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A new genus and 37 new noctuid species from peninsular
Florida and the Keys (Lepidoptera: Noctuoidea)

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A new genus and 37 new noctuid species from peninsular Florida and the Keys (Lepidoptera: Noctuoidea)

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Abstract. A new genus, *Janzena* (Erebidae), and 37 new species of Noctuoidea (Lepidoptera) are described from Florida as well as two species elevated from synonymy to species status. *Bleptina biformata*, *Bleptina extincta*, *Bleptina flavivena*, *Bleptina verticalis*, *Lascoria coma*, *Janzena pyraliformis*, *Sigela sordes*, *Sigela minuta*, *Sigela incisa*, *Sigela subincisa*, *Sigela rosea*, *Sigela lynx*, *Dyspyralis ocala*, *Metalectra nigrior*, *Metalectra dixonii*, *Melipotis florida*, *Doryodes acta*, *Doryodes unica*, *Doryodes fulva*, *Toxonprucha killamae*, *Zale lafontainei*, *Zale vargoi*, *Zale clandestina*, *Athyryma fakahatchee*, *Antiblemma perva*, *Antiblemma carolae*, *Paectes hercules*, *Meganola georgei*, *Litoprosopus linea*, *Tripudia calusa*, *Catabenooides insularis*, *Neogalea caracara*, *Condica collaris*, *Homophoberia australis*, *Diastema leo*, *Pyreferra slotteni*, and *Leucania elephas* are described as new. *Hemeroplanis floccalis* (Zeller), **revived status**, is raised to species status from the synonymy of *Hemeroplanis scopulepes* (Haworth), and *Euscirrhopterus argentata* (Druce), **revived status**, is raised to species status from the synonymy of *Euscirrhopterus poeyi* Grote. The genus *Araeopteron* Hampson is restricted to the Old World and *Araeopteron vilhelmina* (Dyar) is transferred to the genus *Sigela* Hulst, **new combination**. The barcode index number (BIN) is provided for each species, when available.

Key words. BOLD, DNA barcoding.

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Introduction

Kimball (1965) produced the first major work on the Lepidoptera of Florida. In that work he listed many species that John Franclemont advised him were undescribed. Unfortunately, we have no way of knowing which species these undescribed species represented. During the past several years, I have spent considerable time studying the Lepidoptera of southern Florida. As a result of this endeavor many undescribed species and several new introductions to the North American fauna from the Antilles have been collected and identified. Species with similar structural characteristics, but with differences in wing coloration, habitus, or habitat, that I believed to be distinct were sent to the Barcode of Life Initiative, University of Guelph, where the mitochondrial gene cytochrome *c* oxidase subunit I (COI) was analyzed and 658 COI base pairs compared.

There has been a recent trend in Lepidoptera systematics where researchers believe that new species should be described only in generic revisions. The result is that species remain nameless in collections for posterity. As researchers retire and are not replaced, this problem is compounded. Rather than leave species languishing nameless in museum collections and in order that names be available for biodiversity inventories and conservation work, I follow the style of Smith (1902) and describe 37 of these species below. In this paper I deal predominantly with species from southern Florida, paying special attention to the Florida Keys. Insects in the Keys have been under enormous pressure from aerial spraying of insecticides to control mosquitoes, as well as habitat destruction from human encroachment and hurricanes.

Materials and Methods

Specimens, including types were examined from the following collections: Canadian National Collection of Insects, Arachnids, and Nematodes, Ottawa, Canada (CNC); Florida State Collection of Arthropods, Gainesville, Florida, United States; McGuire Center for Lepidoptera Biodiversity, University of Florida, Gainesville, Florida, United States. Photographs of types were examined from the following collections: the Natural History Museum,

London, United Kingdom (NHMUK), the Oxford University Museum of Natural History, Oxford, England (OUMNH), and the National Museum of Natural History, Washington, DC, United States (USNM). Terminology for genital structures and wing markings follows that of Lafontaine (2004). Adult genitalia were prepared following the methods of Lafontaine (2004). Cleaned, stained genitalia were stored and examined in 99% isopropanol, before being photographed using a Nikon D7100 digital camera. The higher classification follows Lafontaine and Schmidt (2010, 2015).

Molecular variation was assessed based on the 658 bp 'barcode' region of the first subunit of the cytochrome oxidase (COI) gene (Hebert et al. 2003). DNA was extracted from one leg removed from a dried specimen, sent to, and processed at the University of Guelph through the Barcode of Life Data systems (BOLD; www.lepbarcoding.org). DNA extraction, amplification, and sequencing protocols for the Barcode of Life initiative are detailed in Hebert et al. (2003). Molecular sequence data were compared with phylograms constructed using the neighbor-joining method, and distance calculations were performed using the Kimura 2-parameter (K2P) distance model (Saitou and Nei 1987) as implemented on the BOLD website.

Paratypes are located in the Florida State Collection of Arthropods (FSCA), the McGuire Center for Lepidoptera and Biodiversity (MGCL), and the author's private research collection (JTT). Where the depository is not specified in the text, the specimens are currently located in JTT, to be distributed at a later date.

Species Descriptions

Erebidae: Herminiinae

Bleptina biformata Troubridge, new species

(Fig. 1a, 1b, 1c, 57, 105)

BIN: BOLD:AAH4580

Diagnosis. *Bleptina biformata* is most closely related to *B. caradrinalis* Guenée (Fig. 3), and are distinguished from each other by the larger size of *B. caradrinalis* (forewing length 12–14 mm vs. *B. biformata* forewing length 8–11 mm) and by the male genitalia, in which the apex of the valve of *B. biformata* has a single, curved terminal spine dorsally and is rounded ventrally (Fig. 57) that of *B. caradrinalis* is drawn to distinct dorsal and ventral points (Fig. 56).

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen beige with scattered patches of black scales. **Dorsal forewing.** Forewing length 8–11 mm. *Bleptina biformata* is sexually dimorphic and highly variable, the ground color can be light gray brown, brown, or beige. **Males.** Antemedial line usually absent, if present, usually reduced to one or two diffuse black spots on veins; median line of diffuse black scales relatively broad; postmedial line a series of black dots on veins; submarginal line entire, light brown, edged by darker brown and black scales, arcs evenly from tornus to vein CuA1 and then makes a straight line to the costal margin; terminal line a series of dark dots between veins; fringe brown; orbicular spot, if present, is a small black dot; reniform spot ochre with a black dot in lower half. **Females.** Females tend to have two distinct forms, although intermediate specimens are common as well. In the first form (Fig. 1b), the ground color is light gray brown, the orbicular spot is present as a black dot, the reniform spot is a bold, black inverted comma shape, the medial line is present as a faint dark shadow, and the other ordinary lines are as described for the male, only fainter. In the second form (Fig. 1c), the ground color is light gray brown; basal and antemedial lines occur as bold black spots on veins; medial line entirely absent; postmedial line a double series of bold black spots that alternate on either side of an imaginary line, producing a zig-zag appearance; submarginal line slightly paler than ground color of wing, bordered basally and distally by black spots on veins; terminal line as in male; fringe light gray brown; orbicular and claviform spots black; reniform spot rust colored with black dot in the ventral half and black scales on basal margin. **Dorsal hindwing** (both sexes). Ground color light gray brown basally with darker gray-brown submarginal shade; postmedial line and discal spot gray-brown; terminal line a series of dark gray-brown dots between veins; fringe light gray brown.

Male genitalia (Fig. 57). Valves symmetrical, long and relatively narrow, apex with a single curved, claw-like spine dorsally, rounded ventrally, the valve otherwise unarmed; vesica with basal, globular chamber on left, with a field of minute cornuti and three large, spine-like cornuti, cornuti absent from apical diverticulum. Uncus with recurved neck, swollen in mid section with pointed tip. **Female genitalia** (Fig. 105). Ovipositor lobes setose with flattened apices; ostium bursae with lateral sclerites attached to anterior apophyses; short, membranous ductus bursae terminates at appendix bursae; appendix bursae with small, bulbous chamber from which a dorsal diverticulum arises and narrows toward ductus seminalis; posterior section of corpus bursae forms a tube with several ridges terminating at oval anterior section of corpus bursae; anterior section of corpus bursae encircled by band of several long, knife-like cornuti that extend inward.

Type material. Holotype male: USA: **Florida, Monroe Co.:** Bahia Honda, 24.665°N, 81.254°W, 9.Dec.2013, J. Troubridge, in the CNC. **Paratypes:** 59♂, 83♀: **Miami-Dade Co.:** Card Sound Rd., 25.341°N, 80.412°W, 10.Apr.2018, J. Troubridge, 1♀; **Monroe Co.:** Bahia Honda, 24.665°N, 81.254°W, 9.Dec.2015, 2♀; 16.Dec.2014, 1♂, 2♀; 9.Dec.2013, 5♂, 4♀; 9.Nov.2013, 1♂ 2♀; 12.Mar.2012, 1♀; 4.Mar.2013, 6♀; 8.Feb.2013, 3♀; 8.Apr.2013, 2♂, 1♀; 8.Jul.2013, 1♂, 2♀; 3.Mar.2013, 1♀; 15.Feb.2018, 1♂, 5♀, all J. Troubridge; Big Pine Key, 24° 40.93'N, 81° 22.06'W, 23.Feb.2011, 1♀; 4.Dec.2011, 1♀; Upper Key Largo, 25.267°N, 80.292°W, 10.Dec.2015, 3♂, 1♀; 11.Mar.2015, 1♀; 12.Apr.2016, 1♂; 25.263°N, 80.313°W, 11.Mar.2018, 1♂, 5♀; 11.Mar.2018, 1♂, 5♀; 9.Apr.2018, 2♂, 2♀; 16.Jul.2018, 1♂; 10.Apr.2018, 1♀, all J. Troubridge; Long Key, 24.814°N, 80.822°W, 13.Mar.2015, J. Troubridge 1♂, 2♀; Islamorada, 24.963° N, 80.566°W, 2.Apr.2014, 5♂, 8♀; 15.Dec.2014, 9♂, 4♀; 3.Mar.2014, 3♂, 1♀, all J. Troubridge; Long Point Key, 24.749°N, 80.364°W, 13.Mar.2015, 1♂, 1♀; 2.Feb.2015, 2♂, 3♀, all J. Troubridge; Dagny Johnson State Park, 25.184°N, 80.362°W, 20.Jun.2014, 5♂, 4♀; 25.181°N, 80.364°W, 3.Mar.2014, 5♂, 4♀; 2.Apr.2014, 1♂, 1♀; 25.179°N, 80.366°W, 2♀, all J. Troubridge; No Name Key, 24.695°N, 81.329°W, 21.Jun.2017, J. Troubridge, 1♀; Plantation Key, 4.Apr.1966, C.F. Zeiger and H.V. Weems Jr., 3♂ (FSCA); Key Largo, 2.May.1957, H.V. Weems Jr., slide MGCL 5857m, 3♂ (FSCA); Big Pine Key, 24.673°N, 81.363°W, Malaise trap, 16–28.May.2019, J. Farnum, 1♂ (FSCA); Bahia Honda State Park, 24.666°N, 81.253°W, 12.Mar.2012, J. Troubridge, 1♀ (FSCA); same data, 8.Feb.2013, slide MGCL 5858f, 2♀ (FSCA); Dagny Johnson State Park, 25.179°N, 80.366°W, 7.Jul.2013, J. Troubridge, 2♀ (FSCA).

Etymology. The name refers to the sexual dimorphism this species exhibits.

Distribution. This species is known from the Florida Keys and adjacent mainland and probably the Bahamas and Cuba. Núñez Aguila and Barro Cañamero (2012) list *Bleptina caradrinalis* as occurring in Cuba, I strongly suspect that this is actually *Bleptina biformata*.

Remarks. The DNA of *B. biformata* was analyzed and the 658 COI base pairs compared with those of specimens of *B. caradrinalis*. The results showed a 3.8% difference between *B. biformata* and *B. caradrinalis*, its nearest North American relative.

***Bleptina extincta* Troubridge, new species**

(Fig. 5a, 5b, 58, 106)

Diagnosis. *Bleptina extincta* is most closely related to *Bleptina araealis* (Hampson) (BIN: BOLD:ADP0536) (Fig. 6), described from Nassau, Bahamas. Externally they are similar in size but the postmedial line of *B. araealis* is wide, black, and extends through the reniform spot. Internally, the male valve of *B. araealis* has a stout, dorsal subapical claw and a minute clasper (Fig. 59), whereas that of *B. extincta* has three apical claws and no clasper (Fig. 58).

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen dark brown with scattered black and chestnut-brown scales; terminal segment of labial palps with tuft of black scales. **Dorsal forewing** (both sexes). Forewing length 5 mm. Ground color light gray with scattered rust brown and black scales; basal line black with scattered rust scales; wide, black antemedial line with scattered rust scaled extending through orbicular spot; very faint medial line slightly darker than ground color; postmedial line light gray, bordered basally and distally with rust scales; jagged light gray submarginal line edged basally and distally with black scales; veins in submargin highlighted with scattered rust scales in some specimens; terminal line a series of black dots between veins; fringe gray between veins, light gray at tips of veins; orbicular spot yellow; reniform spot yellow with black dot

on lower margin. **Dorsal hindwing.** Ground color light gray with slightly darker medial and postmedial bands; terminal line with a series of dark gray dots between veins; fringe light gray. **Male genitalia** (Fig. 58). Valves symmetrical, long, and relatively narrow, apex with three claw-like spines, shorter one directed ventrally, two longer ones arise dorsally from a single stalk, the valve otherwise unarmed. Uncus with short recurved neck, swollen in mid section with pointed tip. **Female genitalia** (Fig. 106). Ovipositor lobes setose, slightly pointed at apex; short, membranous ductus bursae terminates at bulbous appendix bursae from which a coiled diverticulum narrows to ductus seminalis; posterior section of corpus bursae a long, narrow tube with grooved sclerite extending its entire length, terminating in a concave, scobinate disc on ventral side of bulbous, anterior corpus bursae; anterior section of corpus bursae encircled by narrow sclerites on dorsal, ventral, and the insect's left side, from which several short, knife-like cornuti extend into the corpus bursae.

Type material. **Holotype** male: USA: **Florida, Miami-Dade Co.:** Biscayne Trail, 25.342°N, 80.412°W, 11.Mar.2018, J. Troubridge, in the CNC. **Paratypes:** 8♂, 1♀: **Miami-Dade Co.:** Biscayne Trail, 25.342°N, 80.412°W, 16 Jul. 2016, 1♂, J. Hayden et al., slides MGCL 3005, 3006 (FSCA); 11.Mar.2018, J. Troubridge, 1♂ 1♀; **Monroe Co.:** Sugarloaf Key, 22–23.Jun.1975, 1♂, R. H. Leuschner, 1♂ (FSCA); Key Largo, 10 mi. N. Key Largo City, 17 Jan. 1974, J.B. Heppner, 2♂ (FSCA); Key Largo, 24 Jun. 1975, R. Leuschner, 2♂ (FSCA, MGCL).

Etymology. The name refers to fact that this species was once common on Key Largo but collecting throughout the Florida Keys has failed to find *B. extincta* in recent years.

Distribution. This species is known from the Florida Keys and adjacent mainland.

***Bleptina flavivena* Troubridge, new species**

(Fig. 2a, 2b, 55, 107)

BIN: BOLD:AAI8821

Diagnosis. *Bleptina flavivena* is most closely related to *Bleptina verticalis*, described below, and is distinguished from it by the dark gray-brown wing color of *B. verticalis*, versus the light brown color of *B. flavivena*. Externally, *B. flavivena*, and *B. hydrillalis* Guenée, (described from Haiti and extralimital to the US) look almost identical. Among other differences in male and female genitalia, *B. flavivena* can be distinguished from both *B. verticalis* and *B. hydrillalis* by the male valves, which are symmetrical in *B. verticalis* and asymmetrical in the other two species.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen beige with scattered black scales; tuft of black and beige scales on terminal segment of labial palps. **Dorsal forewing** (both sexes). Forewing length 10–11 mm. Ground color light brown with scattered black and darker brown scales, especially between the postmedial line and the outer margin; thin basal line light beige, bordered basally with brown scales, extends perpendicular to posterior margin; straight antemedial line light beige, bordered distally with brown scales extends perpendicular to posterior margin before bending basally at costa; postmedial line light beige, thinly bordered basally with brown scales, bends basally to costa above reniform spot; light beige submarginal line bends distally into cell M3; tiny orbicular spot black or ochre; reniform spot shaped like an inverted comma, either solid black or ochre, with a black dot in center; terminal line a series of brown spots between veins; fringe brown; all forewing veins lightly highlighted with ochre scales. **Dorsal hindwing.** Ground color beige, lightly suffused with dark brown scales basally, becoming solid dark gray brown in postmedial area; obscure discal lunule brown; terminal line a series of dark-brown crescents between veins; fringe with scattered dark-brown and light-gray scales. **Male genitalia** (Fig. 55). Valves symmetrical, long, and relatively narrow, sacculus bulging ventrally at base of valve; apex drawn dorsally to a sharp point, the valve otherwise unarmed. Uncus long, curved downward, swollen in mid section with pointed tip. Vesica with small, scobinate, bulbous basal section that is drawn to form a long process that narrows toward tip; an elongate ventral diverticulum leads to ductus seminalis. **Female genitalia** (Fig. 107). Ovipositor lobes setose, extending slightly distally at apex; ostium bursae scobinate; short, membranous ductus bursae terminates at bulbous part of appendix bursae from which a coiled diverticulum narrows to ductus seminalis; posterior corpus bursae a long, narrow tube connecting bulbous anterior section of corpus bursae to appendix bursae; this tube with many ridged sclerites extending its entire length, terminating in a concave,

scobinate disc on ventral side of corpus bursae; anterior section of corpus bursae encircled by a narrow sclerite, from which about 14 short, knife-like cornuti extend into the corpus bursae.

Type material. **Holotype** male: USA: **Florida, Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 27.Mar.2017, J. Troubridge, in the CNC. **Paratypes:** 26♂, 32♀: **Florida: Alachua Co.:** Gainesville, Hull Road, 29.636°N 82.371°W, 25.Feb.2015, J. Hayden, 1♀ (FSCA); Gainesville, 2832 NW 41st Place, 29.692°N, 82.365°W, UV light, 20.May.2020, J. Hayden, slide MGCL 5847, 1♂; same data, 26.Mar.2020, 1♂; 14.Jun.2020, 1♀; 15.Jun.2020, 2♂ (FSCA); **Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 23.Mar.2012, 1♀; 28.Feb.2012, 1♀; 25.98°N, 81.41°W, 25.Feb.2015, 4♀; 23.Mar.2015, 2♀; 23.Mar.2014, 2♀; 2.Feb.2013, 1♂ 2♀; 21.Feb.2014, 5♂ 3♀; 11.Nov.2014; 1♂, all J. Troubridge; **Desoto Co.:** Nocatee, 27°10.07'N, 81°54.63'W, 3.May.2013, 3♀; 16.Apr.2012, 2♂, 1♀ all J. Troubridge; **Manatee Co.:** Oneco, 4.Jun.1954, P. Dillman, 1♂ (FSCA); Bradenton, Gulf Coast Exp. Sta., 24.Mar.1955, E.G. Kelsheimer, 1♂ (FSCA); **Okeechobee Co.:** Kissimmee Prairie, 27.584°N, 81.044°W, 13.Mar.2013, 1♀; 10.Jan.2013, 1♀; 5.Feb.2013, 1♀, all J. Troubridge; **Sarasota Co.:** North Port, 27.040°N, 82.069°W, 28.Nov.2012, 1♀; 7.Nov.2012, 2♂; 6.Nov.2013, 1♂, 1♀; 26.Nov.2012, 2♂; 13.Nov.2014, 1♂; 3.Dec.2013, 1♂, 2♀; 15.Nov.2017, 1♀; 4.Dec.2012, 1♂, 1♀, all J. Troubridge. 23.May.1946, C.P. Kimball, 1♂ (FSCA); Siesta Key, 2.May.1953 and 12.Feb.1960, C.P. Kimball, slides MGCL 4058, 4059, 1♂, 1♀ (FSCA); **Seminole Co.:** Geneva, 28.723°N, 81.086°W, 8.Feb.2017, J.M. Krok, slide MGCL 4055, 1♀ (FSCA); **Volusia Co.:** Cassadaga, 16.Feb.1956, S.V. Fuller, 1♂ (FSCA).

Etymology. From Latin, *flavivena* refers to yellowish scales that highlight the forewing veins of this species.

Distribution. This species is known from peninsular Florida.

***Bleptina verticalis* Troubridge, new species**

(Fig. 4a, 4b, 60, 108)

BIN: BOLD:ACD3830

Diagnosis. *Bleptina verticalis* is most closely related to *B. hydrillalis*. They are distinguished from each other by the forewing color, light brown in *B. hydrillalis*, dark gray brown with scattered chestnut scales in *B. verticalis*. The male genitalia are similar but the digitus of *B. hydrillalis* is much shorter and thicker than that of *B. verticalis*, and the right valve of *B. hydrillalis* narrows abruptly to a point at apex, whereas that of *B. verticalis* gradually narrows to a point in the apical 1/3.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen dark brown with scattered black and chestnut-brown scales; terminal segment of labial palps with tuft of black scales. **Dorsal forewing** (both sexes). Forewing length 10–12 mm. Ground color dark gray brown with scattered light-gray, chestnut, and black scales; thin basal line light gray, extends perpendicular to posterior margin; straight antemedial line light gray, bordered distally with black and basally with chestnut scales, extends perpendicular to posterior margin before bending basally at costa; medial line often diffuse, dark gray brown, extends perpendicular to posterior margin; post-medial line light gray, bordered distally with black and basally with chestnut scales extends perpendicular to posterior margin before bending outward around and giving wide birth to reniform spot; jagged submarginal line with light-gray and ochre scales edged distally with black scales; costa beige; tiny orbicular spot ochre, surrounded by scattered black scales; reniform spot shaped like an inverted comma, either solid black or ochre, with a black dot in center; terminal line a series of black spots between veins; fringe a series of three fine black lines separated by light gray. **Dorsal hindwing.** Ground color off-white to light gray brown, lightly suffused with dark-brown scales basally, becoming solid dark gray brown in postmedial area; obscure discal lunule brown; terminal line a series of dark-brown crescents between veins; fringe with scattered dark-brown and light-gray scales. **Male genitalia** (Fig. 60). Valves asymmetrical, the left much shorter than the right, with a short terminal spine pointing backward and a sharp, curved spine pointing inward; right valve narrows to a point in distal 1/3; a long, narrow digitus arises from costal margin of each valve; uncus long, curved downward, swollen in mid section with pointed tip; aedeagus with elongate, dorsal sclerite that bends upward with scobinate tip; vesica forms an elongate tube, curving to the right with narrow terminal cornutus; a sub-basal diverticulum present on the left and a large basal diverticulum with three smaller diverticula extends to the right, terminating at ductus seminalis. **Female genitalia** (Fig. 108). Ovipositor lobes setose, posteriorly truncated; ostium bursae scobinate; ductus bursae short,

membranous, terminates at coiled diverticulum of appendix bursae that narrows to ductus seminalis on left; posterior section of corpus bursae a long tube that gradually widens to bulbous, anterior section of corpus bursae, this tube heavily sclerotized with two deep, knife-like ridges extending along the inner part of tube, terminating at anterior section; basal to the terminus of this sclerite, a ribbon-like sclerite encircles the dorsal, ventral, and left sides of corpus bursae with six sharp, flattened, knife-like blades extending into corpus bursae from this sclerite.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Upper Key Largo, 25.179°N, 80.366°W, 10.Jul.2015, J. Troubridge in CNC. **Paratypes:** 41♂, 84♀: **Florida: Collier Co.:** Marco Island, 15.Jan.1989, D. Smith, 1♀ (FSCA); **Miami-Dade Co.:** Card Sound Rd., 25.341°N, 80.412°W, 10.Apr.2018, J. Troubridge, 1♀; Miami, Coral Gables USDA ARS Station, 17.Jul.2008, J. Brambila, 1♂; same data, 25.642°N, 80.295°W, 15.Oct.2015, J. Hayden, 1♀ (FSCA); **Monroe Co.:** Crocodile Lake Wildlife Refuge, Nike Missile Site, 2.May.2009, slide MGCL 5861, 2♂, 2♀ (FSCA); Upper Key Largo, 25.179°N, 80.366°W, 10.Jul.2015, 1♂, 10♀; 25.287°N, 80.292°W, 10.Dec.2015, 3♂; 11.Mar.2015, 1♀, all J. Troubridge; Long Key, 24.814°N, 80.822°W, 13.Mar.2015, J. Troubridge, 2♀; Long Point Key, 24.749°N, 80.364°W, 13.Mar.2015, J. Troubridge, 3♀; Islamorada, 24.963°N, 80.566°W, 21.Jun.2014, 3♂, 4♀; 15.Dec.2014, 5♂, 2♀; No Name Key, 24.695°N, 81.328°W, 15.Feb.2018, 4♂, 20♀; 17.Mar.2018, 1♀; 8.Apr.2018, 1♂, 7♀, all J. Troubridge; Big Pine Key, 24° 40.93'N, 81° 22.06'W, 23.Feb.2011, J. Troubridge, 1♂; Dagny Johnson State Park, 25.184°N, 80.362°W, 20.Jun.2014, 1♂, 1♀; 25.181°N, 80.364°W, 3.Mar.2014, 1♀; 2.Apr.2014, 1♂, 1♀; 27.Feb.2012, 1♀, all J. Troubridge; Bahia Honda, 24.665°N, 81.254°W, 9.Dec.2013, 5♂, 4♀; 20.Jun.2017 2♂; 12.Mar.2015, 1♀; 16.Dec.2014, 3♀; 4.Mar.2013, 2♀; 3.Mar.2016 4♂, 2♀; 8.Apr.2013, 1♀; 19.Mar.2017, 1♂, 1♀; 9.Dec.2015, 5♂, 6♀; 15.Feb.2018, 2♂, 5♀, all J. Troubridge.

