow label].

Paratypes (9 ♂♂): 1 ♂, same data as above except, "INBio: COSTA RICA: CRI000, 228852", "Slide No. 3938", "Wing Slide No. 7049"; 1 ♂, same data as above except, "R. Zuniga, Ene. 1991", "INBio: COSTA RICA: CRI000, 580629", "Slide No. 3899", 4 ♂♂, same data as above except, "Feb.", "INBio: COSTA RICA: CRI000, 346854", "Slide No. 3944", "USNM 83786"; "INBio: COSTA RICA: CRI000, 347128", "Slide No. 3945"; "INBio: COSTA RICA: CRI000, 347177", "Slide No. 3948", "USNM 83787"; "INBio: COSTA RICA: CRI000, 680077", "Slide No. 3892", "USNM 83788"; 1 ♂, same data as above except, "Mar. 1991", "INBio: COSTA RICA: CRI000, 660687", "Slide No. 3891"; 1 ♂, "Est. Sirena, 0–100 m, P.N. Corcovado, Prov. Puntarenas, COSTA RICA, G. Fonseca, Mar. 1992, L-S-270500, 508300", "INBio: COSTA RICA: CRI000, 780371", "Slide No. 3913"; 1 ♂, same data as above except, "# 2769", "INBio: COSTA RICA: CRI000, 755416", "Slide No. 3929", "USNM 83789" [5 in INBio, 4 in USNM].

Distribution (Map 12): *Blastobasis babae* is known from three collecting sites along the southern Pacific Coast; one near the mouth of the Golfo de Nicoya, one south of the western part of the Cordillera de Talamanca, and one on the Osa Peninsula.

Etymology. The specific epithet *babae* is derived from the Latin *babae*, meaning an exclamation of astonishment or joy.

Blastobasis thyone **Adamski, new species**

(Figs. 95–96, 291, 334, Map 13)

Diagnosis.—*Blastobasis thyone* is similar to *B. babae* in facies but differs from the latter by having a longer uncus; a narrower gnathos; the sockets of tergal setae not extending beyond the midlength of the tegumen; a more acutely curved apical process of the ventral part of the valva; a less spinose apicoventral margin of the proximal flange of the dorsal part of the valva; and a slightly longer phallus.

Description.—Head: Scales on vertex, frontoclypeus brown tipped with pale brown. Outer surface of labial palpus dark brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface pale brown. Antennal scape and pecten brown; first flagellomere in male dilated, inner surface of dilated part with 23 palmate sex scales (n=1), (Fig. 291). Proboscis brown.

Thorax: Tegula and mesonotum agouti patterned, with basal and apical 1/3s brown, middle 1/3 pale brown. Legs with brown scales tipped with pale brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 334): Length 5.6 mm (n = 1), with brown scales tipped with pale brown intermixed with brown and pale-brown scales; submedian fascia faint; cell with three dark-brown spots, one near middle, two on apical end along crossvein; marginal spots brown. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 95–96): Uncus nearly parallelsided from base to 2/3, abruptly narrowed apically, forming rounded apex, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos narrow, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process

setose on outer surface, planate on inner surface; ventral margin setose from about 1/5, upturned slightly, forming narrow fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally to a broadly rounded, apicoventral ridge; proximal flange bearing sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; phallus bulbous basally, sclerite of phallus sigmoid-shaped; anellus slightly narrowed from widened base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Estac[ión] Quebrada Bonita, 50 m, R[eserva] B[iológia] Carara, Punt[arenas] Pr[ovincia], COSTA RICA, Oct[ubre] 1989, R. Zuniga, L-N-194500, 469850", "INBio: COSTA RICA: CRI000, 160848" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3896" [yellow label].

MAP 13. Distribution of *Blastobasis thyone* (●) and *B. usurae* (▲).

Distribution (Map 13). *Blastobasis thyone* is known from one collecting site along the southwestern coast of Costa Rica near the mouth of the Gulfo de Nicoya.

Etymology. The specific epithet *thyone* is chosen in honor of Thyone, mother of Bacchus.

***Blastobasis usurae* Adamski, new species**
(Figs. 97–98, 292, 335, Map 13)

Diagnosis.—*Blastobasis usurae* is similar to *B. echus* in facies but differs from the latter by having a narrower anal opening; the sockets of tergal setae not extending beyond the midlength of the tegumen; a narrower proximal flange of the dorsal part of the valva; and a smaller phallus. *B. usurae* also has a subquadrate pigmented part of the gnathos; and an apex of the anellus that is shallowly emarginate mesially, that are lacking in *B. echus*.

Description.—Head: Vertex and frontoclypeus brown [with scales missing]. Outer and inner surfaces of labial palpus pale brown. Antennal scape pale brown; first flagellomere in male dilated, inner surface of dilated part with 32 palmate sex scales (n=1), (Fig. 292); [apical flagella missing]. Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs pale brown. Forewing (Fig. 335): Length 4.9 mm (n = 1), pale brown intermixed with few brown scales; cell with three spots, one spot near middle, two spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 97–98): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos wider than midwidth of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from about 1/5, upturned slightly, forming narrow fold to near slightly raised setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process broadly curved inwardly; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally forming broadly rounded, apicoventral ridge; proximal flange bearing conical setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; sclerite of phallus acutely curved near 2/3; anellus slightly narrowed apically from widened base, shallowly emarginate apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinoza, Jun[io] 1991, L-N-316200, 364400”, “INBio: COSTA RICA: CRI000, 324228” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3443” [yellow label].

Distribution (Map 13). *Blastobasis usurae* is known from one collecting site in northwestern Costa Rica southwest of the Cordillera de Guanacaste in the dry-forest region.

Etymology. The specific epithet *usurae* is derived from the Latin *usura* meaning, enjoyment.

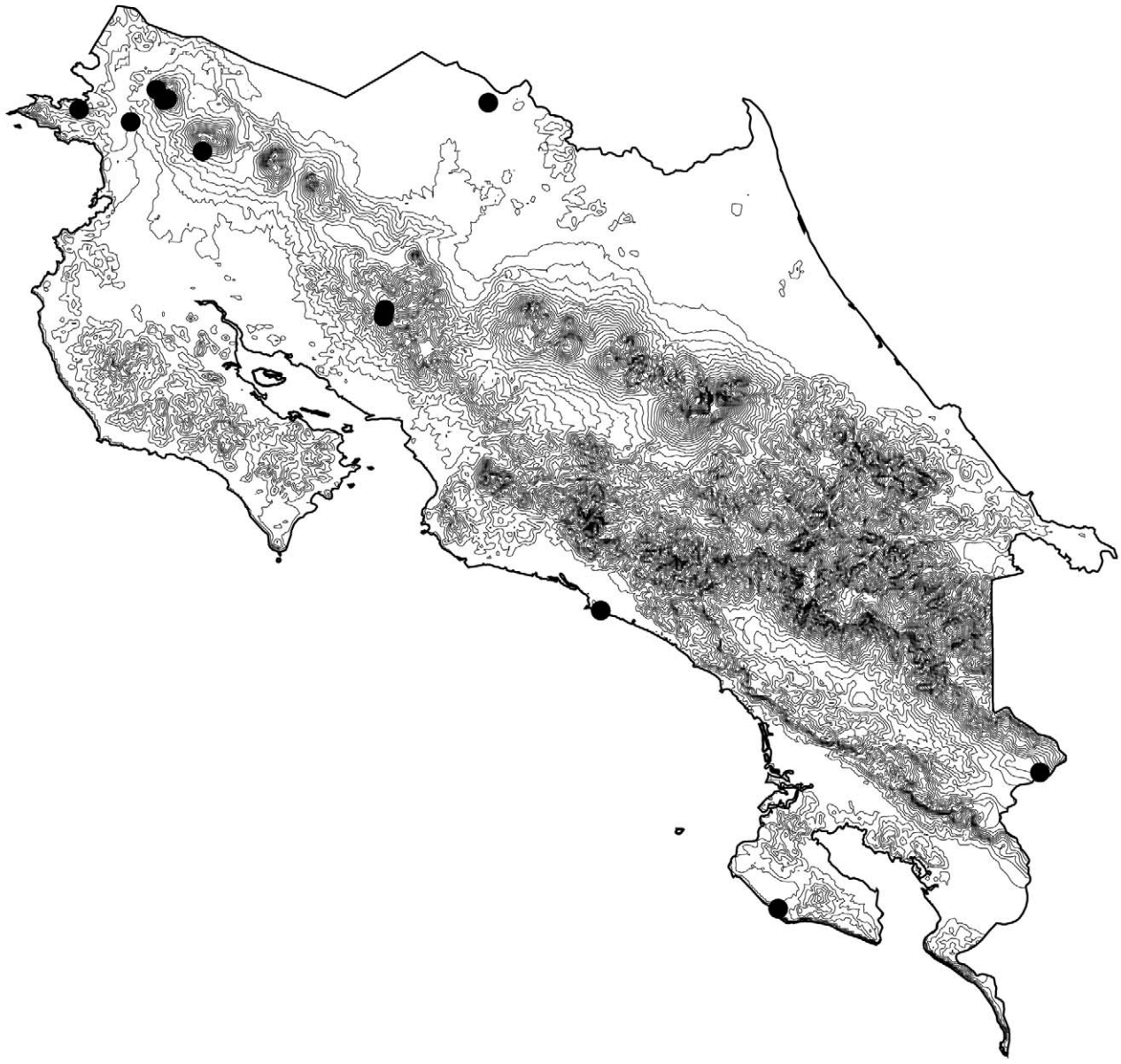
***Blastobasis echus* Adamski, new species**
(Figs. 17, 99–100, 293, 336, Map 14)

Diagnosis.—*Blastobasis echus* is similar to *B. usurae* in facies but differs from the latter by having a wider anal opening; a more elongate pigmented part of the gnathos; sockets of tergal setae extending beyond the midlength of the tegumen; a wider proximal flange of the dorsal part of the valva; a larger phallus; and an apex of the anellus that is more emarginate mesially. *B. echus* also has and an anellus that is setose only along its lateral margins, a feature that is lacking in *B. usurae*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer and inner surfaces of labial palpus with brownish-gray scales tipped with pale brownish gray, and pale brownish-gray scales along apical margins of segments 1–2. Antennal scape with brownish-gray scales tipped with pale brownish gray, pecten brown, flagellum dark brownish gray; first flagellomere in male dilated, inner surface of dilated part with 56 palmate sex scales (n=1), (Fig. 293). Proboscis pale brownish gray.

Thorax: Tegula with brownish-gray scales tipped with pale brownish gray; mesonotum with basal 1/4 brownish gray, apical 3/4 with scales brownish gray tipped with pale brownish gray. Forewing (Fig. 336): Length 4.1–8.5 mm (n = 140), brownish-gray scales tipped with pale brownish gray intermixed with brownish-gray scales

and pale brownish-gray scales; basal 1/3 pale brownish gray intermixed with few brownish-gray scales except, costa brownish gray or base dark gradually brightening to 1/3; submedian fascia complete or incomplete; apical 2/3 dark basally, gradually brightening to apex; cell with three spots, one near middle, two on apical end along crossvein; marginal spots appear as short streaks on apical portions of radial and medial veins. Undersurface brown. Venation (Fig. 17) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases, CuA_1 slightly curved, CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 17) with anterior part of cell closed, posterior part of cell open; cubitus 4-branched with all veins arising submarginally from cubitus.



MAP 14. Distribution of *Blastobasis echus* (●).

Abdomen: Male genitalia (Figs. 99–100): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose; shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos narrower than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from

about 1/5, upturned greatly beyond base, forming wide fold to near base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process broadly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending laterally to a broadly rounded, apicoventral ridge; proximal flange bearing densely packed microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus longer than valva, bulbous basally; sclerite of phallus shorter than valva, acutely curved near 2/3; anellus near parallelsided from base, apically notched mesially, setose along margin. Female Genitalia: Unknown.

Holotype, ♂, "F[in]ca Cafrosa, Est[ación] Las Mellizas, P[arque] N[acional] Amistad, 1300 m, Prov[incia] Punt[arenas]", "COSTA RICA, M. Ramirez & G. Mora, Set[iembre] 1990, L-S-316100, 596100", "INBio: COSTA RICA: CRI000, 666167" [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 3710" [yellow label].

Paratypes (139 ♂♂): 1 ♂, same data as for holotype except, "Set.", "CRI000, 666148", "Slide No. 3678"; 1 ♂, "Oct.", "CRI000, 575391", "Slide No. 3636", "USNM 83790"; 2 ♂♂, "Nov.", "CRI000, 521710", "Slide No. 3698", "USNM 83791"; "CRI000, 521859", "Slide No. 3699", "USNM 83792"; 1 ♂, "M. Ramirez, Mar., 1991", "CRI000, 301699", "Slide No. 3696"; 1 ♂, "Abr.", "CRI000, 474616", "Slide No. 3612"; 1 ♂, "M.M. Chavarria & G. Mora, Ene. 1991", "CRI000,380751", "Slide No. 3615", "USNM 83793"; 13 ♂♂, "M. Ramirez, Abr. 1991", "CRI000, 474700", "Slide No. 3618", "USNM 83794"; "CRI000, 474740", Slide No. 3621" "CRI000, 474726", "Slide No. 3624", "USNM 83795"; "CRI000, 474809", "Slide No. 3625"; "CRI000, 475010", "Slide No. 3627"; "CRI000, 474760", "Slide No. 3626", "USNM 83796"; "CRI000, 474825", "Slide No. 3655"; "CRI000, 474586", "Slide No. 3681"; "CRI000, 474604", "Slide No. 3658", "USNM 83797"; "CRI000, 474869", "Slide No. 3656", "USNM 83798"; "CRI000, 474833", "Slide No. 3682"; "CRI000, 475001", "Slide No. 3688"; "CRI000, 474790", "Slide No. 3609"; 3 ♂♂, "M. Ramirez, May. 1991", "CRI000, 355324", "Slide No. 3708", "USNM 83799"; "CRI000, 355235", "Slide No. 3657"; "CRI000, 355314", "Slide No. 3670", "USNM 83800"; 2 ♂♂, "G. Mora, May. 1991", "CRI000, 320052", "Slide No. 3717", "USNM 83801"; "CRI000, 320086", "Slide No. 3720", "USNM 83802"; 10 ♂♂, "Est. Las Pailas, 800 m, P. N. Rincon de la Vieja, Prov. Guanacaste, COSTA RICA, 1 a 22 Jul. 1992, D. Garcia, L-N-306300, 388600", "CRI000, 689983", "Slide No. 3339"; "CRI000, 689963", "Slide No. 3354"; "CRI000, 689978", "Slide No. 3347"; "CRI000, 689981", "Slide No. 3348"; "CRI000, 689956", "Slide No. 3349", "USNM 83803"; "CRI000, 689935", "Slide No. 3351", "USNM 83804"; "CRI000, 689979", "Slide No. 3352", "USNM 83805"; "CRI000, 689940", "Slide No. 3355"; "CRI000, 689927", "Slide No. 3358"; "CRI000, 689966", "Slide No. 3359", "USNM 83806"; 9 ♂♂, "C. Cano", "CRI000, 718963", "Slide No. 3341"; "CRI000, 718964", "Slide No. 3330"; "CRI000, 719000", "Slide No. 3328"; "CRI000, 718966", "Slide No. 3336"; "CRI000, 719019", "Slide No. 3334"; "CRI000, 718935", "Slide No. 3333", "USNM 83807"; "CRI000, 719017", "Slide No. 3313"; "CRI000, 719004", "Slide No. 3332"; "CRI000, 718933", "Slide No. 3340", "USNM 83808"; 18 ♂♂, "21–30 Nov. 1991", "CRI000, 818562", "Slide No. 3377", "USNM 83809"; "CRI000, 818723", "Slide No. 3378"; "CRI000, 818716", "Slide No. 3379", "USNM 83810"; "CRI000, 818801", "Slide No. 3380"; "CRI000, 818797", "Slide No. 3384"; "CRI000, 818613", "Slide No. 3386"; "CRI000, 818629", "Slide No. 3387"; "CRI000, 818594", "Slide No. 3388"; CRI000, 818628", "Slide No. 3389"; "CRI000, 818648", "Slide No. 3390"; "CRI000, 818671", "Slide No. 3391"; "CRI000, 828144", "Slide No. 3318", "USNM 83811"; "CRI000, 828085", "Slide No. 3325"; "CRI000, 818621", "Slide No. 3315"; "CRI000, 818778", "Slide No. 3316"; "CRI000, 828122", "Slide No. 3296", "USNM 83812"; "CRI000, 818564", "Slide No. 3431"; "CRI000, 818795", "Slide No. 3430"; 2 ♂♂, "23 Set.-12 Oct., 1992, D. Garcia", "CRI000, 863244", "Slide No. 3293"; "CRI000, 920483", "Slide No. 3292"; 3 ♂♂, "23 Oct.-12 Nov., 1992, C. Cano", "CRI000, 920523", "Slide No. 3317", "USNM 83813"; "CRI000, 920401", "Slide No. 3319", "USNM 83814"; "CRI000, 920457", "Slide No. 3291"; 3 ♂♂, "24 Oct.-12 Nov., 1992, D. Garcia", "CRI000, 946628", "Slide No. 3360"; "CRI000, 946660", "Slide No. 3361", "USNM 83815"; "CRI000, 946505", "Slide No. 3310"; 8 ♂♂, "24 Nov.-26 Ene., 1993, J. Sihezar & G. Rodríguez", "CRI001, 211953", "Slide No. 3420"; "CRI001, 211945", "Slide No. 3429"; "CRI001, 211970", "Slide No. 3424"; "CRI001, 211901", "Slide No. 3425"; "CRI001, 212031", "Slide No. 3366"; "CRI001, 212052"; "Slide No. 3314"; "CRI001, 212056", "Slide No. 3307"; "CRI001, 212048", "Slide No. 3306"; 3 ♂♂, "19–27 Ene., 1993, D. Garcia", "CRI001, 303941", "Slide No. 3326", "USNM 83816"; "CRI001, 303956", "Slide No. 3342"; "CRI001, 303970", "Slide No. 3344"; 1 ♂, "10–27 Mar., 1993, K. Taylor", "CRI001, 319322", "Slide No. 3345"; 2 ♂♂, "19–27 Ene., 1993, D. Garcia", "CRI001, 304029", "Slide No. 3397"; "CRI001, 303994", "Slide No. 3393", "USNM 83817"; 14 ♂♂, "21–25Mar., 1993, D. Garcia, # 2765", "CRI001, 684196", "Slide No. 3410"; "CRI001, 684256", "Slide

No. 3411"; "CRI001, 684202", "Slide No. 3412"; "CRI001, 684299", "Slide No. 3413"; "CRI001, 684211", "Slide No. 3415"; "CRI001, 684173", "Slide No. 3416"; "CRI001, 684343", "Slide No. 3414"; "CRI001, 684283", "Slide No. 3457"; "CRI001, 684278", "Slide No. 3459"; "CRI001, 684138", "Slide No. 3408"; "CRI001, 684139", "Slide No. 3409"; "CRI001, 684344", "Slide No. 3403", "USNM 83818"; "CRI001, 684231", "Slide No. 3401"; "CRI001, 684180", "Slide No. 3303"; 2 ♂♂, "10–13 Mar., 1994, D. Garcia, # 2767", "CRI001, 738506", "Slide No. 3407"; "CRI001, 738470", "Slide No. 3419"; 1 ♂, "7–19 Feb., 1994, D. Garcia, # 2624", "CRI001, 986253", "Slide No. 3477", "USNM 83819"; 1 ♂, "10–18 Abr., 1994, K. Taylor, # 2838", "CRI001, 793491", "Slide No. 3298"; 9 ♂♂, "Est. Maritza, 600 m, lado O Volcan Orosi, Prov. Guanacaste, COSTA RICA, D. Garcia, 28 Feb.-10 Mar., 1992, L-N-326900, 373000", "CRI000, 695284", "Slide No. 3490", "USNM 83820"; "CRI000, 695248", "Slide No. 3492"; "CRI000, 695274", "Slide No. 3493"; "CRI000, 695250", "Slide No. 3494"; "CRI000, 695324", "Slide No. 3495"; "CRI000, 695326", "Slide No. 3496"; "CRI000, 695263", "Slide No. 3510"; "CRI000, 427704", "Slide No. 3513"; "CRI000, 695266", "Slide No. 3838", "USNM 83821"; 1 ♂, "F.A. Quesada, 27 Feb.-10 Mar. 1992", "CRI000, 889095", "Slide No. 3537"; 1 ♂, "R. Vargas", "CRI000, 468682", "Slide No. 3498"; 1 ♂, "I Curso Microlepidoptera, Jul. 1990", "CRI000, 179547", "Slide No. 3502"; 1 ♂, "II Curso Parataxonomos, Ago., 1990", "CRI000, 680747", "Slide No. 3522"; 1 ♂, "Est. Cacao, 1000–1400m, lado SO Volcan Cacao, P.N. Guanacaste, COSTA RICA, G. Rodrigues, 21–28 May., 1992, L-N-323300, 375700", "CRI000, 684309", "Slide No. 3279", "Wing Slide No. 7026"; 2 ♂♂, "D. Brenes, 21–29 May., 1992", "CRI000, 488002", "Slide No. 3157", "USNM 83822"; CRI000, 488042", "Slide No. 3187", "Wing Slide No. 7036"; 1 ♂, "C. Chaves, Mar. 1991", "CRI000, 317627", "Slide No. 3162"; 1 ♂, "C. Chaves, Abr. 1991", "CRI000, 434842", "Slide No. 3136", "USNM 83823"; 1 ♂, "June 1991", "CRI000, 623350", "Slide No. 3182", "Wing Slide No. 7037"; 1 ♂, "21–29 May., 1992, D. Garcia", "CRI001, 290689", "Slide No. 3121"; 1 ♂, "13–17 Feb., 1995, E. Fletes, # 4766", "CRI002, 143101", "Slide No. 3175", "USNM 83824"; 1 ♂, "II Curso Parataxonomos, Jun., 1990", "CRI000, 661534", "Slide No. 3137"; 1 ♂, "Est. Sirena, P.N. Corcovado, Prov. Puntarenas, COSTA RICA, 1–100 m, Mar., 1994, G. Fonseca, L-S-270500, 508300, # 2769", "CRI001, 755498", "Slide No. 3928"; 1 ♂, "Mar., 1992", "CRI000, 780351", "Slide No. 3937"; 2 ♂♂, "G. Fonseca, Abr. 1992", "CRI000, 794323", "Slide No. 3921"; "CRI000, 794535", "Slide No. 3923"; 2 ♂♂, "San Luis, Monteverde, Prov. Puntarenas, COSTA RICA, 1000–1350 m, Abr., 1994, Z. Fuentes, L-N-449250, 250850, # 2845", "CRI001, 796750", "Slide No. 3911", "USNM 83825"; "CRI001, 796758", "Slide No. 3906", "USNM 83826"; 1 ♂, "Feb., 1995, Z. Fuentes, # 4393", "CRI002, 165555", "Slide No. 3859"; 1 ♂, "Dic., 1994, de Luz, Z. Fuentes, # 3380", "CRI002, 119330", "Slide No. 3857", "USNM 83827"; "USNM 83827"; 2 ♂♂, "Tierras Morenas, Prov. Guanacaste, COSTA RICA, Mar. 1994, G. Rodriguez, L-S-283950, 424500, # 2762", "CRI001, 683723", "Slide No. 3582"; "CRI001, 683731", "Slide No. 3585"; 1 ♂, "Fca. Jenny, 30 km N Liberia, P.N. Guanacaste, COSTA RICA, E. Araya & R. Espinoza, Oct. 1990, L-N-316200, 364400", "CRI000, 498368", "Slide No. 3475"; 1 ♂, "Quepos, 80 m P.N. Manuel Antonio, Prov. Puntarenas, COSTA RICA, R. Zuniga, Ene. 1991, L-S-370900, 448800", "CRI000, 366807", "Slide No. 3947", "USNM 83828"; 1 ♂, "Est. La Casona, 1520 m, Res. Biol. Monteverde, Prov. Puntarenas, COSTA RICA, Dic. 1992, N. Obando, L-N-253250, 449700", "CRI001, 358264", "Slide No. 3738", "USNM 83829"; 1 ♂, "Est. Mengo, 1100 m, SW side Volcan Cacao, Prov. Guanacaste, COSTA RICA, Feb. 1989, GNP Biodiversity Survey, 85°28'10"W, 10°55'43"N", "CRI001, 054909", "Slide No. 3605", "USNM 83830"; 1♂"Est. Murciélago, 8 km SO de Cuajiniquil, Prov. Guanacaste, COSTA RICA, 100 m, 7–25 Mar. 1994, F. Quesada, L-N-320300, 347200, # 2794", "CRI001, 758757", "Slide No. 3588" [98 in INBio, 41 in USNM].

Distribution (Map 14). *Blastobasis echus* is known from several collecting sites near or along the Cordillera de Guanacaste, the Cordillera de Tilarán, and the Cordillera de Talamanca; two dry-forest sites in northwestern Costa Rica, one site in the north-central part of the country near the border of Nicaragua, and two sites along eastern Pacific Coast.

Etymology. The specific epithet *echus* is derived from the Latin *echo*.

Blastobasis litis **Adamski, new species**

(Figs. 101–102, 294, 337, Map 15)

Diagnosis.—*Blastobasis litis* is similar to *B. chanes* in facies but differs from the latter by having sockets of tergal setae extending beyond the midlength of the tegumen; and a wider apicoventral margin of proximal flange of

dorsal part of the valva. *B. litis* also has a phallus and sclerite of phallus that are acutely curved at 2/3; an anellus that is widely truncate apically, and setose along its lateral margins; and a dorsal strut of the tegumen that are lacking in *B. chanes*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with white intermixed with pale grayish-brown scales. Outer surface of labial palpus grayish brown intermixed with white scales along apical margins of segments 1–2, inner surface paler. Antennal scape and pecten grayish brown, flagellum brownish gray gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 23 palmate sex scales (n=1), (Fig. 294). Proboscis grayish brown.

MAP 15. Distribution of *Blastobasis litis* (●) and *B. chanes* (▲).

Thorax: Scales on tegula and mesonotum grayish brown tipped with pale grayish brown. Legs with grayish-brown scales tipped with pale grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 337): Length 5.0 – 6.0 mm (n = 2), grayish brown intermixed with grayish-brown scales tipped with pale grayish brown; base grayish brown, submedian fascia grayish brown, complete; cell with three grayish-brown spots, one spot near middle, two spots on apical end along crossvein; marginal spots grayish brown. Undersurface grayish brown. Hindwing: Translucent grayish brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 101–102): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen narrow, fused with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos about equal to midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/5, upturned slightly, forming narrow fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process broadly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, widening ventrolaterally forming a broadly rounded apicoventral ridge; proximal flange bearing densely packed microtrichiae intermixed with sparse hairlike setae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus widened basally, parallelsided, apically truncate, narrowly notched mesially, setose along margin. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Cafrosa, 1300 m, Est[ación] Las Melizas, P[arque] Internac[ional] La Amistad, Prov[incia] Punt[arenas], COSTA RICA, M. Ramirez, May[o] 1991, L-S-316100, 596100”, “INBio: COSTA RICA: CRI000, 355380” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3632” [yellow label].

Paratype: 1 ♂, “Est. Marirza, 600 m, ledo oeste del Volcan Crosi, Prov. Guan., COSTA RICA, I Curso Microlepidoptera, Jul. 1990, L-N-326900, 373000”, “CRI000, 179349”, “Slide No. 3501”, “USNM 83831”, [paratype in USNM].

Distribution (Map 15). *Blastobasis litis* is known from two distantly separate collecting sites: one along the western most part of the Cordillera de Guanacaste and one along the eastern most part of the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *litis* is derived from Latin *Litis*, meaning a legal controversy or action.

Blastobasis chanes **Adamski, new species**

(Figs. 103–104, 295, 338, Map 15)

Diagnosis.—*Blastobasis chanes* is similar to *B. litis* in facies but differs from the latter by having the sockets of tergal setae not extending beyond the midlength of the tegumen; and a narrower apicoventral margin of the proximal flange of the dorsal part of the valva. *B. chanes* also has a sclerite of phallus that is shallowly sigmoid-shaped; and an anellus that is narrowly truncate apically and setose on apical 1/2 that are lacking in *B. litis.* .

Description.—Head: Vertex, frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler. Antenna pale brown; first flagellomere in male dilated, inner surface of dilated part with 7 palmate sex scales (n=1), (Fig. 295). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 338): Length 4.0–4.5 mm (n = 3), pale brown intermixed with few brown scales; cell with a short, brown streak near middle and two brown spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 103–104): Uncus slightly narrowed from base, narrowly rounded apically, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen; posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos slightly wider than midwidth of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly angled dorsolaterally from beyond base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from about 1/5, upturned slightly near middle, forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process abruptly curved inwardly near 2/3; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal

ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending laterally forming broadly rounded, apicoventral ridge; proximal flange bearing row of long hairlike setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus about equal in length to valva; sclerite of phallus subsigmoid-shaped, shorter than valva; anellus slightly narrowed apically from widened base, apically truncate, shallowly and widely emarginate apically, setose along apical 2/3. Female Genitalia: Unknown.

Holotype, ♂, "F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinoza, Jun[io] 1991, L-N-316200, 364400", "INBio: COSTA RICA: CRI000, 324008" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3450" [yellow label].

Paratypes (2 ♂♂): 1 ♂, same data as for holotype except, "80 km N de Liberia, May 1991, L-N-316200, 364400", "CRI000, 457988", "Slide No. 3451"; 1 ♂, "Quepos, 80 m, P.N. Manuel Antonio, Prov. Punt., COSTA RICA, R. Zuniga, Mar. 1991, L-S-370900, 448800", "CRI000, 648386", "Slide No. 3942", "USNM 83832", [1 in INBio, 1 in USNM].

Distribution (Map 15). *Blastobasis chanes* is known from two collecting sites; one south of the western most part of the Cordillera de Guanacaste in the dry-forest region and one near the middle of the southern Pacific coastline.

Etymology. The specific epithet *chanes* is derived from the Latin *chane* meaning, a fish.

Blastobasis fax **Adamski, new species**

(Figs. 105–106, 296, 339, Map 16)

Diagnosis.—*Blastobasis fax* is similar to *B. coffeaella* in facies but differs from the latter by having a more narrowly rounded apex of the uncus; a shorter pigmented part of the gnathos; a broader apical margin of the ventral part of the valva; and a more sparsely spinose apicoventral margin of the proximal flange of the dorsal part of the valva. *B. fax* also has a sclerite of the phallus that is curved at 2/3; and an anellus that is broadly rounded apically that are lacking in *B. coffeaella*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler [many scales missing]. Antennal scape pale brown; first flagellomere in male dilated, inner surface of dilated part with 25 palmate sex scales (n=1), (Fig. 296). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 339): Length 4.4 mm (n = 1), pale brown intermixed with few brown scales. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 105–106): Uncus gradually narrowing from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length than width of anal opening. Dorsal strut of tegumen linear, fused with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, shallowly bidentate; midwidth of pigmented part of gnathos wider than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part slightly angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from near midlength, upturned slightly, forming narrow fold to near slightly raised, setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process laterally widened, protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally forming narrowly rounded, apicoventral ridge; proximal flange bearing few conical setae intermixed with sparse microtrchiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; sclerite of phallus broadly curved near 2/3; anellus near parallelsided from base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinoza, Jun[io] 1991, L-N-316200, 364400", "INBio: COSTA RICA: CRI000, 323934" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3454" [yellow label].

MAP 16. Distribution of *Blastobasis fax* (●) and *B. coffeaella* (▲).

Distribution (Map 16). *Blastobasis fax* is known from one collecting site south of the western most part of the Cordillera de Guanacaste in the dry-forest region in western Costa Rica.

Etymology. The specific epithet *fax* is derived from the Latin word *facis* meaning, a torch.

***Blastobasis coffeaella* (Busck, 1925)**
(Figs. 18, 107–108, 258, 297, 340, Map 16)

Diagnosis.—*Blastobasis coffeaella* is similar to *B. fax* in facies but differs from the latter by having a more broadly rounded apex of the uncus; a longer pigmented part of the gnathos; a narrower apical margin of the ventral part of the valva; and a more densely spinose apicoventral margin of the proximal flange of the dorsal part of the valva. *B. coffeaella* also has a sclerite of the phallus that is sigmoid-shaped; and an apex of the anellus that is mesially emarginate apically, that are lacking in *B. fax*.

Re-description.—Head: Scales of vertex and frontoclypeus grayish brown tipped with pale grayish brown.

Outer surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2, inner surface pale brown. Antennal scape grayish brown intermixed with few pale-brown scales, pecten grayish brown, flagellum brown gray gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 34 palmate sex scales (n=1), (Fig. 297). Proboscis pale brown.

Thorax: Tegula with scales agouti patterned, with basal and apical 1/3s grayish brown tipped with pale grayish-brown, and middle 1/3 pale brown; mesonotum with basal 1/2 brown, apical 1/2 pale brown. Legs brown intermixed with grayish-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 340): Length 6.2–7.9 mm (n = 3), grayish brown intermixed with grayish-brown scales tipped with pale grayish brown and few reddish-brown scales; base dark, gradually brightening to submedian fascia; submedian fascia incomplete; cell with three spots, one near middle, two on apical end along crossvein; apical area between apical part of cell and apex slightly darkening; marginal spots present. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 107–108): Uncus nearly parallelsided from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length than width of anal opening. Dorsal strut of tegumen narrowly linear, fused with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of pigmented part of gnathos slightly wider than midwidth of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin upturned near 1/3, forming narrow fold to near slightly raised, setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa and proximal flange overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process widened laterally, protracted ventrally fusing with dorsolateral ridge of proximal flange; base of ventral margin of proximal flange cleft, extending ventrolaterally forming a broadly rounded, protuberant ridge; proximal flange serrate, bearing few conical setae intermixed with sparse microtrchiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus slightly narrowed from widened base, mesially notched apically, setose on apical 1/2 and along lateral margin to base. Female Genitalia (Fig. 258): Apophyses posteriores nearly 2 1/2X longer than apophyses anteriores. Eighth tergum with a slightly elongate, darkly pigmented, median longitudinal streak throughout most of length. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment; narrow duct connecting ductus bursae and inception of ductus seminalis from shared point; inception of ductus seminalis slightly anterior to posterior margin of seventh sternum. Ductus bursae about 1 2/5X longer than apophyses posteriores, with two rows of imbricate platelets within anterior 1/4, gradually becoming sparser posteriorly. Corpus bursae elongate, sparsely spinulate on posterior end; signum short, conical, arising from small, rounded base near middle.

Type examined: Holotype, ♂, “on coffee, Sao Paulo, Brazil, A[rthur] Neiva [Collector]”, “*Auximobasis coffeaella* Busck, Slide”, “U.S. Nat[ional] Mus[eum] Cat[alogue] Num[ber] 28167”, [USNM].

Other Specimens Examined: (2 ♂♂, 1 ♀): Costa Rica: Heredia Province: Barreal: reared specimens from coffee beans: 2 ♂♂, Slide No. 82543; Wing Slide No. 83227; 1 ♂ not dissected; 1 ♀, Slide No. 82544 [USNM].

Distribution (Map 16). *Blastobasis coffeaella* is known from one collecting site in central Costa Rica between the Cordillera de Central and the western most part of the Cordillera de Talamanca. This species is known also from Sao Paulo, Brazil.

Remarks: The biology of *Blastobasis coffeaella* on *Coffea arabica* L. (Rubiaceae) was described by Busck (1925).

Blastobasis rotullae **Adamski, new species**

(Figs. 19, 109–110, 298, 341, Map 17)

Diagnosis.—*Blastobasis rotullae* is similar to *B. custodis* in facies but differs from the latter by having the sockets of tergal setae not extending beyond the midlength of the tegumen; a more narrowly rounded apicoventral margin of proximal flange of the dorsal part of the valva; and a smaller anellus.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed

with pale-brown scales along apical margins of segments 1–2, inner surface paler. Antennal scape pale brown intermixed with few brown scales, pecten pale brown, flagellum brownish gray; first flagellomere in male dilated, inner surface of dilated part with 42 palmate sex scales (n=1), (Fig. 298). Proboscis brownish gray.

Thorax: Tegula and mesonotum pale brown intermixed with brown scales. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 341): Length 4.2–5.9 mm (n = 8), pale brown intermixed with brown scales or with brownish-gray scales tipped with pale brown intermixed with pale-brown scales; cell with three brown spots, one spot near middle, two spots on apical end along crossvein; marginal spots brown. Undersurface brownish gray. Venation (Fig. 19) with M_3 and CuA_1 arising from common point on distoposterior part of cell; cubital veins divergent from bases; CuA_1 straight, CuA_2 acutely curved basally. Hindwing: Translucent brownish gray gradually darkening to apex. Venation (Fig. 19) with cell closed, posterior part of crossvein weak; cubitus 4-branched with all veins arising submarginally from cubitus.

MAP 17. Distribution of *Blastobasis rotullae* (●) and *B. custodis* (▲).

Abdomen: Male genitalia (Figs. 109–110): Uncus slightly narrowed from base, narrowly rounded apically, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, shallowly

bidentate. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part nearly parallelsided from base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose, upturned near middle, forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally forming narrowly rounded, apicoventral ridge; membrane above proximal flange bearing several conical setae intermixed with sparse microtrchiae. Juxta bandlike. Vinculum semicircular. Phallus shorter than valva, bulbous basally; sclerite of phallus longer than valva, subsigmoid-shaped; anellus widened basally, parallelsided; apex shallowly notched mesially, trisetose along lateral margins. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Queb[rada] Bonita, 50 m, Res[erva] Biol[ógica] Carara, Prov[incia] Punt[arenas], COSTA RICA, R. Zuniga, Feb[rero] 1991, L-N-194500, 469850", "INBio: COSTA RICA: CRI000, 680082" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3894" [yellow label].

Paratypes (7 ♂♂): 1 ♂, same data as for holotype except, "Jun. 1991", "CRI000, 349060", "Slide No. 3898", "USNM 83833"; 1 ♂, "Est. Sirena, P.N. Corcovado, 0–100 m, Prov. Punt., COSTA RICA, G. Fonseca, Abr. 1991, L-S-270500, 508300", "CRI000, 475888", "Slide No. 3934"; 3 ♂♂, "Abr. 1992", "CRI000, 794325", "Slide No. 3919", "USNM 83834"; "CRI000, 794563", "Slide No. 3920", "USNM 83835"; "CRI000, 794420", "Slide No. 3922"; 1 ♂, "May. 1992", "CRI000, 914702", "Slide No. 4024", "Wing Slide No. 7041"; 1 ♂, "G. Fonseca, May. 1993", "CRI001, 205285", "Slide No. 3931", "USNM 83836", [3 in INBio, 4 in USNM].

Distribution (Map 17). *Blastobasis rotullae* is known from two collecting sites in southern Costa Rica; one near the mouth of the Golfo de Nicoya, and the other along the southeastern coastline on the Osa Peninsula.

Etymology. The specific epithet *rotullae* is derived from the Latin *rotulla* meaning, little wheel.

Blastobasis custodis **Adamski, new species**

(Figs. 111–112, 299, 342, Map 17)

Diagnosis.—*Blastobasis custodis* is similar to *B. rotullae* in facies but differs from the latter by having the sockets of tergal setae extending beyond the midlength of the tegumen; a more angular apicoventral margin of the proximal flange of the dorsal part of the valva; and a larger anellus.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with few brown scales, inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown gradually darkening apically; first flagellomere in male dilated, inner surface of dilated part with 57 palmate sex scales (n=1), (Fig. 299). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown [many scales missing]. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres [some legs missing]. Forewing (Fig. 342): Length 8.2 mm (n = 1), pale brown intermixed with brown scales; cell with three brown spots, one spot near middle, two spots on apical end along crossvein; marginal spots brown. Undersurface brown. Hindwing: Translucent brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 111–112): Uncus slightly narrowed from base, narrowly rounded apically, slightly downcurved, sparsely setose, slightly shorter than width of anal opening. Dorsal strut of tegumen absent. Gnathos narrow, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from beyond base, upturned slightly near 1/5, forming narrow fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with densely packed microtrichiate membrane extending above and below phallus to opposite side; ventral ridge of digitate process protracted ventrally fusing with proximal flange; ventral margin of proximal flange linear, extending laterally, forming angularly rounded, apicoventral ridge; proximal flange densely microtrchiate. Juxta bandlike. Vinculum semicircular. Phallus slightly bulbous basally; phallus and sclerite of phallus longer than valva; sclerite of phallus

acutely recurved apically; anellus slightly widened apically from base, shallowly notched apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guanacaste, Costa Rica, 23 a 28 Ene[io] 1991, E. Phillips, L-N-330200, 380200", "INBio: COSTA RICA: CRI000, 812606" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3532" [yellow label].

Distribution (Map 17). *Blastobasis custodis* is know from one collecting site on the western most part of the Cordillera de Guanacaste in the northwestern part of Costa Rica.

Etymology. The specific epithet *custodis* is derived from the Latin *custos* meaning, protector.

Blastobasis deliciolarum Adamski, new species

(Figs. 20, 113–114, 300, 343, Map 18)

Diagnosis.—*Blastobasis deliciolarum* is similar to *B. abollae* in facies but differs from the latter by having a shorter uncus; a narrower pigmented part of the gnathos; and a more densely spinose apicoventral margin of the proximal flange of the dorsal part of the valva. *B. deliciolarum* also has an anellus that is broadly rounded apically that is lacking in *B. abollae*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus brownish gray intermixed with pale brownish-gray scales along apical margins of segments 1–2, inner surface pale brown. Antennal scape and pecten brownish gray, flagellum brown; first flagellomere in male dilated, inner surface of dilated part with 55 palmate sex scales (n=1), (Fig. 300). Proboscis pale brown.

Thorax: Tegula and mesonotum brownish gray intermixed with brownish-gray scales tipped with pale brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 343): Length 4.0–6.7 mm (n = 20), with brownish-gray scales tipped with pale brownish gray intermixed with brown and pale brownish-gray scales; base dark gradually brightening to submedian fascia; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 20) with M_3 slightly curved; cubital veins divergent from bases; CuA_1 nearly straight, CuA_2 broadly curved. Hindwing: Pale brown gradually darkening to apex. Venation (Fig. 20) with anterior part of cell closed, posterior part of cell open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 113–114): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate; midwidth of pigmented part of gnathos narrower than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from slightly beyond 1/3, upturned near middle, forming a wide fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming sigmoid-shaped, setose, digitate process; digitate process geniculate basally; area beneath costa overlaid with sparse microtrichiae membrane, extending above and below phallus to opposite side; ventral ridge of digitate process protracted ventrally fusing with proximal flange; ventral margin of proximal flange linear, extending laterally to rounded, apicoventral ridge; proximal flange bearing numerous conical setae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus curved at 2/3, longer than valva; anellus widened basally, parallelsided, broadly rounded apically, setose along lateral margins. Female Genitalia: Unknown.

Holotype, ♂, "F[in]ca Cafrosa, Est[ación] Las Mellizas, P[arque] N[acional] Amistad, 1300 m, Prov[incia] Punt[arenas], COSTA RICA, M. Ramirez & G. Mora Nov[iembre] 1990, L-S-316100, 596100", "INBio: COSTA RICA: CRI000, 521805" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3630" [yellow label].

Paratypes (19 ♂♂): 1 ♂, same data as for holotype except, "CRI000, 521766", "Slide No. 3697", "USNM 83837"; 1 ♂, "Set. 1990", "CRI000, 666179", "Slide No. 3712", "Wing Slide No. 7047"; 5 ♂♂, "M. Ramirez, May. 1991", "CRI000, 355210", "Slide No. 3704", "USNM 83838"; "CRI000, 355433", "Slide No. 3705", "USNM 83839"; "CRI000, 355424", "Slide No. 3706"; "CRI000, 355317", "Slide No. 3703", "USNM 83840"; "CRI000, 355422", "Slide No. 3664"; 2 ♂♂, "M.M. Chavarria & G. Mora, Ene. 1991", "CRI000, 380588"; "Slide

No. 3631", "USNM 83841"; "CRI000, 380708", "Slide No. 3668", "USNM 83842"; 3 ♂♂, "M. Ramirez, Abr. 1991", "CRI000, 474817", "Slide No. 3683"; "CRI000, 475038", "CRI000, 475038", "Slide No. 3667", "USNM 83843"; "CRI000, 474750", "Slide No. 3669", "USNM 83844"; 2 ♂♂, "Las Pailas, P.N. Rincón de la Vieja, Prov. Guan., COSTA RICA, 800 m, 21–25 Mar. 1993, D. Garcia, L-N-306300, 388600, # 2765", "CRI001, 684284", "Slide No. 3458"; "CRI001, 684216", "Slide No. 3301"; 1 ♂, "1–22 Jul. 1992, D. Garcia", "CRI000, 689952", "Slide No. 3299"; 1 ♂, "C. Cano", "CRI000, 718997", "Slide No. 3329"; 1 ♂, "Est. Maritza, 600 m, lado oeste del Volcan Orosi, Prov. Guan., COSTA RICA, II Curso Parataxonoms, Ago. 1990, L-N-326900, 373000", "CRI000, 576178", "Slide No. 3505", "USNM 83845"; 1 ♂, "Estación Santa Rosa, Prov. Guan, COSTA RICA, 300 m, 25 Feb.-7 Mar. 1995, S. Avila, L-N-313000, 359800, # 5859", "CRI002, 320237", "Slide No. 3476"; 1 ♂, "Est. Cacao, 1000–1400 m, lado suroeste del Volcan Cacao, COSTA RICA, C. Chaves, Ago. 1990, L-N-323300, 375700", "CRI000, 660586", "Slide No. 3167", "USNM 83846", [9 in INBio, 10 in USNM].

MAP 18. Distribution of *Blastobasis deliciolarum* (●) and *B. abollae* (▲).

Distribution (Map 18). *Blastobasis deliciolarum* is known from five collecting sites; three along the western most part of the Cordillera de Guanacaste, one to the south in the dry-forest region, and one along the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *deliciolarum* is derived from the Latin *deliciolae* meaning, darling.

***Blastobasis abollae* Adamski, new species**
(Figs. 115–116, 301, 344, Map 18)

Diagnosis.—*Blastobasis abollae* is similar to *B. deliciolarum* in facies but differs from the latter by having a longer uncus; a wider pigmented part of the gnathos; a less densely spinose apicoventral margin of the proximal flange of the dorsal part of the valva; and an anellus that is more narrowly rounded apically. *B. abollae* also has a dorsal strut of the tegumen that is lacking in *B. deliciolarum*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer and inner surfaces of labial palpus pale brown. Antennal scape pale brown [pecten missing], flagellum brownish gray gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 50 palmate sex scales (n=1), (Fig. 301). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown intermixed with few brown scales [many scales missing]. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 344): Length 6.8 mm (n = 1), pale brown intermixed with few brown scales; cell with a short, brown streak near middle and two brown spots on apical end along crossvein; marginal spots brown. Undersurface brown. Hindwing: Pale brown.

Abdomen: Male genitalia (Figs. 115–116): Uncus slightly narrowed from base, narrowly rounded apically, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Dorsal strut of tegumen constricted near middle, fused with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate; midwidth of pigmented part of gnathos slightly narrower than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/4, upturned, forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming digitate and setose process; digitate process slightly curved inwardly, apically dilated; area beneath costa overlaid with densely packed microtrichiae membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally to rounded, apicoventral ridge; proximal flange bearing numerous hairlike setae intermixed with small spinules and sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus gradually narrowing from base, slightly notched apically, setose mostly along lateral margins. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Cafrosa, Est[ación] Las Mellizas, P[arque] N[acional] Amistad, 1300 m, Prov[incia] Punt[arenas], COSTA RICA, M.M. Chavarria & G. Mora, Ene[io] 1991, L-S-316100, 596100”, “INBio: COSTA RICA: CRI000, 380667” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3616” [yellow label].

Distribution (Map 18). *Blastobasis abollae* is known from one collecting site along the eastern part of the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *abollae* is derived from the Latin *abolla* meaning, a thick cloak.

***Blastobasis lex* Adamski, new species**
(Figs. 117–118, 302, 345, Map 19)

Diagnosis.—*Blastobasis lex* is similar to *B. vesta* in facies but differs from the latter by having a more apically broader uncus; a narrower proximal flange of the dorsal part of the valva; and a larger phallus.

Description.—Head: Vertex and frontoclypeus brownish gray. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface pale brown. Antennal scape with brownish-gray scales tipped with pale brownish gray, [pecten missing], flagellum brown gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 54 palmate sex scales (n=1), (Fig. 302). Proboscis brownish gray.

Thorax: Tegula and mesonotum with brownish-gray scales tipped with pale brownish gray. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 345): Length 5.9 mm (n = 1), pale brown intermixed with brown scales; base brown; cell with three brown

spots, one spot near middle, two spots on apical end along crossvein; marginal spots brown. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 117–118): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate; midwidth of pigmented part of gnathos wider than width of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/5, upturned, forming narrow fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending ventrolaterally, forming broadly rounded ridge; proximal flange bearing numerous spinules intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus abruptly curved near 1/2; anellus gradually narrowing from widened base, slightly notched apically, setose mostly along lateral margins. Female Genitalia: Unknown.

MAP 19. Distribution of *Blastobasis lex* (●) and *B. vesta* (▲).

Holotype, ♂, "Est[ación] Maritza, 600 m, Lado O Vol[can] Orosi, Prov[incia] Guanacaste, Costa Rica, M. Ortiz, 27 Feb[rero]-10 Mar[zo] 1992, L-N-326900, 373000", "INBio: COSTA RICA: CRI000, 695165" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3488" [yellow label].

Distribution (Map 19). *Blastobasis lex* is known from one collecting site on the western most part of the Cordillera de Guanacaste in western Costa Rica.

Etymology. The specific epithet *lex* is derived from the Latin, *legis* meaning, a contract.

Blastobasis vesta Adamski, new species

(Figs. 21, 119–120, 259, 303, 344, Map 19)

Diagnosis.—*Blastobasis vesta* is similar to *B. lex* in facies but differs from the latter by having an uncus that is apically narrower; a wider proximal flange of the dorsal part of the valva; and a smaller phallus.

Description.—Head: Vertex and frontoclypeus grayish brown. Outer surface of labial palpus with segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 pale-brown intermixed with few brown scales; inner surface pale brown. Antenna pale grayish brown; first flagellomere in male dilated, inner surface of dilated part with 43 palmate sex scales (n=1), (Fig. 303). Proboscis pale grayish brown.

Thorax: Tegula and mesonotum with grayish-brown scales tipped with pale grayish brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 344): Length 5.1–7.4 mm (n = 9), with grayish-brown scales tipped with pale grayish brown; base dark abruptly brightening slightly beyond base to submedian fascia; submedian fascia complete or incomplete; cell with three spots, one near middle [obliterated by submedian fascia in some specimens], two on apical end along crossvein; area between crossvein and apex darker than area near middle; marginal spots present. Undersurface brown. Venation (Fig. 21) with M_3 closer to M_2 along basal 1/3 than distance between M_3 and CuA_1; cubital veins divergent from bases; CuA_1 straight, CuA_2 acutely curved basally. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 21) with anterior part of cell closed, posterior part of cell open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 119–120): Uncus narrowing from widened base, narrowly rounded apically, slightly downcurved, sparsely setose, shorter in length than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate; midwidth of pigmented part of gnathos wider than width of uncus. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part angled dorsolaterally from beyond base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/5, upturned near 1/5 forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid with sparse microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracting diagonally ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending toward a broadly rounded, lateral ridge; membrane beneath costa with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus bulbous basally; phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus gradually narrowing from base, apically truncate, setose. Female Genitalia (Fig. 259): Apophyses posteriores at least 2X longer than apophyses anteriores. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment; wide duct connecting to dilated part of ductus bursae and inception of ductus seminalis from shared point; inception of ductus seminalis near posterior margin of seventh sternum. Ductus bursae nearly 1 2/5X longer than apophyses posteriores, with two rows of imbricate platelets within anterior 1/3, gradually becoming sparser posteriorly. Corpus bursae elongate, spinulate; signum spinate, arising from small, rounded base near middle.

Holotype, ♂, "Est[ación] Maritza, 600 m, lado O Vol[can] Orosi, Prov[incia] Guanacaste, Costa Rica, D. Brenes, 27 Feb[rero]-11 Mar[zo] 1992, L-N-326900, 373000", "INBio: COSTA RICA: CRI000, 695050" [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3517" [yellow label].

Paratypes (8 ♂♂, 4 ♀♀): 3 ♂♂, same data as for holotype except, “CRI000, 744672”, “Slide No. 3511”; “CRI000, 695036”, “Slide No. 3516”, “Wing Slide No. 7051”; “CRI000, 695018”, “Slide No. 3518”, “USNM 83851”; 1 ♂, “Z. Fuentes, 27 Feb.-10 Mar. 1992”, “CRI000, 437002”, “Slide No. 3520”, “USNM 83852”; 1 ♂, “A. Martin”, “CRI000, 733561”, “Slide No. 3524”; 1 ♂, “A Gutierrez, 28 Feb.-10 Mar. 1992”, “CRI000, 681619”, “Slide No. 3504”, “USNM 83853”; 1 ♂, “K. Taylor”, “CRI000, 702375”, “Slide No. 3515”; 1 ♂, “600 m, D. Garcia, 28 Feb.-10 Mar. 1992”, “CRI000, 695306”, “Slide No. 3539”; 4 ♀♀, “II Curso Parataxonomos, Ago. 1990”, “CRI000, 391939”, “Slide No. 6015”; “CRI000, 391899”, “Slide No. 6016”; “CRI000, 575955”; “CRI000, 576168”, [9 in INBio, 3 in USNM].

Distribution (Map 19). *Blastobasis vesta* is known from one collecting site on the western most part of the Cordillera de Guanacaste in western Costa Rica.

Etymology. The specific epithet *vesta* is chosen in honor of Vesta, daughter of Saturn and Ops.

Blastobasis nivis Adamski, new species

(Figs. 22, 121–122, 304, 347, Map 20)

Diagnosis.—*Blastobasis nivis* is similar to *B. phaedra* in facies but differs from the latter by having a smaller uncus; the sockets of tergal setae extending beyond the midlength of the tegumen; a narrower basal ridge of the digitate process of the dorsal part of the valva; a larger phallus; and an anellus that is narrower. *B. nivis* also has an elongate pigmented part of the gnathos that is lacking in *B. phaedra*.

Description.—Head: Scales on vertex brownish gray tipped with pale brownish gray; frontoclypeus with dark-gray scales tipped with pale gray. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2, inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically; first flagellomere in male dilated, inner surface of dilated part with 41 palmate sex scales (n=1), (Fig. 304). Proboscis pale brown.

Thorax: Tegula and mesonotum with basal 1/4 brown, apical 3/4 pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 347): Length 3.7–4.3 mm (n = 9), pale brown intermixed with brown scales; submedian fascia incomplete or absent; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 22) with M_3 closer to M_2 near basal 1/2 than distance between M_3 and CuA_1 near basal 1/2; cubital veins divergent from bases; CuA_1 straight, CuA_2 curved basally. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 22) with anterior part of cell closed, posterior part of cell open; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 121–122): Uncus parallelsided from single-tiered base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate; midwidth of pigmented part of gnathos narrower than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose from 1/5, slightly upturned, forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa and above proximal flange overlaid with densely packed microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending toward a broadly rounded, ventrolateral ridge; proximal flange bearing conical setae intermixed with densely packed microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus subsigmoid-shaped; anellus gradually narrowing from base, mesially notched apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Pitilla, 700 m, 9 km, S St[an]a Cecilia, Prov[incia] Guan[acaste], COSTA RICA, C. Moraga, Abr[il] 1991, L-N-330200, 380200” , “INBio: COSTA RICA: CRI000, 484528” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3581” [yellow label].

Paratypes (8 ♂♂): 2 ♂♂, same data as for holotype except, “C. Moraga & P. Rios, Nov. 1990”, “CRI000,

313721", "Slide No. 3564", "CRI000, 313732", "Slide No. 3575", "Wing Slide No. 7048"; 1 ♂, "P. Rios, Jul. 1991", "CRI000, 336168", "Slide No. 3558", "USNM 83847"; 1 ♂, "19–27 Ene. 1993, D. Garcia", "CRI001, 303972", "Slide No. 3343", "USNM 83848"; 1 ♂, "Agua Buena, P.N. Guanacaste, Prov. Guan., COSTA RICA, 200 m, 7–12 Feb. 1994, E. López, L-N-334800, 364100, # 2692", "CRI001, 747242", "Slide No. 3594", "USNM 83849"; 1 ♂, "Sector Cerro Cocori, Fca. de E. Rojas, 150 m, Prov. Limón, COSTA RICA, E. Rojas, Dic. 1991, L-N-286000, 567500", "CRI000, 550179", "Slide No. 3960"; 1 ♂, "Quepos, 80 m, P.N. Manuel Antonio, Prov. Punt., COSTA RICA, R. Zuniga, Feb. 1991, L-S-370900, 448800", "CRI000, 346953", "Slide No. 3941"; 1 ♂, "Fca. Jenny, 30 km N de Liberia, P.N. Guanacaste, COSTA RICA, Mar. 1991, R. Espinoza, L-N-316200, 364400", "CRI001, 326460", "Slide 3478", "USNM 83850", [4 in INBio, 4 in USNM].

MAP 20. Distribution of *Blastobasis nivis* (●).

Distribution (Map 20). *Blastobasis nivis* is known from six collecting sites; four in western Costa Rica along the western part of the Cordillera de Guanacaste, and two in the east-central part of the country near the border of Nicaragua and along the middle of the Pacific coastline.

Etymology. The specific epithet *nivis* is derived from the Latin *nix* meaning, snow.

***Blastobasis phaedra* Adamski, new species**
(Figs. 23, 123–124, 305, 348, Map 21)

Diagnosis.—*Blastobasis phaedra* is similar to *B. nivis* in facies but differs from the latter by having a larger uncus; the sockets of tergal setae not extending beyond the midlength of the tegumen; a wider basal ridge of the digitate process of the dorsal part of the valva; a smaller phallus; and an anellus that is wider.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brown. Outer surface of labial palpus with segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 brown intermixed with pale brown scales; inner surface pale brown. Antennal scape pale brown intermixed with few brown scales, pecten pale brown, flagellum brownish gray; first flagellomere in male dilated, inner surface of dilated part with 32 palmate sex scales (n=1), (Fig. 305). Proboscis pale brown.

Thorax: Tegula pale brown on basal 2/3, brownish gray on apical 1/3; mesonotum brownish gray on basal 1/5, pale brownish gray on apical 4/5. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 348): Length 6.0–7.0 mm (n = 11), pale brown intermixed with brown scales; base dark gradually brightening to submedian fascia or abruptly brighted slightly beyond base to submedian fascia; submedian fascia complete or incomplete; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 23) with M_3 closer to CuA_1 near basal 1/2 than distance between M_3 and CuA_1 near basal 1/3; cubital veins divergent from bases; CuA_1 straight, CuA_2 broadly curved. Hindwing: Translucent pale brown or translucent pale brown gradually darkening to apex. Venation (Fig. 23) with cell closed; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 123–124): Uncus gradually narrowing from base, narrowly rounded apically, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, narrowly bidentate. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/5, slightly upturned, forming narrow fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa slightly recurved, extending dorsolaterally, forming setose digitate process; area beneath costa and above proximal flange overlaid with dense microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange slightly cleft, extending laterally to angular, ventrolateral ridge; proximal flange bearing conical setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus slightly bulbous basally, sclerite of phallus subsigmoid-shaped; anellus slightly narrowed from base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Sirena, P[arque] N[acional] Corcovado, 0–100 m, Prov[incia] Punt[arenas], COSTA RICA, G. Fonseca, Abr[il] 1991, L-S-270500, 508300”, “INBio: COSTA RICA: CRI000, 475824” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3933” [yellow label].

Paratypes (10 ♂♂): 2 ♂♂, Est. Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guan., COSTA RICA, 10–27 Mar. 1993, K. Taylor, L-N-306300, 388600”, “CRI001, 319348”, “Slide No. 3309”; “CRI001, 319334”, “Slide No. 3311”; 1 ♂, “10–13 Mar. 1994, D. Garcia, # 2767”, “CRI001, 738517”, “Slide No. 3305”, “USNM 83854”; 1 ♂, “23 Oct.-12 Nov. 1992, C. Cano”, “CRI000, 926864”, “Slide No. 3426”; 1 ♂, “Est. Maritza, 600 m, lado O Volcan Orosi, Prov. Guanacaste, COSTA RICA, P. Campos, Feb. 1992, L-N-326900, 373000”, “CRI000, 888599”, “Slide No. 3508”; 1 ♂, “Z. Fuentes, 27 Feb.-10 Mar. 1992”, “CRI000, 437003”, “Slide No. 3521”, “USNM 83855”; 1 ♂, “II Curso Parataxonomos, Ago. 1990”, “CRI000, 391822”, “Slide No. 3480”, “Wing Slide No. 7042”; 1 ♂, “Est. Quebrada Bonita, 50 m, Res. Biol. Carara, Prov. Punt., COSTA RICA, R. Zuniga, Ago. 1990, L-N-194500, 469850”, “CRI000, 181125”, “Slide No. 3895”; 1 ♂, “P.N. Manuel Antonio, 80 m, Quepos, Prov. Punt., COSTA RICA, Oct. 1992, G. Varela, L-S-370900, 448800”, “CRI000, 935553”, “Slide No. 3949”, “USNM 83856”; 1 ♂, “Estación Magsasay, Prov. Heredia, COSTA RICA, 0–200 m, May. 1991, R. Aguilar, L-N-264600, 531000, # 2035”, “CRI001, 903954” , “Slide No. 3967”, “USNM 83857”, [6 in INBio, 4 in USNM].

MAP 21. Distribution of *Blastobasis phaedra* (●).

Distribution (Map 21). *Blastobasis phaedra* is known from six collecting sites; two in western Costa Rica along the Cordillera de Guanacaste, one north of the Cordillera Central, and three along the Pacific coastline near the mouth of the Golfo de Nicoya east to the Osa Peninsula.

Etymology. The specific epithet *phaedra* is chosen in honor of Phaedra, daughter of Minos.

Blastobasis aedes **Adamski, new species**

(Figs. 24, 125–126, 306, 349, Map 22)

Diagnosis.—*Blastobasis aedes* is similar to *B. tapetae* in facies but differs from the latter by having a three-tiered uncus; a less protuberant mesial part of the gnathos; an apicoventral margin of the ventral part of the valva that is less greatly upturned; and a more densely spinose apicoventral margin of the proximal flange of the dorsal part of the valva. *B. aedes* also has a dorsal strut and a sigmoid-shaped sclerite of the phallus that are lacking in *B. tapetae*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brown. Outer

surface of labial palpus with segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 pale brown intermixed with few brown scales; inner surface pale brown. Antennal scape pale brown intermixed with few brown scales, pecten pale brown, flagellum brownish gray; first flagellomere in male dilated, inner surface of dilated part with 31 palmate sex scales (n=1), (Fig. 306). Proboscis pale brown.

Thorax: Tegula with basal 1/3 brown, apical 2/3 pale brown; mesonotum with basal 1/2 brown, apical 1/2 pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 349): Length 4.9–6.8 mm (n = 20), pale brown intermixed with few brown scales; cell with three spots, one near middle, two on apical end along crossvein; submedian fascia present or absent, if present, basal area gradually brightening to inner margin of fascia; marginal spots present or absent. Undersurface brown. Venation (Fig. 24) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases, CuA_1 straight, CuA_2 curved basally. Hindwing: Translucent pale brown or translucent pale brown gradually darkening to apex. Venation (Fig. 24) with cell closed; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 125–126): Uncus three-tiered, each gradually narrowed from base, apex narrowly rounded, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Dorsal strut of tegumen linear, fusing to base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, widely bidentate; midwidth of pigmented part of gnathos narrower than midwidth of uncus. Sockets of tergal setae extending slightly beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/5, slightly upturned, forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process abruptly curved near midlength; area beneath costa above proximal flange overlaid with dense microtrichiate membrane, extending above and below phallus to opposite side; basal ridge of digitate process densely setose, protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange broadly cleft, extending ventrolaterally forming broadly rounded, serrate, ventrolateral ridge; proximal flange bearing conical setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus sigmoid-shaped; anellus parallelsided from base, narrowing from subapical region to apex, setose mostly along margins. Female Genitalia: Unknown.

Holotype, ♂, “Finca Jenny, 30 km N de Liberia, Prov[incia] Guana[caste], COSTA RICA, 240 m, 6–13 Set[iembre] 1994, E. Araya, L-N-316200, 364400, # 3223”, “INBio: COSTA RICA: CRI002, 022693” [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3519” [yellow label].

Paratypes (19 ♂♂): 1 ♂, same data as for holotype except, “CRI002, 022687”, “Slide No. 3500”; 2 ♂♂, “Mar. 1991, R. Espinoza, # 1678”, “CRI001, 692914”, “Slide No. 3461”; “CRI001, 692919”, “Slide No. 3460”; 3 ♂♂, “Jul. 1991”, “CRI000, 332402”, “Slide No. 3432”, “USNM 83858”; “CRI000, 332492”, “Slide No. 3436”; “CRI000, 332314”, “Slide No. 3437”; 2 ♂♂, “Abr. 1991”, “CRI000, 649418”, “Slide No. 3472”, “USNM 83859”; “CRI000, 649471”, “Slide No. 3471”; 3 ♂♂, “E. Araya & R. Espinosa, Set. 1990”, “CRI000, 227310”, “Slide No. 3482”, “USNM 83860”; “CRI000, 227350”, “Slide No. 3467”, “USNM 83861”; “CRI000, 227408”, “Slide No. 3435”, “USNM 83862”; 2 ♂♂, “E. Araya, May. 1991”, “CRI000, 658036”, “Slide No. 3464”; “CRI000, 481701”, “Slide No. 3442”; 1 ♂, “E. Araya & R. Espinoza, Ago. 1990” “CRI000, 614992”, “Slide No. 3446”, “USNM 83863”; 1 ♂, “R. Espinoza, Jun. 1991”, “CRI000, 323600”, “Slide No. 3439”, “USNM 83864”; 1 ♂, “Mar. 1991”, “CRI001, 326408”, “Slide No. 3452”, “USNM 83865”; 2 ♂♂, “Est. Los Almendros, Prov. Guan., COSTA RICA, 300 m, 29 Mar.-2 Abr. 1995, E.E. Lopéz, L-N-334850, 395500, # 4791”, “CRI002, 188843”, “Slide No. 3596”; “CRI002, 143707”, “Slide No. 3595”, “Wing Slide No. 7050”; 1 ♂, “Est. Santa Rosa, Prov. Guan., COSTA RICA, 300 m, 23 Feb.-8 Mar. 1995, E. Navarro, L-N-313300, 359300, # 4607”, “CRI002, 140805”, “Slide No. 3479” [11 in INBio, 8 in USNM].

Distribution (Map 22). *Blastobasis aedes* is known from three collecting sites in northwestern Costa Rica near the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *aedes* is derived from Latin meaning, a building.

MAP 22. Distribution of *Blastobasis aedes* (●) and *B. tapetae* (▲).

***Blastobasis tapetae* Adamski, new species**
(Figs. 127–128, 307, 350, Map 22)

Diagnosis.—*Blastobasis tapetae* is similar to *B. aedes* in facies but differs from the latter by having a more widened uncus; a more protuberant mesial part of the gnathos; a more greatly upturned apicoventral margin of the ventral part of the valva; a less sparsely spinose apicoventral margin of the proximal flange of the dorsal part of the valva; and a sclerite of phallus that is more broadly curved from midlength. *B. tapetae* also has an anellus with a pair of apicolateral processes that are lacking in *B. aedes.*

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface pale brown intermixed with few brown scales. Antennal scape and pecten pale brown, flagellum brownish gray gradually darkening apically; first flagellomere in male dilated, inner surface of dilated part with 13 palmate sex scales (n=1), (Fig. 307). Proboscis pale brown.

Thorax: Tegula with basal 1/2 with brown scales tipped with pale brown, apical 1/2 pale brown; mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 350): Length 4.8–5.0 mm (n = 2), pale brown intermixed with brown scales; submedian fascia incomplete or absent; cell with or without a short, brown streak near middle, and with two brown spots on apical end along crossvein; marginal spots brown. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 127–128): Uncus slightly longer than wide, slightly narrowed from base to subapical region, narrowed from subapical region, forming broadly rounded apex, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos narrow, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented part of gnathos about equal in width to midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/6, greatly upturned, forming widened fold to near slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process broadly curved inwardly; area beneath costa overlaid with dense microtrichiate membrane, extending above and below phallus to opposite side; phallus and sclerite of phallus longer than valva; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange extending lateroventrally, forming broadly rounded ridge; proximal flange bearing small spinules intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus slightly curved, sclerite of phallus broadly curved from slightly beyond middle; anellus gradually narrowed from base, setose, bearing two large, recurrent, barblike processes from apical region. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Pitilla, 700 m, 9 km S St[an]a Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guana[caste], COSTA RICA, C. Moraga, Jun[io] 1991, L-N-330200, 380200, “INBio: COSTA RICA: CRI000, 699950 [barcode label], “INBio ♂ Genitalia Slide by D. Adamski, No. 3568 [yellow label].

Paratype: 1 ♂, “Estación Pitilla, 9 km S Santa Cecilia, P.N. Guanacaste, Prov. Guan., COSTA RICA, 700 m, 23–26 Jun. 1993, Taller Microlepidoptera, L-N-330200, 380200, # 2183, “CRI001, 835940, “Slide No. 3535, “USNM 83866 [paratype in USNM].

Distribution (Map 22). *Blastobasis tapetae* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *tapetae* is derived from the Latin *tapeta* meaning, a drapery or tapestry.

Blastobasis rotae **Adamski, new species**

(Figs. 129–130, 308, 351, Map 23)

Diagnosis.—*Blastobasis rotae* is similar to *B. manto* in facies but differs from the latter by having a shorter uncus; a longer pigmented part of the gnathos; a wider and more acutely curved apical process of the ventral part of the valva; a wider basal ridge of the digitate process of the dorsal part of the valva; a less spinose proximal flange; and a more acutely curved phallus from midlength.

Description.—Head: Vertex, frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface pale brown. Antennal scape brown intermixed with pale-brown scales along anterior and apical margins, [pecten missing], flagellum brown; first flagellomere in male dilated, inner surface of dilated part with 32 palmate sex scales (n=1), (Fig. 308). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs pale brown intermixed with few dark-brown scales [many scales missing]. Forewing (Fig. 351): Length 5.8 mm (n = 1), pale brown intermixed with brown scales; cell with a short, brown streak near middle and two brown spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 129–130): Uncus narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length than width of anal opening. Dorsal strut of tegumen absent. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate; midwidth of

pigmented part of gnathos narrower than midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, abruptly narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose from 1/6, greatly upturned near 1/6 forming wide fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid by membrane with sparse microtrichiae, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally, fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange basally cleft, extending ventrolaterally, forming broadly rounded ridge; proximal flange bearing conical setae intermixed with small spinules, and sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus about as long as valva, sclerite of phallus shorter; phallus and sclerite of phallus acutely curved from midlength; anellus gradually narrowed from base, forming a narrowly rounded, setose apex. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Maritza, 600 m, Lado O Vol[can] Orosi, Prov[incia] Guanacaste, Costa Rica, M. Segura, 27 Feb[rero]-10 Mar[zo] 1992, L-N-326900, 373000, "INBio: COSTA RICA: CRI000, 737803 [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3506 [yellow label].

MAP 23. Distribution of *Blastobasis rotae* (●) and *B. manto* (▲).

Distribution (Map 23). *Blastobasis rotae* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *rotae* is derived from the Latin *rota* meaning, a wheel.

Blastobasis manto Adamski, new species

(Figs. 131–132, 309, 352, Map 23)

Diagnosis.—*Blastobasis manto* is similar to *B. rotae* in facies but differs from the latter by having a longer uncus; a shorter pigmented part of the gnathos; a narrower and broadly curved apical process of the ventral part of the valva; a narrower basal ridge of the digitate process of the dorsal part of the valva; a more spinose proximal flange; and a more acutely curved phallus from 3/4.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with few brown scales, inner surface pale brown. Antennal scape pale brown, [pecten missing], flagellum brown; first flagellomere in male dilated, inner surface of dilated part with 53 palmate sex scales (n=1), (Fig. 309). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs pale brown intermixed with few brown scales [many scales missing]. Forewing (Fig. 352): Length 5.9 mm (n = 1), pale brown intermixed with brown scales; submedian fascia complete, faint; cell with a brown spot near middle. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 131–132): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter in length to width of anal opening. Dorsal strut of tegumen absent. Gnathos narrow, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented area of gnathos about equal in width to midwidth of uncus. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/6, slightly upturned from 1/6 forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid by membrane with sparse microtrichiate, extending above and below phallus to opposite side; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange linear, extending laterally, forming a broadly rounded, serrate ridge; proximal flange bearing several spines intermixed with hairlike setae and sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus slightly longer than valva, both abruptly curved at 3/4; anellus gradually narrowed from base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “COSTA RICA, San Jos, Cuidad Colon, El Rodeo, 950 m, 21-VI-1998, C19-22L, F, Col. Kenji Nishida, “INBio ♂ Genitalia Slide by D. Adamski, No. 4036 [yellow label].

Distribution (Map 23). *Blastobasis manto* is known from one collecting site in south-central Costa Rica.

Etymology. The specific epithet *manto* is chosen in honor of Manto, daughter of the Theban seer Tiresias.

Blastobasis dicionis Adamski, new species

(Figs. 25, 133–134, 260, 310, 353, Map 24)

Diagnosis.—*Blastobasis dicionis* is similar to *B. beo* in facies but differs from the latter by having a longer uncus; a narrower ventral part of the valva; a narrower proximal flange of the dorsal part of the valva; and a more acutely curved and more densely setose anellus.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus grayish brown intermixed with pale grayish-brown scales along apical margin of segment 2, inner surface pale grayish brown. Antennal scape and pecten with brownish-gray scales tipped with pale brownish gray, flagellum gray; first flagellomere in male dilated, inner surface of dilated part with 21 palmate sex scales (n=1), (Fig. 310). Proboscis pale brownish gray.

MAP 24. Distribution of *Blastobasis dicionis* (●) and *B. beo* (▲).

Thorax: Tegula and mesonotum with scales brownish gray tipped with pale brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 353): Length 5.0–7.0 mm (n = 16), brownish gray intermixed with brownish-gray scales tipped with pale brownish gray and pale brownish-gray scales; base dark gradually or abruptly brightening to submedian fascia, or brownish gray if submedian fascia absent; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present or absent. Undersurface brown. Venation (Fig. 25) with M_3 closer to M_2 near basal 1/2 than distance between M_3 and CuA_1 near basal 1/2; cubital veins divergent from bases; CuA_1 straight, CuA_2 curved basally. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 25) with cell closed; cubitus 4-branched with all veins arising submarginally from cubitus.