Etymology. From Latin, *verticalis* means vertical and refers to the vertical basal and antemedial lines on the forewing of this species.

Distribution. This species is known from the Florida Keys and adjacent mainland.

Remarks. The DNA was analyzed, and the 658 COI base pairs compared with those of specimens of *B. hydrillalis*. The results showed a 3.04% difference between *B. verticalis* and *B. hydrillalis*, its nearest relative.

Lascoria coma Troubridge, new species

(Fig. 8a, 8b, 61, 110)

BIN: BOLD:AAB4991

Diagnosis. There are four species of *Lascoria* Walker living in Florida. In *L. ambigualis* (Walker) (BIN: BOLD:AAA4458) the forewing is rust brown with a dark mesial area, particularly adjacent to the antemedial line. Internally, the valves are asymmetrical with the left valve shorter than the right and the ostium bursae has a broad sclerotized pouch that extends well beyond the ductus bursae (Fig. 63, 112). *Lascoria alucitalis* (Guenée) (BIN: BOLD:AAB2758) is a much darker species with symmetrical valves, the lower section with a low, stout, subapical process, the upper section straight, blunt, and finger-like, and the fleshy center section finger-like but swollen in the middle (Fig. 64). The female genitalia look remarkably like a guitar, the long, narrow ductus bursae with sclerotization that extends onto the posterior half of the corpus bursae (Fig. 113). *Lascoria coma* is most closely related to *L. orneodalis* (Guenée) (BIN: BOLD:AAB4990) (Fig. 9) and they are difficult to distinguish without examining the genitalia. Both species are muddy brown and what little pattern they have appears to be variable. The male valves are similar in that the ventral process is bifid at the tip, and the dorsal process is reduced to a flattened plate that is covered with short spines, this plate is narrower than that of *L. coma*. There is a short spine at the tip of the aedeagus of *L. coma*, which is reduced to form a small sclerite in *L. orneodalis*. The middle, fleshy process of *L. orneodalis* looks like a long-necked bottle (Fig. 62), whereas that of *L. coma* looks like a leaf with several lateral processes (Fig. 61). I illustrate the genitalia of all four species, males are easily identified by brushing the scales away from the genitalia.

Description. Male antennae bipectinate, female antennae filiform, ciliate; head, vertex, thorax, and abdomen brown. **Dorsal forewing** (male). Forewing length 10.5–11.5 mm. Ground color brown; basal, antemedial, and medial lines usually reduced to shadows only slightly darker than the ground color of the wing; postmedial and submarginal lines, if present, darker brown than ground color and undulate; postmedial area adjacent to submarginal line a darker brown than remainder of wing; terminal line present as a series of dark brown dots between

veins; orbicular spot absent, reniform spot occurs as one or two minute yellow dots; fringe brown. Outer margin with deep cleft at vein CuA1 and costal margin with scent patch (both absent in female). **Dorsal hindwing.** Ground color brown, becoming darker brown toward margin; faint discal spot and medial line slightly darker brown than wing; terminal line a series of dark-brown dots between veins; fringe brown. **Male genitalia** (Fig. 61). Valves symmetrical, saccular extension bifid apically with flattened terminal point and longer subapical, flattened, dorsal point; dorsal margin of valve with sclerotized plate with a raised comb of low spines; valve narrows apically to form an elongate, leaf-like process between costal margin and bifid clasper; uncus with narrow neck, swollen in middle, narrows to a sharp point; aedeagus with small dorsal terminal spine; vesica sac-like, bends dorsally with three dorsal, scobinate diverticula. **Female genitalia** (Fig. 110). Ovipositor lobes setose, flattened across apex; ostium bursae with heavily sclerotized ventral plate with broad, lateral plates extending along the entire length of ductus bursae on dorsal and left sides; appendix bursae with coiled, ventral diverticulum narrowing toward ductus seminalis; corpus bursae more or less round with scobinate ventral surface.

Type material. **Holotype** female: USA: **Florida, Desoto Co.:** Peace River, 27.545°N, 81.598° W, 9.Mar. 2010, BOLD sample ID: CNCLEP 73820, J. Troubridge, in the CNC. **Paratypes:** 3♂, 4♀: **Alachua Co.:** Gainesville, 3215 Hull Road, FLMNH McGuire Center, 9.Jan.2019, J. Hayden, slide MGCL 5630, 1♂ (FSCA); San Felasco Hammock, 22.Feb.1975, J.B. Heppner, 1♀ (FSCA); **Sarasota Co.:** North Port, 27° 02.5'N, 82° 05.0'W, 6.Nov.2013, 1♂; 7.Feb.2012, 1♀; 16.Nov. 2011, 1♀; 26.Nov.2012, 1♀, all J. Troubridge. **Seminole Co.:** Sanford, Hidden Lake Villas, 31.Dec.1988, R. Gillmore, 1♂ (MGCL).

Etymology. From Latin, the word *coma* means leaves or foliage, which refers to the leaf-like apical processes of the male valves, which are diagnostic of the species.

Distribution. This species has been collected in peninsular Florida, northward at least to Gainesville and southward to at least Sarasota and Desoto counties. Its nearest relative, *L. orneodalis*, has been collected from the Florida Keys, northward to Collier Co., as well as in the Antilles, Costa Rica, and probably elsewhere in the Neotropics.

Remarks. The DNA was analyzed, and the 658 COI base pairs compared with those of specimens of *L. orneodalis*. The results showed a 3.13% difference between *L. coma* and *L. orneodalis*.

Erebidae: Rivulinae

Janzena Troubridge, gen. n.

Type species. *Janzena pyraliformis* Troubridge

Diagnosis. Externally, *Janzena* is characterized by the scales beneath the prothoracic collar that are greatly elongated medially and held vertically to resemble a crest (Fig. 12b). The forewing is brown with zig-zag pattern of scattered white scales. The male is characterized by the narrow apical spine and tiny subapical clasper on the valve, the cross-shaped juxta, and the enormous spine on the apex of the vesica. In the female genitalia, the corpus bursae is divided into a leathery, tubular posterior section and membranous, globular anterior section.

Description. Head. Antenna filiform, ciliate; eye unlash, smooth, round, without surface hair. **Thorax.** Clothed with spatulate scales, scales posterior to prothoracic collar greatly elongated and held vertically to form a crest. **Abdomen.** Coremata with brushes, levers, and pockets absent from base of abdomen. **Male genitalia** (Fig. 66). Valve long and narrow, the distal $\frac{3}{4}$ membranous, rounded apically with a narrow apical spine; sacculus encircles basal $\frac{1}{4}$ of valve; clasper fused to valve and runs along ventral margin from sacculus almost to apex of valve, at which point it leaves the surface of valve to form a tiny spine; uncus narrow basally, becoming wider toward apex, producing an elongate, globular structure; juxta in the form of a cross, lateral arms meet valves and very narrow anterior arm extends toward saccus; vesica short and tubular with very long apical spine *ca.* 1.3× the length of the vesica. **Female genitalia** (Fig. 109). Ovipositor lobes short and non-telescopic; ostium bursae with ventral sclerite that gradually narrows medially on distal margin; ductus bursae relatively short, membranous; small appendix bursae arises near ductus bursae; corpus bursae in two parts, the elongate, tubular, posterior section leathery and lightly sclerotized on the dorsal surface and the anterior globular, membranous section arises laterally from anterior end of tubular posterior section.

Etymology. Gender feminine. This genus is named to honor Dr. Daniel H. Janzen and his work with Neotropical Lepidoptera.

Discussion. The nuclear DNA was studied at the CNC, where it was determined that the genus *Janzena* forms a basal lineage to the remainder of the Rivulinae (Reza Zahiri, pers. comm.). Species have been collected in the Florida Keys, Puerto Rico, and Costa Rica (where a second undescribed species occurs). In Costa Rica, larvae are frequently collected on senna (*Cassia* sp.; D. H. Janzen, pers. comm.), which are common plants in southern Florida.

Janzena pyraliformis Troubridge, new species

(Fig. 12a, 12b, 66, 109)

BIN: BOLD:AAD0168

Diagnosis. *Janzena pyraliformis* is easily distinguished from all other North American noctuoids by the scales beneath and posterior to the prothoracic collar that are greatly elongated to form a crest behind the head.

Description. Antennae filiform, ciliate; head, vertex, and abdomen brown; thorax white with scattered brown scales; brown prothoracic collar elongated to form a crest. **Dorsal forewing** (both sexes). Forewing length 9–10 mm. Ground color brown; basal area brown with small off-white spots; antemedial line a broad, off-white band extending diagonally from inner margin to costa above orbicular spot; broad, diffuse, off-white postmedial line is met at CuA2 by a similar broad, off-white band extending to orbicular spot, these off-white lines effectively divide the entire area of the forewing (basal to the postmedial line) into three distinct brown triangles: the first basal to the antemedial line, the second with the orbicular spot at the apex, and the third with the reniform spot at its center; undulating subterminal line a series of black dots; a second series of black dots is present in the subterminal area, terminal line a series of off-white specks between veins; fringe brown; orbicular spot off-white with light gray center and encircled with dark brown; reniform spot a rust brown lunule surrounded with dark brown. **Dorsal hindwing.** Light brown, gradually becoming darker toward outer margin; veins and discal lunule highlighted with darker brown scales; terminal line dark brown; fringe light ochre brown. **Genitalia** (Fig. 66, 109). As described in genus description (above).

Type material. Holotype male: USA: **Florida, Monroe Co.:** Long Point Key, 24.749°N, 80.984° W, 22.Feb.2015, J. Troubridge, in the CNC (BOLD sample ID: CNCLEP 00116227).

Etymology. The specific epithet refers to the habitus, which closely resembles that of a pyralid.

Distribution. This holotype is the only specimen to have been collected in Florida. *Janzena pyraliformis* is apparently common in Costa Rica (D. H. Janzen pers. comm.), and it also occurs in Puerto Rico.

Erebidae: Scolecocampinae

A note regarding the genus *Sigela* Hulst

The genus *Araeopteron* Hampson (type species *Araeopteron pictale* Hampson) was described from Sri Lanka. Structurally, the *A. vilhelmina* (Dyar) group is very different from the Old World *Araeopteroninae* and closer to the New World *Sigela*, except that forewing vein M2 extends to the lower margin of the cell, so the forewing is quadrifine and not trifine as in *Sigela* (Lafontaine and Schmidt (2010)). The genus *Sigela* as treated here encompasses several small noctuid species that form several divergent species groups that may be relegated to new genera or subgenera when the group is revised. Rather than split the group into small or monotypic genera, I prefer the more inclusive approach and place the entire group into the genus *Sigela*. The trifine forewing of *Sigela* (s.s.) is unique in the Erebididae. I see no reason to define the genus *Sigela* on this single apomorphy and consider the vilhelmina group to be a basal lineage within the genus *Sigela*. To this end, I restrict the genus *Araeopteron* to the Old World, transfer *A. vilhelmina* to the genus *Sigela*, **new combination**, restricting its distribution to Mexico and Central America, and describe *Sigela incisa* for the southern Florida species. Of the species described below, *S. rosea* and *S. lynx* have trifine forewings, whereas *S. subincisa*, *S. minuta*, and *S. sordes* and *S. incisa* have quadrifine forewings and, like *S. incisa*, form basal lineages within *Sigela*. In addition to the six species described here, there are several undescribed species that occur in Texas, the southwestern USA, and Mexico that are extralimital to this paper.

***Sigela incisa* Troubridge, new species**

(Fig. 18, 88, 117)

BIN: BOLD:ABA1145

Diagnosis. *Sigela incisa* is easily distinguished from the other North American *Sigela* species by indentation of the outer margin of the forewing. *Sigela vilhelmina* has a broad, smudged gray band in the submargin of the forewing, but in *S. incisa* a dark gray submarginal spot is present on the lower half of the forewing. Additionally, the ordinary lines of the forewing are reasonably distinct in *S. incisa*, but muted or absent in *S. vilhelmina*.

Description. Antennae filiform, ciliate; head, vertex, labial palps and thorax off-white; abdomen light gray brown. **Dorsal forewing** (both sexes). Forewing length 4–5 mm. Ground color white to very light gray brown; basal, antemedial, and postmedial lines faint brown to gray brown; medial line brown to gray brown, much more pronounced than other lines; reniform spot absent; orbicular spot a black dot. Terminal line and fringe chestnut brown except off-white between veins M3 and CuA1; outer margin scalloped inward between vein R3 and apex and between CuA1 and tornus. **Dorsal hindwing.** Ground color white to light gray brown; discal dot black, medial line chestnut brown; jagged postmedial line chestnut brown, bordered distally with off-white scales submarginal area filled with dark gray adjacent to postmedial line and gray brown adjacent to off-white terminal line; fringe chestnut brown. **Male genitalia** (Fig. 88). Valve unarmed, sacculus extends along entire length of valve, with parallel dorsal and ventral margins, rounded and slightly downturned at apex with a field of apical setae, and a slightly elevated dorsal hump in mid section; dorsal portion of valve gradually widens toward rounded apex, apex with field of dense setae; uncus relatively short, gradually narrows to pointed apex; tegumen fused to form a solid dorsal plate with medial suture; juxta forms a broad oval plate between valves; saccus rounded ventrally with ear-like extensions at base of tegumen; aedeagus drawn to an apical point; vesica arises dorsally with elongate posterior diverticulum and subapical diverticulum directed anteriorly. **Female genitalia** (Fig. 117). Ovipositor lobes setose, non-telescopic; ductus bursae membranous, narrow, terminating at bulbous appendix bursae on dorsal side of corpus bursae; corpus bursae with crescent-shaped field of small, interior signa on dorsal side between appendix bursae and bulbous anterior section.

Type material. **Holotype** male: USA: **Florida, Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.41°W, 23.Mar.2015, J. Troubridge, in the CNC. **Paratypes:** 10♂, 14♀: **Collier Co.:** Naples, 3875 Arnold Ave., 7.Sep. 993, R.A. Belmont, 1♂ (MGCL). Fakahatchee Strand Preserve State Park: 21.Feb.2014, 1♂, 3♀; 4.Feb.2014, 2♂, 3♀; 11.Mar.2016, 3♂, 3♀; 20.Jan.2017, 1♂; 11.Nov.2015, 1♀; 25.Feb.2015, 1♀; 3.Mar.2019, 1♂; 1.Apr.2019, 1♂, all J. Troubridge; **Miami-Dade Co.:** Florida City: 25°24.89'N, 80°26.40'W, 29.Jan.2015, J. Troubridge, 3♀.

Etymology. The word *incisa* refers to indentation along the margin of the forewing.

Distribution. *Sigela incisa* has been collected in extreme southern Florida, from Collier, Monroe, and Miami-Dade Counties. I have seen photographs of similar specimens from the Greater Antilles, but no specimens are available for study. These either could be conspecific with the Florida material, or additional species in the complex.

Remarks. *Sigela vilhelmina* (as *Araeopteron vilhelmina*) was listed in Franclemont and Todd (1983) based on specimens from southern Florida in the USNM. Three species in the BOLD database are members of the vilhelmina group, two of which are from Central America, and one from south Florida. The *S. vilhelmina* type in the USNM was collected in southern Mexico and closely matches one of these Central American species (BIN: BOLD:AAE5712). The DNA of the Florida specimens was analyzed, and the 658 COI base pairs compared with those of specimens of *S. vilhelmina* from Costa Rica. The results showed that the Florida specimens represent a distinct species with an 8.25% difference between it and *S. vilhelmina*.

***Sigela subincisa* Troubridge, new species**

(Fig. 17, 89)

BIN: BOLD:ABW8375

Diagnosis. *Sigela subincisa* is superficially like *Sigela brauneata* (Swett). Both species exhibit a distinct blackish brown reniform spot and gray scales that form the ordinary lines of the forewing and hindwing. They differ in

that the ordinary lines of *S. brauneata* are much darker and less distinct than those of *S. subincisa*, and the hindwing of *S. brauneata* is evenly rounded, whereas that of *S. subincisa* is indented at the tips of the cubital veins.

Description. Antennae filiform, ciliate; head, vertex, labial palps and thorax light beige; first and second abdominal segments light beige; the remainder darker gray brown. **Dorsal forewing** (male). Forewing length 4–5 mm, quadrifine. Ground color beige; basal, antemedial, medial, and postmedial lines dark brown to gray brown with blackish-brown reniform spot present on postmedial line; submarginal line thin, jagged, light beige, edged basally with broad area of dark-brown to gray-brown scales; thin marginal line dark brown; fringe beige with light beige dots at tips of veins. **Dorsal hindwing.** Ground color beige, diffuse dark-brown scales extend into antemedial, medial, and postmedial areas from tornus approximately halfway across wing, fringe beige with light beige dots at tips of veins. **Male genitalia** (Fig. 89). Valve unarmed, long, narrow, with even sides, rounded at tip, dorsal edge of sacculus heavily sclerotized, giving rigidity to valve. Vesica uninflated but two cornuti appear to be present; uncus talon-like, pointed, and downturned at tip. **Female genitalia.** Unknown.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** No Name Key, 24.695°N, 81.329°W, 12.Mar.2018, BOLD sample ID: KSLEP1274, J. Troubridge, in the CNC. **Paratypes:** 2♂: **Miami-Dade Co.:** 25.396°N, 80.566°W, 24.Sept.2016, J. Vargo, 1♂; **Monroe Co.:** Big Pine Key, 24.673°N 81.363°W, Malaise trap, 8–22.Jan.2019, J. Farnum, slide MGCL 5054, 1♂ (FSCA).

Etymology. *Subincisa* refers to indentation along the margin of the hindwing at the tip of the cubital veins.

Distribution. *Sigela subincisa* has been collected only in extreme southern Florida.

***Sigela sordes* Troubridge, new species**

(Fig. 13a, 13b 85, 114)

BIN: BOLD:AAE9651

Diagnosis. I know of no other North American species that remotely resembles *Sigela sordes*. Under magnification, the scales on the wings and body appear too large and too few for the size of the specimen. There are strongly defined, distinct lines or spots. The reniform spot is reduced to a thin, white discal lunule surrounded by a few scattered black scales and a large brown area that appears smudged. The hindwing has scattered scales that can be gray green, orange, or beige, the color of which is repeated on the forewing in a large postmedial patch below vein M2 and along the posterior margin below vein 1A+2A.

Description. Antenna filiform, ciliate; head, vertex, thorax, and abdomen light beige. **Dorsal forewing** (both sexes). Forewing length 5–6 mm. Ground color light brown; antemedial line absent, diffuse postmedial line white, surrounded by a patch of gray-green scales below vein M2; scattered black or dark-brown scales loosely define reniform spot present along vein 1A+2A between postmedial line and margin; medial area dark brown between vein 1A+2A and costal margin; scattered gray-green and off-white scales present between vein 1A+2A and posterior margin; diffuse submarginal line white with scattered black scales on veins in submargin adjacent submarginal line; terminal line off-white; fringe light brown checkered with off-white scales at vein tips. **Dorsal hindwing.** Basal area with scattered gray-green or orange scales; postmedial line white; terminal line white; submarginal line beige, bordered basally with scattered dark brown scales; fringe with scattered brown and white scales. **Male genitalia** (Fig. 85). Valve short and thick with finger-like apical process that bends medially at tip. Saccular extension terminates just short of the apical finger-like process with a triangular process extending just beyond saccular margin and dorsally with a strong, inward curved spine-like extension; a raised oval plate covered with fine spines is situated above costal margin of left valve; uncus narrows toward dorso-ventrally flattened tip. **Female genitalia** (Fig. 114). Ovipositor lobes short, setose, and more or less flattened at tip; ostium bursae lightly sclerotized; ductus bursae membranous, gradually widening toward appendix bursae; appendix bursae with small diverticulum on right, narrowing toward ductus seminalis; corpus bursae with single signa on ventral surface that turns inward as a sharp spine; central area of corpus bursae encircled by a field of minute spicules.

Type material. **Holotype** male: USA: **Florida, Highlands Co.:** Archbold Biological Station, 27.188°N, 81.336°W, 17.Mar.2016, J. Troubridge, in the CNC. **Paratypes:** 12♂, 2♀: **Alachua Co.:** Gainesville, 12.Dec.1975, W.H. Pierce, 1♂ (FSCA); Paynes Prairie Preserve, 29.520°N, 82.295°W, 31.Oct.2007, G.T. Austin and P.Z. Goldstein, MGCL #1070698, 1070527, and 1070845, [one] slide MGCL 5103, 2♂, 1♀ (MGCL); Gainesville, 29.616°N,

82.299°W, 6.Jan.2009, G.T. Austin, #1070555, 1♂; (MGCL); **Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39° W, 3.Mar.2019, J. Troubridge, 3♂; **Highlands Co.:** same data as holotype, 4♂; 1♀; **Hillsborough Co.:** Tampa, USF Ecology Area, 12.Sep.1990, W.L. Adair Jr., 1♂ [abdomen missing] (MGCL).

Etymology. From Latin, the word *sordes* means smudge, which refers to the dark smudge-like marking in the center of the forewing.

Distribution. This species has been collected in peninsular Florida.

Remarks. The color of the hindwing always carries through to the forewing. Most specimens that I have seen are ochre or dull beige.

***Sigela minuta* Troubridge, new species**

(Fig. 19, 90, 118)

BIN: BOLD:ADC5571

Diagnosis. I know of no other North American species that remotely resembles *Sigela minuta*, it could be confused with a mustotimine crambid. *Sigela minuta* is characterized by scattered beige scales that loosely delineate the ordinary lines of the forewing and hindwing; forewing with slightly darker, solid beige submarginal patch extending from the tornus to vein M3, and a second patch on the lower quarter of the medial line. The reniform spot has a distinct black dot and a similar dot is present on the hindwing.

Description. Antennae filiform, ciliate; head, vertex, and thorax white; abdomen light beige. **Dorsal forewing** (both sexes). Forewing length 3.5–5.1 mm. Ground color white; basal, antemedial, medial, postmedial, and submarginal lines composed of a loose scattering of beige scales; lower quarter of medial line forms a more solid patch of beige scales; submarginal area between tornus and vein M3 with a solid patch of beige scales; reniform spot with a minute black dot; a marginal series of black dots present at tips of veins; fringe beige. **Dorsal hindwing.** Ground color white; basal, antemedial, medial, and submarginal lines composed of a loose scattering of beige scales; postmedial line with scattered black and beige scales; discal dot black; a marginal series of black dots present at tips of veins; fringe beige. **Male genitalia** (Fig. 90). Valves unarmed, narrow at base, becoming broad and paddle-like toward apex with broad apical indentation. Uncus long and narrow, arcs downward to pointed apex. Saccus with deep medial cleft. Juxta forms a narrow band between valves. Vesica with cornuti absent. **Female genitalia** (Fig. 118). Ovipositor lobes setose, flattened apically. Ductus bursae membranous, long, and very narrow. Corpus bursae pear-shaped, signa absent.

Type material. **Holotype** female: USA: **Florida, Alachua Co.,** Paynes Prairie, Gainesville, 29.5263°N, 82.2957°W, 6.Apr.2015, BOLD sample ID: CNCLEP 00119846, Carle Belanger, the CNC. **Paratypes:** 1♂, 1♀: **Miami-Dade Co.:** Florida City, 25.396°N, 80.506° W, 8.Jan.2013, J. Vargo, 1♂; **Okeechobee Co.:** 27.583°N, 81.049° W, 15.Feb.2016, J. Vargo, 1♀.

Etymology. From Latin, the word *minuta* meaning small, which refers to the small size of the moth.

Distribution. This species has been collected in peninsular Florida.

***Sigela rosea* Troubridge, new species**

(Fig. 14, 87, 116)

BIN: BOLD:AAC6450

Diagnosis. *Sigela rosea*, *S. lynx*, (described below) (Fig. 16) and *S. basipunctaria* (Walker) (BIN: BOLD:AAE9652) (Fig. 15) are three closely related species that occur in Florida and are easily distinguished by the forewing markings. In *S. basipunctaria*, the forewing is pink with scattered black specks in the submarginal area, the orbicular spot is present as a distinct black dot, and the costa is pink with small black spots along margin. In *S. rosea*, the forewing is roughly similar to that of *S. basipunctaria* except that there are submarginal splotches of dark gray and black scales, and the costa is gray (rather than pink), with larger black spots than those of *S. basipunctaria*. In *S. lynx*, the forewing is a pinkish beige color with many diffuse black lines and spots, and the costa is pink or pinkish beige with black spots that are about the same size as those of *S. rosea*. *Sigela eoides* (Barnes and McDunnough) flies with the *basipunctaria* group in Florida. Although not closely related, it could be confused with members of

this group due to its pinkish coloration. It is easily separated from them by the presence of a distinct, smudged, black reniform spot, absent in the members of the *basipunctaria* group. Internally, *S. basipunctaria* has *ca.* five long teeth *ca.* 0.2 mm in length internally surrounding the entrance to the corpus bursae, in that of *S. lynx* and *S. rosea*, these teeth are *ca.* 0.1 mm in length. The male valve of *S. basipunctaria* has a ventral, subapical thumb-like process that bends medially. The apex of the valve of *S. rosea* is rounded, with the cucullus extending ventrally to form a low hump. That of *S. lynx* is more or less like that of *S. basipunctaria*, except that the ventral process is shorter and wider at its base.

Description. Antennae filiform, ciliate; head, vertex, and labial palps light gray; thorax, and abdomen light pink; thorax with three black dots and each abdominal segment with a black dorsal dot. **Dorsal forewing** (both sexes). Forewing length 4–6 mm. Ground color light pink; basal line reduced to black dots on vein 1A+2A and costa; antemedial line reduced to black dots on cubital vein and costa; postmedial line reduced to a series of 2–3 black dots on veins and on costa; discal dots black; diffuse submarginal line undulates with splotches of dark-gray scales in cell CuA2 and M2; terminal line a series of black dots between veins; fringe pink. **Dorsal hindwing.** Ground color light pink; basal line reduced to scattered black scales near posterior margin; discal dot black; diffuse submarginal line undulates with splotches of dark-gray scales; terminal line a series of black dots between veins; fringe pink. **Male genitalia** (Fig. 87). Valve long with even sides, flat across tip and bulging ventrally at apex, the entire valve otherwise unarmed; uncus talon-like, pointed, and downturned at tip. **Female genitalia** (Fig. 116). Ovipositor lobes short, setose, and more or less flattened at tip; ostium bursae lightly sclerotized; ductus bursae membranous, gradually widening toward appendix bursae; appendix bursae with small diverticulum on left, narrowing toward ductus seminalis; appendix bursae constricted anteriorly before widening to oval corpus bursae; corpus bursae encircled by a row of cornuti that turn inward as short spines.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** No Name Key, 24.695°N, 81.328° W, 15.Feb.2018, J. Troubridge, in the CNC. **Paratypes:** 23♂, 17♀: **Alachua Co.:** Gainesville, 28.Dec.1981, E.C. Knudson, 1♂ (MGCL); **Highlands Co.:** Archbold Biological Station, 27.188°N, 81.336°W, 30.Mar.2017, J. Troubridge, 1♂; **Levy Co.:** Goethe State Forest, 29.155°N, 82.699°W, 21.Dec.2013, 4♂, 2♀; 11.Jan.2018, 2♀; 12.Apr.2014, J. Troubridge, 1♂; Goethe State Forest, 29.161°N, 82.598°W, 4.May.2012, J. Hayden and A. Jansen, slide MGCL 5102, 2♂ (FSCA); **Marion Co.:** Ocala National Forest, near Hopkin's Prairie, 11–18.May.1979, leg. Fairchild and Weems, 1♂ (FSCA); **Miami-Dade Co.:** Florida City, 25° 24.89'N, 80° 26.40'W, 30.Jan.2013, 1♂, 1♀; 2.Mar.2014, 2♀; 27.Jan.2014, 2♂, 2♀; 29.Jan.2015, 2♀, all J. Troubridge; **Monroe Co.:** same data as holotype, 1♂; Big Pine Key, 12.Jan.1988, J.B. Heppner, 1♂ (FSCA); Big Pine Key, 24.706°N, 81.379°W, 25.Feb.2012, J. Troubridge, 4♂, 5♀; **Putnam Co.:** Welaka Forest Cons. Sta., 17–21.Mar.1986, J.B. Heppner, 2♂, 1♀ (FSCA); **Sarasota Co.:** Siesta Key, 24.Feb.1970, C.P. Kimball, 1♂ (FSCA); **Volusia Co.:** Cassadaga, 21.Nov.1962, S.V. Fuller, 1♂ (FSCA).

Etymology. From Latin, *rosea* refers to the pink color of the wings.

Distribution. *Sigela rosea* has been collected from the lower Florida Keys throughout peninsular Florida, Louisiana, and Texas, usually in pine flatwoods.

***Sigela lynx* Troubridge, new species**

(Fig. 16, 86, 115)

BIN: BOLD:AAE9653

Diagnosis. See under *S. rosea*, above.

Description. Antennae filiform, ciliate; head, vertex, and labial palps light pink; thorax, and abdomen light pink; thorax with four black dots; first abdominal segment with one, and the third abdominal segment with two black dots. **Dorsal forewing and hindwing** (both sexes). Forewing length 5–7 mm. Ground color light pinkish beige; orbicular spot present as a small black dot; distinct discal dot on hindwing is lost among scattered black and gray scales that make up the ordinary lines; undulating basal, antemedial, medial, postmedial, and submarginal lines present on both forewing and hindwing as a diffuse scattering of black and dark gray scales; terminal lines a series of black dots between veins; fringe pink between veins, gray at tips of veins. **Male genitalia** (Fig. 86). Valve long and with even sides, rounded at tip with short ventral thumb-like process arising just below apex, which makes the tip of the valve resemble the shape of a mitten, the entire valve otherwise unarmed; uncus talon-like,

pointed and downturned at tip. **Female genitalia** (Fig. 115). Ovipositor lobes short, setose, and more or less flattened at tip; ostium bursae lightly sclerotized; ductus bursae membranous, gradually widening toward appendix bursae; appendix bursae with small diverticulum on left, narrowing toward ductus seminalis; appendix bursae constricted anteriorly before widening to oval corpus bursae; $\frac{3}{4}$ of corpus bursae encircled by a row of long, talon-like cornuti point into corpus bursae.

Type material. **Holotype** male: USA: **Florida, Sarasota Co.:** North Port, 27° 02.5'N, 82° 05.0'W, 20.Dec.2014, J. Troubridge, in the CNC. **Paratypes:** 11♂, 104♀: **Alachua Co.:** Gainesville, 29.639°N, 82.410°W, reared on Sabal palmetto leaf, 3.Jun.2018, J. Hayden, 2♂ (FSCA); Gainesville, FDACS-DPI, 29.635°N, 82.371°W, 23.Mar.2017, J. Hayden, 1♀ (FSCA); **Citrus Co.:** Floral City, 9065 Bushnell Road, reared on Sabal palmetto leaf, 15.May.2018, J. Hayden, 1♂ (FSCA); **Levy Co.:** Goethe State Forest, 29.161°N 82.598°W, 6.Aug.2011, J. Hayden, 1♂ (FSCA); **Marion Co.:** Hopkins Prairie, 29.277°N, 81.692°W, 17.Dec.2017, J. Troubridge, 1♀; Ocala, 29.282°N, 82.129°W, reared on Sabal palmetto leaf, 4 Mar. 2018, J. Hayden, slide MGCL 5066m, 2♂; same data, 29.282°N, 82.131°W, slide MGCL 5073♀, 1♂, 3♀ (FSCA); **Miami-Dade Co.:** Florida City, 25° 24.89'N, 80° 26.40'W, 25.Jan.2017, 1♀; 29.Jan.2015, 2♀, all J. Troubridge; **Sarasota Co.:** same data as holotype, 34♀; North Port, 27° 02.5'N, 82° 05.0'W, 3.Dec.2013, 3♀; 24.Nov. 2014, 1♂, 9♀; 18.Nov.2013, 2♀; 8.Dec.2014, 1♀; North Port, 27.040°N, 82.069° W, 23.Nov.2017, 2♂, 23♀; 15.Dec.2017, 1♂, 10♀; 6.Dec.2017, 18♀, all J. Troubridge.

Etymology. *Lynx* is the genus for bobcats and lynx. The light beige wings that are heavily speckled with black are reminiscent of the coat of our native bobcats.

Distribution. *Sigela lynx* has been collected throughout peninsular Florida, and in Texas, usually in pine flatwoods. My specimens were collected on bait, and it is interesting that most of these are females.

Remarks. This species often emerges from *Sabal palmetto* (Walt.) Lodd. fronds. The leaves were cut up and the frassy parts were put in jumbo Ziploc bags and hung from twine. The larvae look like tiny geometrids, having prolegs only on A6 and A10. They probably feed on the algae, fungi and detritus on the big old leaves (Jim Hayden, pers. comm.).

Erebidae: Hypenodinae

Dyspyralis ocala Troubridge, new species

(Fig. 23, 91, 119)

BIN: BOLD:AAD7218

Diagnosis. *Dyspyralis ocala* is distinctive compared to the other species of *Dyspyralis* Warren. The forewing of *D. ocala* is a dark gray brown with the ordinary lines forming indistinct bands of blackish scales and a black reniform spot is present in some specimens. The most similar described species is *D. noloides* Barnes and McDunnough, (BIN: BOLD:ABZ5294) which has a gray forewing and distinct black claviform spot.

Description. Antennae filiform, ciliate; head, vertex, labial palps and thorax and abdomen gray brown. **Dorsal forewing** (both sexes). Forewing length 5–6 mm. Ground dark gray brown; basal, antemedial, medial, and post-medial lines a scattered assemblage of blackish scales; reniform spot obscure, black, present on postmedial line of some specimens; subterminal line a jagged series of black scales, bordered posteriorly with a few scattered off-white scales; terminal line a series of broken black dashes bordered posteriorly with beige; fringe dark gray brown. **Dorsal hindwing.** Ground color dark gray brown; terminal line black; fringe dark gray brown. **Male genitalia** (Fig. 91). Valve membranous, paddle-like, rounded apically; an elongate, fleshy digitus projects dorsally from center of valve; sacculus forms a sclerotized ridge, extending from the base of the valve to the clasper; clasper fused to the valve except terminally where it separates from valve to form small, pointed tip; uncus very long, narrow, curved downward, dorso-ventrally flattened and becoming broad in mid-section, closely resembling a spear tip (this is not visible in Fig. 91); juxta with medial cleft; dorsal surface of aedeagus with large field of minute spicules on posterior half; vesica appears to be without cornuti. **Female genitalia** (Fig. 119). Ovipositor lobes rounded and covered with setae; ductus bursae like an inverted wine bottle with a narrow, dorsal sclerite, narrows at junction of appendix bursae; appendix bursae forms a small pouch on right side of corpus bursae; corpus bursae shaped like a tear drop, with crescent-shaped signum.

Type material. **Holotype** male: USA: **Florida, Marion Co.:** Hopkins prairie, 29.277° N, 81.692° W, 11.Mar.2019, J. Troubridge, in the CNC. **Paratypes:** 3♂, 4♀: **Alachua Co.:** Gainesville, 29.692°N, 82.365°W, 4–5.Oct.2019, J. Hayden, slide MGCL 5859, 1♂ (MGCL); Sugarfoot Hammock, 6 mi. SW Gainesville, 6.Oct.1973, J.B. Heppner, slide MGCL 5617, 1♀ (MGCL); **Marion Co.:** Ocala National Forest, 29.332°N, 81.781°W, 19.Oct.2016, J. Hayden, slide MGCL 4860, 1♀; **Putnam Co.:** Welaka Forest Conservation Station, 17–21.Mar.1986, J.B. Heppner, slide MGCL 5786, 2♂ (FSCA). **Suwannee Co.:** Suwannee River State Park, 13 mi. NE Live Oak, 24.Oct.1975, J.B. Heppner, 2♀ (MGCL).

Etymology. The specific epithet refers to Ocala National Forest, where the holotype was collected. Noun in apposition.

Distribution. All specimens I have seen were collected in north central Florida. Specimens from North Carolina in the BOLD database are attributable to this species. Whether it occurs through Georgia is unknown at this time.

Erebidae: Boletobiinae

Metalectra nigrrior Troubridge, new species

(Fig. 11, 68, 120)

BIN: BOLD:AAE9529

Diagnosis. *Metalectra nigrrior* is similar to *M. analis* (Schaus), described from Cuba, and *M. dixoni*, **new species** described below. In *M. analis* and *M. dixoni* there are patches of scattered red scales distal to the reniform spot and hindwing discal spot, normally absent in *M. nigrrior*. In *M. analis* there is a patch of off-white scales between the medial line and the submarginal area of the hindwing tornus of *M. analis*; these are absent in *M. nigrrior*. Internally, the juxta of *M. nigrrior* is an oval, elevated dome, whereas that of *M. dixoni* is similarly elevated, but extended dorsally to a point resembling the prow of a boat. The clasper of *M. nigrrior* is an ovate structure with a minute terminal point, whereas that of *M. dixoni* is shorter and concave terminally. *Metalectra nigrrior* also is sympatric with *M. discalis* (Grote) (BIN: BOLD:AAA8207) and *M. quadrisignata* (Walker) (BIN: BOLD:AAB4859). *Metalectra discalis* tends to have more light brown through the antemedial and postmedial areas than *M. nigrrior*, the juxta is not domed, and the clasper is in the form of a bent, setose, finger-like process with no terminal point. *Metalectra quadrisignata* is smaller than *M. nigrrior*, the juxta is not domed, and the clasper is like a large, setose ball, with small terminal point.

Description. Male antennae bipectinate; female antennae filiform; head, vertex, prothoracic collar, tegulae, and thorax, brown; foretibia of male brown with dense scales. **Dorsal forewing** (both sexes). Forewing length 11–14 mm. Ground color brown with patches of metallic mauve scales; basal line light brown, antemedial line light pinkish beige bordered distally with dark brown or black scales; broad, diffuse medial line dark blackish brown; postmedial line a series of dark blackish brown spots; postmedial area with a series of light beige dots on veins; submarginal line a series of obscure, dark-brown crescents; terminal line black with black dots on veins adjacent to line; fringe brown; orbicular spot black; reniform spot rectangular, black; a series of alternate blackish brown and pinkish spots present along costa. **Dorsal hindwing.** Ground color brown, heavily suffused with metallic mauve scales between veins M3 and 2A; black discal spot rectangular; vein 3A with light beige spot in submarginal area; postmedial line series of black dots on veins between veins M1 and 2A; postmedial area with a series of light beige dots on veins; cell 2A brown between postmedial line and wing margin; terminal line black; fringe brown. **Male genitalia** (Fig. 68). Valve lightly sclerotized in terminal half; clasper setose, arising on short stalk to form oval, apex with small, downturned hook; sacculus with setose, flattened disc adjacent to clasper; juxta with raised, oval, dome-like process; uncus long and narrow, arcs downward with pointed tip. Aedeagus with small antero-dorsal hump; vesica globular, bends to the right with two small subbasal diverticula, beneath which the ductus seminalis arises; various additional diverticula present; small submarginal sclerite present on ductus seminalis. **Female genitalia** (Fig. 120). Ovipositor lobes setose; anterior apophyses reduced to short, bulbous, processes slightly pointed anteriorly; ostium bursae triangular, flanked by pointed triangular processes directed posteriorly; posterior $\frac{2}{3}$ of ductus bursae heavily sclerotized; $\frac{1}{2}$ of anterior section of ductus bursae membranous and the remaining half sclerotized toward appendix bursae; appendix bursae twice as long as wide, ductus seminalis arises at posterior end; corpus bursae about twice as long as wide and twice as wide as appendix bursae

with a ventral field of thorn-like cornuti pointing inward and a second, smaller field on dorsal surface adjacent to appendix bursae.

Type material. **Holotype** male: USA: **Florida, Sarasota Co.:** North Port, 27° 02.5'N, 82° 05'W, 4.Dec.2014, J. Troubridge, in the CNC. **Paratypes:** 18♂, 7♀: **Desoto Co.:** Nocatee, 27° 10.07'N, 81° 54.63'W, J. Troubridge, 1♂; **Monroe Co.:** Upper Key Largo, 25.287° N, 80.292°W, 25.Jan.2017, J. Troubridge, 1♀; Key Largo, 25.133°N, 80.408°W, 10.Jan.2017, M.L. Justiz, slides MGCL 3994, 3995, 1♂, 1♀ (FSCA); **Sarasota Co.:** Nokomis, 27.149°N, 82.458°W, 14.Aug.2019, S. Youngblood, slide MGCL 5581, 1♀ (FSCA); North Port, 27° 02.5'N, 82° 05.0'W, 4.Dec.2014, 1♂; 24.Nov.2014, 2♂; 11.Nov. 2013, 1♂; 29.Nov.2012, 1♀; 27.Nov.2011, 1♂; 26.Nov.2012, 1♂; 23.Nov.2017, 1♂; 6.Dec.2017, 1♂; 6.Nov.2013, 2♂, 1♀; 3.Nov.2013, 4♂, 2♀; 29.Nov.2013, 1♂; 4.Dec.2012, 1♂ all J. Troubridge.

Etymology. *Nigrior*, from Latin means “blacker” and refers to this species being blacker than *M. discalis* and *M. quadisignata*.

Distribution. *Metalectra nigrior* has been collected from Sarasota and Desoto counties, southward to Key Largo, usually in pine flatwoods.

Remarks. The DNA was analyzed and the 658 COI base pairs compared with those of specimens of *M. analis*, *M. nigrior*, and *M. dixonii*. The results showed an 8.57% difference between *M. dixonii* and *M. nigrior* and a 7.5% difference between *M. analis* and *M. nigrior*.

***Metalectra dixonii* Troubridge, new species**

(Fig. 10, 67, 121)

BIN: BOLD:AAB7485

Diagnosis. *Metalectra dixonii* is similar to *M. analis*, described from Cuba, and *M. nigrior*. In *M. analis* and *M. dixonii* there are patches of scattered red scales distal to the reniform spot and hindwing discal spot, normally absent in *M. nigrior*, if present, the foretibia is brown, not red as in *M. dixonii*. In *M. analis* there is a patch of off-white scales between the medial line and the submargin in the hindwing tornus, absent in *M. dixonii*. Internally, the juxta of *M. nigrior* is an oval elevated dome, while that of *M. dixonii* is similarly elevated, but narrower and extended dorsally to a point resembling the prow of a boat. The clasper of *M. nigrior* is an ovate structure with a minute terminal point, but that of *M. dixonii* is shorter and concave terminally.

Description. Male antennae bipectinate, female antennae filiform; head, vertex, prothoracic collar, tegulae, thorax, brown. Foretibia of male red, with dense scales. **Dorsal forewing** (both sexes). Forewing length 11–14 mm. Ground color brown with scattered metallic red and mauve scales; basal line dark blackish brown; thin antemedial line light pinkish beige bordered distally with dark brown or black scales; broad, diffuse medial line dark blackish brown; postmedial line a series of dark blackish brown spots; postmedial area with a series of light beige dots on veins; submarginal line a series of obscure, dark brown spots; terminal line black with black dots on veins adjacent to this line; fringe brown; orbicular spot black; reniform spot black, bordered distally with scattered red scales; a series of alternate blackish brown and red spots along costa. **Dorsal hindwing.** Brown, with scattered metallic mauve scales between veins M3 and 2A; discal dot black, bordered distally with scattered red scales; vein 3A with light beige spot in submargin; postmedial series of black dots on veins from veins M1 to 2A; postmedial area with a series of light beige dots on veins; terminal line black, fringe brown. **Male genitalia** (Fig. 67). Valve weakly sclerotized in terminal ½ with a small, ventral pollex; setose clasper arises on short stalk to form globular apex with ventral margin deeply concave; sacculus with setose, flattened disc adjacent to clasper; juxta with boat shaped process arising from broad stalk; uncus long and narrow, arcs downward with pointed tip; aedeagus with antero-dorsal hump and ventral apical sclerite extending onto ventral surface of vesica, giving support to vesica as it extends dorsally; vesica globular with two small ventral basal diverticula beneath sclerite, and small diverticula arising from all sides. **Female genitalia** (Fig. 121). Ovipositor lobes short, setose, more or less flattened at tip; ostium bursae distinctly sclerotized; anterior apophyses absent, replaced by deep pits adjacent to ostium bursae, these pits rounded anteriorly; ductus bursae with two sclerites, one at junction with appendix bursae and one along anterior half of ductus bursae; appendix bursae with elongate diverticulum arising ventrally, encircling appendix bursae and narrowing toward ductus seminalis; appendix bursae constricted anteriorly before widening

to oval corpus bursae; corpus bursae with a dense field of long, narrow, interior setae on right near junction of appendix bursae.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Upper Key Largo, 25.265°N, 80.310°W, 16.Jul.2018, J. Troubridge in the CNC. **Paratypes.** 14♂, 11♀: **Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 20.Jan.2017, 1♂, 1♀; 16.Nov.2014, 1♂; 1.Apr.2019, 1♂, all J. Troubridge; **Miami Dade Co.:** Miami, Coral Gables, Cutler Bay, 25.643°N, 80.296°W, 24.Nov.2016 P. Perez, slide MGCL 3180, 1♀ (FSCA); Florida City, 25.40°N, 80.65°W, 13.Mar.2019, 5♂, 8♀; 3.Feb.2016, 2♂, 1♀; 2.Mar.2014, 1♂; 29.Jan. 2015, 1♂; 15.Jan.2013, 1♂, all J. Troubridge; **Monroe Co.:** Upper Key Largo, 25.287°N, 80.292°W, 28.Nov.2016, J. Troubridge, 1♂.

Etymology. I name this species to honor Jeremy Dixon, U.S. Fish and Wildlife Service, who kindly facilitated access Crocodile Lake National Wildlife Refuge, the type locality of *M. dixonii*. His interest and support for the study of moths in the Florida Keys is greatly appreciated.

Distribution. *Metalectra dixonii* has been collected in Costa Rica and in Florida from Collier Co., southward to Key Largo, usually in hardwood hammocks.

Remarks. The DNA was analyzed, and the 658 COI base pairs compared between specimens of *M. analis*, *M. dixonii*, and *M. nigrior*. The results showed an 8.57% difference between *M. dixonii* and *M. nigrior* and a 7.43% difference between *M. analis* and *M. dixonii*.

Erebidae: Phytometrinae

Hemeroplanis floccalis (Zeller), revived status

(Fig. 39a, 39b, 39c, 82)

BIN: BOLD:AAB1106

The DNA of *Hemeroplanis scopulepes* (Haworth) (BIN: BOLD:AAB1105) was analyzed, which split “*scopulepes*” into two distinct species separated by a 3.28% difference in the 658 COI base pairs compared. The type locality of *H. scopulepes* is “England” (in error for the southeastern United States; Poole 1989). Of the specimens examined, *H. scopulepes* was found in North Carolina, Mississippi, Alabama, and in Florida, southward at least to Highlands County. The second species occurs in Texas, Mexico, Costa Rica, and southern Florida. *Hemeroplanis floccalis* (Zeller), **revived status**, described from Texas is an available name for this species, which I here raise from the synonymy of *H. scopulepes* to full species status. These two species can be difficult to identify due to the extreme variation they exhibit; however, *H. scopulepes* (Fig. 40) tends to be larger (FW length 12–14 mm) than *H. floccalis* (FW length 10–12 mm). Internally, the male clasper of *H. scopulepes* is roughly triangular (Fig. 84), whereas that of *H. floccalis* narrows apically to form a thumb-like projection (Fig. 82).

Erebidae: Erebiniae: Melipotini

Melipotis florida Troubridge, new species

(Fig. 26a, 26b, 65, 122)

BIN: BOLD:ABZ4611

Diagnosis. *Melipotis florida* is most similar to *M. perpendicularis* (Guenée) (Fig. 27a, 27b) (BIN: BOLD:AAB8726), lectotype from Colombia, designated by Viette (1951). *Melipotis perpendicularis* forms a species complex in southwestern United States where two cryptic species occur along with *M. perpendicularis*, these species are placed into BIN: BOLD:ABZ4611 along with *M. florida*. In *M. perpendicularis*, the antemedial line of the forewing extends roughly perpendicular to the posterior margin of the wing, whereas that of *M. florida* arises at an acute angle from the posterior margin. Internally, the male genitalia are similar, but differ in the vesica, which has four elongate, finger-like diverticula in *M. perpendicularis*, but only three in *M. florida*.

Description. Antennae filiform, ciliate; head, vertex, prothoracic collar, tegulae, thorax, and abdomen gray brown to light gray brown. **Dorsal forewing.** Forewing length 18–21 mm. Male: ground color dark gray brown; basal line absent, antemedial line forms a solid band 1.5–2.0 mm wide, light gray, often with chestnut toward posterior margin, curves abruptly toward tornus, meeting posterior margin at an acute angle; a distinct black triangular

spot lies basal to antemedial line adjacent to posterior margin; narrow fine postmedial line delineates outer margin of reniform spot and bends around to terminate mid way along antemedial band; submarginal line somewhat obscure, bordered outwardly with chestnut brown scales, divides medial blackish area from broad submarginal gray band; orbicular spot black with thin white line on outer margin and scattered chestnut brown scales on perimeter; a small black dot occurs between orbicular and reniform spots; reniform spot light gray; minute black dots on margin between veins; fringe gray. Females extremely variable, some resembling males and others with the entire forewing mottled gray (Fig. 26b). **Dorsal hindwing.** Dirty white basally with pearlescent sheen; veins bordered with black scales; broad black terminal band encompasses *ca.* ½ of wing above and ¼ wing below cubital veins; a diffuse submarginal patch of light-gray scales is present between cubital veins; fringe black between cubital veins, white elsewhere. **Male genitalia** (Fig. 65). Valve divided in half lengthwise with sclerotized dorsal and ventral halves separated by membranous seam that extends from base to apex; clasper arises from base of valve, narrow at base and widens to form a paddle-like tip; a sclerite extends along the entire length of the dorsal section of valve and splits near the apex to form a small, pointed spine-like process that extends just beyond the dorsal margin and a second spine-like process that extends just beyond the tip of the valve; uncus short, blunt, covered with what appears to be hair pencils; juxta with short ear-like processes on either side of aedeagus; anal tube with long ventral sclerite; vesica arcs ventrally supported by a narrow, posterior sclerite leaving from small bump on dorsal surface and two smaller ventral sclerites; vesica forms globular process at base of downward arc on which three elongate, finger-like diverticula extend from left, right, and anterior sides of vesica; a second large diverticulum extends downward from the base of the left diverticulum and two small diverticula occur on the dorsal surface; a long, hair-like cornutus extends from the lower surface of the vesica, dorsally between these two diverticula; vesica completely covered by fine cornuti except on posterior surface. **Female genitalia** (Fig. 122). Ovipositor telescopic, ovipositor lobes fleshy with short setae; ductus bursae divided into a long, posterior, lightly sclerotized section and heavily sclerotized anterior section *ca.* half the length of the posterior section, these two sections separated by a short membranous section; orbicular corpus bursae with two small signa, narrows on the posterior ventral surface to ductus seminalis.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Dagny Johnson S.P., 25.181°N, 80.364°W, 3.Mar.2014, J. Troubridge, in the CNC. **Paratypes:** 270♂, 68♀: **Collier Co.:** Fakahatchee Strand Preserve State Park, 21.Feb.2014, 1♂; 21.Feb.2013, 1♀, all J. Troubridge; **Miami-Dade Co.:** Florida City, 25° 24.89'N, 80° 26.40'W, 1.Apr.2014, 1♀; 27.Jan.2014, 45♂, 16♀; 2.Mar.2014, 9♂, 3♀; 11.Feb.2013, 5♂; 15.Jan.2013, 9♂, 5♀; 30.Jan.2013, 22♂, 9♀; 9.Mar.2013, 4♂, 2♀; 3.Feb.2016, 116♂, 7♀; 26.Feb.2012, 11♂, 4♀; 21.Mar.2012, 11♂, 3♀; 13.Mar.2019, 36♂, 16♀, all J. Troubridge; Miami, Brickell Ham., 21.Aug.1939, F.N. Young, 1♂ (no. 3546,1) (FSCA); **Monroe Co.:** Key Largo, 26.Dec.1987, L.C. Dow, 1♀ (FSCA).