Abdomen: Male genitalia (Figs. 133–134): Uncus slightly narrowed from base, narrowly rounded apically, slightly downcurved, sparsely setose, longer than width of anal opening. Dorsal strut of tegumen narrow, fusing with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin slightly protracted mesially, bidentate. Sockets of tergal setae extending to near midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/6, slightly upturned, forming narrow

fold, extending to near a slightly raised setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process slightly curved inwardly; area beneath costa overlaid by membrane with densely packed microtrichiae, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange cleft basally, extending ventrolaterally, forming broadly rounded ridge; proximal flange bearing numerous hairlike setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva, both abruptly curved at 2/3; anellus slightly widened near midlength, broadly rounded apically, setose along lateral margins. Female Genitalia (Fig. 260): Apophyses posteriores nearly 3 1/3X longer than apophyses anteriores. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment. Posterior margin of seventh sternum entire; inception of ductus seminalis on anterior end of dilated part of ductus bursae, slightly posterior to anterior margin of seventh sternum. Ductus bursae about equal in length to apophyses posteriores, with two rows of imbricate platelets within anterior 1/3, gradually becoming sparser posteriorly. Corpus bursae elongate, sparsely spinulate, with slightly dilated bulla on posterior end; signum spinate, arising from small, rounded base near middle.

Holotype, ♂, "F[in]ca Jenny, 30 km N Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, E. Araya & R. Espinosa, Set[iembre] 1990, L-N-316200, 364400, "INBio: COSTA RICA: CRI000, 498321 [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3470 [yellow label].

Paratypes (15 ♂♂, 8 ♀♀): 4 ♂♂, 4 ♀♀ same data as for holotype except, "CRI000, 498310, "Slide No. 3469, "USNM 83867; "CRI000, 227308, "Slide No. 3591, "USNM 83868; "CRI000, 227363, "Slide No. 3486, "USNM 83869; "CRI000, 227327, "Slide No. 3485, "Wing Slide No. 7039; "CRI000, 227339, "♀ Slide 6009; "CRI000, 226847, "♀ Slide No. 6007; "CRI000, 227318; "CRI000, 227320; 5 ♂♂, 4 ♀♀, "Ago., "CRI000, 614898, "Slide No. 3441; "CRI000, 615004, "Slide No. 3440; "CRI000, 614936, "Slide No. 3444; "CRI000, 614950, "Slide No. 3445, "USNM 83870; "CRI000, 226798, "Slide No. 3447, "USNM 83871; "CRI000, 226849, "Slide No. 6008; "CRI000, 226813; "CRI000, 615059; "CRI000, 615045; 2 ♂♂, "R. Espinoza, Jul. 1991, "CRI000, 332229, "Slide No. 3563; "CRI000, 332282, "Slide No. 3438; 2 ♂♂, "Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guanacaste, COSTA RICA, 23 Oct.-12 Nov. 1992, D. Garcia, L-N-306300, 388600, "CRI000, 863329, "Slide No. 3294; "CRI000, 926877, "Slide No. 3427, "USNM 83872; 1 ♂, 24 Oct.-12 Nov. 1992, "CRI000, 946575, "Slide No. 3308; 1 ♂, "Est. Sta. Rosa, 300 m, P.N. Guanacaste, Prov. Guan., COSTA RICA, I Curso Microlepidoptera, Jul. 1990, L-N-313000, 359800, "CRI000, 306862, "Slide No. 3481, "USNM 83873 [16 in INBio, 7 in USNM].

Distribution (Map 24). *Blastobasis dicionis* is known from three collecting sites in northwestern Costa Rica; one on the Cordillera de Guanacaste, and two from the dry-forest area.

Etymology. The specific epithet *dicionis* is derived from the Latin *dicio* meaning, authority, power, or control.

Blastobasis beo **Adamski, new species**

(Figs. 135–136, 311, 354, Map 24)

Diagnosis.—*Blastobasis beo* is similar to *B. dicionis* in facies but differs from the latter by having a shorter uncus, a wider ventral part of the valva, a wider proximal flange of the dorsal part of the valva, and a lesser curved and a more sparsely setose anellus.

Description.—Head: Vertex and frontoclypeus pale brown [many scales missing]. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler. Antennal scape with brown scales tipped with pale brown, [pecten missing], flagellum brown; first flagellomere in male dilated, inner surface of dilated part with 43 palmate sex scales (n=1), (Fig. 311). Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown [many scales missing]. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 354): Length 4.9–5.8 mm (n = 3), pale brown intermixed with brown scales; cell with a short, brown streak near middle. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 135–136): Uncus slightly narrowed from base, broadly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen narrow, fusing with base of uncus. Gnathos wide, confluent with tegumen, posteroventral margin greatly protracted mesially, bidentate; midwidth of pigmented area of gnathos about equal to midwidth of uncus. Sockets of tergal setae not

extending beyond midlength of tegumen. Valva divided; ventral part broadly curved dorsolaterally from beyond base, narrowed apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin setose from 1/5, slightly upturned from 1/5 forming narrow fold to near slightly raised, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; area beneath costa overlaid by membrane with densely packed microtrichiae, extending above and below phallus to opposite side; basal ridge of digitate process protracted ventrally fusing with dorsolateral ridge of proximal flange; ventral margin of proximal flange cleft basally, extending ventrolaterally, forming broadly rounded ridge; proximal flange bearing several conical setae intermixed with sparse microtrichiae. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus slightly shorter than valva, both abruptly curved basally and beyond 1/2; anellus slightly narrowed from base, apically rounded, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Las Pailas, 800 m, P[arque] N[acional] Rincón de la Vieja, Prov[incia] Guanacaste, Costa Rica, 1 a 22 Jul[io] 1992, C. Cano, L-N- 306300, 388600, "INBio: COSTA RICA: CRI000, 718995 [barcode label], "INBio ♂ Genitalia Slide by D. Adamski, No. 3335 [yellow label].

Paratypes (2 ♂♂): 1 ♂, same data as for holotype except, 9–20 Abr. 1994, D. Garcia, # 2835, "CRI001, 784768, "Slide No. 3382, "USNM 83874; 1 ♂, "Est. Maritza, 600 m, lado O Volcan Orosi, Prov. Guanacaste, COSTA RICA, D. Garcia, 28 Feb.-10 Mar. 1992, L-N-326900, 373000, "CRI000, 695281, "Slide No. 3487, "USNM 83875 [2 in USNM].

Distribution (Map 24). *Blastobasis beo* is known from two collecting sites in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *beo* is derived from the Latin meaning, "to bless or "enrich.

Hypatopa Walsingham, 1907

Nearly 100 species of *Hypatopa* have been described from North America and the Neotropics. Contrastingly, only a few species are known from the Palearctic and Oriental regions. *Hypatopa* are distinguished from other blastobasinae by having, a protuberant proximal flange of the dorsal part of the valva, a ventrolateral margin of the proximal flange that is setose and/or intermixed with spines, and an entire or mesially emarginate ventroposterior margin of the gnathos. Only a single host record has been authoritatively documented for *Hypatopa*, and it is based on a USDA-APHIS-PPQ interception, from which one adult specimen was reared from *Solidago* sp. (Asteraceae) from The Dominican Republic.

Key to the Species of *Hypatopa* of Costa Rica

1. Male . . . 2
- Female . . . 50
2. Gnathos present) . . . 3
- Gnathos absent) . . . *Hypatopa rabio*
3. Gnathos emarginate mesially (Figs. 139, 145, 149, 151, 153, 157, 159, 161, 163, 165, 167, 169, 171, 177, 179, 181, 183, 185, 189, 191, 195, 201, 203, 205, 209, 211, 213, 215, 219, 221, 223, 225, 231) . . . 4
- Gnathos not emarginate mesially (Figs. 137, 147, 173, 141, 143, 155, 175, 187, 193, 197, 199, 207, 217, 227, 231, 233) . . . 36
4. Mesial emargination on a slightly raised or protuberant lobe (Figs. 139, 145, 153, 163, 171, 183, 189, 203, 205, 209, 221, 225, 231) . . . 5
- Mesial emargination on an entire margin (Figs. 149, 151, 157, 159, 161, 167, 169, 177, 179, 181, 185) . . . 17
5. Apical process of ventral part of valva acutely curved in area from base to 1/2 (Figs. 139, 163, 209, 231) . . . 6
- Apical process of ventral part of valva not acutely curved in area from base to 1/2 (Figs. 145, 153, 171, 183, 189, 203, 205, 221, 225) . . . 9
6. Apical process of ventral part of valva acutely curved laterally (Figs. 231). . . . *Hypatopa rudis*
- Apical process of ventral part of valva not acutely curved laterally (139, 163, 209) . . . 7
7. Proximal flange of valva longer than wide (Fig. 163); anellus rounded apically (Fig. 164) . . . *Hypatopa plebis*
- Proximal flange of valva not longer than wide (Figs. 139, 209); anellus emarginate apically (Figs. 140, 210) . . . 8
8. Gnathos deeply emarginate mesially; proximal flange wider than long (Fig. 139) . . . *Hypatopa cladis*
- Gnathos shallowly emarginate mesially; proximal flange about as wide as long (Fig. 209) . . . *Hypatopa io*

9. Margin of proximal flange of valva crenulate (Figs. 183, 225) 10
- Margin of proximal flange of valva serrate (Figs. 145, 153, 171, 189, 203, 205, 221) 11
10. Gnathos deeply emarginate mesially (Fig. 183); anellus truncate apically (Fig. 184) . . . . . *Hypatopa semela*
- Gnathos shallowly emarginate mesially (Fig. 225); anellus deeply emarginate, forming two lateral lobes and with two porrect median spinelike processes (Fig. 226) . . . . . *Hypatopa solea*
11. Gnathos deeply emarginate mesially (Figs. 153, 171) 12
- Gnathos shallowly emarginate mesially (Figs. 145, 189, 203, 205, 221) 13
12. Sclerite of phallus acutely curved near middle; vesica with barbed cornuti (Fig. 154) . . . . . *Hypatopa crux*
- Sclerite of phallus shallowly curved near middle; vesica without cornuti (Fig. 172). . . . . *Hypatopa caepae*
13. Phallus and sclerite of phallus longer than valva (Figs. 145, 204, 206) 14
- Phallus and sclerite of phallus shorter than valva (Figs. 190, 222). 16
14. Sclerite of phallus acutely sigmoid-shaped (Fig. 204) . . . . . *Hypatopa dux*
- Sclerite of phallus not acutely curved throughout length (Figs. 146, 206) 15
15. Juxta divided mesially (Fig. 145); anellus nearly parallelsided throughout most of length (Fig. 146) . . . . . *Hypatopa cotis*
- Juxta bandlike (Fig. 205); anellus constricted beyond base (Fig. 206). . . . . *Hypatopa erato*
16. Gnathos widely emarginate (Fig. 189); anellus near parallelsided throughout most of length (Fig. 190) . . . . . *Hypatopa rego*
- Gnathos narrowly emarginate (Fig. 221); anellus gradually narrowed from base (Fig. 222). . . . . *Hypatopa umbra*
17. Gnathos projected anteriorly near or greater than 1/2 width (Figs. 169, 177, 191, 195, 201, 219, 223) 18
- Gnathos not projected anteriorly as above (Figs. 149, 151, 157, 159, 161, 165, 167, 179, 181, 185, 211, 213, 215) 24
18. Ventral part of valva greatly protracted inwards basally (Figs. 169, 195, 23) 19
- Ventral part of valva slightly protracted inwards basally (Figs. 177, 191, 201, 19) 21
19. Proximal flange of valva nearly twice as long as wide; apical process of ventral part of valva acutely curved basally (Fig. 169) . . . . . *Hypatopa manus*
- Proximal flange of valva about as long as wide; apical process of ventral part of valva not acutely curved from base (Figs. 195, 223) 20
20. Apical margin of proximal flange wider than base (Fig. 223); anellus widely emarginate, forming two lateral lobes, and with two convergent apical processes (Fig. 224) . . . . . *Hypatopa texo*
- Apical margin of proximal flange narrower than base (Fig. 195); anellus rounded apically (Fig. 196). . . . . *Hypatopa verax*
21. Gnathos deeply emarginate mesially (Figs. 177, 191, 219) 22
- Gnathos shallowly emarginate mesially (Fig. 201). . . . . *Hypatopa nox*
22. Sclerite of phallus recurved apically (Figs. 192, 220). 23
- Sclerite of phallus not recurved apically (Fig. 178) . . . . . *Hypatopa scobis*
23. Margin of proximal flange serrate (Fig. 191); sclerite of phallus recurved to near base of anellus (Fig. 220) . . . . *Hypatopa ira*
- Margin of proximal flange entire (Fig. 219); sclerite of phallus recurved to subapical region (Fig. 192) . . . . . *Hypatopa styga*
24. Ventrolateral margin of proximal flange with two subequal, large spinelike processes (Fig. 149) . . . . . *Hypatopa hecate*
- Ventrolateral margin of proximal flange entire, crenulate, or serrate (Figs. 151, 157, 159, 161, 165, 167, 179, 181, 185, 211, 213, 215) 25
25. Margin of proximal flange entire or crenulate 26
- Margin of proximal flange serrate. 30
26. Base of phallus widely bulbous basally (Figs. 152, 180, 214) 27
– Base of phallus not widely bulbous basally (Figs. 160, 166) 29
27. Vesica with cornuti (Fig. 152). . . . . *Hypatopa acus*
- Vesica without cornuti (Fig. 180, 214) 28
28. Proximal flange elongate (Fig. 213); sclerite of phallus straight basally (Fig. 214). . . . . *Hypatopa vox*
- Proximal flange ellipsoid (Fig. 179); sclerite of phallus acutely curved basally (Fig. 180). . . . . *Hypatopa agnae*
29. Anellus 1/2 length of phallus, nearly parallelsided (Fig. 166) . . . . . *Hypatopa dolo*
- Anellus less than 1/2 length of phallus, wider on basal 2/3, abruptly narrowed apically (Fig. 160) . . . . . *Hypatopa arxcis*
30. Juxta divided mesially (Figs. 161, 211). 31
- Juxta bandlike (Figs. 157, 167, 181, 185, 215). 32
31. Apical process of ventral part of valva downcurved (Fig. 161); anellus broadly rounded apically (Fig. 162). . . . *Hypatopa caedis*
- Apical process of ventral part of valva upturned (Fig. 211); anellus broadly emarginate apically (Fig. 212) . . . . *Hypatopa leda*
32. Anellus apically emarginate (Figs. 158, 182, 216) 33
- Anellus apically rounded (Figs. 168, 186) 35
33. Anellus shallowly emarginate apically, bulbous basally (Fig. 158) . . . . . *Hypatopa hera*
- Anellus deeply emarginate apically, not bulbous basally (Figs. 182, 216). 34
34. Emargination of anellus forming two apically rounded lateral lobes (Fig. 182) . . . . . *Hypatopa phoebe*
- Emargination of anellus forming two convergent, apically pointed lateral lobes (Fig. 216) . . . . . *Hypatopa tapadulcea*
35. Proximal flange subrectangular; spinelike process of ventral part of valva rounded apically (Fig. 167). . . . . *Hypatopa cyane*
- Proximal flange semicircular; apical process of ventral part of valva acute (Fig. 185) . . . . . *Hypatopa edax*
36. Gnathos with a small or protuberant mesial lobe (Figs. 137, 147, 155, 173, 187) 37
- Gnathos with mesial lobe absent (Figs. 141, 143, 175, 193, 197, 199, 207, 217, 227, 233) 41
37. Proximal flange of valva with 1–4 spinelike processes on apicoventral region (Figs. 148, 174). 38
- Proximal flange of valva without such processes (Figs. 137, 155, 187). 39

38. Proximal flange of valva elongate, densely setose (Fig. 173); sclerite of phallus broadly curved (Fig. 174) . . *Hypatopa cotytto*
- Proximal flange of valva not elongate, sparsely setose (Fig. 147); sclerite of phallus acutely curved at 2/3 (Fig. 148) . . . . . *Hypatopa pica*
39. Margin of proximal flange of valva entire (Fig. 137); anellus with apical barb (Fig. 138) . . . . . *Hypatopa nex*
- Margin of proximal flange serrate (Figs. 155, 187); anellus without apical barb (Figs. 156, 188) 40
40. Proximal flange serrate (Fig. 155); apical margin of anellus narrower than base (Fig. 156) . . . . . *Hypatopa limae*
- Proximal flange deeply serrate (Fig. 187); anellus truncate apically (Fig. 188). . . . . *Hypatopa joniella*
41. Apical process of ventral part of valva diminutive (Figs. 141, 143); apex of anellus bearing a pair of recurrent lateral barblike processes (Figs. 142, 144). 42
- Apical process of ventral part of valva of normal length (Figs. 197, 199, 207, 217, 227, 233); anellus not bearing recurrent barblike processes (Figs. 198, 200, 208, 218, 228, 234). 43
42. Anellus with crenulate barblike processes (Fig. 142). . . . . *Hypatopa juno*
- Anellus with straight barblike processes (Fig. 144) . . . . . *Hypatopa actes*
43. Anellus mesially emarginate apically (Figs. 228, 234). 44
- Anellus not mesially emarginate apically (Figs. 176, 194, 198, 200, 208, 218). 45
44. Anellus marginate, forming two large, divergent apicolateral processes (Fig. 228) . . . . . *Hypatopa bilobata*
- Anellus marginate, forming two short apicolateral processes (Fig. 234) . . . . . *Hypatopa musa*
45. Phallus widely bulbous basally (Figs. 194, 198, 200). 46
- Phallus not widely bulbous (Figs. 176, 208, 218). 48
46. Apical part of sclerite of phallus slightly curved (Fig. 194) . . . . . *Hypatopa texla*
- Apical part of sclerite of phallus recurved (Figs. 198, 200) 47
47. Basal ridge of digitate process of dorsal part of valva densely setose; base of apical process of ventral part of valva with a setose lobe (Fig. 199). . . . . *Hypatopa mora*
- Basal ridge of digitate process of dorsal part of valva sparsely setose; base of apical process of ventral part of valva without a setose lobe (Fig. 197) . . . . . *Hypatopa tapadulcea*
48. Apical process of ventral part of valva downcurved (Fig. 217) . . . . . *Hypatopa dicax*
- Apical process of ventral part of valva not downcurved (Figs. 175, 207) 49
49. Margin of proximal flange entire (Fig. 175); sclerite of phallus shorter than phallus (Fig. 176) . . . . . *Hypatopa lucina*
- Margin of proximal flange serrate (Fig. 207); sclerite of phallus as long as phallus (Fig. 208). . . . . *Hypatopa fio*
50. Eighth tergum with a darkly pigmented median longitudinal streak (Figs. 265, 270, 272–273) 51
- Eighth tergum without a darkly pigmented median longitudinal streak (Figs. 261–264, 266–269, 271). 54
51. Ductus bursae coiled throughout most of length (Fig.265). . . . . *Hypatopa tapadulcea*
- Ductus bursae not coiled throughout most of length (Figs. 270, 272–273) 52
52. Posterior margin of seventh sternum emarginate (Figs. 270, 272) 53
- Posterior margin of seventh sternum straight (Fig. 273). . . . . *Hypatopa vitis*
53. Posterior margin of seventh sternum laterally emarginate, forming a broad, truncate, median lobe (Fig. 270). . . . *Hypatopa rea*
- Posterior margin of seventh sternum mesially and laterally emarginate, forming two rounded lobes (Fig. 272) . . . *Hypatopa gena*
54. Sex scales on membrane adjacent to Ostium bursae or on margin of seventh sternum (Figs. 261–262, 268) 55
- Sex scales absent (Figs. 263–264, 266–267, 269, 271). 57
55. Sex scales on membrane adjacent to Ostium bursae (Fig. 261) . . . . . *Hypatopa umbra*
- Sex scales on or near posterior margin of seventh sternum only (Figs. 262, 268) 56
56. Sex scales on posterolateral margin of seventh sternum; antrum present (Fig. 262) . . . . . *Hypatopa hecate*
- Sex scales along entire posterior margin of seventh segment; antrum absent (Fig. 268) . . . . . *Hypatopa rabio*
57. Signum present (Figs. 264, 266, 269, 271) 59
- Signum absent (Fig. 263, 267) 58
58. Eighth sternum subquadrate; ductus seminalis anterior to anterior margin of seventh sternum (Fig. 267) . . . . . *Hypatopa texo*
- Eighth sternum longer than wide; ductus seminalis posterior to anterior margin of seventh sternum (Fig. 263) . . . . . *Hypatopa plebis*
59. Eighth sternum quadrate (Fig. 269). . . . . *Hypatopa sais*
- Eighth sternum longer than wide (Figs. 264, 266, 271) 60
60. Antrum present (Figs. 264, 266) 61
- Antrum absent (Fig. 271) . . . . . *Hypatopa hora*
61. Antrum wider than long; anterior 1/4 of ductus bursae spinulate (Fig. 266) . . . . . *Hypatopa leda*
- Antrum longer than wide; anterior 1/2 of ductus bursae with two rows of internal platelets (Fig. 264) . . . . . *Hypatopa phoebe*

Hypatopa nex **Adamski, new species**

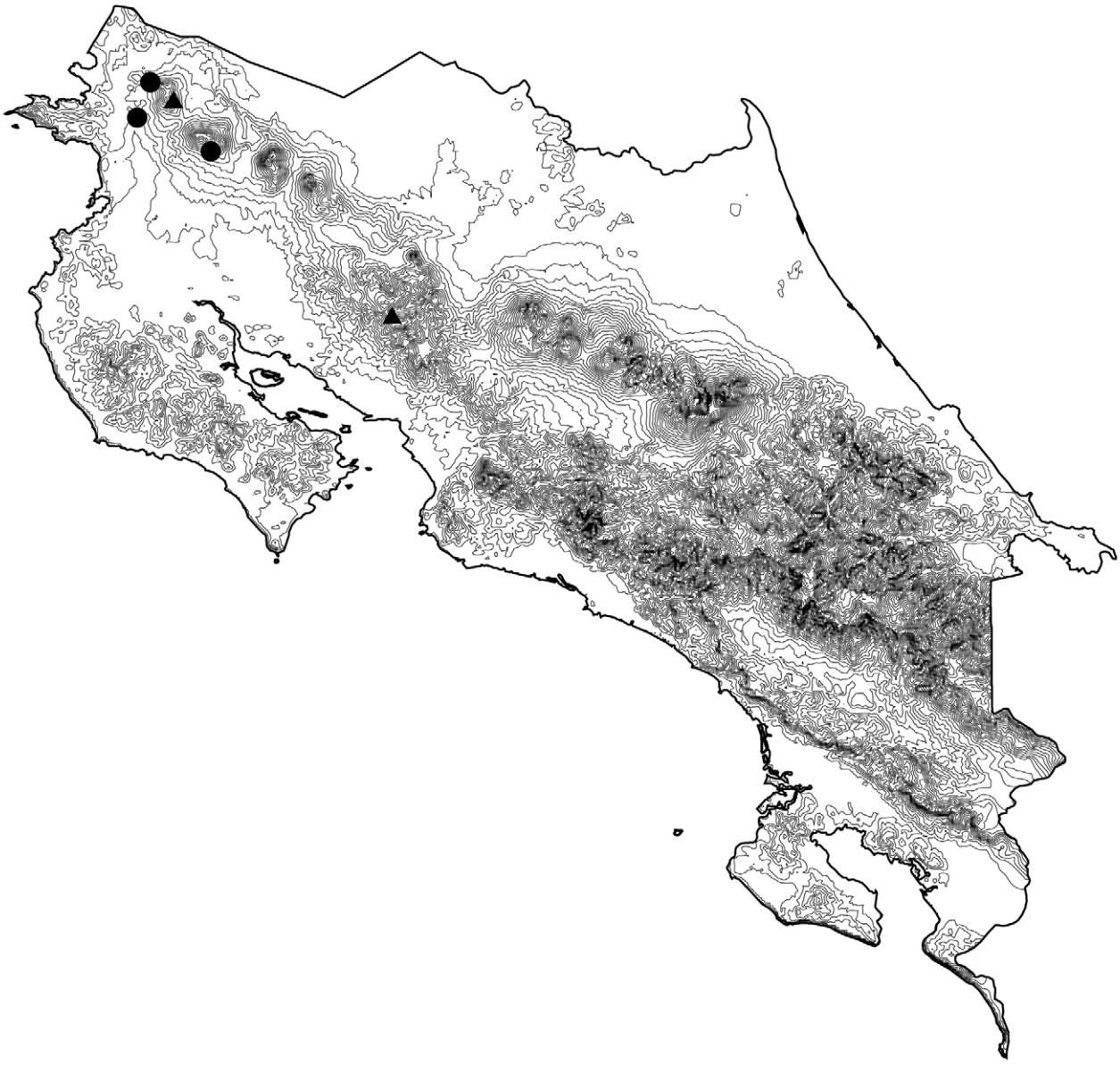
(Figs. 137–138, 355, Map 25)

Diagnosis.—*Hypatopa nex* is similar to *H. cladis* in facies but differs from the latter by having a more broadly rounded uncus; a less upturned ventral margin of the ventral part of the valva; and a smaller proximal flange of the dorsal part of the valva. *H. nex* also has a protuberant median lobe of the ventroposterior margin of the gnathos; an

anellus that is transversely setose near midlength, with a large apical barblike process that are lacking in *H. cladis*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus dark brown or brown with white scales along apical margins of segments 1–2; inner surface paler. Antenna pale brown. Proboscis pale brownish gray.

Thorax: Tegula and mesonotum with scales brownish gray tipped with white. Legs dark brown intermixed with brown, with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 355): Length 5.0–6.0 mm (n = 3), white intermixed with pale-brown scales on basal 1/3, brown intermixed with brown scales tipped with pale brown and white on apical 2/3; submedian fascia faint; cell with three brown spots, one near middle, two on apical end along crossvein. Undersurface brownish gray. Hindwing: Translucent brownish gray gradually darkening to apex.



MAP 25. Distribution of *Hypatopa nex* (●) and *H. cladis* (▲).

Abdomen: Male genitalia (Figs. 137–138): Uncus narrow basally, slightly constricted near midlength, narrowly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Gnathos, confluent with tegumen, lateral arms thin, directed anteriorly, fused mesially, forming widened median lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part nearly parallelsided to 2/3, abruptly narrowed apically, forming elongate, inwardly curved, spinelike process; process planate on inner surface; ventral margin upturned from slightly beyond base, forming narrow fold, abruptly terminating about 2/3

near slightly widened, setose lobe at base of spinelike process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process abruptly curved ventrally fusing with proximal flange; flange, disclike process with microtrichiate surface on basal 1/2, setose on apical 1/2. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus, shallowly sigmoid-shaped; anellus with single apical barblike process, setose near midlength with pair of setae along margin near base. Female Genitalia: Unknown.

Holotype, ♂, "Finca Jenny, 30 km N de Liberia, Prov[incia] Guana[caste], COSTA RICA, 240 m, 30 Abr.-11 May 1995, E. Araya, de Luz, L-N-317150, 363700, # 4796, "INBio: COSTA RICA: CRI002, 245574 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2460 [yellow label].

Paratypes (2 ♂♂): 1 ♂, "Est. Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guanacaste, COSTA RICA, 21 a 30 Nov. 1992, D. Garcia, L-N-306300, 388600, "CRI000, 828117, "Slide 2101, "USNM 83876; 1 ♂, "Cerro El Hacha, 300 m, 12 km SE de La Cruz, Prov. Guanacaste, COSTA RICA, 25 Jun. 1992, Curso III, Parataxon., L-N-329200, 368000, "CRI000, 871263, "Slide 2472 [1 in INBio, 1 in USNM].

Distribution (Map 25). *Hypatopa nex* is known from three collecting sites in northwestern Costa Rica along the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *nex* is from the Latin for, a violent death.

Hypatopa cladis Adamski, new species

(Figs. 26, 139–140, 356, Map 25)

Diagnosis.—*Hypatopa cladis* is similar to *H. nex* in facies but differs from the latter by having a more narrowly rounded uncus; a more upturned ventral margin of the ventral part of the valva; and a larger proximal flange of the dorsal part of the valva. *H. cladis* also has a mesial emargination of the ventroposterior margin of the gnathos; an anellus with a short row of setae on each lateral margin near midlength and a linear cluster of subapical setae near middle that are lacking in *H. nex.*

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer and inner surfaces of labial palpus on segment 1 grayish brown intermixed with pale grayish-brown scales along apical margin, segment 2 pale brown on basal 1/2 intermixed with grayish-brown scales and pale-brown scales along apical margin, segment 3 pale brown. Antennal scape brown intermixed with few pale-brown scales, pecten brown, flagellum grayish brown. Proboscis pale brown.

Thorax: Tegula agouti patterned, with basal and apical 1/3s brown, middle 1/3 pale brown; mesonotum with anterior 1/5 and posterior 1/5 brown, middle 3/5 pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 356): Length 5.0–7.2 mm (n = 38), pale brown intermixed with brown scales; submedian fascia faint, complete or incomplete; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 26) with M_3 and CuA_1 arising from common point on distoposterior part of cell; cubital veins divergent from bases with CuA_2 acutely curved basally. Hindwing: Translucent pale brown. Venation (Fig. 26) with cubitus 4-branched; M_2 arising from distoposterior part of cell and M_3 branching from CuA_1 from base at 1/3.

Abdomen: Male genitalia (Figs. 139–140): Uncus narrowed from widened base, narrowly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Gnathos wide, confluent with tegumen, emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part nearly parallelsided to 2/3, abruptly narrowed apically, forming elongate, inwardly curved, spinelike process; process setose on outer surface, planate on inner surface; ventral margin greatly upturned, forming wide fold, terminating near slightly raised setose lobe; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process abruptly curved ventrally fusing with proximal flange; flange, elongate, surface microtrichiate on dorsal 2/3, setose on ventral 1/3. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; sclerite of phallus, sigmoid-shaped; anellus more than 1/2 length of phallus, slightly constricted basally, gradually narrowed from subapical region, slightly emarginate apically, with two short rows of lateral setae and linear cluster of subapical setae near middle. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, Prov[incia] Guana[caste], COSTA RICA, 1100 m, 7–17 Feb[rero], 1995, F.

Alvarado, L-N-323100, 375800, # 4452, "INBio: COSTA RICA: CRI002, 195792 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2345 [yellow label].

Paratypes (35 ♂♂): 3 ♂♂, same data as for holotype except, 7–18 Feb., A. Picado, # 4534, "CRI002, 139766, "Slide No. 2356, "USNM 83881; "CRI002, 139763, "Slide No. 2721; "CRI002, 139778, "Slide No. 2351, "USNM 83882; 1 ♂, 7–18 Feb., M. Lobo, # 5320, "CRI002, 235016, "Slide No. 2349; 1 ♂, 7–18 Feb., A. Azofeifa, # 5283, "CRI002, 205177, "Slide No. 2343, "USNM 83883; 1 ♂, "M. Madrigal, # 4709, "CRI002, 187154, "Slide No. 2360, "USNM 83884; 1 ♂, 17–18 Feb., E. Alfaro, # 4584, CRI002, 334529, "Slide No. 2368; 1 ♂, 2 km SW del Cerro Cacao, 12–17 Feb. S. Avila, # 5858, "CRI002, 336962, "Slide No. 2364; 2 ♂♂, 11–17 Feb., M.A. Camacho, # 5356, "CRI002, 386660, "Slide No. 2358; "CRI002, 386667, "Slide No. 2367, "USNM 83885; 6 ♂♂, 1100–1650 m, 8–18 Feb., R. Villalobos, # 4443, "CRI002, 183597, Slide No. 2374; "CRI002, 183595, "Slide No. 2355; "CRI002, 183650, "Slide No. 2361, "USNM 83886; "CRI002, 183598, "Slide No. 2366; "CRI002, 183662, "Slide No. 2369; "CRI002, 183601, "Slide No. 2373; 12 ♂♂, "Estac. Mengo, 1100 m, SW side Volcan Cacao, Prov. Guanacaste, COSTA RICA, Feb. 1989, GNP Biodiversity Survey, 85°28'10"W, 10°55'43"N, "CRI001, 054963, "Slide No. 2490; "CRI001, 054952, "Slide No. 2491; "CRI001, 054962, "Slide No. 2494; "CRI001, 054964, "Slide No. 2496; "CRI001, 054956, "Slide No. 2497; "CRI001, 054966, "Slide No. 2501; "CRI001, 055027, "Slide No. 2505, "USNM 83887; "CRI001, 005032, "Slide No. 2506, "USNM 83888; "CRI001, 054920, "Slide No. 2512; "CRI001, 054887, "Slide No. 2515; "CRI001, 054949, "Slide No. 2520; "CRI001, 054948, "Slide No. 2521; 5 ♂♂, "Fca. Cafrosa, Est. Las Mellizas, P.N. Amistad, 1300 m, Prov. Puntarenas, COSTA RICA, M. Ramirez & G. Mora, Oct. 1990, L-S-316100, 596100, "CRI000, 575536, "Slide No. 2621; "M.M. Chavarria & G. Mora, Ene. 1991, CRI000, 380718, "Slide No. 2611, "Wing Slide No. 7005; "G. Mora, Feb. 1991, "CRI000, 275639, "Slide No. 2613; "M. Ramirez, Abr. 1991, "CRI000, 474637, "Slide No. 2614; "M. Ramirez & G. Mora, April 1989, "CRI001, 054884, "Slide No. 2623; 2 ♂♂, "San Luis, Monteverde, Prov. Puntarenas, COSTA RICA, 1000–1350 m, Feb. 1995, Z. Fuentes, L-N-250850, 449250, # 4393, "CRI002, 165574, "Slide No. 2624, "USNM 83889; "CRI002, 165579, "Slide No. 2632 [26 in INBio, 9 in USNM].

Distribution (Map 25). *Hypatopa cladis* is known from two collecting sites; one on the Cordillera de Guanacaste and one on the Cordillera de Tilarán in the western part of Costa Rica.

Etymology. The specific epithet *cladis* is derived from the Latin *clades* meaning, destruction.

Hypatopa juno Adamski, new species

(Figs. 27, 141–142, 357, Map 26)

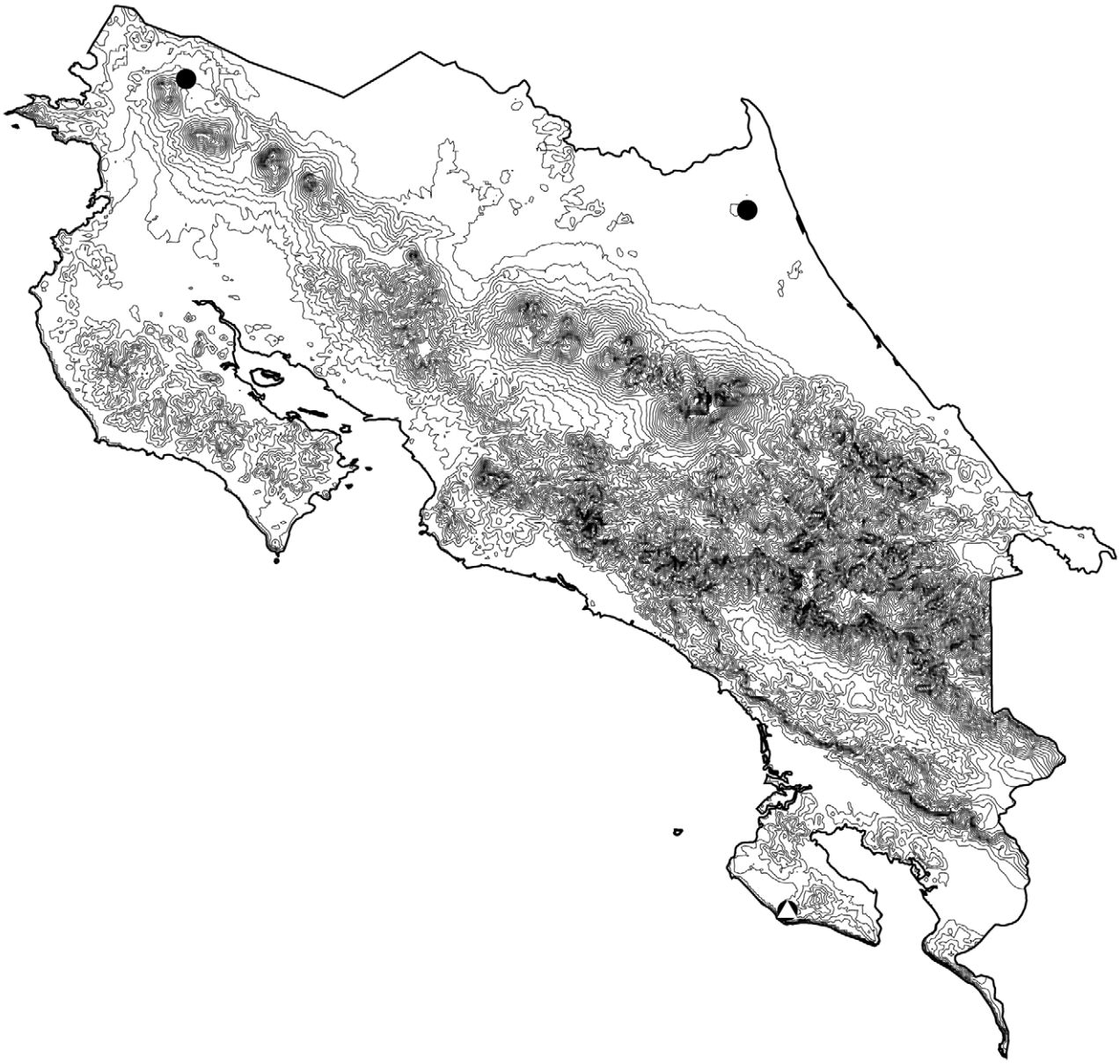
Diagnosis.—*Hypatopa juno* is similar to *H. actes* in facies but differs from the latter by having a narrower apical 1/2 of the uncus; a less upturned ventral margin of the ventral part of the valva; and a narrower digitate process of the dorsal part of the valva. *H. juno* also has a larger anellus that is setose throughout that is lacking in *H. actes*. Both species share an anellus with two large apicolateral barbs but those of *H. juno* are crenulate and those of *H. actes* are irregularly spinelike.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus reddish brown or brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula reddish brown or brown on basal 1/3, pale brown on apical 2/3; mesonotum reddish brown or brown on basal 1/5, pale brown on apical 4/5. Legs brown intermixed with reddish-brown scales near midsegments and along apical margins of all segments and tarsomeres or brown intermixed with pale-brown scales near midtibia and apical margins of tibia and tarsomeres. Forewing (Fig. 357): Length 4.4–6.0 mm (n = 5), reddish brown or pale brownish gray intermixed with brownish-gray scales tipped with pale brownish gray and brown scales; submedian fascia faint; cell with three spots, one near middle, two on apical end along crossvein. Undersurface brown. Venation (Fig. 27) with M_3 and CuA_1 arising from point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 slightly curved apically and CuA_2 broadly curved. Hindwing: Translucent pale gray gradually darkening to apex. Venation (Fig. 27) with cubitus 4-branched, with M_2 arising from cubitus beyond cell and M_3 and CuA_1 branched near 2/3.

Abdomen: Male genitalia (Figs. 141–142): Uncus gradually narrowed from widened base, narrowly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Gnathos, narrow, anteriorly-

directed ring, confluent with tegumen, ventroposterior margin entire. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part widened basally, gradually narrowed, forming short, inwardly curved, spinelike apical process; process sparsely setose on outer surface, planate on inner surface; ventral margin greatly upturned from base, forming wide fold extending to near widened setose lobe at base of apical process; dorsal part with base of costa supplanted by large irregularly shaped basal articulation, extending apically to midlength near setose digitate process; digitate process extending dorsolaterally from base; basal ridge extending ventrally, fusing with dorsolateral ridge of proximal flange; flange subquadrate, microtrichiate on apical 1/2. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; both broadly curved near middle; anellus setose throughout length, wide basally, parallelsided, narrowed from subapical region to rounded apical margin; apical region bearing two, irregularly crenulate, apicolateral barbs; vesica with an elongate cornutus. Female Genitalia: Unknown.



MAP 26. Distribution of *Hypatopa juno* (●) and *H. actes* (▲).

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guanacaste, COSTA RICA, Ago[sto] 1992, P. Ríos, L-N-330200, 380200, "INBio, COSTA RICA: CRI000, 844705 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2037 [yellow label].

Paratypes (4 ♂♂): 1 ♂, "Est. Pitilla, 700 m S Sta. Cecilia, P.N. Guanacaste, Prov. Guanacaste, COSTA RICA,

C. Moraga, 3–18 Oct. 1991, L-N-330200, 380200, “CRI000, 356316, “Slide No. 2008, “USNM 83877; 1 ♂, “P. Rios, Abr., “CRI000, 546732, “Slide No. 2009, “USNM 83878; 1 ♂, “Est. Sirena, 0–100 m, P.N. Corcovado, Prov. Puntarenas, COSTA RICA, G. Fonseca, Set. 1991, L-S-270500, 508300, “CRI000, 357478, “Slide No. 2648, “Wing Slide No. 7033; 1 ♂, “Sector Cerro Cocori, Fca. de E. Rojas, 150 m, Prov. Limón, COSTA RICA, E. Rojas, Abr. 1992, L-N-286000, 567500, “CRI000, 785525, “Slide No. 2676 [2 in INBio, 2 in USNM].

Distribution (Map 26). *Hypatopa juno* is known from three collecting sites; one on the western most part of the Cordillera de Guanacaste in western Costa Rica, one in the north-central part of the country near the border of Nicaragua, and one along the Pacific coastline on the Osa Peninsula.

Etymology. The specific epithet *juno* is chosen in honor of the goddess Juno.

Hypatopa actes Adamski, new species

(Figs. 143–144, 358, Map 26)

Diagnosis.—*Hypatopa actes* is similar to *H. juno* in facies but differs from the latter by having a wider apical 1/2 of the uncus; a more upturned ventral margin of the ventral part of the valva; and a wider digitate process of the dorsal part of the valva. *H. actes* also has a smaller anellus that is subapically setose, and is lacking in *H. juno*. Both species share an anellus with two large apicolateral barbs but those of *H. actes* are spinelike and those of *H. juno* are irregularly crenulate.

Description.—Head: Vertex and frontoclypeus brownish orange. Outer surface of labial palpus pale brownish orange intermixed with brownish-orange scales, inner surface pale brownish orange. Antennal scape and pecten brownish orange, flagellum brown basally paler apically. Proboscis pale brownish orange.

Thorax: Tegula and mesonotum pale brownish orange. Legs brown intermixed with pale brownish-orange scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 358): Length 4.5 mm (n = 1), pale brownish orange intermixed with brown scales; submedian fascia faint; cell with three brown spots, one faint spot near middle, two spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 143–144): Uncus narrowed from widened base, narrowly rounded apically, slightly downcurved, sparsely setose, shorter than width of anal opening. Gnathos narrow, anteriorly directed ring, confluent with tegumen, ventroposterior margin entire. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part widened basally, gradually narrowed apically, forming short, inwardly curved, spinelike process; process setose on outer surface, concave on inner surface; ventral margin greatly upturned from base, forming wide fold, gradually narrowed to near base of apical process; dorsal part with apical portion of costa wide, acutely curved near 1/2, extending dorsally and gradually widening, forming setose digitate process; basal ridge of digitate process extended ventrally fusing with dorsolateral ridge of proximal flange; flange angular, spinulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, broadly curved from middle; anellus setose subapically, bearing two large spinelike, apicolateral barbs. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Sirena, 0–100 m, P[arque] N[acional] Corcovado, Prov[incia] Punt[arenas], COSTA RICA, G. Fonseca, Mar[zo] 1992, L-S-270500, 508300, “INBio: COSTA RICA: CRI000, 780370 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2640 [yellow label].

Distribution (Map 26). *Hypatopa actes* is known from one collecting site on the southeastern part of the Pacific coastline on the Osa Peninsula.

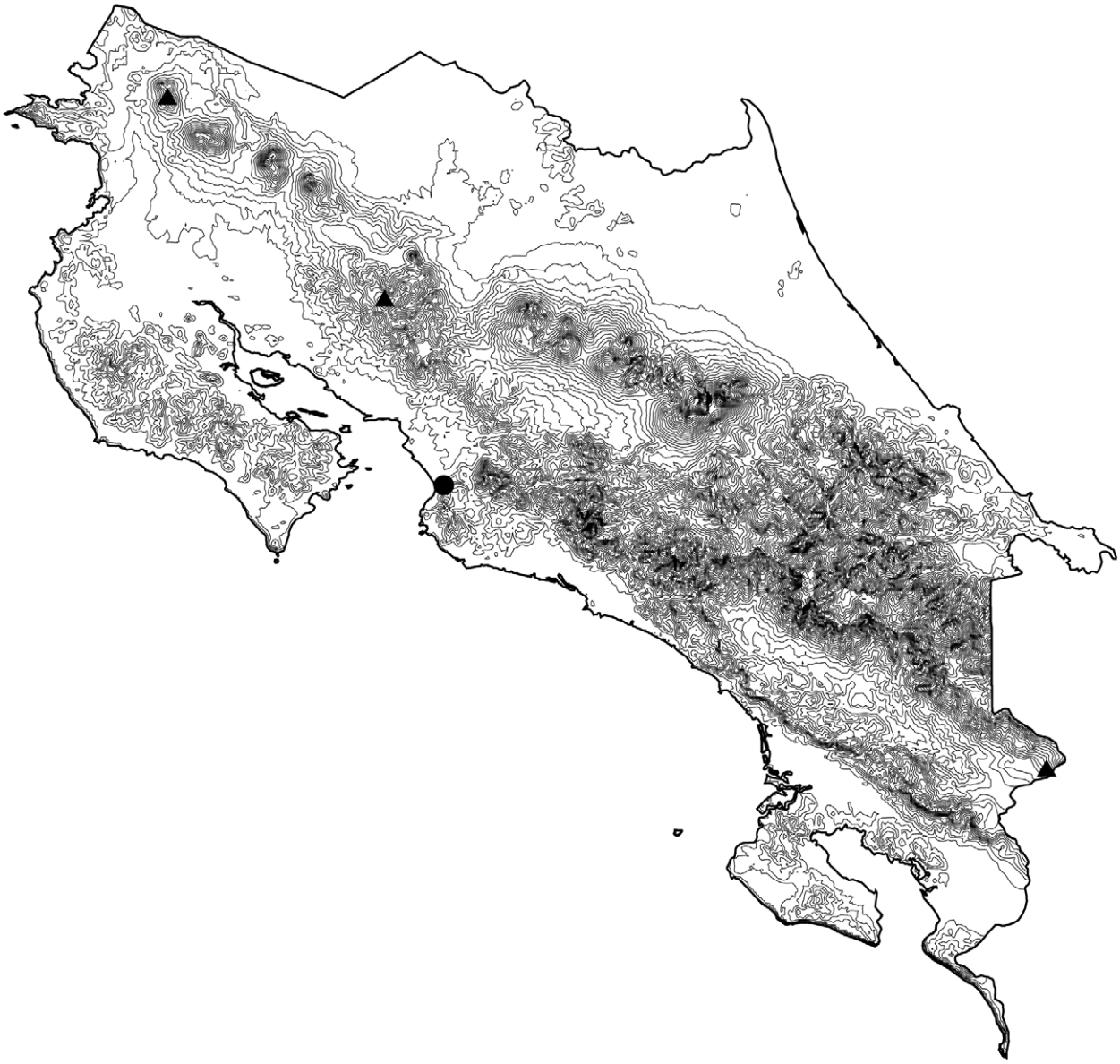
Etymology. The specific epithet *actes* is chosen from the older name of Attica.

Hypatopa cotis Adamski, new species

(Figs. 145–146, 359, Map 27)

Diagnosis.—*Hypatopa cotis* possesses the following unique combination of features that includes: a lateral part of ventroposterior margin of gnathos broadly emarginate with the median part produced posteriorly, forming a large, narrowly notched lobe; a subquadrate proximal flange with a deeply serrate ventral and lateral margins; and a

ventral margin of the ventral part of the valva bearing a dorsally curved spinelike process and a compact cluster of hairlike setae at base. This combination of character states differentiates it from all other congeners.



MAP 27. Distribution of *Hypatopa cotis* (●) and *H. pica* (▲).

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with few brown scales on segments 1–2, terminal segment brown; inner surface of labial palpus pale brown. Antenna pale brown. Proboscis pale brown.

Thorax: Tegula brown on basal 1/3, pale brown on apical 2/3; mesonotum brown on basal 1/5, pale brown on apical 4/5. Foreleg brown intermixed with pale-brown scales near midtibia and along apical margins of tibia and tarsomeres [many scales missing]. Forewing (Fig. 359): Length 4.5 mm (n = 1), pale brown intermixed with white and few brownish-orange scales; submedian fascia faint; cell with three faint, brown spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 145–146): Uncus narrowed from widened base, slightly constricted subapically, forming slightly enlarged apical part, slightly downcurved, sparsely setose, shorter than width of anal opening. Gnathos wide, laterally emarginate, confluent with tegumen, median part of ventroposterior margin produced posteriorly, forming large, narrowly notched median lobe. Tergal setae absent. Valva divided; ventral part widened mesially from narrowly rounded base, gradually narrowed apically, forming elongate, inwardly curved, spinelike process; process cylindrical, setose on basal 1/2 of outer surface; ventral margin entire, setose from

midlength, with setose ridge at base of spinelike process; dorsal part with apical portion of costa supplanted by narrow basal articulation, fusing with dorsolaterally extending, setose, digitate process; basal ridge of digitate process extended ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, spinulate, with serrate lateral and ventral margins; ventral margin bearing dorsally curved spinelike process with compact cluster of hairlike setae at base. Juxta divided. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, sclerite of phallus singly coiled; anellus wide, parallelsided, broadly rounded apically, setose near middle. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Queb[rada] Bonita, 50 m, Res[erva] Biol[ógica] Carara, Prov[incia] Punt[arenas], COSTA RICA, R. Zuniga, Mar[zo] 1991, L-N-194500, 469850, "INBio, COSTA RICA: CRI000, 660689 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2663 [yellow label].

Distribution (Map 27). *Hypatopa cotis* is known from one collecting site on the Pacific coastline near the mouth of the Golfo de Nicoya.

Etymology. The specific epithet *cotis* is derived from the Latin *cos* meaning, a hard flint stone.

***Hypatopa pica* Adamski, new species**

(Figs. 28, 147–148, 261, 360, Map 27)

Diagnosis.—*Hypatopa pica* is similar to *H. hecate* in facies but differs from the latter by having a more anteriorly directed ventroposterior margin of the gnathos; an apical process of the ventral part of valva that is more acutely curved inwardly from 1/3; and an anellus with more apical and subapical setae. *H. pica* also has three spinelike processes above the ventral margin of the proximal flange of the dorsal part of the valva; a lateral margin of the proximal flange with one spinelike process; a dorsal strut of tegumen that is present; an antrum that is about as wide as long in the female; and a posterior margin of seventh sternum that is straight in the female that are lacking in *H. hecate*.

Description.—Head: Scales on vertex and frontoclypeus grayish-brown tipped with white. Outer surface of labial palpus dark grayish brown intermixed with white scales along apical margins of segments 1–2, inner surface as above except with a reddish-brown streak on basal 2/3. Antennal scape grayish brown intermixed with pale grayish-brown scales, pecten pale grayish brown, flagellum brownish gray basally gradually brightening apically. Proboscis grayish brown.

Thorax: Tegula with scales brownish gray tipped with white; mesonotum brown on basal 1/5, brown with brownish-gray scales tipped with white on apical 4/5. Legs dark grayish brown intermixed with white scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 360): Length 6.8–8.5 mm (n = 6), with brown scales tipped with white intermixed with white, dark-brown scales, and brownish-orange scales tipped with white; base and submedian fascia separated by mostly white scales; submedian fascia complete or incomplete [faint in rubbed specimens]; cell mostly white with four dark-brown spots, one near middle, one along cubitus beyond middle, and two near apical end along crossvein, [spots faint or absent in rubbed specimens]; apical costa mostly brown; marginal spots brown. Undersurface grayish brown. Venation (Fig. 28) with M_2 and M_3 nearly parallel; cubital veins divergent from bases with CuA_1 straight and CuA_2 acutely curved basally. Hindwing: Translucent pale gray. Venation (Fig. 28) with cubitus 2-branched, M_2 and M_3 absent.

Abdomen: Male genitalia (Figs. 147–148): Uncus parallelsided from base to acutely curved subapical region, narrowly rounded apically, sparsely setose, shorter than width of anal opening. Dorsal strut of tegumen present. Gnathos narrowed, anteriorly directed ring, confluent with tegumen; ventroposterior margin produced mesially, forming narrow lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part widened basally, gradually narrowed apically, forming elongate, acutely curved, inwardly projecting, process; process curved from 1/3, setose on outer surface, concave on inner surface; ventral margin setose along upturned part, terminating to near setose lobe at base of apical process; dorsal part with apical portion of costa supplanted by narrow basal articulation, fusing with dorsally extending, setose digitate process near midlength; digitate process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange angular, bearing three dorsally pointed conical processes above ventral margin and larger, laterally pointed, conical process on ventrolateral margin; ventral margin setose. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, both acutely curved near 2/3; anellus elongate,

nearly twice as wide basally than apically, setose on apical 1/2, with paired setae along lateral margins near base. Female Genitalia (261): Apophyses posteriores nearly 2X longer than apophyses anteriores. Ostium bursae wide, within membrane, slightly posterior to seventh segment. Antrum cup-shaped, about as wide as long. Inception of ductus seminalis from a slightly dilated part of ductus bursae, slightly anterior to anterior margin of seventh sternum; posterior margin of seventh sternum nearly straight; membrane posterolateral to seventh segment with pair of compact clusters of sex scales. Ductus bursae nearly 3 1/3X longer than length of apophyses posteriores, with two rows of imbricate platelets within anterior 1/6, gradually becoming sparser posteriorly. Corpus bursae ovoid, sparsely spinulate; signum, flattened subtriangular process, arising from ovoid base near middle.

Holotype, ♂, "Est[ación] La Casona, R[eserva] B[iológica] Monteverde, Prov[incia] Punta[renas], COSTA RICA, 1520 m, Mar[zo] 1994, N. Obando, L-N-253250, 449700, # 2819, "INBio: COSTA RICA: CRI001, 764688 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2556 [yellow label].

Paratypes (4 ♂♂, 1 ♀): 2 ♂♂, 1 ♀, same data as for holotype except,1992, "CRI000, 898435, "Slide No. 2564, "USNM 83894; "CRI000, 898440, "Slide No. 2579, "USNM 83895; "CRI001, 764779, "♀ Slide No. 4514, "USNM 84138; 1 ♂, "Fca. Cafrosa, Est. Las Mellizas, P.N. Amistad, 1300 m, Prov. Puntarenas, COSTA RICA, M. Ramirez, Mar. 1991, L-S-316100, 596100, "CRI000, 301673, "Slide No. 2612; 1 ♂, "Est. Cacao, 1000–1400 m, Lado SO Volcan Cacao, P.N. Guanacaste, Prov. Guanacaste, COSTA RICA, C. Chaves, May 1991, L-N-323300, 375700, "CRI000, 563530, "Slide No. 2219, "Wing Slide No. 7014 [2 in INBio, 3 in USNM].

Distribution (Map 27). *Hypatopa pica* is known from three collecting sites; one on the Cordillera de Guanacaste, one on the Cordillera de Tilarán, and one in the eastern part of the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *pica* is derived from the Latin meaning, a jay or magpie.

Hypatopa hecate **Adamski, new species**

(Figs. 29, 149–150, 262, 361, Map 28)

Diagnosis.—*Hypatopa hecate* is similar to *H. pica* in facies but differs from the latter by having the ventroposterior margin of the gnathos not anteriorly directed; an apical process of the ventral part of valva that is less acutely curved inwardly from 1/3; an anellus with fewer apical and subapical setae; and an antrum that is longer than wide in the female. *H. hecate* also has several spinelike processes above ventral margin of the proximal flange of the dorsal part of the valva; a lateral margin of the proximal flange with two subequal spinelike processes; and a posterior margin of seventh sternum that is broadly emarginate mesially in the female that are lacking in *H. pica*.

Description.—Head: Vertex and frontoclypeus pale yellowish brown. Outer surface of labial palpus pale yellowish brown intermixed with few brown scales, inner surface pale yellowish brown. Antenna pale yellowish brown. Proboscis pale yellowish brown.

Thorax: Tegula and mesonotum pale yellowish brown. Legs brown intermixed with pale yellowish-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 361): Length 4.5–6.2 mm (n = 24), with pale yellowish-brown scales intermixed with few reddish-brown and brown scales; cell with three spots, one near middle, two on apical end along crossvein. Undersurface brown. Venation (Fig. 29) with M_2 and M_3 straight; cubital veins from base with CuA_2 slightly recurrent apically. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 29) with cubitus 3-branched; M_2+M_3 branched from CuA_1 slightly beyond distoposterior part of cell.

Abdomen: Male genitalia (Figs. 149–150): Uncus parallelsided from near middle, acutely curved downwards subapically, narrowly rounded apically, sparsely setose, about equal in length to width of anal opening. Gnathos wide, confluent with tegumen, ventroposterior margin emarginate mesially. Sockets of tergal setae of tegumen absent. Valva divided; ventral part widened basally, gradually narrowed apically, forming elongate, inwardly curved, spinelike process; process setose on outer surface, concave on inner surface; ventral margin setose, upturned beyond 1/3 forming narrow fold extending to base of apical process; costa supplanted by narrow basal articulation, fusing with dorsolaterally extending, setose, digitate process; process slightly curved inwardly; basal ridge of digitate process extending ventrally fusing with lateral ridge of proximal flange; flange angular, bearing several spinelike processes above ventral margin and near middle; ventrolateral margin bearing two larger and subequal spinelike processes. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than

valva, both acutely curved near 2/3; anellus gradually narrowed from base, bearing long row of setae on one side and sparse cluster of setae on opposite side near base. Female Genitalia (Fig. 262): Apophyses posteriores nearly 2X longer than apophyses anteriores. Ostium bursae wide, within membrane near posterior margin of seventh segment. Antrum longer than wide, slightly constricted on posterior end, widening anteriorly to 3/4, gradually narrowing to swollen part of ductus bursae; posterior end of swollen part bearing inception of ductus seminalis; posterior margin of seventh sternum broadly emarginate mesially; membrane posterolateral to seventh segment with pair of compact clusters of sex scales. Ductus bursae at least 5 1/2X longer than apophyses posteriores, with two rows of imbricate platelets within anterior 1/5, gradually becoming sparser posteriorly. Corpus bursae ovoid, sparsely spinulate; signum, a flattened subtriangular process, arising from ovoid base near middle.

MAP 28. Distribution of *Hypatopa hecate* (●) and *H. acus* (▲).

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, Prov[incia] Guan[acaste], COSTA RICA, C. Moraga, Abr[il] 1991, L-N-330200, 380200, "INBio: COSTA RICA: CRI000, 484678 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2029 [yellow label].

Paratypes (19 ♂♂, 4 ♀♀): 3 ♂♂, 2 ♀♀, Same data as for holotype, "CRI000, 484645, "♂ Slide No. 2010, "USNM 83896; "CRI000, 484740, "♂ Slide No. 2000; "CRI000, 484648, ♀ Slide No. 4517, "USNM 83897; "CRI000, 484590 [♀ not dissected]; "CRI000, 484794, "♂ Slide No. 2033; 2 ♂♂, 1 ♀, 2–9 Mar. 1992, "CRI000,

414778, “♂ Slide No. 2039, “USNM 83898; “CRI000, 414793, “♂ Gen. Slide No. 2055, “Wing Slide No. 7015; “CRI000, 414798 [♀ not dissected] [USNM]; 2 ♂♂, “Abr. 1995, P. Rios, # 4814, “CRI002, 336567, “Slide No. 2093; “CRI002, 336711, “Slide No. 2095; 2 ♂♂, 31 Mar.-15Abr. 1992 C. Moraga, “CRI000, 725185, “Slide No. 2044, “USNM 83900; “CRI000, 725191, “Slide No. 2048; 1 ♂, 3–9 Feb. 1992, P. Rios, “CRI000, 344820, “Slide No. 2091; 1 ♀, 21 Mar. a Abr. 1993, P. Rios, “CRI001, 387057, “Slide No. 4518, “USNM 83901; 4 ♂♂, “Sector Cerro Cocori, F[in]ca de E. Rojas, 150 m, Prov. Limón, COSTA RICA, E. Rojas, Abr. 1991, L-N-286000, 567500, “CRI000, 452338, “Slide No. 2677; “Mar., “CRI000, 181604, “Slide No. 2682; “Mar. 1992, “CRI000, 363749, “Slide No. 2674, “USNM 83902; 31 Ene.-21Feb., “CRI000, 785158, “Slide No. 2675, “USNM 83903; 5 ♂♂, 05/L/00/22, ALAS, Ceibo, II-2003, “INB3229656, “Slide No. 2692; “INB3229658, “Slide No. 2695; INB3229657, “Slide No. 2696, “USNM 83904; INB3229655, “Slide No. 2698, “USNM 83905; “INB3229661, “Slide No. 2702 [13 in INBio, 10 in USNM].

Distribution (Map 28). *Hypatopa hecate* is known from two collecting sites; one on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica and one in the north-central part of the country north of the Cordillera Central.

Etymology. The specific epithet *hecate* is chosen in honor of Hecate, the goddess of magic and enchantment.

Hypatopa acus Adamski, new species

(Figs. 151–152, 362, Map 28)

Diagnosis.—*Hypatopa acus* is similar to *H. crux* in facies but differs from the latter by having a slightly wider gnathos; a shorter apical process of the ventral part of the valva that is acutely curved inwardly; and a smaller proximal flange with a margin that is shallowly crenulate. *H. acus* also has a ventroposterior margin of the gnathos that is not directed anteriorly; and a vesica with two large barbless cornuti that are lacking in *H. crux*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with brown scales, inner surface paler. Antenna pale brown. Proboscis pale brown.

Thorax: Tegula with basal 1/2 brown, apical 1/2 pale brown; mesonotun brown intermixed with pale-brown scales. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of tarsomeres. Forewing (Fig. 362): Length 4.4–4.7 mm (n = 2), pale brown intermixed with brownish-orange scales and few brown scales; cell with three faint brown spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent brown, gradually darkening to apex.

Abdomen: Male genitalia (Figs. 151–152): Uncus gradually narrowed from single-tiered base, acutely curved downwards from subapical region, sparsely setose, apex laterally flattened, shorter than width of anal opening. Gnathos wide, confluent with tegumen, ventroposterior margin slightly emarginate mesially. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually narrowed apically from widened middle, forming short, inwardly curved, spinelike process; process acutely curved from 2/3, planate on inner surface; ventral margin setose along a slightly upturned part, extending to abruptly dilated margin near base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange ellipsoid, bearing densely packed microtrichiae on upper 1/2 and densely packed setae on lower 1/2; margin shallowly crenulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, sclerite of phallus acutely curved near 2/3 and at base; vesica with 2 large subequal cornuti, anellus setose. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, P. Ríos, May 1991, L-N-330200, 380200, “INBio: COSTA RICA: CRI000, 582620 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2004 [yellow label].

Paratype (1 ♂): “Est. Sirena, P.N. Corcovado, 0–100 m, Prov. Puntarenas, COSTA RICA, G. Fonseca, Mar. 1991, L-S-270500, 508300, “CRI000, 447876, “Slide No. 2646, “USNM 83922 [1 in USNM].

Distribution (Map 28). *Hypatopa acus* is known from three collecting sites; one along the western most part of the Cordillera de Guanacaste, one along the eastern most part of the Cordillera de Talamanca near the border of Panama, and one along the southeastern Pacific coastline on the Osa Peninsula.

Etymology. The specific epithet *acus* is derived from the Latin for, a needle.

***Hypatopa crux* Adamski, new species**
(Figs. 30, 153–154, 363, Map 29)

Diagnosis.—*Hypatopa crux* is similar to *H. acus* in facies but differs from the latter by having a slightly narrower gnathos; a longer apical process of the ventral part of the valva that is slightly curved inwardly; and a larger proximal flange with a serrate margin. *H. crux* also has a ventroposterior margin of the gnathos that is slightly directed anteriorly; and a vesica with two large, barbed cornuti that are lacking in *H. acus*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus with segments 1–2 brown intermixed with pale-brown scales along apical margins, segment 3 pale brown; inner surface pale brown. Antennal scape pale brown, pecten brown, flagellum brownish gray. Proboscis pale brown.

Thorax: Tegula brown or basal 1/3 brown, apical 2/3 pale brown; mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 363): Length 3.9–5.1 mm (n = 43), pale brown with few faint markings or pale brown intermixed with brown scales; base brown abruptly or gradually becoming paler to submedian fascia; submedian fascia faint or dark, incomplete or complete; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present or absent. Undersurface brown. Venation (Fig. 30) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 nearly straight and CuA_2 broadly curved. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 30) with cubitus 4-branched with M_2 shallowly curved anteriorly, M_3 and CuA_1 branched near 1/3.

Abdomen: Male genitalia (Figs. 153–154): Uncus gradually narrowed from broadly rounded base, acutely curved downwards from subapical region, sparsely setose, laterally flattened apically, shorter than width of anal opening. Gnathos narrow slightly directed anteriorly, confluent with tegumen, ventroposterior margin slightly raised, emarginate mesially. Sockets of tergal setae extending to near midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened near middle, abruptly narrowed to near base of apical process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process geniculate basally; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange ellipsoid, bearing sparse microtrichiae on upper 1/2 and densely packed spinelike setae on lower 1/2; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, slightly bulbous basally; sclerite of phallus sigmoid-shaped; vesica with two large subequal cornuti, each irregularly serrate apically, anellus longer than wide, setose on apical 1/2. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guanacaste, COSTA RICA, Ago[sto] 1992, P. Ríos, L-N-330200, 380200, “INBio: COSTA RICA: CRI000, 844772 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2041 [yellow label].

Paratypes (42 ♂♂): 6 ♂♂, same data as for holotype, “CRI000, 844776, “Slide No. 2035, “USNM 83906; “CRI000, 844754, “Slide No. 2034; “CRI00, 844779, “Slide No. 2052, “Wing Slide No. 7035; “CRI000, 844774, “Slide No. 2053, “USNM 83907; “CRI000, 844758, “Slide No. 2051, “USNM 83908; “CRI000, 844756, “Slide No. 2056; 13 ♂♂, “Ago. 1991, “CRI000, 559256, “Slide No. 2011, “USNM 83909; “CRI000, 559266, “Slide No. 2014, “USNM 83910; “CRI000, 559275, “Slide No. 2015, “USNM 83911; “CRI000, 559247, “Slide No. 2016, “USNM 83912; “CRI000, 559281, “Slide No. 2017; “CRI000, 460338, “Slide No. 2019; “CRI000, 537974, “Slide No. 2031, “USNM 83913; “CRI000, 537957, “Slide No. 2024, “USNM 83914; “CRI000, 537931, “Slide No. 2025, “USNM 83915; “CRI000, 537929, “Slide No. 2026; “CRI000, 537891, “Slide No. 2027, “USNM 83916; “CRI000, 537991, “Slide No. 2030; “CRI000, 537995, “Slide No. 2032, “USNM 83917; 2 ♂♂, 22 Set.-14 Oct., 1992, “CRI000, 824358, “Slide No. 2036; “CRI000, 824363, “Slide No. 2040, “USNM 83918; 2 ♂♂, 2–9 Mar. 1992, C. Moraga, “CRI000, 414735, “Slide No. 2049, “USNM 83919; “CRI000, 414753, “Slide No. 2050, “USNM 83920; 2 ♂♂, “P. Rios, 2–19 Mar., 1992, “CRI000, 727180, “Slide No. 2047, “USNM 83921; “CRI000, 727182, “Slide No. 2038; 1 ♂, Apr. 1995, # 4814, “CRI002, 336688, “Slide No. 2096; 1 ♂, “Mar. 1989, G.N.P. Biodiversity Survey, 85°25’40”W, 10°59’26”N, “CRI001, 054882, “Slide No. 2098; 12 ♂♂, “Estac. Mengo, 1100 m, SW side Volcan Cacao, Prov. Guanacaste, COSTA RICA, Feb. 1989, G.N.P. Biodiversity Survey, 85°28’10”W, 10°55’43”N, “CRI001, 054938, “Slide No. 2493; “CRI001, 054937, “Slide No. 2500; “CRI001, 055022, “Slide No. 2502; “CRI001, 054960, “Slide No. 2503; “CRI001, 054931, “Slide No. 2504; “CRI001, 054932, “Slide No. 2507; “CRI001, 054950, “Slide No. 2511; “CRI001, 054922, “Slide No. 2513; “CRI001, 054944, “Slide No. 2514;

"CRI001, 054888, "Slide No. 2517; "CRI000, 125461, "Slide No. 2518; "CRI000, 125454, "Slide No. 2519; 3 ♂♂, 05/L/00/22, ALAS, Ceibo, II2003, INB3229660, "Slide No. 2693; INB3229659, "Slide No. 2694; "INB3229662, "Slide No. 2701 [26 in INBio, 16 in USNM].

MAP 29. Distribution of *Hypatopa crux* (●) and *Hypatopa limae* (▲).

Distribution (Map 29). *Hypatopa crux* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *crux* is derived from the Latin meaning, a cross.

Hypatopa limae **Adamski, new species**

(Figs. 155–156, 364, Map 29)

Diagnosis.—*Hypatopa limae* is similar to *H. hera* and *H. arxcis* in facies but differs from the latter two by having a longer uncus; a more narrowly serrate margin of the proximal flange of the dorsal part of the valva; a longer sclerite of the phallus; and a wider base of the anellus. *H. limae* also has an entire ventroposterior margin of the gnathos that is lacking in *H. hera* and *H. arxcis.*

Description.—Head: Vertex and frontoclypeus pale reddish brown. Outer surface of segments 1–2 of labial palpus brown intermixed with pale reddish-brown scales, terminal segment pale reddish brown; inner surface pale reddish brown. Antennal scape brown intermixed with pale reddish-brown scales, pecten reddish brown, flagellum brown. Proboscis pale reddish brown.

Thorax: Tegula with reddish-brown scales tipped with pale reddish brown on basal 2/3, pale reddish brown on apical 1/3; mesonotum pale reddish brown. Legs brown intermixed with pale reddish-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 364): Length 10.5 mm (n = 1), pale reddish brown; [specimen rubbed]. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 155–156): Uncus gradually narrowed from widened base, slightly downcurved, narrowly rounded apically, sparsely setose, length about equal to width of anal opening. Gnathos narrow, confluent with tegumen, ventroposterior margin slightly protuberant mesially, forming slightly raised lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened near middle, abruptly narrowed apically, forming inwardly curved, spinelike process; process acutely curved near 1/2, setose on outer margin, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow fold to near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing dorsally with proximal flange; flange ellipsoid, bearing sparse microtrichiae on upper 1/4, densely packed spinelike setae on lower 3/4; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, bulbous basally, sclerite of phallus sigmoid-shaped; anellus bearing two elongate setal clusters on ventrolateral surface. Female Genitalia: Unknown.

Holotype, ♂, "COSTA RICA: Heredia: Refugio Vara Blanca, 6 km ENE Vara Blanca, 1900 m, 10°11'N, 84°07'W, 10-IV-2002, D. & M. Davis, 20/L02/051, "INBio, ♂ Genitalia Slide by D. Adamski, No. 2691 [yellow label].

Distribution (Map 29). *Hypatopa limae* is known from one collecting site in central Costa Rica along the Cordillera Central.

Etymology. The specific epithet *limae* is derived from the Latin meaning, labor.

Hypatopa hera Adamski, new species

(Figs. 157–158, 365, Map 30)

Diagnosis.—*Hypatopa hera* is similar to *H. limae* and *H. arxcis* in facies but differs from the latter two by having a wider uncus; a more widely serrate margin of the proximal flange of the dorsal part of the valva; a more bulbous base of the phallus; and a narrower base of the anellus. *H. hera* also has a straight digitate process of the dorsal part of the valva that is lacking in *H. limae* and *H. arxcis.*

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with few brown scales, inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs pale brown. Forewing (Fig. 365): Length 5.5 mm (n = 1), pale brown. Undersurface brown. Hindwing: Translucent pale brown [specimen worn].

Abdomen: Male genitalia (Figs. 157–158): Uncus narrowed from widened base to subapical region, acutely downcurved and narrowly rounded apically, sparsely setose, shorter than width of anal opening. Gnathos, narrow ring, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened to near middle, abruptly narrowed apically to area beneath base of inwardly curved, spinelike process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange ellipsoid, bearing densely packed microtrichiae on upper 2/3, densely packed spinelike setae on lower 1/3; margin widely serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, bulbous basally, sclerite of phallus sigmoid-shaped; anellus gradually narrowed from base, apex shallowly notched mesially, setose along midregion. Female Genitalia: Unknown.

Holotype, ♂, “Rancho Quemado, Peninsula de Osa, 200 m, Prov[incia] Punt[arenas], COSTA RICA, F. Quesada, Feb[rero] 1992, L-S-292500, 511000, “INBio: COSTA RICA: CRI000, 345260 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2667 [yellow label].

MAP 30. Distribution of *Hypatopa hera* (●) and *H. arxcis* (▲).

Distribution (Map 30). *Hypatopa hera* is known from one collecting site in southeastern Costa Rica on the Osa Peninsula.

Etymology. The specific epithet *hera* is chosen in honor of the Greek goddess Hera.

***Hypatopa arxcis* Adamski, new species**

(Figs. 31, 159–160, 366, Map 30)

Diagnosis.—*Hypatopa arxcis* is similar to *H. hera* and *H. limae* in facies but differs from the latter two by having a shorter uncus; a larger setose lobe at base of apical process of the ventral part of the valva; and a larger proximal flange of the dorsal part of the valva. *H. arxcis* also has an outer margin of the proximal flange that is nearly entire; and a basally widened anellus that is constricted subapically, forming a nipplelike apical end that are lacking in *H. hera* and *H. limae*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2, inner surface pale brown. Antennal scape pale brown, pecten brown, flagellum brownish gray. Proboscis pale brown.

Thorax: Tegula with basal 2/3 brown, apical 1/3 pale brown; mesonotum with basal 1/3 brown, apical 2/3 pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 366): Length 3.8–4.9 mm (n = 7), pale brown intermixed with brown scales; basal 1/3 pale brown except costa brown; submedian fascia complete or incomplete; cell with three spots, one near middle, two on apical end along crossvein; marginal spots present. Undersurface brown. Venation (Fig. 31) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases; CuA_1 straight, CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 31) with cubitus 4-branched with M_2 arising from distoposterior part of cell and M_3 and CuA_1 branching near 1/2.