Etymology. The name refers to the known range of the species. Noun in apposition.

Distribution. This species is known from Upper Key Largo, northward at least to Collier County.

Remarks. The DNA was analyzed, and the 658 COI base pairs compared with those of specimens of *Melipotis perpendicularis*. The results showed a 2.3% difference between *M. florida* and *M. perpendicularis*, its nearest relative.

Erebidae: Erebinae: Euclidiini

Doryodes acta Troubridge, new species

(Fig. 28, 79)

BIN: BOLD:AAC9851

Diagnosis. Lafontaine and Sullivan (2015) published an excellent revision of the genus and images of adults and genitalia of extant species are available for comparison in that work. In general, all species in the genus have a blackish brown stripe extending through the middle of the forewing from the wing base to a point about ¾ of the way to the outer margin before turning to the apex and fading out before reaching it. This line is bordered on both dorsal and ventral margins to varying degrees by a thin white line. *Doryodes acta* is most closely related to *D. fusselli* Sullivan and Lafontaine, which is known only from North Carolina. Externally, both species look similar and are smaller and paler than the species with which they fly. Internally, the vesica of *D. fusselli* (see Lafontaine

and Sullivan (2015), fig. 36) bends to the right with two short, apical diverticula that abut each other, each with a single cornutus, and a larger diverticulum on the right with one basal and two subapical cornuti. The vesica of *D. acta* has two sub-basal comb-like cornuti, two widely separated apical diverticula, the left one elongate with single basal and two subapical cornuti, the right much shorter with an apical cornutus, and on the right a second, larger diverticulum with single basal and apical cornuti.

Description. Male antennae bipectinate; head, vertex, thorax, and abdomen light pinkish beige. **Dorsal forewing** (male). Forewing length 16–17 mm. Ground color light pinkish beige with heavy suffusion of black scales; a medial, yellow-brown patch extends from wing base to apex, below which is a dark brown line that is bordered dorsally with a thin white line in proximal $\frac{2}{3}$ and ventrally in the distal $\frac{1}{3}$ by a white line, edged ventrally and dorsally with dark brown that bends toward apex; orbicular and reniform spots present as minute black dots; fringe light pinkish beige. **Dorsal hindwing.** Ground color light beige with slightly darker beige scales bordering outer and anterior margins; fringe light beige. **Male genitalia** (Fig. 79). Valve trifid apically with costal extension cut away dorsally to form a point on ventral margin; saccular extension drawn to a blunt point terminates short of costal extension; a rounded, fleshy, apical process is situated between costa and saccular extensions; uncus relatively narrow, arcs slightly downward to pointed apex; vesica bends downward with 1–4 posterior comb-like cornuti before branching to form two small and three large diverticula; a flat ventral cornutus is present on body of vesica where branching begins; one minute, ventral diverticulum points backward, one low diverticulum present on left, these two diverticula without cornuti; one elongate posterior diverticulum with terminal cornutus is directed dorsally, below which a large, square, diverticulum with large, thorn-like, bulbous, apical cornutus; large, ventral diverticulum has matching, lateral bulbous, thorn-like cornuti. **Female genitalia.** Unknown.

Type material. **Holotype** male: USA: **Florida, Dixie Co.:** Highway 361, 29.564°N, 83.380°W, 16.Nov. 2015, J. Troubridge, in the CNC. **Paratypes:** 13♂: **Dixie Co.:** Highway 361, 29.564°N, 83.380°W, 5.Apr.2016, 11♂; 16.Nov.2015, 2♂, all J. Troubridge.

Etymology. From Latin, *acta* means seashore, and refers to the coastal habitat of this species.

Distribution. Thus far, *D. acta* is known only from the remote Gulf of Mexico salt marshes of Dixie Co., Florida.

Remarks. The DNA was analyzed and the 658 COI base pairs compared with those of specimens of *Doryodes fusselli*. The results showed a 0.3% difference between *D. acta* and *D. fusselli*, its sister species. The BOLD database places *D. acta* and *D. fusselli* into BIN: BOLD:AAC9851.

***Doryodes unica* Troubridge, new species**

(Fig. 29, 80)

BIN: BOLD:ABX5381

Diagnosis. *Doryodes unica* is most similar to *D. latistriga* Sullivan and Lafontaine, which is known from salt marshes along the northern Gulf of Mexico from Alabama to Louisiana. Externally, *D. latistriga* is extremely variable and the best way to distinguish the species is by examining the genitalia. Internally, the vesica of *D. latistriga* (see Lafontaine and Sullivan (2015), fig. 39) bends downward to a blunt apex and distal diverticulum that has a lateral cornutus on this lower process. Two short, lateral diverticula are present on the right, just beyond a flat cornutus, and a dorsal, cornutus is present near shaft of aedeagus. The vesica of *D. unica* bends downward with two cornuti, on left side, one on ventral surface, and two large, flat apical cornuti with a distal subterminal diverticulum. The BOLD database places both *D. unica* and *D. reinecke* Sullivan and Lafontaine into BIN: BOLD:ABX5381. *Doryodes reinecke* has a much duskier habitus than *D. unica*. Internally, the vesica of *D. reinecke* above the basal trunk is T-shaped with a preapical rooster-comb-like cornutus on the anterior surface and a conical cornutus on the left side, which is very different from that of *D. unica* (described above).

Description. Male antennae bipectinate; head, vertex, thorax, and abdomen light beige. **Dorsal forewing** (male). Forewing length 16 mm. Ground color light brown suffused with of dark-brown and black scales; dark-brown line edged ventrally with thin, light beige line in proximal $\frac{2}{3}$ and white in distal $\frac{1}{3}$; brown line bordered dorsally with thin white line in proximal $\frac{2}{3}$, above which an ochre patch extends from wing base to apex; orbicular and reniform spots present as minute black dots within this ochre patch; fringe light beige. **Dorsal hindwing.** Ground color white basally, gradually becoming light ochre-brown toward outer margin; terminal line with scattered black

scales; fringe concolorous with wing margin. **Male genitalia** (Fig. 80). Valve trifid apically with costal extension drawn to an apical point; saccular extension with rounded tip terminating short of costal extension; a rounded, fleshy, apical process is situated between costal and saccular extensions; uncus relatively thick with pointed apex; vesica bends to the right with two spiny cornuti on left side, one flat cornutus on ventral surface at point where large diverticula arise; a low diverticulum on posterior surface lacks cornuti; a large diverticulum arises dorsally with two large cornuti on right, one is bulbous, thorn-like and the other with a low field of spines; left side with two small diverticula arising behind large, bulbous, thorn-like cornutus. **Female genitalia**. Unknown.

Type material. Holotype male: USA: **Florida: Dixie Co.:** Highway 361, 29.564°N, 83.380°W, 5.Apr.2016, BOLD sample ID: CNCLEP00119981, J. Troubridge, in the CNC.

Etymology. From Latin, *unica* refers to fact that the species is known only from the unique holotype.

Distribution. This species is known only from the remote Gulf of Mexico salt marshes of Dixie Co., Florida.

***Doryodes fulva* Troubridge, new species**

(Fig. 30, 81)

BIN: BOLD:ACE7229

Diagnosis. *Doryodes fulva* is most closely related to *D. desoto* Lafontaine and Sullivan (Fig. 31), which is known from salt marshes along the west coast of Florida and is sympatric with *D. fulva* in Dixie County. The BOLD database places *D. desoto* into BIN: BOLD:ACE7229 along with *D. fulva*. Externally, *D. fulva* is easily distinguished from *D. desoto* and the other *Doryodes* Guenée species with which it flies by the lower margin of the brown forewing line, which is not sharply delineated but blends more gradually into the lower half of the wing than in the other species. Additionally, the hindwing is yellowish beige with brown shading in the postmedial area, whereas it is off-white, light beige, or yellowish white in the other species.

Description. Male antennae bipectinate; head, vertex, and thorax, gray brown; abdomen light beige. **Dorsal forewing** (male). Forewing length 17–18 mm. Ground color light beige, heavy suffusion of dark brown scales on costa and below dark brown line; yellowish beige area between brown line and costa with very few dark brown scales; distal 1/3 of dark brown line edged ventrally with light beige line bending toward apex; brown line bordered dorsally with white line on proximal 2/3, below which the brown band gradually blends to ground color of wing; orbicular and reniform spots present as minute black dots; fringe light beige. **Dorsal hindwing.** Ground color light yellowish beige with concolorous fringe; postmedial area with scattered dark brown scales; vein Rs+M1 highlighted with dark brown scales basal to where they split; fringe concolorous with wing. **Male genitalia** (Fig. 81). Valve trifid apically with costal extension cut away dorsally to form a point on ventral margin; saccular extension drawn to a blunt point terminating short of costal extension; a rounded, fleshy, apical process is situated between costal and saccular extensions; uncus with narrow neck at tegumen, wide basally, arcs downward as it narrows toward pointed apex; vesica with a comb-like sub-basal diverticulum, and two bulbous, spine-like cornuti on right; at end of downward slope, vesica opens to form two small (one unarmed on left and one with apical cornutus on right) and three large diverticula, one on right, one longer one on left, and one elongate, distal diverticulum, each with large, bulbous, thorn-like terminal cornuti; a flat, ventral cornutus is present at junction of downward body of vesica and point where vesica splits into various diverticula. **Female genitalia**. Unknown.

Type material. Holotype male: USA: **Florida: Dixie Co.:** Highway 361, 29.564°N, 83.380°W, 16.Nov.2015, J. Troubridge, in the CNC. **Paratypes:** 2♂: **Dixie Co.:** Highway 361, 29.564°N, 83.380°W, 5.Apr.2016, J. Troubridge, 2♂.

Etymology. From Latin, *fulva* refers to tawny color of this species.

Distribution. This species is known only from the remote Gulf of Mexico salt marshes of Dixie County, Florida.

Remarks. The DNA was analyzed and the 658 COI base pairs compared with those of specimens of *D. desoto*. The results showed a 0.3% difference between *D. fulva* and *D. desoto*, its sister species.

Erebidae: Erebiniae: Ophiusini***Toxonprucha killamae* Troubridge, new species**

(Fig. 7a, 7b, 7c, 71, 123)

BIN: BOLD:AAI4900

Diagnosis. *Toxonprucha killamae* is extremely variable but is easily distinguished from the other North American *Toxonprucha* Möschler species by its smaller size. Its closest relative is *T. stunia* (Schaus) from Central America, but is distinguished from it by the dark, mottled-brown wing pattern, often frosted with light mauve in the post-medial area. *Toxonprucha killamae* is much more variable, usually with dark medial shading on all wings.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen brown. **Dorsal forewing** (both sexes). Forewing length 7–10 mm. Ground color gray brown; antemedial line dark chestnut to black, bending inward around orbicular spot; orbicular spot black; thin medial line curves evenly around orbicular spot and then straight to anterior margin; undulating postmedial line dark chestnut, extends from posterior margin to lower, anterior corner of reniform spot and then sweeps outward, widely encircling reniform spot, reaching costa above reniform spot; subterminal line obscure, dark brown basally, light brown distally; reniform spot dark gray, encircled with scattered black scales; terminal line black, fringe brown. In occasional specimens, the area between the subterminal line and the medial line is heavily suffused with black scales. **Dorsal hindwing.** Forewing coloration and pattern extends onto hindwing; medial line dark brown to black, meets postmedial line of forewing of spread specimens; three or four evenly spaced dark brown lines occur basal to medial line; subterminal line obscure, dark brown basally, light brown distally; terminal line black, fringe brown. **Male genitalia** (Fig. 71). Valve long and with even sides, about 5× long as wide, rounded at tip, clasper, pollex, and digitus all absent; uncus talon-like, pointed and downturned at tip, a broad, raised, dorsal, setose, subapical hat-like process present on dorsal surface; anal tube with dorsal sclerite grooved to accommodate uncus and more deeply grooved at tip to receive downturned apical spine of uncus. **Female genitalia** (Fig. 123). Ovipositor lobes short, setose, rounded at tip; ostium bursae lightly sclerotized with bifid plate on ventral margin; ductus bursae very short, membranous; appendix bursae spirals toward ductus seminalis; posterior half of corpus bursae constricted to form a narrow tube, widening to anterior, bulbous section; signa absent.

Type material. Holotype male: USA: **Florida, Monroe Co.:** No Name Key, 24.695°N, 81.329°W, 20–21.Jun.2017, J. Troubridge, in the CNC. **Paratypes:** 12♂, 18♀: **Monroe Co.:** No Name Key, 25.May.1986, L.C. Dow, 1♂ (MGCL); Big Pine Key, 24.710°N, 81.383°W, 2.Jun.2020, J.M. Farnum, slide MGCL 5853♀, 1♀ (FSCA); No Name Key, 24.695°N, 81.329°W, 20–21.Jun.2017, J. Troubridge, 4♂, 2♀; Bahia Honda State Park, 24.665°N, 81.254°W, 19.Jun.2014, 1♂, 2♀; 24.Jul.2016, 1♀, all J. Troubridge; Islamorada, 24.962°N, 80.566°W, 21.Jun.2014, J. Troubridge, 6♂, 7♀; Upper Key Largo, 25.179°N, 80.366°W, 25.Jul.2016, 1♂, 1♀; 9.Jul.2015, 1♀; 25.287°N, 80.292°W, 12.Apr.2016, 1♀; 25.263°N, 80.313°W, 4.Apr.2019, 1♀, all J. Troubridge.

Etymology. I take pleasure in naming *Toxonprucha killamae* to honor Kristie Killam, U.S. Fish and Wildlife Service, who kindly facilitated access to National Key Deer Refuge, the type locality of *T. killamae*. Her interest and support for the study of moths in the Florida Keys is greatly appreciated.

Distribution. This species is presently known only from the Florida Keys, where it can be found in disturbed and natural habitats.

Remarks. The DNA was analyzed and the 658 COI base pairs compared with those of specimens of *Toxonprucha* in the BOLD database. The results showed that there is a 5.71% difference between *T. killamae* and *T. stunia*, from Mexico and Central America, its nearest relative.

***Zale lafontainei* Troubridge, new species**

(Fig. 32a, 32b, 32c, 32d, 74, 124)

BIN: BOLD:ACD9041

Diagnosis. The closest relative to *Zale lafontainei* is *Zale erilda* Schaus from Puerto Rico, they are distinguished from each other by characters of the male genitalia. The right valve of *Z. erilda* is shorter than the left valve, scoop-like, with a short basal clasper and large hooked process arising from the costa (Fig. 75). In *Z. lafontainei*, the

right valve is about the same length as the left one with a large basal clasper and large paddle-like apex with costal process absent (Fig. 74). The BOLD database places both *Z. lafontainei* and *Z. erilda* into BIN: BOLD:ACD9041. There are no *Zale* Hübner species in Florida with which male *Z. lafontainei* could be confused; however, females could easily be confused with females of *Z. vargoi* **new species**. The female of *Z. vargoi* is smaller (FW length 18–21 mm versus 22–27 mm in *Z. lafontainei*) and the ostium bursae of *Z. vargoi* extends through the 7th abdominal sternite, whereas that of *Z. lafontainei* is distal to the 7th sternite.

Description. Antennae filiform, ciliate. Head, thorax, and abdomen brown; dorsal tuft of light beige scales on 1st abdominal tergite is diagnostic. *Zale lafontainei* is sexually dimorphic. **Male.** Head, thorax, and abdomen brown; 7th abdominal tergite with black scales, 1st abdominal tergite with a tuft of scales distinctly lighter than remainder of body. **Dorsal forewing.** Forewing length 22–27 mm. Ground color light tan; basal area brown with weak, black basal line; jagged antemedial line black, edged outwardly with brown; double chestnut-brown medial line extends through light tan medial area; thin, black, jagged, postmedial line edged outwardly with dark-brown scales; chestnut-brown subterminal line edged outwardly with dark gray forms a crescent extending from posterior margin to terminus of vein M3, subterminal line weaker through veins M1–M3, dark gray distal portion of subterminal line extends from vein M1 to apex; a triangular patch of chestnut-brown scales extends between costa and vein M1 and from postmedial line and dark-gray subterminal line; a row of submarginal dots between veins are chestnut brown, edged distally with light-tan scales; fringe light brown; orbicular spot reduced to a small chestnut-brown dot; obscure reniform spot with scattered gray brown basally, a thin line of off-white scales through center, and scattered chestnut-brown scales distally. **Dorsal hindwing.** Ground color light tan with scattered light gray-brown scales; discal lunule dark brown; three bands of light gray-brown scales extend through basal area adjacent to subterminal line; subterminal line consists of two thin black lines with dark-brown scales between the two lines; a band of brown scales borders subterminal line distally, a broad band of dark-gray scales border this brown band with a patch of light gray-brown scales between the dark-gray and brown bands from vein 2A to vein M2; a row of submarginal dots between veins are chestnut brown, edged distally with light-tan scales; fringe brown. **Female. Dorsal forewing.** Ground color light rust brown, suffused with dark gray scales; basal area heavily suffused with dark gray-brown scales; basal line weak, black; thin, black antemedial line obscure; thin, jagged, postmedial line black; a broad area of dark-gray and black scales fills medial area from antemedial line to postmedial line from posterior margin to apex except along costa; orbicular spot obscure or absent, reniform spot obscure, dark gray, bordered by thin black line basally; chestnut-brown subterminal line edged outwardly with light tan and then dark gray forms a crescent extending from posterior margin to terminus of vein M3; subterminal line becomes a diffuse row of dark-gray scales through veins M1–M3, a row of dark-brown submarginal dots between veins are edged distally with light-tan scales; fringe brown. **Dorsal hindwing.** Ground color light brown with scattered dark gray-brown scales; discal lunule dark brown; three bands of dark gray-brown scales extend through basal area adjacent to subterminal line; subterminal line consists of two thin black lines with dark-brown scales between the two lines; subterminal line bordered distally with tan scales, followed by a band of brown and then dark gray; a row of submarginal chestnut-brown dots between veins edged distally with light-tan scales; fringe brown. **Male genitalia** (Fig. 74). Valves asymmetrical, heavily sclerotized. Right valve scoop-like toward cucullus; cucullus becomes broader along dorsal surface with thick field of setae; a large spike extends medially from a point mid-way along ventral surface of valve; left valve with ventral hump basal to a narrow neck below broad, spear-like cucullus; uncus long and thin with downward spine at tip; juxta with two lateral anterior processes, rounded at apex; aedeagus bends down and then upward where short sclerite extends from tip of aedeagus onto vesica; vesica with several elongate diverticula, a long, thin cornutus extends along ductus seminalis. **Female genitalia** (Fig. 124). Ovipositor lobes short, setose, rounded at tip; ostium bursae lightly sclerotized; ductus bursae relatively short, membranous; appendix bursae narrows dorsally toward ductus seminalis; corpus bursae constricted posteriorly, widening to anterior, oval corpus bursae, signa absent; 7th abdominal sternite asymmetrical, deeply concave on posterior margin, slightly off-center to the right with left lobe longer than right lobe.

Type material. Holotype male: USA: **Florida, Monroe Co.:** Bahia Honda State Park, 24.666°N, 81.253°W, 4.Mar.2013, J. Troubridge, in the CNC. **Paratypes:** 57♂, 77♀: **Collier Co.:** near Copeland, Fakahatchee Strand, Janes Scenic Drive, 28.Mar.1986, 1♀ (MGCL); Fakahatchee Strand, 25.98°N 81.41°W; 13 Mar. 2012, J. Troubridge, 1♀ (FSCA); **Miami-Dade Co.:** Florida City, 25° 24.89'N, 80° 26.40'W, 9.Mar.2014, 4♂, 5♀; 30.Jan.2013, 4♂, 5♀;

11.Feb.2013, 2♂, 2♀; 2.Mar.2014, 5♀; 15.Jan.2013, 3♂, 4♀; 1.Apr.2014, 1♂; 29.Jan.2015, 5♂, 4♀; 27.Jan.2014, 1♂, 5♀; 21.Mar.2012, 2♂, 2♀; 13.Mar.2019, 8♂, 5♀, all J. Troubridge; **Monroe Co.:** Key Largo, 23.Apr.1986, L.C. Dow, 2♀ (FSCA); Key Largo, 24.May.1986, L.C. Dow and J.D. Worsley, [one] slide MGCL 5879, 4♀ (MGCL); Dagny Johnson State Park, 25.179°N 80.366°W, 7.Jul.2013, J. Troubridge, 1♀ (FSCA); Big Pine Key, vic. Watson Hammock, 25.Dec.1987, L.C. Dow, [one] slide MGCL 5880, 3♀ (MGCL); Marathon, 29.Jul.1992, L.C. Dow, 1♂ (MGCL); Big Pine Key, Palmetto Avenue, 24.673°N 81.363°W, Malaise trap, 7–21.Aug., 21.Aug.–5 Sep., and 5–19 Sep. 2019, J. Farnum, 3♀ (FSCA); No Name Key, 30 Mar. 1986, L.C. Dow, 1♀ (MGCL); Bahia Honda State Park, 24.666°N, 81.253° W, 4.Mar.2013, 6♂, 10♀; 16.Dec.2014, 3♂, 2♀; 19.Jun.2014, 1♂; 9.Nov.2013, 1♂, 2♀; 8.Apr.2013, 4♂, 1♀; 12.Mar.2012, 1♂, all J. Troubridge; Long Point Key, 24.749°N, 80.964°W, 22.Feb.2015, J. Troubridge, 8♂, 4♀; Dagny Johnson State Park, 25.286°N, 80.292°W, 21.Feb.2015, 1♂, 3♀; 11.Mar.2012, 4♂, 2♀, all J. Troubridge.

Etymology. I name this species to honor Dr. J. Donald Lafontaine, whose help, friendship, and support throughout my career in entomology has been invaluable to myself and others.

Distribution. *Zale lafontainei* has been found in Miami-Dade and Monroe counties, Florida.

Zale vargoi Troubridge, new species

(Fig. 33a, 33b, 33c, 78, 125)

BIN: BOLD:ADJ5326

Diagnosis. There are no North American species that can be confused with males of *Z. vargoi*; the gray-brown wing color of the male is diagnostic. Females could easily be confused with females of *Z. lafontainei*. The female of *Z. vargoi* is smaller (FW length 18–21 mm versus 22–27 mm in *Z. lafontainei*) and the ostium bursae of *Z. vargoi* extends through the 7th abdominal sternite, whereas that of *Z. lafontainei* is distal to the 7th sternite.

Description. Antennae filiform, ciliate. *Zale vargoi* is sexually dimorphic. **Male.** Head, thorax, and abdomen gray brown. **Dorsal forewing.** Forewing length 18–21 mm. Ground color gray brown; basal area brown with obscure, off-white basal line; thin, jagged antemedial line off-white; jagged, brown medial line bordered anteriorly by a band of scattered white and light-green scales, within which the orbicular spot is present as a small black dot; reniform spot absent; thin, black, jagged, postmedial line becomes white where it crosses costa; very thin, off-white subterminal line edged outwardly with dark gray forms a crescent extending from posterior margin to terminus of vein M3; subterminal line obscure between vein M3 and costa; a white dash is present on subterminal line at vein CuA2, submarginal line a series of dots between veins; fringe concolorous with wing. **Dorsal hindwing.** Ground color gray brown, basal area slightly paler; minute discal lunule dark gray brown; three faint gray-brown bands extend through medial area adjacent to subterminal line; subterminal line consists of two thin lines, basal line dark gray brown, much thinner than black distal line; distal line bordered distally with brown-ochre, and gray lines between M3 and tornus, purplish-gray submarginal area lighter than medial area; obscure submarginal streaks between veins brown; fringe concolorous with wing. **Female.** Head and thorax dark brown; abdomen light brown with black scales on 1st and 6th tergites. **Dorsal forewing.** Ground color light brown, suffused with darker brown scales; basal area a mixture of dark-brown and black scales; thin, jagged, black antemedial line obscure; thin, jagged, postmedial line black, on which a black dot occurs in cell M3, line becomes heavier between vein CuA1 and costa; a triangular patch of dark-brown and black scales extending from CuA1 to apex, distal to postmedial line; medial line dark brown; orbicular spot a small black dot; reniform spot with scattered black scales on basal area, otherwise imperceptible; thin, brown subterminal line edged outwardly with wide black band that forms a crescent extending from posterior margin to terminus of vein M3, submarginal line an obscure series of black dots; fringe brown. **Dorsal hindwing.** Ground color light brown with scattered dark brown scales basal to medial line; faint discal lunule brown; three obscure bands of brown scales present between medial line and subterminal line; subterminal line consists of two thin black lines, bordered distally with light brown scales, followed by a wide dark gray band; submarginal line a series of obscure, dark brown dots between veins; fringe brown. **Male genitalia** (Fig. 78). Valves asymmetrical, heavily sclerotized; right valve bends slightly downward toward apex with dorsal finger-like process above two low humps; a broad, low, triangular process extends ventrally from ventral margin of sacculus, posterior to which a flattened process bends medially from tip of sacculus; left valve much broader and more complex with long dorsal and ventral finger-like processes

extending from apex and long, finger-like process extending ventrally from ventral margin of sacculus, posterior to which a triangular process lies flat against valve at tip of sacculus; uncus long and thin with downward spine at tip; juxta with two lateral anterior processes, carved out on right to accommodate aedeagus; aedeagus heavily sclerotized, bends down and to the left before sweeping upward toward vesica, which projects dorsally from tip of aedeagus; a strong spine projects posteriorly from the point where the aedeagus turns vertically; vesica with several elongate diverticula, those on the left covered with minute spicules. **Female genitalia** (Fig. 125). Ovipositor lobes short, setose, rounded at tip; ostium bursae cuts through left side of 7th abdominal sternite; ductus bursae relatively short, sclerotized toward ostium bursae; appendix bursae undefined; ductus seminalis exits dorsally; oblong corpus bursae sack-like; 7th abdominal sternite asymmetrical, deeply concave on posterior margin, with circular orifice on left forming ostium bursae.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Sugarloaf Key, 24.665°N, 81.516°W, 24.Jan.2017, BOLD sample ID: KSLEP1002-17, J. Vargo, in the CNC. **Paratypes:** 2♀: **Monroe Co.:** No Name Key, 24.695°N, 81.329°W, 21–22.Jan.2017, 1♀; 5.Feb.2018, 1♀, both J. Troubridge.

Etymology. I name this species to honor my good friend, James Vargo, who collected the holotype.

Distribution. *Zale vargoi* is known only from the Lower Keys, Monroe Co., Florida.

Zale clandestina Troubridge, new species

(Fig. 34a, 34b, 77, 126)

BIN: BOLD:AAA4887

Diagnosis. *Zale clandestina* is closely related to and easily confused with *Z. minerea* (Guenée). Since individuals of *Z. minerea* could be confused with *Z. clandestina*, DNA or genital characters should be used to distinguish the two species. In the female genitalia of *Z. clandestina*, the posterior lobes of the 7th sternite are more evenly rounded than in *Z. minerea* and form a deep U-shaped medial groove, but the lateral corners of the 7th sternite of *Z. minerea* are more angular and form a V-shaped medial groove. In *Z. clandestina*, the posterior portion of the corpus bursae is relatively short but that of *Z. minerea* forms a longer neck. In the male genitalia, the apical processes of both valves are carved away subapically on the dorsal margin giving the appearance of a brontosaurus's head in *Z. minerea* (Fig. 76), evenly rounded in *Z. clandestina* (Fig. 77), and the heavily setose ridge on the right valve of *Z. minerea* terminates adjacent to the posterior margin of the valve but continues well beyond the posterior margin in *Z. clandestina*.

Description. Antennae filiform, ciliate. *Zale clandestina* is sexually dimorphic. **Male.** Head, thorax, and abdomen ochre. **Dorsal forewing.** Forewing length 21–22 mm. Ground color light ochre; the entire area basal to the obscure, cream colored antemedial line is mottled with various shades of brown; similar mottled brown patches present between radial vein and costa in medial area and between obscured postmedial line and apex; orbicular spot a tiny brown dot; reniform spot a brown lunule; cubital vein edged with brown scales between antemedial line and subterminal line edged basally with brown and distally with white forms a crescent extending from posterior margin to terminus of vein M3 where a dark-brown patch extends between subterminal line and outer margin; subterminal line obscure between vein M3 and costa; outer margin deeply scalloped between veins; a row of brown marginal dots is present between veins; fringe concolorous with wing. **Dorsal hindwing.** Ground color light beige, basal area slightly paler; minute discal dot light brown; five faint light-brown lines extend through medial area adjacent to subterminal line; thin, cream-colored subterminal line bordered basally with dark brown, distally with light brown and then white edged distally with light gray between M3 and tornus; obscure marginal dots between veins brown; fringe concolorous with wing. **Female.** Head brown; thorax dark brown; abdomen brown with beige dorsal dots. **Dorsal forewing.** Ground color ochre brown, suffused with dark-brown scales; basal area dark brown; antemedial line chestnut, obscured by dark-brown scales; thin, faint postmedial line brown, on which a dark-brown dot occurs in cell M1; a triangular patch of dark-brown scales extends from vein M1 to apex, distal to postmedial line; medial line a diffuse scattering of dark-brown scales; area between radial vein and costa mottled dark brown; cubital vein edged with dark gray; orbicular spot a small dark-brown dot; reniform spot a dark-brown crescent, thin, brown subterminal line edged outwardly with wide, dark-gray band that forms a crescent extending from posterior margin to terminus of vein M3; all veins between

subterminal line and outer margin edged with dark-gray scales; fringe brown. **Dorsal hindwing.** Ground color light brown with scattered dark-brown scales basal to medial line; faint discal dot brown; two obscure bands of brown scales present basal to subterminal line; subterminal line consists of two thin black lines bordering chestnut-brown band; subterminal line bordered distally with light-brown scales, followed by a wide dark-gray band; fringe dark brown. **Male genitalia** (Fig. 77). Valves asymmetrical, heavily sclerotized. Right valve with a low, pointed process mid-way along ventral margin (process “a”), distal to which ventral margin curves upward to a low medial pointed process (process “b”), adjacent to which a long process arises from outer margin, curving downward and inward to a blunt apex; a heavily setose ridge extends along inner margin of valve from process “a” to process “b” and extends distally from process “b” as a heavily setose, finger-like process about $\frac{3}{4}$ mm in length (this ridge terminates at process “b” in *Z. minerea*). Left valve with a large process mid-way along ventral margin that is drawn to a blunt point, posterior to which valve is deeply incised anterior to a wide subapical section, from which a dorso-ventrally flattened, finger-like process apically bends inward. Uncus long, narrow, with hooked, pointed tip; juxta H-shaped; aedeagus heavily sclerotized, bends to left and then abruptly upward with subapical field of minute teeth; vesica with a small basal diverticulum, a large sub-basal diverticulum and small subapical diverticulum on right, two small sub-basal diverticula and one subapical diverticulum on the right, and a large apical diverticulum bending downward; ductus seminalis arises dorsally adjacent to sub-basal diverticulum. **Female genitalia** (Fig. 126). Ovipositor lobes rounded at tip; 7th abdominal sternite forms a heavily sclerotized plate; a deep, medial, posterior indentation divides 7th sternite with symmetrical, lateral lobes, this indentation terminates anteriorly at a suture, which divides plate in half, curving slightly to left of center where ostium bursae opens through plate at anterior margin; heavily sclerotized ductus bursae extends posteriorly from ostium bursae to short, narrow appendix bursae; ductus seminalis arises on ventral side of appendix bursae; bursae copulatrix round, extends anteriorly half way beyond 7th sternite; signa absent.

Type material. **Holotype** male: USA: **Florida, Citrus Co.:** State Rt. 480, 28.698°N, 82.401°W, 16.Feb.2020, J. Troubridge, in the CNC. **Paratypes:** 7♂, 4♀: **Alachua Co.:** 9 miles NW Gainesville, UF Horticulture Unit, 5–12. Mar.1978, Malaise trap, N.N. Greenbaum, [one] slide MGCL 5881, 2♂; same data, 2–9. Apr.1978, slide MGCL 1262, 1♀ (FSCA); **Citrus Co.:** same data as holotype, 1♂; same location as holotype, 13.Apr.2017, 1♀, J. Troubridge; Withlacoochee State Forest, Rd. M-11, 12.May.1985, H.D. Baggett, 1♂; 8 mi. W. of Floral City, Rd. M-11, 18.May.1988, L.C. Dow, 1♂, 1♀ (FSCA, MGCL); **Liberty Co.:** Torreya State Park, 16.Mar.1980, H.D. Baggett, 1♂; 25.May.1980, C.F. Zeiger, slide MGCL 3158, 1♂; 29.May.1984, slide MGCL 3159, 1♀ (FSCA).

Etymology. The name is from Latin and means clandestine, a reference to the fact that this species has been hidden under *Z. minerea*.

Distribution. *Zale clandestina* has been collected in north-central Florida, North Carolina and there is a single specimen in the BOLD database from Connecticut.

Remarks. The DNA were analyzed and the 658 COI base pairs compared with those of specimens of *Z. minerea*. The results showed a 2.7% difference between *Z. clandestina* and *Z. minerea*, its nearest relative.

Erebidae: Eulepidotinae: Panopodini

Athyрма fakahatchee Troubridge, new species

(Fig. 35, 69, 127)

BIN: BOLD:AAK4103

Diagnosis. *Athyрма ganglio* Hübner (Fig. 36) is easily distinguished from *A. fakahatchee* by the reniform spot, which is shaped like an hourglass in *A. fakahatchee* and as a much smaller inverted comma in *A. ganglio*. The reniform spot is more similar in *A. adjutrix* (Cramer), but the forewing has a pinkish tinge, whereas it is brown in *A. fakahatchee*; the postmedial area is grayer without the heavy dusting of dark-brown scales that is present in *A. fakahatchee*; there usually is a row of dark-brown or black postmedial spots adjacent to the reniform spot in *A. adjutrix*, whereas it is absent in *A. fakahatchee*; the basal corner of the large triangular black spot is rounded in *A. adjutrix*, but more pointed in *A. fakahatchee*.

Description. Antennae bipectinate in males, filiform in females. Head, thorax, and abdomen brown; first abdominal segment with a dorsal tuft of dark-brown scales tipped with white. **Dorsal forewing** (both sexes). Forewing

length 17–21 mm. Ground color brown; basal line absent other than a black rectangle on costa; antemedial line black with large triangular basal projection in lower half, edged with rust scales ventral and basal to this triangle; thin, black medial line with 'S' shaped mark over vein 1A+2A; postmedial line reduced to two or three black spots above reniform spot; reniform spot very large, black, edged with rust scales; costa of male with button-like scent patch above medial line that extends through wing to form larger scent patch on ventral surface; terminal line deeply scalloped, dark brown, edged outwardly with light brown; postmedial area dusted with dark-brown scales, heavier along veins; fringe brown. **Dorsal hindwing:** brown, slightly lighter brown toward base; discal spot very faint; terminal line dark brown, edged outwardly with light brown; fringe brown. **Male genitalia** (Fig. 69). Valves with sclerotized apical finger-like process extending from ventral margin bending inward and slightly pointed at apex, above which a broad, weakly-sclerotized cucullus is supported by a sclerotized extension of costa; uncus relatively short with three short terminal spines, lateral spines directed backward and to center, longer spine angled downward, a narrow, ventral, finger-like process gives uncus a bottle opener look in lateral view; vesica extends to left as globular process with smaller diverticulum projecting to left; a second small diverticulum extends posteriorly; a larger basal diverticulum on right has a comb of stout, spine-like cornuti directed posteriorly. **Female genitalia** (Fig. 127). Ovipositor lobes setose, drawn to a blunt point; ostium bursae membranous with sclerotized lateral cup-like appendages; ductus bursae with relatively short, membranous, posterior section and heavily sclerotized anterior section that opens into heavily sclerotized appendix bursae; appendix bursae projected to the right with deeply concave pit on right side; corpus bursae more or less round, signa absent.

Type material. **Holotype** male: USA: **Florida, Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98° N, 81.39° W, 23.Mar.2015, J. Troubridge, in the CNC. **Paratypes:** 10♂, 4♀: **Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 21.Nov.2013, 1♂; 12.Feb.2013, 1♂; 15.Jan.2012, 1♂; 18.Jul.2012, 1♂; 30.Mar.2016, 2♂, 1♀; 21.Dec.2011, 1♂, 1♀, all J. Troubridge; Fakahatchee, 29.Apr.1986, L.C. Dow, 1♀ (FSCA); Fakahatchee Strand, Royal Park Hammock, 8.Feb.1988, V.P. Lucas, 1♂, 1♀ (MGCL) and 29.Oct.1989, W. Lee Adair, Jr., 1♂ (FSCA); Collier-Seminole State Park, 22.Apr.1988, L.C. Dow, 1♂ (FSCA).

Etymology. The type series was collected at Fakahatchee Strand Preserve State Park, hence the name. Noun in apposition.

Distribution. This species seems to be restricted to Fakahatchee Strand and nearby areas in Collier County.

Remarks. There has been confusion around the identities of the Florida species of *Athyrma* Hübner, which was resolved by analyzing DNA barcode data in conjunction with the examination of type material. *Athyrma ganglio* (Fig. 36) (described from South America) (BIN: BOLD:AAC7979) from Costa Rica and Florida are conspecific, thus the Florida specimens are correctly classified as *A. ganglio*. Analysis of the 658 COI base pairs of neotropical *Athyrma* species splits Costa Rican specimens presently listed as *A. adjutrix* (described from Surinam) into two distinct species with a 3.4% difference between them. One of these species is represented by Costa Rican specimens in the BOLD database (BIN: BOLD:ABZ2992) and it is this species that matches Cramer's type image. Its synonym, *A. dormitrix* Guenée (described from Brazil) is correctly placed under *A. adjutrix*. It is the other species, represented by both Costa Rican and Floridian specimens in the BOLD database that I describe as *A. fakahatchee*.

Erebidae: Eulepidotinae (*incertae sedis*)

Antiblemma perva Troubridge, new species

(Fig. 38a, 38b, 70, 128)

BIN: BOLD:AAC2502

Diagnosis. In Florida, *A. perva* is similar to *A. carolae* new species, described below, and *A. filaria* (Smith), but is easily distinguished from them by the bifid uncus of *A. carolae* and *A. filaria*, which is entire in *A. perva*. In Central America *A. perva* and *A. concinnula* (Walker) (BIN: BOLD:AAC3668) can be distinguished by the wings of *A. perva*, which are light brown, heavily suffused with dark-brown scales that give the wing a darker brown appearance than in *A. concinnula*, which lacks the heavy suffusion of dark-brown scales.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen brown. **Dorsal forewing** (both sexes). Forewing length 10–11 mm. Ground color brown; antemedial line dark brown, bordered basally with ochre dots

on the cubital vein and vein 1A+2A; postmedial line, bordered outwardly with ochre dots on veins and scalloped outwardly between veins; submarginal line a series of diffuse dark-brown spots between veins; orbicular spot absent; reniform spot shaped like a figure “8” delineated by brown scales slightly darker than ground color; terminal line a series of black crescents between veins; fringe brown; antemedial and postmedial lines with bold white spots on costa in some specimens. **Dorsal hindwing.** Ground color brown, heavily suffused with dark-brown scales; discal spot usually split into upper and lower black dots; postmedial line dark brown, bordered outwardly with ochre dots, extends noticeably outward over cubital veins; obscure row of submarginal brown spots; terminal line a series of black crescents between veins; fringe brown. **Male genitalia** (Fig. 70). Valve weakly sclerotized except along costal margin, widens in middle before narrowing to the more heavily-sclerotized costa; costa extends beyond lower section of valve to bluntly-pointed apex; a fleshy flap narrower than the valve terminates just short of terminal costal extension lies against outer side of valve, this flap covered with small spicules; uncus long, very thin, curved downward at pointed tip; aedeagus with two apical, dorsal sclerites with scale-like inner surface and an elongate sclerite on left side; elongate anterior extension of aedeagus basal to gonopore narrower than terminal section; vesica sac-like extends to left with two apical diverticula and elongate diverticulum on left terminating at ductus seminalis. **Female genitalia** (Fig. 128). Ovipositor lobes setose, relatively short; ostium bursae membranous, widens to membranous ductus bursae; long ductus bursae terminates at slightly swollen appendix bursae where ductus seminalis arises from ventral pouch; corpus bursae without signa, narrows to posterior appendix bursae.

Type material. **Holotype** male: USA: **Florida, Sarasota Co.:** North Port, 27° 02.5'N, 82° 05'W, 7.Nov.2012, J. Troubridge, in the CNC. **Paratypes:** 25♂, 33♀: **Alachua Co.:** Gainesville, 2832 NW 41st Place, 29.692°N, 82.365°W, UV light, 28–29.Apr.2020, 11–12.Jun.2020, 21.Jun.2020, J. Hayden, 2♂, 1♀ (FSCA); **Charlotte Co.:** Port Charlotte, 27.024°N, 82.062°W, 4.Jul.2013, J. Troubridge, 1♂; **Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 27.Mar.2017, 1♀; 25.Feb.2015, 2♀, all J. Troubridge; **Desoto Co.:** Peace River nr. Nocatee, 27° 10.07'N, 81° 54.63'W, J. Troubridge, 1♂, 2♀; **Hernando Co.:** Brooksville, Chinsegut Hill, 20.Oct.1987, W. Lee Adair, 1♀; same data, 11.Oct.1989, 1♂ (FSCA); **Marion Co.:** Hopkins Prairie, 29.277°N, 81.692°W, 27.Mar.2017, J. Troubridge, 1♀; **Okeechobee Co.:** Kissimmee Prairie, 27.584°N, 81.044°W, 17.Mar.2013, J. Troubridge, 4♀; **Orange Co.:** Moss Park, 16.Aug.1986, L.C. Dow, 1♂, 1♀ (FSCA); **Sarasota Co.:** North Port, 27° 02.5'N, 82° 05.0'W, 7.Nov.2012, 4♂, 6♀; 28.Nov.2012, 3♂, 3♀; 29.Nov. 2012, 3♀; 17.Nov.2012, 1♀; 15.Nov.2017, 2♀; 29.Mar.2012, 2♀; 28.Mar.2012, 2♀; 12.Mar.2012, 1♂; 7.Feb.2010, 1♀; 4.Dec.2012, 1♂; 13.Dec.2011, 1♂; 6.Dec.2017, 1♂; 9.Dec.2011, 1♂, all J. Troubridge; Siesta Key, 1.May.1953, C.P. Kimball, 1♂ (FSCA); **Seminole Co.:** Sanford, Hidden Lake Villas, 15.Feb.1988, R. Gillmore, 1♂ (MGCL); W. of Sanford, 5724 Michelle Ln., 21.May.1991, R. Gillmore, 1♂ (MGCL).

Etymology. The specific epithet *perva* is simply a contraction of the Latin word “*pervagatus*,” which means widespread and common. This is the most widespread and common *Antiblemma* Hübner in Florida.

Distribution. This species occurs in the Florida Keys and peninsular Florida, as well as in Costa Rica. The extent of its range in the Antilles is unknown.

Remarks. The DNA analysis of the 658 COI base pairs of neotropical *Antiblemma* species splits Costa Rican specimens presently listed as *Antiblemma concinnula* (Walker) into two distinct species with a 14.4% difference between them. All specimens of the first species in the BOLD database are from Costa Rica and the second species contains specimens from both Costa Rica and Florida. Subsequent to the examination of the *Capnodes concinnula* type from Brazil, housed in the Oxford University Museum of Natural History, Oxford, England, it was determined that this first species matches the *A. concinnula* holotype, leaving the second species, which includes the Florida “*concinnula*,” undescribed until now.

***Antiblemma carolae* Troubridge, new species**

(Fig. 37a, 37b, 72, 129)

BIN: BOLD:ACD8952

Diagnosis. *Antiblemma carolae* is most similar to *A. perva* but is easily distinguished from it by the antemedial and postmedial lines of the forewing, which are gently curving in *A. carolae*, whereas they are more erratic and slightly scalloped between the veins in *A. perva*. In addition, the upper wing surface of *A. carolae* has a purple

sheen which is much reduced or absent in *A. perva*. Internally, the uncus of *A. carolae* is bifid, that of *A. perva* entire. The only other *Antiblemma* found in Florida with a bifid uncus is *A. filaria*, which lacks ochre scales of the hindwing postmedial line, and the valve is much narrower than that of *A. carolae*.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen brown. **Dorsal forewing** (both sexes). Forewing length 10–11 mm. Ground color brown with purple sheen; antemedial line brown, bordered outwardly with ochre, bows evenly outward below cubital vein; postmedial line, bordered outwardly with ochre, mainly straight below reniform spot, bending around reniform to costa; reniform and orbicular spots obscure, delineated by brown scales slightly darker than ground color, orbicular spot shaped like a figure “8;” obscure row of submarginal brown spots surrounded by mauve scales; terminal line a series of black crescents surrounded by mauve scales; fringe brown. **Dorsal hindwing.** Ground color brown with purple sheen; discal lunule dark brown; postmedial line bordered outwardly with ochre, slightly convex around cubital veins but otherwise reasonably straight obscure row of submarginal brown spots surrounded by mauve scales; terminal line a series of black crescents surrounded by mauve scales; fringe brown. **Male genitalia** (Fig. 72). Valve weakly sclerotized except along costal margin, widens in middle before narrowing to bluntly pointed apex; a fleshy flap approximately same size as valve on outer side of valve, this flap covered with small spicules; uncus long, thin, curved downward and bifid at tip. **Female genitalia** (Fig. 129). Ovipositor lobes setose, relatively short; ostium bursae membranous, widens to membranous ductus bursae; ductus bursae terminates at slightly swollen appendix bursae where ductus seminalis arises from ventral side; corpus bursae without signa, shaped like an avocado, narrowing to posterior appendix bursae.

Type material. **Holotype** male: USA: **Florida, Miami-Dade Co.:** Florida City, 25° 24.89'N, 80° 26.40'W, 29.Jan.2015, J. Troubridge, in the CNC. **Paratypes:** 4♂, 5♀: **Miami-Dade Co.:** Florida City, 25° 24.89'N, 80° 26.40'W, 27.Jan.2014, 1♂, 2♀; 2.Mar.2014, 1♂, 1♀; 30.Jan.2013, 1♂, 1♀; Miami-Dade Co., Florida City, 25.40°N, 80.65°W, 3.Feb.2016, 1♂, 1♀, all J. Troubridge.

Etymology. I take pleasure in naming this species in honor of my good friend, Carol Wolf, who first alerted me to the presence of this species in southern Florida.

Distribution. *Antiblemma carolae* has been collected in hardwood hammocks and pine flatwoods in extreme southern Florida, the Bahamas, and Cuba. The extent of its range in the Antilles is unknown.

Remarks. Although *A. carolae* most closely approaches *A. perva* in external appearance in south Florida, it is more closely related to *A. uncinata* (Felder and Rogenhofer), *A. mundicola* (Walker), and several undescribed neotropical species.

Euteliidae: Euteliinae

Paectes hercules Troubridge, new species

(Fig. 24, 130)

BIN: BOLD:AAX1890

Diagnosis. The closest relative to *P. hercules* is *P. lunodes* (Guenée) (Fig. 25) (BIN: BOLD:AAC2512), (syntypes from Brazil, French Guiana, and Honduras). Externally, *P. hercules* can be distinguished from *P. lunodes* as follows: the reniform spot of *P. lunodes* is reasonably well demarcated, whereas that of *P. hercules* is smudged; the medial area of the forewing of *P. lunodes* is bright gray and contrasts with the ordinary lines and post-basal area, whereas the entire forewing of *P. hercules* is dull gray brown, the lines less contrasting, and the forewing of *P. lunodes* is broader than that of *P. hercules*.

Description. Female antennae filiform; head, vertex, thorax, and abdomen light gray; first two abdominal segments with cream-colored scales edged on posterior margin with dark gray; a single row of black scales between head and thoracic collar. **Dorsal forewing** (female). Forewing length 11–12 mm. Ground color gray brown; narrow, black postmedial line, double below vein M2, single above M2, bends toward outer margin at cell R5 and then bends abruptly back and toward costa; basal spot distinct, ovate, light beige; antemedial line thin, black, extends from posterior margin, bends toward thorax, and abruptly turns outward forming ventral border to basal spot; reniform and orbicular spots obscure, outlined with a few pinkish scales; medial line faint, zigzag,

located below reniform spot; submarginal area with black dashes through cells R4 and R5; apex with light-gray disk; submarginal line a series of black crescents between veins; fringe medium gray with darker gray checkering at tips of veins. **Dorsal hindwing.** Basal area light gray, darker gray toward margin; anal fold with a white and dark-gray striped pattern, all veins highlighted with dark gray; fringe white, checkered with dark gray at tips of veins. **Male genitalia.** Unknown. **Female genitalia** (Fig. 130). Ovipositor lobes with scattered setae; ostium bursae wide; ductus bursae with posterior part well sclerotized, narrowing toward membranous section; ductus bursae splits posteriorly into elongate, globular corpus bursae on left, and narrow, somewhat coiled appendix bursae on right, then bending back before splitting a second time with small, ventral, globular appendix bursae and dorsal ductus seminalis.

Type material. **Holotype** female: USA: **Florida, Monroe Co.:** Dagny Johnson St. Pk., 25.185°N, 80.362°W, 17.Jul.2012, BOLD sample ID: CNCLEP 94152, J. Troubridge, in the CNC. **Paratypes:** 1♀: **Monroe Co.:** Upper Key Largo [Crocodile Lake National Wildlife Refuge], 25.265°N, 80.310°W, 16.Jul.2018, J. Troubridge.

Etymology. From Latin, *hercules* refers to the now-abandoned Nike Hercules missile base on Upper Key Largo, where the type specimen was collected. Noun in apposition.

Distribution. Thus far, this species is known from the Florida Keys and adjacent mainland. The extent of its range in the Antilles is unknown.

Remarks. The DNA of the holotype was analyzed, and the 658 COI base pairs compared with those of specimens of *P. lunodes*. The results showed a 3.9% difference between *P. hercules* and *P. lunodes*, its nearest relative. I have not seen specimens identified as *P. lunodes* from southern Florida or Cuba, and whether these specimens represent true *P. lunodes* or *P. hercules* remains an open question. A long series of *Paectes* Hübner from the Bahamas in the McGuire Center, Gainesville, FL, did not contain *P. lunodes* or *P. hercules*. Presently I have only female specimens of *P. hercules* and male specimens of *P. lunodes*, so I am unable to discuss genital differences.

Nolidae: Nolinae

Meganola georgei Troubridge, new species

(Fig. 21, 92, 131)

BIN: BOLD:AAA8651

Diagnosis. *Meganola georgei* is most closely related to *Meganola phylla* (Dyar) (Fig. 22) (BIN: BOLD:ABZ5427) and is distinguished from it by the black spots on the forewing costa, which are solid black with diffuse margins in *M. phylla* but smaller, gray or brownish gray, with a crisper black margin in *M. georgei*. Additionally, the postmedial line of *M. georgei* is double with two distinct black lines below the reniform spot, that of *M. phylla* is less distinct and composed of scattered black scales.