Abdomen: Male genitalia (Figs. 159–160): Uncus narrowed from widened base, downcurved, narrowly rounded apically, setose, shorter than width of anal opening. Gnathos, narrow ring, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened beyond base, slightly narrowing apically, forming inwardly curved spinelike process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose, slightly upturned beyond middle, narrowing to near base of setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange ellipsoid, microtrichiae throughout except, setose along ventral margin; margin mostly entire. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus about as long as valva; phallus straight, sclerite of phallus slightly curved at 1/4; anellus with widened base, constricted subapically, forming nipplelike apical end, and bearing two setal clusters on midregion. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Queb[rada] Bonita, 50 m, Res[erva] Biol[ógica] Carara, Prov[incia] Punt[arenas], COSTA RICA, R. Zuniga, Feb[rero] 1991, L-N-194500, 469850, “INBio: COSTA RICA: CRI000, 680105 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2664 [yellow label].

Paratypes (6 ♂♂): 3 ♂♂, same data as for holotype except, “Abr., “CRI000, 315690, “Slide No. 2660, “USNM 83923; “CRI000, 315675, “Slide 2661; “CRI000, 315637, “Slide No. 2666, “Wing Slide No. 7013; 1 ♂, “Mar., “CRI000, 660681, “Slide No. 2665, “Wing Slide No. 7057; 2 ♂♂, “Est. Bijagual, 500 m, Res. Biol. Carara, Prov. San Jos, COSTA RICA, R. Zuniga, Feb. 1991, L-N-192250, 474760, “CRI000, 680169, “Slide No. 2543; “CRI000, 680359, “Slide No. 2541, “USNM 83924 [4 in INBio, 2 in USNM].

Distribution (Map 30). *Hypatopa arxcis* is known from two collecting sites in south-central Costa Rica along the Pacific coastline near the mouth of the Golfo de Nicoya.

Etymology. The specific epithet *arxcis* is derived from the Latin *arx* meaning, fortress, citadel, or stronghold.

Hypatopa caedis **Adamski, new species**

(Figs. 161–162, 367, Map 31)

Diagnosis.—*Hypatopa caedis* possesses the following unique combination of features: ventroposterior margin of gnathos widely emarginate mesially; ventrolaterally curved, spinelike, apical process of the ventral part of the valva; and juxta divided. This combination of character states differentiates it from all other congeners.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus grayish brown, inner surface pale grayish brown. Antennal scape and pecten pale grayish brown [many scales missing], flagellum grayish brown; first flagellomere unmodfied in male. Proboscis pale grayish brown.

Thorax: Tegula with basal 1/3 grayish brown, apical 2/3 pale grayish brown; mesonotum grayish brown. Legs brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 367): Length 3.8 mm (n = 1), white intermixed with pale grayish-brown scales and grayish-brown scales tipped with pale grayish brown; cell with two small, brown spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 161–162): Uncus narrowed from broadly rounded base, acutely downcurved and laterally flattened apically, sparsely setose, shorter than width of anal opening. Gnathos, narrow ring, confluent with

tegumen, ventroposterior margin widely emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened to middle, narrowing to base of ventrolaterally curved, spinelike, apical process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally, fusing with dorsal ridge of proximal flange; flange ellipsoid, setose; margin shallowly crenulate, setose along lateral margin. Juxta divided. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, sclerite of phallus shallowly sigmoid-shaped; anellus wide basally, parallelsided, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado suroeste del Volcan Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, 25 Set[iembre]-11 Oct[ubre] 1990, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 390079 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2150 [yellow label].

MAP 31. Distribution of *Hypatopa caedis* (●) and *H. plebis* (▲).

Distribution (Map 31). *Hypatopa caedis* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *caedis* is derived from the Latin *caedes* meaning, a killing or slaughter.

***Hypatopa plebis* Adamski, new species**
(Figs. 32, 163–164, 263, 368, Map 31)

Diagnosis.—*Hypatopa plebis* is similar to *H. dolo* and *H. cyane* in facies but differs from them by having sexually dimorphic lengths of the labial palpus (longer in female); a larger base of the uncus; a more shallow mesial emargination of the ventroposterior margin of the gnathos; and a more oblique lateral margin of the proximal flange of the dorsal part of the valva. *Hypatopa plebis* also has an anellus that is broadly constricted near the middle that are lacking in *H. dolo* and *H. cyane*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Labial palpus short in male, not extending beyond midlength of frontoclypeus, longer in female. Outer and inner surfaces of labial palpus with scales brownish gray tipped with pale brownish gray. Antennal scape with scales brownish gray tipped with pale brownish gray, pecten pale brownish gray, flagellum brownish gray. Proboscis brownish gray.

Thorax: Tegula and mesonotum brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 368): Length 4.1–5.5 mm (n = 12), brownish gray intermixed with pale brownish-gray scales scattered throughout middle area from base to crossvein of cell; cell with three spots, one near middle, two on apical end along crossvein; marginal spots absent. Undersurface brown. Venation (Fig. 32) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases; CuA_1 nearly straight and CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 32) with cubitus 4-branched with M_2 arising from distoposterior part of cell and M_3 and CuA_1 branching near 1/5.

Abdomen: Male genitalia (Figs. 163–164): Uncus narrowed from broadly rounded base, narrowly rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen, ventroposterior margin slightly protuberant mesially forming narrowly emarginate lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, somewhat parallelsided, gradually narrowing to base of inwardly curved, spinelike apical process; process acutely curved from 1/3, setose on basal part of outer surface, planate on inner surface; ventral margin greatly curved upwards, forming wide fold beneath apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process abruptly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrilateral (with opposite sides near equal and near parallel), bearing densely packed microtrichiae on upper 1/2, setose on ventral 1/2, intermixed with few spinules along ventrolateral margin; ventral and ventrolateral margin entire, setose dorsolaterally. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, both broadly curved from middle; anellus wide basally, broadly constricted near middle, gradually narrowed from slightly widened subapical region, forming narrowly rounded apex, setose on apical part, with single, trisetose row on lateral margins. Female Genitalia (Fig. 263): Apophyses posteriores about 2 1/2X longer than apophyses anteriores. Ostium bursae within membrane, slightly posterior to seventh segment. Posterior margin of seventh sternum straight. Ductus bursae about 1 1/2X longer than apophyses posteriores; with two rows of imbricate platelets within anterior 1/2, gradually becoming sparser posteriorly. Inception of ductus seminalis arising from ductus bursae anterior to posterior margin of seventh sternum. Corpus bursae ovoid, sparsely spinulate; signum absent.

Holotype, ♂, “Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, 8–12 Oct[ubre] 1991, L-N-323300, 375700, “INBio: COSTA RICA: CRI000, 350256 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2210 [yellow label].

Paratypes (11 ♂♂, 7 ♀♀): 6 ♂♂, same data as for holotype except, 21 a 29 Mayo 1992, D. Garcia, “CRI001, 290682, “Slide No. 2376; “CRI001, 290720, “Slide No. 2339; “CRI001, 290719, “Slide No. 2338; “CRI001, 290745, “Slide No. 2333; “CRI001, 290742, “Slide No. 2332; “CRI001, 290649, “Slide No. 2259, “USNM 83925; 6 ♀♀, “Abr. 1991, C. Chaves, “CRI000, 434695, “Slide No. 4545; “CRI000, 434655, “Slide No. 4546, “USNM 84139; “CRI000, 319610, “Slide No. 4547, “USNM 84140; “CRI000, 319612, “Slide No. 4548, “USNM 84141; “CRI000, 328831, “Slide No. 4549, “USNM 84142; “CRI000, 319549, “Slide No. 4550, “USNM 84143; 1 ♀, 11 Set.-11 Oct. 1991, D. Garcia, “CRI000, 349654, “♀ Slide No. 4544; 2 ♂♂, “D. Brenes, “CRI000, 488054, “Slide No. 2308, “USNM 83926; “CRI000, 488029, “Slide No. 2320, “Wing Slide No. 7012; 1 ♂, “E. Lopez, “CRI000, 684395, “Slide No. 2309, “USNM 83927; 1 ♂, “A. Gutierrez, “CRI000, 416753, “Slide No. 2312, “USNM 83928; 1 ♂, 23 Oct.-9 Nov. 1990, C. Chaves, “CRI000, 316182, “Slide No. 2720, “USNM 83929 [8 in INBio, 10 in USNM].

Distribution (Map 31). *Hypatopa plebis* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *plebis* is derived from the Latin *plebs* meaning, the people.

Hypatopa dolo Adamski, new species

(Figs. 165–166, 369, Map 32)

Diagnosis.—*Hypatopa dolo* is similar to *H. cyane* and *H. plebis* in facies but differs from the latter two by having a more narrowly rounded apex of the uncus; and a more moderately curved inwardly apical process of the ventral part of the valva. *H. dolo* also has a straight phallus; a moderately curved sclerite of the phallus; and an anellus that is setose on apical 1/2, that are lacking in *H. cyane* and *H. plebis*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer and inner surfaces of labial palpus dark brown with white scales along apical margins of segments 1–2, and on apical part of terminal segment. Antennal scape pale brown intermixed with few brownish-gray scales tipped with pale grayish brown, pecten brown, flagellum grayish brown. Proboscis pale grayish brown.

MAP 32. Distribution of *Hypatopa dolo* (●) and *H. cyane* (▲).

Thorax: Tegula with grayish-brown scales tipped with pale grayish brown on basal 1/3, pale brown on apical 2/3; mesonotum pale brown. Legs dark brown intermixed with pale grayish-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 369): Length 4.6 mm (n = 1), pale brown intermixed with brownish-orange and brown scales; submedian fascia faint; cell with three spots, one near middle, two on apical end along crossvein [spots within cell rubbed]; marginal spots brown. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 165–166): Uncus narrowed from widened base, narrowly rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, somewhat parallelsided, gradually narrowing to inwardly curved spinelike apical process; process setose on outer surface, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow fold, to near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally, fusing with dorsolateral ridge of proximal flange; flange subellipsoid, bearing sparse microtrichiae on apicodiagonal 1/2, and hairlike setae on basodiagonal 1/2; margin shallowly crenulate, sparsely setose. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; phallus straight, sclerite of phallus shallowly sigmoid-shaped; anellus near 1/2 length of phallus, gradually narrowing apically to rounded apex, setose on apical 2/3, with pair of setae along lateral margins near base. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Las Pailas, P[arque] N[acional] de la Vieja, Prov[incia] Guana[caste], COSTA RICA, 800 m, 10–13 Mar[zo] 1994, D. Garcia, L-N-306300, 388600, "INBio: COSTA RICA: CRI001, 738503 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2136 [yellow label].

Distribution (Map 32). *Hypatopa dolo* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *dolo* is derived from the Latin meaning, a pike.

Hypatopa cyane Adamski, new species

(Figs. 33, 167–168, 370, Map 32)

Diagnosis.—*Hypatopa cyane* is similar to *H. plebis* and *H. dolo* in facies but differs from the latter two by having a laterally flattened apical part of the uncus; a subquadrate apical margin of proximal flange of the dorsal part of the valva; a slightly bulbous base of the phallus; and a setose anellus on the basal 1/2. These features are lacking in *H. plebis* and *H. dolo.*

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 brown intermixed with pale-brown scales; inner surface brown intermixed with pale-brown scales or pale brown. Antennal scape pale brown, pecten brown, flagellum grayish brown. Proboscis pale brown.

Thorax: Tegula with basal 1/3 grayish brown, apical 2/3 pale grayish brown; mesonotum with basal 1/5 brown, apical 4/5 pale grayish brown. Legs brown intermixed with pale brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 370): Length 4.1–5.1 mm (n = 12), basal 1/3 pale brown intermixed with few brown scales, apical 2/3 brown intermixed with pale-brown scales; cell with three spots, one near middle, two on apical end along crossvein; marginal spots faint or absent. Undersurface brown. Venation (Fig. 33) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly rounded. Hindwing: Translucent pale brown, gradually darkening to apex. Venation (Fig. 33) with cubitus 4-branched with M_2 arising about 1/2 distance between distoposterior part of cell and branching point of M_3 and CuA_1.

Abdomen: Male genitalia (Figs. 167–168): Uncus narrowed from single-tiered base, acutely downcurved and laterally flattened apically, sparsely setose, nearly equal in length to width of anal opening. Gnathos, narrow band, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened to middle, gradually narrowed to base of inwardly curved, spinelike apical process; process acutely curved at 1/3, setose on outer surface, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow

fold to near marginal ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subrectangular, bearing sparse microtrichiae on dorsal 1/2, hairlike setae on ventral 1/2; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus about equal to length of valva, slightly curved from middle; anellus about 1/3 length of phallus, parallelsided, broadly rounded apically, setose on basal 1/2. Female Genitalia: Unknown.

Holotype, ♂, "F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinosa, Ago[sto] 1991, L-N-316200, 364400, "INBio COSTA RICA: CRI000, 599680 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2398 [yellow label].

Paratypes (11 ♂♂): 1 ♂, same data as for holotype except, "Jul. 1991, L-N-316200, 864400, "CRI000, 332461, "Slide No. 2432; 4 ♂♂, "Est. Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guanacaste, COSTA RICA, 21 a 30 Nov. 1992, D. Garcia, L-N-306300, 388600, "CRI000, 818604, "Slide No. 2109, "USNM 83932; "CRI000, 818595, "Slide No. 2111; "CRI000, 818592, "Slide No. 2103; "CRI000, 818743, "Slide No. 2104, "USNM 83931; 1 ♂, 1 a 22 Jul. 1992, "CRI000, 689932, "Slide No. 2107; 1 ♂, 27 Jul.-17 Ago. 1992, "CRI000, 825808, "Slide No. 2100, "USNM 83930; 1 ♂, "Est. Maritza, 600 m, lado O Volcan Orosi, Prov. Guan., COSTA RICA, 28 Feb.-10 Mar. 1992, L-N-326900, 373000, "CRI000, 681610, "Slide No. 2523, "USNM 83933; 1 ♂, "Tierras Morenas, Prov. Guan., COSTA RICA, 685 m, Abr. 1994, G. Rodriguez, L-S-283950, 424500, # 2826, "CRI001, 787159, "Slide No. 2470, "USNM 83934; 1 ♂, Agua Buena, P.N. Guanacaste, COSTA RICA, 200 m, 7–12 Feb. 1994, E. López, L-N-334800, 364100, # 2692, "CRI001, 747315, "Slide No. 2481, "Wing Slide No. 7011; 1 ♂, "COSTA RICA, San Jos, Cuidad Colon, El Rodeo, 950 m, 21-VI-1998, C19-22L, F, Col. Kenji Nishida, "Slide No. 2715, "USNM 83935 [5 in INBio, 6 in USNM].

Distribution (Map 32). *Hypatopa cyane* is known from five collecting sites in northwestern Costa Rica along or near the Cordillera de Guanacaste.

Etymology. The specific epithet *cyane* is chosen in honor of Cyane, a nymph changed into a fountain for her grief of the loss of Proserpine.

Hypatopa manus Adamski, new species

(Figs. 34, 169–170, 371, Map 33)

Diagnosis.—*Hypatopa manus* possesses the following unique combination of features; an anteriorly directed ventroposterior margin of the gnathos; an apical process of the ventral part of the valva that is acutely curved inwardly from base; a digitate process of the dorsal part of the valva that is straight from a slightly angled base; a proximal flange that is elongate, narrowly angular basally, gradually widening dorsolaterally to a broadly rounded apical part; and a phallus and sclerite of phallus that is longer than the valva. This combination of character states differentiates it from all other congeners.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of all segments, inner surface pale brown. Antennal scape with grayish-brown scales tipped with white, pecten grayish brown, flagellum gray. Proboscis pale brown.

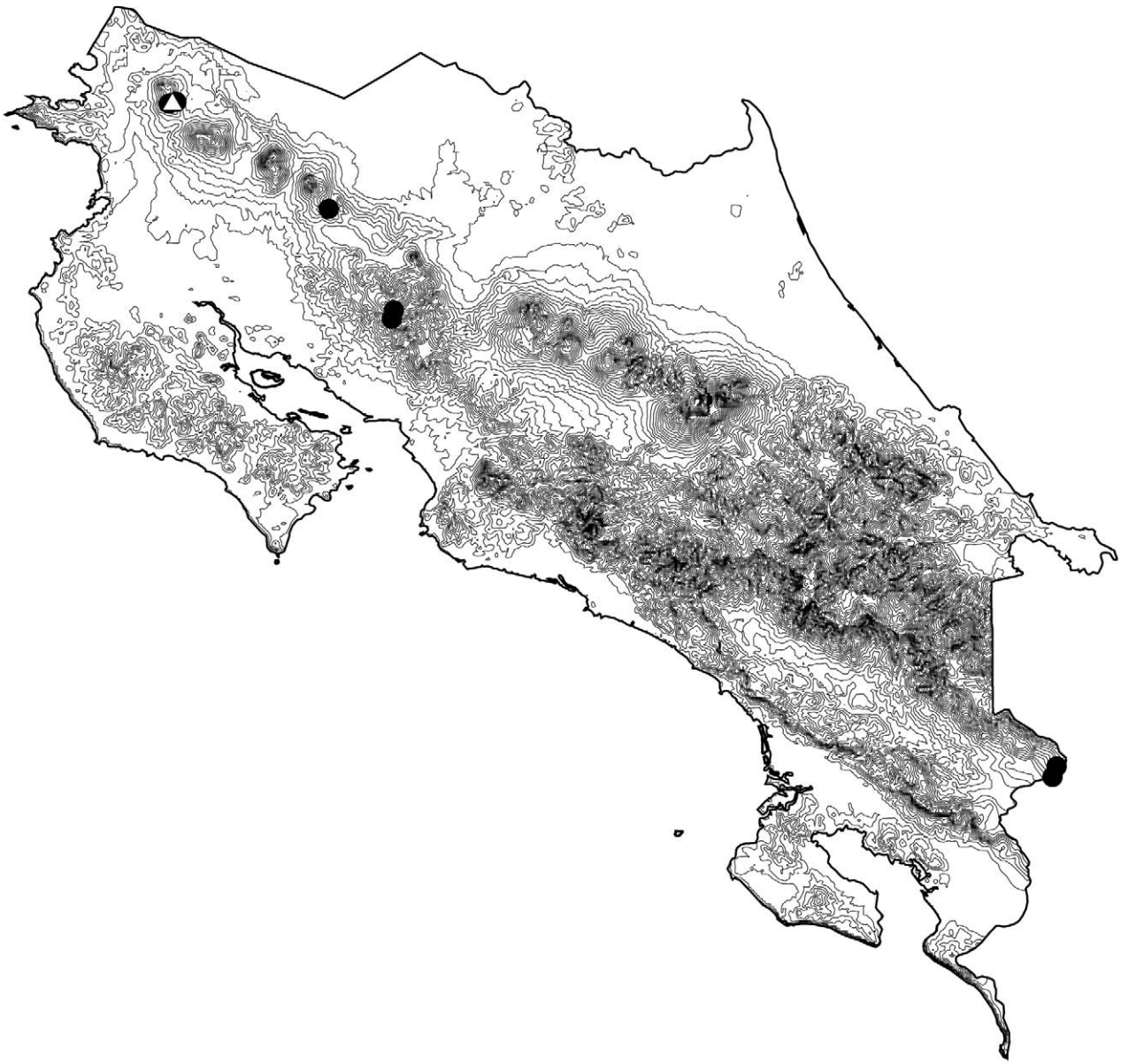
Thorax: Tegula brown; mesonotum with basal 1/2 brown, apical 1/2 pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 371): Length 4.0–6.0 mm (n = 73), pale brown intermixed with brown scales; base dark gradually brightening to 2/3 [some specimens with a dark costa]; cell with three spots present or absent, if present, one near middle, one near middle on apical end along crossvein; marginal spots faint. Undersurface brown. Venation (Fig. 34) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with M_3 straight and CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 34) with cubitus 4-branched; M_2 arising from point beyond distoposterior part of cell and branching point of M_3 and CuA_1 near 1/3.

Abdomen: Male genitalia (Figs. 169–170): Uncus narrowed from broadly rounded base, acutely downcurved and laterally flattened apically, sparsely setose, about equal in length to width of anal opening. Gnathos, narrow, anteriorly directed band, confluent with tegumen, ventroposterior margin widely emarginate mesially. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided, ventral part basally protracted inwardly,

angular at 2/3, narrowing to inwardly curved, spinelike apical process; process acutely curved inwardly from base, setose on outer surface, planate on inner surface; ventral margin entire, sparsely setose, with setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsally from an angled base, forming setose digitate process; process straight from base; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange elongate, narrowly angular basally, gradually widening dorsolaterally to broadly rounded apical margin; flange densely setose, each seta pointed toward middle; margin entire. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus slightly curved from 1/3, sclerite of phallus slightly curved at 2/3; anellus about 1/5 length of phallus, parallelsided along basal 1/2, gradually narrowing to rounded apex, setose on basal 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Puntarenas, COSTA RICA, Ago[sto] 1992, N. Obando, L-N-253250, 449700, "INBio: COSTA RICA: CRI000, 947143 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2566 [yellow label].

Paratypes (73 ♂♂): 10 ♂♂, same data as for holotype except, "CRI000, 947047, "Slide No. 2569; "CRI000, 947175, "Slide No. 2571, "USNM 83936; "CRI000, 947068, "Slide No. 2570, "USNM 83937; "CRI000, 947053, "Slide No. 2577, "USNM 83938; "CRI000, 970311, "Slide No. 2578; "CRI000, 970252, "Slide No. 2580, "USNM 83939; "CRI000, 947186, "Slide No. 2581; "CRI000, 947081, "Slide No. 2584; "CRI000, 947121, "Slide No. 2585, "USNM 83940; "CRI000, 970249, "Slide No. 2587, "USNM 83941; 1 ♂,"Set., "CRI000, 946857, "Slide No. 2573, "USNM 83942; 1 ♂, "Feb., "CRI000, 801536, "Slide No. 2609; 1 ♂, "Nov. 1991, "CRI000, 487012, "Slide No. 2607; 4 ♂♂, "Ene. 1993, "CRI001, 368980, "Slide No. 2594, "USNM 83943; "CRI001, 368990, "Slide No. 2596, "USNM 83944; "CRI001, 369094, "Slide No. 2599; "CRI001, 369111, "Slide No. 2604, "USNM 83945; 1 ♂, "C. Chaves, Abr. 1991, "CRI000, 434741, "Slide No. 2293; 6 ♂♂, "Jun. 1991, "CRI000, 586070, "Slide No. 2256, "USNM 83946; "CRI000, 623497, "Slide No. 2285; "CRI000, 623446, "Slide No. 2286, "USNM 83947; "CRI000, 586021, "Slide No. 2236, "USNM 83948; "CRI000, 585971, "Slide No. 2252; "CRI000, 613329, "Slide No. 2294, "USNM 83949; 2 ♂♂, 23 Oct.-9 Nov. 1990, "CRI000, 316243, "Slide No. 2195; "CRI000, 576662, "Slide No. 2198; 2 ♂♂, 25 Set.-11 Oct. 1990, "CRI000, 577687, "Slide No. 2163; "CRI000, 577738, "Slide No. 2185, "USNM 83950; 4 ♂♂, "Set. 1991, "CRI000, 357222, "Slide No. 2223, "USNM 83951; "CRI000, 357383, "Slide No. 2246; "CRI000, 357240, "Slide No. 2247, "USNM 83952; "CRI000, 356652, "Slide No. 2218; 4 ♂♂, "C. Chaves & R. Espinoza, Nov.-Dic., 1990, "CRI000, 321920, "Slide No. 2158, "USNM 83953; "CRI000, 321536, "Slide No. 2192, "USNM 83954; "CRI000, 321953, "Slide No. 2203, "USNM 83955; "CRI000, 321672, "Slide No. 2159, "USNM 83956; 3 ♂♂, "F.A. Quesada, Jun., 1991, "CRI000, 338540, "Slide No. 2385; "CRI000, 613333, "Slide No. 2389, "USNM 83957; "CRI000, 613355, "Slide No. 2390; 1 ♂, "M. Segura, 23 Mar.-21 Apr., 1992, "CRI000, 416797, "Slide No. 2471; 1 ♂, "A. Martin, 21–29 May, 1992, "CRI000, 684384, "Slide No. 2311; 1 ♂, "D. Brenes, 21–29 May, "CRI000, 487953, "Slide No. 2321, "USNM 83958; 1 ♂, "M. Ramirez, May, 1991, "CRI000, 355373, "Slide No. 2610; 2 ♂♂, "Abr. 1994, N. Obando, # 2820, "CRI001, 781891, "Slide No. 2548; "CRI001, 781864, "Slide No. 2550, "USNM 83959; 2 ♂♂, "Mar., 1994, # 2819, "CRI001, 764782, "Slide No. 2555, "USNM 83960; "CRI001, 764636, "Slide No. 2562, "USNM 83961; 3 ♂♂, "Jul. 1993, # 2287, "CRI001, 130666, "Slide No. 2603; "CRI001, 730703, "Slide No. 2590, "USNM 83962; "CRI001, 130649, "Slide No. 2592, "USNM 83963; 3 ♂♂, "Agos. 1992, "CRI001, 910053, "Slide No. 2593, "USNM 83964; "CRI001, 910170, "Slide No. 2600; "CRI001, 910010, "Slide No. 2602; 4 ♂♂, "Oct., 1993, "CRI001, 162892, "Slide No. 2630; "CRI001, 162899, "Slide No. 2626; "CRI001, 162842, "Slide No. 2629; "CRI001, 162856, "Slide No. 2631, "USNM 83965; 1 ♂, "May 1993, N.G. Obando, # 2184, "CRI001, 810549, "Slide No. 2591; 8 ♂♂, "Derrumbe, III Curso Parataxon., May, 1992, "CRI000, 416812, "Slide No. 2264, "USNM 83966; "CRI000, 416849, "Slide No. 2266, "USNM 83967; "CRI000, 426529, "Slide No. 2340; "CRI000, 417040, "Slide No. 2337; "CRI000, 417085, "Slide No. 2326; "CRI000, 416847, "Slide No. 2317, "USNM 83968; "CRI000, 416799, "Slide No. 2274, "USNM 83969; "CRI000, 416984, "Slide No. 2273, "Wing Slide No. 7010; 1 ♂, "II Curso Parataxon., Jun. 1990, "CRI000, 609183, "Slide No. 2169; 1 ♂, "San Luis, Monteverde, Prov. Punta., COSTA RICA, 1000–1350 m, Jul. 1994, Z. Fuentes, L-N-250850, 449250, # 3074, "CRI002, 025719, "Slide No. 2634, "USNM 83970; 1 ♂, "Estac. Mengo,100 m, SW side Volcon Cacao, Prov. Guan., COSTA RICA, Feb. 1989, GNP Biodiversity Survey, 85°28'10"W, 10°55'43"N, "CRI001, 055023, "Slide No. 2522; 1 ♂, COSTA RICA, Prov. Puntarenas, El Ripario, 3 km NE de Progresso, 1300 m, 5–7 Jun. 1997, A. Picado, de Luz, L-S-319000, 597000, # 47405, "CRI002, 569827, "Slide No. 2671; 3 ♂♂, "COSTA RICA, Puntarenas, Monteverde, Eatación Biológica Monteverde, 1500 m, 11-XI-2001, Col. Kenji Nishida, luz en la noche, "Slide No. 2700, "USNM 83971; "Slide No. 2708, "USNM 83972; "Slide No. 2713, "USNM 83973 [35 in INBio, 38 in USNM].



MAP 33. Distribution of *Hypatopa manus* (●) and *H. caepae* (▲).

Distribution (Map 33). *Hypatopa manus* is known from nine collecting sites; five in western Costa Rica along the Cordillera de Guanacaste, two on the Cordillera de Tilarán, and two closely adjacent sites on the eastern most part of the Cordillera de Talamanca near the border of Panama.

Etymology. The specific epithet *manus* is derived from the Latin meaning, the hand.

Hypatopa caepae **Adamski, new species**

(Figs. 171–172, 372, Map 33)

Diagnosis.—*Hypatopa caepae* is similar to *H. cotytto* in facies but differs from the latter by having a broader base of the uncus; and a less inwardly curved apical process of the ventral part of valva. *H. caepae* also has a mesially emarginate ventroposterior margin of the gnathos; an inwardly curved digitate process of the dorsal part of the valva; a subquadrate proximal flange of the dorsal part of the valva, with a serrate lateral margin; a straight phallus; and a setose anellus on the apical 1/2 that is lacking in *H. cotytto*.

Description.—Head: Scales on vertex, frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus grayish brown with pale grayish-brown scales along apical margin of segment 2, inner surface pale grayish brown intermixed with few grayish-brown scales. Antennal scape with grayish-brown scales tipped with white, pecten grayish brown, flagellum grayish brown. Proboscis pale grayish brown.

Thorax: Tegula and mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 372): Length 4.5 mm (n = 1), pale brown intermixed with brown scales; base and submedian fascia brown intermixed with pale-brown scales; submedian fascia complete; cell with three brown spots, one near middle [nearly obliterated by submedian fascia], two on apical end along crossvein; marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 171–172): Uncus slightly constricted between a broadly rounded base and subapical region, narrowed from subapical region, forming acuminate apex, straight, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened to midlength, narrowing to base of inwardly curved, spinelike apical process; process slightly curved throughout most of length, acutely curved apically, setose on apical surface, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow fold to near setose lobe at base of apical process; ventral articulation narrow and elongate, projecting diagonally toward dorsal articulation; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally, fusing with dorsolateral ridge of proximal flange; flange subquadrate, sparsely microtrichiate on dorsal 1/3, setose on ventral 2/3; ventral margin entire, lateral margin deeply serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, phallus nearly straight, sclerite of phallus slightly curved near 2/3; anellus about 1/3 length of phallus, slightly constricted beyond base, rounded apically, setose on apical 1/2. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Cacao, 1000–1400 m, Lado suroeste del Volcan Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, 25 Set[iembre]-11 Oct[ubre] 1990, L-N-323300, 375700, “INBio: COSTA RICA: CRI000, 590693 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2172 [yellow label].

Distribution (Map 33). *Hypatopa caepae* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *caepae* is derived from the Latin *caepa* meaning, onion.

Hypatopa cotytto **Adamski, new species**

(Figs. 173–174, 373, Map 34)

Diagnosis.—*Hypatopa cotytto* is similar to *H. caepae* in facies but differs from the latter by having a narrower base of the uncus; and a more inwardly curved apical process of the ventral part of the valva. *H. cotytto* also has a ventroposterior margin of the gnathos projected medioposteriorly, forming a spinelike process; a straight digitate process of the dorsal part of the valva; a subrectangular proximal flange, with the lateral margin shallowly crenulate, bearing a large, laterally projecting spinelike process on apicoventral angle, with densely packed setose cluster at its base; a broadly curved phallus; and setose lateral margins of the anellus that are lacking in *H. caepae*.

Description.—Head: Scales on vertex and frontoclypeus grayish-brown scales tipped with pale grayish brown. Outer surface of labial palpus grayish brown with pale grayish-brown scales along apical margins of segment 1 and on apical part of segment 3; inner surface paler. Antennal scape with grayish-brown scales tipped with pale grayish brown [pecten missing], flagellum brown. Proboscis pale grayish brown.

Thorax: Tegula and mesonotum agouti patterned, with brown on basal and apical 1/3s, pale brown on middle 1/3. Legs brown intermixed with pale-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 373): Length 4.6 mm (n = 1), pale brown intermixed with brown scales; cell with three brown spots, one spot near middle, two spots on apical end along crossvein; brown marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 173–174): Uncus slightly constricted from widened base, narrowed from subapical region, forming acuminate apex, nearly straight, sparsely setose, longer than width of anal opening. Gnathos narrow, anteriorly directed band, confluent with tegumen, ventroposterior margin projected

medioposteriorly, forming spinelike process. Sockets of tergal setae extending slightly beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, gradually widened to midlength, narrowing to base of pair of subequal, divergent, spinelike apical processes; processes branched from common base; longer process projecting dorsally and inwardly from 1/2, shorter process projecting inwardly to near right angle to larger process; ventral margin entire, with large, rounded setose lobe at base of apical processes; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process constricted basally, extending ventrally fusing with dorsolateral ridge of proximal flange; flange subrectangular, densely setose, bearing large, laterally projecting spinelike process on apicoventral angle, and densely packed setose cluster at its base; ventral margin entire, lateral margin shallowly crenulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, broadly curved near middle, apical part straight; anellus gradually narrowed from base, narrowly rounded apically, setose on lateral margins, with pair of median setae near base. Female Genitalia: Unknown.

Holotype, ♂, "Est[acion] Bijagual, 500 m, Res[erva] Biol[ógica] Carara, Prov[incia] S[an] Jos, COSTA RICA, R. Zuniga, Feb[rero] 1991, L-N-192250, 474760, "INBio: COSTA RICA: CRI000, 680181 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2542 [yellow label].

MAP 34. Distribution of *Hypatopa cotytto* (●) and *H. lucina* (▲).

Distribution (Map 34). *Hypatopa cotytto* is known from one collecting site in south-central Costa Rica near the mouth of the Golfo de Nicoya.

Etymology. The specific epithet *cotytto* is chosen in honor of Cotytto, the goddess of unchastity, originally worshipped in Thrace.

Hypatopa lucina Adamski, new species

(Figs. 175–176, 374, Map 34)

Diagnosis.—*Hypatopa lucina* is similar to *H. scobis* and *H. agnae* in facies but differs from them by having a shorter uncus; a more inwardly curved apical process of the ventral part of the valva; and a shorter sclerite of the phallus. *H. lucina* also has an entire ventroposterior margin of the gnathos; an outwardly curved digitate process of the dorsal part of the valva; and a setose anellus with a truncate apical margin that are lacking in *H. scobis* and *H. agnae*.

Description.—Head: Vertex and frontoclypeus pale brown [many scales missing]. Labial palpi missing. Antennal scape with scales grayish brown tipped with pale grayish brown, pecten pale brown, flagellum brown. Proboscis pale grayish brown.

Thorax: Tegula with grayish-brown scales tipped with pale grayish brown on basal 2/3, pale brown on apical 1/3; mesonotum with grayish-brown scales tipped with pale grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 374): Length 5.3 mm (n = 1), pale brown intermixed with white, brownish-orange, and brown scales. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 175–176): Uncus narrow and parallelsided from base to subapical region, narrowing to acuminate apex, slightly curved downwards, sparsely setose, shorter than width of anal opening. Gnathos narrow, anteriorly directed band, partially free posterolaterally from tegumen, bearing a short, protuberant process on each posterolateral angle, ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadly protracted inwardly at base, gradually widened to midlength, narrowing to near constricted part beneath base of large, hinged, inwardly curved apical process; process setose on outer surface, planate on inner surface; ventral margin inwardly curved slightly beyond middle, forming narrow fold, terminating near round, setose, marginal ridge at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process widened basally gradually narrowing to apex; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; both flanges asymetrically rounded, slightly protracted laterally, sparsely microtrichiate mesially, densely setose submarginally; margin entire. Juxta bandlike. Vinculum semicircular. Phallus longer than valva, acutely curved subapically; sclerite of phallus shorter than valva, shallowly curved from middle; anellus slightly widened from base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinoza, Jun[io] 1991, L-N-316200, 364400, “INBio: COSTA RICA: CRI000, 323963 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2401 [yellow label].

Distribution (Map 34). *Hypatopa lucina* is known from one collecting site in northwestern Costa Rica in the dry-forest region southwest of the Cordillera de Guanacaste.

Etymology. The specific epithet *lucina* is chosen in honor of Lucina, the goddess of births.

Hypatopa scobis Adamski, new species

(Figs. 35, 177–178, 375, Map 35)

Diagnosis.—*Hypatopa scobis* is similar to *H. lucina* and *H. agnae* in facies but differs from them by having a more shallowly serrate margin of the proximal flange of the valva. *H. scobis* also has a proximal flange bearing an erect spine on dorsolateral margin; a moderately curved base to the sclerite of the phallus; a nearly straight phallus with a bulbous base; and an anellus with a rounded apex, setose on apical 1/2 that are lacking in *H. lucina* and *H. agnae*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer

surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2 or pale brown intermixed with few brown scales; inner surface pale brown intermixed with few brown scales. Antennal scape grayish brown intermixed with few pale grayish-brown scales, pecten grayish brown, flagellum gray. Proboscis pale brown.

MAP 35. Distribution of *Hypatopa scobis* (●) and *H. agnae* (▲).

Thorax: Tegula and mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 375): Length 4.2–4.9 mm (n = 7), pale brown intermixed with few brown scales; cell with three faint spots, one near middle, two on apical end along crossvein. Undersurface brown. Venation (Fig. 35) with cubital veins divergent from bases; CuA_1 about 1/3 longer than $CuA_{2;}$ CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 35) with cubitus 4-branched; M_2 arising from a point about 1/2 distance between distoposterior part of cell and branching point of M_3 and CuA_1.

Abdomen: Male genitalia (Figs. 177–178): Uncus gradually narrowed from widened base, constricted broadly near middle, widened apically, forming slightly widened apical part, nearly straight, sparsely setose, longer than width of anal opening. Gnathos narrow, ventroposterior emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly projected inwardly, gradually widening to midlength, narrowing apically, forming large, inwardly curved apical process; process setose on outer surface,

slightly concave on inner margin; ventral margin slightly upturned beyond middle, forming narrow fold to near small setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange slightly ellipsoid, sparsely microtrichiate on dorsal 1/2, densely setose on ventral 1/2; margin irregularly serrate, bearing erect spine on dorsolateral margin. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus bulbous basally, sclerite of phallus sigmoid-shaped; anellus gradually narrowed from widened base, narrowly rounded apically, setose on apical 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] Guan[acaste], Prov[incia] Guanacaste, COSTA RICA, F. Araya, 21 a 29 May. 1992, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 426076 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2277 [yellow label].

Paratypes (6 ♂♂): 1 ♂, same data as for holotype except, "D. Brenes, "CRI000, 488013, "Slide No. 2314; 2 ♂♂, "C. Chaves, 25 Set.-11 Oct. 1990, "CRI000, 390151, "Slide No. 2165, "USNM 83974; "CRI000, 590769, "Slide No. 2178, "USNM 83975; 2 ♂♂, 23 Oct.- 9 Nov., "CRI000, 576598, "Slide No. 2188, "USNM 83976; "CRI000, 316067, "Slide No. 2196, "Wing Slide No. 7002; 1 ♂, "F.A. Quesada, Jun. 1991, "CRI000, 613327, "Slide No. 2253 [3 in INBio, 3 in USNM].

Distribution (Map 35). *Hypatopa scobis* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *scobis* is derived from the Latin meaning, that which is scraped or scratched off, i.e., filings, shavings, or sawdust.

Hypatopa agnae **Adamski, new species**

(Figs. 179–180, 376, Map 35)

Diagnosis.—*Hypatopa agnae* is similar to *H. scobis* and *H. lucina* but differs from them by having a more acutely curved apical part of uncus. *H. agnae* also has a ventroposterior margin of the gnathos that is not anteriorly directed; an undulate phallus that is bulbous basally; a sclerite of phallus that is acutely curved basally; and an anellus that is narrowly truncate apically and setose on the apical 1/2 that are lacking in *H. scobis* and *H. lucina*.

Description.—Head: Scales on vertex, frontoclypeus grayish-brown scales tipped with pale grayish brown scales. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2 and on apical part of terminal segment, inner surface pale brown. Antenna pale brown. Proboscis pale brown.

Thorax: Tegula and mesonotum brown intermixed with few pale-brown scales. Legs brown intermixed with pale-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 376): Length 4.5 mm (n = 1), pale brown intermixed with brownish-orange scales and brown scales; submedian fascia faint; cell with three faint brown spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 179–180): Uncus gradually narrowed from wide base, parallelsided from middle to subapical region, slightly widening apically, forming narrowly rounded, acutely curved apical part; apical part sparsely setose, shorter than width of anal opening. Gnathos narrow ring confluent with tegumen, ventroposterior margin widely emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part projecting inwardly, gradually widened to midlength, narrowing apically, forming large, inwardly curved, apical process; process setose on outer surface, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow fold to near small setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange ellipsoid, sparsely microtrichiate on dorsal 1/3, densely setose on ventral 2/3; margin shallowly crenulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus undulate, bulbous basally, sclerite of phallus sigmoid-shaped; anellus gradually narrowed from widened base, narrowly truncate apically, setose on apical 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, A. Guadamuz, Jun[io]-Ago[sto] 1991, L-N-323300, 375700, "INBio:

COSTA RICA: CRI000, 338531 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2220 [yellow label].

Paratypes (2 ♂♂): 1 ♂, same data as for holotype except, "CRI000, 338534, "Slide No. 2225, "USNM 83977; 1 ♂, "C. Moraga, 21 a 29 May, 1992, "CRI000, 411956, "Slide No. 2271, "USNM 83978 [2 in USNM].

Distribution (Map 35). *Hypatopa agnae* is known from one collecting site in northwestern Costa Rica on the western most part of the Cordillera de Guanacaste.

Etymology. The specific epithet *agnae* is derived from the Latin *agna* meaning, a ewe or lamb.

Hypatopa phoebe Adamski, new species

(Figs. 36, 181–182, 264, 377, Map 36)

Diagnosis.—*Hypatopa phoebe* is similar to *H. semela* in facies but differs from the latter by having a more acutely curved apical process of the ventral part of the valva; and a longer phallus. *H. phoebe* also has a shallowly crenulate margin of proximal flange of the dorsal part of the valva; a basally broadened anellus with two lateral lobes, and a widely notched apex that is setose on the apical 1/3 and bisetose along the margin near base that are lacking in *H. semela*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus grayish brown intermixed with pale grayish-brown scales along apical margin of segment 2, inner surface paler. Antennal scape pale brown, pecten grayish brown, flagellum grayish brown. Proboscis pale grayish brown.

Thorax: Tegula with basal 1/2 brown, apical 1/2 pale brown; mesonotum with basal 1/5 brown, apical 4/5 pale brown. Legs brown intermixed with pale-brown scales near midsegments and on apical margins of all segments and tarsomeres. Forewing (Fig. 377): Length 7.5–8.4 mm (n = 12), pale brown intermixed with brown scales, paler basally gradually darkening to apex; cell with three spots, one near middle, two on apical end along crossvein; a short apical portion of radial and medial veins darkly streaked. Undersurface brown. Venation (Fig. 36) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 acutely curved basally. Hindwing: Translucent pale brown. Venation (Fig. 36) with cubitus 3-branched; M_2+M_3 branched with CuA_1 slightly beyond distoposterior part of cell.

Abdomen: Male genitalia (Figs. 181–182): Uncus gradually narrowed from widened base to narrowly rounded apex, nearly straight, sparsely setose, shorter than width of anal opening. Gnathos wide, confluent with tegumen, ventroposterior margin emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly projecting inwardly, near parallelsided, narrowing abruptly, forming large, inwardly curved, apical process; process setose on outer surface, slightly concave on inner margin; ventral margin slightly upturned beyond middle, forming narrow fold to near small setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subelliptical, sparsely microtrichiate on dorsal 1/4, densely setose on ventral 3/4; margin shallowly crenulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus broadly curved from middle; sclerite of phallus acutely curved from 1/3; anellus broad basally, constricted near middle, slightly widening, forming two lateral lobes, apex widely notched, setose on apical 1/3, bisetose along lateral margins near base. Female Genitalia (Fig. 264): Apophyses posteriores slightly more than 3X longer than apophyses anteriores. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment; antrum elongate, deeply emarginate. Posterior margin of seventh sternum straight. Ductus bursae about 3X longer than apophyses posteriores; with two rows of imbricate platelets within anterior 1/2, gradually becoming sparser posteriorly. Inception of ductus seminalis arising from ductus bursae slightly posterior to anterior margin of seventh sternum. Corpus bursae ovoid, more spinulate posteriorly than anteriorly; signum, short laterally flattened, subtriangilar process arising from ovoid base.

Holotype, ♂, "Est[ación] La Casona, R[eserva] B[iológica] Monteverde, Prov[incia] Punta[renas], COSTA RICA, 1520 m, Mar[zo] 1994, N. Obando, L-N-253250, 449700, # 2819, "INBio: COSTA RICA: CRI001, 764788 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2544 [yellow label].

Paratypes (6 ♂♂, 5 ♀♀): 5 ♂♂, same data as for holotype except, "CRI001, 764719, "Slide No. 2545, "Wing

Slide No. 7004; “CRI001, 764764, “Slide No. 2560, “Wing Slide No. 7007; “CRI001, 764755, Slide No. 2547; “CRI001, 764761, “Slide No. 2549; “CRI001, 764791, “Slide No. 2557, “USNM 83979; 2 ♀♀, “Feb. 1992, “CRI000, 801525, “Slide No. 4525, “USNM 83980; “CRI000, 801587, “Slide No. 4526, “USNM 83981; 1 ♂, 1 ♀, “Dic. 1992, “CRI001, 358307, “Slide No. 2574; “CRI001, 358294, “Slide No. 4528, “USNM 83982; 1 ♀, “Mar. 1991, “CRI001, 320122, “Slide No. 4527, “USNM 83983; 1 ♀, “Ene. 1994, “CRI001, 867221, “Slide No. 4556, “USNM 83984 [5 in INBio, 6 in USNM].

MAP 36. Distribution of *Hypatopa phoebe* (●) and *H. semela* (▲).

Distribution (Map 36). *Hypatopa phoebe* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *phoebe*, is chosen in honor of Phoebe, goddess of the moon.

Hypatopa semela Adamski, new species

(Figs. 183–184, 378, Map 36)

Diagnosis.—*Hypatopa semela* is similar to *H. phoebe* in facies but differs from the latter by having a less acutely

curved apical process of the ventral part of the valva; and a shorter phallus. *H. semela* also has an entire margin of proximal flange of the dorsal part of the valva; and a gradually narrowed anellus that is truncate apically, bearing a single seta on each lateral margin near the apical 1/3 that are lacking in *H. phoebe*.

Description.—Head: Vertex, frontoclypeus pale brown. Outer surface of labial palpus pale brown intermixed with few brown scales, inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs pale brown [hindlegs missing]. Forewing (Fig. 378): Length 8.1 mm (n = 1), pale brown intermixed with few brown scales; cell with three faint brown spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 183–184): Uncus gradually narrowed from widened base, laterally flattened, acutely curved apically, sparsely setose, shorter than width of anal opening. Gnathos wide, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae extending to midlength of tegumen. Valva divided; ventral part projecting inwardly, gradually widened to about 1/4, narrowing apically, forming large, inwardly curved apical process; process setose on outer surface, planate on inner surface; ventral margin greatly upturned basally, forming widened fold, extending to near setose ridge at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange ellipsoid, sparsely microtrichiate on dorsal 1/3, densely setose on ventral 2/3; margin entire, setose on lateral part. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus nearly straight, sclerite of phallus irregularly undulate throughout length; anellus gradually narrowed from widened base, truncate apically, bearing single seta on each lateral margin near apical 1/3. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Puntarenas, COSTA RICA, N. Obando, Feb[rero] 1992, L-N-253250, 449700, "INBio: COSTA RICA: CRI000, 801617 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2586 [yellow label].

Distribution (Map 36). *Hypatopa semela* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *semela* is chosen in honor of Semela, daughter of Cadmus, mother of Bacchus by Jupiter.

Hypatopa edax Adamski, new species

(Figs. 185–186, 379, Map 37)

Diagnosis.—*Hypatopa edax* is similar to *H. joniella* in facies but differs from the latter by having a wider base of the uncus; a more acutely curved apical region of the apical process of ventral part of valva; and a more acutely curved digitate process of dorsal part of valva. *H. edax* also has a mesially emarginate ventroposterior margin of the gnathos; a serrate lateral margin of proximal flange of the dorsal part of the valva; a slightly bulbous base of the phallus; and anellus that is narrowly rounded apically that are lacking in *H. joniella*.

Description.—Head: Scales on vertex and frontoclypeus grayish-brown tipped with pale grayish brown. Outer surface of labial palpus brown intermixed with pale grayish-brown scales along apical margins of segments 1–2, inner surface paler. Antennal scape and pecten grayish brown, flagellum grayish brown basally gradually brightening apically. Proboscis pale grayish brown.

Thorax: Tegula and mesonotum grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 379): Length 4.0–4.2 mm (n = 2), pale brown intermixed with pale grayish-brown scales and brown scales; base and submedian fascia brown; cell with three dark-brown spots, one near middle, two on apical end along crossvein. Undersurface grayish brown. Hindwing: Translucent brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 185–186): Uncus gradually narrowed from broadly rounded base, laterally flattened, acutely curved apically, sparsely setose, shorter than width of anal opening. Gnathos, thin band, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part projected inwardly, gradually widened to middle, narrowing apically, forming large, inwardly curved, apical process; process setose on outer surface, planate on

inner surface; ventral margin slightly upturned beyond middle, forming narrow fold to near setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange subelliptical, sparsely microtrichiate on dorsal 1/2, densely setose on ventral 1/2; ventral margin entire, lateral margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus broadly curved near middle, sclerite of phallus broadly curved from slightly beyond middle; anellus gradually narrowed from base, narrowly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] Guan[acaste], Prov[incia] Guanacaste, COSTA RICA, D. Brenes, 21 a 29 May 1992, L-N-323300, 375700, "INBio, COSTA RICA: CRI000, 487962 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2325 [yellow label].

Paratype (1 ♂): same data as for holotype except, "C. Chaves, Set. 1991, "CRI000, 357422, "Slide No. 2222, "USNM 83985 [1 in USNM].

MAP 37. Distribution of *Hypatopa edax* (●) and *H. joniella* (▲).

Distribution (Map 37). *Hypatopa edax* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *edax* is derived from the Latin meaning, greedy.

***Hypatopa joniella* Adamski, new species**
(Figs. 37, 187–188, 380, Map 37)

Diagnosis.—*Hypatopa joniella* is similar to *H. edax* in facies but differs from the latter by having a narrower base of the uncus; and a less acutely curved digitate process of the dorsal part of valva. *H. joniella* also has an entire ventroposterior margin of the gnathos; a slightly curved apical process of ventral part of valva; a deeply serrate lateral margin of the proximal flange of the dorsal part of the valva; a widely bulbous base of the phallus; and a nearly truncate apex of the anellus that are lacking in *H. edax*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2 and apical portion of segment 3, inner surface pale brown. Antennal scape brown intermixed with few pale-brown scales along apical margin, pecten grayish brown, flagellum gray. Proboscis pale brownish gray.

Thorax: Tegula with basal 1/5 brown, apical 4/5 pale brown; mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 380): Length 9.5–10.2 mm (n = 7), pale brown intermixed with reddish-brown and brown scales; cell with three spots, one near middle, two on apical end along crossvein; marginal spots connected forming a crenulate pattern. Undersurface brown. Venation (Fig. 37) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; M_2 closer to M_1 than to M_3; cubital veins divergent from bases with CuA_1 straight and CuA_2 acutely curved basally. Hindwing: Translucent pale brown slightly darkening to apex. Venation (Fig. 37) with cubitus 4-branched; M_2 arising from point slightly beyond distoposterior part of cell and M_3 and CuA_1 branched near 1/2.

Abdomen: Male genitalia (Figs. 187–188): Uncus gradually narrowed from single-tiered base, gradually narrowed, laterally flattened, and acutely curved apically, sparsely setose, shorter than width of anal opening. Gnathos, thin band, confluent with tegumen, ventroposterior margin entire, with a slightly protuberant, broadly rounded mesial lobe. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part projected inwardly, gradually widened before midlength, narrowing apically, forming large, nearly straight apical process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose, slightly upturned beyond middle, forming narrow fold to near setose lobe; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange subelliptical, densely microtrichiate, setose submarginally; ventrolateral margin deeply serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, bulbous basally, sclerite of phallus acutely curved near base; anellus gradually widened from base, nearly truncate apically, setose laterally. Female Genitalia: Unknown.

Holotype, ♂, “Costa Rica: San Jos Province; Estación Biológica Cerro de la Muerte 3120 m, 09°33'42.27"N, 083°44'26.26"W; 44°F, at Light, 5–6 July 2003; Coll. Jon & David Adamski; “USNM Gen. Slide No. 83504 [in USNM].

Paratypes (6 ♂♂): “Costa Rica: San Jos Province; Estación Biológica Cerro de la Muerte 3120 m, 09°33'42.27"N, 083°44'26.26"W; 44°F, at Light, 5–6 July 2003; Coll. Jon & David Adamski; “USNM Wing Slide No. 83505 [6 in USNM].

Distribution (Map 37). *Hypatopa joniella* is known from one collecting site on the central part of the Cordillera de Talamanca in southeastern Costa Rica.

Etymology. The specific epithet *joniella* is chosen in honor of Jon David Adamski, my son, who collected this species with me on a very cold evening.

***Hypatopa rego* Adamski, new species**
(Figs. 38, 189–190, 381, Map 38)

Diagnosis.—*Hypatopa rego* is similar to *H. styga* in facies but differs from the latter by having a slightly wider uncus; a more shallowly emarginate ventroposterior margin of the gnathos; a shorter phallus and sclerite of phallus; and a larger anellus. *H. rego* also has a slightly curved apical process of ventral part of valva; and a basally geniculate digitate process of dorsal part of valva that are lacking in *H. styga.*

Description.—Head: Vertex and frontoclypeus pale brown. Outer and inner surfaces of labial palpus with

segments 1–2 brown intermixed with pale-brown scales along apical margins, segment 3 pale brown intermixed with few brown scales. Antennal scape pale brown intermixed with few brown scales, pecten brown, flagellum brownish gray. Proboscis pale brown.

MAP 38. Distribution of *Hypatopa rego* (●) and *H. styga* (▲).

Thorax: Tegula brown; mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and on apical margins of all segments and tarsomeres. Forewing (Fig. 381): Length 4.2–5.3 mm (n = 6), pale brown scales intermixed with brown scales; basal 1/3 pale brown except costa brown; apical 2/3 brown intermixed with few pale-brown scales. Undersurface brown. Venation (Fig. 38) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 acutely curved basally. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 38) with cubitus 4-branched; M_2 branched near 1/3 and M_3 and CuA_1 branched near 2/3.

Abdomen: Male genitalia (Figs. 189–190): Uncus near parallelsided from widened base to subapical area, gradually narrowing apically to rounded apex, straight, sparsely setose, about equal in length to width of anal opening. Gnathos, thin anteriorly directed band confluent with tegumen, ventroposterior margin protuberant, forming slightly raised, mesially emarginate lobe. Sockets of tergal setae extending to midlength of tegumen. Valva divided; ventral part slightly projecting inwardly, gradually widened to near middle, narrowing apically, forming

large, nearly straight apical process; process setose on outer surface, planate on inner surface; ventral margin entire, widening to near middle, gradually narrowing to near an abruptly widened setose ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate basally, slightly recurved apically; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange round, sparsely microtrichiate on dorsal 1/2, densely setose on surrounding, ventral 1/2; ventrolateral margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus about equal to length of valva; phallus straight, slightly bulbous basally, sclerite of phallus acutely curved near base and near middle; anellus parallelsided from wide base, narrowly rounded apically, bearing two elongate setal clusters on lateral surfaces. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado suroeste del Volcan Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, Ago[sto] 1990, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 660549 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2191 [yellow label].

Paratypes (5 ♂♂): 3 ♂♂, same data as for holotype except, "Nov.-Dic., "CRI000, 321348, "Slide No. 2167; "CRI000, 321719, "Slide No. 2156, "Wing Slide No. 7001; "CRI000, 321336, "Slide No. 2207, "USNM 83986; 1 ♂, "M. Ortiz, 21 a 29 May 1992, "CRI000, 420022, "Slide No. 2260, "USNM 83987; 1 ♂, same data as above except, "Derrumbe, III Curso Parataxon., May 1992, "CRI000, 426503, "Slide No. 2341, "USNM 83988 [2 in INBio, 3 in USNM].

Distribution (Map 38). *Hypatopa rego* is known from two closely adjacent collecting sites along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *rego* is derived from the Latin *regula* meaning, a straight length or ruler.

Hypatopa styga **Adamski, new species**

(Figs. 191–192, 382, Map 38)

Diagnosis.—*Hypatopa styga* is similar to *H. rego* in facies but differs from the latter by having a slightly narrower uncus; a longer phallus and sclerite of phallus; and a smaller anellus. *H. styga* also has a deeply emarginate ventroposterior margin of the gnathos; an acutely curved apical process of ventral part of valva; and a slightly curved base of the digitate process of dorsal part of valva that are lacking in *H. rego.*

Description.—Head: Vertex, frontoclypeus, and scape pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, terminal segment pale brown; inner surface pale brown. Antenna pale brown. Proboscis pale grayish brown.

Thorax: Tegula with grayish-brown scales tipped with pale grayish brown on basal 1/2, pale grayish brown on apical 1/2; mesonotum with grayish-brown scales tipped with pale grayish brown. Legs brown intermixed with pale grayish-brown scales near midsegments and along apical margins of tarsomeres [hindlegs missing]. Forewing (Fig. 382): Length 5.0 mm (n = 1), pale brown intermixed with brownish-orange and brown scales; cell with three faint spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 191–192): Uncus gradually narrowed from widened base, constricted near middle, forming slightly widened apical part; apical part acutely curved, sparsely setose, about equal in length to width of anal opening. Gnathos, thin anteriorly directed band, confluent with tegumen, ventroposterior margin emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly projecting inwardly, gradually widened before middle, narrowing apically, forming large, inwardly curved, apical process; process setose on outer surface, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow fold to near base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process slightly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange subellipsoid, sparsely microtrichiate on dorsal 1/2, densely setose on ventral 1/2; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus basally curved, sclerite of phallus broadly curved near middle, acutely curved basally; anellus gradually narrowed from wide base, broadly rounded apically, bearing two elongate setal clusters on lateral surfaces. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] Guan[acaste],

Prov[incia] Guanacaste, COSTA RICA, C. Cano, 21 a 29 May 1992, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 448372 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2318 [yellow label].

Distribution (Map 38). *Hypatopa styga* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *styga* is derived from the Latin *Styx* meaning, a river that separates the world of the living from the world of the dead.

Hypatopa texla **Adamski, new species**

(Figs. 193–194, 383, Map 39)

Diagnosis.—*Hypatopa texla* is similar to *H. verax* in facies but differs from the latter by having a wider and acutely curved apical process of the ventral part of the valva; and a wider digitate process of the dorsal part of the valva. *H. texla* also has an entire ventroposterior margin of the gnathos; a bulbous base of the phallus; an irregularly curved sclerite of phallus; and an apically truncate anellus that are lacking in *H. verax*.

MAP 39. Distribution of *Hypatopa texla* (●) and *H. verax* (▲).

Description.—Head: Vertex and frontoclypeus pale brown intermixed with grayish-brown scales tipped with pale grayish brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, terminal segment pale brown; inner surface pale brown. Antennal scape brown intermixed with few pale-brown scales, pecten pale brown, flagellum pale gray; first flagellomere unmodfied in male. Proboscis pale brown.

Thorax: Tegula brown on basal 1/2, pale brown on apical 1/2; mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of tarsomeres [many scales missing]. Forewing (Fig. 383): Length 7.6 mm (n = 1), pale brown intermixed with few brown scales; cell with three faint brown spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 193–194): Uncus gradually narrowed from base, parallelsided to subapical region, acutely curved and narrowly rounded apically, sparsely setose, about equal in length to width of anal opening. Gnathos, thin band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part slightly projecting inwardly at base, gradually widened near middle, narrowing apically, forming large, inwardly curved apical process; process acutely curved near 1/3, setose on outer surface, planate on inner surface; ventral margin slightly upturned before middle, forming narrow fold to near setose lobe at base of apical process; dorsal part with a widened costa extending dorsally, forming setose digitate process; process slightly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange semicircular, densely microtrichiate on mesial surface, densely setose on surrounding submarginal surface; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, bulbous basally, sclerite of phallus irregularly curved throughout length; anellus gradually widened from base, apically truncate, setose. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Cuerici, Sendero al Mirador, 4.6 km al E de Villa Mills, San Jos, COSTA RICA, 2640–2700 m, 25 Nov[iembre] 1995, A. Picado, de Luz, L-S-389700, 499600, # 6795, “INBio: COSTA RICA: CRI002, 391429 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2540 [yellow label].

Distribution (Map 39). *Hypatopa texla* is known from one collecting site on the Cordillera de Talamanca in southeastern Costa Rica.

Etymology. The specific epithet *texla* is derived from the Latin *tela* meaning, that which is woven.

***Hypatopa verax* Adamski, new species**

(Figs. 195–196, 384, Map 39)

Diagnosis.—*Hypatopa verax* is similar to *H. texla* in facies but differs from the latter by having a narrower and slightly curved apical process of the ventral part of the valva; and a narrower digitate process of the dorsal part of the valva. *H. verax* also has a mesially emarginate ventroposterior margin of the gnathos; a slightly widened base of the phallus; a digitate process of the dorsal part of the valva that is broadly curved apically from a geniculate basal part; and an anellus that is broadly rounded apically that are lacking in *H. texla*.

Description.—Head: Scales on vertex and frontoclypeus grayish-brown tipped with pale grayish brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2; inner surface pale brown intermixed with few brown scales. Antennal scape and pecten grayish brown, flagellum gray. Proboscis pale grayish brown.

Thorax: Tegula and mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 384): Length 4.0–4.5 mm (n = 2), brown intermixed with pale-brown scales; submedian fascia complete; cell with three dark-brown spots, one near middle, two on apical end along crossvein; marginal spots brown. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 195–196): Uncus gradually narrowed from broadly rounded base, slightly curved ventrally, narrowly rounded apically, sparsely setose, shorter than width of anal opening. Gnathos, thin band, confluent with tegumen; ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part projecting inwardly, gradually widened near middle, narrowing apically, forming inwardly curved apical process; process slightly curved, setose on outer surface, planate on inner surface; ventral margin slightly upturned beyond middle, forming narrow fold to near

small, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process broadly curved inwardly, narrowed basally, gradually widening to rounded apex; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange semicircular, sparsely microtrichiate on upper 1/4, densely setose on lower 3/4; ventral margin entire, lateral margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus shallowly curved, sclerite of phallus broadly curved apically from acutely curved basally part; anellus parallelsided from widened base, broadly rounded apically, setose. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] Guan[acaste], Prov[incia] Guanacaste, COSTA RICA, C. Moraga, P. Ríos, 21 a 29 May 1992, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 411959 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2265 [yellow label].

Paratype (1 ♂): same data as for holotype except, "C. Chaves, Abr., 1991, "CRI000, 434815, "Slide No. 2250, "USNM 83989 [1 in USNM].

Distribution (Map 39). *Hypatopa verax* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *verax* is derived from the Latin meaning, truthful.

***Hypatopa tapadulcea* Adamski, 1999**

(Figs. 39, 197–198, 265, 385, Map 40)

Diagnosis.—*Hypatopa tapadulcea* is similar to *H. mora* in facies but differs from the latter by having a less inwardly curved apical process of the ventral part of the valva; and a less recurved apical part of the sclerite of the phallus. *H. tapadulcea* also has an inwardly curved digital process of the dorsal part of the valva; and a sparsely spinulate proximal flange of the dorsal part of the valva that are lacking in *H. mora.*

Re-description.—Head: Scale on vertex and frontoclypeus brown tipped with yellowish brown. Outer surface of labial palpus with brown scales tipped with yellowish brown intermixed with brown scales and pale-brown scales, inner surface mostly yellowish brown intermixed with few brown scales [some specimens have both surfaces with mostly brown scales]. Antennal scape and pecten brown, flagellum brownish gray. Proboscis pale brown.

Thorax: Tegula and mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of tarsomeres. Forewing (Fig. 385): Length 5.0 mm (n = 1), brown. Undersurface brown. Venation (Fig. 39) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved basally. Hindwing: Gray. Venation (Fig. 39) with cubitus 4-branched; M_2 arising on distoposterior part of cell and M_3 and CuA_1 branched near 1/2.

Abdomen: Male genitalia (Figs. 197–198): Uncus gradually narrowed from widened base, acutely curved and narrowly rounded apically, sparsely setose, about equal in length to width of anal opening. Gnathos attenuate, anteriorly directed band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part slightly projecting inwardly, wide basally, angular near middle, narrowing apically, forming large, inwardly curved, apical process; process setose on outer surface, planate on inner surface; ventral margin setose from beyond base; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; digitate process broadly curved inwardly, slightly constricted basally; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, sparsely spinulate on basal 1/2, spinulate and setose on apical 1/2; margin narrowly serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus slightly curved beyond bulbous base, sclerite of phallus broadly curved from middle, acutely curved apically and at base; anellus slightly wider near middle than at base and apex, bearing two setal clusters on lateral surfaces. Female Genitalia (Fig. 265): Apophyses posteriores 2X longer than apophyses anteriores; eighth tergum with short, darkly pigmented, median longitudinal streak on posterior end. Ostium bursae elongate, within membrane, slightly posterior to seventh segment; posterior margin of seventh sternum straight; short duct connecting with coiled part of ductus bursae and ductus seminalis from shared point; ductus bursae about 8X longer than apophyses posteriores. Corpus bursae ovoid; signum spinate arising from spinulate base on posterior end.

Type Examined: Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S Sta. Cecilia, PN Guanacaste, Prov. Guan., COSTA RICA, C. Moraga, Set. 1991, L-N-330200, 380200. [INBio].

MAP 40. Distribution of *Hypatopa tapadulcea* (●) and *H. mora* (▲).

Distribution (Map 40). *Hypatopa tapadulcea* is known from three collecting sites; two on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica and one on the western part of the Cordillera de Tilarán. Additional collecting sites other than that of the holotype are obtained from Adamski (1999b) include: "Estación Cacao, 1000–1400 m, Lado SO Vol. Cacao, P.N.Guanacaste, Prov. Guan., L-N-323300, 375700 and "San Luis, Monteverde, 1000–1355 m, Prov. Punta., L-N-449250, 250850. Paratypes are in INBio and USNM.

***Hypatopa mora* Adamski, new species**
(Figs. 199–200, 386, Map 40)

Diagnosis.—*Hypatopa mora* is similar to *H. tapadulcea* in facies but differs from the latter by having a more acutely curved apical process of the ventral part of the valva; and a more recurved apical part of the sclerite of the phallus. *H. mora* also has an outwardly curved digitate process of the dorsal part of the valva; and a densely spinulate proximal flange of the dorsal part of the valva that are lacking in *H. tapadulcea.*

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus brown intermixed with few pale-brown scales along apical margin of segment 2, inner surface pale brownish gray. Antennal scape brownish gray, pecten brownish gray tipped with pale brownish gray, flagellum gray. Proboscis pale brownish gray.

Thorax: Tegula with basal 4/5 brown, apical 1/5 with brown scales tipped with pale brown; mesonotum with basal 1/2 brown, apical 1/2 pale brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of tarsomeres [most legs missing]. Forewing (Fig. 386): Length 7.2 mm (n = 1), with basal 1/3 pale brown, apical 2/3 brown intermixed with brown scales tipped with pale brown; apical margin with brown crenulations. Undersurface brown. Hindwing: Translucent pale brown slightly darkening to apex.

Abdomen: Male genitalia (Figs. 199–200): Uncus narrowed from widened base, laterally flattened and acutely curved apically, sparsely setose, slightly longer than width of anal opening. Gnathos attenuate, anteriorly directed band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part projecting inwardly, truncate basally, angular near middle, narrowing apically, forming large, inwardly curved, apical process; process broadly curved inwardly, setose on outer surface, planate on inner surface; ventral margin setose from beyond base, with small setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process broadly recurved; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange narrowed basally, widening apically, forming subquadrate apical part; proximal flange sparsely microtrichiate basally, densely spinulate and sparsely setose apically. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight beyond bulbous base, sclerite of phallus broadly curved from middle, acutely curved basally, recurved apically; anellus parallelsided from wide base, broadly rounded apically, setose on midregion. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica], Prov[incia] Punt[arenas], COSTA RICA, Dic[iembre] 1992, N. Obando, L-N-253250, 449700, “INBio: COSTA RICA: CRI001, 358287 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2567 [yellow label].

Distribution (Map 40). *Hypatopa mora* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *mora* is from the Latin meaning, a delay.

Hypatopa nox Adamski, new species

(Figs. 201–202, 387, Map 41)

Diagnosis.—*Hypatopa nox* is similar to *H. dux* in facies but differs from the latter by having a more protuberant median lobe of the ventroposterior margin of the gnathos; a wider apical process of the ventral part of the valva; and a shorter phallus. *H. nox* also has an outwardly curved digitate process of the dorsal part of the valva; an apically rounded, shallowly crenulate, margin of the proximal flange of the dorsal part of the valva; a sigmoid-shaped sclerite of the phallus; and a broadly rounded apical margin of the anellus that are lacking in *H. dux*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus brown intermixed with pale-brown scales, inner surface paler. Antennal scape and pecten brownish gray, flagellum gray. Proboscis pale brownish gray.

Thorax: Tegula and mesonotum grayish brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 387): Length 5.8–6.1 mm (n = 6), pale brown intermixed with brown scales; cell with three spots, one near middle, two on apical end along crossvein; marginal spots faint or absent. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 201–202): Uncus gradually narrowed from wide base, acutely curved and narrowly rounded apically, sparsely setose, longer than width of anal opening. Gnathos narrow, anteriorly directed band, confluent with tegumen; ventroposterior margin narrowly emarginate. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part basally truncate, angular near middle, abruptly narrowed apically, forming large, inwardly curved, apical process; process, setose on outer surface, planate on inner surface, ventral margin setose from angular part to margin, setose lobe at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process broadly recurrent, shorter than

apical process on ventral part; basal ridge of digitate process setose, extending ventrally fusing with dorsolateral ridge of proximal flange; flange elongate, broadly rounded apically, sparsely spinulate on basal 1/2, densely spiculate and sparsely setose on apical 1/2; margin shallowly crenulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, sclerite of phallus sigmoid-shaped; anellus gradually narrowed from wide base, broadly rounded apically, setose on basal 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Puntarenas, COSTA RICA, Ago[sto] 1992, N. Obando, L-N-253250, 449700, "INBio: COSTA RICA: CRI000, 947187 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2672 [yellow label].

Paratypes (5 ♀♀): 1 ♀, "Est. La Carsona, 1520 m, Res. Biol. Monteverde, Prov. Puntarenas, COSTA RICA, Ago. 1992, N. Orbando, L-N-253250, 449700, "CRI000, 947042, "Slide No. 4538, "USNM 84012; 2 ♀♀, # 2295, "CRI001, 910108, "Slide No. 4531; "CRI001, 910130, "Slide No. 4536, "USNM 84013; 1 ♀, "Ene., "CRI001, 368962, "Slide No. 4534; 1 ♀, "Mar. 1994, # 2819, "CRI001, 764749, "Gen. Slide No. 4535, "Wing Slide No. 7024 [3 in INBio, 2 in USNM].

MAP 41. Distribution of *Hypatopa nox* (●) and *H. dux* (▲).

Distribution (Map 41). *Hypatopa nox* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *nox* is derived from the Latin meaning, night.

***Hypatopa dux* Adamski, new species**
(Figs. 203–204, 388, Map 41)

Diagnosis.—*Hypatopa dux* is similar to *H. nox* in facies but differs from the latter by having a less protuberant median lobe of the ventroposterior margin of the gnathos; and a narrower apical process of the ventral part of the valva. *H. dux* also has an inwardly curved digitate process of the dorsal part of the valva; an apically quadrate and serrate margin of the proximal flange of the dorsal part of the valva; a longer phallus; a singly-coiled sclerite of the phallus; and a broadly truncate apical part of the anellus that are lacking in *H. nox*.

Description.—Head: Scales on vertex and frontoclypeus brown tipped with pale grayish brown. Outer surface of labial palpus brown, inner surface pale brown. Antennal scape brown intermixed with few pale-gray scales along apical margin, pecten pale brown, flagellum brown on basal 3/4, pale gray on apical 1/4; first flagellomere unmodfied in male. Proboscis pale grayish brown.

Thorax: Tegula and mesonotum grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 388): Length 5.0–5.6 mm (n = 3), brown intermixed with few pale-brown scales. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 203–204): Uncus gradually narrowed from widened base, acutely curved and rounded apically, sparsely setose, about equal in length to width of anal opening. Gnathos narrow, anteriorly directed band, confluent with tegumen; ventroposterior margin slightly protuberant mesially, forming shallowly emarginate lobe. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part protracting basally, gradually widening to middle, narrowing to base of large, inwardly curved apical process; process slightly curved, setose on outer surface, planate on inner surface; ventral margin sparsely setose to near short, abruptly dilated, setose marginal ridge beneath apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate basally; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, slightly wider apically than at base, sparsely microtrichiate on basal 1/2, densely densely setose on apical 1/2; margin deeply serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, margin undulate; sclerite of phallus singly coiled; anellus parallelsided from widened base, truncate apically, with short row of setae on lateral margins of apical 1/2. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Biol[ógica] Las Alturas, 1500 m, Coto Brus, Prov[incia] Puntarenas, COSTA RICA, Jun[io] 1992, M. Ramirez, L-S-322500, 591300, “INBio: COSTA RICA: CRI000, 747804 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2668 [yellow label].

Paratypes (2 ♂♂): same data as for holotype except, “Set., 1991, “CRI000, 491868, “Slide No. 2669, “USNM 84014; “Oct. 1991, “CRI000, 354144, “Slide No. 2670, “USNM 84015. [2 in USNM].

Distribution (Map 41). *Hypatopa dux* is known from one collecting site on the Cordillera de Talamanca in southeastern Costa Rica near the border of Panama.

Etymology. The specific epithet *dux* is derived from the Latin meaning, a guide or conductor.

***Hypatopa erato* Adamski, new species**
(Figs. 205–206, 389, Map 42)

Diagnosis.—*Hypatopa erato* is similar to *H. fio* in facies but differs from the latter by having a shorter uncus; a wider digitate process of the dorsal part of the valva; a lateral margin of the proximal flange that is more deeply serrate; and a phallus and sclerite of the phallus that is longer. *H. erato* also has a setose proximal flange of the dorsal part of the valva; a sclerite of the phallus that is abruptly curved at 2/3; and an apically truncate anellus that is constricted slightly beyond base that are lacking in *H. fio*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, terminal segment with apical part pale brown; inner surface pale brown. Antennal scape grayish brown with pale-gray scales along apical margin, pecten pale brown, flagellum pale gray. Proboscis pale brown.

Thorax: Tegula grayish brown intermixed with few brown scales tipped with pale brown; mesonotum with

brown scales tipped with pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 389): Length 6.2 mm (n = 1), pale brown intermixed with brownish-orange and brown scales; brown submedian fascia complete; cell with three brown spots, one near middle, two on apical end along crossvein; marginal spots brown, faint. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

MAP 42. Distribution of *Hypatopa erato* (●) and *H. fio* (▲).

Abdomen: Male genitalia (Figs. 205–206): Uncus gradually narrowed from widened base, rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, slightly directed anteriorly, confluent with tegumen; ventroposterior margin with shallowly emarginate median lobe. Sockets of tergal setae not extending to midlength of tegumen. Valva divided; ventral part protracting basally, nearly parallelsided to base of a large, inwardly curved, apical process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose to near small, setose marginal ridge beneath apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate basally; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate densely microtrichiate on basal 2/3, densely setose on apical 1/3; margin deeply serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus and sclerite of phallus slightly curved subapically; anellus constricted

beyond base, forming bulbous apical part, bearing two elongate setal clusters on lateral surfaces. Female Genitalia: Unknown.