Description. Antennae bipectinate in males, filiform in females; head, thorax, and abdomen light gray. **Dorsal forewing** (both sexes). Forewing length 8–10 mm. Ground color light gray; antemedial line thin, black, with sharp “V” shape below cubital vein; postmedial line composed of two thin black lines, inner line with sharp “V” shape on vein 1A+2A; submarginal line a series of dark-gray smudges; terminal line white with black dots on veins, fringe gray; orbicular and reniform spots white, not sharply delineated; costa with light gray-brown triangular spot with black border adjacent to reniform spot, a brown spot sits adjacent to this triangular spot and reniform spot; a second basal patch of brown scales on costa with smaller dark-gray spot distal to it. **Dorsal hindwing.** Ground color light gray with darker postmedial shade and gray scales highlight veins; dark-gray discal spot diffuse; fringe gray. **Male genitalia** (Fig. 92). Valve heavily setose with squarish apex and rounded corners; sacculus relatively small, terminates distally with curved, spine-like clasper; costa heavily sclerotized; uncus broad basally, narrowing to sharp, hooked tip; gnathos finger-like, scobinate; juxta with pointed lateral processes directed anteriorly into abdomen; transtilla thread-like; vesica with hooked, spine-like cornutus. **Female genitalia** (Fig. 131). Ovipositor lobes setose, not telescopic; ostium bursae heavily sclerotized on ventral surface; ductus bursae relatively short, broad, heavily sclerotized on dorsal surface with sclerite on right side at junction of appendix bursae; globular appendix bursae arises from narrow neck on left side of ductus bursae; corpus bursae tear-drop shaped with elongate signum on left side.

Type material. **Holotype** male: USA: **Florida, Desoto Co.:** Nocatee, 27°10.07'N, 81°54.63'W, 1.Mar.2011, J. Troubridge, in the CNC. **Paratypes:** 29♂ 15♀: **Florida: Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 8.Feb.2014, 1♀, J. Troubridge; **Desoto Co.:** Nocatee, 27°10.07'N, 81°54.63'W, 1♂; 22.Jan.2010, 1♂; 27.Feb.2013, 1♀; 23.Feb.2012; 2♂ 2♀; 1.Mar.2011, 1♂, all J. Troubridge; **Highlands Co.:** Archbold, 27° 11.22'N, 81° 20.27'W, 1♂, J. Troubridge; **Okeechobee Co.:** Kissimmee Prairie, 27.584°N, 81.044°W, 8.Feb.2013, 1♂ 1♀; 10.Jan.2013, 1♂, J. Troubridge; **Sarasota Co.:** North Port, 27.040°N, 82.069°W, 5.Nov.2012, 1♀; 4.Dec.2012, 1♂, 1♀; 15.Dec.2009, 3♂; 10.Dec.2009, 4♂, 2♀; 22.Dec.2009, 4♂; 18.Nov.2013, 1♂; 15.Mar.2010, 2♂; 9.Mar.2011, 1♂; 28.Mar.2012, 1♀; 24.Nov.2014, 1♂, 2♀; 17.Jan.2010, 1♀; 9.Mar.2011, 1♂, 1♀; 12.Mar.2012, 1♂; 15.Mar.2010, 1♂; 28.Mar.2012, 1♀; 7.Feb.2010, 1♂, all J. Troubridge.

Etymology. *Meganola georgei* is named in honor of George “Lucky” Inman, who kindly allowed access to the type locality.

Distribution. *Meganola georgei* is common from southern Florida, northward into Georgia.

Noctuidae: Dyopsinae

Litoprosopus linea Troubridge, new species

(Fig. 41, 73, 132)

BIN: BOLD:ACM4126

Diagnosis. *Litoprosopus linea* is easily distinguished from the other North American *Litoprosopus* Grote species by the metallic mauve patch of scales in the tornus of the forewing that is divided into two sections above and below vein 1A+2A (entire in the other species) and the dark-brown line extending from this patch of scales to the outer margin of the wing, absent in the other species.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen light brown. **Dorsal forewing** (both sexes). Forewing length 16–17 mm. Ground color light brown; narrow postmedial line ferruginous, splits into two diverging lines from cubital vein to costa; antemedial line diffuse, reduced to a series of ferruginous spots, again splitting into two diverging lines extending to costa; basal line reduced to a few ferruginous spots; submarginal area with scattered ferruginous scales becoming denser toward apex; metallic mauve patch of scales in tornus divided into two sections above and below vein 1A+2A, a dark-brown line extends from this patch of scales through middle of cell CuA2 to outer margin; fringe light brown, gradually becoming yellow brown toward tornus. **Dorsal hindwing.** Basal area light yellow brown; post medial band darker gray brown, edged outwardly with light yellow brown below vein M1; broad terminal shade dark gray brown; black jewel spot (with two metallic blue streaks) straddles vein CuA at margin, edged with light-yellow scales on inner margin; fringe cream colored. **Male genitalia** (Fig. 73). Valve narrows in mid-section and becomes broader and rounded at apex; clasper forms a narrow rod that extends near ventral margin of valve; ampulla of clasper angled acutely back toward base of valve before bending dorsally and then turning slightly downward; uncus long, curved downward, heavily setose on terminal half, apex pointed; pleural sternite heavily setose; anal tube supported by long dorsal and ventral sclerites; shaft of aedeagus with sclerotized C-shaped “trap door” that closes over tip of aedeagus when not everted; vesica angled dorsally with a band of fine sub-basal setae extending from ventral to dorsal surface on right side; a small sub-basal diverticulum on left folds inward to meet a second small diverticulum; between these diverticula, a C-shaped channel is formed reminiscent of the “trap door” at apex of shaft; a bulbous, submarginal, dorsal diverticulum is covered with a field of fine setae from which vesica turns abruptly to right and narrows to the ductus seminalis. **Female genitalia** (Fig. 132). Ovipositor lobes short with scattered setae; ostium bursae well sclerotized, broader than ductus bursae; ductus bursae elongate, membranous, with small diverticulum on dorsal surface; corpus bursae about 3× as long as wide with appendix bursae arising on right as a large diverticulum at posterior end.

Type material. **Holotype** male: USA: **Florida, Charlotte Co.:** Port Charlotte, 27.024°N, 82.063°W, 4.Jul.2016, J. Troubridge, in the CNC. **Paratypes:** 8♂, 4♀: **Broward Co.:** Davie, 9.Jul.1982 and 11.Aug.1983, at light, M. Minno, 2♂ (MGCL); Fort Lauderdale, 15.Dec.1983, M. Minno, 1♂ with pupal exuvia (MGCL); Fort Lauderdale, Harbor-dale, 26.093°N, 80.125°W, *Helicoverpa* trap, 23.Sep.2016, E. Dougherty, 1♀ (FSCA); **Charlotte Co.:** Port Charlotte,

27.024°N, 82.063°W, 4.Jul.2016, 1♂; 25.Dec.2018, J. Troubridge, 1♂, 1♀; **Collier Co.:** Marco Island, 15.Sep.1988, D. Smith, slide MGCL 3399, 1♂; same data, 4.Jul.1988, slide MGCL 3400, 1♀; same data, 2.Aug.1988, dissected, 1♂ (FSCA); Collier-Seminole State Park, 14.Feb. 1988, V.P. Lucas, 1♂ (MGCL); **Miami-Dade Co.:** Miami Beach Marina, Lindgren trap, 25.771°N, 80.140°W; 25.Jan. 2017, P. Perez, 1♀ (FSCA).

Etymology. From Latin, *linea* refers to the dark line in the tornus of the forewing.

Distribution. This species is known from Cuba, the Bahamas, the Florida Keys, and peninsular Florida at least as far north as Ocala. The extent of its range elsewhere in the Antilles is unknown. In Florida, I have not seen this species in rural areas where sabal and saw palmettos are abundant; however, it occurs in urban areas where various ornamental palms have been planted.

Remarks. The DNA of *L. linea* was analyzed and the 658 COI base pairs compared with those of specimens of *L. futilis* and *L. bahamensis*. The results showed a 4.4% difference between *L. linea* and *L. futilis*, and a 6.2% difference between *L. linea* and *L. bahamensis*.

Noctuidae: Eustrotiinae

Tripudia calusa Troubridge, new species

(Fig. 20, 83, 133)

BIN: BOLD:ACP5031

Diagnosis. *Tripudia calusa* is most closely related to *T. dimidata* (Smith) and *T. luda* (Druce), although it does not look like either of these southwestern species. In the Florida Keys, *T. calusa* occurs with *T. lamina* Pogue, *T. goyanensis* (Hampson), and *T. balteata* Smith, and can be distinguished from all of these species by the blackish-brown mesial band that extends from the posterior margin to the costal margin of the forewing; this band is absent in each of these other related species. In this regard, *T. calusa* more closely resembles *Cobubatha metaspilaris* Walker, with which it also occurs in the Florida Keys. *Tripudia calusa* is easily distinguished from *C. metaspilaris* by the basal and postmedial areas of the forewing, which are light beige in *C. metaspilaris* and dark brown with a more complicated pattern in *T. calusa*.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen brown. **Dorsal forewing** (both sexes). Forewing length 4.5–5.0 mm. Ground color blackish brown with scattered gray scales in basal area; obscure basal line with black and dark-brown scales; thin, brown antemedial line bordered basally and distally with broad gray lines; blackish-brown mesial band extends from posterior margin to costal margin; broad, gray, postmedial line is bordered basally and distally with thin black lines; submarginal line is composed of patches of black scales and gray scales toward tornus; cell M1 gray through submargin with a square patch of rust-colored scales adjacent to postmedial line, and a triangular patch of rust-colored scales adjacent to terminal line, a similar triangular spot is adjacent to terminal line in cell R4; terminal line black, edged basally with white scales; orbicular spot light gray, reniform spot dark gray. **Dorsal hindwing.** Ground color gray brown basally, becoming darker toward margin with darker gray-brown submarginal shade and diffuse discal spot; fringe gray. **Male genitalia** (Fig. 83). Valves symmetrical, gradually widening toward rounded apex, sacculus well developed with very fine, finger-like clasper bending backward, almost touching low, scobinate pollex; uncus with short, thick neck that widens at base of setose terminal section; terminal section gradually widens to a downturned point; a flat rod extends from base of uncus to give support or direction to aedeagus; juxta with long spine arising from right side. **Female genitalia** (Fig. 133). Ovipositor telescopic; ovipositor lobes long, pointed, setose toward apex; ostium bursae well sclerotized, with a minute sclerite situated mid-way between ostium bursae and ovipositor lobes; ductus bursae long, membranous, terminating at bulbous appendix bursae from which a diverticulum narrows to ductus seminalis; signa absent from corpus bursae, but anterior part scobinate.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Bahia Honda State Park, 24.666°N, 81.253°W, 15.Apr.2015, J. Troubridge, in the CNC. **Paratypes:** 18♂, 5♀: **Monroe Co.:** Bahia Honda State Park, 24.666°N, 81.253° W, 15.Apr.2015, 1♂; Islamorada, 24.962°N, 80.566° W, 21.Jun.2014, 9♂, 3♀; 24.963°N, 80.566° W, 2.Apr.2014, 6♂, 2♀; Crawl Key, 24.747° N, 80.979°W, 19.Mar.2017, 1♂; Upper Key Largo, 25.286°N, 80.292°W, 11.Mar.2015, 1♂, all J. Troubridge.

Etymology. The holotype was collected at Calusa Beach, Bahia Honda State Park, hence the name. Noun in apposition.

Distribution. This species is known from the Florida Keys, it can be quite common in residential areas in Islamorada. Whether or not it occurs in the Antilles is unknown.

Noctuidae: Oncocnemidinae

Catabenoides insularis Troubridge, new species

(Fig. 44a, 44b, 93, 134)

BIN: BOLD:ACI9518

Diagnosis. In southern Florida, *Catabenoides insularis* is most like *Catabenoides vitrina* (Walker) (BIN: BOLD:ACK3449); however, it is distinguished from it by the distinct black line on the forewing of female *C. vitrina*, absent on that of *C. insularis*. The forewing of *C. insularis* is more heavily suffused with gray scales than *C. vitrina*, which has a whiter appearance, and the gray patch on the tornus of the forewing of *C. insularis* is larger and more pronounced than that of *C. vitrina*. Internally, males are easily distinguished by brushing the scales away that obscure the genitalia; the ventral margin of the cucullus of *C. insularis* is smooth, whereas that of *C. vitrina* has two low, pointed processes (Fig. 94). The vesicas are abundantly distinct, *C. vitrina* has a field of spine-like cornuti toward the apex, whereas *C. insularis* has a long, curved terminal spine. The closest relation to *C. insularis* is *C. lazelli* Becker and Miller, described from the British Virgin Islands. Among other differences, the saccular extensions of *C. insularis* are long and pointed; those of *C. lazelli* are branching.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen light gray; frons with a narrow black transverse band below scape; tegulae light gray; abdomen with ventrolateral pits with coremata on first abdominal sternite. **Dorsal forewing.** Forewing length 10–11 mm. Ground color light gray; antemedial and postmedial lines reduced to either black dots on veins or entirely absent; orbicular, claviform, and reniform spots absent; fringe light gray with white scales at tips of veins; a submarginal patch of darker gray scales occurs in tornus and often around cubital veins. **Dorsal hindwing.** Pearl white with scattered gray marginal and submarginal scales bleeding onto veins; fringe white. **Male genitalia** (Fig. 93). Valves asymmetrical; cucullus with dense field of fine setae and corona of stouter setae; sacculus with long, spine-like extensions almost extending to base of cucullus; left valve with short, stout, “L”-shaped digitus; right valve with long, narrow digitus; claspers squarish, plate-like, and lie flat against valve, left clasper drawn to a point on ventral margin, arises slightly closer to base of valve than right clasper, which is broader and concave on distal margin; uncus long, narrow, setose, curved downward and drawn to a point; juxta roughly rectangular dorsally, widens laterally to form circular plates toward base of valves; aedeagus with terminal sclerite bending down to support vesica; vesica bending ventrally and then to right with dorsal and left diverticula; a long, stout, terminal cornutus on right arcs anteriorly. A large field of minute spicules covers most of the vesica. **Female genitalia** (Fig. 134). Ovipositor lobes rounded at tip with numerous setae; ostium bursae with sclerite on ventral side extending half way down ductus bursae to terminate at a short membranous section; anterior half of ductus bursae heavily sclerotized ventrally, becoming a broader plate that bends back on itself to sweep around posteriorly, forming the dorsal side of appendix bursae; corpus bursae forms a large pear-shaped sac with two lateral, elongate signa.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Dagny Johnson State Park, 25.181°N, 80.364° W, 8.Dec.2013, J. Troubridge, in the CNC. **Paratypes:** 5♀: **Monroe Co.:** Dagny Johnson State Park, 25.181°N, 80.364° W, 11.Mar.2012, 2♀; 9.Apr.2013, 1♀; 3 Mar. 2013, 1♀; 10.Feb.2013, 1♀, all J. Troubridge.

Etymology. The Latin word *insularis* means “of an island” and refers to the island habitat of this species.

Distribution. *Catabenoides insularis* has been collected in the Florida Keys, the Bahamas, and Cuba. To my knowledge, *C. vitrina* has not been collected in Florida since Hurricane Andrew (1992) and whether it still exists in southern Florida is unknown.

Remarks. *Catabenoides insularis* is the species previously listed as *Callierges divisa* Herrich-Schäffer, in the literature. After examining the type in Havana, Becker (2002) synonymized *C. divisa* with *C. vitrina*, leaving our Florida species in need of a name. *Catabenoides* Poole is an interesting genus in need of further work. The species

can be arranged into two groups: the terminellus (Grote) group in which the ventral margin of the cucullus is smooth and the vesica has a stout terminal cornutus; and the vitrina group, in which the ventral margin of the cucullus has two short “teeth” and the posterior margin of the vesica has a field of short cornuti. Becker and Miller (2002) illustrate the genitalia of “*C. terminellus*” from Guana Island, B.V.I., which is actually an undescribed species in the terminellus group, there are also two undescribed species in the vitrina group in southern Texas and California and probably more in Mexico and the Antilles. To describe these species here would be extralimital to the scope of this paper.

***Neogalea caracara* Troubridge, new species**

(Fig. 42, 99)

BIN: BOLD:ADI0938

Diagnosis. *Neogalea caracara* is most similar to *N. sunia* (Guenée) (Fig. 43) (BIN: BOLD:AAC5921); however, it can be distinguished from it by the distinct black line on the base of the prothoracic collar of *N. sunia* that is absent in *N. caracara*, and the dark-gray forewing of *N. sunia* versus the silver-gray forewing in *N. caracara*.

Description. Antennae filiform, ciliate; frons black; vertex, thorax, and abdomen light gray; prothoracic collar and tegulae light gray. Abdomen with basal coremata with levers and pockets. **Dorsal forewing** (male). Forewing length 13 mm. Ground color silver gray; antemedial, medial, and postmedial lines reduced to black scales on costa, postmedial line barely discernible, reduced to black dots on veins; scattered black scales occur on all veins and silver-gray scales lie adjacent to veins; scattered gray scales between veins; obscure black dashes present in submarginal area between veins; terminal line a series of black lunules between veins; fringe double, outer scales white and inner scales gray below CuA1, inner and outer scales gray between vein tips, white at vein tips between CuA1 and apex. **Dorsal hindwing.** Pearly white, scattered gray scales on veins in submargin and along margin, and in submargin at apex; fringe white. **Male genitalia** (Fig. 99). Valve with sacculus densely clothed in fine setae medially and a row of coarse setae extends along ventral margin; sacculus narrows and turns upward and away from valve to terminal spine; clasper more-or-less rectangular, extends dorsally from sacculus; valve narrows to form a neck beyond sacculus before widening to cucullus; cucullus resembling a bird’s head with hooked beak on ventral margin and field of dense setae at apex resembling a bird’s crest and dense field of fine setae on neck resembling a ruff; saccus narrows ventrally to blunt point; juxta resembles a hide with the neck adjacent to aedeagus; uncus with dense field of dorsal and ventral setae, these setae very short at blunt apex; aedeagus with short, thumb-like apical process on left; vesica bends ventrally with sub-basal diverticulum capped with a single spine-like cornutus directed posteriorly, below this diverticulum vesica bends around anteriorly to left before bending ventrally to ductus seminalis; entire terminal area covered by a dense field of stout cornuti. **Female genitalia.** Unknown.

Type material. Holotype male: USA: **Florida, Monroe Co.:** Dagny Johnson S.P., 25.181°N, 80.364°W, 11.Mar.2012, BOLD sample ID: CNCLEP 102408, J. Troubridge, in the CNC.

Etymology. The male valve looks remarkably like a bird’s head and reminds me of a crested caracara (*Caracara cheriway* Jacquin), hence the name.

Distribution. This species is known from the unique holotype from Dagny Johnson State Park in the Florida Keys. The extent of its range in the Antilles is unknown.

Remarks. The DNA of the holotype was analyzed, and the 658 COI base pairs compared with those of specimens of *N. sunia*. The results showed a 3.64% difference between *N. caracara* and *N. sunia*, its nearest relative and a 9.4% difference between *N. caracara* and *N. esula* (Druce).

Noctuidae: Agaristinae

***Euscirrhopterus argentata* (Druce), revived status**

(Fig. 52)

BIN: BOLD:AAB3807

The DNA of *Euscirrhopterus poeyi* Grote (Fig. 51) (BIN: BOLD:ABA3355) from the Florida Keys was analyzed and the 658 COI base pairs compared with those of specimens of *E. “poeyi”* from Mexico and Costa Rica. The

results showed a 5.33% difference between the two. I treat *E. poeyi*, described from Cuba, as the valid name for Florida specimens because the Mexican and Central American species is clearly distinct. The name *E. argentata* (Druce), **revived status**, described from Mexico and Guatemala, is available for the Mexican and Central American species, which I here raise from the synonymy of *E. poeyi* to full species status. *Euscirrhopterus argentata* is distinguished from *E. poeyi* by the darker gray of the forewing and broader submarginal black band on the hindwing of *E. argentata*.

Noctuidae: Condicinae: Condicini

Condica collaris Troubridge, new species

(Fig. 45, 95)

BIN: BOLD:ACY6353

Diagnosis. *Condica collaris* is most similar to *C. concisa* (Walker) (BIN: BOLD:AAD8631) (Fig. 46) but is distinguished from it by the distinct black line on the prothoracic collar (plain gray in *C. concisa*), and the distinct black claviform spot, which is more muted in *C. concisa*. The clasper of *C. concisa* is like that of *C. collaris*; however, sacculus is broader, extending beyond the dorsal margin of valve and almost half of length of valve.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen light gray; prothoracic collar light gray with black anterior line; tegulae light gray; abdomen with ventro-latero pits with coremata on first abdominal sternite. **Dorsal forewing.** Forewing length 11 mm. Ground color light gray; basal, antemedial and postmedial lines obscure, reduced to scattered dark gray scales; terminal line a series of black dots between veins and minute white dots at tips of veins; four white dots along costa toward apex; orbicular and reniform spots obscure, demarcated by scattered white and black scales; black claviform spot distinct; fringe light gray with white scales at tips of veins. **Dorsal hindwing.** White basally, light gray toward margin; veins highlighted with gray scales; fringe light gray with white scales at tips of veins. **Male genitalia** (Fig. 95). Valves symmetrical with dense field of setae on distal half; sacculus broad at base, narrows toward apex where clasper arises; clasper long, spine-like, curved and tapered, extending from ventral margin of valve distal to sacculus to a point just beyond dorsal margin of valve; uncus long, narrow, curved downward and drawn to a point; aedeagus drawn to a blunt point toward apex and bends ventrally, extending well beyond vesica; vesica arises from ventral side of aedeagus, sweeps around anteriorly and covered with minute spicules, a row of elongate, spine-like cornuti extends from aedeagus along ventral margin of vesica, terminating with a field of shorter cornuti. Two additional cornuti occur laterally on left side, adjacent aedeagus: one forms a small dome covered with small spines; second one plate-like, narrowed in mid-section, terminating in a process resembling a bird's head and beak. Clasper narrow on ventral margin of valve, increasingly broad and flat through its basal $\frac{3}{4}$; apical $\frac{1}{4}$ tapered to a point. **Female genitalia.** Unknown.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Bahia Honda, 24.665°N, 81.254°W, 12.Mar.2015, BOLD sample ID: CNCLEP 00102348, J. Troubridge, in the CNC.

Etymology. From Latin, *collaris* refers to the black line on the prothoracic collar which instantly diagnoses the species.

Distribution. This species has been collected at Bahia Honda State Park in the Florida Keys and South Abaco, Bahamas.

Remarks. The DNA of the holotype was analyzed, and the 658 COI base pairs compared with those of specimens of *C. concisa*. The results showed a 6.7% difference between *C. collaris* and *C. concisa*, its nearest relative.

Homophoberia australis Troubridge, new species

(Fig. 49a, 49b, 49c, 96, 135)

BIN: BOLD:AAE1602

Diagnosis. *Homophoberia australis* is the sister species to *H. cristata* Morrison (BIN: BOLD:AAC0091). Due to the variation in habitus of both species, I see no reliable way to distinguish the two species other than by geographical distribution or DNA. *Homophoberia cristata* occurs from South Carolina, northward into Quebec, whereas *H. australis* occurs in Florida and extreme southern Georgia. In the male genitalia, the clasper of

H. australis (Fig. 96) is narrower at the base and gradually tapers to the terminal spine, whereas in *H. cristata* (Fig. 97), the clasper is more bulbous at the base, narrowing more abruptly to the terminal spine, and the dorsal diverticulum on the vesica of *H. australis* is a little longer and narrower than the squat counterpart in *H. cristata*.

Description. Male antenna pectinate; female antennae filiform, ciliate. Head, vertex, thorax, and abdomen brown to ochre. **Dorsal forewing.** Forewing length 12–15 mm. Ground color of males tends not to vary and is reliably dark brown; ground color of females varies from dark brown to ochre; basal line somewhat obscure, consisting of scattered black and tan scales; antemedial line jagged, consisting of scattered black scales, bordered by tan scales; postmedial line black, bordered distally by tan scales; orbicular spot oval in shape, composed of a thin outer ring of black scales and a thin inner ring of tan scales; reniform spot with thin inner tan crescent surrounded by tan scales, except in lower half where a patch of black scales obscures tan border; submarginal area of the wing entirely lighter brown than medial and basal areas in most specimens; subterminal line tan, diffuse, bordered basally and distally with brown scales; terminal line a series of black crescents between veins; fringe dark brown. **Dorsal hindwing.** Ground color tan, heavily suffused with brown scales; discal lunule dark brown; terminal line dark brown; fringe brown, tan at tips of veins. **Male genitalia** (Fig. 96). Valves symmetrical with dense field of setae on distal $\frac{3}{4}$; sacculus broad at base, narrows toward apex where clasper arises; curved, spine-like clasper extends from the ventral margin of valve; uncus short, narrow, curved downward with a rounded apex; juxta with a “Y” shaped spine and lateral flaps to form a shield-like support for the aedeagus; aedeagus short, broad with large ventral plate at base of vesica; vesica globular with ductus seminalis distal and dorsal diverticulum narrow. **Female genitalia** (Fig. 135). Ovipositor lobes with numerous setae; ductus bursae short with sclerite across ventral surface just anterior to ostium bursae; ductus bursae terminates at lower end of large, inverted “J” shaped corpus bursae.

Type material. **Holotype** male: USA: **Florida, Sarasota Co.:** North Port, 27°02.5'N, 82°02.0'W, 7.Nov.2012, J. Troubridge, in the CNC. **Paratypes:** 15♂, 16♀: **Alachua Co.:** Gainesville, reared on *Nuphar luteum*, 10.May.1972, D.H. Habeck, slide MGCL 2804, 1♂ (FSCA); Gainesville, Archer Road Lab., 30.May.1973, J.B. Heppner, 1♂; (FSCA); Gainesville, 29.616°N, 82.299°W, 17.Jun., 13.Sep., 16.Sep., 7.Oct.2005, 25.Apr.2006, G.T. Austin, MGCL #1074745, 1075011, 1075163, 1075194, 1075584, 2♂, 3♀ (MGCL); **Collier Co.:** Fakahatchee Strand Preserve State Park, 25.98°N, 81.39°W, 11.Mar.2016, J. Troubridge, 1♂; **Desoto Co.:** Nocatee, 27°10.07'N, 81°54.63'W, 14.Apr.2010, J. Troubridge, 1♀; **Hernando Co.:** Brooksville, Withlacoochee Training Center, Childs Road, 19.Apr.2016, J.E. Hayden and K. Schnepf, slide MGCL 4554, 1♂ (FSCA); **Highlands Co.:** Archbold Biological Station, 27.188°N, 81.336° W, 1.Apr.2016, 1♂; 18.Mar.2018, 1♂; all J. Troubridge; **Hillsborough Co.:** Tampa, University of South Florida, 17.Mar.1982, W.L. Adair, 1♀; (FSCA); **Martin Co.:** Jonathan Dickenson State Park, 8--9.Aug. 999, J.B. Heppner, 1♀ (FSCA); **Orange Co.:** Orlando, 21.Mar.1986, L.C. Dow, 1♀ (FSCA); **Putnam Co.:** Palatka, 17.Apr.1991, H.D. Baggett, slide MGCL 2805, 1♀ (FSCA); Welaka State Forest, 17–21.Mar.1986, J.B. Heppner, 1♂, 1♀ (FSCA); **Sarasota Co.:** North Port, 27°02.5'N, 82°02.0'W, 24.Nov.2009, 1♀; 16.Nov. 2011, 1♂; 13.Dec.2011, 1♀; 12.Apr.2011, 2♂, 2♀; 27.Jul.2016, 1♂; 12.Mar.2012, 1♂, 1♀; 24.Apr.2011, 1♀; 7.Feb.2010, 1♂, 1♀ all J. Troubridge.

Etymology. From Latin, *australis* refers to the southern range of this species.

Distribution. This species has been collected in Florida and southern Georgia. It has been reared on yellow water lily, *Nuphar luteum* (L.)

Remarks. The DNA of *H. australis* was analyzed and the 658 COI base pairs compared with those of specimens of *H. cristata*. The results show an 8.7% difference between *H. australis* and *H. cristata*.

Noctuidae: Condicinae: Leuconyctini

Diastema leo Troubridge, new species

(Fig. 47, 98, 136)

BIN: BOLD:ABA1169

Diagnosis. *Diastema leo* is the sister species to *Diastema tigris* Guenée (BIN: BOLD:AAA8374). Like *H. australis* (above) I see no reliable way to distinguish the two species other than by range or DNA, although *D. tigris* has an

orange phenotype (Fig. 48) that I have not seen in *D. leo*. *Diastema leo* occurs from Florida, northward into Georgia, in the Bahamas, and probably the Greater Antilles, whereas *D. tigris* occurs from central Texas, southward through Central America. The DNA of *D. leo* was analyzed and the 658 COI base pairs compared with those of specimens of *D. tigris*. The results showed a 3.32% difference between *D. leo* and *D. tigris*. In the male genitalia, the clasper of *D. leo* is slightly longer than that of *D. tigris*, although this character could be variable.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen light ochre. **Dorsal forewing** (both sexes). Forewing length 12–14 mm. Ground color light ochre; basal line with two dark rust-brown spots adjacent to costa; antemedial line with three large dark rust-brown spots; two faint ochre lines transect wing between antemedial line and orbicular spot; rectangular orbicular and suborbicular spots dark rust brown; medial line arcs from costa to anal margin between orbicular and obscure reniform spot; postmedial line ochre, bordered on anterior and distal margins with purplish-gray scales; light ochre submarginal line incised between M2 and M3, bordered basally with dark rust-brown scales; terminal line a series of black dots at tips of veins; fringe light ochre. **Dorsal hindwing.** Ground color light ochre, heavily suffused with brown scales toward apex; veins Rs to CuA2 bordered with brown scales; margin light ochre. **Male genitalia** (Fig. 98). Valves narrowing slightly toward broadly-rounded cucullus; cucullus with dense field of spine-like setae that sweep back toward the anterior; inner side of valve with a deep pit near dorsal margin; clasper “C” shaped, very narrow with pointed apex arises from posterior side of pit, sweeping downward into the pit before extending anterior end of pit toward uncus; uncus broad, flattened dorso-ventrally, constricted at base and bending ventrally at tip to small hook; vesica an elongate sack, directed to right and sweeping to anterior where it narrows toward ductus seminalis at apex. **Female genitalia** (Fig. 136). Ovipositor lobes rounded apically with numerous setae; 7th abdominal sternite heavily sclerotized along deeply concave posterior margin; ostium bursae adjoins posterior margin of 7th sternite on dorsal surface; posterior half of ductus bursae heavily sclerotized, membranous anterior half of ductus bursae meets oblong corpus bursae at junction of appendix bursae; oval appendix bursae joins corpus bursae via a broad tube.

Type material. **Holotype** male: USA: **Florida, Highlands Co.:** Archbold Biol. Stn., 27.188°N, 81.338°W, 30.Mar.2017, J. Troubridge, in the CNC. **Paratypes:** 8♂, 4♀: **Alachua Co.:** Archer, 29.543°N 82.578°W, 12.Jun.2015, J.E. Hayden, 1♂ (FSCA); Gainesville, 15–16.Jul.1983, J.B. Heppner 1♂; (FSCA); Location unspecified, 5.Jun.1957, H.V. Weems, 1♂ (FSCA); **Highlands Co.:** Archbold Biol. Stn., 27.188°N, 81.338° W, 9.Apr.2015, 1♀; 29.Jul.2011, 1♂; 17.Mar.2016, 1♀, all J. Troubridge. **Hillsborough Co.:** USF Ecology Area, 14.Oct.1991, W.L. Adair, 1♂ (FSCA); **Marion Co.:** 2 mi. S. of Belleview, 11.Jun.1990, J.S. Kutis, 1♂ (MGCL); **Miami-Dade Co.:** Kendall, 12370 SW 30th St., 31.Mar.1990, L. Koehn, 1♂ (FSCA); **Seminole Co.:** Winter Springs, 5.Sep.1983, R. Gillmore, 1♀ (MGCL); Sanford, Hidden Lake Villas, 22 .Aug.1985, R. Gillmore, 1♀ (MGCL); **Volusia Co.:** Tomoka State Park, 22–25.May.2000, J.B. Heppner, 1♂ (FSCA).

Etymology. The term *leo* is from Latin and means lion.

Distribution. *Diastema leo* has been collected in Florida, Georgia, and the Antilles.

Noctuidae: Noctuinae: Xylenini

Pyreferra slotteni Troubridge, new species

(Fig. 53, 103, 138)

BIN: BOLD:ACI9598

Diagnosis. *Pyreferra slotteni* is most closely related to *Pyreferra pettiti* (Grote) (BIN: BOLD:AAD2999) (Fig. 54). They can be distinguished from each other by the forewing of *P. slotteni*, which is slightly more pointed than that of *P. pettiti*, and by the medial and postmedial lines, which are slightly wavy in *P. pettiti*, but straight or slightly curved in *P. slotteni*. Internally, among many differences, the clasper of *P. slotteni* is about twice as wide as that of *P. pettiti*, and the apex of the left valve is evenly rounded in *P. slotteni*, but shorter with a jagged tip in that of *P. pettiti* (Fig. 103 versus 104). The DNA of *P. slotteni* was analyzed and the 658 COI base pairs compared with those of specimens of *P. pettiti*. The results showed a 5.77% difference between *P. slotteni* and *P. pettiti*.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen orange. **Dorsal forewing** (both sexes). Forewing length 14–15 mm. Ground color orange; antemedial, medial, and postmedial lines dark orange, straight or slightly curving, not wavy; thin terminal line dark orange brown; veins highlighted with scattered gray scales, becoming darker gray spots on postmedial line; scattered light-gray scales present between cubital cell and costa; orbicular and reniform spots delineated by light orange scales, reniform spot with dark-gray scales in posterior half; fringe orange. **Dorsal hindwing.** Ground color light orange yellow, lightly suffused with maroon scales between medial line and margin; medial line of scattered maroon scales, terminal line maroon; faint discal lunule light orange; fringe light orange yellow. **Male genitalia** (Fig. 103). Base of valves with dorsal processes arising from sacculus on either side of juxta; a low process arises from costa adjacent to tegumen; clasper relatively wide, bends ventrally at right angles below apex, (resembling a sock) extends to apex of left valve and beyond apex of right valve; a membranous area connects sacculus to sclerotized valve tip, where costa narrows and bends ventrally to form a finger-like apex on left valve; tip of right valve shorter than that of left valve and is divided into a short dorsal process and longer ventral process; juxta wide at base, with a narrow neck that widens toward aedeagus; sclerotized plates extend from ventral corners of tegumen to meet above aedeagus; uncus curves gently downward to blunt tip; vesica bends downward and backward, with a small diverticulum on left at point where vesica turns backward; a small diverticulum on right is present mid-way along vesica and covered with a dense field of fine cornuti, and a large, dorsal, subapical diverticulum is present above ductus seminalis. **Female genitalia.** (Fig. 138). Ovipositor lobes setose; ostium bursae and ductus bursae well sclerotized; ductus bursae folds to the left below ostium bursae and then bends to the right where it meets orbicular appendix bursae; appendix bursae arises from ductus bursae where ductus bursae meets globular corpus bursae; corpus bursae with three elongate signa.

Type material. **Holotype** male: USA: **Florida, Alachua Co.:** Gainesville, 5421 NW 69th Lane, 21.Jan.1996, Jeffery R. Slotten, in the CNC. **Paratypes:** 9♂, 5♀: **Alachua Co.:** Gainesville, San Felasco Hammock, 30.Jan.1988, C.M. Stevens and H.D. Baggett, slide MGCL 2700, 6♂, 2♀ (FSCA); San Felasco Hammock, 31.Jan.1988, T.M. Neal, slide MGCL 2728, 1♀ (FSCA); **Liberty Co.:** Torreya State Park, 18.Mar.1983, W.L. Adair, slide MGCL 5862, 1♂ (FSCA); Torreya State Park, 15.Nov.1987, T.M. Neal, 1♀ (FSCA); **Santa Rosa Co.:** Blackwater River State Park, 17.Nov.1987, T.M. Neal, 1♂ (FSCA); **Mississippi: Grenada Co.:** 5 mi S Holcomb, 33° 41'51"N 90° 01'47"W, 8.Feb.1994, 1♀, R. L. Brown, D. Pollock (CNC); **Warren Co.:** Vicksburg, 11.Nov.2007, 1♂, Ricky Patterson (CNC).

Etymology. I take pleasure in naming this species for Dr. Jeffery Slotten, who collected the holotype.

Distribution. *Pyreferra slotteni* occurs from northern Florida, northward at least to North Carolina, where it flies with *P. pettiti*.

Noctuidae: Noctuinae: Leucaniini

Leucania elephas Troubridge, new species

(Fig. 50, 100, 137)

BIN: BOLD:ACP6589

Diagnosis. *Leucania elephas*, *L. februalis* (Hill) (BIN: BOLD:ABW8345), and *L. solita* Walker (BIN: BOLD:AAD6861) are the only members of the *L. humidicola* Guenée group occurring in North America. In southern Florida, the only species with which *L. elephas* could be confused is *L. dorsalis* Walker, but can be distinguished from it by the darker, more contrasting white and brown scales on the cubital vein of the forewing and the tufted fore and middle tibia of the male of *L. elephas*. Previously, *L. elephas* was confused with and treated as *L. humidicola* (e.g., Adams 2001, Franclemont and Todd 1983); however, in the male genitalia of *L. humidicola*, the ampulla of the clasper is long and pointed, extending slightly below the ventral margin of the sacculus, the digitus is long with a blunt tip (Fig. 102), and the vesica has a small subbasal diverticulum. In *L. elephas* (Fig. 100), the clasper curves abruptly upward, the digitus is short and pointed, and the vesica has a long diverticulum with a terminal cornutus. The BOLD database places both *L. humidicola* and *L. solita* into BIN: BOLD:AAD6861.

Description. Antennae filiform, ciliate; head, vertex, thorax, and abdomen light tan; prothoracic collar light tan with two diffuse gray lines edged posteriorly with light brown; a small tuft of gray scales tucks under thoracic

collar; tegulae light tan; abdomen with ventrolateral pits with coremata on first abdominal sternite. **Dorsal forewing** (both sexes). Forewing length 16–17 mm. Ground color light yellowish tan; ordinary lines and spots absent; postmedial line reduced to a series of minute black dots; cubital vein distinctly white with dark brown shading below and adjacent to vein; veins M2, M3, and CuA1 thinly scaled with white; cells M2 and M3 with diffuse dark-brown medial streak; cubital cell with distinct black dot at distal end, black dots between veins on outer margin, and black dots scattered along costa and posterior margin; all veins thinly edged with light brown scales and a thin medial light-brown line extends down each cell; fringe light brown. **Dorsal hindwing**. Pearlescent white with minute beige dots on margin between veins, veins may be lightly highlighted with beige scales toward margin, fringe white. **Male genitalia** (Fig. 100). Cucullus widely separated from sacculus; a setose pad lies at base of cucullus from which projects a flattened, pointed digitus; clasper resembles an elephant's head with upturned ampulla resembling its trunk and an extension of the costa as its ear. Juxta with relatively large dome between base of valves; uncus long, curved downward with heavily setose pointed tip; pleural sternite heavily setose with blunt ventral extensions extending toward base of valves; anal tube with long ventral sclerite; vesica forms a short tube basally terminating at a T-intersection at which point the vesica makes an abrupt right turn and sweeps around anteriorly and a very long, narrow diverticulum with bulbous terminal cornutus sweeps out and around toward vesica. Vesica with a field of fine setae on dorsal surface that terminates at ductus seminalis. **Female genitalia** (Fig. 137). Ovipositor lobes well sclerotized, with scattered setae; ductus bursae well sclerotized, with many distinct longitudinal ridges, bends 360° to terminate at anterior, leathery, globular corpus bursae; appendix bursae with posterior ridges and drawn to a point posteriorly at ductus seminalis, arises ventrally from ductus bursae at about ¼ of length of ductus bursae; signa absent.

Type material. **Holotype** male: USA: **Florida, Monroe Co.:** Bahia Honda, 24.665°N, 81.254°W, 9.Dec.2015, J. Troubridge, in the CNC. **Paratypes:** 19♂, 9♀: **Florida, Monroe Co.:** Bahia Honda, 24.665°N, 81.254°W, 3.Mar.2016, 2♂, 1♀; 13.Apr.2016, 2♂; 3.Apr.2013, 2♂, 2♀; 8.Jul.2013, 2♂, 1♀; 4.Mar.2013, 1♂; 24.Jul.2016, 1♂, 1♀; 24.Feb.2017, 1♀; 18.Mar.2017, 1♀; 8.Apr.2013, 1♂, all J. Troubridge; Big Pine Key, 24° 40.93'N, 81° 22.06'W, 4.Dec.2011, J. Troubridge, 1♂; Upper Key Largo, 24.665°N, 81.254°W, 16.Apr.2018, J. Troubridge, 1♂; Long Key, 24.814°N, 80.822°W, 13.Mar.2015, J. Troubridge, 1♂; No Name Key, 24.695°N, 81.328°W, 8.Apr.2018, J. Troubridge, 1♂; Crawl Key, 24.747°N, 80.979°W, 3.Mar.2016, J. Troubridge, 1♂; Key Largo, 11.Mar.1986, L.C. Dow, 1♂ (MGCL); Cape Sable, 7.Apr.1966, F.W. Mead, 1982,1, (one) slide MGCL 4421, 3♂ (FSCA); **Sarasota Co.:** Siesta Key, 8.May1953, C.P. Kimball, 1982,2, 1♂ (FSCA).

Etymology. From Latin, *elephas* refers to the shape of the male clasper, which resembles an elephant's head.

Distribution. This species is known from the Florida Keys and extreme southern Texas. The extent of its range in Mexico or the Greater Antilles is unknown. The DNA of "*L. humidicola*" from the Lesser Antilles has been analyzed and shows these specimens to be yet another undescribed species in the group.

Remarks. The DNA of *L. elephas* was analyzed and the 658 COI base pairs compared with those of specimens of *L. humidicola* from Venezuela, *L. solita* from California, and *L. februalis* from California. The results showed a 5.4% difference between *L. elephas* and *L. humidicola*, a 4.2% difference between *L. elephas* and *L. solita*, and a 1.1% difference between *L. elephas* and *L. februalis*. The male genitalia of *L. februalis* (Fig. 101) and *L. humidicola* (Fig. 102) are similar but their DNA differs by 5.0%.

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Literature Cited

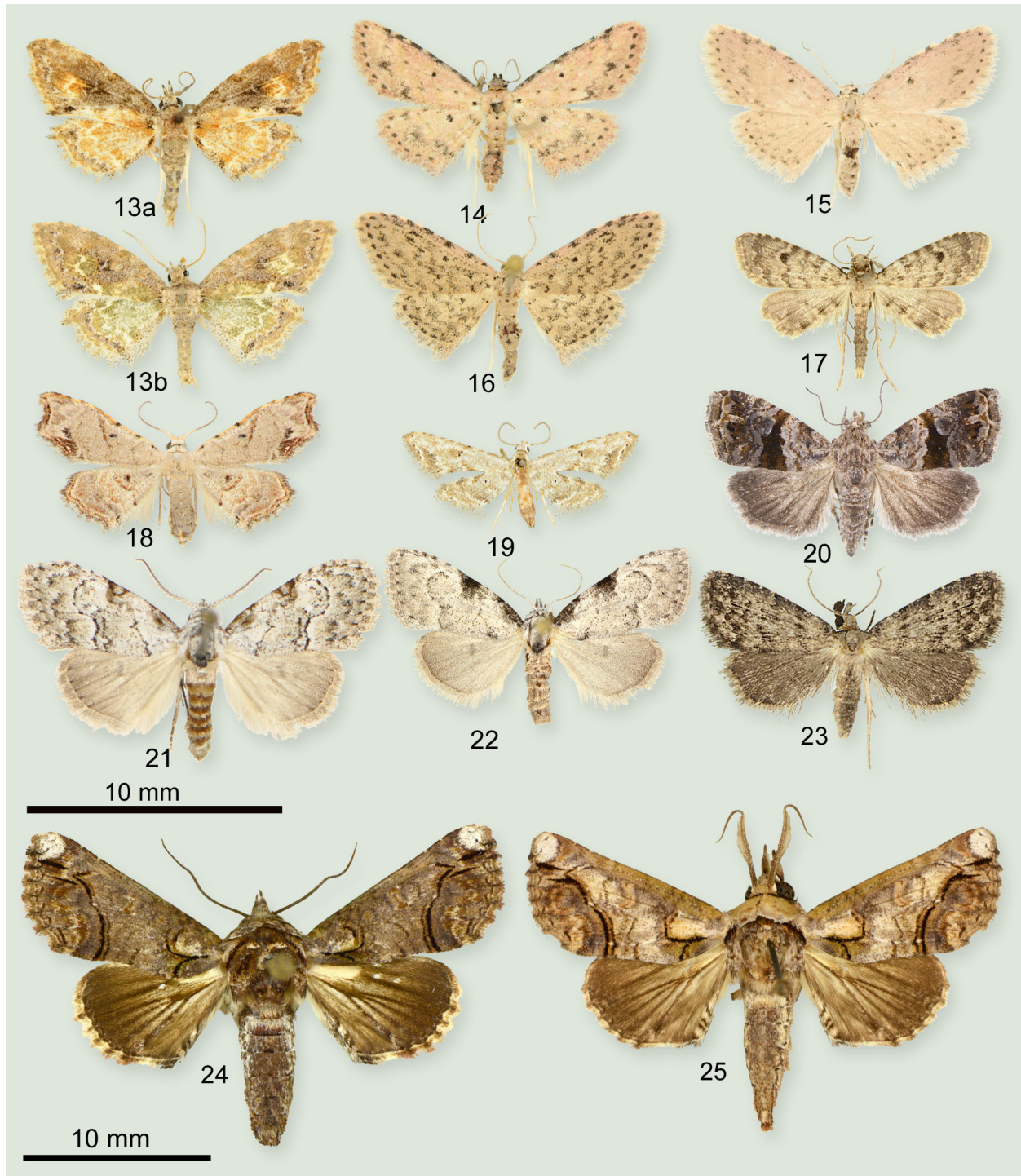
- Adams MS. 2001.** A revision of the moth genus *Leucania* Ochseneheimer in the Antilles (Insecta Lepidoptera: Noctuidae). *Annals of the Carnegie Museum* 70: 179–220.
- Becker VO. 2002.** The Noctuoidea (Lepidoptera) from Cuba described by Herrich-Schäffer and Gundlach in the Gundlach Collection, Havana. *Revista Brasileira de Zoologia*. 19(2): 349–391.
- Becker VO, Miller SE. 2002.** The large moths of Guana Island, British Virgin Islands: A survey of efficient colonizers (Sphingidae, Notodontidae, Noctuidae, Arctiidae, Geometridae, Hyblaeidae, Cossidae). *Journal of the Lepidopterists' Society* 56(1): 9–44.
- Franclmont JG, Todd EL. 1983.** Noctuidae, p. 120–159. *In*: Hodges RW (ed.). Check list of the Lepidoptera of America north of Mexico. E. W. Classey Ltd. and the Wedge Entomological Research Foundation; London. 284 p.
- Hebert PDN, Cywinska A, Balland SL, deWaard JR. 2003.** Biological identifications through DNA barcodes. *Proceedings of the Royal Society B* 270: 313–321.
- Kimball CP. 1965.** Arthropods of Florida and neighboring land areas, Vol. 1: Lepidoptera of Florida. Florida Dept. of Agriculture, Division of Plant Industry; Gainesville, Florida. v + 363 p.
- Lafontaine JD. 2004.** Noctuoidea, Noctuidae (part): Noctuinae, Agrotini. The moths of America north of Mexico, fascicle 25.1, The Wedge Entomological Research Foundation; Washington, DC. 385 p.
- Lafontaine JD, Schmidt BC. 2010.** Annotated check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico. *ZooKeys* 40: 1–239.
- Lafontaine JD, Schmidt BC. 2015.** Additions and corrections to the check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico III. *ZooKeys* 527: 127–147.
- Lafontaine JD, Sullivan JB. 2015.** A revision of the genus *Doryodes* Guenée, 1857, with descriptions of six new species (Lepidoptera, Erebididae, Catocalinae, Euclidiini). *ZooKeys* 527: 3–30.
- Núñez Aguila R, Barro Cañamero A. 2012.** A list of Cuban Lepidoptera (Arthropoda: Insecta). *Zootaxa* 3384: 1–59.
- Poole RW. 1989.** *Lepidopterorum Catalogus (New Series)*. Fascicle 118. Noctuidae, Parts 1–3. E. J. Brill; New York. 1314 p.
- Saitou N, Nei M. 1987.** The neighbor-joining method: a new method for reconstructing phylogenetic trees. *Molecular Biology and Evolution* 4(4): 406–425.
- Smith JB. 1902.** New species of Noctuidae for 1902. *Journal of the New York Entomological Society* 10: 33–53.
- Viette PEL. 1951.** Sur quelques noctuelles décrites par Guenée. *Bulletin Mensuel de la Société Linnéenne de Lyon* 20: 159–162.

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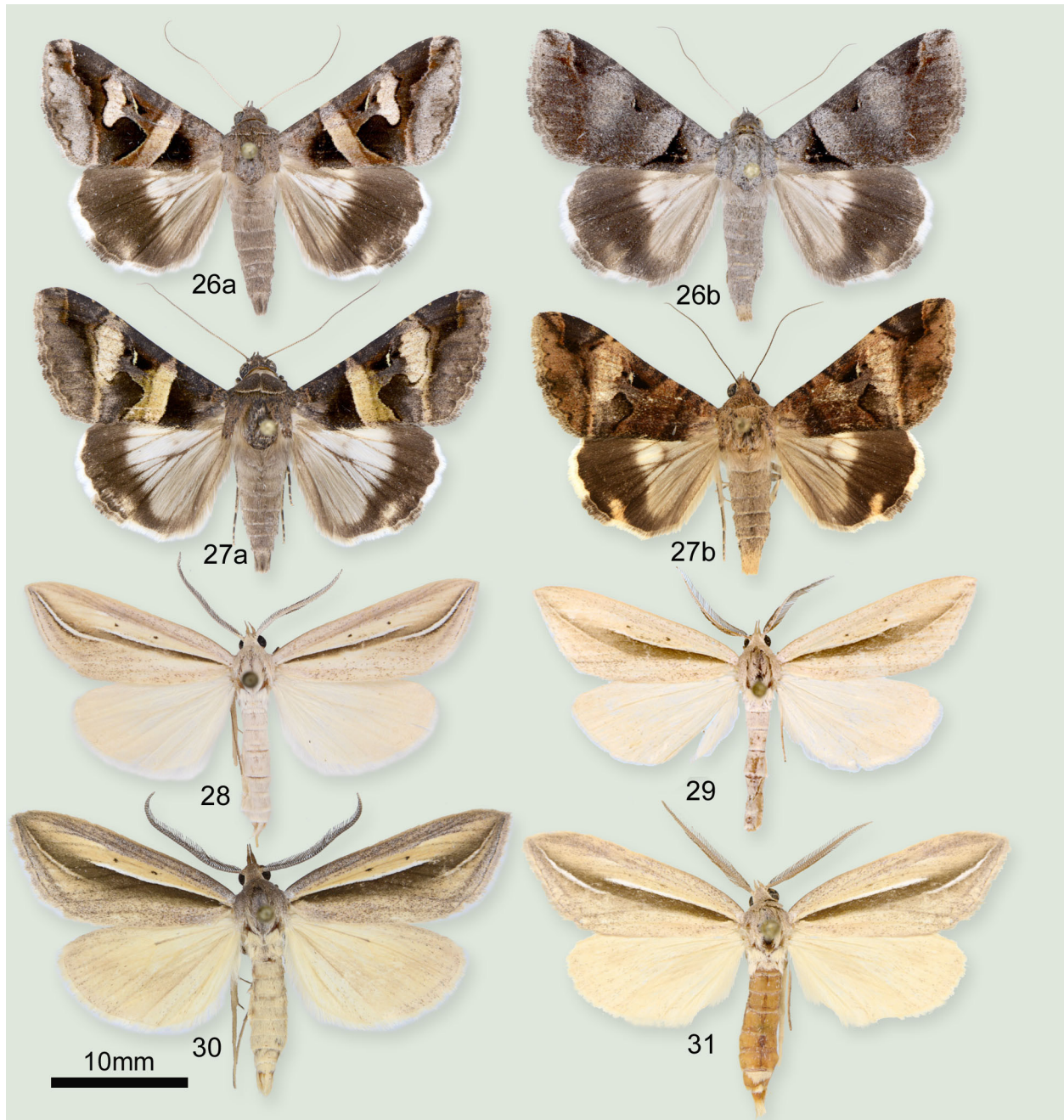
Review editor Ryan St Laurent.