Holotype, ♂, "COSTA RICA: Puntarenas, Estación Biológica Monteverde, 1500 m, 02-II-2001, col. Kenji Nishida, luz en la noche, "INBio, ♂ Genitalia Slide by D. Adamski, No. 2703.

Distribution (Map 42). *Hypatopa erato* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *erato* is chosen in honor of Erato, the Muse of lyric and love-poetry.

Hypatopa fio Adamski, new species

(Figs. 207–208, 390, Map 42)

Diagnosis.—*Hypatopa fio* is similar to *H. erato* in facies but differs from the latter by having a longer uncus; a narrower digitate process of the dorsal part of the valva; a more shallowly serrate margin of the proximal flange; and a shorter phallus and sclerite of the phallus. *H. fio* also has an inner surface of proximal flange of the dorsal part of the valva that lacks setae; a sclerite of the phallus that is broadly curved from midlength; and an anellus that is broad throughout its length that are lacking in *H. erato*.

Description.—Head: Scales on vertex and frontoclypeus with grayish-brown scales tipped with pale grayish brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum grayish brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 390): Length 4.7 mm (n = 1), pale brown intermixed with brown scales. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 207–208): Uncus gradually narrowed from base, slightly constricted beyond middle, forming rounded apical part, slightly downcurved, sparsely setose, near equal in length to width of anal opening. Gnathos, narrow anteriorly directed band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part basally angular, broadly rounded to base of large, inwardly curved apical process; process, setose outer surface, planate on inner surface; ventral margin greatly upturned basally, forming wide fold beneath proximal flange; basal margin setose to near setose marginal ridge beneath base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate basally; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, with short microtrichiae on basal 1/2, spiculate on apical 1/2; margin broadly rounded, shallowly serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; phallus straight; sclerite of phallus shallowly sigmoid-shaped; anellus gradually narrowed from wide base, broadly rounded apically, setose on basal 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, Abr[il] 1991, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 319464 [barcode label], "INBio, ♀ Genitalia Slide by D. Adamski, No. 2215 [yellow label].

Distribution (Map 42): *Hypatopa fio* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *fio* is derived from the Latin meaning, to come into existence.

Hypatopa io Adamski, new species

(Figs. 40, 209–210, 391, Map 43)

Diagnosis.—*Hypatopa io* is similar to *H. leda* in facies but differs from the latter by having a larger uncus; a more protuberant median lobe of the ventroposterior margin of the gnathos; a more upturned ventral margin of the ventral part of the valva; a more densely microtrichiate basal part of the proximal flange of the dorsal part of the valva; and a longer phallus and anellus. *H. io* also has a recurved digitate process of the dorsal part of the valva; an

acutely curved apical process of the ventral part of the valva; a serrate margin of proximal flange; and an anellus that is shallowly emarginate mesially, with two irregular rows of subapical setal clusters and two marginal setae near base that are lacking in *H. leda*.

Description.—Head: Vertex and frontoclypeus pale yellowish brown. Outer surface of labial palpus pale yellowish brown intermixed with few brown scales, inner surface pale yellowish brown. Antennal scape and pecten pale yellowish brown, flagellum brownish gray. Proboscis pale yellowish brown.

MAP 43. Distribution of *Hypatopa io* (●) and *H. leda* (▲).

Thorax: Tegula with basal 1/3 brown, apical 2/3 pale yellowish brown; mesonotum yellowish brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 391): Length 5.5–6.2 mm (n = 7), pale yellowish brown intermixed with brown scales near millde, including area from crossvein to apex; cell with three spots, one near middle, two on apical end along crossvein. Undersurface brown anterior to CuP, pale brown posterior to CuP. Venation (Fig. 40) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; M_2 closer to M_1 than to M_3; cubital veins divergent from bases with CuA_1 slightly curved and CuA_2 broadly curved basally. Hindwing: Translucent pale brown. Venation (Fig. 40) with cubitus 4-branched; M_2 arising less than 1/3 and M_3 and CuA_2 branched near 1/2.

Abdomen: Male genitalia (Figs. 209–210): Uncus narrowed from widened base, constricted near middle,

forming rounded apical part, slightly downcurved, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen; ventroposterior margin slightly protuberant, forming shallowly emarginate median lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadly rounded basally, nearly parallelsided to base of large, inwardly curved, apical process; process acutely curved from base, setose outer surface, planate on inner surface; ventral margin setose, greatly upturned near middle, forming wide fold to near small, setose marginal ridge on base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate basally, recurrent apically; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, with broadly rounded apical margin, microtrichiate on basal 2/3, spiculate and sparsely setose on apical 1/3; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, slightly bulbous basally, apically truncate, notched mesially; sclerite of phallus slightly curved near middle, mesially emarginate apically; anellus about 1/2 length of phallus, with two irregular rows of subapical setal clusters along lateral margins, and two marginal setae near base. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 2 km SW del Cerro Cacao, Prov[incia] Guana[caste], COSTA RICA, 1100 m, 12–17 Feb[rero] 1995, S. Avila, L-N-323100, 375800, # 5858, "INBio: COSTA RICA: CRI002, 336969 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2372 [yellow label].

Paratypes (6 ♂♂): 1 ♂, same data as for holotype except, "CRI002, 336980, "Slide No. 2348, "USNM 84016; 1 ♂, 7–18 Feb, 1995, M. Lobo, # 5320, "CRI002, 235021, "Slide No. 2353, "USNM 84018; 1 ♂, "A. Picado, # 4554, "CRI002, 139791, "Slide No. 2354, "USNM 84017; 1 ♂, 1100–1650 m, 8–18 Feb.,1995, R. Villalobos, # 4443, "CRI002, 183616, "Slide No. 2359, "Wing Slide No. 7006; 1 ♂, "Estac. Mengo,100 m, SW side Volcan Cacao, Pr. Guan., COSTA RICA, Feb. 1989, GNP Biodiversity Survey, 85°28'10"W, 10°55'43"N, "CRI001, 054903, "Slide No. 2495; 1 ♂, "San Luis, 1040 m, R.B. Monteverde, Prov. Puntarenas, COSTA RICA, Jul., 1992, Z. Fuentes, L-N-250850, 449250, "CRI000, 729525, "Slide No. 2638 [3 in INBio, 3 in USNM].

Distribution (Map 43). *Hypatopa io* is known from two collecting sites; one on the Cordillera de Guanacaste, and one site on the Cordillera de Tilarán in western Costa Rica.

Etymology. The specific epithet *io* is named in honor of the daughter of Inachus, a stream god.

Hypatopa leda **Adamski, new species**

(Figs. 211–212, 266, 392, Map 43)

Diagnosis.—*Hypatopa leda* is similar to *H. io* in facies but differs from the latter by having a smaller uncus; a less protuberant median lobe of the ventroposterior margin of the gnathos; a less upturned ventral margin of the ventral part of the valva; a shorter and more broadly curved phallus; and a shorter anellus. *H. leda* also has an inwardly curved digitate process of the dorsal part of the valva; a slightly curved apical process of the ventral part of the valva; a sparsely microtrichiate basal part of the proximal flange of the dorsal part of the valva; an irregularly serrate margin of proximal flange; and an anellus that is more deeply and broadly emarginate mesially, with setae on the basal 1/3 that are lacking in *H. io*.

Description.—Head: Vertex and frontoclypeus brown. Outer surface of labial palpus brown, inner surface pale brown. Antennal scape and pecten brown, flagellum brownish gray. Proboscis pale brown.

Thorax: Tegula and mesonotum brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 392): Length 5.2–5.6 mm (n = 3), brown. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 211–212): Uncus parallelsided from broadly rounded base, slightly downturned and boardly rounded apically, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen; ventroposterior margin slightly protuberant, forming shallowly emarginate median lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracting inwardly, widening to near middle, gradually narrowing to large, inwardly curved, apical process; process slightly curved from base, setose on outer surface, planate on inner surface; ventral margin sparsely setose, slightly upturned beyond middle, forming narrow fold to near small, setose marginal ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate basally; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal

flange; flange subelliptical, sparsely spiculate on basal 2/3, irregularly setose on apical 1/3 with hairlike setae intermixed with conical setae; margin irregularly serrate. Juxta divided. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, both broadly curved from middle; anellus near parallelsided from wide base, apex widely emarginate mesially, forming two lateral lobes, setose on basal 1/2. Female Genitalia (Fig. 266): Apophyses posteriores about 3X longer than apophyses anteriores. Ostium bursae within sparsely microtrichiate membrane, slightly posterior to seventh segment. Antrum wider than long; posterior margin of seventh sternum straight. Inception of ductus seminalis arising slightly anterior to posterior margin of seventh sternum; ductus bursae slightly greater than 1 1/2X longer than apophyses posteriores; spinulate on anterior 1/4. Corpus bursae ovoid, spinulate; signum small, spinate, arising from a rounded base.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], COSTA RICA, D. Garcia, 11 Set[iembre]-11 Oct[ubre] 1991, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 349613 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2284 [yellow label].

Paratypes (2 ♂♂, 1 ♀): 1 ♂, same data as for holotype except, "Derrumbe, lado oeste V. Cacao, III Curso Parataxon., May 1992, L-N-323700, 376700, "CRI000, 416963, "Slide No. 2336; 1 ♀, 2 Km SW del Cerro Cacao, 1100 m, 12–17 Feb. 1995, S. Avila, L-N-323100, 375800, # 5858, "CRI002, 336960, "Slide No. 4512, "USNM 84144; 1 ♂, "San Luis, Monteverde, Prov. Punta., 1000–1350 m, Jul. 1994, Z. Fuentes, L-N-250850, 449250, # 3074, "CRI002, 025678, "Slide No. 2636, "USNM 84019 [1 in INBio, 2 in USNM].

Distribution (Map 43): *Hypatopa leda* is known from three collecting sites; two closely adjacent sites on the Cordillera de Guanacaste, and one site on the Cordillera de Tilarán in western Costa Rica.

Etymology. The specific epithet *leda* is chosen in honor of Leda, the wife of Tyndarus, who bore to Zeus, Castor, Pollux, Helen, and Clytemnestra.

Hypatopa vox **Adamski, new species**

(Figs. 213–214, 393, Map 44)

Diagnosis.—*Hypatopa vox* is similar to *H. eos* in facies but differs from the latter by having a narrower gnathos; a narrower digitate process of the dorsal part of the valva; shorter setae on the apical 1/2 of the proximal flange of the dorsal part of the valva; a larger phallus; and a longer sclerite of the phallus. *H. vox* also has a bulbous base of the phallus; and a broadly emarginate apical part of the anellus, with two elongate and densely packed setal clusters on midsection that are lacking in *H. eos*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, terminal segment pale brown intermixed with few brown scales; inner surface of labial palpus pale brown. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula with basal 1/2 brown, apical 1/2 pale brown; mesonotum with basal 1/4 brown, apical 3/4 pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 393): Length 4.8 mm (n = 1), brown intermixed with pale-brown scales; marginal spots faint brown [specimen rubbed]. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 213–214): Uncus gradually narrowed from widened base, slightly constricted near middle, forming rounded apex, slightly curved ventrally, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen; ventroposterior margin slightly protuberant, forming narrowly emarginate median lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part with base greatly upturned forming wide fold, extending beneath proximal flange; basally protracted inwardly, broadly rounded to middle, narrowing to base of inwardly curved, apical process; process straight on basal 1/2, acutely curved on apical 1/2; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange protracted laterally, with broadly rounded apical margin, sparsely microtrichiate on basal 1/2, densely setose (with short setae) on apical 1/2; margin shallowly crennulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, bulbous basally; sclerite of phallus slightly curved near 2/3; anellus gradually narrowed from widened base, apex broadly emarginate mesially, with two elongate and densely packed setal clusters on midsection. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, P. Ríos, Jul[io] 1991, L-N-330200, 380200, "INBio: COSTA RICA: CRI000, 336177 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2020 [yellow label].

MAP 44. Distribution of *Hypatopa vox* (●) and *H. eos* (▲).

Distribution (Map 44). *Hypatopa vox* is known from two collecting sites; one on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica, and one north of the Cordillera Central near the border of Nicaragua.

Etymology. The specific epithet *vox* is derived from the Latin meaning, a voice.

Hypatopa eos **Adamski, new species**

(Figs. 215–216, 394, Map 44)

Diagnosis.—*Hypatopa eos* is similar to *H. vox* in facies but differs from the latter by having a wider gnathos; a wider digitate process of the dorsal part of the valva; longer setae on the apical 1/2 of the proximal flange of the dorsal part of the valva; a smaller phallus; and a shorter sclerite of the phallus. *H. eos* also has a slightly enlarged

base of the phallus; and a deeply emarginate apex of the anellus, with two opposable acuminate lateral arms that are lacking in *H. vox*.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of segments 1–2 of labial palpus brown intermixed with pale-brown scales along apical margins, terminal segment pale brown; inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown [one antenna is missing and one antenna is missing apical part of flagellum]. Proboscis pale brown.

Thorax: Tegula with basal 1/2 brown, apical 1/2 pale brown; mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 394): Length 3.3 mm (n = 1), pale brown intermixed with yellowish-brown and brown scales [specimen rubbed]. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 215–216): Uncus gradually narrowed from base, straight, narrowly rounded apically, sparsely setose, shorter than width of anal opening. Gnathos wide, confluent with tegumen; ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, widening to near middle, gradually narrowing to base of inwardly curved, apical process; process acutely curved from middle, setose on outer surface, planate on inner surface; ventral margin sparsely setose, slightly upturned beyond proximal flange, extending to near small, setose marginal ridge at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, protracted ventrolaterally, sparsely microtrichiate on basal 1/2, densely setose (with long setae) on apical 1/2; margin shallowly crenulate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva; phallus straight with wide base; sclerite of phallus shallowly sigmoid-shaped; anellus near parallelsided from base to subapical region, apical part narrowed from subapical region, deeply emarginate apically, forming two opposable, acuminate, lateral processes, setose on apical 1/3. Female Genitalia: Unknown.

Holotype, ♂, “COSTA RICA: Heredia, Est[ación] Biol[ógica] la Selva, 50–150 m, 10°26'N, 84°01'W, Mar[zo], 1993, INBio-OET, 20 Mar[zo] 1993, Lab clearing, L/04/023, “INBio: COSTA RICA: CRI001, 222998 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2723 [yellow label].

Distribution (Map 44): *Hypatopa eos* is known from one collecting site in north-central Costa Rica north of the Cordillera Central.

Etymology. The specific epithet *eos* is chosen in honor of Eos, one of the horses of the Sun.

***Hypatopa dicax* Adamski, new species**

(Figs. 217–218, 395, Map 45)

Diagnosis.—*Hypatopa dicax* is similar to *H. ira* in facies but differs from the latter by having an apically wider uncus; a basally constricted and narrower proximal flange of the dorsal part of the valva; and a longer phallus. *H. dicax* also has an entire ventroposterior margin of the gnathos; a downcurved apical process of the ventral part of the valva; a twisted digitate process of the dorsal part of the valva; and an acutely curved sclerite of the phallus that are lacking in *H. ira*.

Description.—Head: Scales on vertex and frontoclypeus brownish gray tipped with pale brownish gray. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, terminal segment pale brown; inner surface pale brown. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum with brownish-gray scales tipped with pale brownish gray. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 395): Length 8.1 mm (n = 1), pale brown intermixed with few brown scales; submedian fascia faint. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 217–218): Uncus parallelsided from broadly widened base, rounded apically, slightly downcurved, sparsely setose, about equal in length to width of anal opening. Gnathos, narrow band (not shown), confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, widening to middle, gradually

narrowing to large, ventrally curved, hinged, apical process; process acutely curved from base, setose on outer surface, planate on inner surface; ventral margin sparsely setose, with small, setose marginal ridge at base of apical process; apical part with costa extending dorsally, forming inwardly curved, setose digitate process; process twisted near midlength; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange apically ellipsoid, densely microtrichiate on basal 2/3, densely setose on apical 1/3; margin shallowly serrate. Juxta divided. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, sclerite of phallus acutely curved near 2/3 and slightly curved near base; anellus gradually narrowing from wide base, broadly rounded apically, setose along midregion. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cuerici, Sendero al Mirador, 4.6 km al E de Villa Mills, San Jos, COSTA RICA, 2640 m, 17–22 Mar[zo] 1996, A. Picado, de Luz, L-S-389700, 499600, # 7026, "INBio: COSTA RICA: CRI002, 430799 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2539 [yellow label].

MAP 45. Distribution of *Hypatopa dicax* (●) and *H. ira* (▲).

Distribution (Map 45). *Hypatopa dicax* is known from one collecting site on the Cordillera de Talamanca in eastern Costa Rica.

Etymology. The specific epithet *dicax* is derived from the Latin meaning, ready of speech or witty.

***Hypatopa ira* Adamski, new species**
(Figs. 219–220, 396, Map 45)

Diagnosis.—*Hypatopa ira* is similar to *H. dicax* in facies but differs from the latter by having an narrower apical part of the uncus; a wider proximal flange of the dorsal part of the valva; and a shorter phallus. *H. ira* also has a mesially emarginate ventroposterior margin of the gnathos; an inwardly curved apical process of the ventral part of the valva; a nearly straight digitate process of the dorsal part of the valva; and a sclerite of the phallus that is broadly curved near middle, and recurved apically that are lacking in *H. dicax*.

Description.—Head: Scales on vertex, frontoclypeus, brownish gray tipped with pale brownish gray. Outer surface of labial palpus pale brown intermixed with few brown scales, inner surface pale brown. Antennal scape brownish gray tipped with pale brownish gray and pecten [some scales missing], flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum with brownish gray scales tipped with pale brownish gray. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 396): Length 4.1–4.7 mm (n = 3), pale brown intermixed with brown scales; submedian fascia faint; cell with three faint brown spots, one near middle, two on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 219–220): Uncus broadly constricted from base to middle, widening apically, forming slightly rounded apical part, straight, sparsely setose, about equal in length to width of anal opening. Gnathos narrow, anteriorly directed band, confluent with tegumen, ventroposterior margin narrowly emarginate mesially. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly protracted inwardly at base, widening before middle, gradually narrowing to base of inwardly curved apical process; process setose on outer surface, planate on inner surface; ventral margin sparsely setose, with small setose marginal ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming straight, setose digitate process; process geniculate basally; basal ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange subcircular, protracted ventrolaterally, with broadly rounded apical margin, sparsely spiculate on basal 1/2, setose on apical 1/2; margin entire. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus broadly curved near middle; sclerite of phallus broadly curved near middle, slightly curved basally, recurved apically; anellus near parallelsided from wide base, broadly rounded apically, setose on apical 1/2, with pair of median setae near base. Female Genitalia: Unknown.

Holotype, ♂, “Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] Guan[acaste], Prov[incia] Guanacaste, COSTA RICA, C. Moraga, P. Ríos, 21 a 29 May 1992, L-N-323300, 375700, “INBio: COSTA RICA: CRI000, 411958 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2380 [yellow label].

Paratypes (2 ♂♂): 1 ♂, same data as for holotype except, 800–1400 m, 7–18 Feb. 1995, M. Lobo, L-N-323100, 375800, # 5320, “CRI002, 235045, “Slide No. 2375, “USNM 84020; 1 ♂, same data as above except, 1100 m, 12–17 Feb. 1995, S. Avila, # 5858, “CRI002, 336968, “Slide No. 2357, “USNM 84021 [2 in USNM].

Distribution (Map 45). *Hypatopa ira* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *ira* is derived from the Latin meaning, wrath or anger.

***Hypatopa umbra* Adamski, new species**
(Figs. 41, 221–222, 397, Map 46)

Diagnosis.—*Hypatopa umbra* is similar to *H. texo* in facies but differs from the latter by having a narrower base of the uncus; a more constricted base to a downcurved proximal flange of the dorsal part of the valva; a broader phallus; and a more broadly curved sclerite of the phallus. *H. umbra* also has a slightly protuberant median lobe of the ventroposterior margin of the gnathos; sockets of tergal setae not extending beyond the midlength of the tegumen; a straight apical process of the ventral part of valva; an inwardly curved digitate process of the dorsal part of the valva; and an anellus that is setose on the basal 1/2 that are lacking in *H. texo.*

Description.—Head: Vertex and frontoclypeus grayish brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margin of segment 2, inner surface pale brown. Antennal scape pale brown, pecten pale brown, flagellum brownish gray. Proboscis pale brown.

MAP 46. Distribution of *Hypatopa umbra* (●) and *H. texo* (▲).

Thorax: Tegula and mesonotum grayish brown. Legs brown intermixed with pale-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 397): Length 3.5–5.1 mm (n = 15), pale brown intermixed with brown scales; base brown, gradually brightening to 1/3; cell with two spots on apical end along crossvein, anterior spot small, posterior spot larger, expanded into tornal area; marginal spots dark brown. Undersurface brown. Venation (Fig. 41) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved basally. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 41) with cubitus 3-branched; M_2+M_3 arising from cubitus beyond distoposterior part of cell.

Abdomen: Male genitalia (Figs. 221–222): Uncus gradually narrowed from base, acutely downcurved apically, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen; ventroposterior margin slightly protuberant mesially, forming emarginate, median lobe. Sockets of tergal setae not extending

beyond midlength of tegumen. Valva divided; ventral part angular basally, widening to near middle, gradually narrowing to base of large apical process; process straight throughout most of length, acutely curved apically, setose on outer surface, planate on inner surface; ventral margin sparsely setose, upturned beyond middle, forming wide fold to near base of setose marginal ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process broadly curved inwardly; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subcircular beyond protracted base, with a broadly rounded apical margin, spiculate, setose along apical margin; margin shallowly serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva, broadly curved near 2/3; anellus narrowed from widened base, narrowly rounded apically, setose on basal 1/2. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado suroeste del Volcan Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, 25 Set[iembre]-11 Oct[ubre] 1990, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 390199 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2168 [yellow label].

Paratypes (14 ♂♂): 4 ♂♂, same data as for holotype except, "CRI000, 590764, "Slide No. 2180; "CRI000, 390343, "Slide No. 2182, "USNM 84022; "CRI000, 590792, "Slide No. 2199, "USNM 84023; "CRI000, 390284, "Slide No. 2200, "USNM 84024; 3 ♂♂, "Mar. 1991, "CRI000, 317655, "Slide No. 2221, "USNM 84025; "CRI000, 317500, "Slide No. 2244, "USNM 84026; "CRI000, 317636, "Slide No. 2257, "Wing Slide No. 7008; 1 ♂, "Abr., "CRI000, 319667, "Slide No. 2297, "USNM 84027; 5 ♂♂, "A. Gutierres, 21–29 May 1992, "CRI000, 416757, "Slide No. 2323; "CRI000, 416734, "Slide No. 2303; "CRI000, 416743, "Slide No. 2304; "CRI000, 684400; "Slide No. 2315; "CRI000, 660546; "Slide No. 2190, "USNM 84028: 1 ♂, "San Luis, Monteverde, Prov. Punta., COSTA RICA, 1000–1350 m, Jul. 1994, Z. Fuentes, L-N-250850, 449250, # 3074, "CRI002, 025726, "Slide No. 2633 [7 in INBio, 7 in USNM].

Distribution (Map 46). *Hypatopa umbra* is known from two collecting sites; one on the western most part of the Cordillera de Guanacaste, and one on the Cordillera de Tilarán in western Costa Rica.

Etymology. The specific epithet *umbra* is derived from the Latin meaning, shadow.

Hypatopa texo **Adamski, new species**

(Figs. 42, 223–224, 267, 398, Map 46)

Diagnosis.—*Hypatopa texo* is similar to *H. umbra* in facies but differs from the latter by having a wider base of the uncus; a less constricted base of the proximal flange of the dorsal part of the valva; and a narrower phallus. *H. texo* also has an anteriorly directed ventroposterior margin of the gnathos; sockets of tergal setae extending beyond the midlength of the tegumen; a straight apical process of the ventral part of the valva; an acutely curved digitate process of the dorsal part of the valva; a shallowly undulate sclerite of the phallus, apically bifurcate, forming two elongate, broadly curved, convergent processes; and an anellus that is widely emarginate mesially, forming two narrowly rounded, setose lateral lobes that are lacking in *H. umbra*.

Description.—Head: Vertex and frontoclypeus grayish brown. Outer surface of labial palpus with segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 pale brown intermixed with few brown scales; inner surface pale brown. Antennal scape brown intermixed with pale-brown scales, pecten brown, flagellum gray. Proboscis pale brown.

Thorax: Tegula brown or with basal 2/3 brown, apical 1/3 pale brown; mesonotum brown. Legs dark brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 398): Length 4.5–5.7 mm (n = 19), dark brown intermixed with brown and pale-brown scales; basal 1/3 brown except costa dark brown to 2/3; two pale-brown markings arising from posterior margin, one obliquely arched spot adjacent to basal 1/3, one subcircular spot proximal to tornus; two dark-brown spots at apical 1/3, one pale-brown spot near tornus, one subapical along costa; marginal spots coalescing forming irregularly shaped crenulations. Undersurface brown. Venation (Fig. 42) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 nearly straight and CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 42) with cubitus 4-branched; M_2 arising 1/2 distance between distoposterior part of cell and branching point of M_3 and CuA_1.

Abdomen: Male genitalia (Figs. 223–224): Uncus gradually narrowed from wide base, slightly constricted near middle, slightly curved apically, sparsely setose, longer than width of anal opening. Gnathos narrow,

anteriorly directed band, confluent with tegumen; ventroposterior margin emarginate mesially. Sockets of tergal setae extending beyond midlength of tegumen. Valva divided; ventral part basally protracting inwardly, widening to middle, gradually narrowing to base of inwardly curved, apical process; process acutely curved from middle, setose on outer surface, planate on inner surface; ventral margin setose, with a setose ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process geniculate from beyond base; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrate, protracted ventrolaterally, with broadly rounded apical margin, sparsely microtrichiate on basal 1/2, setose on apical 1/2; margin serrate. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, bulbous basally; sclerite of phallus shallowly undulate, apically bifurcate, forming two elongate, broadly curved, convergent processes; anellus widely emarginate mesially, forming two porrect, narrowly rounded, setose, lateral lobes. Female Genitalia (Fig. 267): Apophyses posteriores about 2 1/2X longer than apophyses anteriores. Ostium bursae within membrane posterior to seventh segment; posterior margin of seventh sternum straight. Inception of ductus seminalis arising beyond anterior margin of seventh sternum; ductus bursae slightly greater than 2X longer than apophyses posteriores; slightly spinulate on anterior 1/5. Corpus bursae ovoid, spinulate; signum absent.

Holotype, ♂, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, P[arque] N[acional] G[uanacaste], COSTA RICA, C. Chaves, Set[iembre] 1991, L-N-323300, 375700, "INBio, COSTA RICA: CRI000, 375364 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2212 [yellow label].

Paratypes (16 ♂♂, 2 ♀♀): 2 ♀♀, same data as for holotype except, "CRI000, 357385, "Slide No. 4511, "USNM 84029; "CRI000, 356688, "Slide No. 4560, "Wing Slide No. 7023; 16 ♂♂, "Jun. 1991, "CRI000, 586088, "Slide No. 2209; "CRI000, 586006, "Slide No. 2216, "USNM 84030; "CRI000, 585999, "Slide No. 2226, "USNM 84033; "CRI000, 586091, "Slide No. 2230; "CRI000, 623451, "Slide No. 2232, "Wing Slide No. 7032; "CRI000, 586067, "Slide No. 2235, "USNM 84032; "CRI000, 586007, "Slide No. 2238, "USNM 84031; "CRI000, 586062, "Slide No. 2239, "USNM 84034; "CRI000, 586032, "Slide No. 2242; "CRI000, 586014, "Slide No. 2251; "CRI000, 586038, "Slide No. 2255, "USNM 84035; "CRI000, 417123, "Slide No. 2263, "USNM 84036; CRI000, 586090, "Slide No. 2288, "USNM 84037; "CRI000, 586026, "Slide No. 2291; "CRI000, 623475, "Slide No. 2296; "CRI000, 571640, "Slide No. 2387 [9 in INBio, 9 in USNM].

Distribution (Map 46): *Hypatopa texo* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *texo* is derived from the Latin *textilis* meaning, a woven textile.

***Hypatopa solea* Adamski, new species**

(Figs. 43, 225–226, 399, Map 47)

Diagnosis.—*Hypatopa solea* is similar to *H. bilobata* in facies but differs from the latter by having a shorter and apically wider uncus; a less anteriorly directed gnathos; and a smaller apical process of the ventral part of the valva. *H. solea* also has a mesially emarginate ventroposterior margin of the gnathos; a nearly straight digitate process of the dorsal part of the valva; an oblique lateral margin of the proximal flange of the dorsal part of the valva; an apically bifurcate sclerite of the phallus, forming two elongate, porrect processes; and an anellus that is widely and deeply emarginate mesially, forming two large, broadly rounded, setose, lateral lobes that are lacking in *H. bilobata*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer and inner surfaces of labial palpus with segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 brown intermixed with pale-brown scales. Antennal scape brown intermixed with few dark-brown scales, pecten brown, flagellum with basal 1/2 gray, apical 1/2 pale brown. Proboscis grayish brown.

Thorax: Tegula brown or with basal 1/2 brown, apical 1/2 pale brown; mesonotum brown. Legs dark brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 399): Length 5.0–6.9 mm (n = 12), brown intermixed with pale-brown scales and few dark-brown scales or dark brown intermixed with brown and few pale-brown scales; one pale brown, obliquely arched spot arising from posterior margin near 1/3; marginal spots faint or absent. Undersurface brown. Venation (Fig. 43) with

M_3 and CuA_1 arising from a common point on distoposterior part of cell; M_2 approximate to M_1; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 43) with cubitus 4-branched; M_2 arising 1/2 distance between distoposterior part of cell and branching point of M_3 and CuA_1.

MAP 47. Distribution of *Hypatopa solea* (●) and *H. bilobata* (▲).

Abdomen: Male genitalia (Figs. 225–226): Uncus near parallelsided from wide base, narrowly rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos narrow, anteriorly directed band, confluent with tegumen; ventroposterior margin slightly protuberant mesially, forming narrowly emarginate lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracting inwardly, slightly widened to middle, near parallelsided to base of inwardly curved, apical process; process setose on outer surface, planate on inner surface; ventral margin setose, with small, abruptly protuberant ridge at base of apical process; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange subquadrilateral (with opposing sides near equal and parallel), protracted ventrolaterally, with broadly rounded apical margin, sparsely microtrichiate on basal 1/2, setose on apical 1/2; margin shallowly crenulate. Juxta

bandlike. Vinculum semicircular. Phallus straight, slightly bulbous basally, longer than valva; sclerite of phallus longer than valva, acutely curved at 2/3, bifurcate apically forming two elongate, spinelike, porrect processes; anellus widely and deeply emarginate mesially, forming two large, broadly rounded, setose lateral lobes. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Punt[arenas], COSTA RICA, Ene[io] 1993, N. Obando, L-N-253250, 449770, "INBio: COSTA RICA: CRI001, 369058 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2601 [yellow label].

Paratypes (11 ♂♂): 2 ♂♂, same data as for holotype except, "Oct. 1993, # 2454, "CRI001, 162860, "Slide No. 2628; "CRI001, 162848, "Slide No. 2625; 1 ♂, "Feb. 1992, "CRI000, 801492, "Slide No. 2582, "USNM 84038; 1 ♂, "Feb. 1994, # 2682, "CRI001, 598367, "Slide No. 2561, "USNM 84039; 1 ♂, "Mar. 1994, # 2819, "CRI001, 764777, "Slide No. 2554, "USNM 84040; 1 ♂, "Ago. 1992, "CRI000, 947084, "Slide No. 2565, "USNM 84041; 1 ♂, "Jun. 1992, "CRI000, 691664, "Slide No. 2568, "Wing Slide No. 7031; 1 ♂, "Derrumbe, Est[ación] Cacao, lado oeste del Volcan Cacao, Prov. Guanacaste, COSTA RICA, III Curso Parataxon., May 1992, L-N-323700, 376700, "CRI000, 416949, "Slide No. 2328; 1 ♂, "Costa Rica, San Jos, El Zurqui, La Fonda, 1450 m, 05-VI-1999, Col. Kenji Nishida, Trampa de luz, "Slide No. 2709, "USNM 84042; 1 ♂, COSTA RICA, Puntarenas, Monteverde, Estación Biológia Monteverde, 1500 m, 11-XI-2001, Col. Kenji Nishida, night at lights, "Slide No. 2699, "USNM 84043; 1 ♂, same data as above except, 11-IV-2001, Col. Reared by Kenji Nishida, Host Plant?, pupate in ground, "Slide No. 2707, "USNM 84044 [4 in INBio, 7 in USNM].

Distribution (Map 47). *Hypatopa solea* is known from two collecting sites; one on the western most part of the Cordillera de Guanacaste, and one on the Cordillera de Tilarán in western Costa Rica.

Etymology. The specific epithet *solea* is derived from the Latin *solum* meaning, a leather sole strapped on the foot, a sandal.

Hypatopa bilobata **Adamski, new species**

(Figs. 44, 227–228, 400, Map 47)

Diagnosis.—*Hypatopa bilobata* is similar to *H. solea* in facies but differs from the latter by having a longer and apically narrower uncus; a more anteriorly directed gnathos; and a larger apical process of the ventral part of the valva. *H. bilobata* also has an entire ventroposterior margin of the gnathos; a twisted digitate process of the dorsal part of valva; a broadly rounded apical margin of the proximal flange of the dorsal part of the valva; a shallowly and apically bifurcate sclerite of the phallus; and a widely and deeply emarginate apex of the anellus, forming two straight, elongate, divergent, marginally setose, lateral lobes that are lacking in *H. solea*.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus with segment 1 brown, segment 2 brown intermixed with pale-brown scales along apical margin, segment 3 brown intermixed with pale-brown scales; inner surface pale brown. Antennal scape brown intermixed with few pale-brown scales, pecten brown, flagellum with basal 4/5 brownish gray, apical 1/5 pale brown. Proboscis pale brown.

Thorax: Tegula and mesonotum brown. Legs dark brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 400): Length 5.0–7.0 mm (n = 15), brown intermixed with pale-brown scales and few dark-brown scales; basal 1/3 pale brown except for brown costa; apical 2/3 brown intermixed with few pale-brown and dark-brown scales; cell with three spots, one near middle, two on apical end along crossvein; marginal spots faint or absent. Undersurface brown. Venation (Fig. 44) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved basally. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 44) with cubitus 4-branched; M_2 arising about 1/2 distance between distoposterior part of cell and branching point of M_3 and CuA_1.

Abdomen: Male genitalia (Figs. 227–228): Uncus gradually narrowed from wide base, narrowly rounded and acutely curved apically, sparsely setose, about equal in length to width of anal opening. Gnathos narrow, anteriorly directed band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracting inwardly, widened to middle, gradually narrowing to near base of inwardly curved, apical process; process slightly curved from base, setose on outer

surface, planate on inner surface; ventral margin setose, with a slightly protuberant ridge at base of apical process; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process twisted slightly beyond base; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange extending ventrolaterally, apically subellipsoid, with broadly rounded apical margin, sparsely microtrichiate on basal 1/2, setose on apical 1/2 (represented by sockets); ventral margin crenulate apically, serrate laterally. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus straight, slightly curved from middle; sclerite of phallus acutely curved at 2/3 and at base, bifurcate apically; anellus widely and deeply emarginate mesially, forming two elongate and divergent lateral lobes, each lobe with row of setae along lateral margin. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Punt[arenas], COSTA RICA, Ene[io] 1993, N. Obando, L-N-253250, 449700, "INBio: COSTA RICA: CRI001, 369045 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2595 [yellow label].

Paratypes (14 ♂♂): 2 ♂♂, same data as for holotype except, "Jul. 1993, # 2287, "CRI001, 130673, "Slide No. 2589, "USNM 84045; "CRI001, 130578, "Slide No. 2598, "Wing Slide No. 7030; 4 ♂♂, "Mar. 1994, # 2819, "CRI001, 764741, "Slide No. 2546, "USNM 84046; "CRI001, 764775, "Slide No. 2551; "CRI001, 764723, "Slide No. 2553; "CRI001, 764717, "Slide No. 2558; 2 ♂♂, "Abr. 1994, # 2820, "CRI001, 781830, "Slide No. 2559, "USNM 84047; "CRI001, 781823, "Slide No. 2563; 1 ♂, "Feb. 1994, # 2682, "CRI001, 698374, "Slide No. 2552, "USNM 84048; 3 ♂♂, "Ago. 1992, "CRI000, 947065, "Slide No. 2588, "USNM 84049; "CRI000, 947149, "Slide No. 2575, "USNM 84050; "CRI000, 947046, "Slide No. 2576; 1 ♂, "Nov. 1991, "CRI000, 487015, "Slide No. 2605; 1 ♂, "Feb. 1992, "CRI000, 801572, "Slide No. 2583, "USNM 84051 [7 in INBio, 7 in USNM].

Distribution (Map 47): *Hypatopa bilobata* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *bilobata* is compound word from the Latin *bi* meaning two and *lob* meaning lobe, together refering to the two apicolateral lobes of the anellus.

Hypatopa rabio **Adamski, new species**

(Figs. 45, 229–230, 268, 401, Map 48)

Diagnosis.—*Hypatopa rabio* possesses the following unique combination of features: an uncus and gnathos that are absent; a ventral part of valva with an apical process that is bifurcate apically; a ventral part of valva with a slightly raised setose lobe beneath base of apical process; a row of subapical setae on outer surface of the apical process of the ventral part of the valva; an acutely and laterally protracted proximal flange of the dorsal part of the valva; and an anellus that is gradually narrowed from a widened base, truncate apically, with a row of marginal setae on the apical 2/3, with a large setal cluster on the basal 1/3. This combination of character states differentiates it from all other congeners.

Description.—Head: Vertex and frontoclypeus grayish brown. Outer surface of labial palpus with segment 1dark brown, segment 2 dark brown intermixed with brown, and pale-brown scales along apical margin, segment 3 dark brown intermixed with few pale-brown scales; inner surface with segments 1–2 pale brown, segment 3 dark-brown intermixed with few pale-brown scales. Antennal scape and pecten grayish brown, flagellum with basal 4/5 brownish gray, apical 1/5 pale brown. Proboscis grayish brown.

Thorax: Tegula and mesonotum brownish gray. Legs dark brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 401): Length 4.1–5.8 mm (n = 24), brown intermixed with few pale-brown and few dark-brown scales; concolorous brown or basal 1/3 slightly paler than apical 2/3; cell with three spots present or absent, if present, one near middle, two on apical end along crossvein. Undersurface brown. Venation (Fig. 45) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 about 1/3 longer than CuA_2 and CuA_2 broadly curved. Hindwing: Translucent pale brown. Venation (Fig. 45) with cubitus 4-branched; M_2 arising slightly beyond 1/2 distance between distoposterior part of cell and branching point of M_3 and CuA_1.

Abdomen: Male genitalia (Figs. 229–230): Uncus and gnathos absent. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracting inwardly, broadly rounded to near large setose lobe at base inwardly curved, apical process; process wide basally, gradually narrowing apically,

forming narrowly bifurcate apical part; apical part with short row of marginal setae on outer surface, planate on inner surface; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process narrow basally, gradually widening apically; basal ridge of digitate process extending ventrally fusing with dorsolateral ridge of proximal flange; flange narrowly ellipsoid from protracted base, densely setose. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva, broadly curved at 2/3; anellus gradually narrowed from widened base, truncate apically, with row of short marginal setae on apical 2/3, and large setal cluster on basal 1/3. Female Genitalia (Fig. 268): Apophyses posteriores about 3X longer than apophyses anteriores. Ostium bursae within membrane posterior to seventh segment; short duct connecting ductus seminalis and anterior part of dustus bursae from shared point. Posterior margin of seventh sternum laterally emarginate, bearing five densely packed clusters of piliform sex scales. Ductus bursae slightly greater than 2X longer than apophyses posteriores; slightly spinulate on anterior 1/4. Corpus bursae ovoid, sparsely spinulate throughout; signum large, posterior end acutely curved anteriorly.

MAP 48. Distribution of *Hypatopa rabio* (●) and *H. rudis* (▲).

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, Prov[incia] Guan[acaste], COSTA RICA, C. Moraga, Abr[il] 1991, L-N-330200, 380200, "INBio: COSTA RICA: CRI000, 484796 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2013 [yellow label].

Paratypes (16 ♂♂, 7 ♀♀): 1 ♂, same data as for holotype except, 3–18 Oct. 1991, “CRI000, 356307, “Slide No. 2012, “USNM 84052; 2 ♂♂, “Jun. 1991, “CRI000, 700038, “Slide No. 2021; “CRI000, 699981, “Slide No. 2022; 1 ♀, “CRI000, 537654, “Slide No. 4559, “USNM 84053; 1 ♂, “C. Moraga & P. Rios, Dic. 1989, “CRI000, 081175, “Slide No. 2097; 4 ♂♂, “Nov. 1990, “CRI000, 313622, “Slide No. 2083; “CRI000, 313680, “Slide No. 2090; “CRI000, 686236, “Slide No. 2085; “CRI000, 380869, “Slide No. 2089; 5 ♂♂, 2 ♀♀, “Dic. 1990, “CRI000, 652856, “Slide No. 2080; “CRI000, 652940, “Slide No. 2082, “USNM 84054; “CRI000, 652723, “Slide No. 2084, “USNM 84055; “CRI000, 652806, “Slide No. 2088; “CRI000, 652982, “Slide No. 2087; “CRI000, 652980, “♀ Wing Slide No. 7022; “CRI000, 652688, “USNM 84056; 1 ♂, 2 ♀♀, “P. Rios & C. Moraga, Oct. 1990, “CRI000, 380825, “Slide No. 2079; “CRI000, 380854, “Slide No. 4558, “USNM 84057; “CRI000, 380812, “Slide No. 4521, “USNM 84058; 1 ♂, “P. Rios, Jul. 1991, “CRI000, 336143, “Slide No. 2018, “USNM 84059; 1 ♂, 6–18 Ago. 1993, # 2321, “CRI001, 658084, “Slide No. 2075, “USNM 84060; 1 ♂, 9–20 Ene. 1994, # 2561, “CRI001, 843880, “Slide No. 4520, “USNM 84061; ♂, “C. Chaves, Set. 1990, “CRI000, 626491, “Slide No. 4519, “USNM 84062 [12 in INBIO, 11 in USNM].

Distribution (Map 48). *Hypatopa rabio* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *rabio* is derived from the Latin *rabies* meaning, madness or rage.

***Hypatopa rudis* Adamski, new species**

(Figs. 231–232, 402, Map 48)

Diagnosis.—*Hypatopa rudis* is similar to *H. musa* in facies but differs from the latter by having a slightly longer uncus; and a basally narrower digitate process of the dorsal part of the valva. *Hypatopa rudis* also has a protuberant and widely emarginate mesial lobe of the ventroposterior margin of the gnathos; a laterally curved apical process of the ventral part of the valva; a sparsely setose proximal flange of the dorsal part of the valva; and a narrowly truncate apex of the anellus, with two pairs of setae on lateral margins of the subapical region and two pairs of setae on the lateral margins near base that are lacking in *H. musa*.

Description.—Head: Scales on vertex and frontoclypeus brownish-gray tipped with pale brownish gray. Labial palpi missing. Antennal scape and pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brownish gray.

Thorax: Tegula and mesonotum with brownish-gray scales tipped with pale brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 402): Length 4.6 mm (n = 1), with pale brownish-gray scales tipped with white intermixed with brownish-gray scales; area between costa and CuP brownish gray; submedian fascia incomplete, faint. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 231–232): Uncus slightly narrowed from base, narrowly rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen; ventroposterior margin entire (gnathos contorted during dissection and not visible). Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadly rounded basally, widening to middle, narrowing to base of outwardly curved, apical process; process widened apically from narrow basal stem, setose on outer surface, planate on inner surface, with a protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; ridge of digitate process extending ventrally fusing with dorsal ridge of proximal flange; flange subcircular, shallowly protuberant, sparsely microtrichiate, with small setal cluster near middle of ventral margin and row of setae along lateral margin. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus bulbous basally; sclerite of phallus curved at 2/3 and along base; anellus gradually narrowed from base, narrowly truncate apically, with two pairs of setae along lateral margins of subapical region and two pairs of setae along lateral margins near base. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinoza, Jul[io] 1991, L-N-316200, 364400, “INBio: COSTA RICA: CRI000, 332460 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2449 [yellow label].

Distribution (Map 48). *Hypatopa rudis* is known from one collecting site in northwestern Costa Rica in a dry-forest region southwest of the Cordillera de Guanacaste.

Etymology. The specific epithet *rudis* is derived from the Latin meaning, a small stick.

***Hypatopa musa* Adamski, new species**
(Figs. 233–234, 403, Map 49)

Diagnosis.—*Hypatopa musa* is similar to *H. rudis* in facies but differs from the latter by having a slightly shorter uncus; and a wider basal part of the digitate process of the dorsal part of the valva. *H. musa* also has an entire ventroposterior margin of the gnathos; an inwardly curved apical process of the ventral part of the valva; a densely setose proximal flange of the dorsal part of the valva; and a widely emarginate apex of a setose anellus that are lacking in *H. rudis*.

Description.—Head: Vertex and frontoclypeus brownish gray. Labial palpus diminutive, within a triangular-shaped depression on ventral part of frontoclypeus. Outer surface of labial palpus brownish gray, inner surface paler. Scape of antenna brownish gray intermixed with white scales along ventral and apical margins, pecten brown, flagellum brownish gray. Proboscis brownish gray.

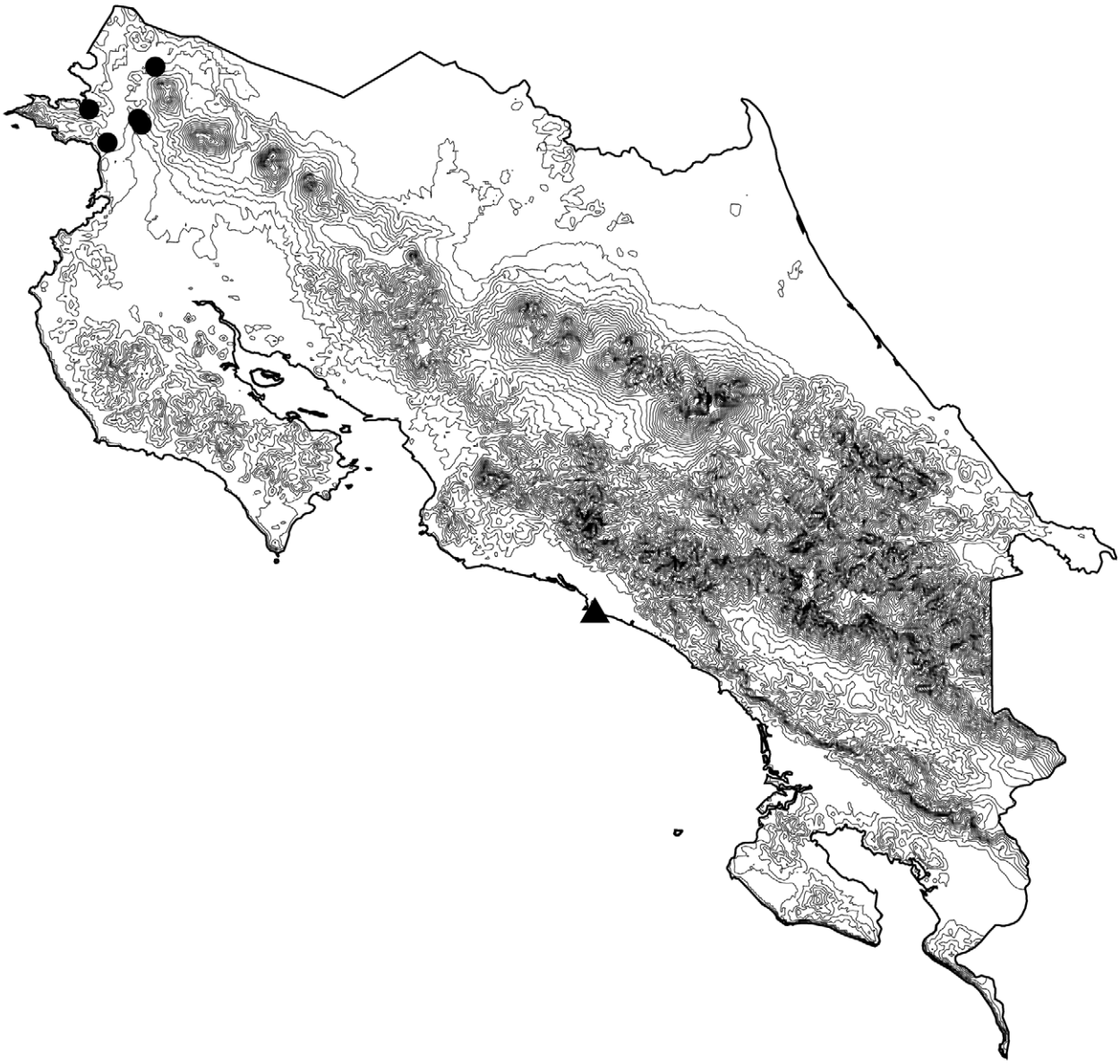
Thorax: Scales on tegula and mesonotum brownish gray tipped with white. Legs brownish gray intermixed with pale grayish-brown scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 403): Length 3.8–5.2 mm (n = 47), grayish brown intermixed with grayish-brown scales tipped with white and white scales; submedian fascia incomplete or absent; cell with two or three spots, if three, one in middle, two on apical end along crossvein; marginal spots large, faint. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia (Figs. 233–234): Uncus parallelsided from base, narrowly rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos, narrow band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, broadly truncated ventrally, gradually widening to middle, narrowing to base of inwardly curved, basally hinged, apical process; process broadly curved, setose on outer surface, planate on inner surface, with slightly protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process widened basally, gradually narrowing apically; basal ridge of digitate process extending ventrally fusing with broadly rounded ridgelike plate extending to lateral margin; proximal flange shallowly protuberant, contorted apically, forming two setose parts converging beneath surface, forming linear depression from near middle of margin to middle; larger part broadly elavated domelike structure on inner surface, smaller part crescent-shaped, with a crenulate margin. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus bulbous basally; sclerite of phallus slightly curved basally, shallowly and subequally bifurcate apically; anellus slightly constricted beyond base gradually widening apically, setose. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinozaa, Jun[io] 1991, L-N-316200, 364400, “INBio: COSTA RICA: CRI000, 324198 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2392 [yellow label].

Paratypes (46 ♂♂): 9 ♂♂, same data as for holotype except, “CRI000, 324232, “Slide No. 2441, “USNM 84063; “CRI000, 323805, “Slide No. 2442; “CRI000, 324027, “Slide No. 2444, “USNM 84064; “CRI000, 323511, “Slide No. 2464; “CRI000, 324180, “Slide No. 2394; “CRI000, 324181, “Slide No. 2406; “CRI000, 323532, “Slide No. 2408; “CRI000, 324038, “Slide No. 2418, “USNM 84065; “CRI000, 323808, “Slide No. 2413, “USNM 84066; 12 ♂♂, “Abr. 1991, “CRI000, 479138, “Slide No. 2445; “CRI000, 649342, “Slide No. 2463; “CRI000, 675240, “Slide No. 2465, “USNM 84067; “CRI000, 675259, “Slide No. 2437, “Wing Slide No. 7017; “CRI000, 646710; “Slide No. 2405; “CRI000, 675276, “Slide No. 2404, “USNM 84068; “CRI000, 649420, “Slide No. 2411; “CRI000, 649374, “Slide No. 2412, “USNM 84069; “CRI000, 479120, “Slide No. 2430; “CRI000, 479145, “Slide No. 2421; “CRI000, 479139, “Slide No. 2438; “CRI000, 479168, “Slide No. 2440; 8 ♂♂, “CRI000, 332409, “Slide No. 2453, “USNM 84070; “CRI000, 521164, “Slide No. 2450, “USNM 84071; “CRI000, 332514, “Slide No. 2448; “CRI000, 332234, “Slide No. 2393, “USNM 84072; “CRI000, 332442, “Slide No. 2400, “USNM 84073; “CRI000, 332432, “Slide No. 2414; “CRI000, 521175, “Slide No. 2428; “CRI000, 332528, “Slide No. 2439; 5 ♂♂, “CRI000, 457992, “Slide No. 2391, “USNM 84074; “CRI000, 458033, “Slide No. 2415, “USNM 84075; “CRI000, 481655, “Slide No. 2425, “USNM 84076; “CRI000, 481772, “Slide No. 2426; “CRI000, 481614, “Slide No. 2433; 2 ♂♂, “CRI000, 599737, “Slide No. 2402, “USNM 84077; “CRI000, 599691, “Slide No. 2396; 2 ♂♂, “Mar. 1991, # 1678, “CRI001, 692853, “Slide No. 2420; “CRI001, 692810, “Slide No. 2467; 1 ♂, “E. Araya & R. Espinosa, Ago. 1990, “CRI000, 226858, “Slide

No. 2455; 1 ♂, 2–16 Abr. 1995, E. Araya, # 4795, “CRI002, 402727, “Slide No. 2459, “USNM 84078; 2 ♂♂, “Los Almendros, P.N. Guanacaste, Prov. Guanacaste, COSTA RICA, 1–22 Jul. 1992, E. Lopez, L-N-334500, 369800, “CRI000, 742701, “Slide No. 2468, “USNM 84079; “CRI000, 742705, “Slide No. 2469; 1 ♂, “Est. Murcielago, 8 km suroeste de Cuajiniquil, 100 m , Prov. Guanacaste, COSTA RICA, 13–28 Jun. 1992, III Curso Parataxon. L-N-320300, 347200, “CRI001, 714560, “Slide No. 2488; 1 ♂, same data as above except, “Feb. 1989, GNP Biodiversity Survey, 85°43'59"W, 10°54'08"N, “CRI000, 214171, “Slide No. 2487; 1 ♂, 9–19 Feb. 1994, C. Cano, # 2649, “CRI001, 725483, “Slide No. 2485, “USNM 84080; 1 ♂, “Playa Naranjo, P.N. Santa Rosa, Prov. Guan., COSTA RICA, E. Alcazar, May 1991, L-N-309300, 354200, “CRI000, 386712, “Slide No. 2483, “USNM 84081 [27 in INBio, 19 in USNM].



MAP 49. Distribution of *Hypatopa musa* (●) and *H. sais* (▲).

Distribution (Map 49). *Hypatopa musa* is known from five collecting sites in northwestern Costa Rica west and southwest of the Cordillera de Guanacaste.

Etymology. The specific epithet *musa* is chosen in honor of Musa, goddess of music, literature, and the arts.

***Hypatopa sais* Adamski, new species**
(Figs. 269, 404, Map 49)

Diagnosis.—*Hypatopa sais* can be distinguished from other *Hypatopa* by having a pale and transversely straight submedian fascia of the forewing.

Description.—Head: Vertex with brownish-gray scales tipped with pale brownish gray; dorsal part of frontoclypeus with brownish-gray scales tipped with pale brownish gray, ventral part of frontoclypeus pale brownish gray. Outer and inner surfaces of labial palpus brown intermixed with pale-brown scales along apical margins of segment 1–2. Antennal scape brownish gray intermixed with pale-brown scales along anterior and apical margins, [pecten missing], flagellum brown basally gradually brightening apically. Proboscis pale brownish gray.

Thorax: Tegula brownish gray except distolateral margins pale brownish gray; mesonotum brownish gray. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 404): Length 5.9 mm (n = 1), brownish gray intermixed with pale brownish-gray scales and few dark-brown scales; submedian fascia transversely straight, pale brownish gray; areas basal and apical to fascia browinsh gray. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia: Unknown. Female Genitalia (Fig. 269): Apophyses posteriores about 3X longer than apophyses anteriores. Eighth sternum quadrate. Ostium bursae within membrane posterior to seventh segment; a short and membranous antrum connecting ductus seminalis and widened posterior part of ductus bursae from shared point. Posterior margin of seventh sternum straight. Ductus bursae slightly greater than 3X longer than apophyses posteriores; slightly spinulate on anterior 1/3. Corpus bursae ovoid, spinulate; signum spinate, arising from a rounded base.

Holotype, ♀, "Quepos, 140 m, P[arque] N[acional] Manuel Antonio, Prov[incia] Punt[arenas], COSTA RICA, G. Varela & R. Zuniga, Oct[ubre] 1990, L-S-371500, 449450, "INBio: COSTA RICA: CRI000, 223336 [barcode label], "INBio, ♀ Genitalia Slide by D. Adamski, No. 4500 [yellow label].

Distribution (Map 49). *Hypatopa sais* is known from one collecting site on the central Pacific coastline of Costa Rica.

Etymology. The specific epithet *sais* is named in honor of Sais, the old capital of Lower Egypt.

***Hypatopa rea* Adamski, new species**
(Figs. 270, 405, Map 50)

Diagnosis.—*Hypatopa rea* can be distinguished from other *Hypatopa* by having a pale brownish-gray ground color of the basal 2/3 of the forewing interrupted by a darker basal area between the costa and anal margin; an incomplete submedian fascia; and a dark brownish gray apical 1/3.

Description.—Head: Vertex brownish gray; dorsal part of frontoclypeus brownish gray, ventral part of frontoclypeus pale brownish gray; scape brownish gray intermixed with pale brownish-gray scales along apicolateral margins. Outer and inner surfaces of labial palpus brownish gray intermixed with pale brownish-gray scales along apical margins of segments 1–2. Antennal scape brownish gray intermixed with pale brownish-gray scales along anterior and apical margins, pecten pale brown, flagellum brownish gray basally gradually brightening apically. Proboscis brownish gray.

Thorax: Tegula with brownish-gray scales tipped with pale brownish gray on basal 1/2, brownish gray on apical 1/2; mesonotum brownish gray on basal 1/5, pale brownish gray on apical 4/5. Legs brownish gray intermixed with pale brownish-gray scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 405): Length 7.9 mm (n = 1), pale brownish gray intermixed with brown and few white scales; basal area between costa and anal margin brown; submedian fascia incomplete, flanked by pale brownish-gray and white scales; cell with three brown spots, one near middle, two on apical end along crossvein; apical 1/3 brown intermixed with brownish-gray scales; marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia: Unknown. Female Genitalia (Fig. 270): Apophyses posteriores slightly more than

3X longer than apophyses anteriores. Eighth tergum with a darkly pigmented median longitudinal streak. Ostium bursae within densely microtrichiate membrane posterior to seventh segment; inception of ductus seminalis near posterior margin of seventh sternum; posterior margin of seventh sternum emarginate laterally, forming protberant and truncate, median lobe. Ductus bursae about 1 1/4X longer than apophyses posteriores; slightly spinulate on anterior 1/3. Corpus bursae ovoid, spinulate; signum spinate, arising from conical base.

Holotype, ♀, "Est[ación] La Casona, 1520 m, Res[erva] Biol[ógica] Monteverde, Prov[incia] Punt[arenas], COSTA RICA, Dic[iembre] 1992, N. Obando, L-N-253250, 449700, "INBio: COSTA RICA: CRI001, 358272 [barcode label], "INBio, ♀ Genitalia Slide by D. Adamski, No. 4501 [yellow label].

MAP 50. Distribution of *Hypatopa rea* (●) and *H. hora* (▲).

Distribution (Map 50). *Hypatopa rea* is known from one collecting site on the Cordillera de Tilarán in west-central Costa Rica.

Etymology. The specific epithet *rea* is derived from the Latin *reus* meaning, a party in a lawsuit, plantiff or defendant.

***Hypatopa hora* Adamski, new species**
(Figs. 271, 406, Map 50)

Diagnosis.—*Hypatopa hora* can be distinguished from other *Hypatopa* by having a dark-brown patch between base and submedian fascia of the forewing.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with pale grayish brown. Outer surface of labial palpus grayish brown intermixed with pale grayish-brown scales along apical margins of segments 1–2, inner surface paler. Antenna pale grayish brown. Proboscis pale grayish brown.

Thorax: Tegula pale grayish brown basally, grayish brown apically; mesonotum agouti patterned, with basal and apical 1/3s brown, middle 1/3 pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 406): Length 5.0–7.1 mm (n = 2), pale brown intermixed with brown and dark-brown scales; a large dark-brown patch between base and submedian fasca; submedian fascia faint, complete; cell with three dark-brown spots, one near middle, two on apical end along crossvein; marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown.

Abdomen: Male genitalia: Unknown. Female Genitalia (Fig. 271): Apophyses posteriores about 3 1/3X longer than apophyses anteriores. Ostium bursae within densely microtrichiate membrane posterior to seventh segment; antrum slightly wider than posterior part of ductus bursae; inception of ductus seminalis equidistant between anterior and posterior margins of seventh sternum; posterior margin of seventh sternum straight. Ductus bursae slightly greater than 2X longer than apophyses posteriores; slightly spinulate on anterior 1/5. Corpus bursae ovoid, sparsely spinulate; signum short, spinate, arising from small conical base.

Holotype, ♀, "Est[ación] Cacao, 1000–1400 m, Lado SO Vol[can] Cacao, Prov[incia] Guan[acaste], COSTA RICA, C. Chaves, Mar[zo] 1991, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 645670 [barcode label], "INBio, ♀ Genitalia Slide by D. Adamski, No. 4502 [yellow label].

Paratype ♀, "Est. Cacao, 1000–1400 m, Lado SO Vol. Cacao, Prov. Guan., COSTA RICA, C. Chaves, Mar. 1991, L-N-323300, 375700, "INBio: COSTA RICA: CRI000, 645680, "♀ Slide No. 4503 [1 in USNM].

Distribution (Map 50). *Hypatopa hora* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *hora* is derived from the Latin meaning, an hour.

***Hypatopa gena* Adamski, new species**
(Figs. 272, 407, Map 51)

Diagnosis.—*Hypatopa gena* can be distinguished from other *Hypatopa* by having a grayish-brown ground color to the forewing with faint markings.

Description.—Head: Scales on vertex and frontoclypeus grayish-brown tipped with pale grayish brown. Outer and inner surfaces of labial palpus brown intermixed with few pale-brown scales along apical margins of segments 1–2. Antennal scape grayish brown intermixed with few pale grayish-brown scales, pecten pale grayish brown, flagellum brownish gray basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum agouti patterned, grayish brown on basal and apical 1/3s, pale brown on middle 1/3. Legs brown intermixed with grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 407): Length 7.1–7.5 mm (n = 2), grayish brown intermixed with few brown scales; submedian fascia complete, faint; cell with three brown spots, one near middle, two on apical end along crossvein; marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia: Unknown. Female Genitalia (Fig. 272): Apophyses posteriores 2X longer than apophyses anteriores. Eighth tergum with darkly pigmented median longitudinal streak. Ostium bursae within sparsely microtrichiate membrane posterior to seventh segment; inception of ductus seminalis at base of slightly dilated antrum equidistant between posterior and anterior margins of seventh sternum; Posterior margin of seventh sternum broadly emarginate laterally and mesially, forming two rounded lobes anterior to Ostium bursae. Ductus bursae 1 1/3X longer than apophyses posteriores, with two rows of internal platelets on anterior 1/3. Corpus bursae ovoid, spinulate; signum stout, conical.

Holotype, ♀, “COSTA RICA: San Jos, Cuidad Colon, El Rodeo, 950 m, 21-VI-1998, col. Kenji Nishida, “INBio, ♀ Genitalia Slide by D. Adamski, No. 2710 [yellow label].

Paratype ♀, “COSTA RICA: San Jos, Cuidad Colon, El Rodeo, 950 m, 21-VI-1998, col. Kenji Nishida, “♀ Slide No. 2712 [1 in INBio].

MAP 51. Distribution of *Hypatopa gena* (●) and *H. vitis* (▲).

Distribution (Map 51). *Hypatopa gena* is known from one collecting site on the eastern part of the Cordillera de Talamanca in south-central Costa Rica.

Etymology. The specific epithet *gena* is derived from the Latin referring, to the cheeks and the chin.

Hypatopa vitis Adamski, new species

(Figs. 273, 408, Map 51)

Diagnosis.—*Hypatopa vitis* can be distinguished from other *Hypatopa* by having a pale-brown ground color of the forewing with faint markings.

Description.—Head: Vertex and frontoclypeus pale brown. Outer surface of labial palpus brown intermixed with pale-brown scales along apical margins of segments 1–2, inner surface paler. Antennal scape pale brown

intermixed with few brown scales, pecten pale brown, flagellum brown basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula with basal 1/3 brown, apical 2/3 pale brown; mesonotum with basal 1/5 brown, apical 4/5 pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 408): Length 6.5 mm (n = 1), pale brown intermixed with brownish-orange scales and few brown scales; submedian fascia faint, incomplete; cell with three faint spots, one near middle, two on apical end along crossvein; marginal spots faint. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia: Unknown. Female Genitalia (Fig. 273): Apophyses posteriores 2 1/2X longer than apophyses anteriores. Ostium bursae within sparse microtrichiate membrane posterior to seventh segment; inception of ductus seminalis slightly posterior to anterior margin of seventh sternum; eighth tergum with darkly pigmented mesial longitudinal streak. Posterior margin of seventh sternum straight. Ductus bursae 2X longer than apophyses posteriores, spinulate on anterior 1/4. Corpus bursae ovoid, spinulate; signum, small, spinate, arising from rounded base.

Holotype, ♀, "Est[ación] Cacao, 2 km SW del Cerro Cacao, Prov[incia] Guana[caste], COSTA RICA, 1000–1200 m, Feb[rero] 1995, E. Phillips, L-N-323100, 375800, # 5448, "INBio: COSTA RICA: CRI002, 212765 [barcode label], "INBio, ♀ Genitalia Slide by D. Adamski, No. 4522 [yellow label].

Distribution (Map 51): *Hypatopa vitis* is known from one collecting site on the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *vitis* is derived from Latin meaning, a centurion's staff made of a branch of a vine.

Pigritia Clemens, 1860

Pigritia includes 21 described species known only from the New World, except for one species from Hawaii (Medeiros and Adamski 2012). North American *Pigritia* have diminutive labial palpi and a reduced number of veins in the hindwing; however, Neotropical species often possess labial palpi that extend at least to the middle of the frontoclypeus or slightly beyond the vertex; and a full complement of veins in the hindwing. The sole distinguishing character states include, a non-protuberant proximal flange of the dorsal part of the valva and a hinged apical process of the ventral part of the valve. Many *Pigritia* may also possess a reduced uncus and gnathos or both structures may be lost entirely. Only one host record for *Pigritia* has been authoritatively documented through USDA/APHIS/PPQ identifier, who confirmed the rearing of one adult specimen from the roots of an *Aster* sp. (Asteraceae) from Texas, USA.

Key to the Species of *Pigritia* of Costa Rica

1. Male . . . 2
- Female . . . 9
2. Labial palpus extending to or beyond antennal base) . . . 3
- Labial palpus extending 1/2 distance between ventral margin of frontoclypeus and antennal base) . . . 5
3. Juxta bandlike and not divided (Fig. 239). . . . *Pigritia faux*
- Juxta divided mesially forming two plates (Figs. 241, 247) . . . 4
4. Plates of juxta greater than 1/2 distance between vinculum and tegumen (Fig. 241). . . . *Pigritia haha*
- Plates of juxta less than 1/2 distance between vinculum and tegumen (Fig. 247) . . . *Pigritia ululae*
5. Uncus spatulate (Fig. 249) . . . *Pigritia marjoriella*
- Uncus digitate (Figs. 237, 245), reduced to a slightly raised lobe (Fig. 243), or absent (Fig. 247) . . . 6
6. Uncus digitate (Figs. 237, 245) . . . 7
- Uncus reduced to a slightly raised lobe (Figs. 235, 243) . . . 8
7. Juxta divided; basal part of valva with a broad, densely setose part (Fig. 237); anellus notched apically (Fig. 238) *Pigritia dido*
- Juxta bandlike; basal part of valva with a narrow, densely setose part (Fig. 245); anellus not notched apically (Fig. 246) . . . *Pigritia gruis*
8. Basal 1/2 of digitate process of valva setose (Fig. 235); anellus bearing a barblike process on subapical region (Fig. 236) . . . *Pigritia sedis*
- Basal 1/2 of digitate process of valva lacking seate altogether (Fig. 243); anellus not bearing a barblike subapical process (Fig. 244) . . . *Pigritia stips*

9. Microtrichiate area on lobes lateral to Ostium bursae as wide as widest part of ovipositor; corpus bursae trisignate (Fig. 273) . . . . . *Pigritia marjoriella*
- Microtrichiate area on lobes lateral to Ostium bursae less than 1/2 as wide as widest part of ovipositor; corpus bursae unisignate (Fig. 272) . . . . . *Pigritia dido*

***Pigritia sedis* Adamski, new species**
(Figs. 235–236, 409, Map 52)

Diagnosis.—*Pigritia sedis* shares with the North American *P. fidella* (Dietz) a shortened labial palpus; a hinged apical process of the ventral part of the valva; a narrow digital process of the dorsal part of the valva; an elongate and densely setose proximal flange; a divided juxta, lacking an uncus and gnathos. *Pigritia sedis* differs by having a more inwardly curved apical process of the ventral part of the valva; a more densely setose proximal flange of the dorsal part of the valva; a shorter phallus and sclerite of phallus; and a setose, barblike process originating from the subapical region of the anellus.

MAP 52. Distribution of *Pigritia sedis* (●) and *P. dido* (▲).

Description.—Head: Vertex and frontoclypeus pale brown. Labial palpus short in male, extending about 1/2 distance between ventral margin of frontoclypeus and antennal base [female unknown]. Outer and inner surfaces pale brown. Antennal scape pale brown intermixed with few brown scales, pecten pale brown, flagellum pale brown. Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 409): Length 4.6 mm (n = 1), pale brown intermixed with few brownish-orange scales and brown scales; cell with two brown spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia (Figs. 235–236): Uncus reduced to slightly pointed lobe. Gnathos absent. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadened basally, angular apicoventrally, widening to middle, narrowing to base of inwardly curved, apical process; process hinged basally, setose on outer surface, planate on inner surface, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; basal ridge of digitate process separate from proximal flange; flange large, subsemicircular, densely setose, supplanting most inner surface; margin entire. Juxta divided, forming two large triangular plates. Vinculum shallowly semicircular. Phallus and sclerite of phallus longer than valva, both broadly curved from middle; anellus near parallelsided throughout length, apically truncate, bearing laterally protuberant, setose, barblike process from subapical region. Female Genitalia: Unknown.

Holotype, ♂, “COSTA RICA: Heredia, Est[ación] Biol[ógica] La Selva, 50–150 m, 10°26'N, 84°01'W, Jan[uary] 1994, INBio-OET, 13 Eneio 1994, Arboleda, L/05/095, “INBio: COSTA RICA: CRI001, 259167 [barcode label], “INBio: ♂ Genitalia Slide by D. Adamski, No. 2722 [yellow label].

Distribution (Map 52). *Pigritia sedis* is known from one collecting site in central Costa Rica north of the Cordillera Central.

Etymology. The specific epithet *sedis* is derived from the Latin *sedes* meaning, seat.

Pigritia dido Adamski, new species

(Figs. 46, 237–238, 274, 410, Map 52)

Diagnosis.—*Pigritia dido* possesses the following unique combination of characters: a short labial palpus; uncus and gnathos present; a basally hinged and acutely curved apical process of the ventral part of the valva; a large, subcircular proximal flange supplanting nearly 1/2 of the inner surface of the valva; and a phallus and sclerite of phallus that are shorter than the valva. Many of these characters are shared with other *Pigrita*, however, no other congener possesses this combination.

Description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with white. Labial palpus diminutive in male, extending about 1/2 distance between ventral margin of frontoclypeus and antennal base from a depression on ventral part of frontoclypeus; labial palpus extending upwards to a point slightly below antennal bases in female. Outer and inner surfaces of labial palpus with segments 1–2 grayish brown intermixed with white scales along apical margins, segment 3 grayish brown with a short, white apical part. Antennal scape with scales grayish brown tipped with white, pecten grayish brown, flagellum brown basally gradually brightening apically. Proboscis with grayish-brown scales tipped with white.

Thorax: Tegula with basal 1/3 with grayish-brown scales tipped with white; apical 2/3 with pale grayish-brown scales tipped with white; mesonotum with basal 1/5 with grayish-brown scales tipped with white; apical 4/5 with pale grayish-brown scales tipped with white. Legs with grayish-brown scales tipped with white intermixed with white scales near midsegments and apical margins of all segments and tarsomeres. Forewing (Fig. 410): Length 4.0–5.5 mm (n = 19), grayish brown scales tipped with white intermixed with grayish-brown and white scales; base gradually darkening to about 1/3, adjacent to a narrow, transversely-curved, white band; apical 2/3 darker than base; cell with three faint spots, one near middle, two on apical end along crossvein; marginal spots faint or absent. Undersurface brown. Venation (Fig. 46) with M_2, M_3, and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 and CuA_2 straight. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 46) with anterior part of cell closed, posterior part of crossvein weak; cubitus 3-branched with all veins arising submarginally.

Abdomen: Male genitalia (Figs. 237–238): Uncus near parallelsided throughout most of length, narrowly

rounded apically, straight, sparsely setose, shorter than width of anal opening. Gnathos, anteriorly directed thin band; ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadly rounded basally, widening to middle, narrowing to base of large, inwardly curved, apical process; apical process hinged, acutely curved inward near 2/3, setose on outer surface, planate on inner surface, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsolaterally, forming setose digitate process; process widened at base, gradually narrowing apically; basal ridge of digitate process absent; proximal flange, subcircular, large, supplanting nearly 1/2 inner surface of valva, sparsely microtrichiate on dorsal 1/2, densely setose on ventral 1/2, with two parallel rows of setae along dorsal margin; apical margin entire. Juxta divided, forming two large triangular plates. Vinculum semicircular. Phallus and sclerite of phallus shorter than valva, phallus straight, parallelsided; sclerite of phallus acutely curved basally; anellus parallelsided from a wide base, broadly rounded apically, emarginate mesially, setose. Female Genitalia (Fig. 274): Apophyses posteriores 2 1/2X longer than apophyses anteriores. Ostium bursae within membrane near to posterior end of seventh segment, between to globose lateral lobes; each lobe with circular microtrichiate area on apical end; narrow duct connecting ductus seminalis and anterior part of ductus bursae from shared point; eighth tergum with darkly pigmented mesial longitudinal streak. Posterior margin of seventh sternum straight. Ductus bursae 1 1/5X longer than apophyses posteriores; with narrow, spinulate band on anterior 1/2. Corpus bursae ovoid, spinulate; signum, thin spinate process, arising from an angular base.

Holotype, ♂, "COSTA RICA: San Jos, Cuidad Colon, El Rodeo, 950 m, 21-VI-1998, C19−22L, F, col. Kenji Nishida, "♂ Genitalia Slide by D. Adamski, USNM 83500 [green label]. Deposited in USNM.

Paratypes (2 ♂♂, 16 ♀♀): same label as holotype except, "♀ Genitalia Slide by D. Adamski, USNM 83501, "♀ Genitalia Slide by D. Adamski, USNM 83502, "♀ Wing Slide by D. Adamski, USNM 83503 [18 in USNM].

Distribution (Map 52). *Pigritia dido* is known from one collecting site on the western most part of the Cordillera de Talamanca in south-central Costa Rica.

Etymology. The specific epithet *dido* is chosen in honor of Dido, founder of Carthage, daughter of Belus of Tyre, and sister of Pygmalion.

Pigritia faux Adamski, new species

(Figs. 47, 239–240, 411, Map 53)

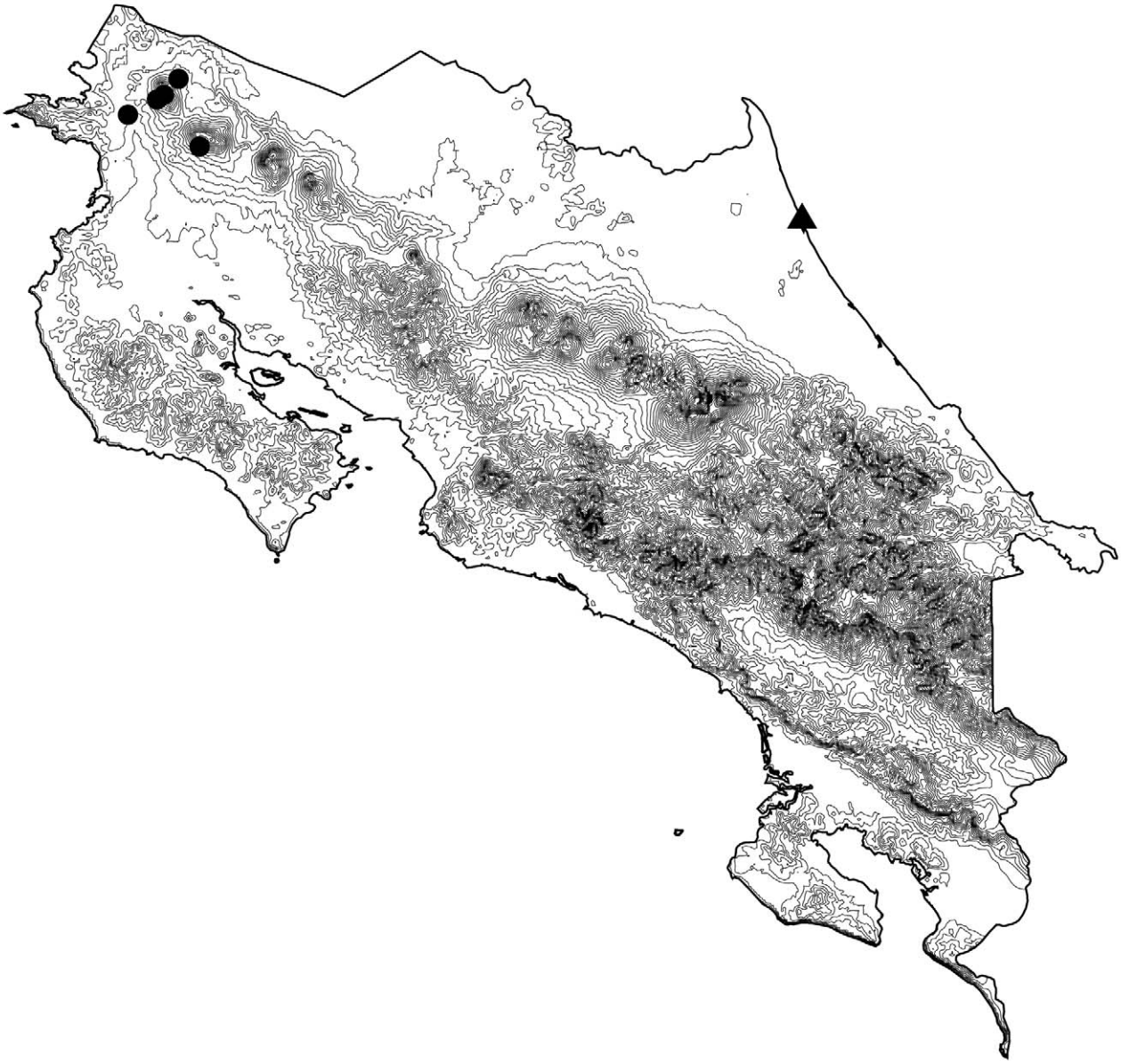
Diagnosis.—*Pigritia faux* is similar to *P. haha* in facies but differs from the latter in having a wider mesially emarginate gnathos; a shorter, a more inwardly curved apical process of the ventral part of the valva; a shorter digitate process of the dorsal part of the valva; a more protracted basal part of the valva; and a shorter phallus and sclerite of the phallus. *P. faux* also has a bandlike juxta; and a setose anellus that are lacking in *P. haha*.

Description.—Head: Scales on vertex and frontoclypeus pale grayish brown tipped with paler grayish brown. Labial palpus in male extending to or slightly above antennal base [female unknown]; outer surface of labial palpus with segments 1–2 brown intermixed with pale-brown scales along apical margins, segment 3 brown with a shortened pale-brown apical part. Antenna pale grayish brown. Proboscis pale grayish brown.

Thorax: Tegula and mesonotum pale grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 411): Length 3.5–4.9 mm (n = 19), pale grayish brown intermixed with few grayish-brown scales, with no distinct markings. Undersurface brown. Venation (Fig. 47) with M_2 and M_3 stalked in series from a common point with CuA_1 on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 acutely curved from middle. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 47) with cell closed; cubitus 3-branched with all veins arising submarginally.

Abdomen: Male genitalia (Figs. 239–240): Uncus reduced to a slightly raised apical lobe. Gnathos anteriorly directed thin band; ventroposterior margin mesially protuberant, forming emarginate lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part slightly longer than wide, broadened basally, angular apicoventrally, widening to middle, narrowing to base of inwardly curved, apical process; process hinged basally, planate on inner surface, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsally, forming straight, setose, digitate process; process shorter than apical process of ventral part; basal ridge of digitate process extending ventrally, separate from proximal flange; flange subellipsoid, narrow

basally, gradually widening to base of apical process, slightly protuberant, supplanting outer part of inner surface to margin; mesial surface sparsely microtrichiate, marginal surface densely setose; margin entire. Juxta bandlike. Vinculum shallowly semicircular. Phallus and sclerite of phallus shorter than valva; phallus bulbous basally; sclerite of phallus shallowly undulate, acutely curved basally, slightly widened apically; anellus slightly widened beyond base, gradually narrowing to a rounded apex, setose on basal 1/2. Female Genitalia: Unknown.



MAP 53. Distribution of *Pigritia faux* (●) and *P. haha* (▲).

Holotype, ♂, "Est[ación] Pitilla, 700 m, 9 km S S[an]ta Cecilia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, 19 May[o]-3 Jun[io]. 1993, P. Ríos, L-N-330200, 380200, "INBio: COSTA RICA: CRI001, 354061 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2071 [yellow label].

Paratypes (18 ♂♂): 2 ♂♂, same label data as holotype except, 3–9 Feb. 1992, C. Moraga, 537685, "Slide 2054, "USNM 84092; 537691, "Slide 2057, "USNM 84093; 1 ♂, same label data as above except, 31 Mar.-15 Abr., 725231, "Slide 2043, "USNM 84094; 1 ♂, same label data as above except, 18 Abr.-19 May. 1993, 398097, "Slide 2060; 4 ♂♂, "Est. Las Pailas, 800 m, P.N. Rincón de la Vieja, Prov. Guan., COSTA RICA, 24 Nov.-26 Ene. 1993, J. Sihezar & G. Rodríguez, L-N-306300, 388600, 211981, "Slide 2119 ,"USNM 84095; 211988, "Slide 2126; 212068, "Slide 2144, "USNM 84096; 211976, "Slide 2131, "USNM 84097; 1 ♂, same label data as above except, 9–25 Feb. 1993, D. García, 215200, "Slide 2113, "USNM 84098; 1 ♂, same label data as above except, 21–25 Mar.

1993, # 2765, 684259, “Slide 2120; 1 ♂, same label data as above except, 10–13 Mar. 1994, # 2767, 738447, “Slide 2140; 1 ♂, same label data as above except, 7–19 Feb. 1994, # 2624, 986255, “Slide 2138; 2 ♂♂, “Fca. Jenny, 30 km N de Liberia, P.N. Guanacaste, Prov. Guan., COSTA RICA, R. Espinosa, Jul. 1991, L-N-316200, 364400, “CRI000, 332362, “Slide 2395; “CRI000, 332589, “Slide 2423, “USNM 84099; 1 ♂, “Est. Pitilla, 700 m, 9 km S Sta. Cecilia, P.N. Guanacaste, COSTA RICA, P. Rios, 31 Mar.-15 Abr. 1992, L-N- 330200, 380200, “CRI000, 771422, “Slide 2058, “Wing Slide 7027; 1 ♂, “Est. Cacao, 1000–1400 m, Lado SO Vol. Cacao, Prov. Guan., COSTA RICA, C. Chaves, Abr. 1991, L-N-323300, 375700, “CRI000, 319420, “Slide 2241, “USNM 84100; 1 ♂, same label data as above except, “II Curso Parataxon., Jun. 1990, 661501, “Slide 2157; 1 ♂, same label data as above except, “III Curso Parataxon., May. 1992, 416842, “Slide 2322, “USNM 84101 [8 in INBio, 10 in USNM].

Distribution (Map 53). *Pigritia faux* is known from five collecting sites along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *faux* is derived from the Latin meaning or referring, to the throat.

Pigritia haha **Adamski, new species**

(Figs. 48, 241–242, 412, Map 53)

Diagnosis.—*Pigritia haha* is similar to *P. faux* in facies but differs from the latter in having a narrower gnathos; a longer, less inwardly curved apical process of the ventral part of the valva; a less protracted basal part of the ventral part of the valva; a longer digitate process of the dorsal part of the valva; and a longer phallus and sclerite of the phallus. *Pigritia haha* also has a divided juxta; an apically bifurcate sclerite of the phallus; and an anellus formed from two large, lateral lobes with deeply crenulate margins that are lacking in *P. faux*.

Description.—Head: Vertex and frontoclypeus pale brown. Labial palpus in male extending to or slightly beyond level of vertex [female unknown]; outer surface brown intermixed with pale-brown scales along apical margins of segments 1–2 and on apical part of terminal segment; inner surface pale brown. Antennal scape and pecten pale brown, flagellum brownish gray basally gradually brightening apically. Proboscis pale brown.

Thorax: Tegula and mesonotum with grayish-brown scales tipped with pale grayish brown. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 412): Length 3.9–4.9 mm (n = 4), pale brown intermixed with grayish-brown scales or brownish-orange scales; submedian fascia incomplete or absent; cell with two spots on apical end along crossvein. Undersurface brown. Venation (Fig. 48) with M_2 and M_3 stalked in series from a common point with CuA_1 on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 48) with cell open; basal 4/5 of M_1 weak; cubitus 3-branched with all veins arising submarginally.

Abdomen: Male genitalia (Figs. 241–242): Uncus absent. Gnathos, anteriorly directed thin band. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadly rounded basoventrally, widening to middle, narrowing to base of apical process; process hinged basally, straight throughout length except, acutely curved apically, planate on inner surface, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process straight, pointed inwardly; basal ridge of digitate process extending ventrally, fusing dorsally with proximal flange; flange subellipsoid, slightly protuberant, smooth on basal 1/2, densely microtrichiate on apical 1/2, densely setose marginally; margin entire. Juxta divided, forming two large subtriangular plates, supplanting most membrane. Vinculum shallowly semicircular. Phallus and sclerite of phallus longer than valva; phallus bulbous basally; sclerite of phallus shallowly curved basally, apically bifurcate; anellus, forming two large, lateral lobes with deeply crenulate lateral margins, setae absent. Female Genitalia: Unknown.

Holotype, ♂, “Cerro Tortuguero, 0–120 m, P[arque] N[acional] Tortuguero, Prov[incia] Limón, COSTA RICA, May. 1991, J. Solano, L-N-285000, 588000, “INBio: COSTA RICA: CRI001, 399250 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2686 [yellow label].

Paratypes (3 ♂♂): 1 ♂, same data as for holotype except, “Abr. 1991, 596042, “Slide 2688; 1 ♂, “COSTA RICA, Heredia, Est. Biol. La Selva, 50–150 m, 10°26’N, 84°01’W, Jan. 1993, INBio-OET, 15 Ene. 1993, Plantación abandonada L0012, 223209, “Slide 2724, “USNM 84102; 1 ♂, same data as above except, “Jan. 1994, 13 Ene. 1994, Arboleda, L/05/095, “Slide 2725 , “USNM 84103, “Wing Slide 7029, “USNM 84155 [1 in INBio, 2 in USNM].

Distribution (Map 53). *Pigritia haha* is known from one collecting site on the northern part of the Caribbean coast in northeastern Costa Rica.

Etymology. The specific epithet *haha* is derived from the Latin *ha, hahae,* or *hahahae,* meaning, an exclamation of joy or amusement.

Pigritia stips Adamski, new species

(Figs. 49, 243–244, 413, Map 54)

Diagnosis.—*Pigritia stips* shares with the North American *P. laticapitella* Clemens a short labial palpus; the absence of the uncus and gnathos; a hinged apical process of the ventral part of the valva; a narrow digital process of the dorsal part of the valva; an elongate and densely setose proximal flange of the dorsal part of the valva; and a divided juxta. *P. stips* differs from the latter by having a smaller apical process of the ventral part of the valva; a smaller and more sparsely setose proximal flange; a shorter phallus and sclerite of phallus; an anellus that is apically bifurcate, fused with sclerite of phallus, forming two sparsely setose lateral and subequal plates; and a vesica with a cornutus that is laterally barbed.

Description.—Head: Vertex and frontoclypeus scape pale brown. Labial palpus in male, extending about 1/2 distance between ventral margin of frontoclypeus and antennal base within a depression on ventral part of frontoclypeus [female unknown]; outer and inner surfaces pale gray. Antenna pale brown. Proboscis pale gray.

Thorax: Tegula and mesonotum pale gray intermixed with few gray scales tipped with pale gray. Legs brown intermixed with pale-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 413): Length 4.2–4.9 mm (n = 5), with brown scales tipped with pale-brown intermixed with pale-brown scales or pale brown intermixed with brownish-orange scales; basal 1/3 paler than apical 2/3, delineated by a narrow, transverse, pale-brown line; cell with two spots on apical end along crossvein. Undersurface brown. Venation (Fig. 49) with M_2 and M_3 stalked in series from a common point with CuA_1 on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved. Hindwing: Translucent pale brown gradually darkening to apex. Venation (Fig. 49) with cell open; cubitus 3-branched with all veins arising submarginally.

Abdomen: Male genitalia (Figs. 243–244): Uncus reduced to slightly raised lobe. Gnathos absent. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadened basally, apicoventrally angular, broadly rounded to base of apical process; process hinged basally, straight, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process slightly curved inwardly from 1/2; basal ridge of digitate process separate from proximal flange; flange, angular, slightly protuberant, gradually widening from narrowed base, setose; margin entire ventrally, crenulate dorsally and dorsolaterally. Juxta divided, forming two subtriangular plates. Vinculum shallowly semicircular. Phallus and sclerite of phallus longer than valva; phallus bulbous basally; sclerite of phallus slightly curved basally, deeply bifurcate apically; anellus deeply bifurcate apically, fused with sclerite of phallus, forming two sparsely setose, subequal plates; larger plate with apically bifurcate projection exdending from basal margin; vesica with an elongate, laterally barbed cornutus. Female Genitalia: Unknown.

Holotype, ♂, “F[in]ca Jenny, 30 km N de Liberia, P[arque] N[acional] Guanacaste, Prov[incia] Guan[acaste], COSTA RICA, R. Espinoza, Jun[io] 1991, L-N-316200, 364400, “INBio: COSTA RICA: CRI000, 324047 [barcode label], “INBio, ♂ Genitalia Slide by D. Adamski, No. 2446 [yellow label].

Paratypes (4 ♂♂): 1 ♂, Est. Las Pailas, P.N. Rincón de la Vieja, 800 m, Prov. Guanacaste, COSTA RICA, 21 a 30, Nov. 1992, D. Garcia, L-N-306300, 388600, “CRI000, 818625, “Slide No. 2106; 1 ♂, 10–13 Mar. 1994, D. Garcia, # 2767, CRI001, 738491, Gen. Slide No. 2133, Wing Slide No. 7028; 1 ♂, Est. Maritza, 600 m, Volcan Orosi, Prov. Guanacaste, COSTA RICA, I Curso Microlepidoptera, Jul. 1990, L-N-326900, 373000, CRI000, 181391, “Slide No. 2525, “USNM 84104; 1 ♂, “Est. Cacao, 1000–1400 m, Lado SO Vol. Cacao, P.N. Guanacaste, COSTA RICA, D. Brenes, 21 a 29 May 1992, L-N-323300, 375700, CRI000, 488056, “Slide No. 2342, “USNM 84105 [2 in INBio, 2 in USNM].

Distribution (Map 54). *Pigritia stips* is known from four collecting sites along the western most part of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *stips* is derived from the Latin meaning, a small coin.

MAP 54. Distribution of *Pigritia stips* (●) and *P. gruis* (▲).

***Pigritia gruis* Adamski, new species**
(Figs. 245–246, 414, Map 54)

Diagnosis.—*Pigritia gruis* possesses the following unique combination of features: an uncus and gnathos that is present; a basally hinged apical process of the ventral part of the valva; a narrow digitate process of the dorsal part of the valva; a proximal flange with 2−3 rows of setae along dorsal margin, sparsely microtrichiate near middle, densely setose on a broadly rounded ridge below middle; and a bandlike juxta. Many of these characters are shared with other *Pigrita*, however, no other congener possesses this combination.

Description.—Head: Vertex and frontoclypeus pale brown. Labial palpus diminutive in male, extending about 1/2 distance between ventral margin of frontoclypeus and antennal base within depression of ventromesial part of frontoclypeus [female unknown]. Antenna pale brown. Proboscis pale brown.

Thorax: Tegula and mesonotum pale brown. Legs brown intermixed with pale-brown scales near midsegment and along apical margins of all segments and tarsomeres. Forewing (Fig. 414): Length 4.6 mm (n = 1), pale brown

intermixed with white scales and a few brown scales; cell with two brown spots on apical end along crossvein. Undersurface brown. Hindwing: Translucent pale brown gradually darkening to apex.

Abdomen: Male genitalia: (Figs. 245–246): Uncus short, parallelsided from widened base, narrowly rounded apically, straight, shorter than width of anal opening. Gnathos, thin band, confluent with tegumen; ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracting inwardly, broadly rounded apicoventrally, widening to middle, narrowing to dilated margin beneath base of apical process; process hinged basally, broadly curved inwardly, setose on outer surface, planate on inner surface, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsally, forming setose digitate process; process outwardly curved at 2/3; basal ridge of digitate process extending ventrally, fusing with dorsolateral margin of proximal flange; flange, subellipsoidal, slightly protuberant, projecting laterally, slightly widened dorsally from base, with 2–3 rows of setae along serpentine dorsal margin, sparsely microtrichiate near middle, densely setose on broadly rounded ridge below middle; margin entire. Juxta bandlike. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus broadly curved basally; sclerite of phallus broadly curved basally and at 2/3; anellus parallelsided from wide base, apically truncate, setose. Female Genitalia: Unknown.

Holotype, ♂, "Estación Santa Rosa, Prov[incia] Guana[caste], COSTA RICA, 300 m, 24 Feb[rero]-7 Mar[zo] 1995, A.M. Maroto, L-N-313000, 359800, # 5420, "INBio: COSTA RICA: CRI002, 212523 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2473 [yellow label].

Distribution (Map 54). *Pigritia gruis* is known from one collecting site in a dry-forest region southwest of the Cordillera de Guanacaste in northwestern Costa Rica.

Etymology. The specific epithet *gruis* is derived from the Latin *grus* meaning, a crane.

***Pigritia ululae* Adamski, new species**

(Figs. 247–248, 415, Map 55)

Diagnosis.—*Pigritia stips* shares with the North American *P. arizonella* (Dietz) an absence of the uncus; a hinged apical process of the ventral part of the valva; a setose dorsal part of the proximal flange, juxtaposed by a setose ridge beneath; and a divided juxta. It differs from the latter by having the labial palpus extending above the vertex; a wider gnathos; a smaller apical process of the ventral part of the valva; a broader basal part of the ventral part of the valva; a shorter digitate process of the dorsal part of the valva; a longer phallus; and a shallowly curved sclerite of the phallus.

Description.—Head: Scales on vertex and frontoclypeus brownish-gray scales tipped with pale brownish gray or pale brown in rubbed specimens. Labial palpus extending slightly above vertex in male [female unknown]; outer surface of segments 1–2 brown intermixed with pale brown scales along apical margins, terminal segment pale brown, inner surface pale brown. Antenna pale brown. Proboscis pale brown.

Thorax: Tegula and mesonotum with brownish-gray scales tipped with pale brownish gray or pale brown in rubbed specimens. Legs grayish brown intermixed with pale grayish-brown scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 415): Length 4.5–5.0 mm (n = 3), grayish brown intermixed with pale grayish-brown scales and grayish-brown scales tipped with pale grayish brown; cell with two grayish-brown spots near apical end along crossvein. Undersurface brown. Hindwing: Translucent pale grayish brown.

Abdomen: Male genitalia (Figs. 247–248): Uncus absent. Gnathos, anteriorly directed thin band; ventroposterior margin entire. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part basally protracted inwardly, broadly rounded to middle, abruptly narrowed, extending to dilated base of apical process; process hinged basally, straight throughout most of length, acutely curved apically, setose on outer margin, planate on inner surface, with protuberant setose ridge at base; dorsal part with apical portion of costa extending dorsally, forming short, setose, and straight, digitate process; process shorter than apical process of ventral part; basal ridge of digitate process extending ventrally, separate from proximal flange; flange, subellipsoid, slightly narrowed apically, sparsely microtrichiate on flattened dorsal part, separated by narrow fissure adjacent to densely setose sigmoid-shaped ridge; margin entire. Juxta divided, forming two angular plates. Vinculum semicircular. Phallus and sclerite of phallus longer than valva; phallus bulbous basally, sclerite of phallus shallowly

undulate, narrowly bifurcate apically; anellus slightly narrowed from widened base, rounded apically, setose on basal 4/5. Female Genitalia: Unknown.

Holotype, ♂, "Est[ación] Magsasay, P[arque] N[acional] Braulio Carrillo, 200 m, Prov[incia] Here[dia], COSTA RICA, A. Fernandez, Nov. 1990, L-N-264600, 531100, "INBio: COSTA RICA: CRI000, 453229 [barcode label], "INBio, ♂ Genitalia Slide by D. Adamski, No. 2536 [yellow label].

Paratypes (2 ♂♂): 1 ♂, "Est. Magsasay, P.N. Braulio Carrillo, 200 m, Prov. Heredia, COSTA RICA, A. Fernandez, Nov. 1990, L-N-264600, 531100, "CRI000, 453150, "Slide No. 2537; 1 ♂, "Sector Cerro Cocori, Fca. de E. Rojas, 150 m, Prov. Limón, COSTA RICA, E. Rojas, Nov. 1991, L-N-286000, 567500, "CRI000, 501431, "Slide No. 2681, "USNM 84106 [1 in INBio, 1 in USNM].

MAP 55. Distribution of *Pigritia ululae* (●) and *P. marjoriella* (▲).

Distribution (Map 55). *Pigritia ululae* is known from two collecting sites north of the Cordillera Central in north-central Costa Rica.

Etymology. The specific epithet *ululae* is derived from the Latin *ulula* meaning, an owl.

***Pigritia marjoriella* Adamski, 1998**
(Figs. 50, 249–250, 275, 416, Map 55)

Diagnosis.—*Pigritia marjoriella* possesses the following unique combination of features: an elongate, apically bilobate uncus; a well developed gnathos; an apically bifurcate, basally hinged apical process of the ventral part of the valva; a mesially constricted anellus; and a trisignate corpus bursae in the female. This combination of features differentiates it from all other congeners.

Re-description.—Head: Scales on vertex and frontoclypeus grayish brown tipped with white. Labial palpus diminutive in male, extending about 1/2 distance between ventral margin of frontoclypeus and antennal base within depression on ventromedian part of frontoclypeus; labial palpus in female extending slightly below antennal base; outer surface grayish brown, inner surface pale grayish brown. Antennal scape with scales grayish brown tipped with white intermixed with white scales along ventral and apical margins, pecten brown, flagellum grayish brown. Proboscis grayish brown.

Thorax: Tegula with basal 1/3 with dark grayish-brown scales tipped with white, apical 2/3 with scales grayish brown or pale grayish brown tipped with white; mesonotum with basal 1/2 with dark grayish-brown scales tipped with white, apical 1/2 with scales grayish brown or pale grayish brown tipped with white. Legs dark grayish brown intermixed with white scales near midsegments and along apical margins of all segments and tarsomeres. Forewing (Fig. 416): Length 3.8–6.0 mm (n = 20), grayish-brown scales tipped with white intermixed with grayish-brown scales and white scales; base and submedian fascia dark; submedian fascia complete; cell with two or three spots, one in middle (obliterated by submedian fascia in some specimens), two on apical end along crossvein; marginal spots large, faint. Undersurface brown. Venation (Fig. 50) with M_3 and CuA_1 arising from a common point on distoposterior part of cell; cubital veins divergent from bases with CuA_1 straight and CuA_2 broadly curved. Hindwing: Translucent pale brown gradually darkening from 1/3 length to apex. Venation (Fig. 50) with anterior part of cell closed, posterior part open; M_1 weak within cell or absent; cubitus 3-branched with all veins arising submarginally.

Abdomen: Male genitalia (Figs. 249–250): Uncus elongate, parallelsided basally, widening laterally from midline, forming two, elongate, setose lobes; lobes deeply emarginate apically from midline. Gnathos, thin band; ventroposterior margin mesially protuberant, forming widened lobe. Sockets of tergal setae not extending beyond midlength of tegumen. Valva divided; ventral part broadly rounded basally, widening to middle, narrowing slightly beyond middle, extending to dilated region beneath base of apical process; process hinged basally, with constricted stemlike base, widening slightly, extending to bifurcate apical part; setose on outer surface, planate on inner surface, with protuberant setose ridge at base; dorsal part with digitate process straight, extending dorsolaterally; basal ridge of digitate process adjacent to proximal flange, extending ventrolaterally to margin; proximal flange, subellipsidal, densely setose on basal 1/3, microtrichiate on apical 2/3. Juxta bandlike. Vinculum U-shaped. Phallus and sclerite of phallus longer than valva; phallus broadly curved from middle; sclerite of phallus acutely curved from beyond base, shallowly undulate apically; anellus, constricted near middle, forming two widened and subequal, setose parts. Female Genitalia (Fig. 275): Apophyses posteriores 1 7/10X longer than apophyses anteriores. Ostium bursae within membrane slightly posterior to end of seventh segment, between two large, globose, lateral lobes; lobes with apically circular, densely microtrichiate region; inception of ductus seminalis about midway between posterior and anterior margins of seventh sternum; eighth tergum with darkly pigmented median longitudinal. Posterior margin of seventh sternum broadly emarginate mesially. Ductus bursae 2 1/5X longer than apophyses posteriores; with two rows of internal platelets on anterior 1/5. Corpus bursae ovoid, sparsely spinulate; signum trisignate, one capitulate, two elongate, spinose plates.

Type Examined: Holotype, ♂, Costa Rica: “Est[ación] Murciélago, 8 km SO de Cuajiniquil, P.N. Guanacaste, CR1001, 817543. [INBio].

Distribution (Map 55). *Pigritia marjoriella* is known from eleven collecting sites in northwestern Costa Rica; six along the Cordillera de Guanacaste, and five in the dry-forest region between the mountains and the Pacific coast. Additional collecting sites other than that of the holotype are obtained from Adamski (1999b), and include: Finca Jenny, 30 km N de Liberia, P.N. Guanacaste, Guan. Prov. L-N-316200, 364400; Estación Cacao, 1000–1400 m, Lado SO Vol. Cacao, Prov. Guan., L-N-323300, 375700; Playa Naranjo, P.N. Santa Rosa, Prov. Guan., L-N-309300, 354200; Cerro El Hacha, 300 m, 12 km SE de La Cruz, Prov. Guan., L-N-329200, 368000; Agua Buena, 200 m, P.N. Guanacaste, Prov. Guan. L-N-334800, 364100; Estación Santa Rosa, Prov. Guan., L-N-313000,

359800; Estación Las Pallas, P.N. Rincón de la Vieja, 800 m, Prov. Guan., 306300, 388600; Tierras Morenas, 685 m, Prov. Guan., L-S-283950, 424500; Estación Maritza, 600 m, Lado Vol. Orosi, Prov. Guan., L-N-326900, 373000; Estación Los Almendros, P.N. Guanacaste, Prov. Guan., L-N-326900, 373000.

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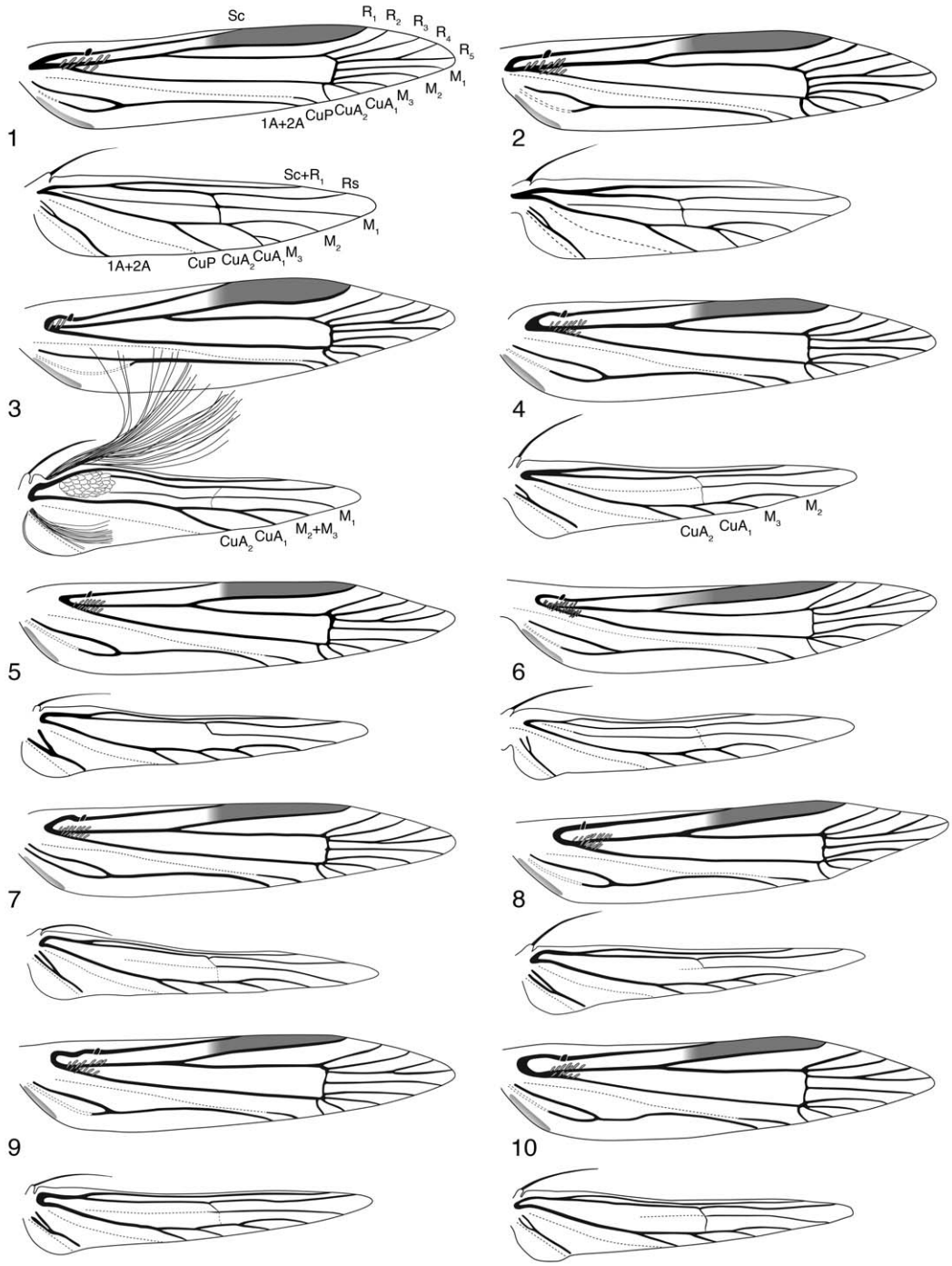
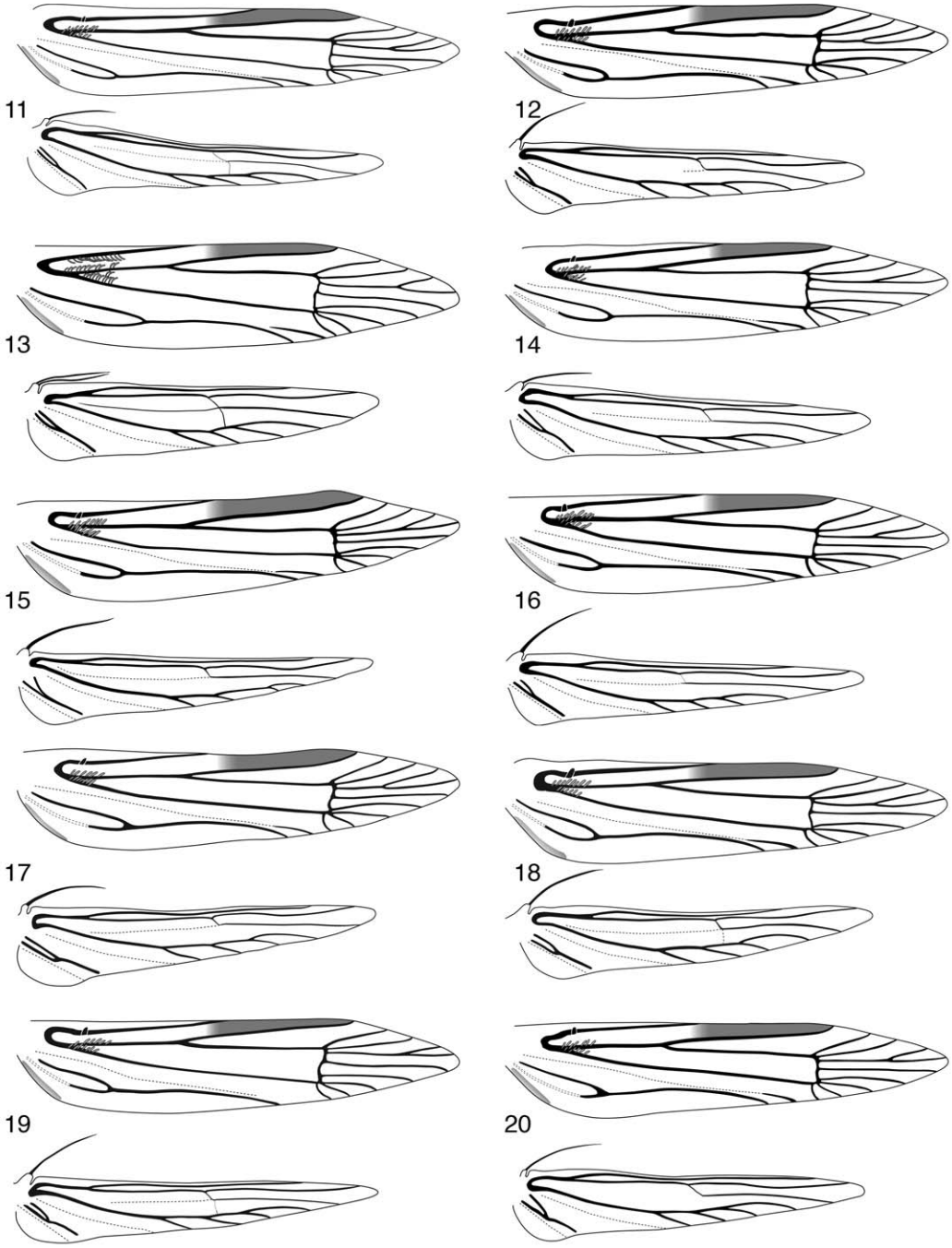
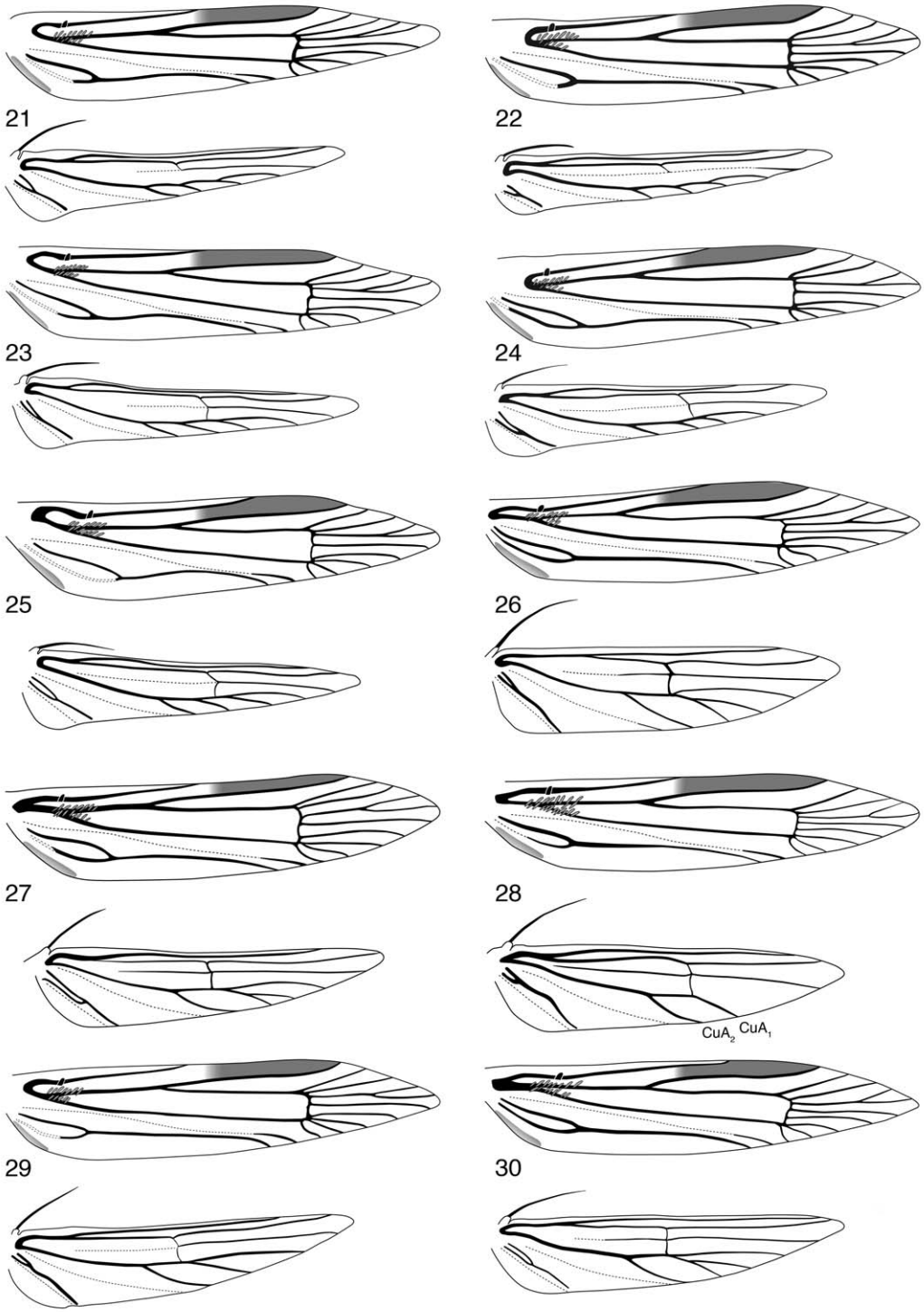


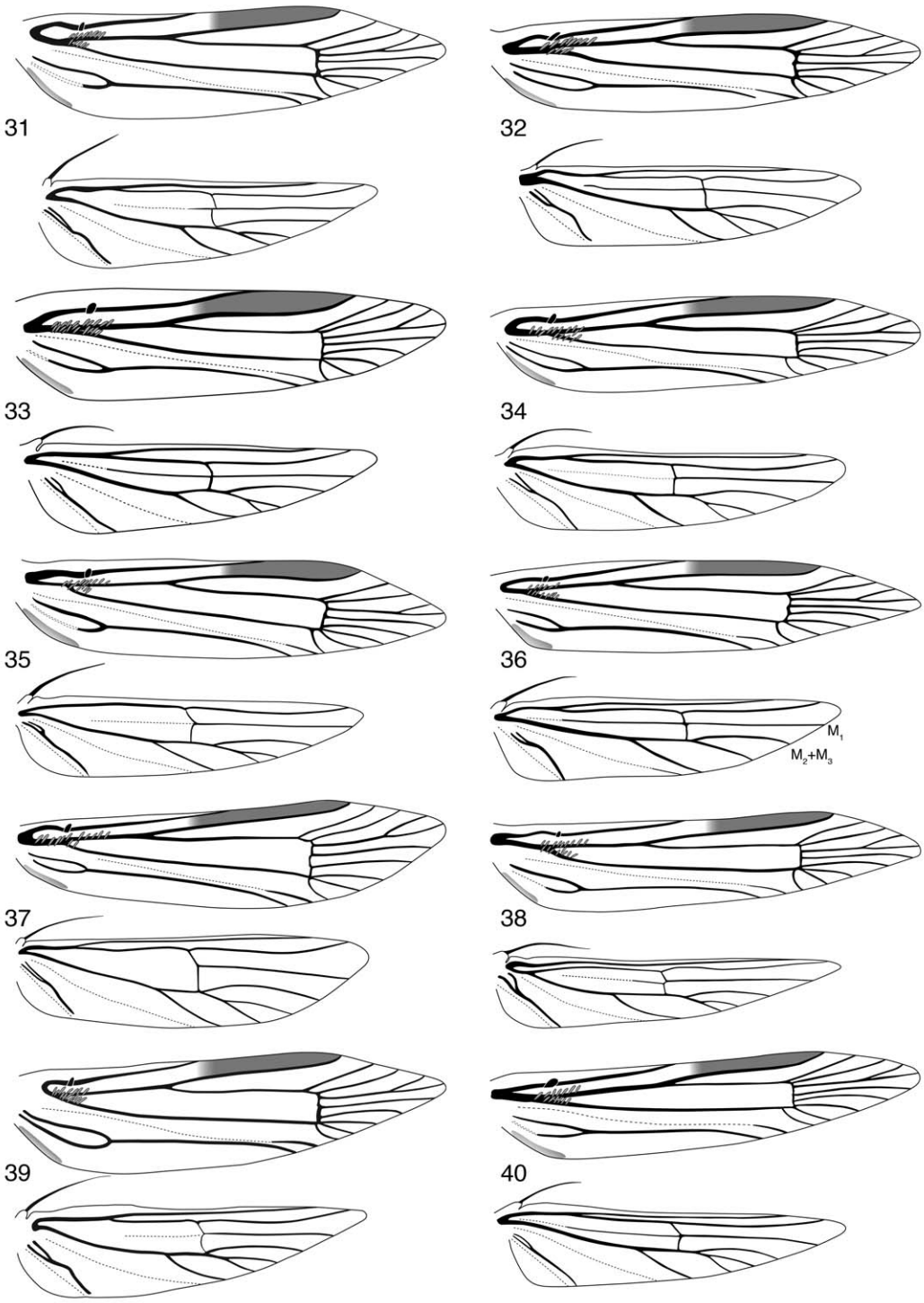
FIGURES 1–10. Wing venation of Blastobasinae. 1, *Hallicis bisetosellus* (slide 7008). 2, *Hallicis clavicula* (slide 7009). 3, *Barbaloba jubae* (slide 7018). 4, *Blastobasis paludis* (slide 7044). 5, *Blastobasis lygdi* (slide 7054). 6, *Blastobasis dapis* (slide 7025). 7, *Blastobasis balucis* (slide 7043). 8, *Blastobasis caetrae* (slide 7052). 9, *Blastobasis furtivus* (slide 7046). 10, *Blastobasis deae* (slide 7038).



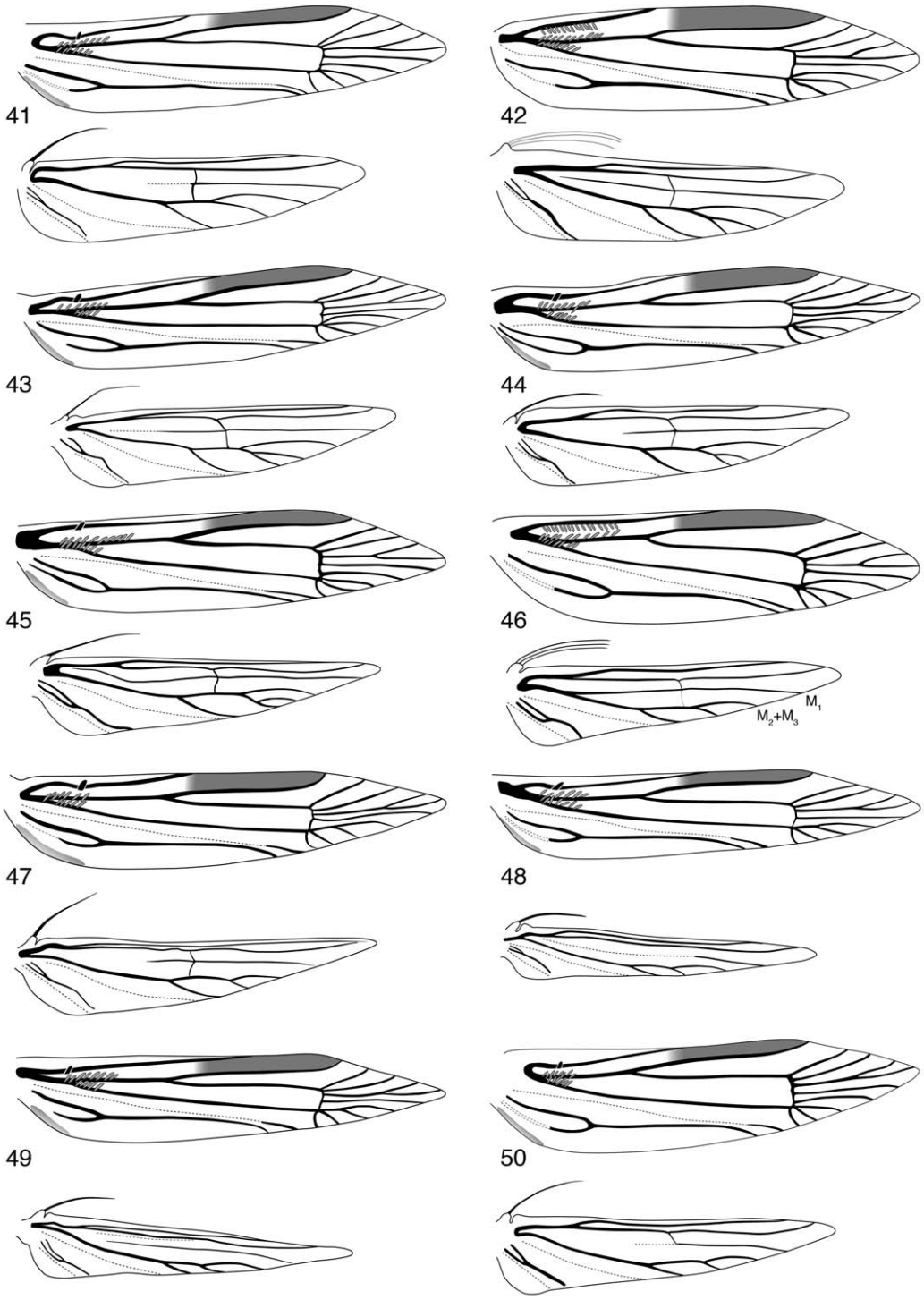
FIGURES 11–20. Wing venation of Blastobasinae. 11, *Blastobasis erae* (slide 7040). 12, *Blastobasis iuanae* (slide 7045). 13, *Blastobasis graminea* Adamski, 1999 (slide 83226). 14, *Blastobasis neniae* (slide 7055). 15, *Blastobasis orithyia* (slide 7053). 16, *Blastobasis babae* (slide 7049). 17, *Blastobasis echus* (slide 7036). 18, *Blastobasis coffeaella* (Busck, 1925) (USNM slide 83227). 19, *Blastobasis rotullae* (slide 7041). 20, *Blastobasis deliciolarum* (slide 7047).



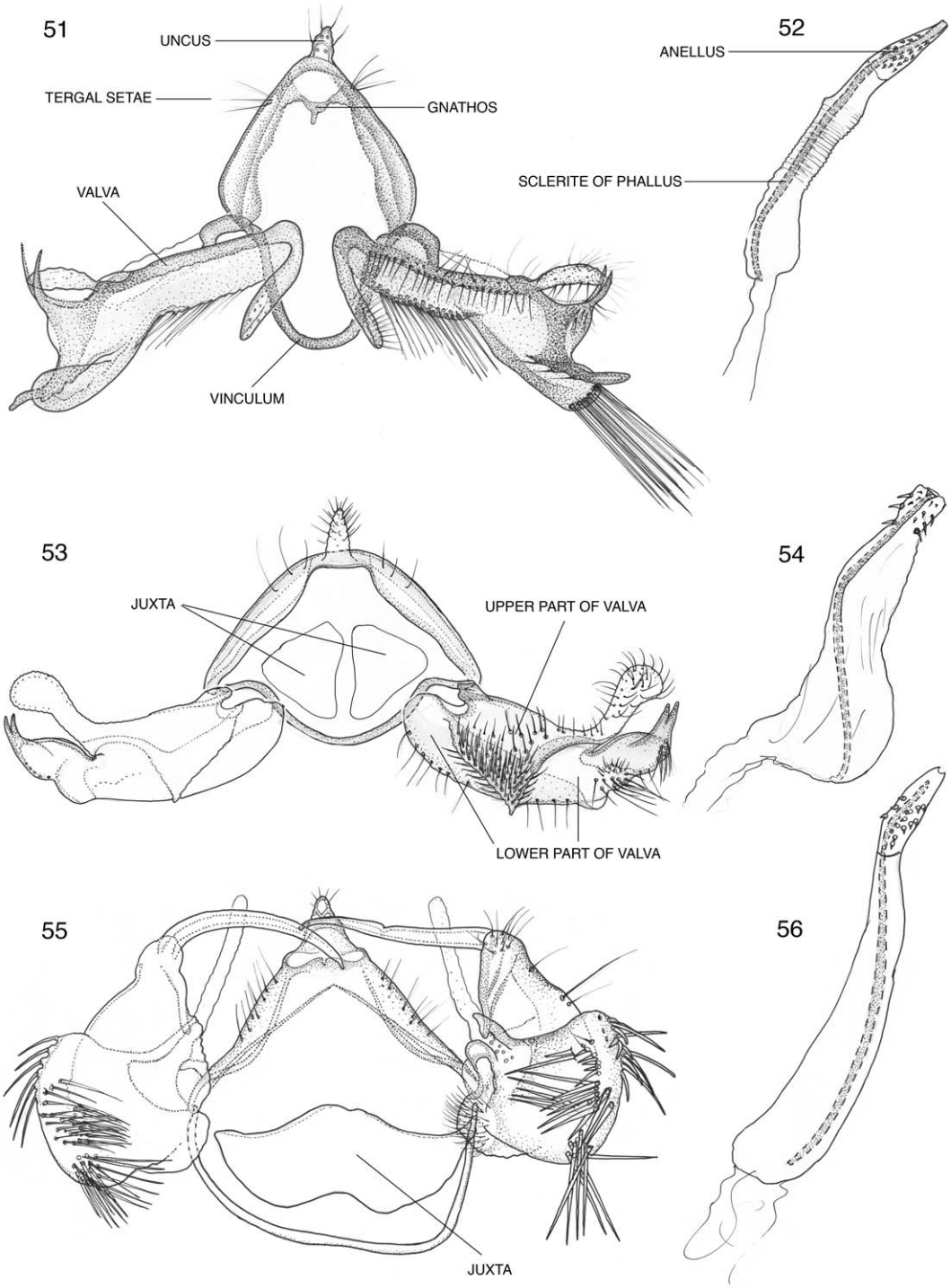
FIGURES 21–30. Wing venation of Blastobasinae. 21, *Blastobasis vesta* (slide 7051). 22, *Blastobasis nivis* (slide 7048). 23, *Blastobasis phaedra* (slide 7042). 24, *Blastobasis aedes* (slide 7050). 25, *Blastobasis dicionis* (slide 7039). 26, *Hypatopa cladis* (slide 7005). 27, *Hypatopa juno* (slide 7033). 28, *Hypatopa pica* (slide 7014). 29, *Hypatopa hecate* (slide 7015). 30, *Hypatopa crux* (slide 7035).



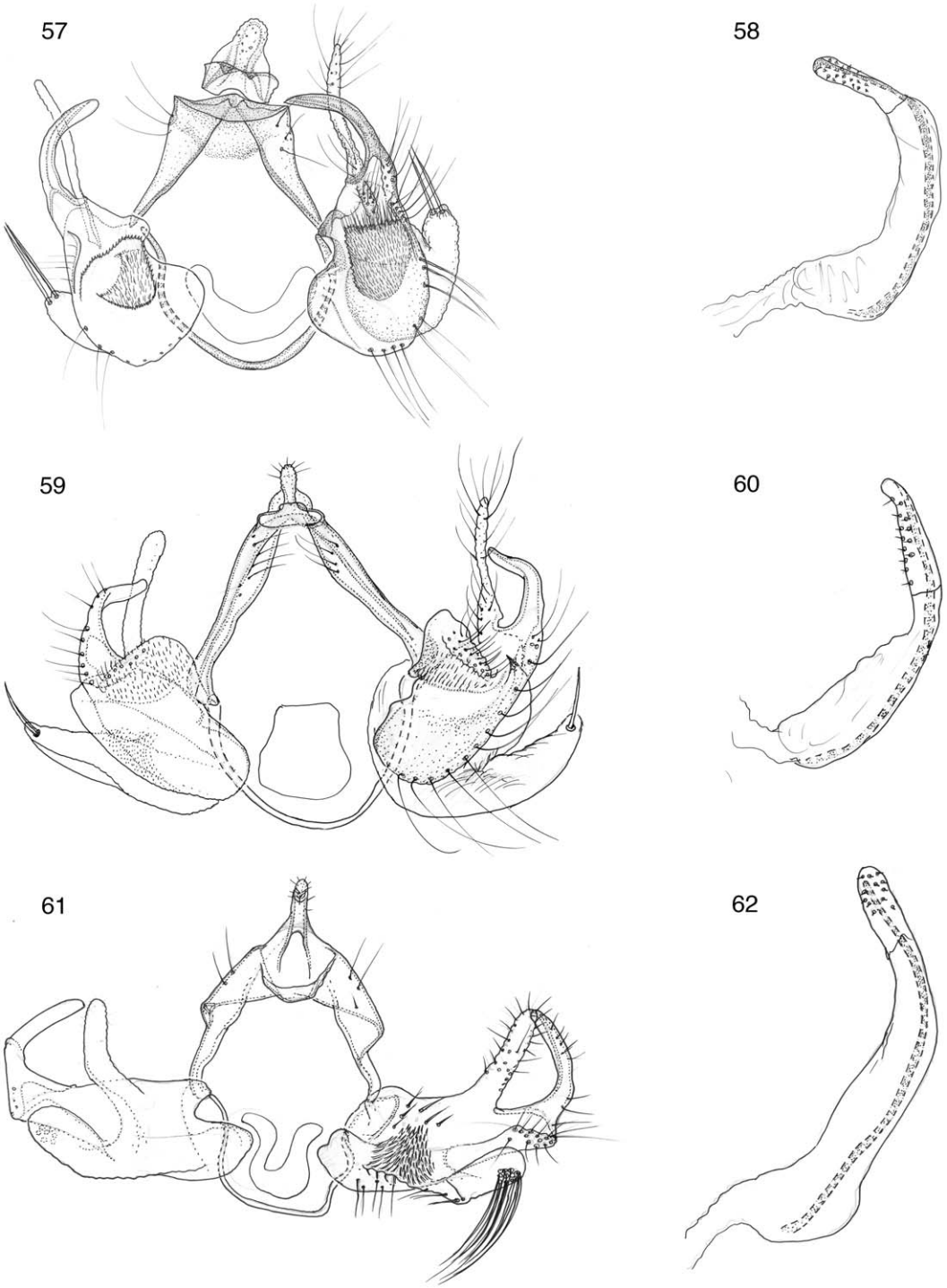
FIGURES 31–40. Wing venation of Blastobasinae. 31, *Hypatopa arxcis* (slide 7057). 32, *Hypatopa plebis* (slide 7012). 33, *Hypatopa cyane* (slide 7011). 34, *Hypatopa manus* (slide 7010). 35, *Hypatopa scobis* (slide 7002). 36, *Hypatopa phoebe* (slide 7004). 37, *Hypatopa joniella* (USNM slide 83505). 38, *Hypatopa rego* (slide 7001). 39, *Hypatopa tapadulcea* Adamski, 1999 (slide 7056). 40, *Hypatopa io* (slide 7006).



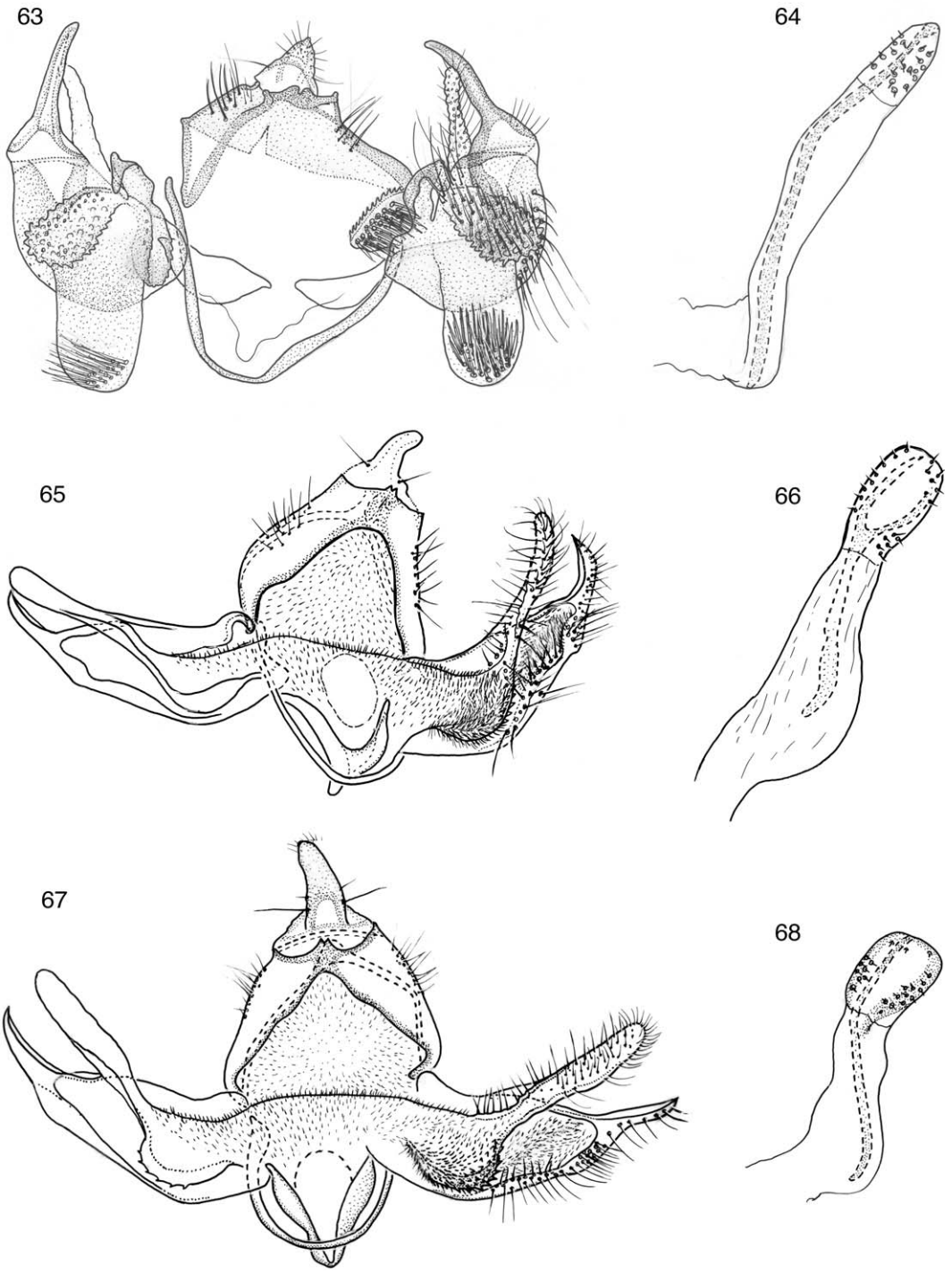
FIGURES 41–50. Wing venation of Blastobasinae. 41, *Hypatopa umbra* (slide 7003). 42, *Hypatopa texo* (slide 7023). 43, *Hypatopa solea* (slide 7031). 44, *Hypatopa bilobata* (slide 7030). 45, *Hypatopa rabio* (slide 7022). 46, *Pigritia dido* (slide 83503). 47, *Pigritia faux* (slide 7027). 48, *Pigritia haha* (slide 7029). 49, *Pigritia stips* (slide 7028). 50, *Pigritia marjoriella* Adamski, 1998 (USNM Slide 83228).



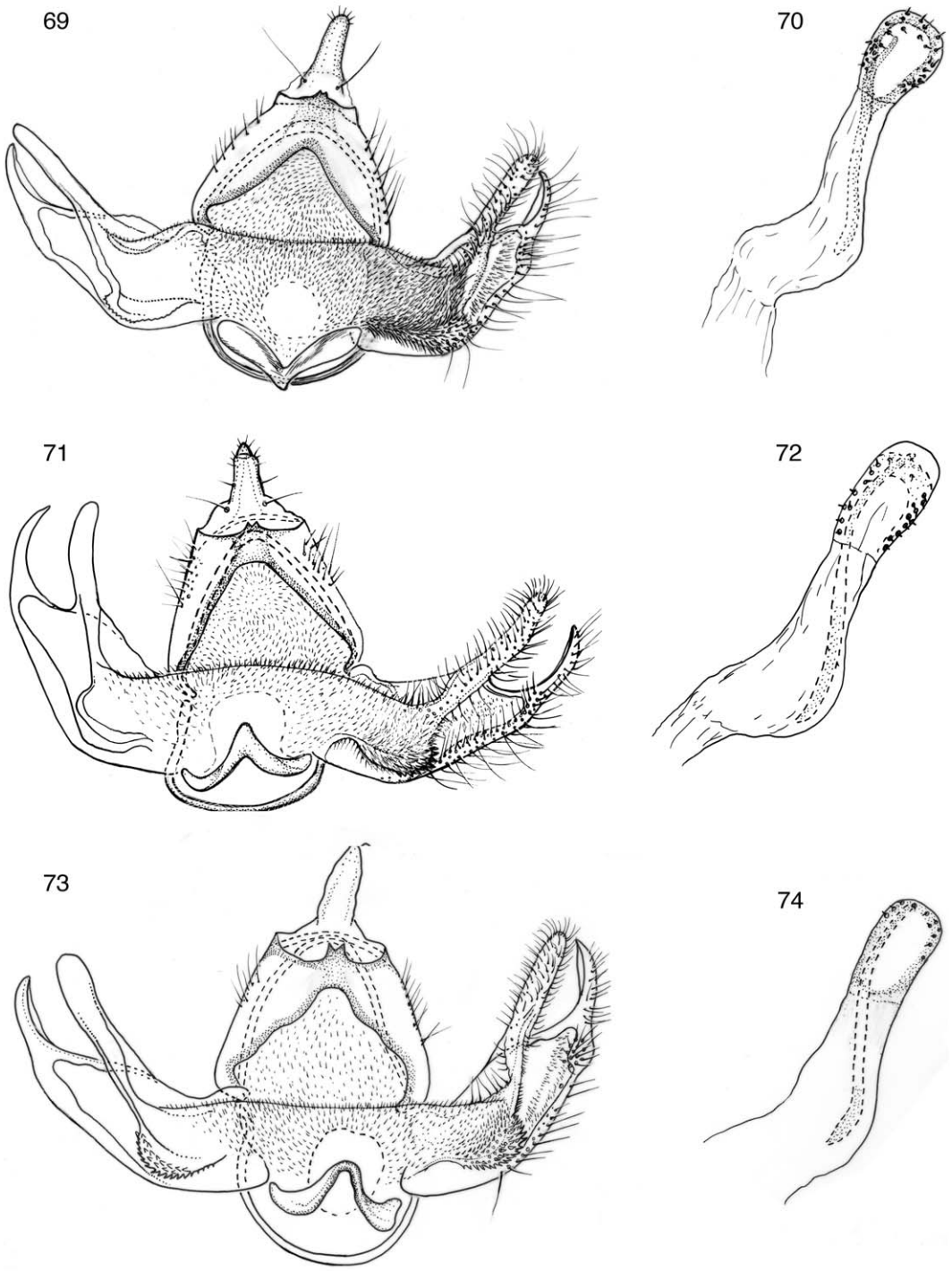
FIGURES 51–56. Male genitalia of Blastobasinae. 51– 2, *Koleps angulatus* (slide 2731). 53–54, *Pseudokoleps akainae* (slide 2086). 55– 6, *Pheos aculeatus* (slide 2617).



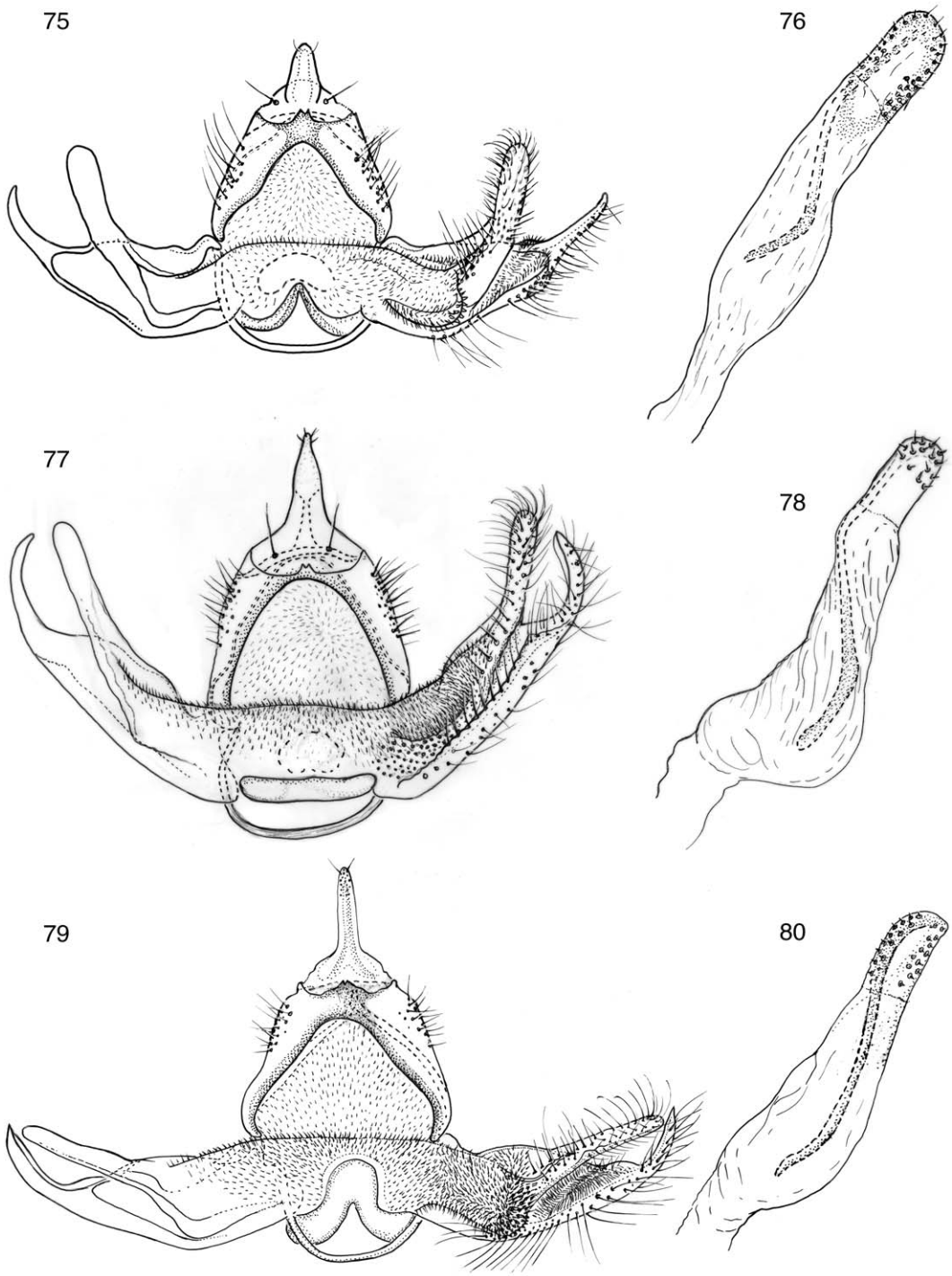
FIGURES 57–62. Male genitalia of Blastobasinae. 57–58, *Hallicis bisetosellus* (slide 2189). 59–60, *Hallicis clavicula* (slide 2524). 61–62, *Barbaloba meleagrisellae* (slide 2105).



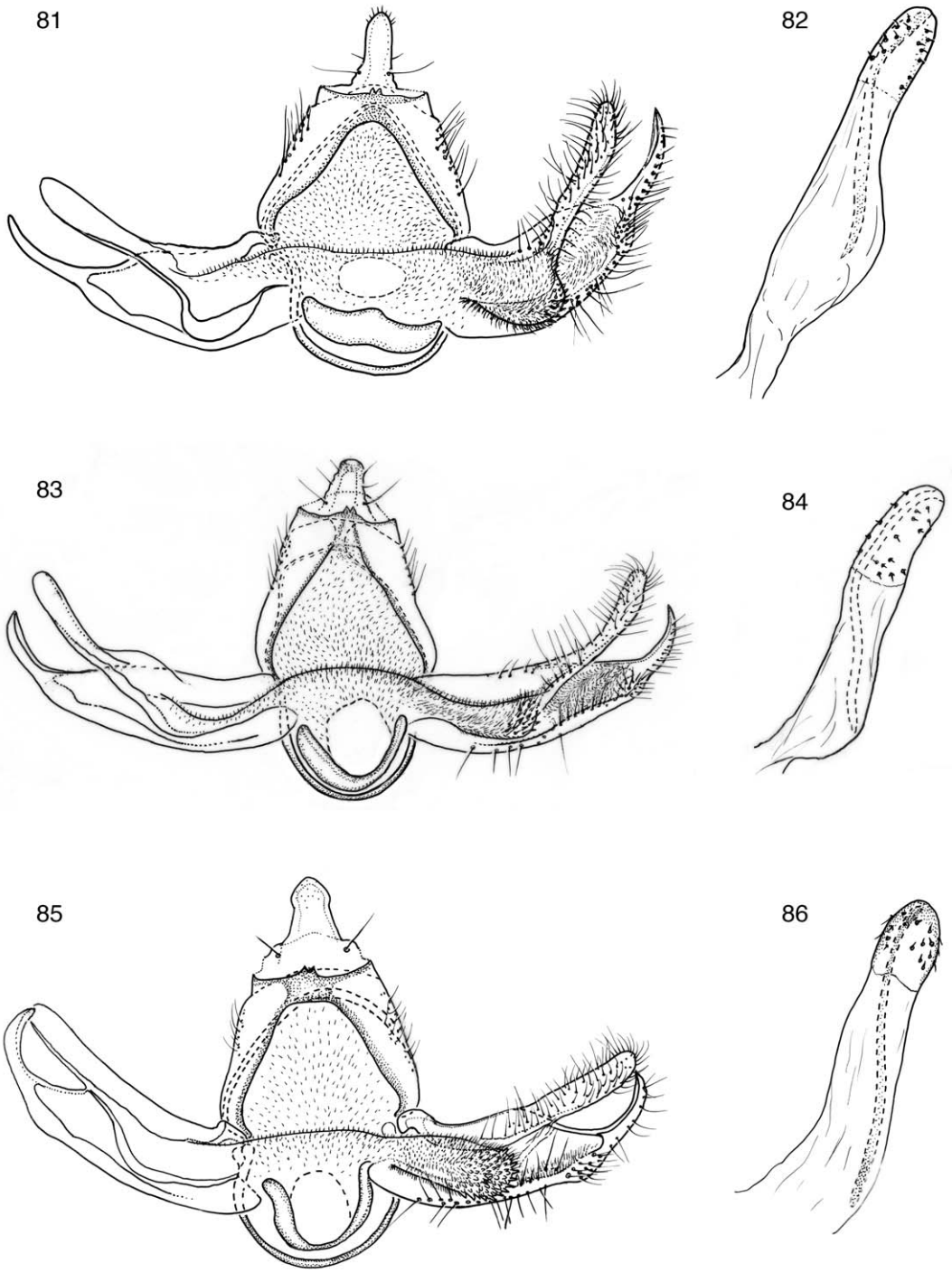
FIGURES 63–68. Male genitalia of Blastobasinae. 63–64, *Barbaloba jubae* (slide 2130). 65–66, *Blastobasis paludis* (slide 3057). 67–68, *Blastobasis lygdi* (slide 3031).



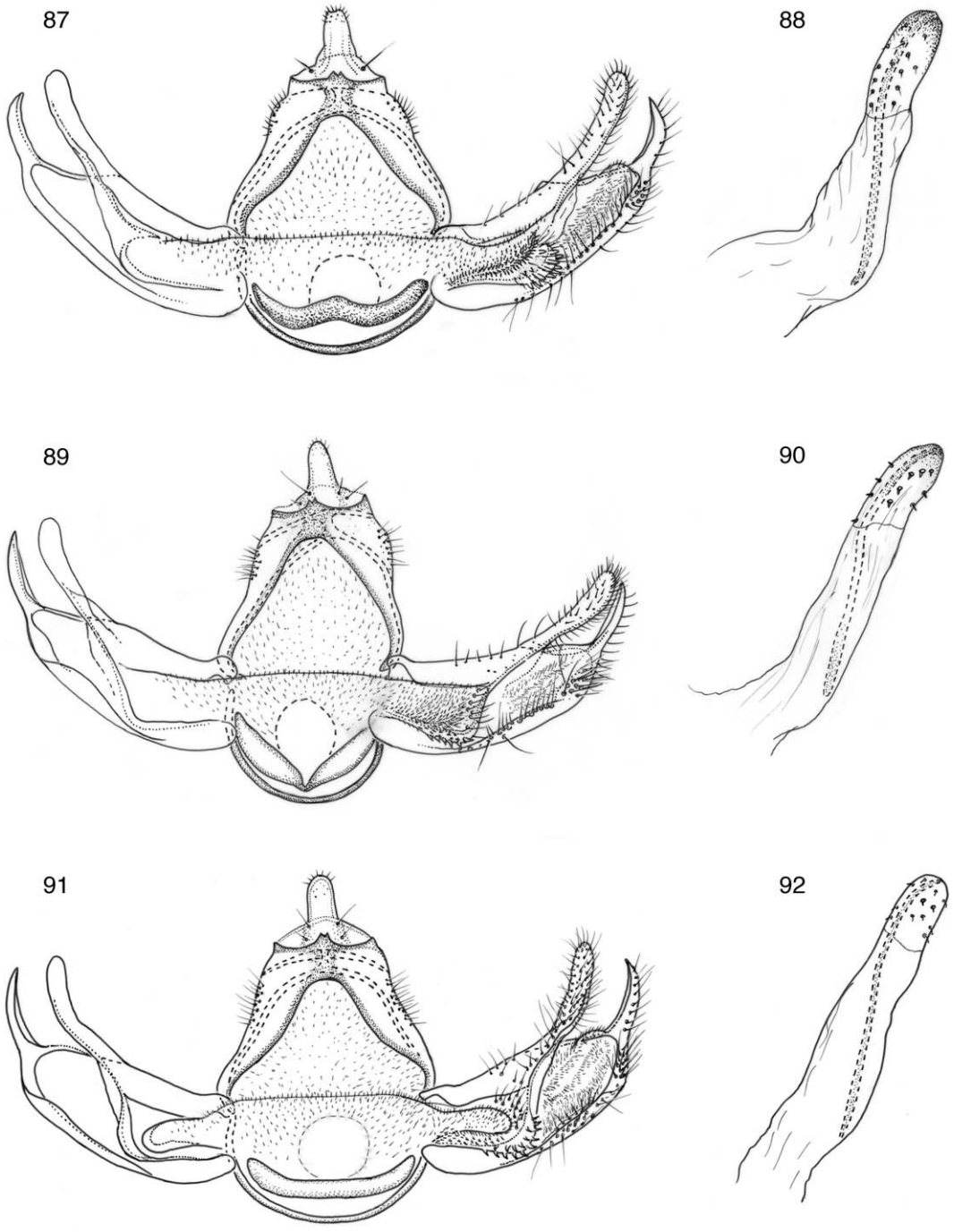
FIGURES 69–74. Male genitalia of Blastobasinae. 69–70, *Blastobasis dapis* (slide 3066). 71–72, *Blastobasis balucis* (slide 3807). 73–74, *Blastobasis caetrae* (slide 3136).



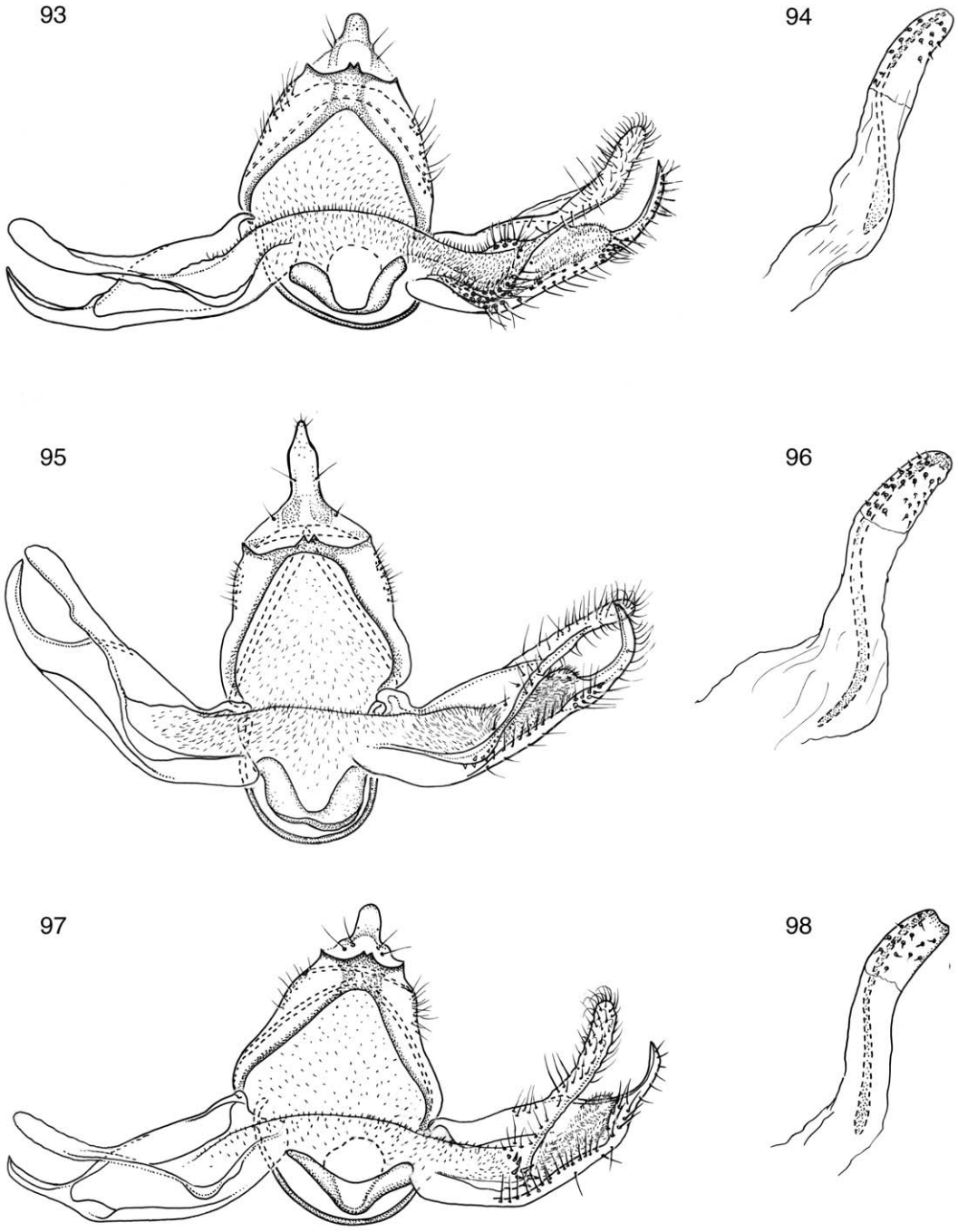
FIGURES 75–80. Male genitalia of Blastobasinae. 75–76, *Blastobasis furtivus* (slide 3579). 77–78, *Blastobasis deae* (slide 3017). 79–80, *Blastobasis erae* (slide 3556).



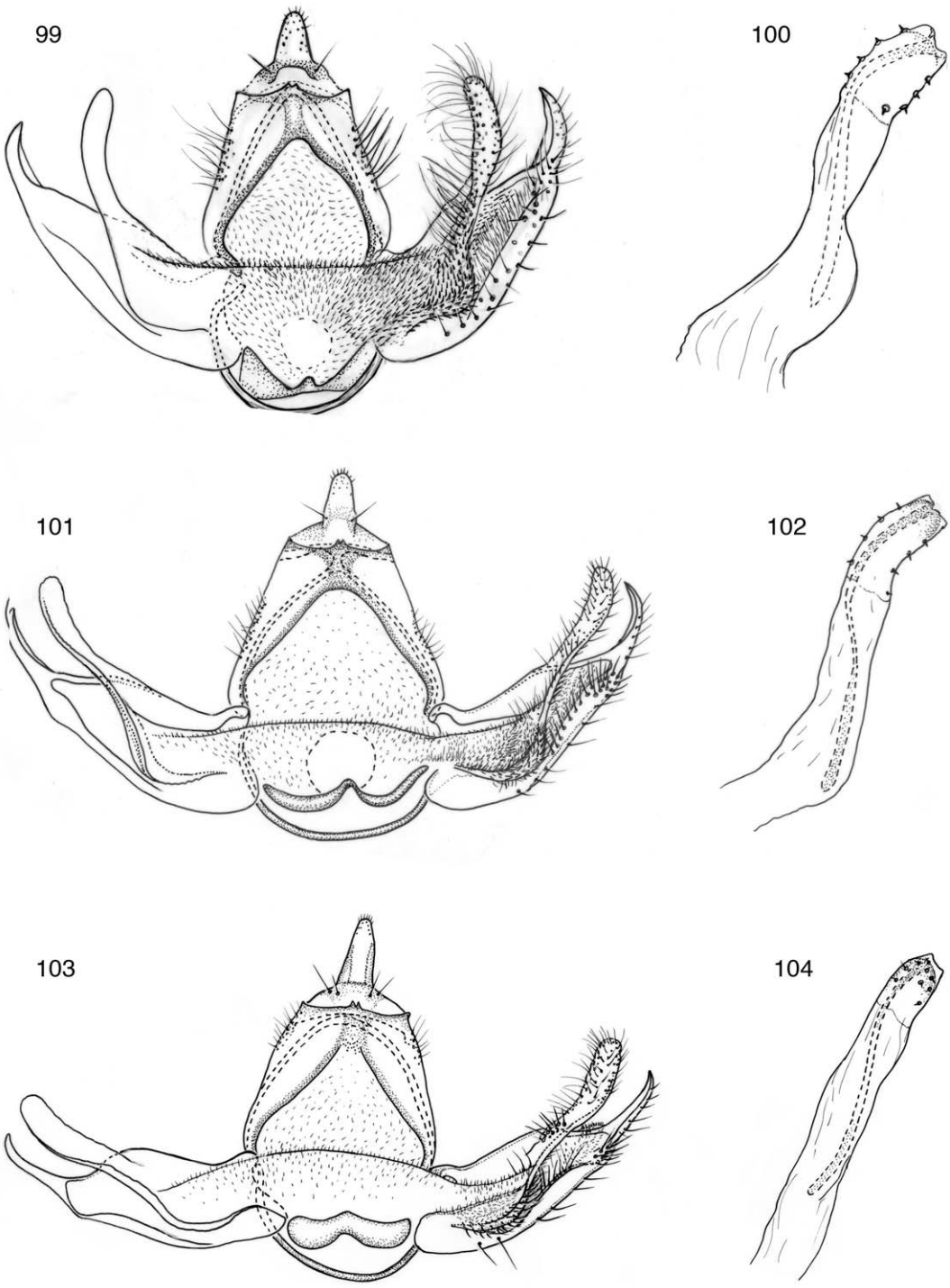
FIGURES 81–86. Male genitalia of Blastobasinae. 81–82, *Blastobasis iuanae* (slide 3778). 83–84, *Blastobasis xiphiae* (slide 3599). 85–86, *Blastobasis graminea* Adamski, 1999 (slide 4223).



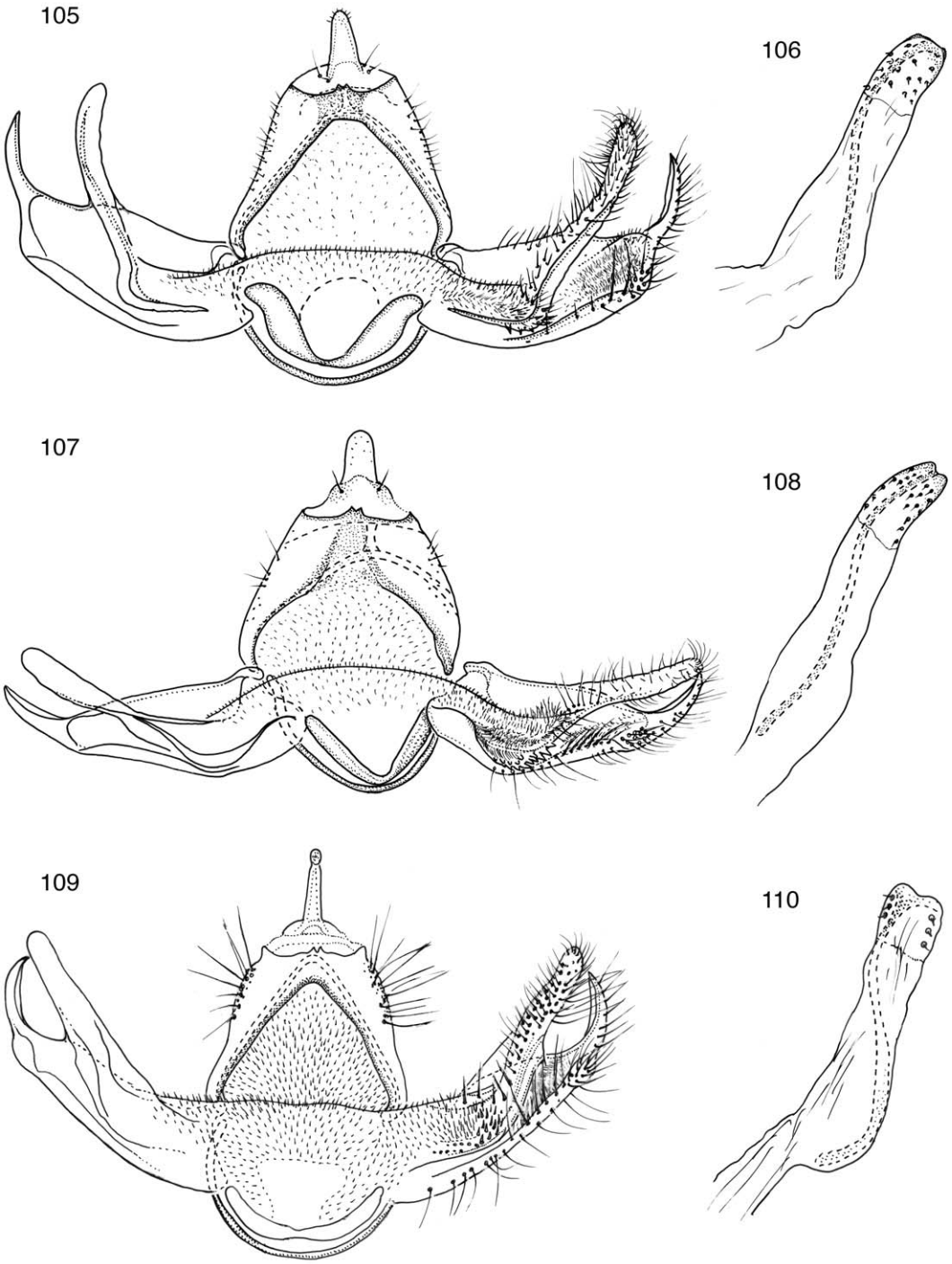
FIGURES 87–92. Male genitalia of Blastobasinae. 87–88, *Blastobasis neniae* (slide 3590). 89–90, *Blastobasis achaea* (slide 3421). 91–92, *Blastobasis orithyia* (slide 3398).



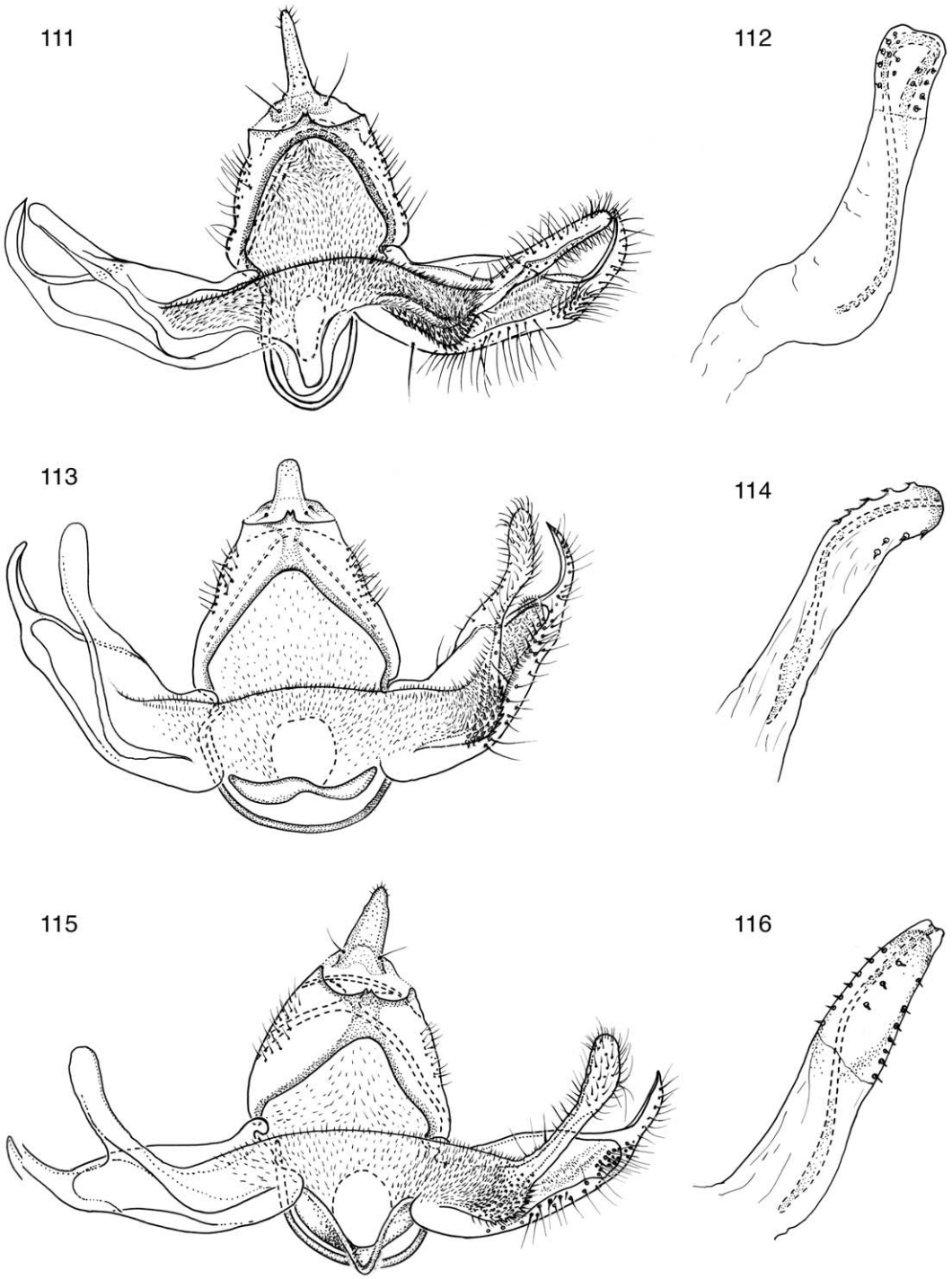
FIGURES 93–98. Male genitalia of Blastobasinae. 93–94, *Blastobasis babae* (slide 3939). 95–96, *Blastobasis thyone* (slide 3896). 97–98, *Blastobasis usurae* (slide 3443).



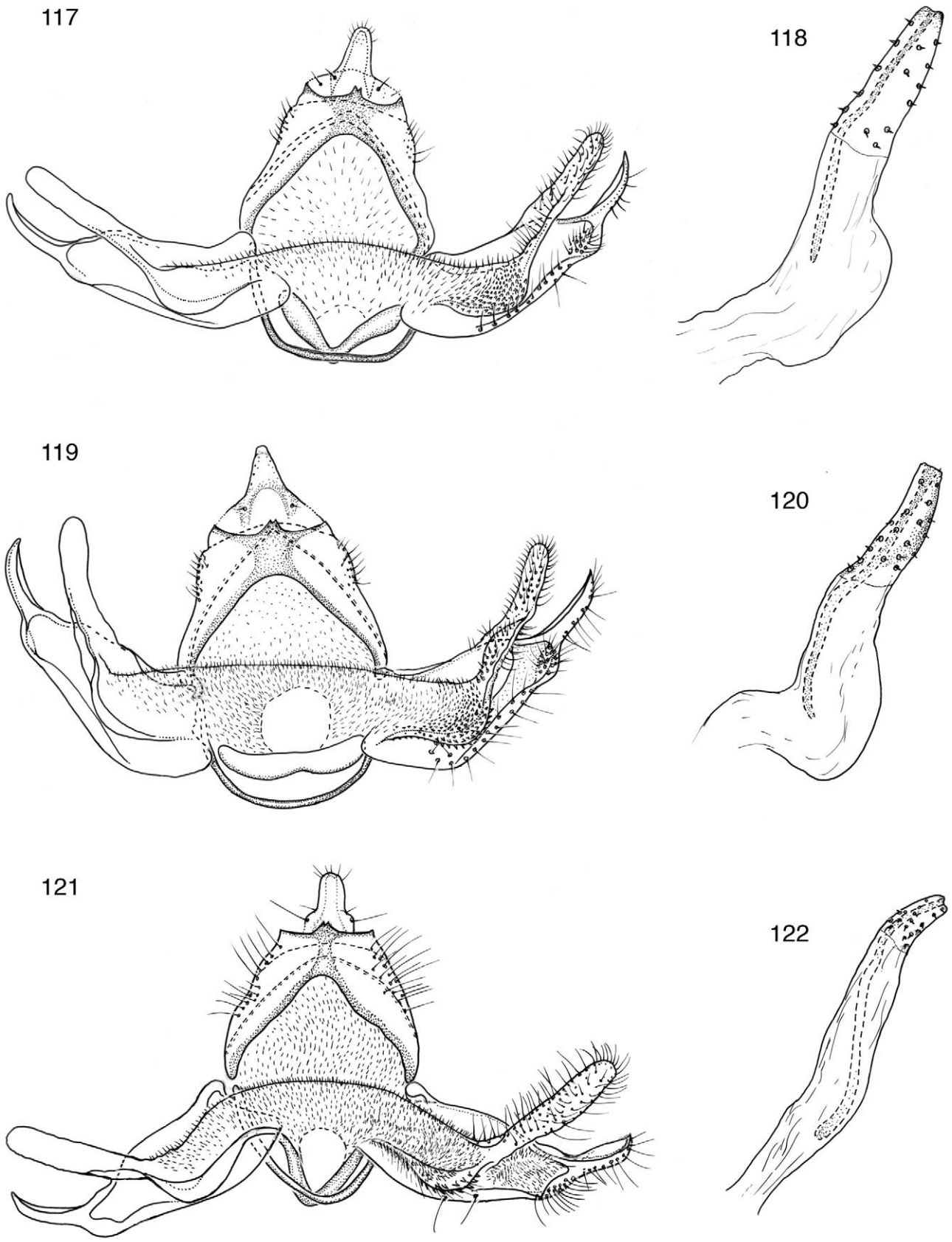
FIGURES 99–104. Male genitalia of Blastobasinae. 99–100, *Blastobasis echus* (slide 3710). 101–102, *Blastobasis litis* (slide 3632). 103–104, *Blastobasis chanes* (slide 3450).



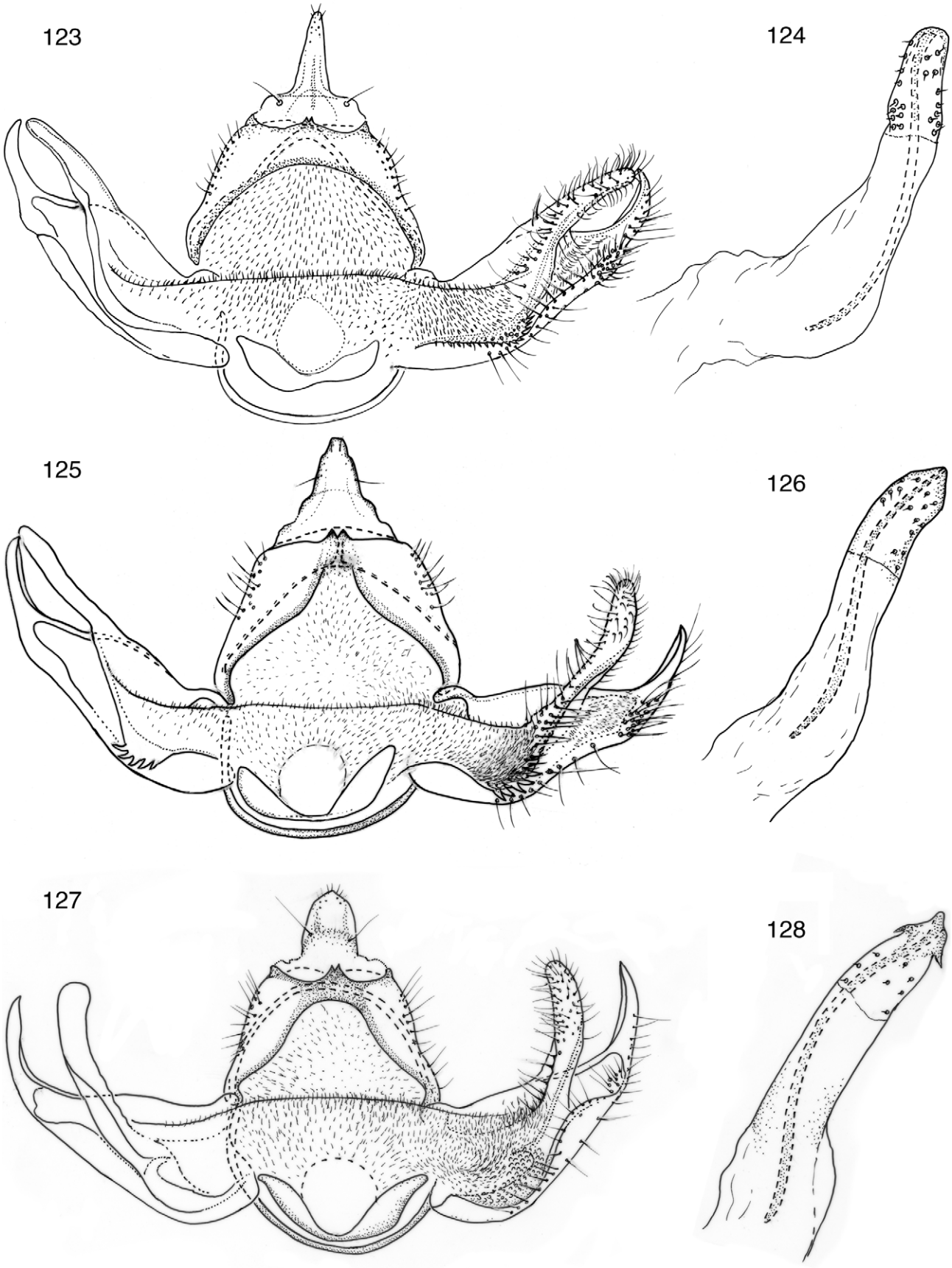
FIGURES 105–110. Male genitalia of Blastobasinae. 105–106, *Blastobasis fax* (slide 3454). 107–108, *Blastobasis coffeaella* (Busck, 1925) (USNM slide 82543). 109–110, *Blastobasis rotullae* (slide 3894).



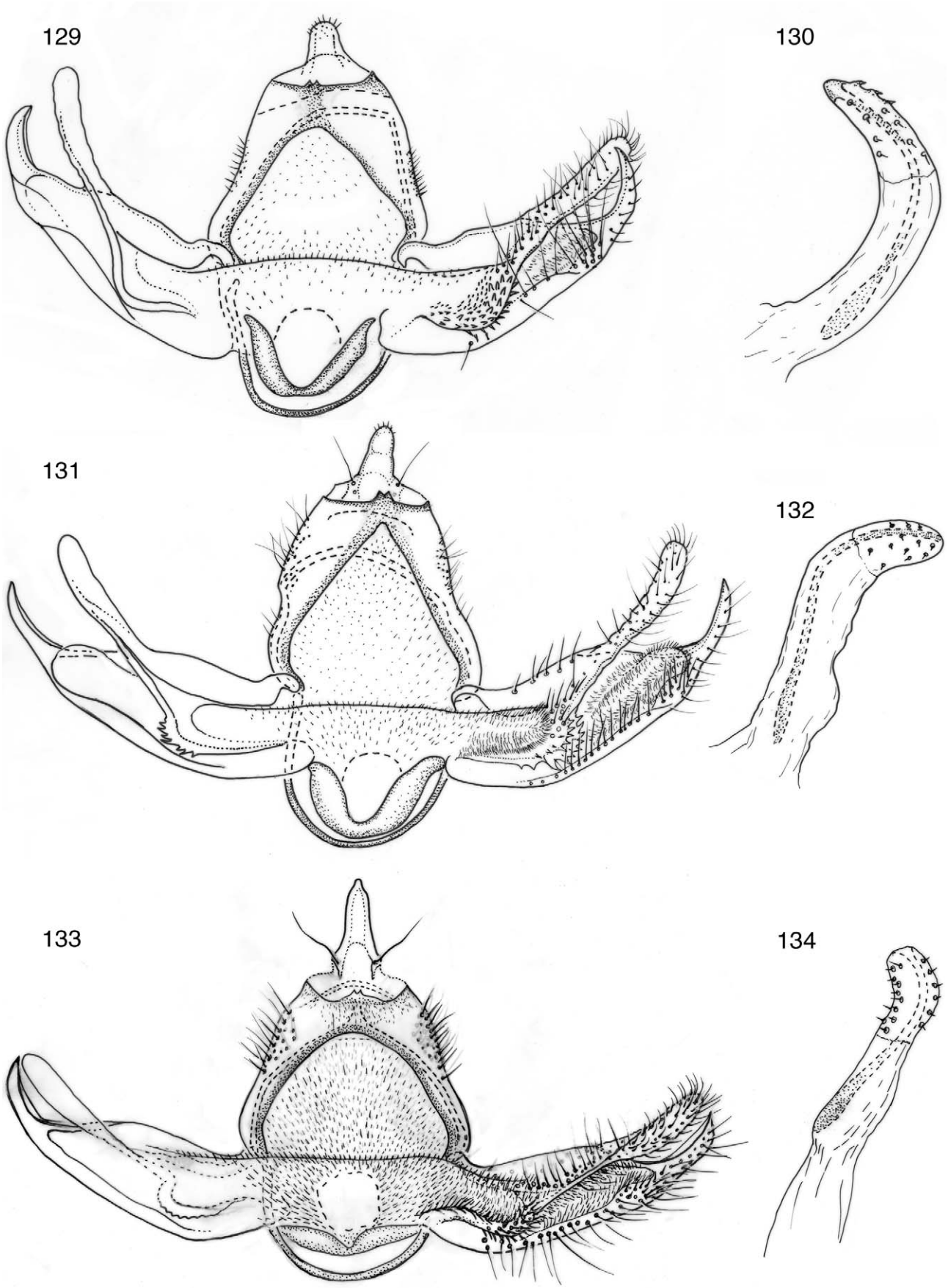
FIGURES 111–116. Male genitalia of Blastobasinae. 111–112, *Blastobasis custodis* (slide 3532). 113–114, *Blastobasis deliciolarum* (slide 3630). 115–116, *Blastobasis abollae* (slide 3616).



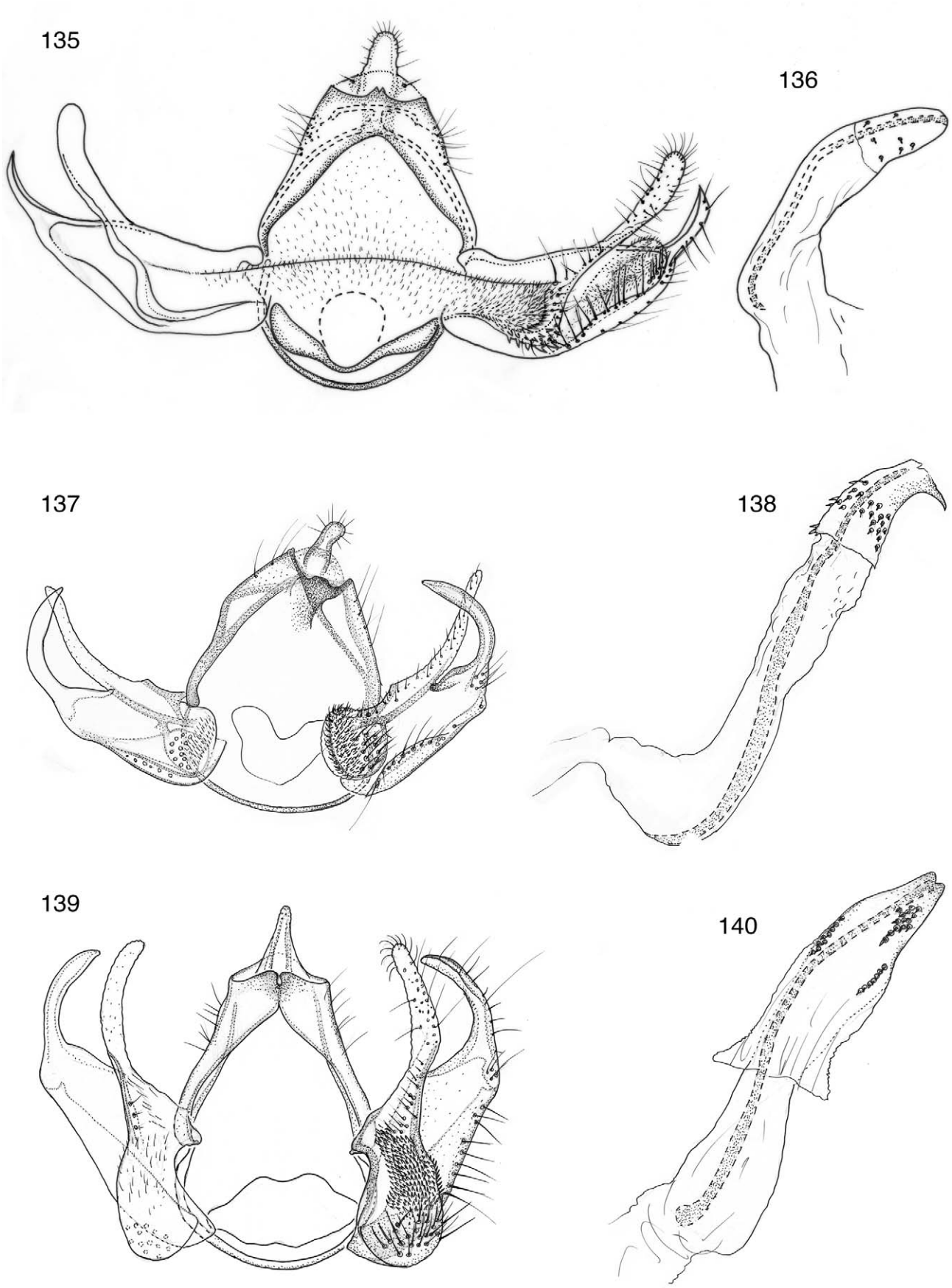
FIGURES 117–122. Male genitalia of Blastobasinae. 117–118, *Blastobasis lex* (slide 3488). 119–120, *Blastobasis vesta* (slide 3517). 121–122, *Blastobasis nivis* (slide 3581).



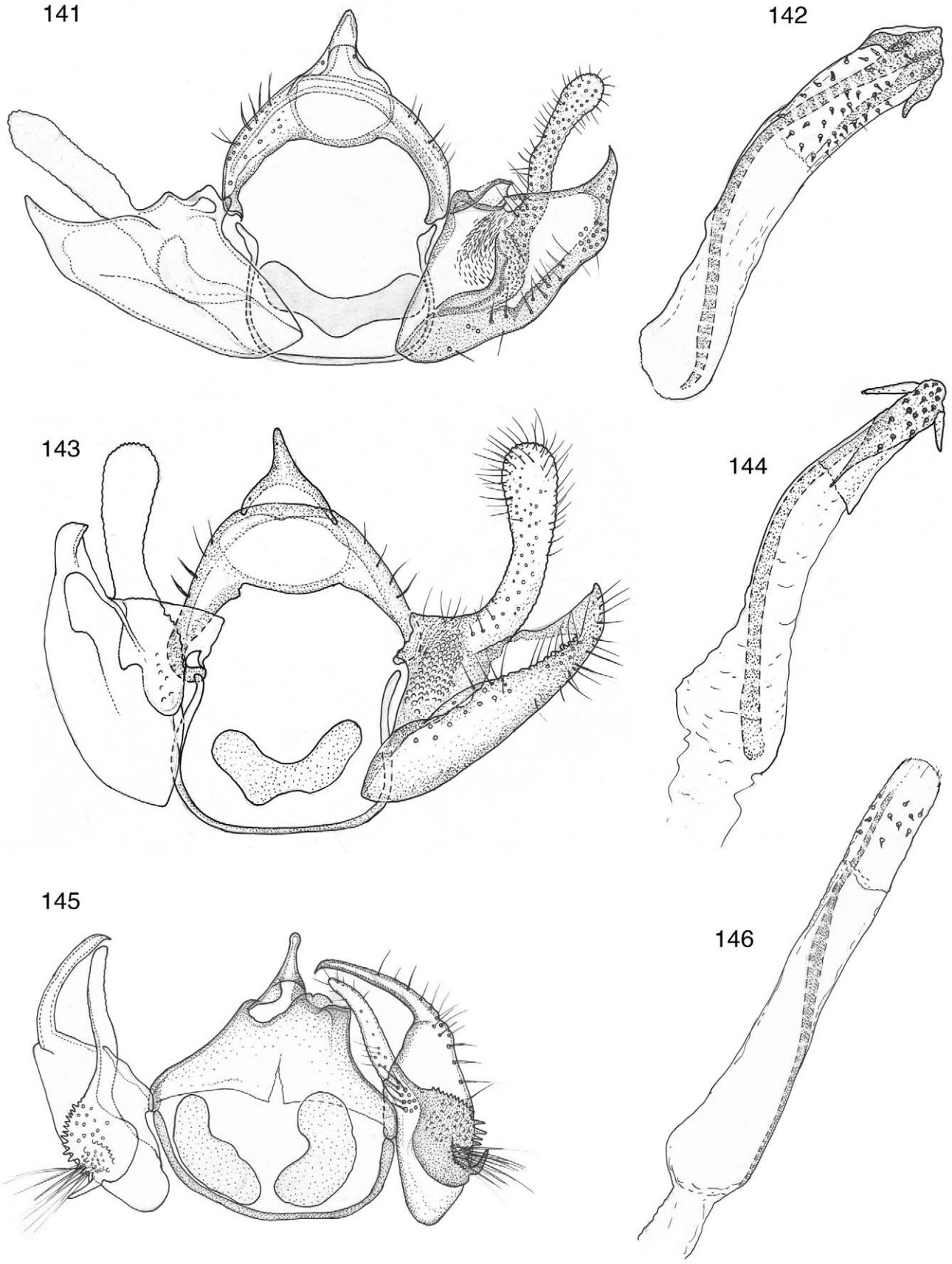
FIGURES 123–128. Male genitalia of Blastobasinae. 123–124, *Blastobasis phaedra* (slide 3933). 125–126, *Blastobasis aedes* (slide 3519). 127–128, *Blastobasis tapetae* (slide 3568).



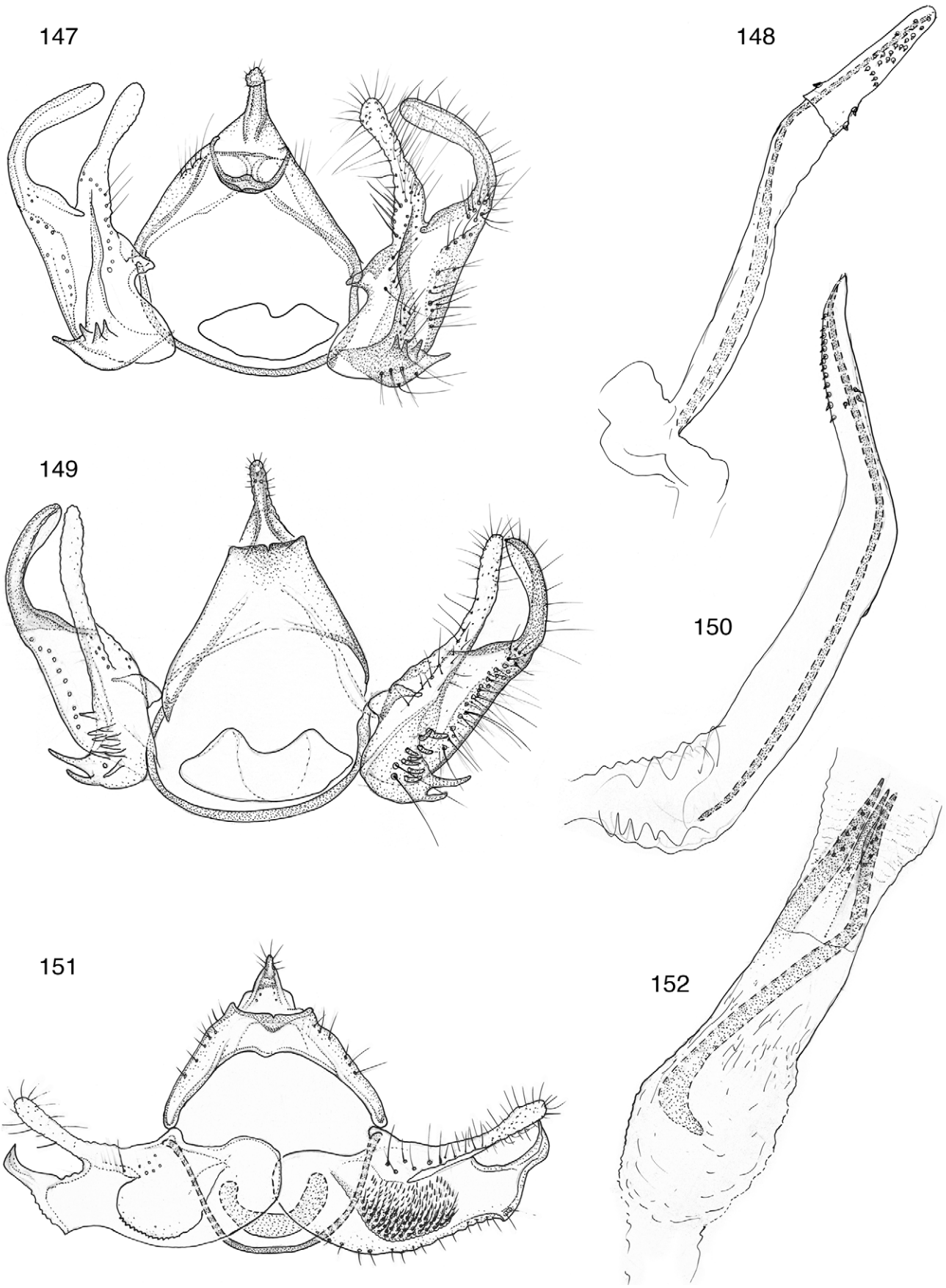
FIGURES 129–134. Male genitalia of Blastobasinae. 129–130, *Blastobasis rotae* (slide 3506). 131–132, *Blastobasis manto* (slide 4036). 133–134, *Blastobasis dicionis* (slide 3470).



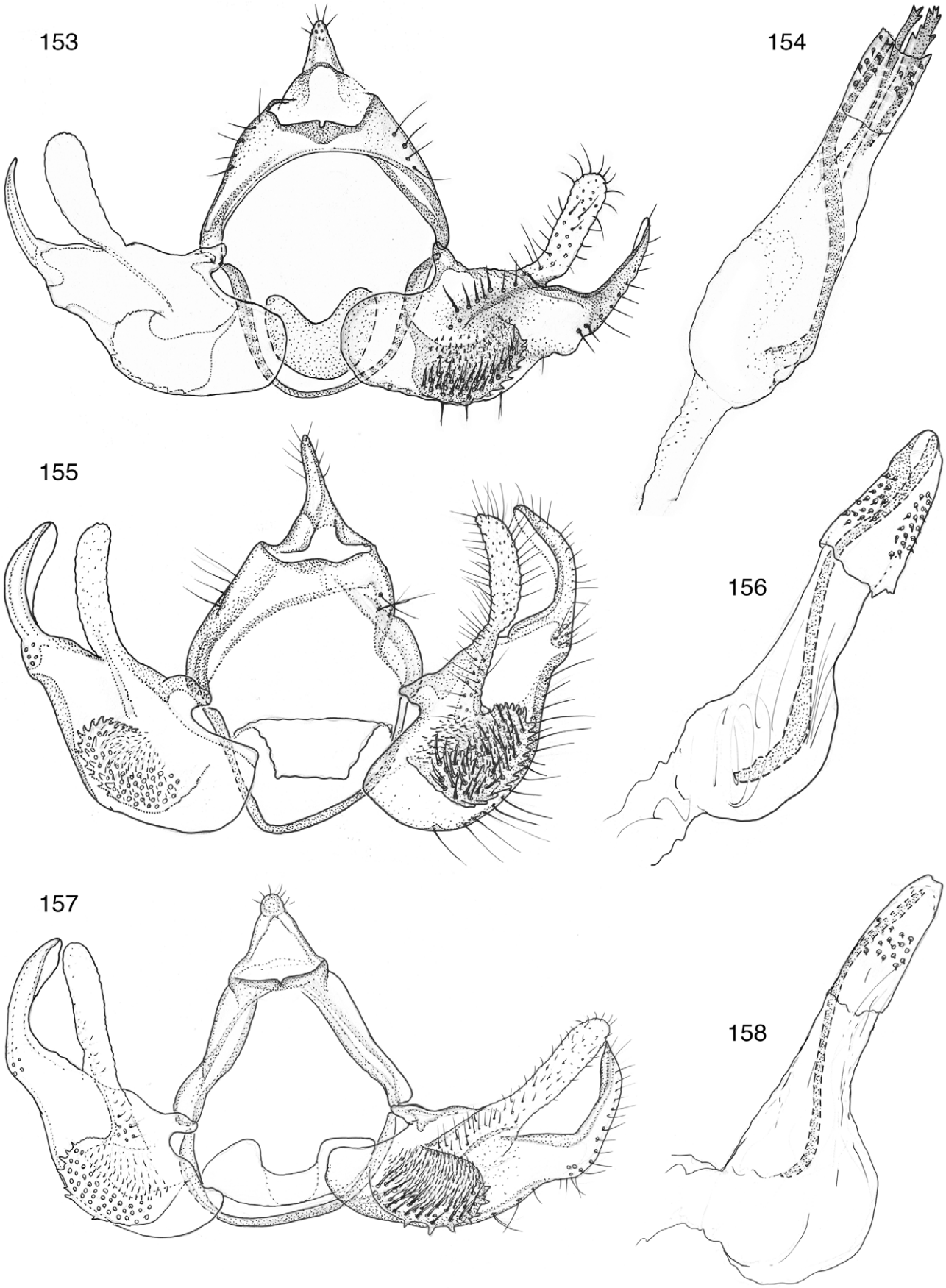
FIGURES 135–140. Male genitalia of Blastobasinae. 135–136, *Blastobasis beo* (slide 3335). 137–138, *Hypatopa nex* (slide 2460). 139–140, *Hypatopa cladis* (slide 2345).



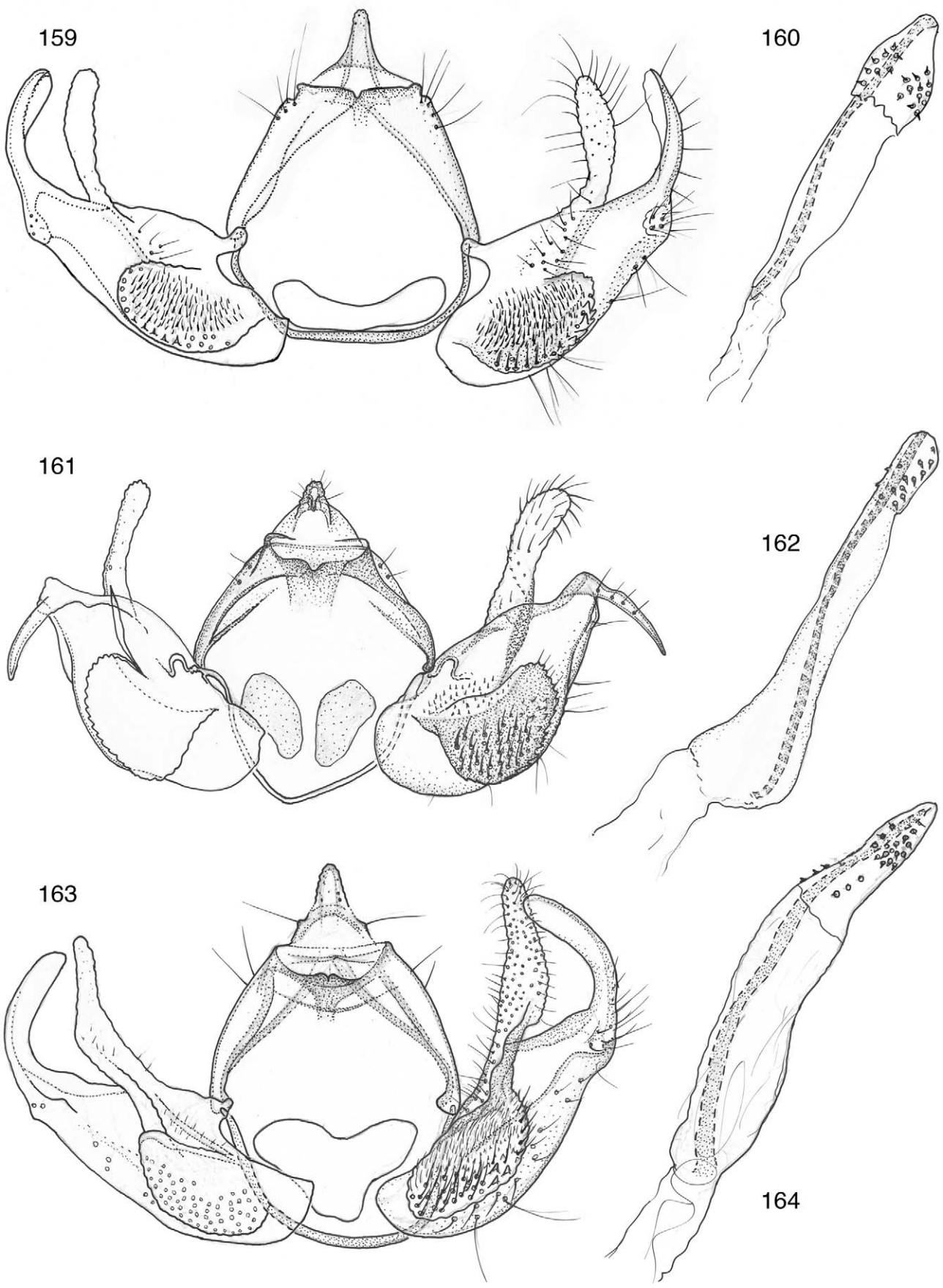
FIGURES 141–146. Male genitalia of Blastobasinae. 141–142, *Hypatopa juno* (slide 2037). 143–144, *Hypatopa actes* (slide 2640). 145–146, *Hypatopa cotis* (slide 2663).



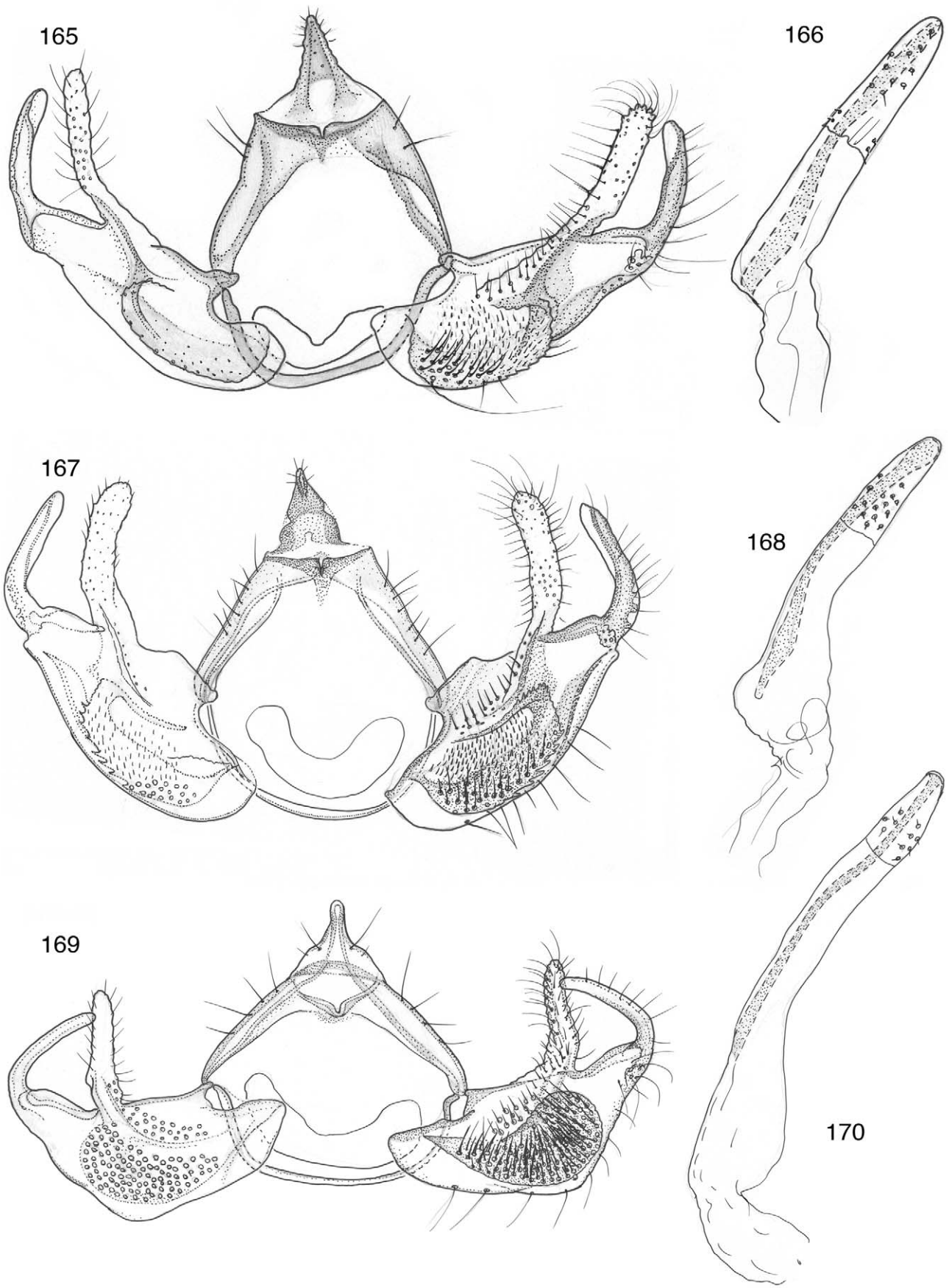
FIGURES 147–152. Male genitalia of Blastobasinae. 147–148, *Hypatopa pica* (slide 2556). 149–150, *Hypatopa hecate* (slide 2029). 151–152, *Hypatopa acus* (slide 2004).



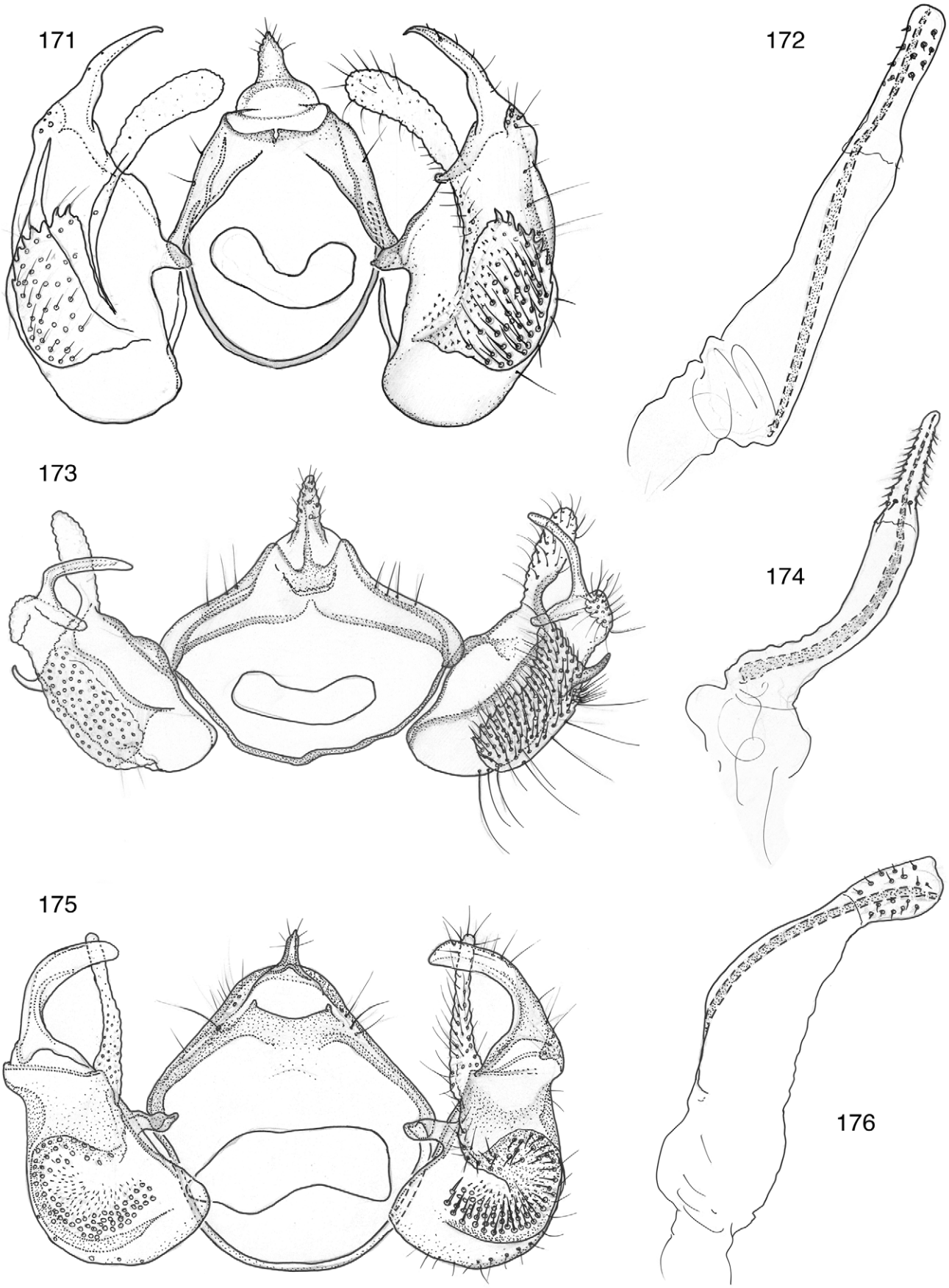
FIGURES 153–158. Male genitalia of Blastobasinae. 153–154, *Hypatopa crux* (slide 2041). 155–156, *Hypatopa limae* (slide 2691). 157–158, *Hypatopa hera* (slide 2667).



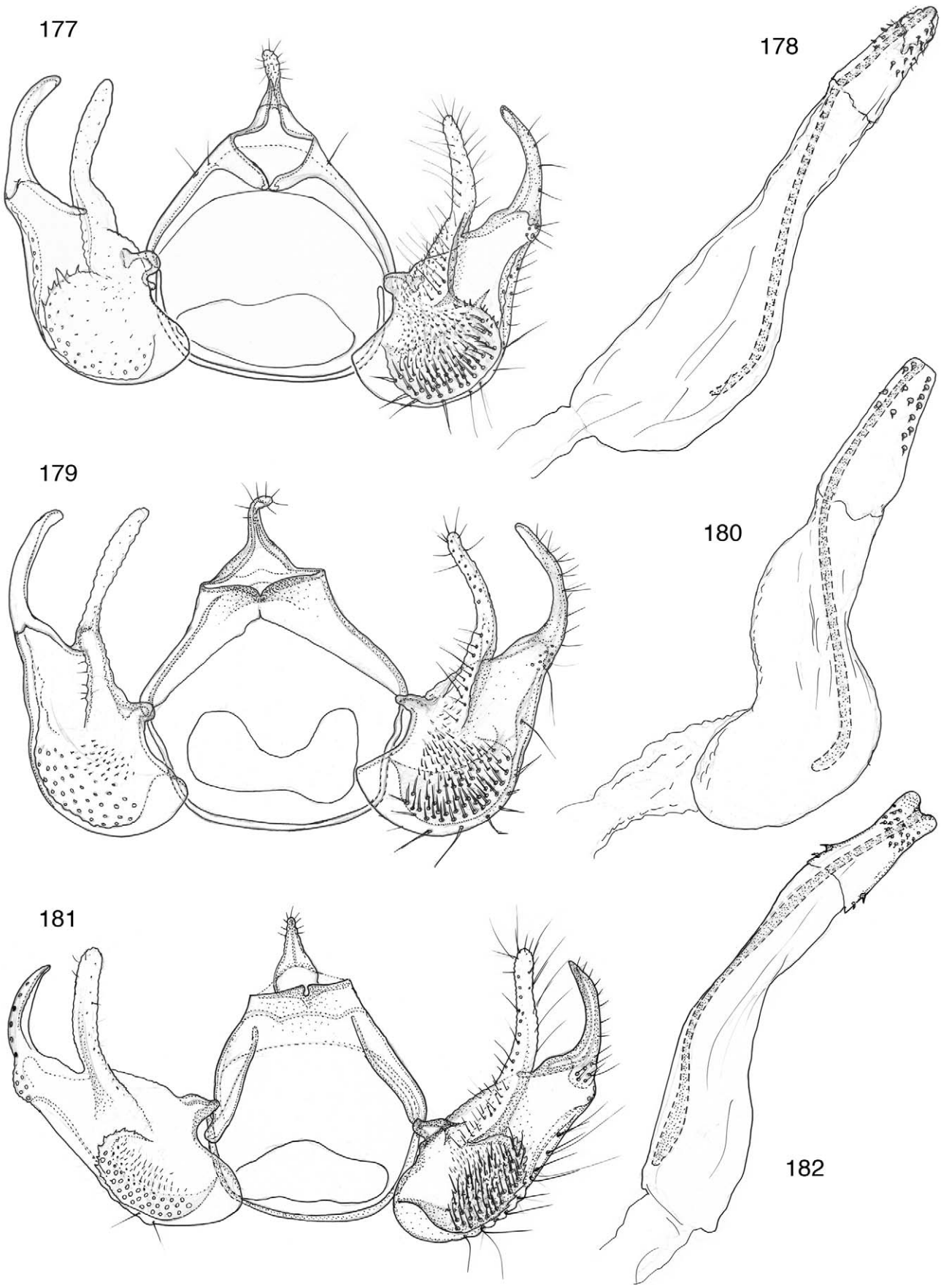
FIGURES 159–164. Male genitalia of Blastobasinae. 159–160, *Hypatopa arxcis* (slide 2664). 161–162, *Hypatopa caedis* (slide 2150). 163–164, *Hypatopa plebis* (slide 2210).



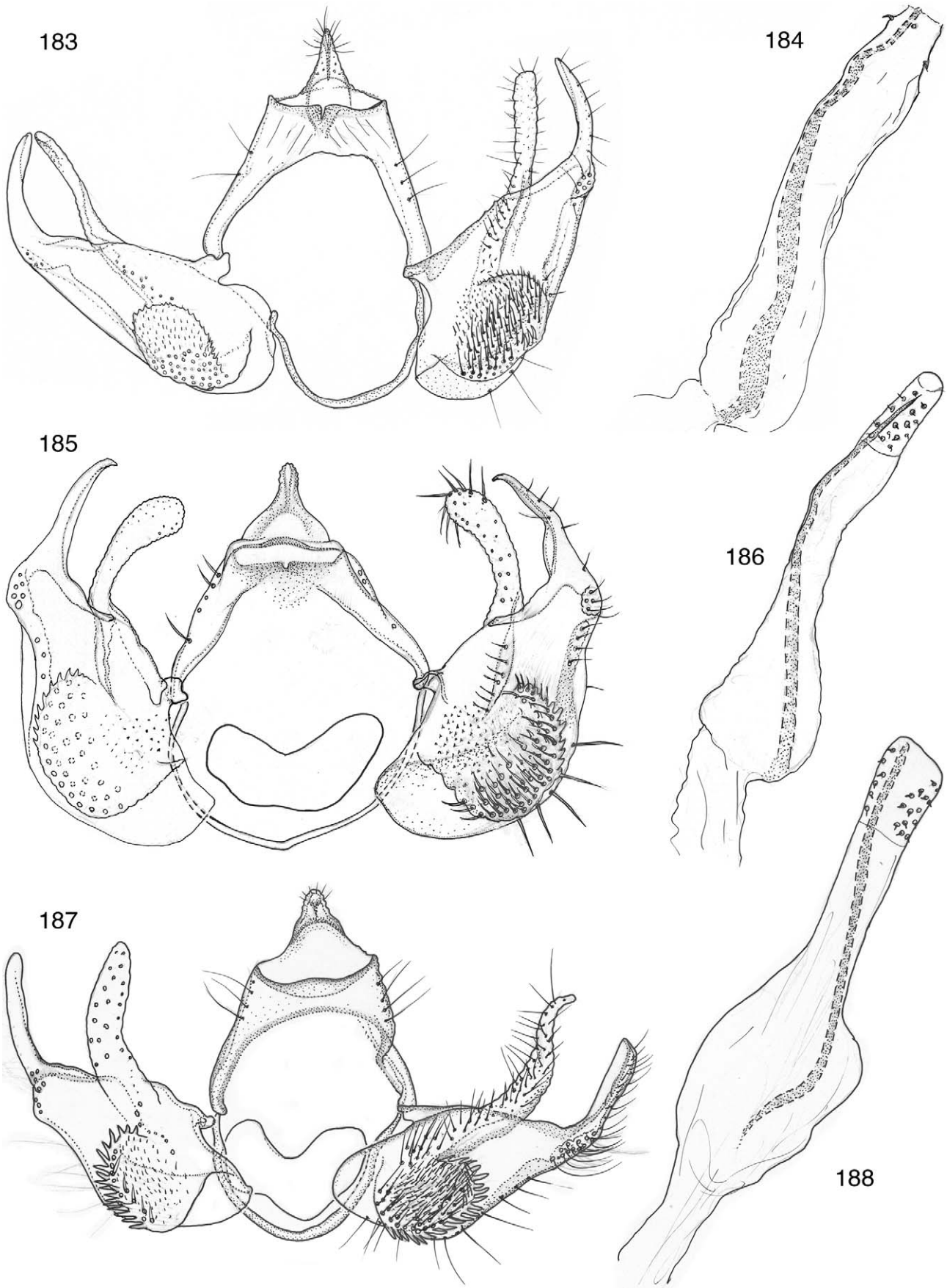
FIGURES 165–170. Male genitalia of Blastobasinae. 165–166, *Hypatopa dolo* (slide 2136). 167–168, *Hypatopa cyane* (slide 2398). 169–170, *Hypatopa manus* (slide 2566).



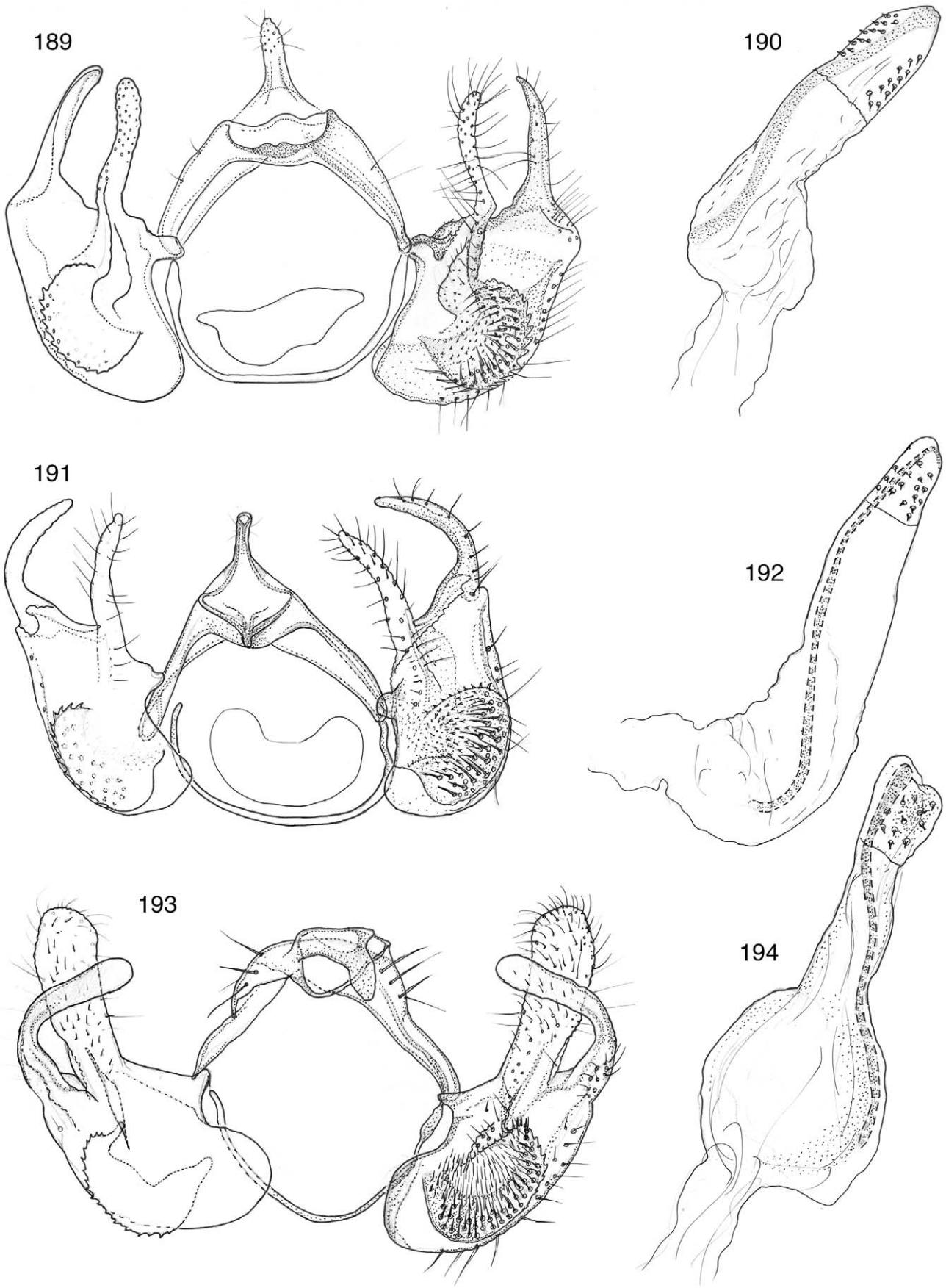
FIGURES 171–176. Male genitalia of Blastobasinae. 171–172, *Hypatopa caepae* (slide 2172). 173–174, *Hypatopa cotytto* (slide 2542). 175–176, *Hypatopa lucina* (slide 2401).



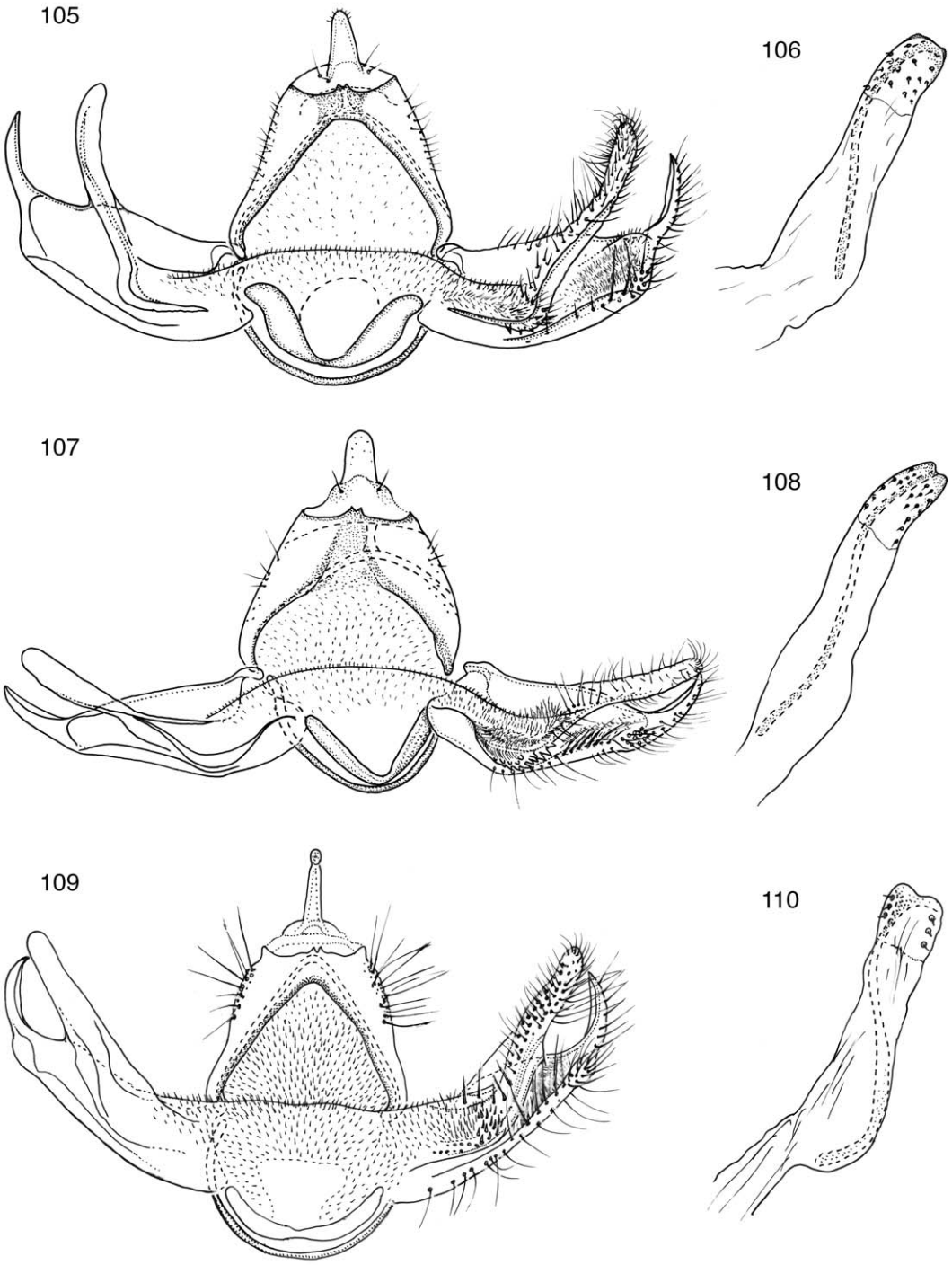
FIGURES 177–182. Male genitalia of Blastobasinae. 177–178, *Hypatopa scobis* (slide 2277). 179–180, *Hypatopa agnae* (slide 2220). 181–182, *Hypatopa phoebe* (slide 2544).



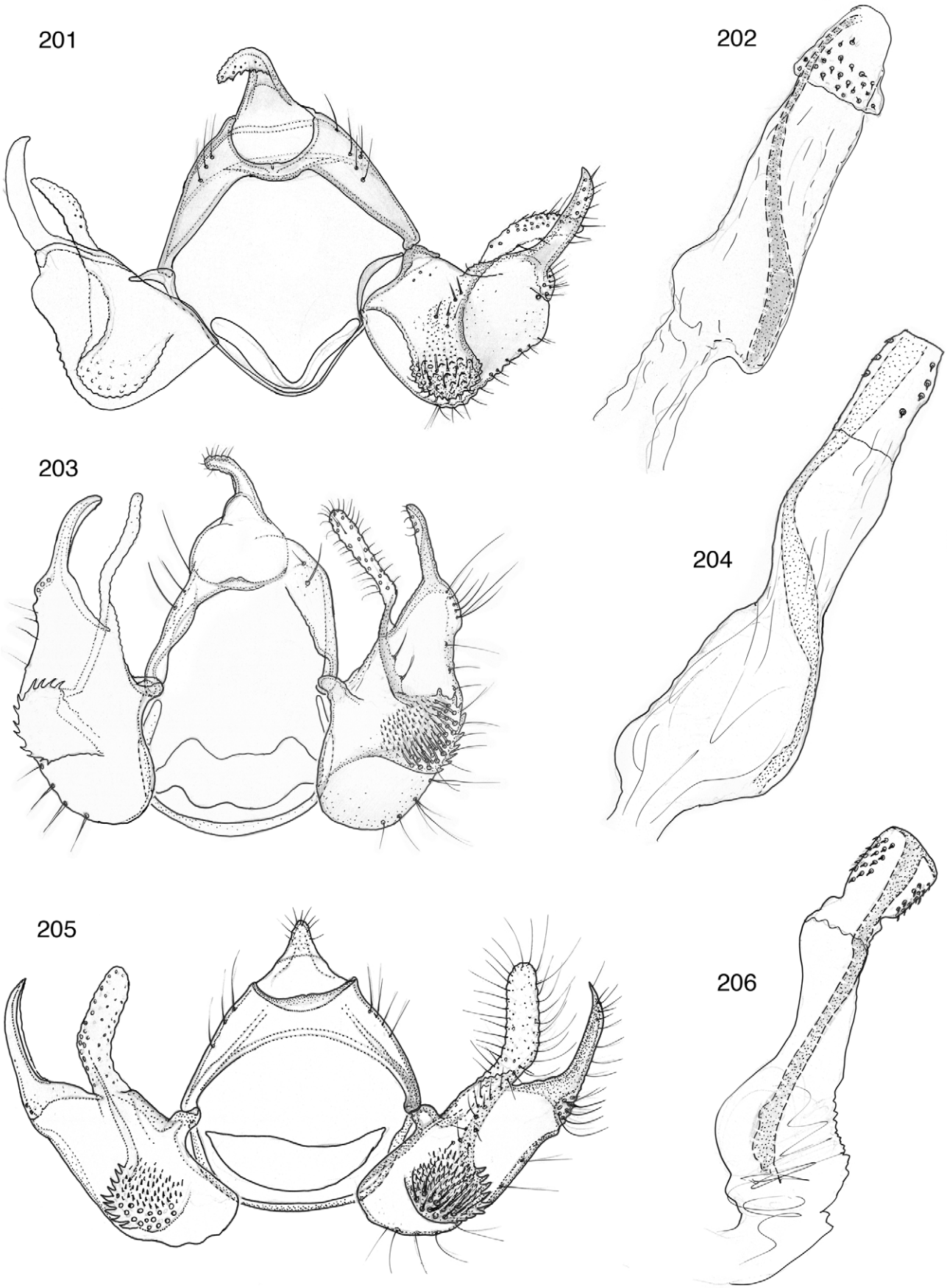
FIGURES 183–188. Male genitalia of Blastobasinae. 183–184, *Hypatopa semela* (slide 2586). 185–186, *Hypatopa edax* (slide 2325). 187–188, *Hypatopa joniella* (slide 83504).



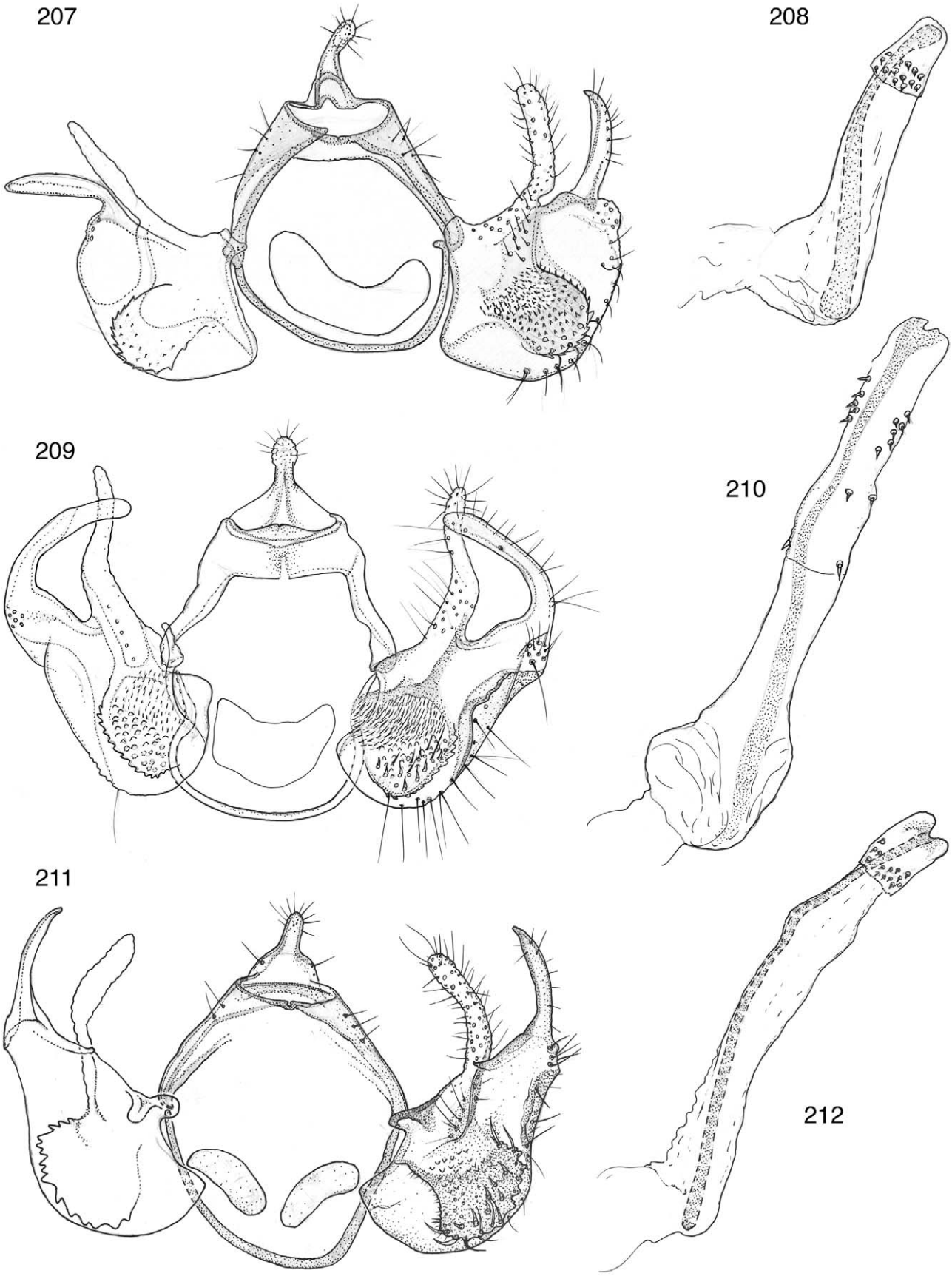
FIGURES 189–194. Male genitalia of Blastobasinae. 189–190, *Hypatopa rego* (slide 2191). 191–192, *Hypatopa styga* (slide 2318). 193–194, *Hypatopa texla* (slide 2540).



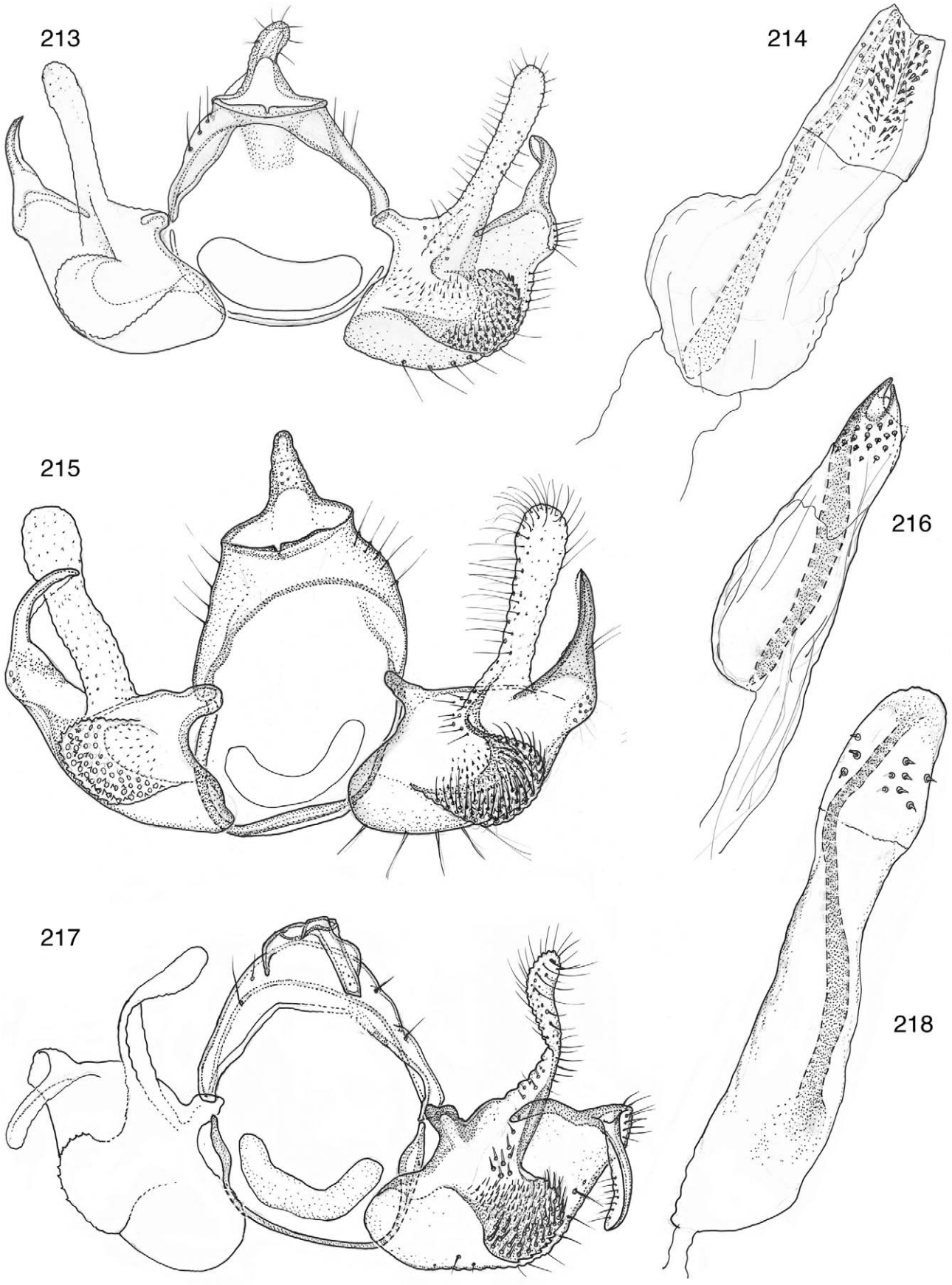
FIGURES 195–200. Male genitalia of Blastobasinae. 195–196, *Hypatopa verax* (slide 2265). 197–198, *Hypatopa tapadulcea* Adamski, 1999 (slide 2069). 199–200, *Hypatopa mora* (slide 2567).



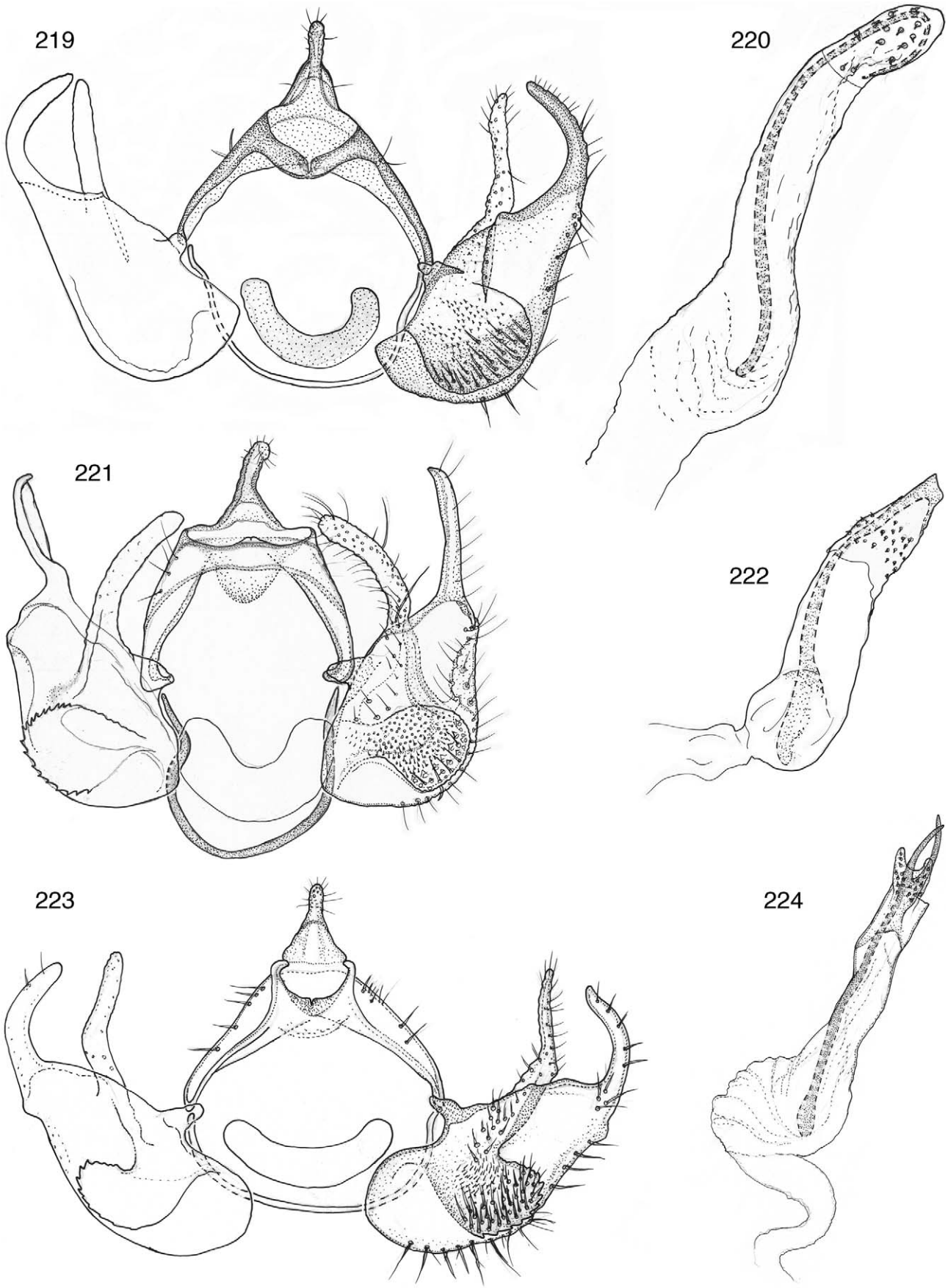
FIGURES 201–206. Male Genitalia of Blastobasinae. 201–202, *Hypatopa nox* (slide 2672). 203–204, *Hypatopa dux* (slide 2668). 205–206, *Hypatopa erato* (slide 2703).



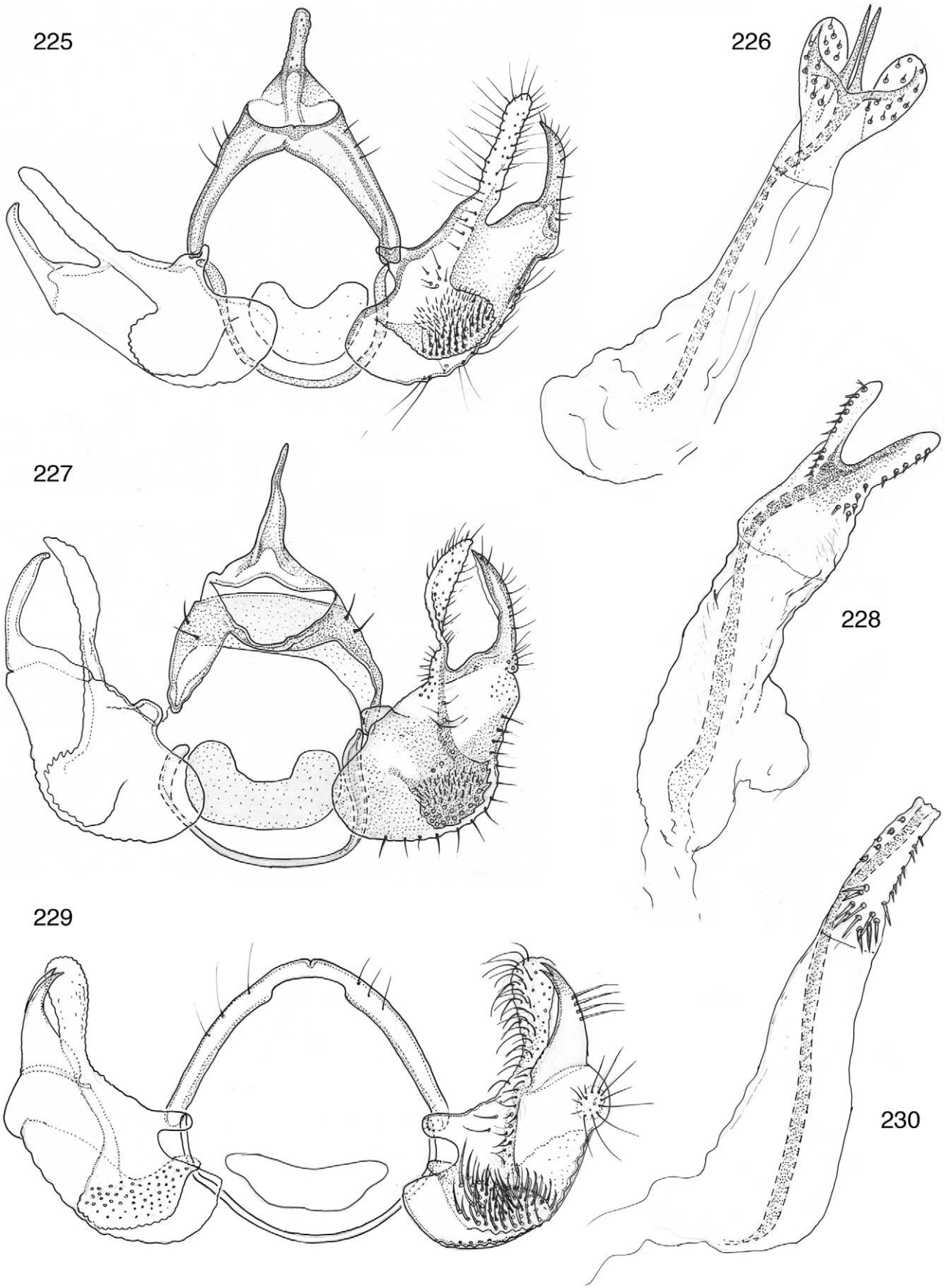
FIGURES 207–212. Male genitalia of Blastobasinae. 207–208, *Hypatopa fio* (slide 2215). 209–210, *Hypatopa io* (slide 2372). 211–212, *Hypatopa leda* (slide 2284).



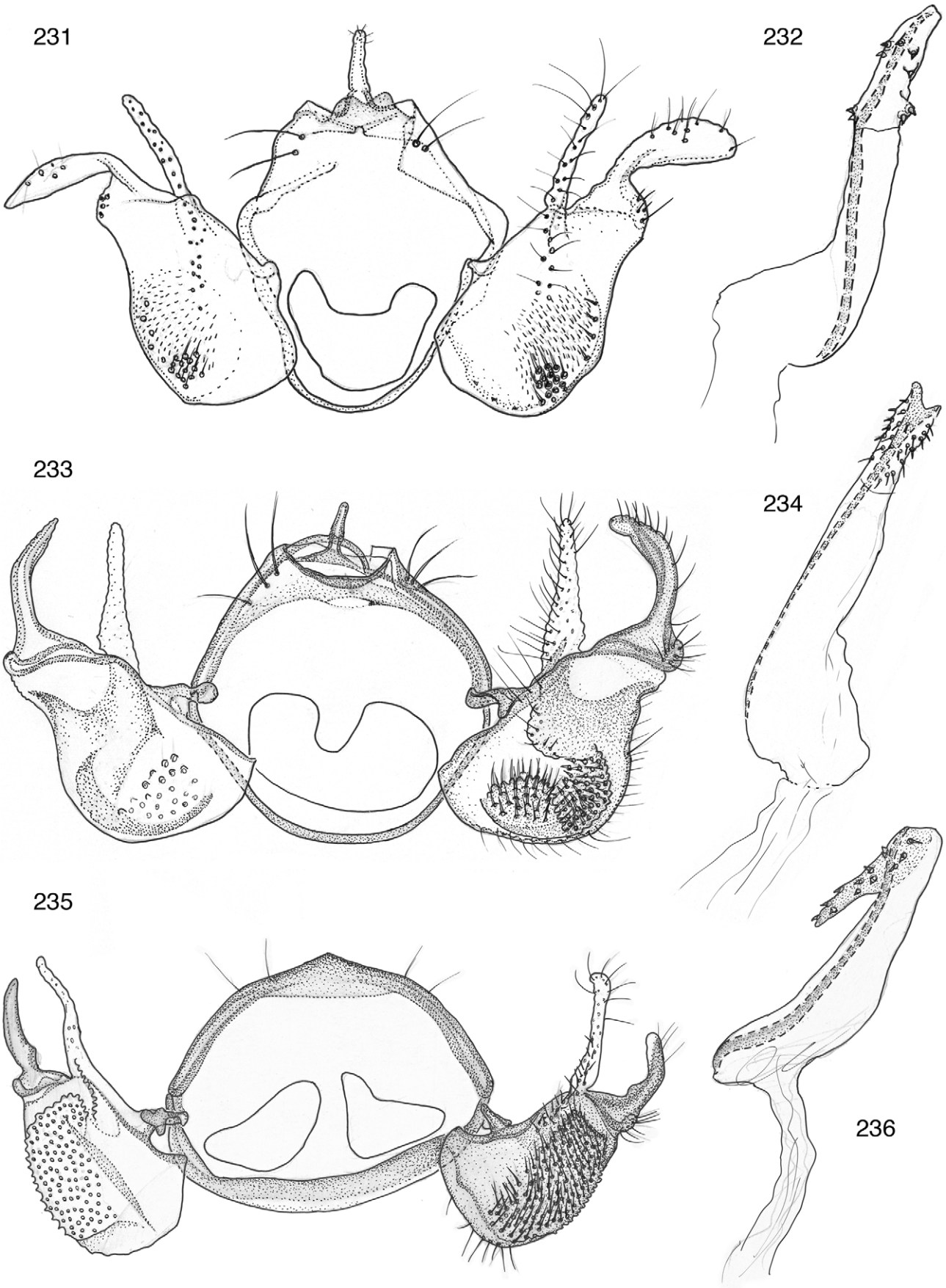
FIGURES 213–218. Male genitalia of Blastobasinae. 213–214, *Hypatopa vox* (slide 2020). 215–216, *Hypatopa eos* (slide 2723). 217–218, *Hypatopa dicax* (slide 2539).



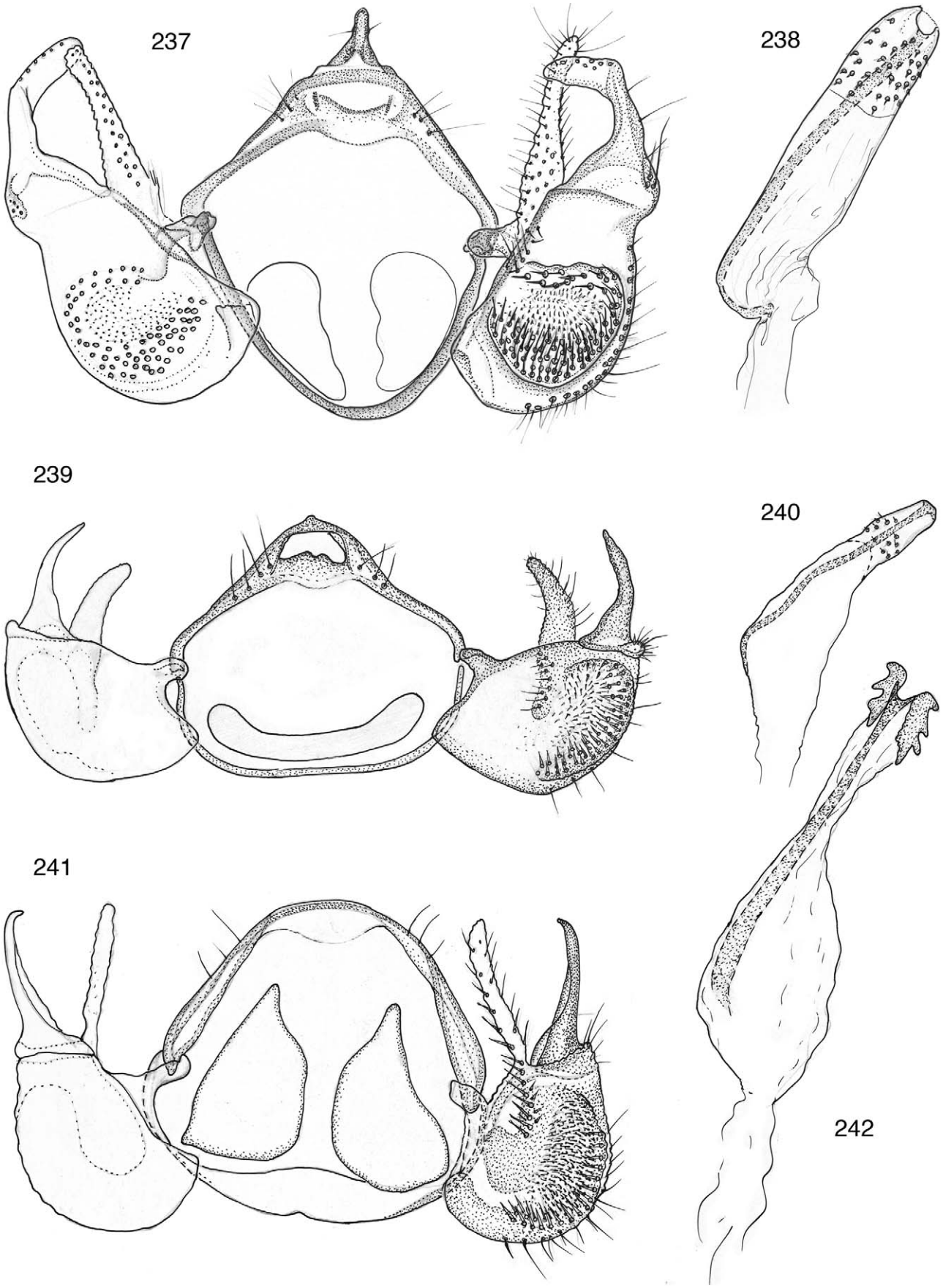
FIGURES 219–224. Male genitalia of Blastobasinae. 219–220, *Hypatopa ira* (slide 2380). 221–222, *Hypatopa umbra* (slide 2168). 223–224, *Hypatopa texo* (slide 2263).



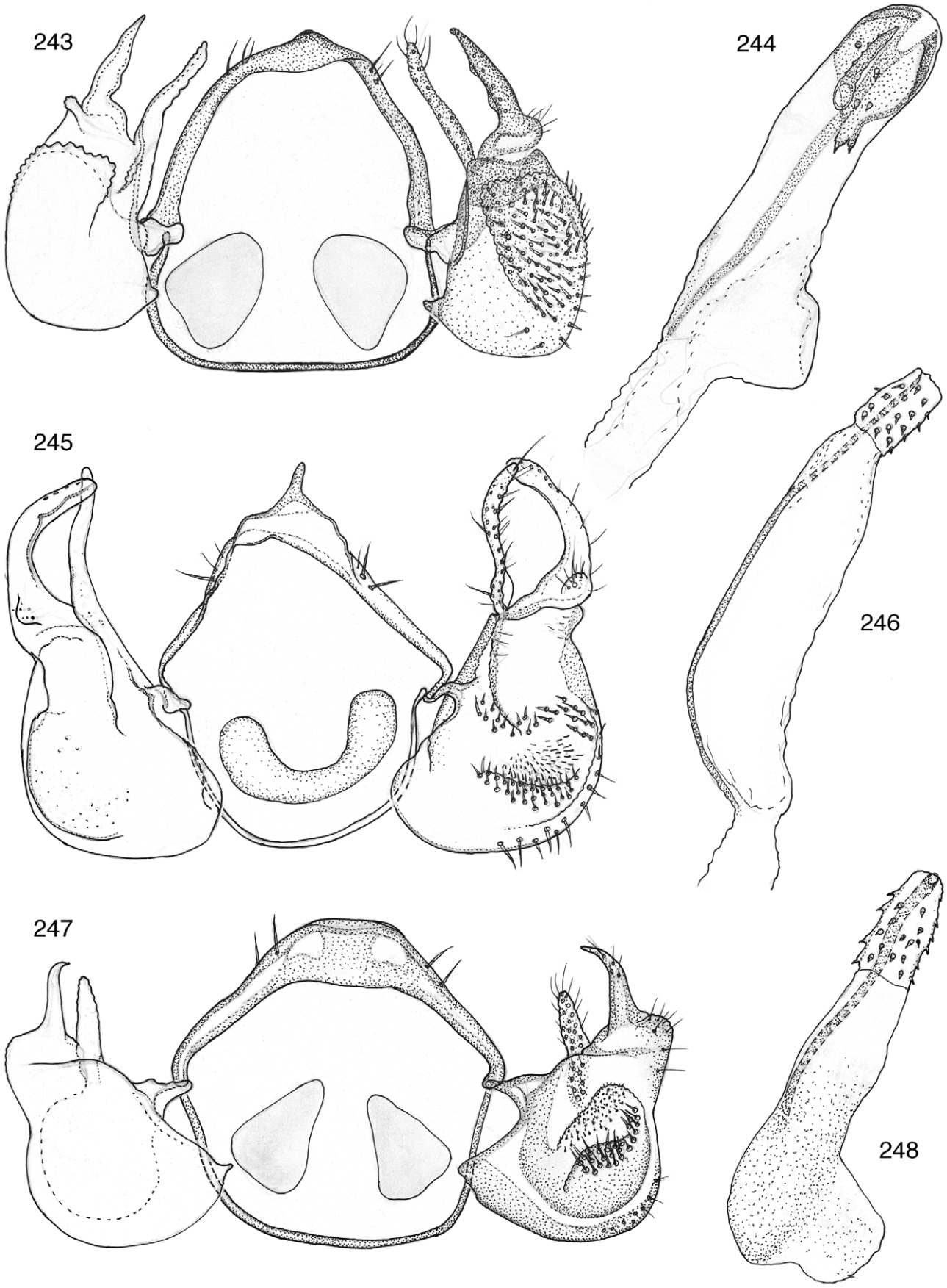
FIGURES 225–230. Male genitalia of Blastobasinae. 225–226, *Hypatopa solea* (slide 2601). 227–228, *Hypatopa bilobata* (slide 2595). 229–230, *Hypatopa rabio* (slide 2013).



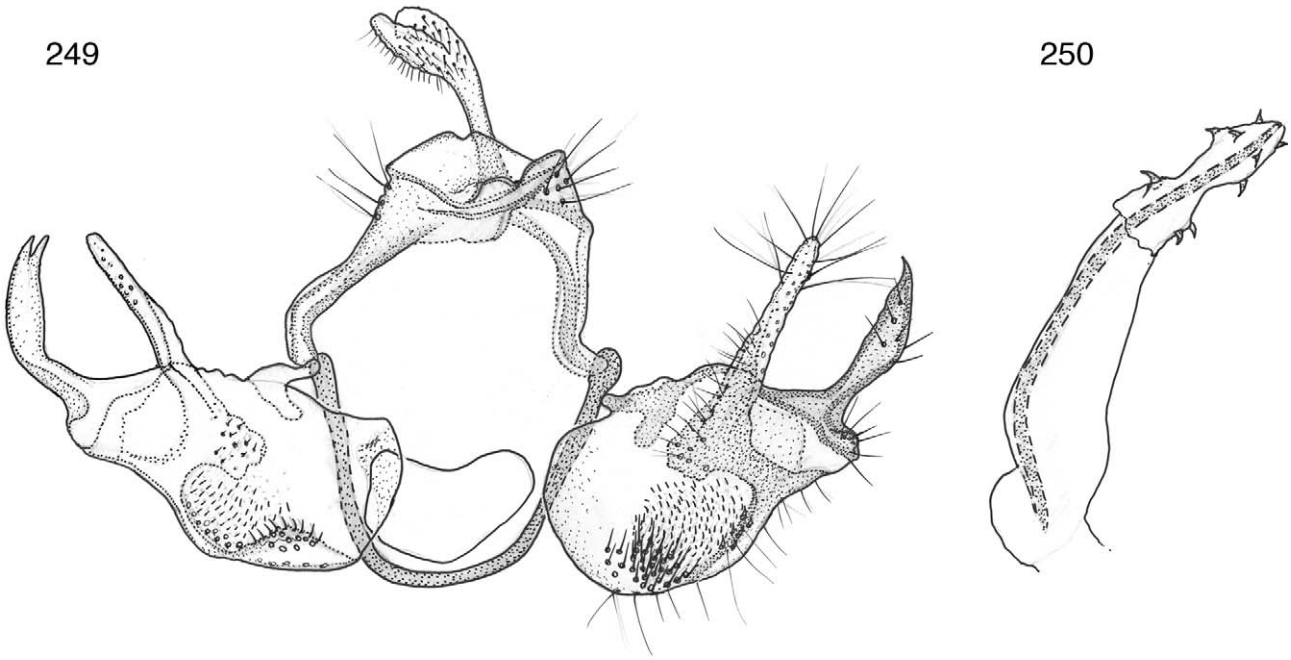
FIGURES 231–236. Male genitalia of Blastobasinae. 231–232, *Hypatopa rudis* (slide 2449). 233–234, *Hypatopa musa* (slide 2392). 235–236, *Pigritia sedis* (slide 2722).



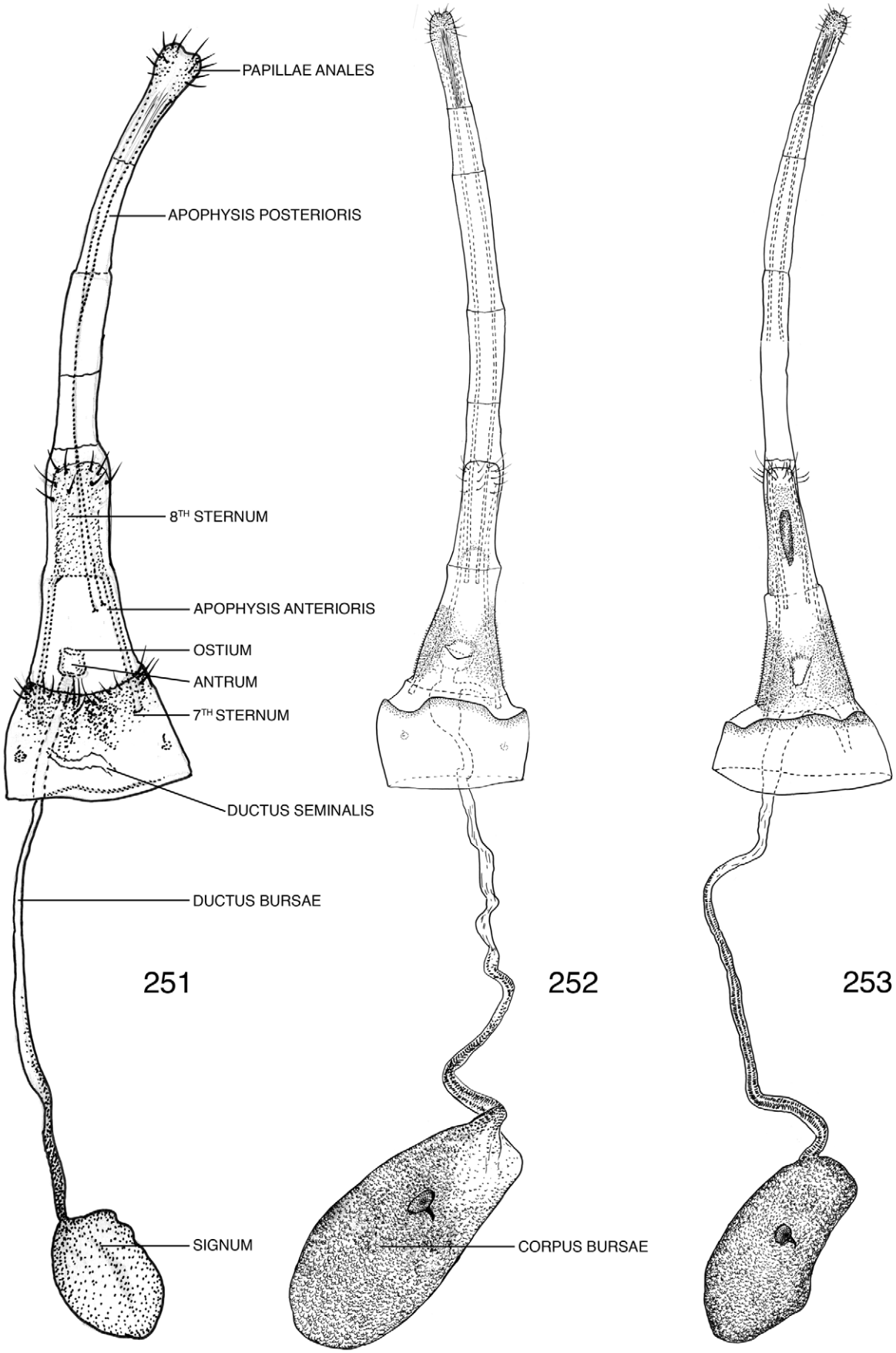
FIGURES 237–242. Male genitalia of Blastobasinae. 237–238, *Pigritia dido* (USNM slide 83500). 239–240, *Pigritia faux* (slide 2071). 241–242, *Pigritia haha* (slide 2686).



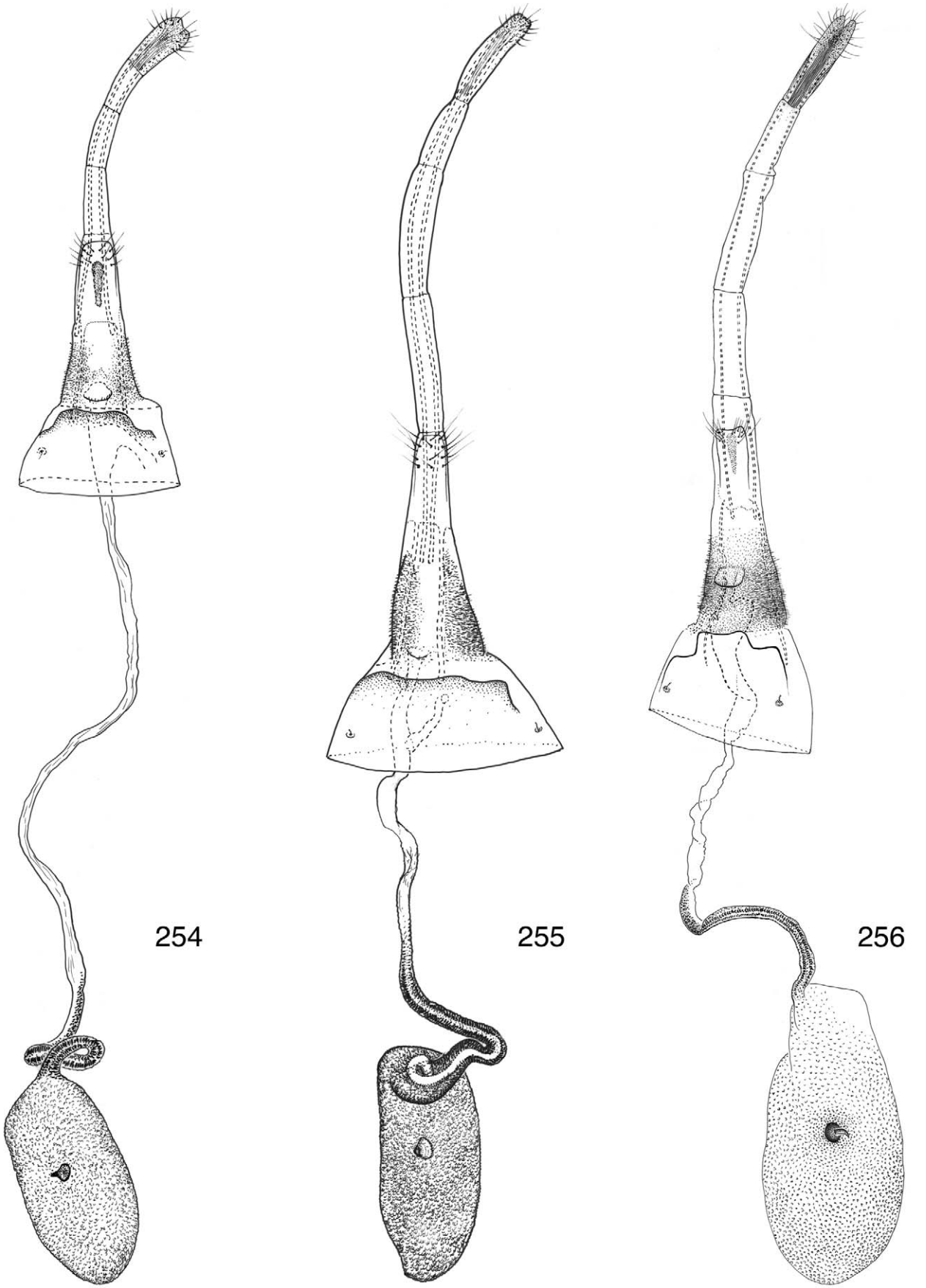
FIGURES 243–248. Male genitalia of Blastobasinae. 243–244, *Pigritia stips* (slide 2446). 245–246, *Pigritia gruis* (slide 2473). 247–248, *Pigritia ululae* (slide 2536).



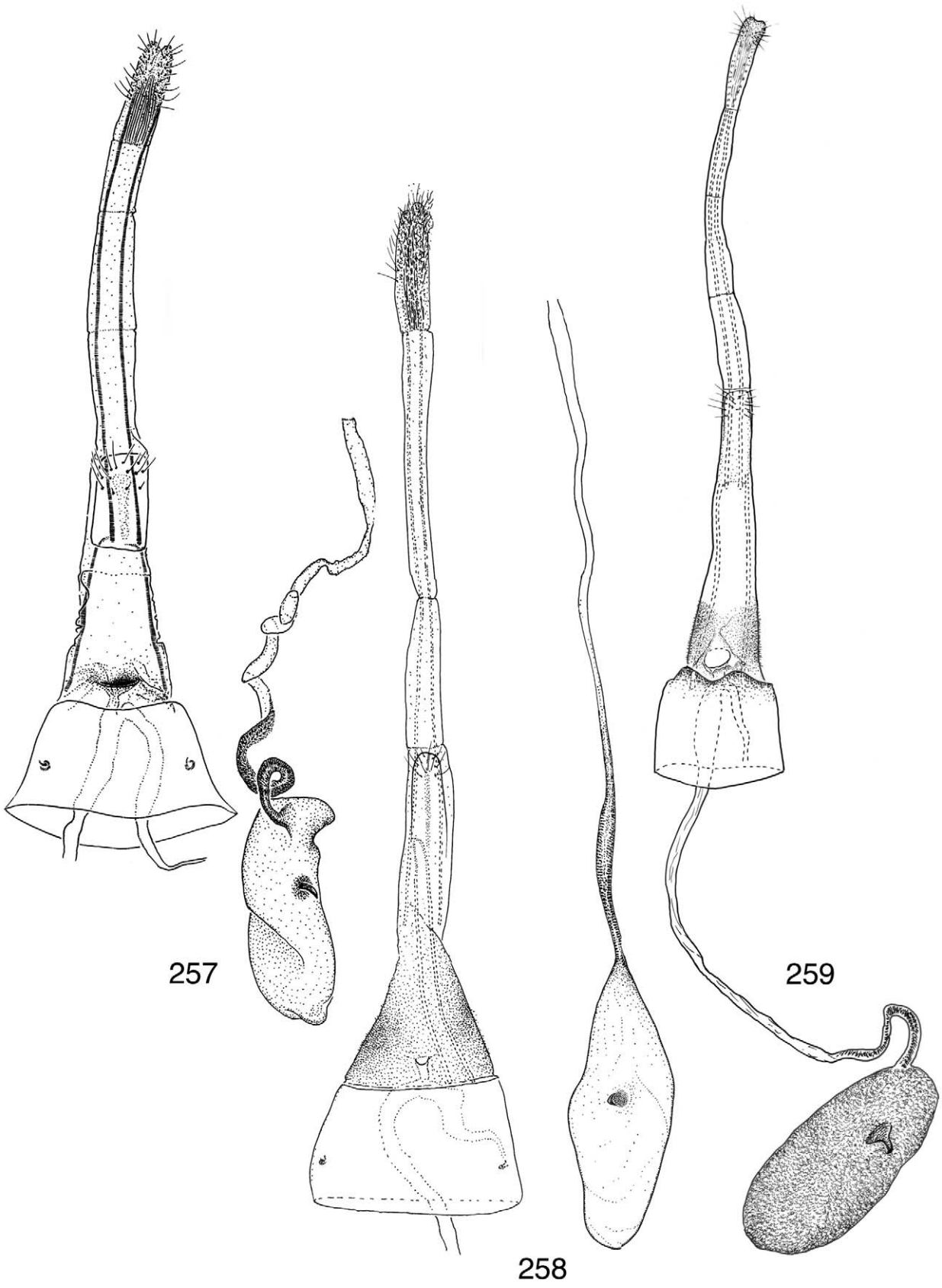
FIGURES 249–250. Male genitalia of Blastobasinae. 249–250, *Pigritia marjoriella* Adamski, 1998 (slide 2377).



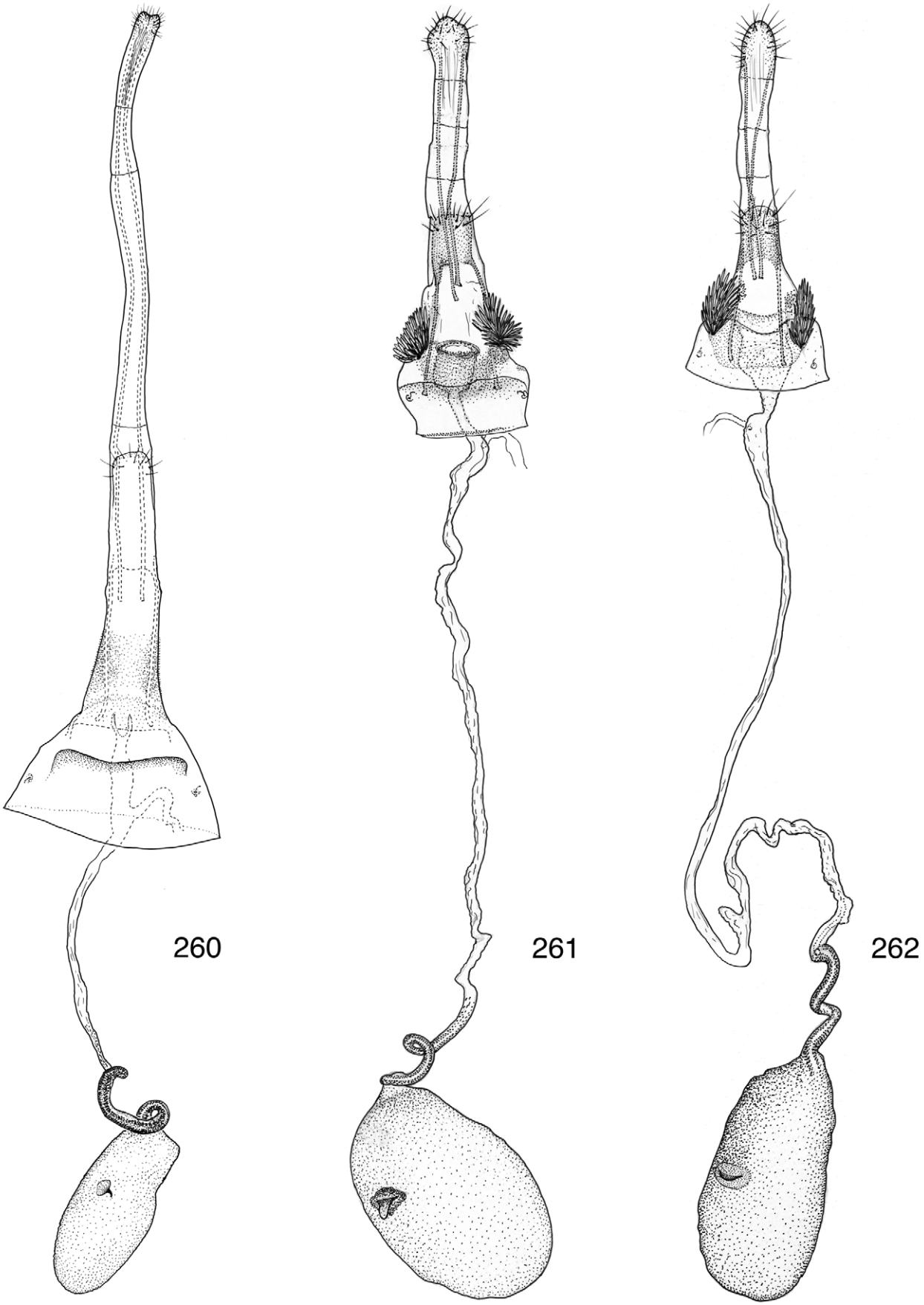
FIGURES 251–253. Female genitalia of Blastobasinae. 251, *Hallicis bisetosellus* (Slide 4516). 252, *Blastobasis balucis* (Slide 6011). 253, *Blastobasis caetrae* (Slide 6017).



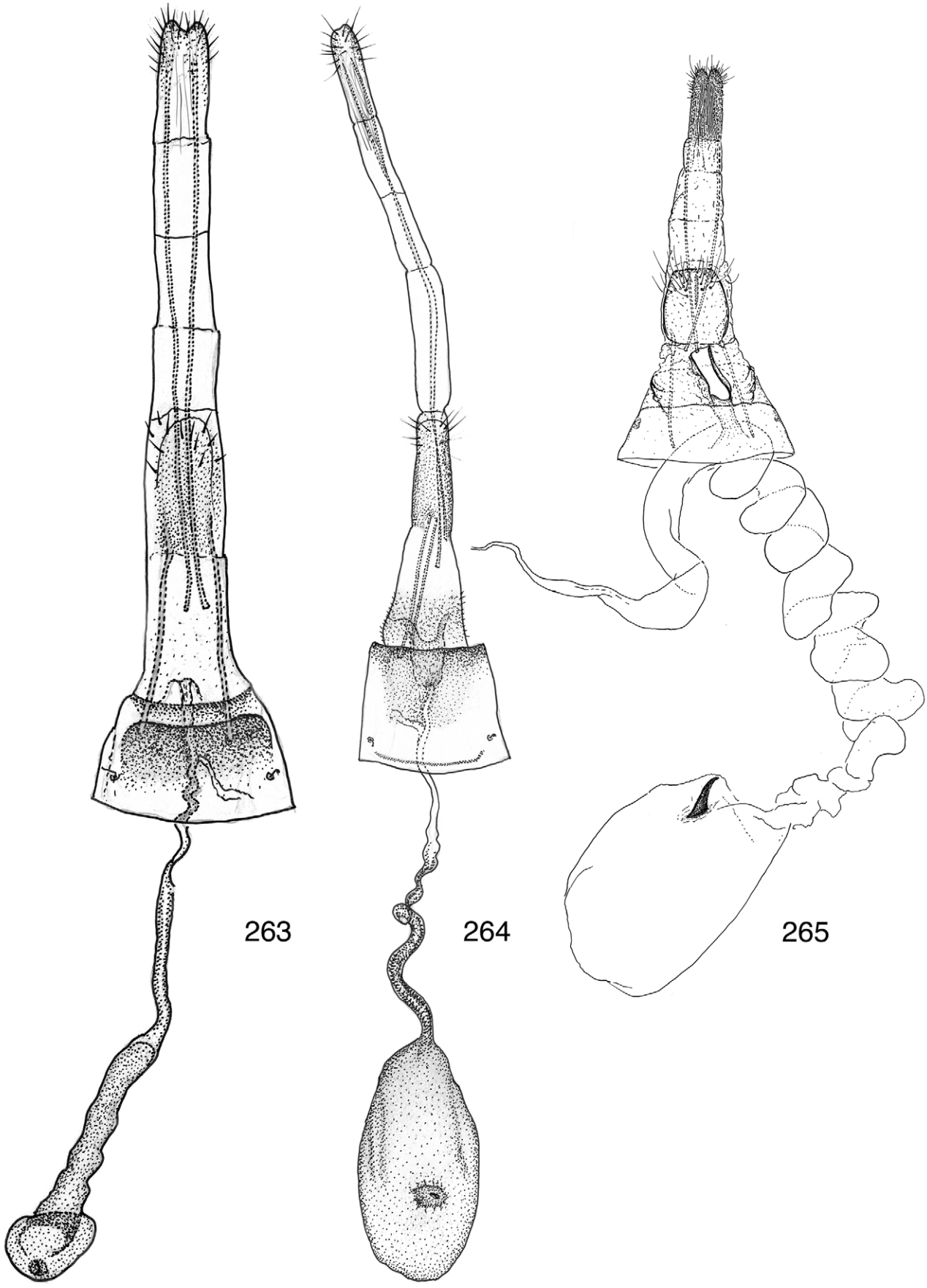
FIGURES 254–256. Female genitalia of Blastobasinae. 254, *Blastobasis furtivus* (Slides 6013 and 6014). 255, *Blastobasis deae* (Slide 6000). 256, *Blastobasis iuanae* (Slide 6012).



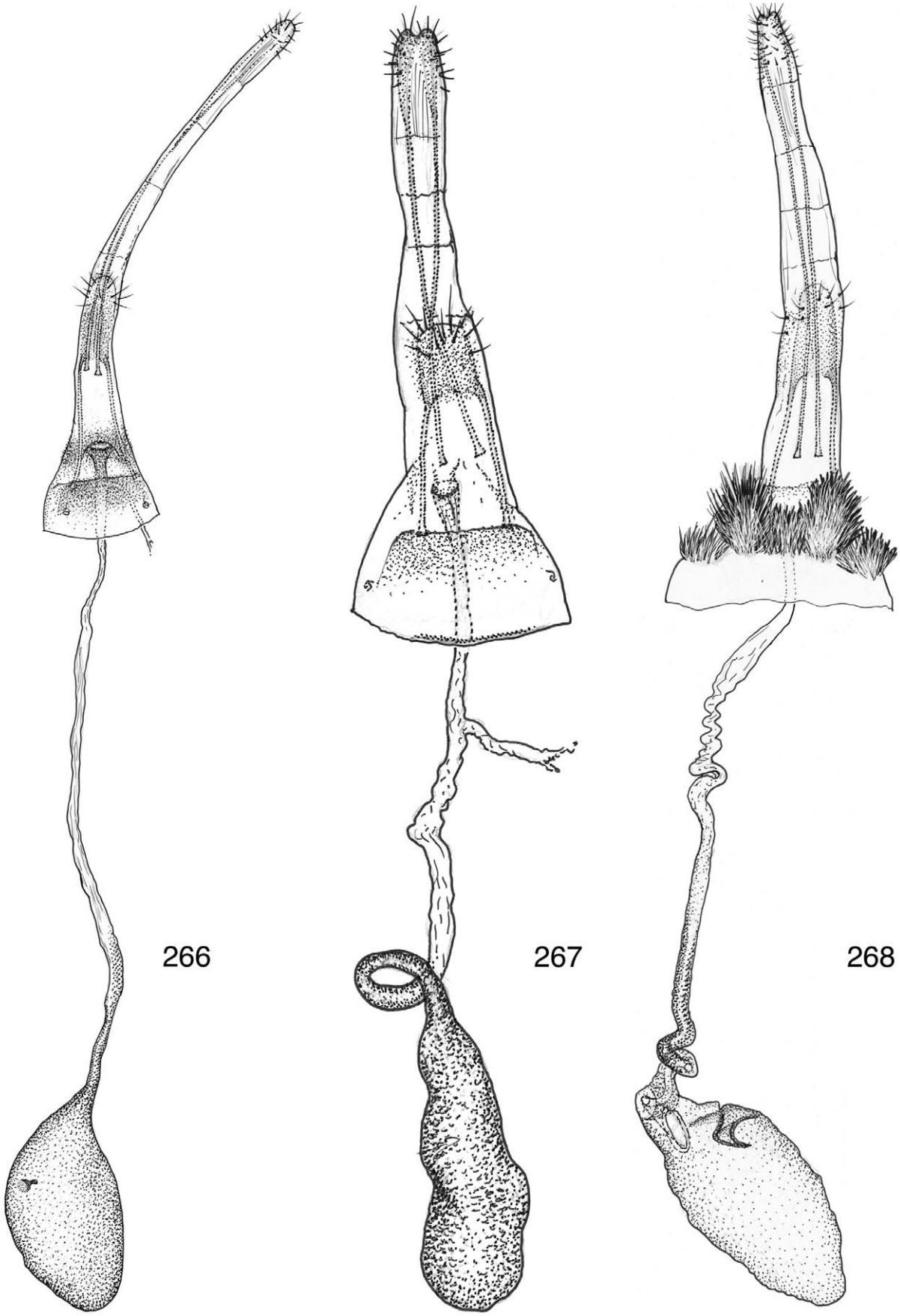
FIGURES 257–259. Female genitalia of Blastobasinae. 257, *Blastobasis graminea* Adamski, 1999 (Slide 83226). 258, *Blastobasis coffeaella* (Busck, 1925) (Slide 83227). 259, *Blastobasis vesta* (Slide 6016).



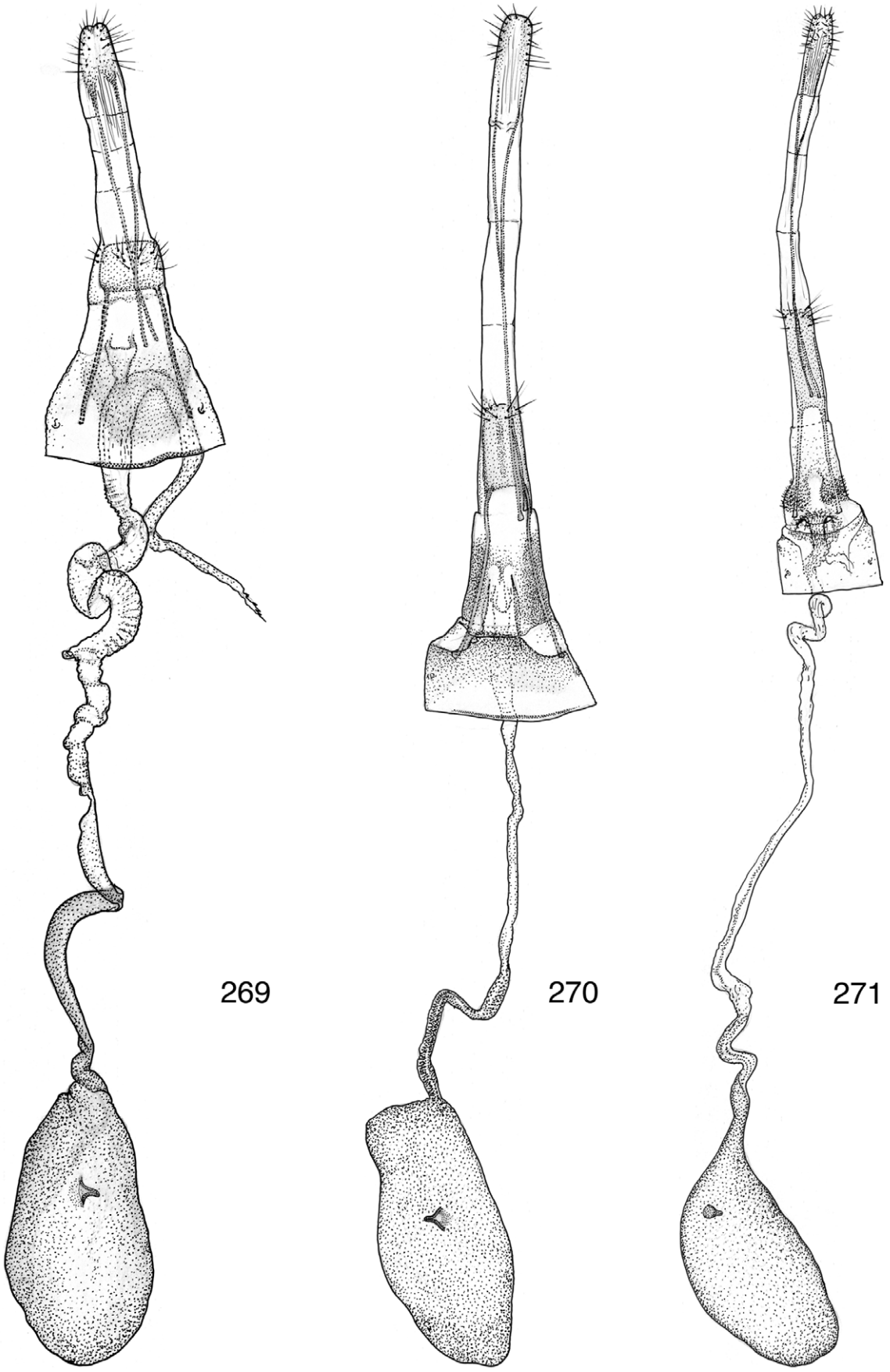
FIGURES 260–262. Female genitalia of Blastobasinae. 260, *Blastobasis dicionis* (Slide 6007). 261, *Hypatopa pica* (Slide 4514). 262, *Hypatopa hecate* (Slide 4517).



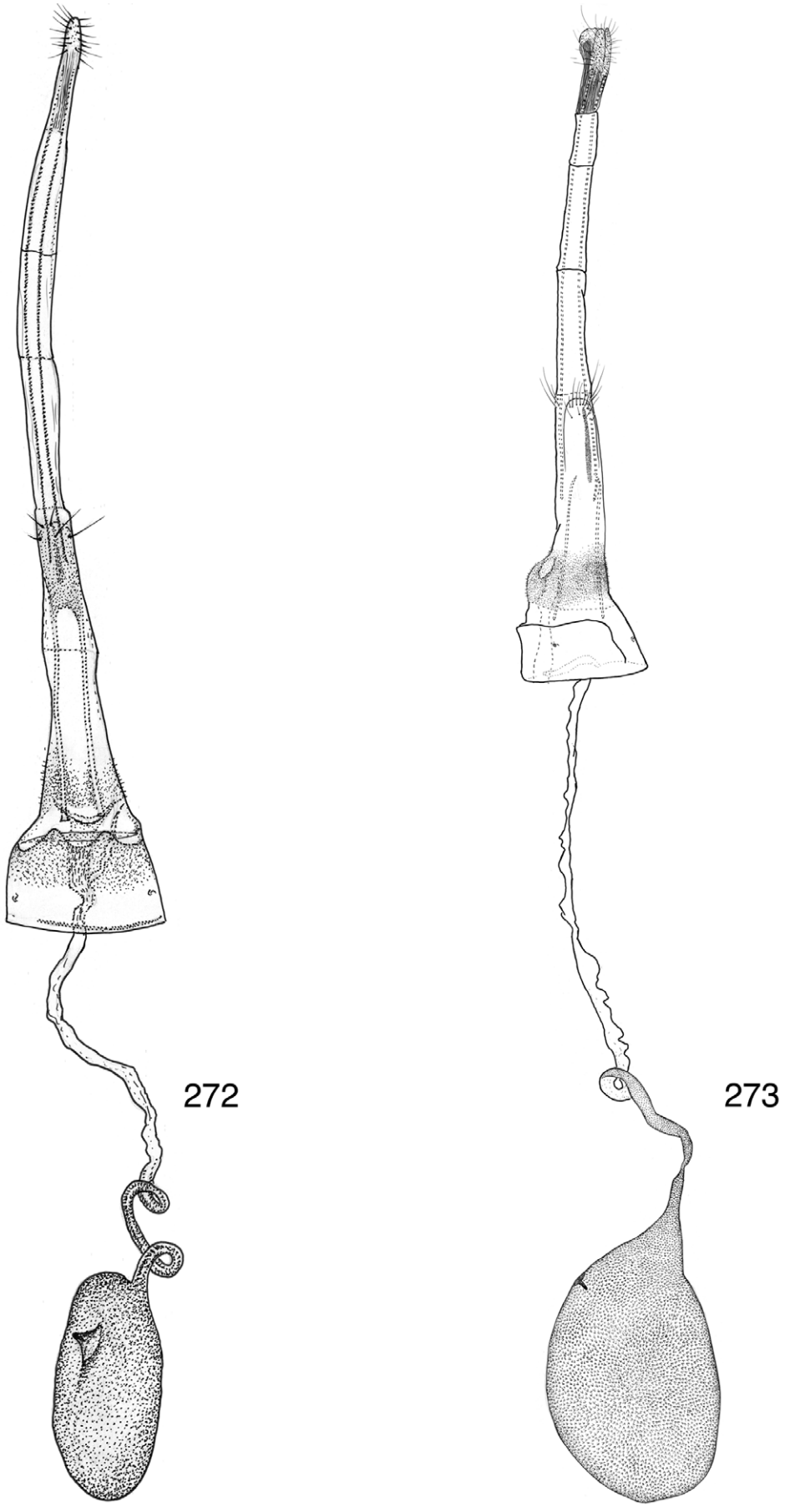
FIGURES 263–265. Female genitalia of Blastobasinae. 263, *Hypatopa plebis* (Slide 4549). 264, *Hypatopa phoebe* (Slide 4525). 265, *Hypatopa tapadulcea* Adamski, 1999 (Taken from Adamski (2002).



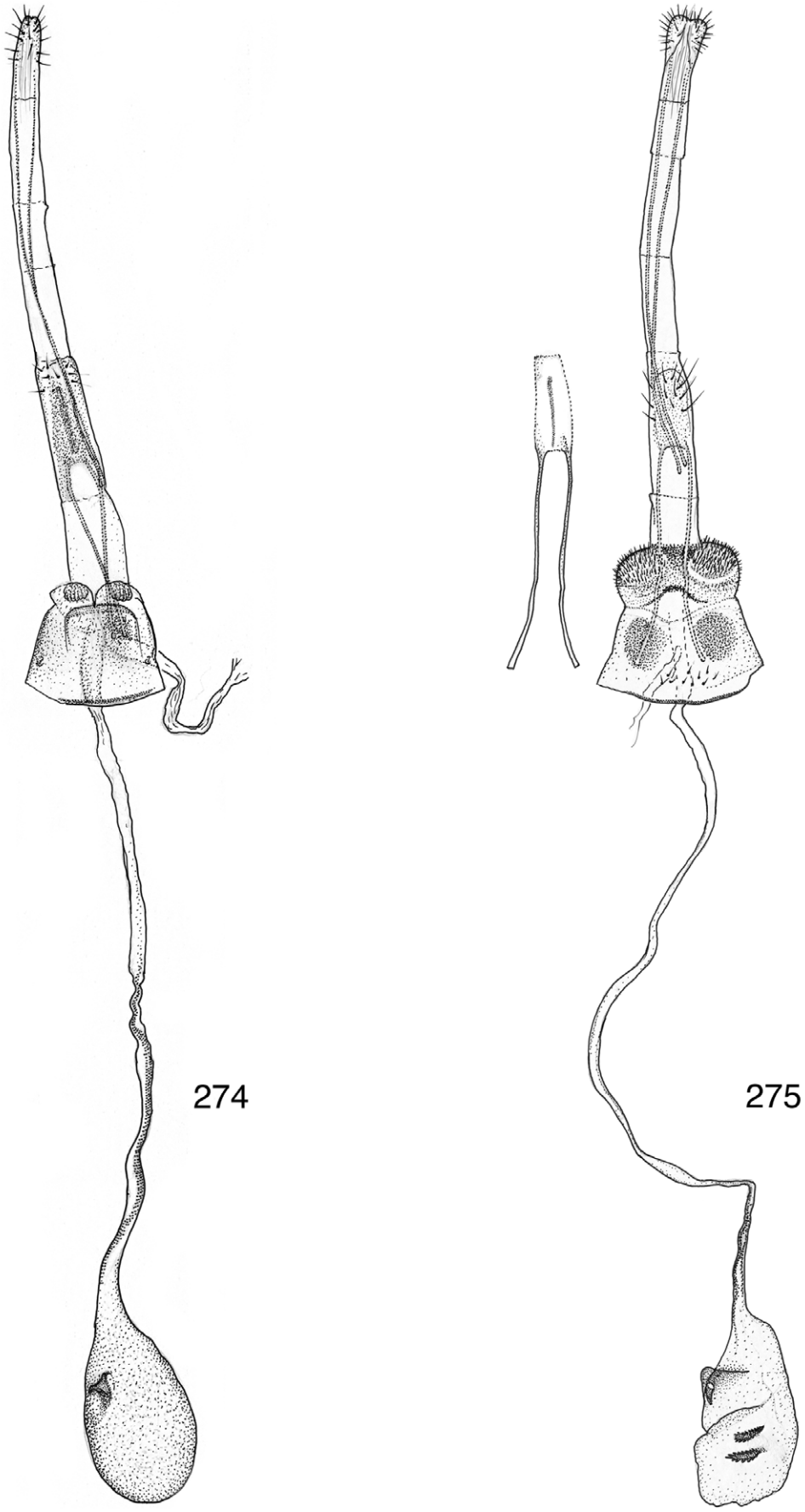
FIGURES 266–268. Female genitalia of Blastobasinae. 266, *Hypatopa leda* (Slide 4512). 267, *Hypatopa texo* (Slide 4511). 268, *Hypatopa rabio* (Slide 4520).



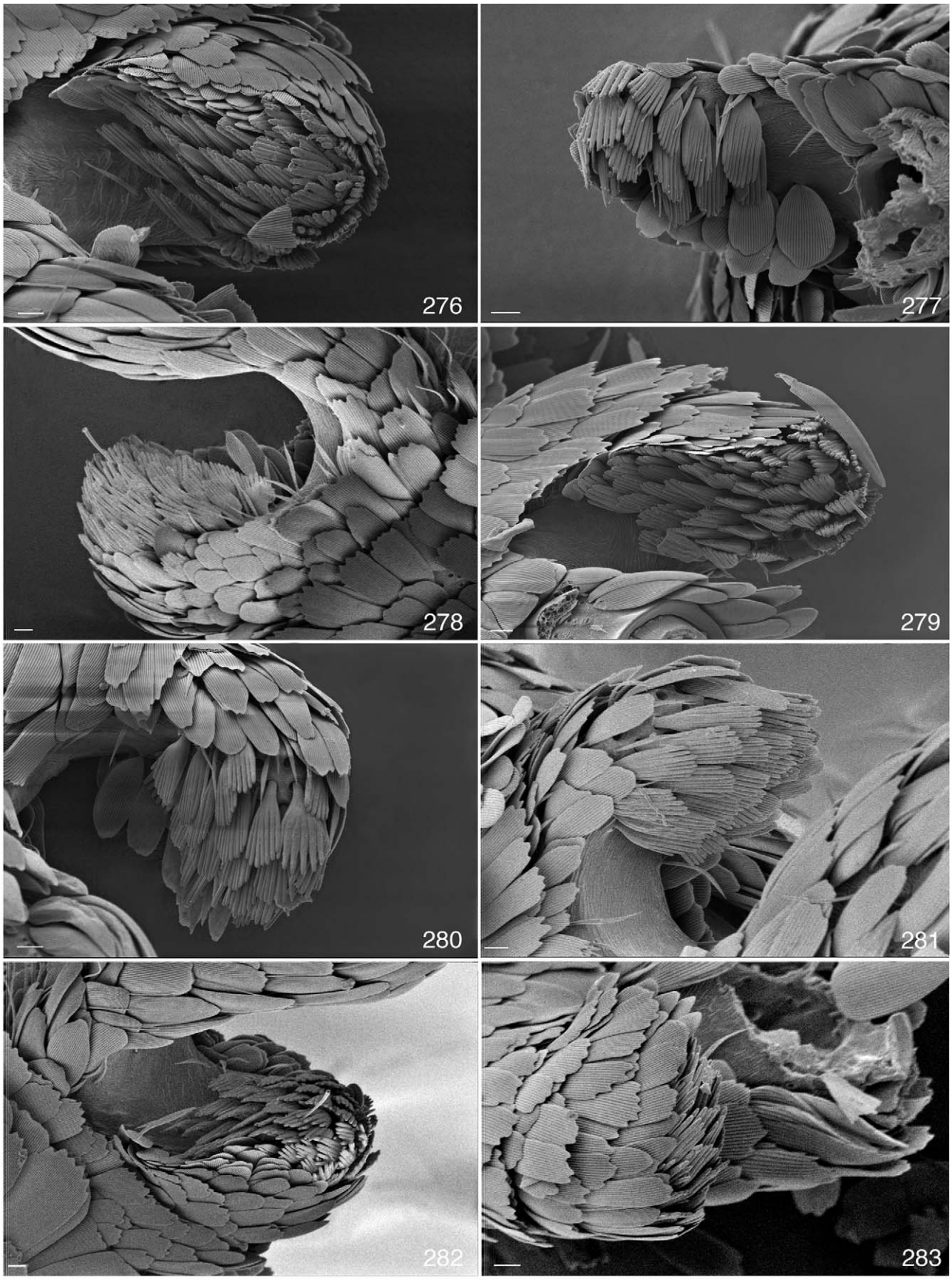
FIGURES 269–271. Female genitalia of Blastobasinae. 269, *Hypatopa sais* (Slide 4500). 270, *Hypatopa rea* (Slide 4501). 271, *Hypatopa hora* (Slide 4503).



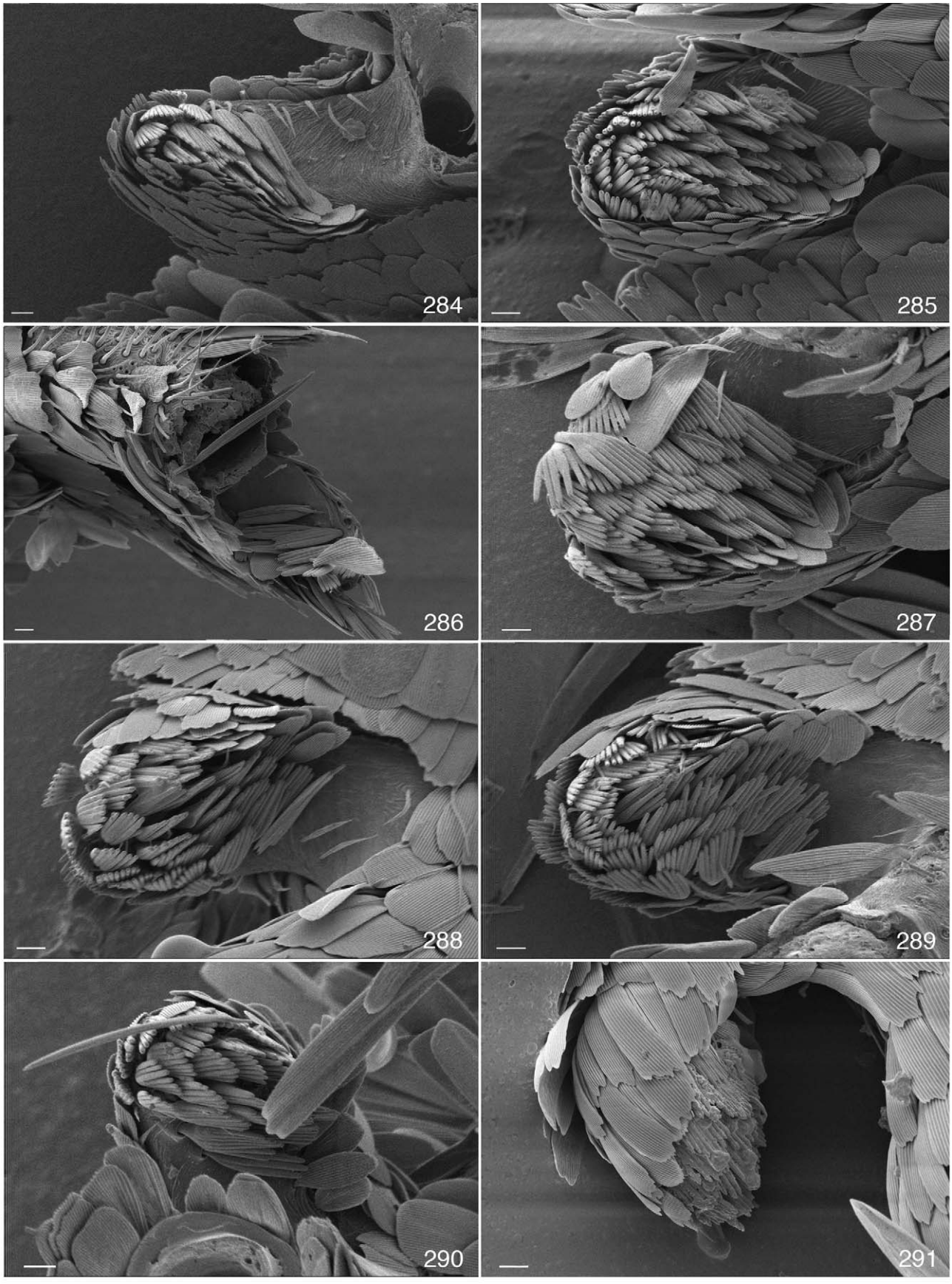
FIGURES 272–273. Female genitalia of Blastobasinae. 272, *Hypatopa gena* (Slide 2710). 273, *Hypatopa vitis* (Slide 4522).



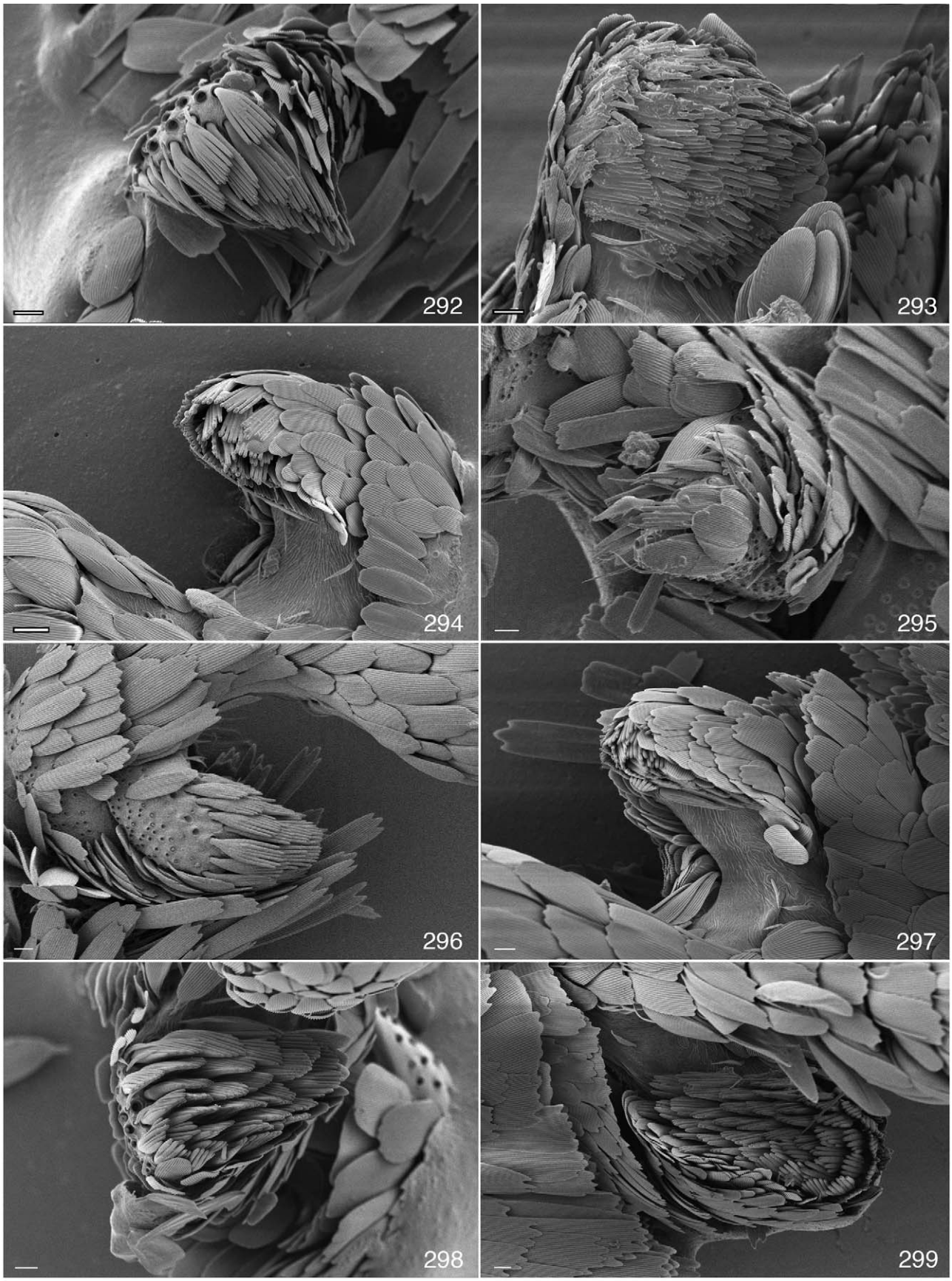
FIGURES 274–275. Female genitalia of Blastobasinae. 274, *Pigritia dido* (Slide 83502). 275, *Pigritia marjoriella* Adamski, 1998 (Slides 4552 and 4554).



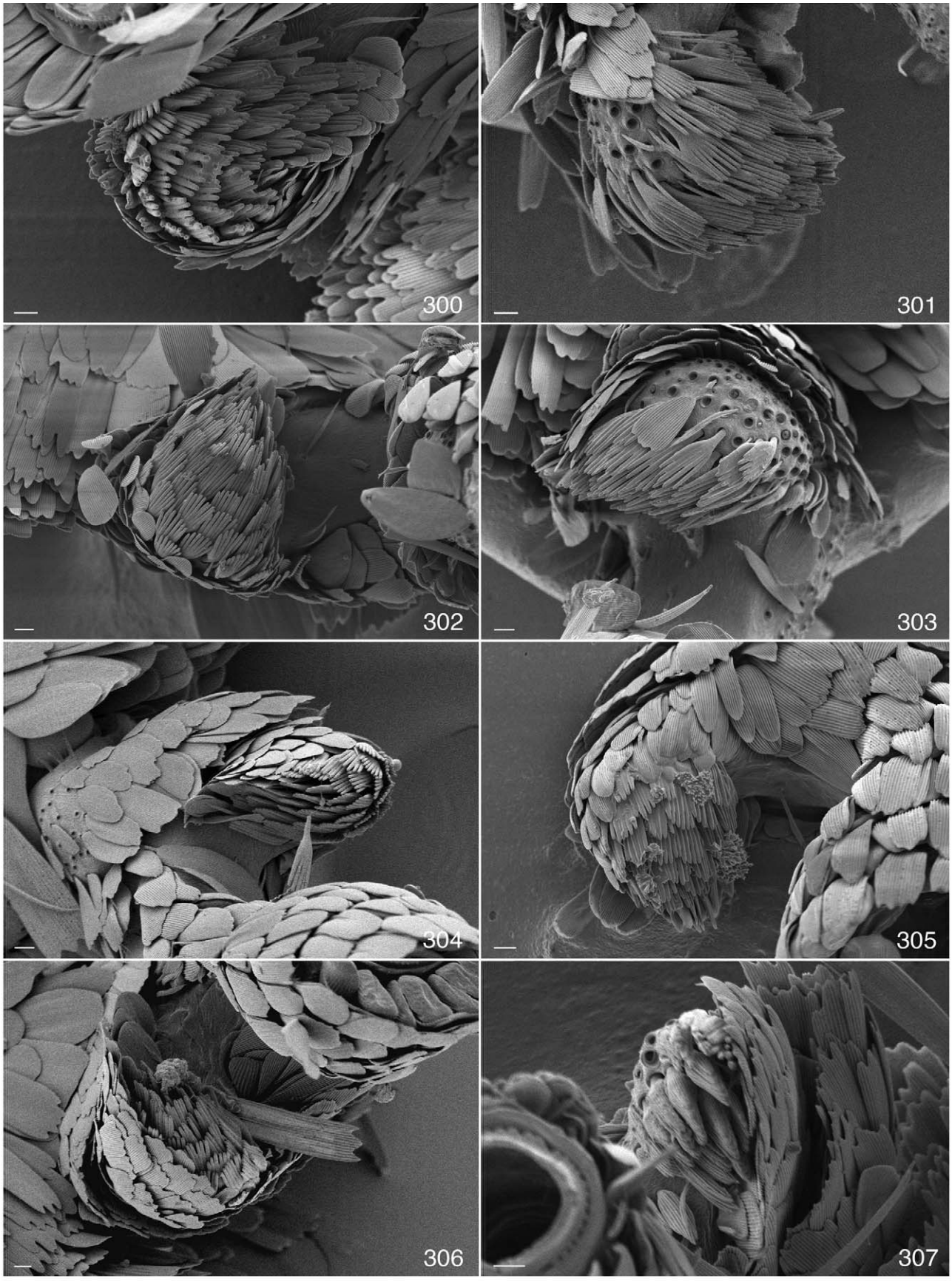
FIGURES 276–283. Male sex scales on first flagellomere of *Blastobasis*. 276, *Blastobasis paludis*. 277, *Blastobasis lygdi*. 278, *Blastobasis dapis*. 279, *Blastobasis balucis*. 280, *Blastobasis caetrae*. 281, *Blastobasis furtivus*. 282, *Blastobasis deae*. 283, *Blastobasis erae*.



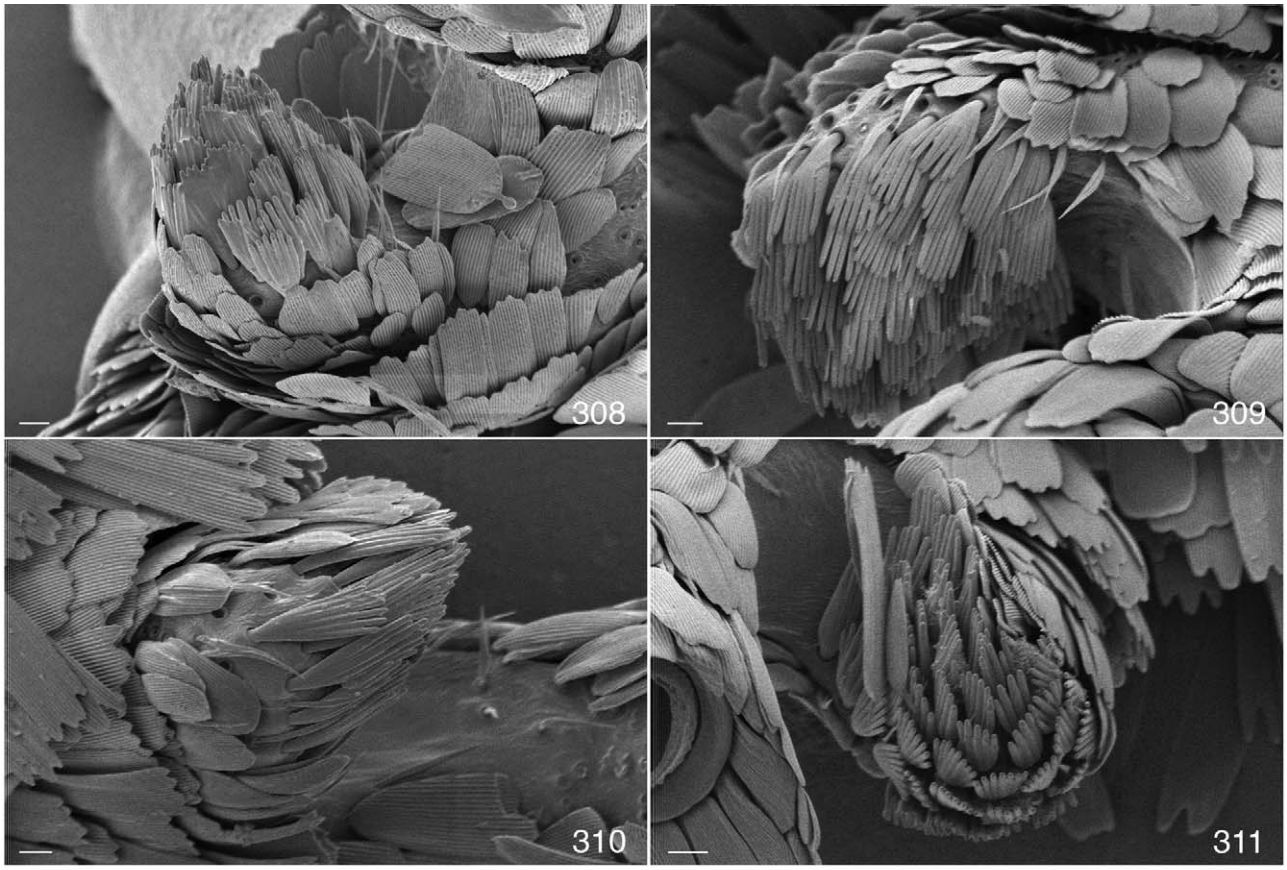
FIGURES 284–291. Male sex scales on first flagellomere of *Blastobasis*. 284, *Blastobasis iuanae*. 285, *Blastobasis graminea* Adamski, 1999. 286, *Blastobasis xiphiae*. 287, *Blastobasis neniae*. 288, *Blastobasis achaea*. 289, *Blastobasis orithyia*. 290, *Blastobasis babae*. 291, *Blastobasis thyone*.



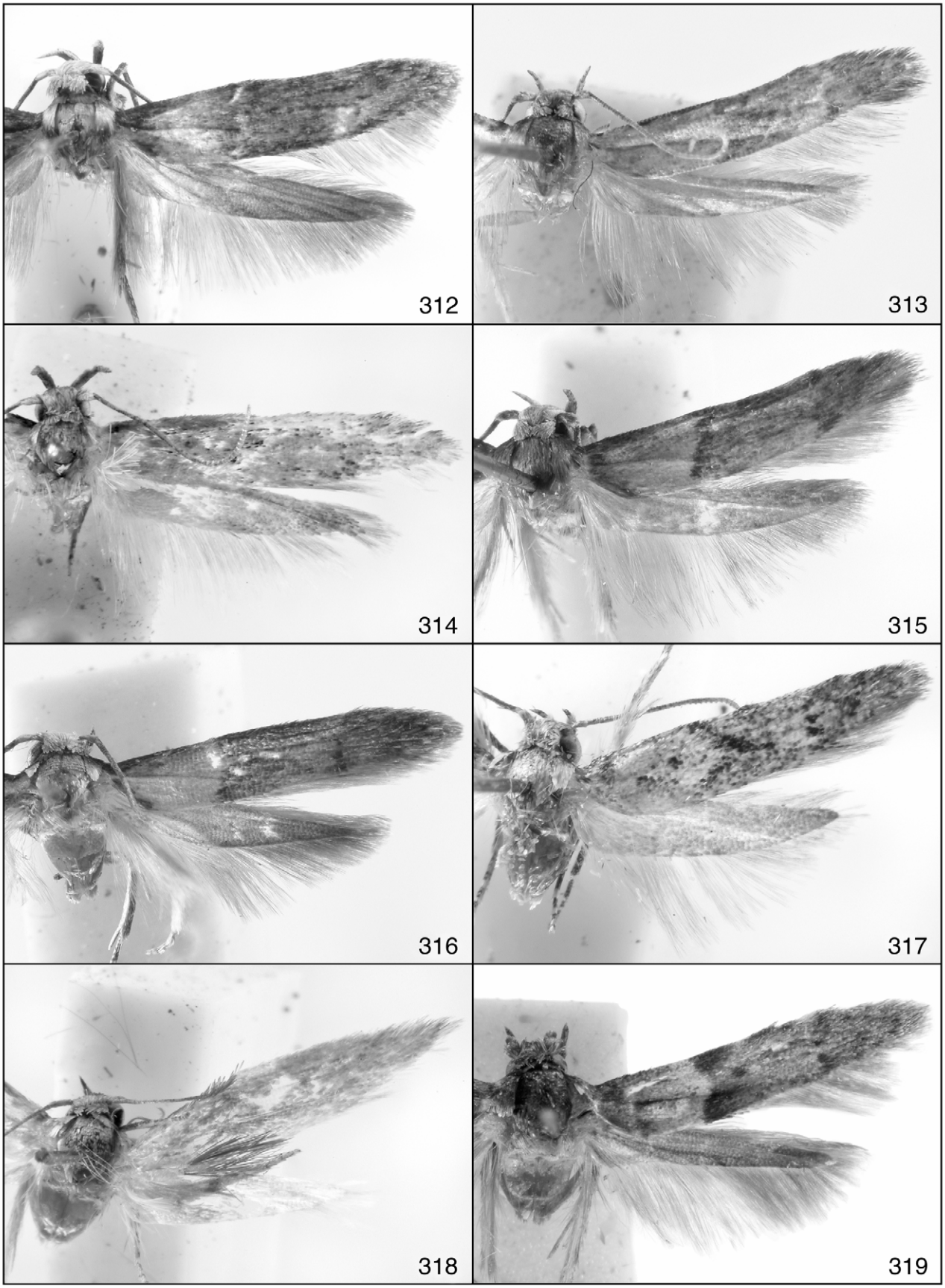
FIGURES 292–299. Male sex scales on first flagellomere of *Blastobasis*. 292, *Blastobasis usurae*. 293, *Blastobasis echus*. 294, *Blastobasis litis*. 295, *Blastobasis chanes*. 296, *Blastobasis fax*. 297, *Blastobasis coffeaella* (Busck, 1925). 298, *Blastobasis rotullae*. 299, *Blastobasis custodis*.



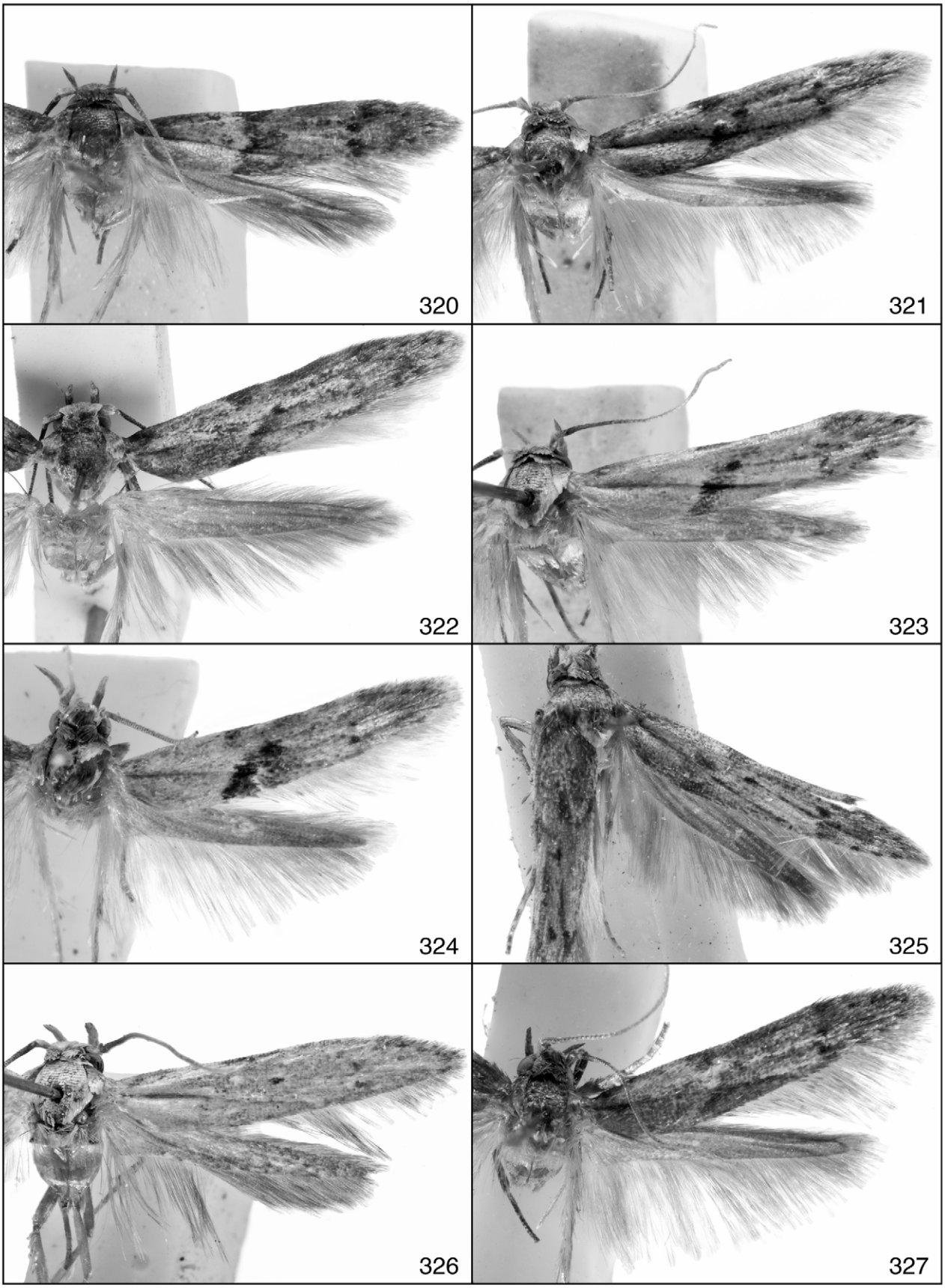
FIGURES 300–307. Male sex scales on first flagellomere of *Blastobasis*. 300, *Blastobasis deliciolarum*. 301, *Blastobasis abollae*. 302, *Blastobasis lex*. 303, *Blastobasis vesta*. 304, *Blastobasis nivis*. 305, *Blastobasis phaedra*. 306, *Blastobasis aedes*. 307, *Blastobasis tapetae*.



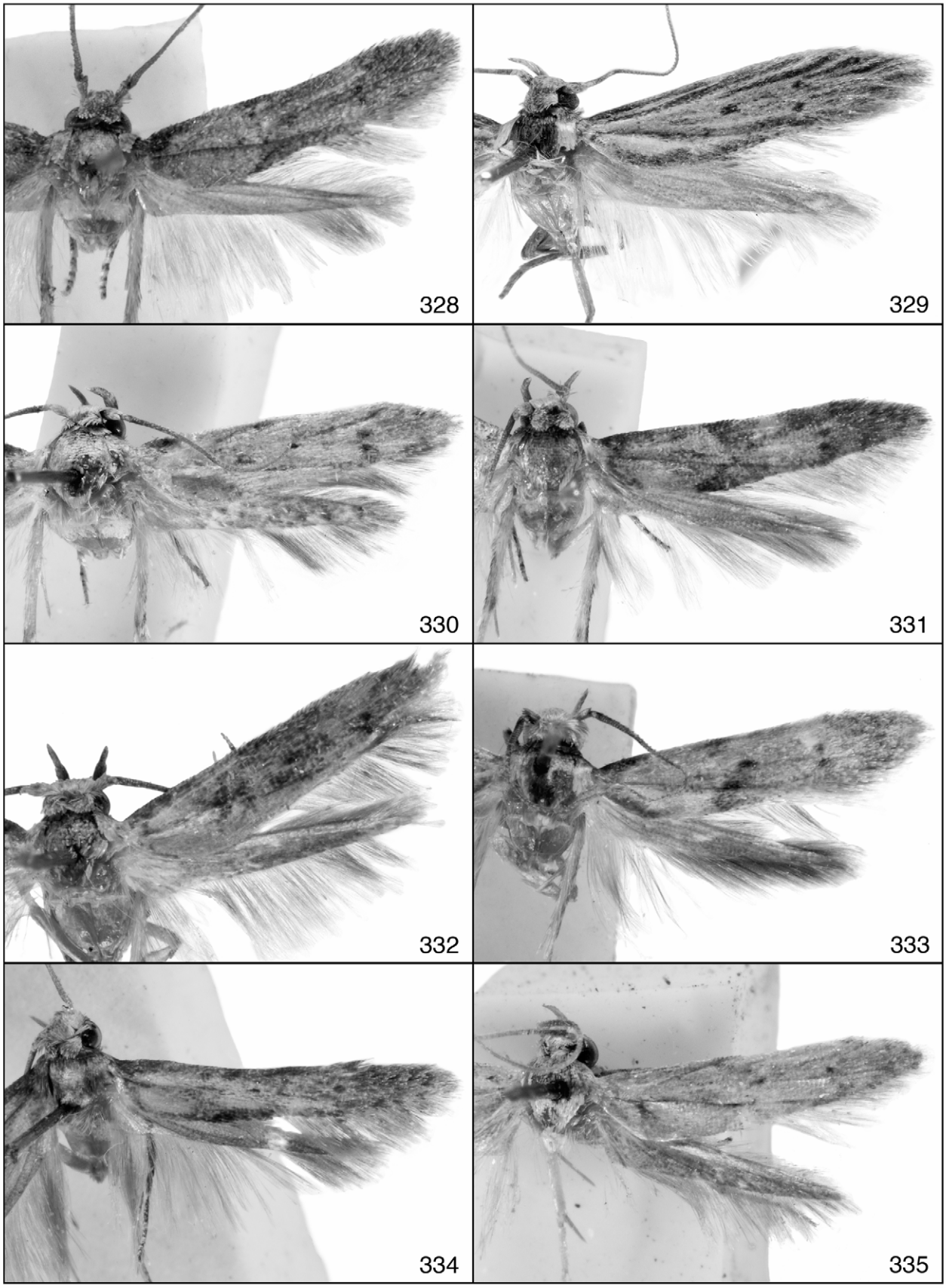
FIGURES 308–311. Male sex scales on first flagellomere of *Blastobasis*. 308, *Blastobasis rotae*. 309, *Blastobasis manto*. 310, *Blastobasis dicionis*. 311, *Blastobasis beo*.



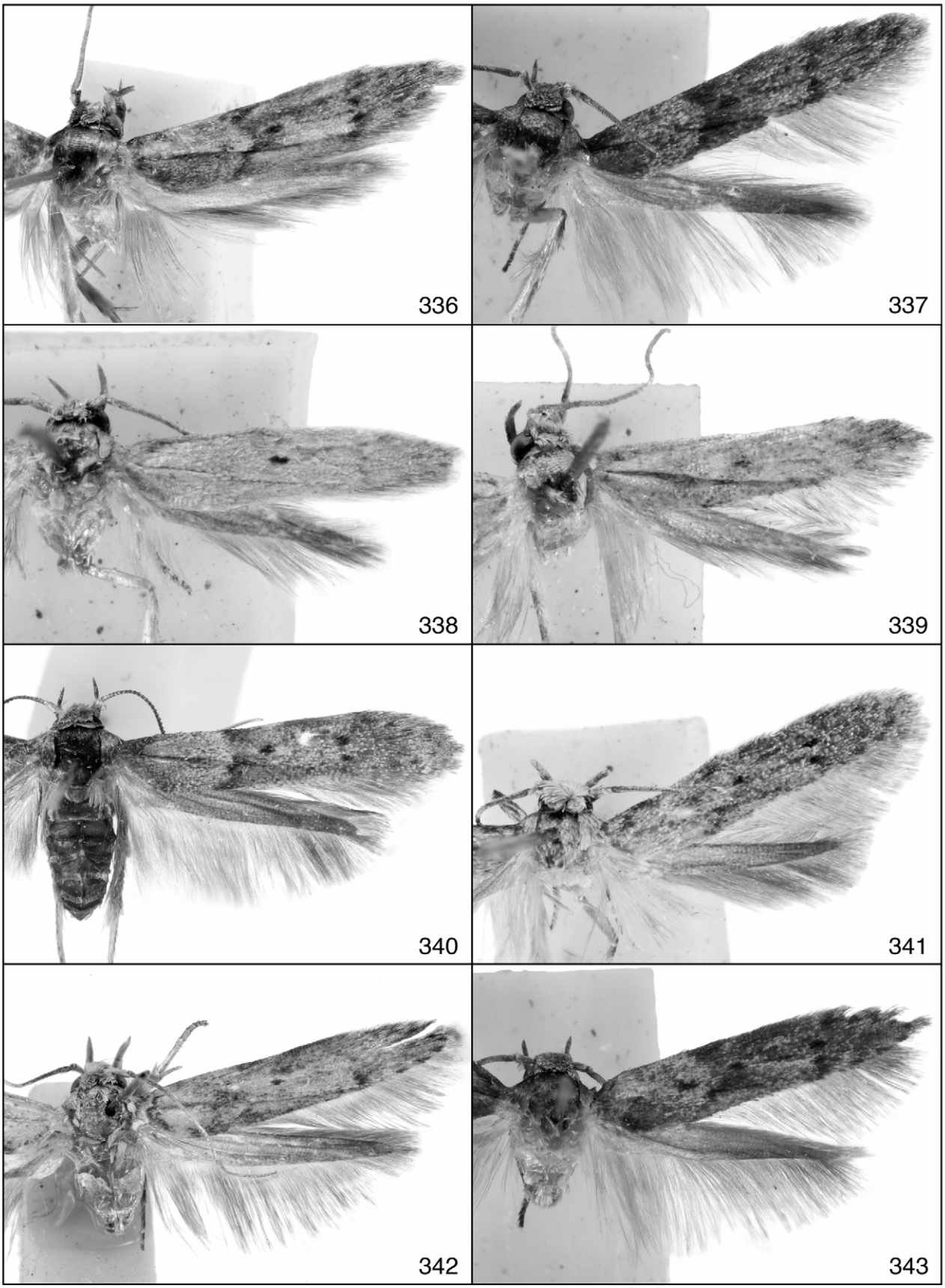
FIGURES 312–319. Imagos of Blastobasinae. 312, *Koleps angulatus*, holotype. 313, *Pseudokoleps akainae*, holotype. 314, *Pheos aculeatus*, holotype. 315, *Hallicis bisetosellus*, holotype. 316, *Hallicis clavicula*, holotype. 317, *Barbaloba meleagrisellae*, holotype. 318, *Barbaloba jubae*, holotype. 319, *Blastobasis paludis*, holotype.



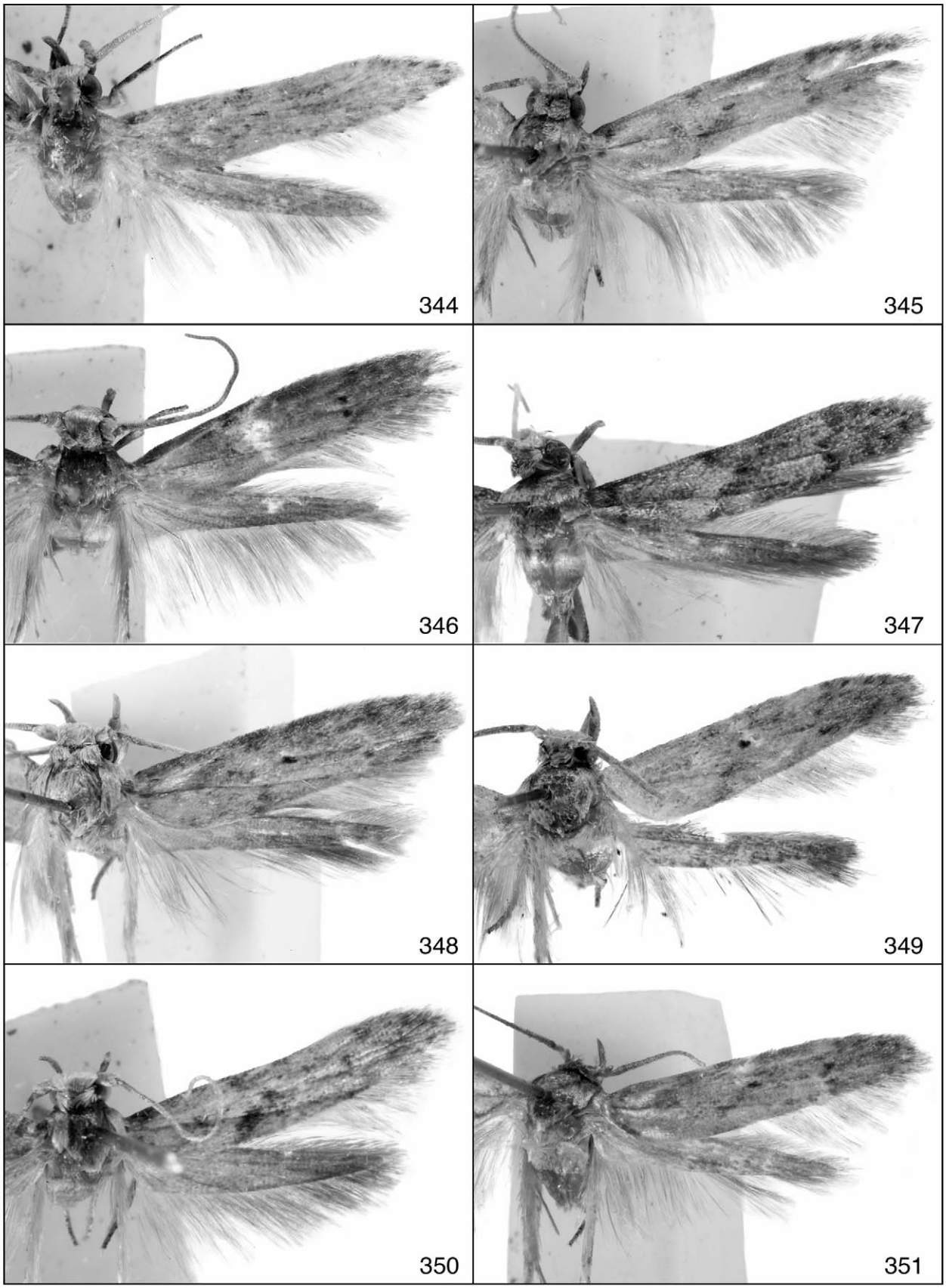
FIGURES 320–327. Imagos of Blastobasinae. 320, *Blastobasis lygdi*, holotype. 321, *Blastobasis dapis*, holotype. 322, *Blastobasis balucis*, holotype. 323, *Blastobasis caetrae*, holotype. 324, *Blastobasis furtivus*, holotype. 325, *Blastobasis deae*, holotype. 326, *Blastobasis erae*, holotype. 327, *Blastobasis iuanae*, holotype.



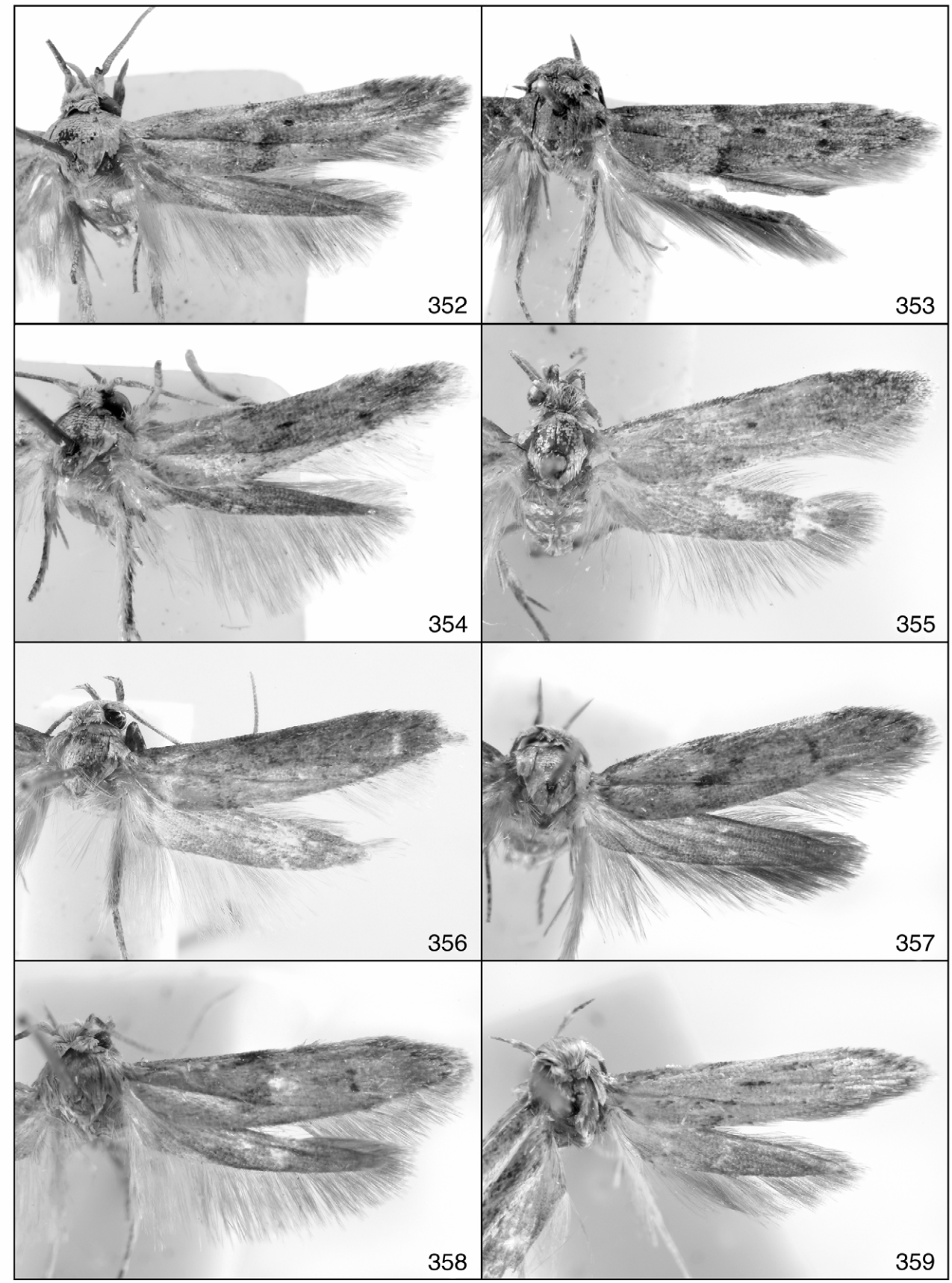
FIGURES 328–335. Imagos of Blastobasinae. 328, *Blastobasis xiphiae*, holotype. 329, *Blastobasis graminea* Adamski, 1999. 330, *Blastobasis neniae*, holotype. 331, *Blastobasis achaea*, holotype. 332, *Blastobasis orithyia*, holotype. 333, *Blastobasis babae*, holotype. 334, *Blastobasis thyone*, holotype. 335, *Blastobasis usurae*, holotype.



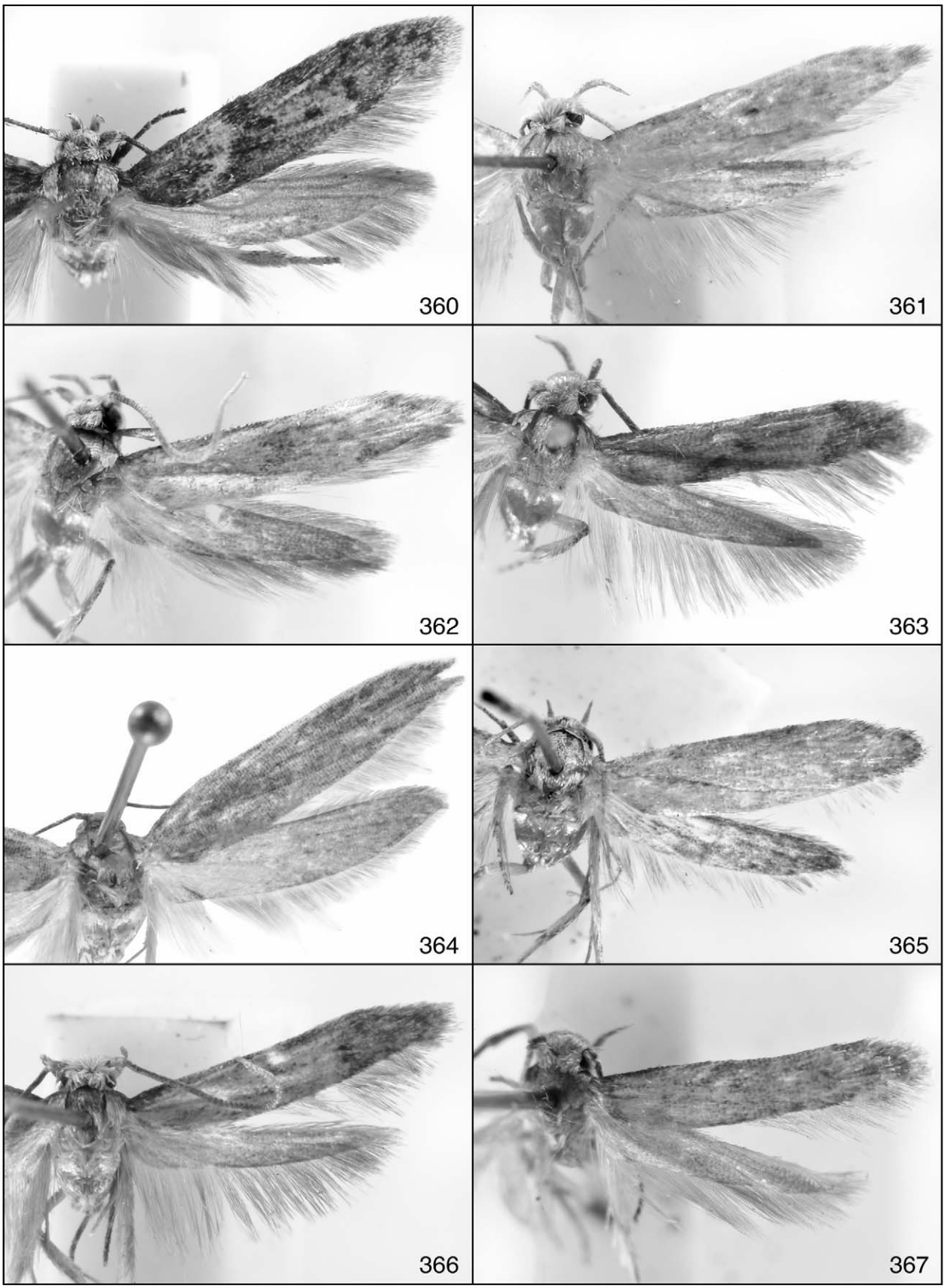
FIGURES 336–343. Imagos of Blastobasinae. 336, *Blastobasis echus*, holotype. 337, *Blastobasis litis*, holotype. 338, *Blastobasis chanes*, holotype. 339, *Blastobasis fax*, holotype. 340, *Blastobasis coffeaella* (Busck, 1925). 341, *Blastobasis rotullae*, holotype. 342, *Blastobasis custodis*, holotype. 343, *Blastobasis deliciolarum*, holotype.



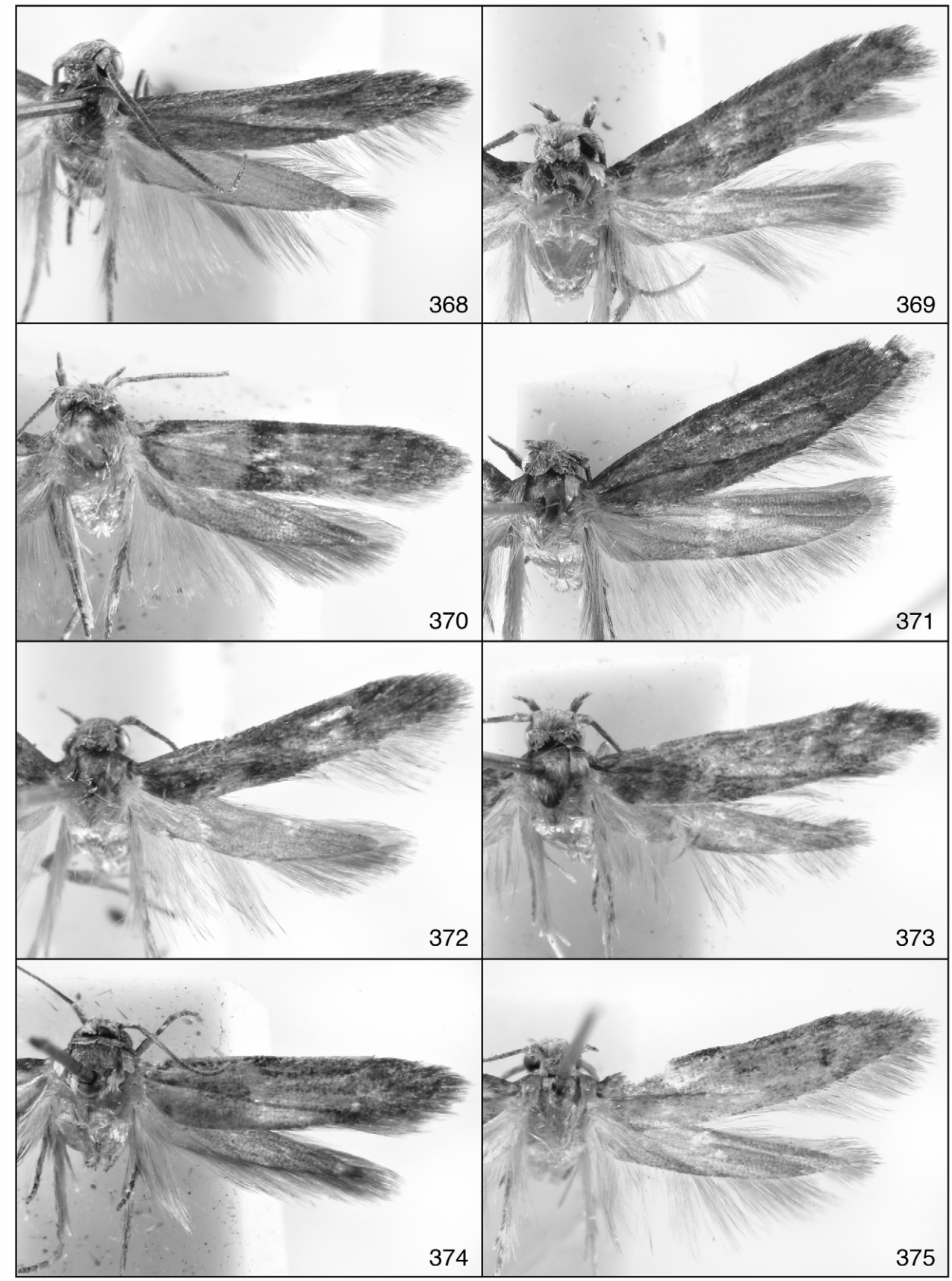
FIGURES 344–351. Imagos of Blastobasinae. 344, *Blastobasis abollae*, holotype. 345, *Blastobasis lex*, holotype. 346, *Blastobasis vesta*, holotype. 347, *Blastobasis nivis*, holotype. 348, *Blastobasis phaedra*, holotype. 349, *Blastobasis aedes*, holotype. 350, *Blastobasis tapetae*, holotype. 351, *Blastobasis rotae*, holotype.



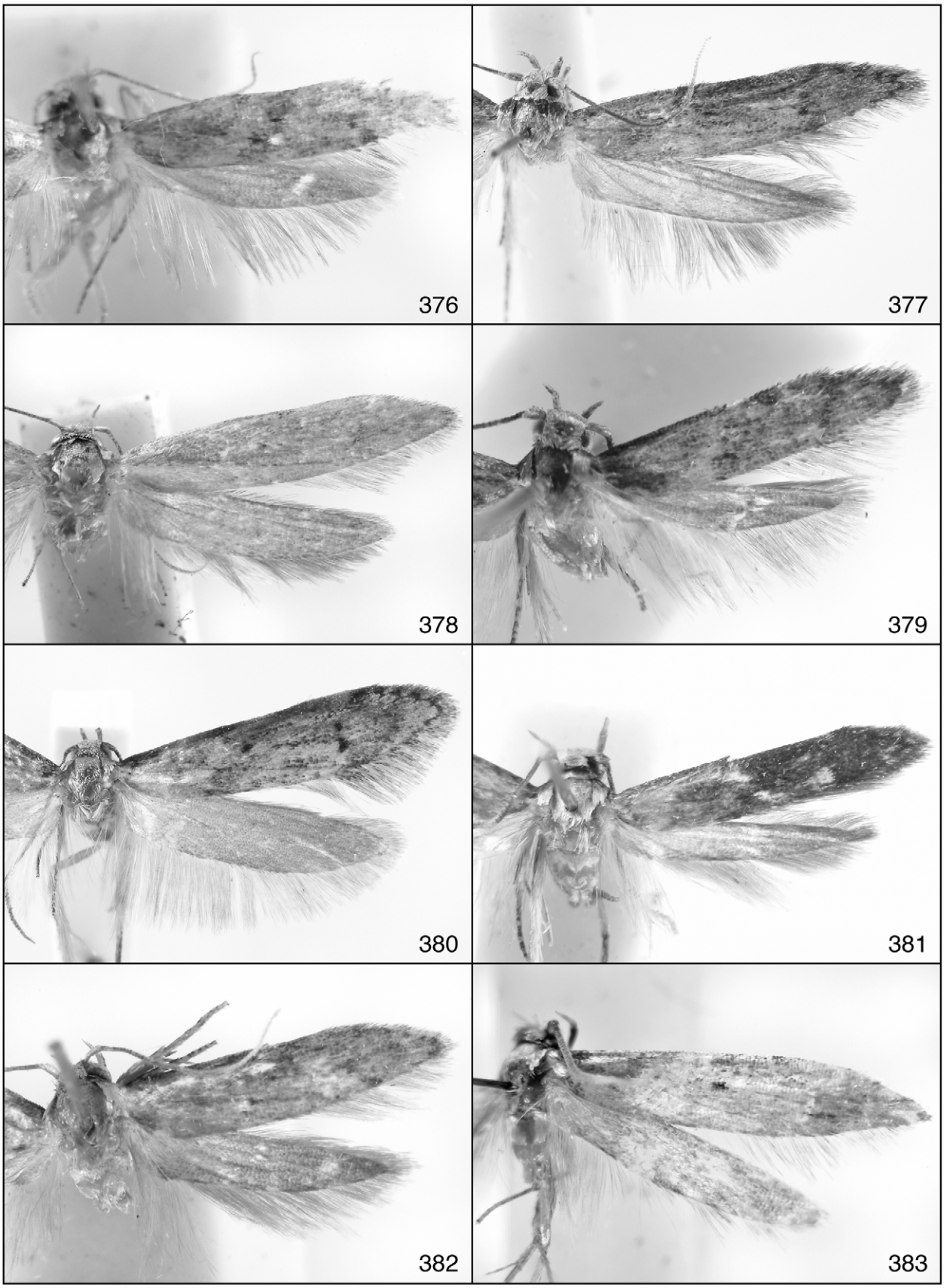
FIGURES 352–359. Imagos of Blastobasinae. 352, *Blastobasis manto*, holotype. 353, *Blastobasis dicionis*, holotype. 354, *Blastobasis beo*, holotype. 355, *Hypatopa nex*, holotype. 356, *Hypatopa cladis*, holotype. 357, *Hypatopa juno*, holotype. 358, *Hypatopa actes*, holotype. 359, *Hypatopa cotis*, holotype.



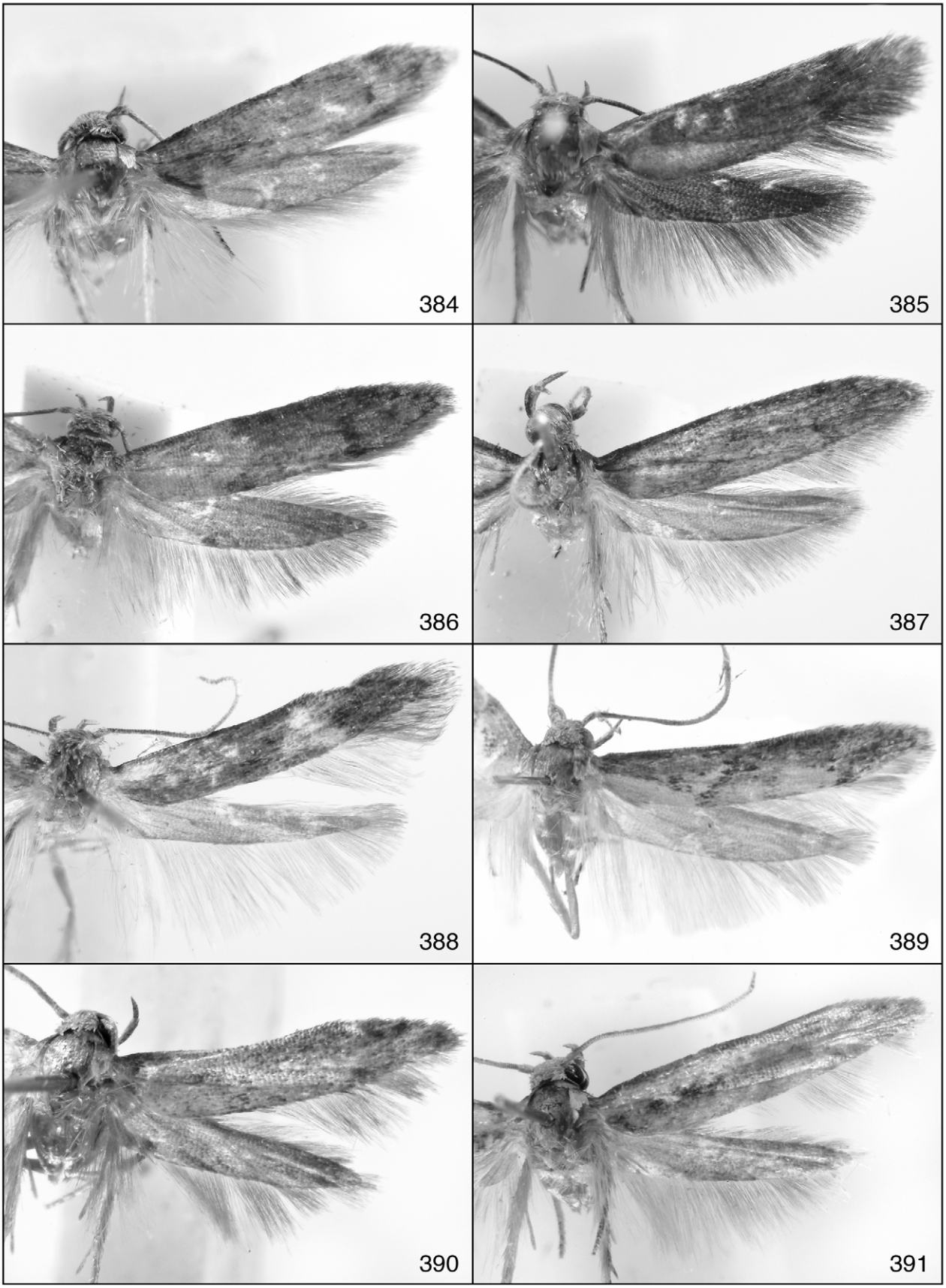
FIGURES 360–367. Imagos of Blastobasinae. 360, *Hypatopa pica*, holotype. 361, *Hypatopa hecate*, holotype. 362, *Hypatopa acus*, holotype. 363, *Hypatopa crux*, holotype. 364, *Hypatopa limae*, holotype. 365, *Hypatopa hera*, holotype. 366, *Hypatopa arxcis*, holotype. 367, *Hypatopa caedis*, holotype.



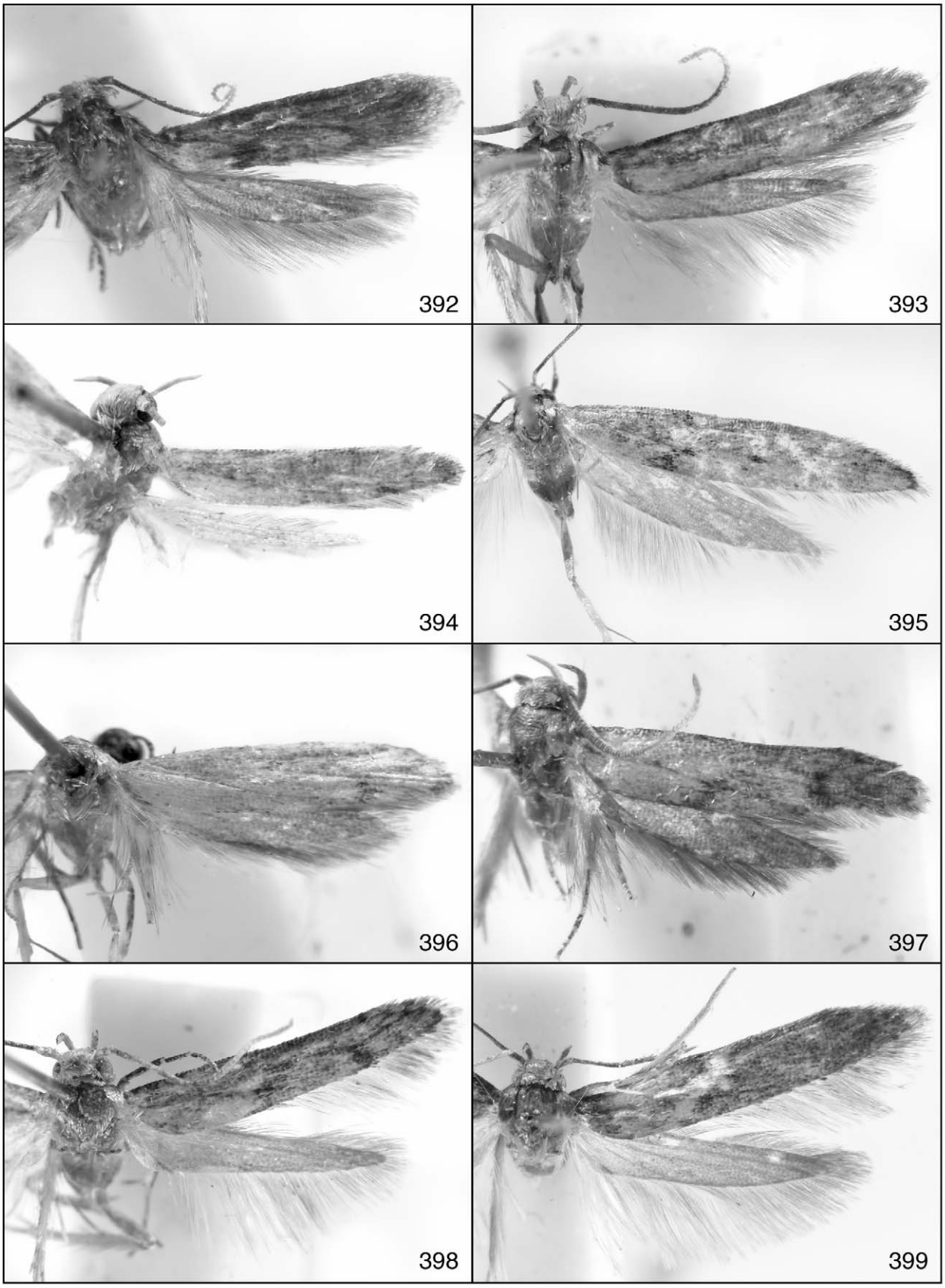
FIGURES 368–375. Imagos of Blastobasinae. 368, *Hypatopa plebis*, holotype. 369, *Hypatopa dolo*, holotype. 370, *Hypatopa cyane*, holotype. 371, *Hypatopa manus*, holotype. 372, *Hypatopa caepae*, holotype. 373, *Hypatopa cotytto*, holotype. 374, *Hypatopa lucina*, holotype. 375, *Hypatopa scobis*, holotype.



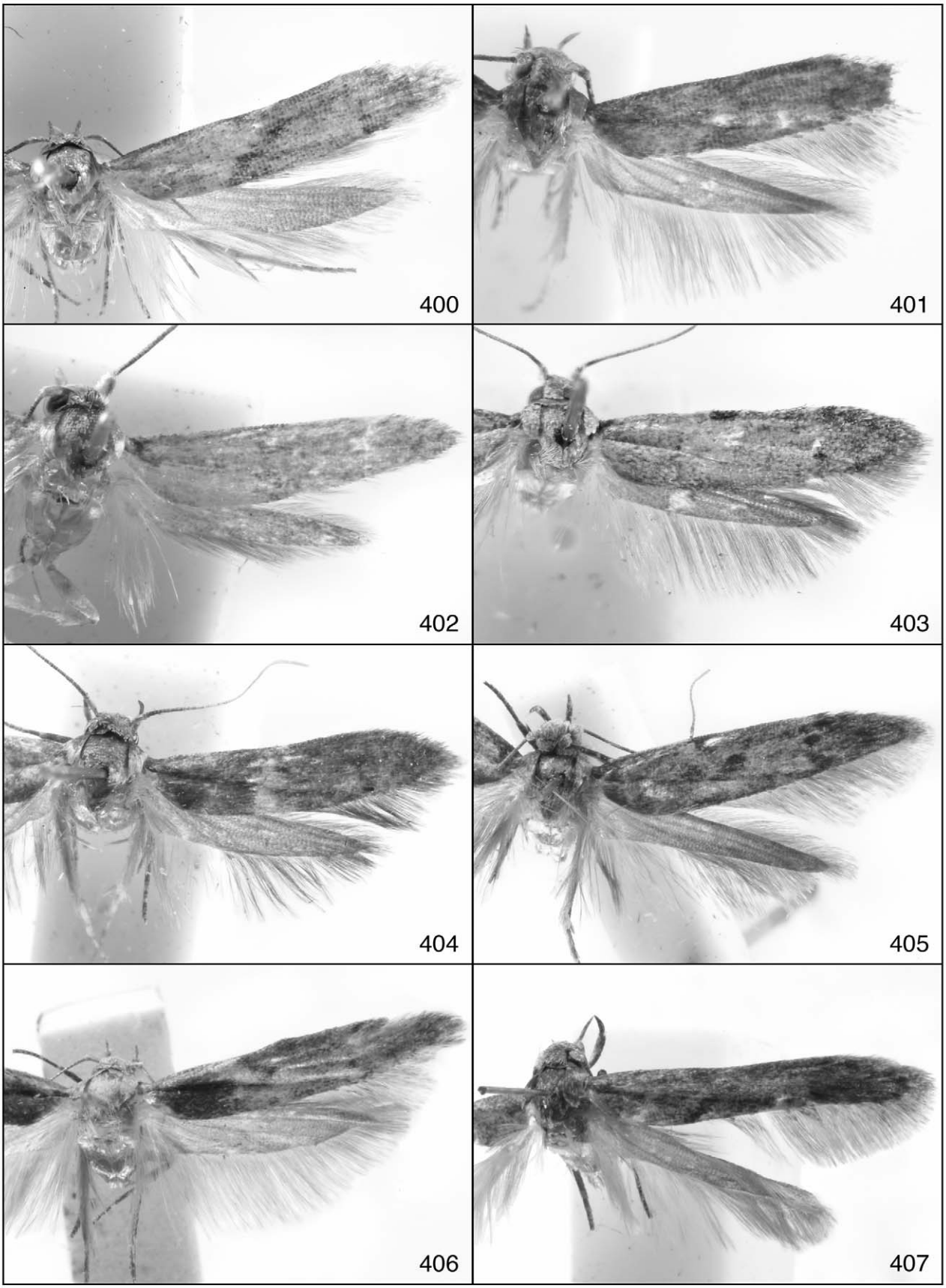
FIGURES 376–383. Imagos of Blastobasinae. 376, *Hypatopa agnae*, holotype. 377, *Hypatopa phoebe*, holotype. 378, *Hypatopa semela*, holotype. 379, *Hypatopa edax*, holotype. 380, *Hypatopa joniella*, holotype. 381, *Hypatopa rego*, holotype. 382, *Hypatopa styga*, holotype. 383, *Hypatopa texla*, holotype.



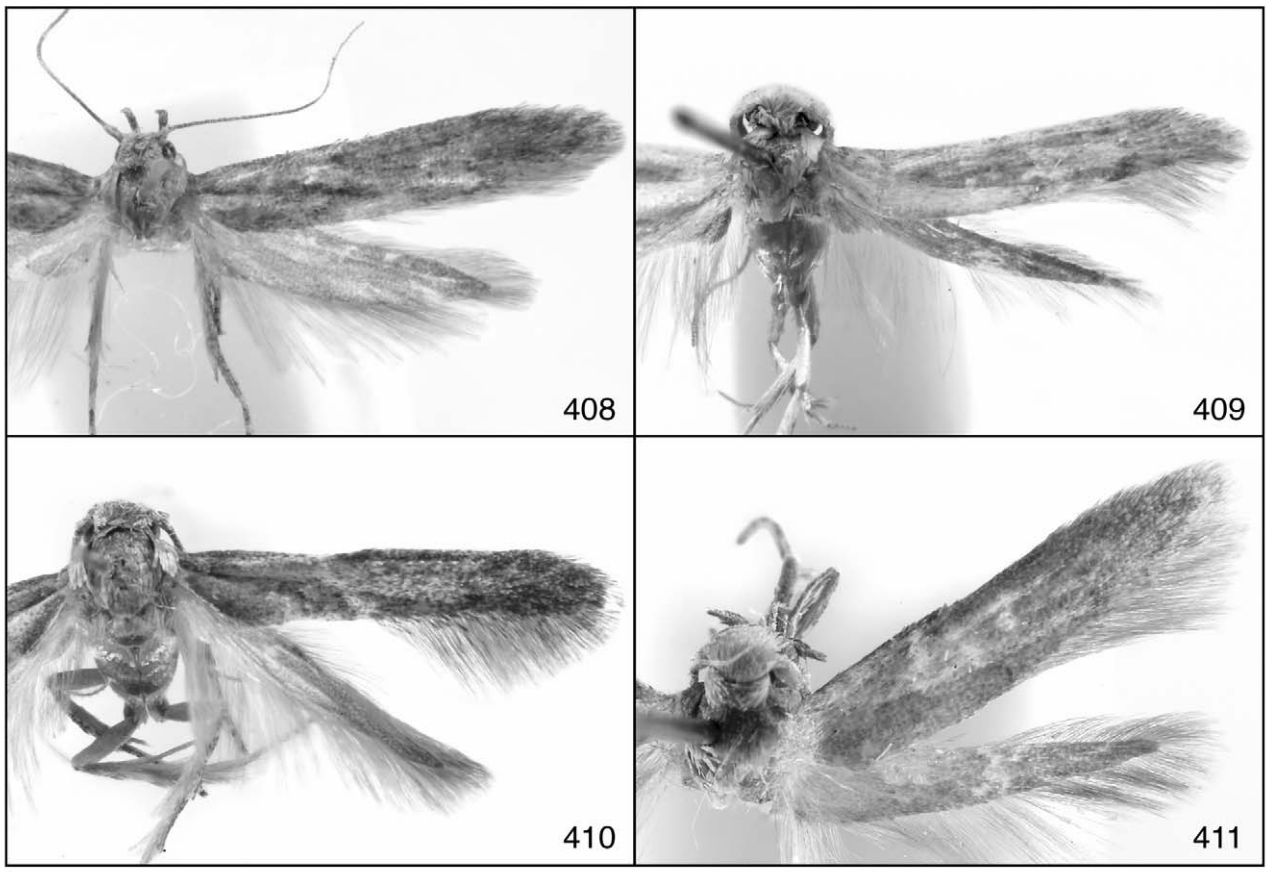
FIGURES 384–391. Imagos of Blastobasinae. 384, *Hypatopa verax*, holotype. 385, *Hypatopa tapadulcea* Adamski, 1999. 386, *Hypatopa mora*, holotype. 387, *Hypatopa nox*, holotype. 388, *Hypatopa dux*, holotype. 389, *Hypatopa erato*, holotype. 390, *Hypatopa fio*, holotype. 391, *Hypatopa io*, holotype.



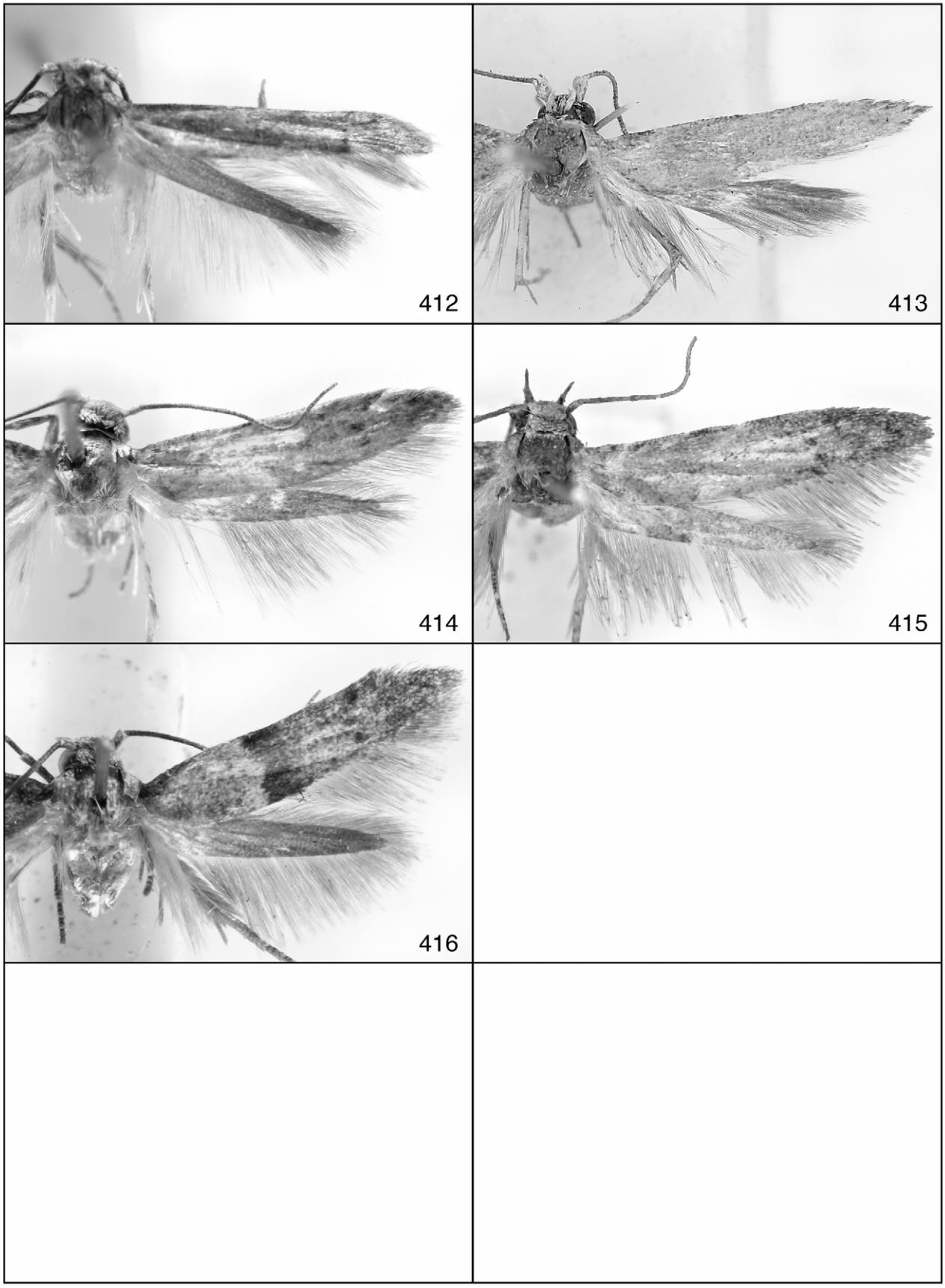
FIGURES 392–399. Imagos of Blastobasinae. 392, *Hypatopa leda*, holotype. 393, *Hypatopa vox*, holotype. 394, *Hypatopa eos*, holotype. 395, *Hypatopa dicax*, holotype. 396, *Hypatopa ira*, holotype. 397, *Hypatopa umbra*, holotype. 398, *Hypatopa texo*, holotype. 399, *Hypatopa solea*, holotype.



FIGURES 400–407. Imagos of Blastobasinae. 400, *Hypatopa bilobata*, holotype. 401, *Hypatopa rabio*, holotype. 402, *Hypatopa rudis*, holotype. 403, *Hypatopa musa*, holotype. 404, *Hypatopa sais*, holotype. 405, *Hypatopa rea*, holotype. 406, *Hypatopa hora*, holotype. 407, *Hypatopa gena*, holotype.



FIGURES 408–411. Imagos of Blastobasinae. 408, *Hypatopa vitis*, holotype. 409, *Pigritia sedis*, holotype. 410, *Pigritia dido*, holotype. 411, *Pigritia faux*, holotype.



FIGURES 412–416. Imagos of Blastobasinae. 412, *Pigritia haha*, holotype. 413, *Pigritia stips*, holotype. 414, *Pigritia gruis*, holotype. 415, *Pigritia ululae*, holotype. 416, *Pigritia marjoriella* Adamski, 1998.