Figures 1–12. Adults. 1a) *Bleptina biformata* ♂, paratype, Key Largo, FL. **1b)** *Bleptina biformata* ♀, paratype, Key Largo, FL. **1c)** *Bleptina biformata* ♀, paratype, Key Largo, FL. **2a)** *Bleptina flavivena* ♀, paratype, North Port, FL. **2b)** *Bleptina flavivena* ♀, paratype, North Port, FL. **3)** *Bleptina caradrinalis* ♂, Ocala, FL. **4a)** *Bleptina verticalis* ♂, paratype, Key Largo, FL. **4b)** *Bleptina verticalis* ♀, paratype, Key Largo, FL. **5a)** *Bleptina extincta* ♂, paratype, Monroe County, FL. **5b)** *Bleptina extincta* ♀, paratype, Monroe County, FL. **6)** *Bleptina araealis* ♂, Andros, Bahamas. **7a–c)** *Toxonprucha killamae* ♀ variation, paratypes, Bahia Honda, FL. **8a)** *Lascoria coma* ♂, paratype, North Port, FL. **8b)** *Lascoria coma* ♀, paratype, North Port, FL. **9)** *Lascoria orneodalis* ♂, Key Largo, FL. **10)** *Metalectra dixonii* ♂, paratype, Florida City, FL. **11)** *Metalectra nigrior* ♂, paratype, North Port, FL. **12a)** *Janzena pyraliformis* ♂, Guanacaste, Costa Rica. **12b)** *Janzena pyraliformis*, Mayagüez, PR, showing hood.



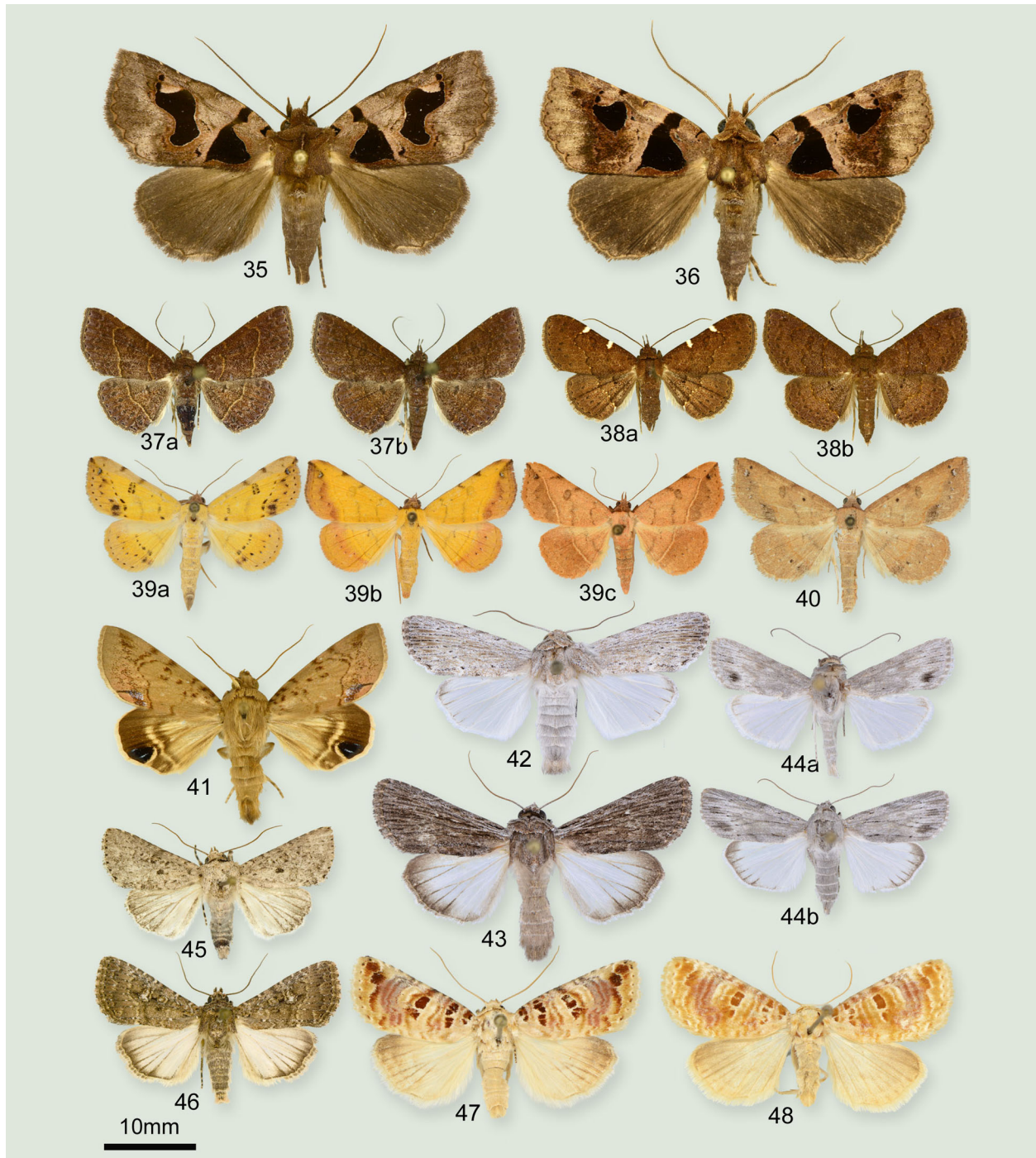
Figures 13–25. Adults. **13a)** *Sigela sordes* ♀, Highlands County, FL. **13b)** *Sigela sordes* ♂, paratype, Collier County, FL. **14)** *Sigela rosea* ♀, paratype, No Name Key, FL. **15)** *Sigela basipunctaria* ♀, North Port, FL. **16)** *Sigela lynx* ♀, paratype, North Port, FL. **17)** *Sigela subincisa* ♂, paratype, Miami-Dade County, FL. **18)** *Sigela incisa* ♂, paratype, Collier County, FL. **19)** *Sigela minuta* ♀, paratype, Okeechobee County, FL. **20)** *Tripudia calusa* ♂, paratype, Bahia Honda, FL. **21)** *Meganola georgei* ♂, paratype, North Port, FL. **22)** *Meganola phylla* ♀, Lambton Shores, ON. **23)** *Dyspyralis ocala* ♂, holotype, Marion County, FL. **24)** *Paectes hercules* ♀, paratype, Key Largo, FL. **25)** *Paectes lunodes* ♂, San Cristobal, MX.



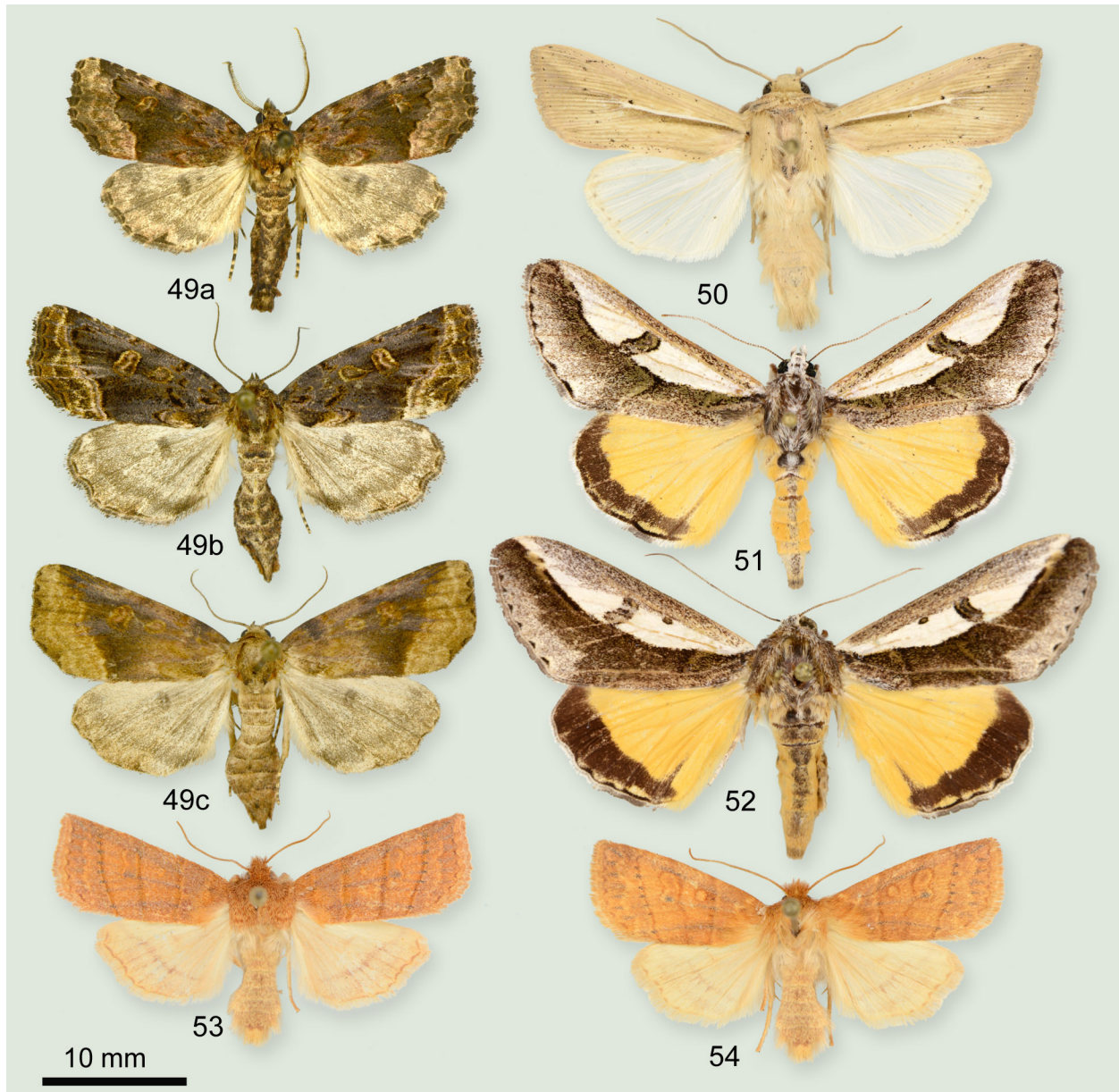
Figures 26–31. Adults. **26a)** *Melipotis florida* ♂, paratype, Florida City, FL. **26b)** *Melipotis florida* ♀, paratype, Florida City, FL. **27a)** *Melipotis perpendicularis* ♂, Key Largo, FL. **27b)** *Melipotis perpendicularis* ♀, Falcon Lake, TX. **28)** *Doryodes acta* ♂, paratype, Dixie County, FL. **29)** *Doryodes unica* ♂, holotype, Dixie County, FL. **30)** *Doryodes fulva* ♂, holotype, Dixie County, FL. **31)** *Doryodes desoto* ♂, Dixie County, FL.



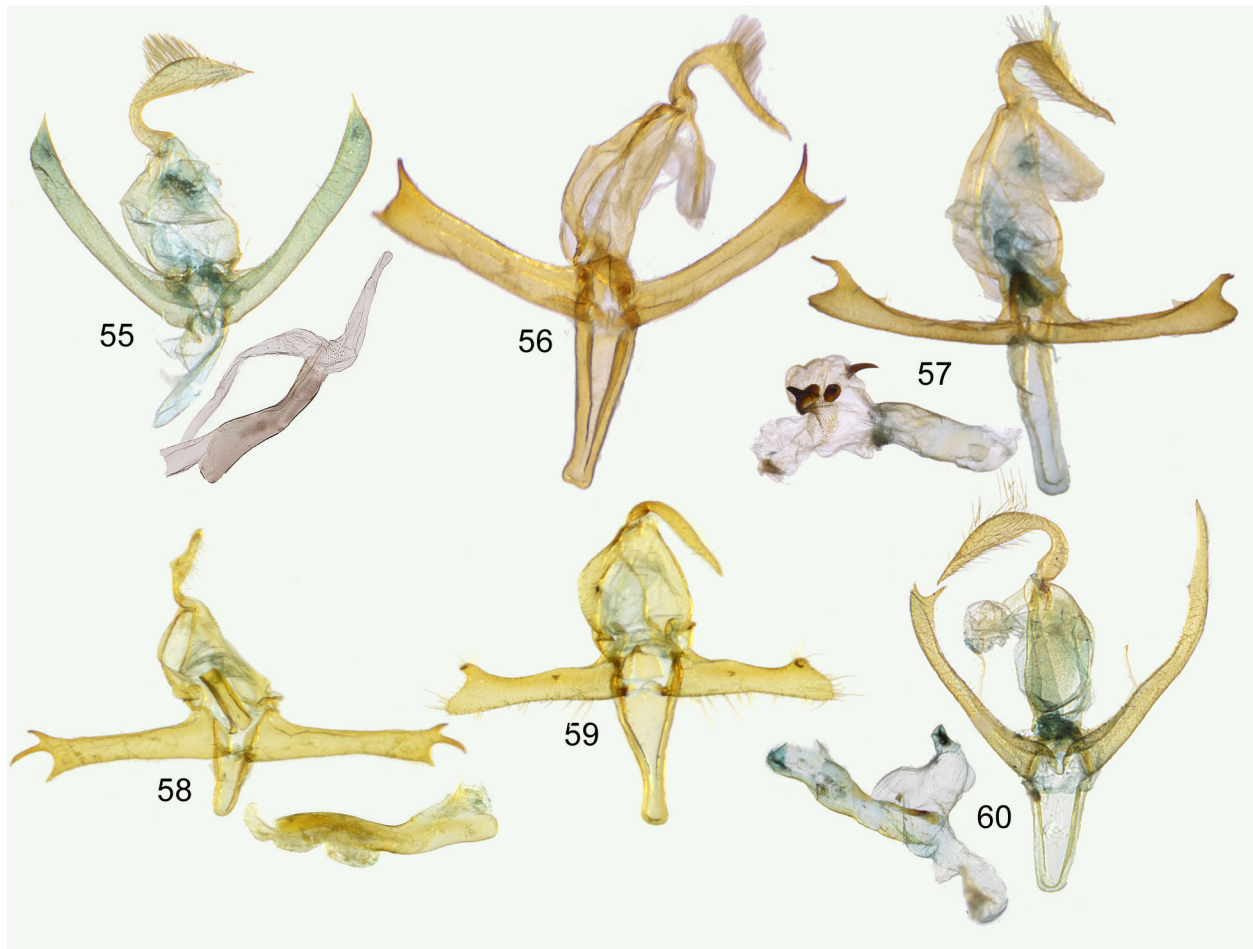
Figures 32–34. *Zale* adults. **32a)** *Z. lafontainei* ♂, paratype, Bahia Honda, FL. **32b)** *Z. lafontainei* ♂, paratype, Key Largo, FL. **32c)** *Z. lafontainei* ♀, paratype, Key Largo, FL. **32d)** *Z. lafontainei* ♀, paratype, Florida City, FL. **33a)** *Z. vargoi* ♂, holotype, Sugarloaf Key, FL. **33b)** *Z. vargoi* ♀, paratype, No Name Key, FL. **33c)** *Z. vargoi* ♀, paratype, No Name Key, FL. **34a)** *Z. clandestina* ♂, Ocala, FL. **34b)** *Z. clandestina* ♀, paratype, Citrus County, FL.



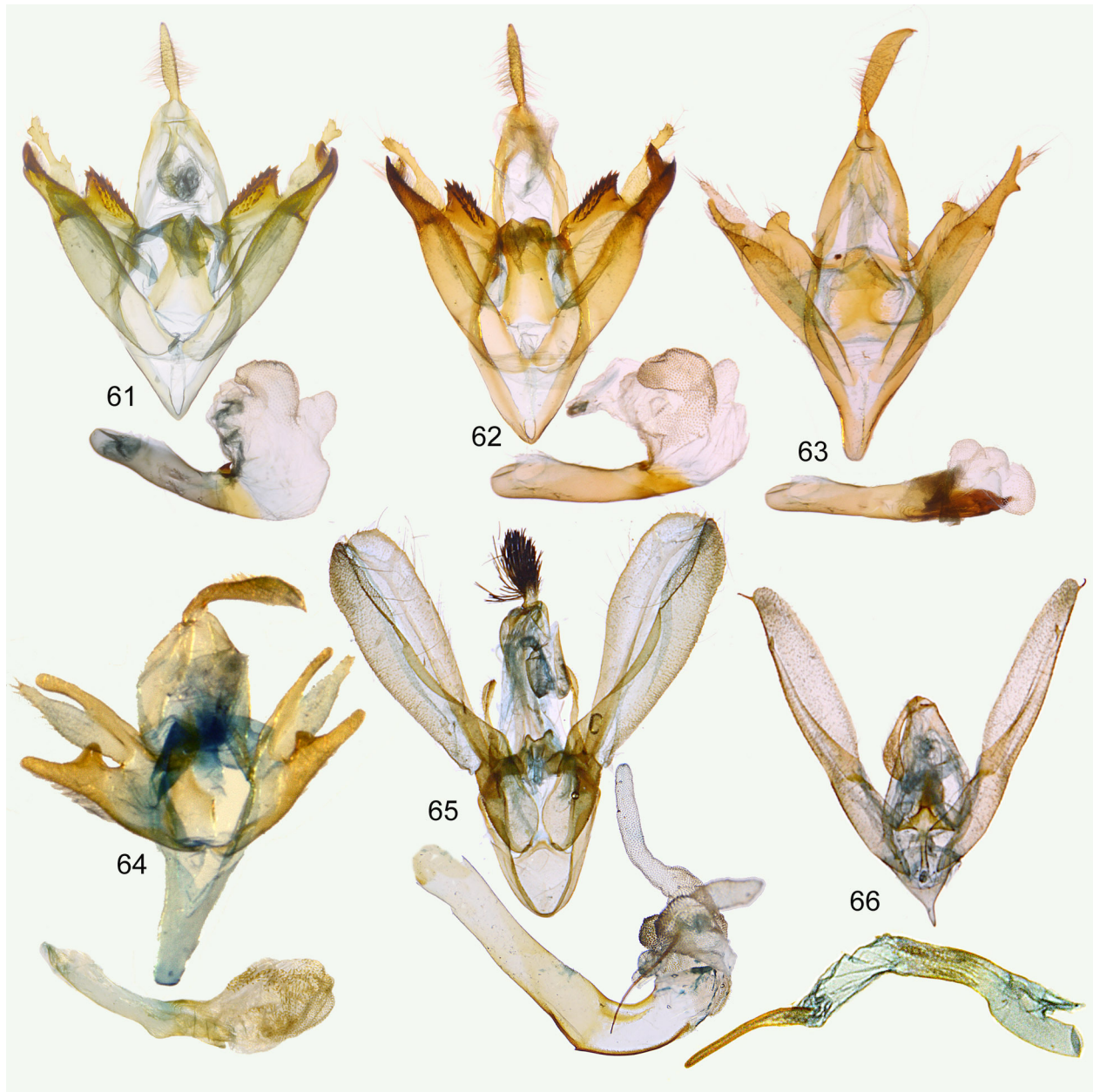
Figures 35–48. Adults. 35) *Athyra fakahatchee* ♀, paratype, Fakahatchee Strand Preserve State Park, FL. 36) *Athyra ganglio* ♀, North Port, FL. 37a) *Antiblemma carolae* ♀, paratype, Florida City, FL. 37b) *Antiblemma carolae* ♀, paratype, Florida City, FL. 38a) *Antiblemma perva* ♀, paratype, North Port, FL. 38b) *Antiblemma perva* ♀, paratype, North Port, FL. 39a) *Hemeroplanis floccalis* ♂, Bahia Honda, FL. 39b) *Hemeroplanis floccalis* ♀, Key Largo, FL. 39c) *Hemeroplanis floccalis* ♀, Port Charlotte, FL. 40) *Hemeroplanis scopulepes* ♂, Highlands County, FL. 41) *Litoprosopus linea* ♀, paratype, Port Charlotte, FL. 42) *Neogalea caracara* ♂, holotype, Key Largo, FL. 43) *Neogalea sunia* ♂, Lake Placid, FL. 44a) *Catabenoides insularis* ♂, holotype, Key Largo, FL. 44b) *Catabenoides insularis* ♀, paratype, Key Largo, FL. 45) *Condica collaris* ♂, holotype, Bahia Honda, FL. 46) *Condica concisa* ♂, North Port, FL. 47) *Diastema leo* ♂, paratype, Highlands County, FL. 48) *Diastema tigris* ♂, Sinton, TX.



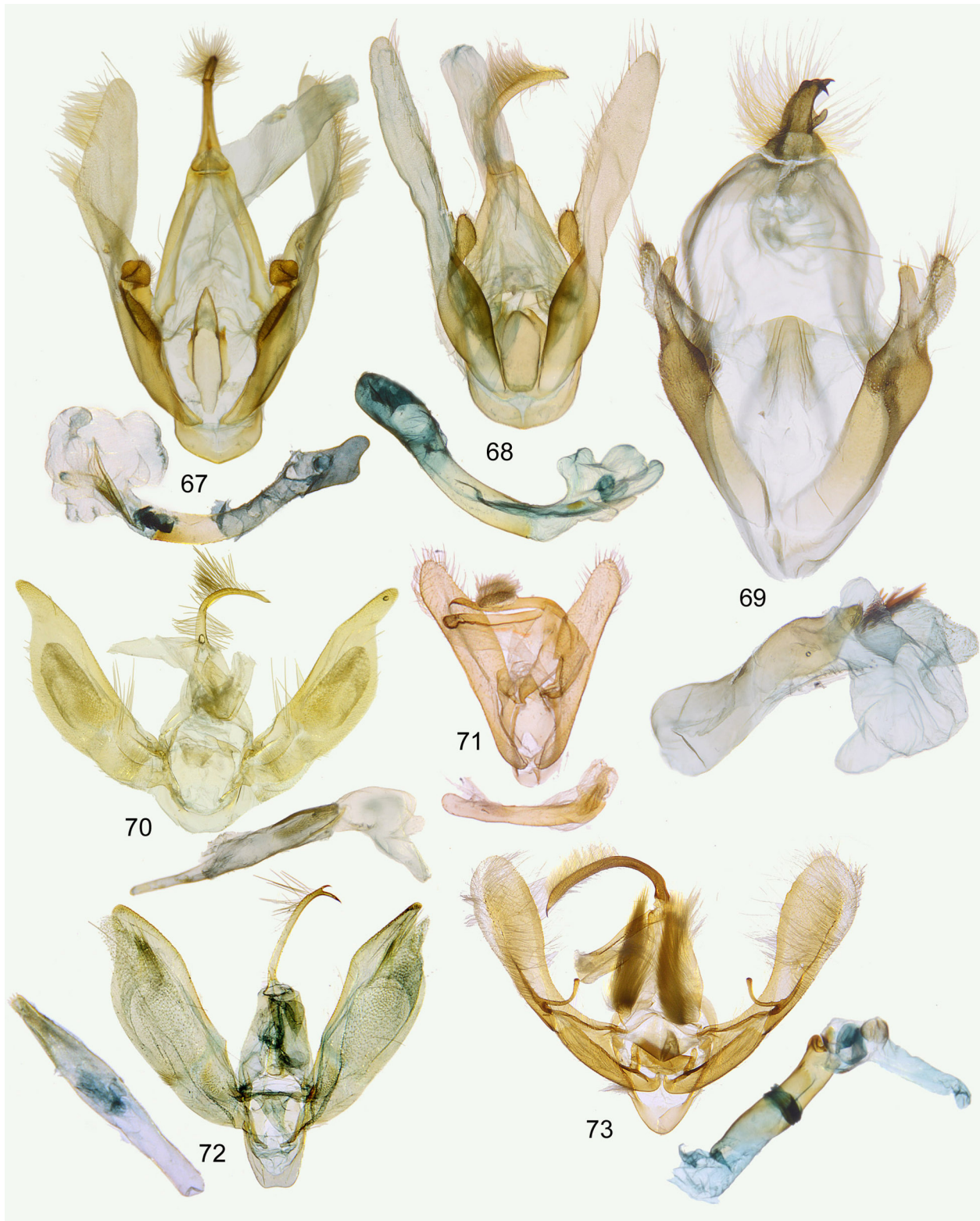
Figures 49–54. Adults. **49a)** *Homophoberia australis* ♂, holotype, North Port, FL. **49b)** *Homophoberia australis* ♀, paratype, North Port, FL. **49c)** *Homophoberia australis* ♀, paratype, North Port, FL. **50)** *Leucania elephas* ♂, paratype, Bahia Honda, FL. **51)** *Euscirrhopterus poeyi* ♀, No Name Key, FL. **52)** *Euscirrhopterus argentata* ♀, Sonora, MX. **53)** *Pyreferra slotteni* ♂, holotype, Gainesville, FL. **54)** *Pyreferra pettiti* ♂, Cayuga, ON.



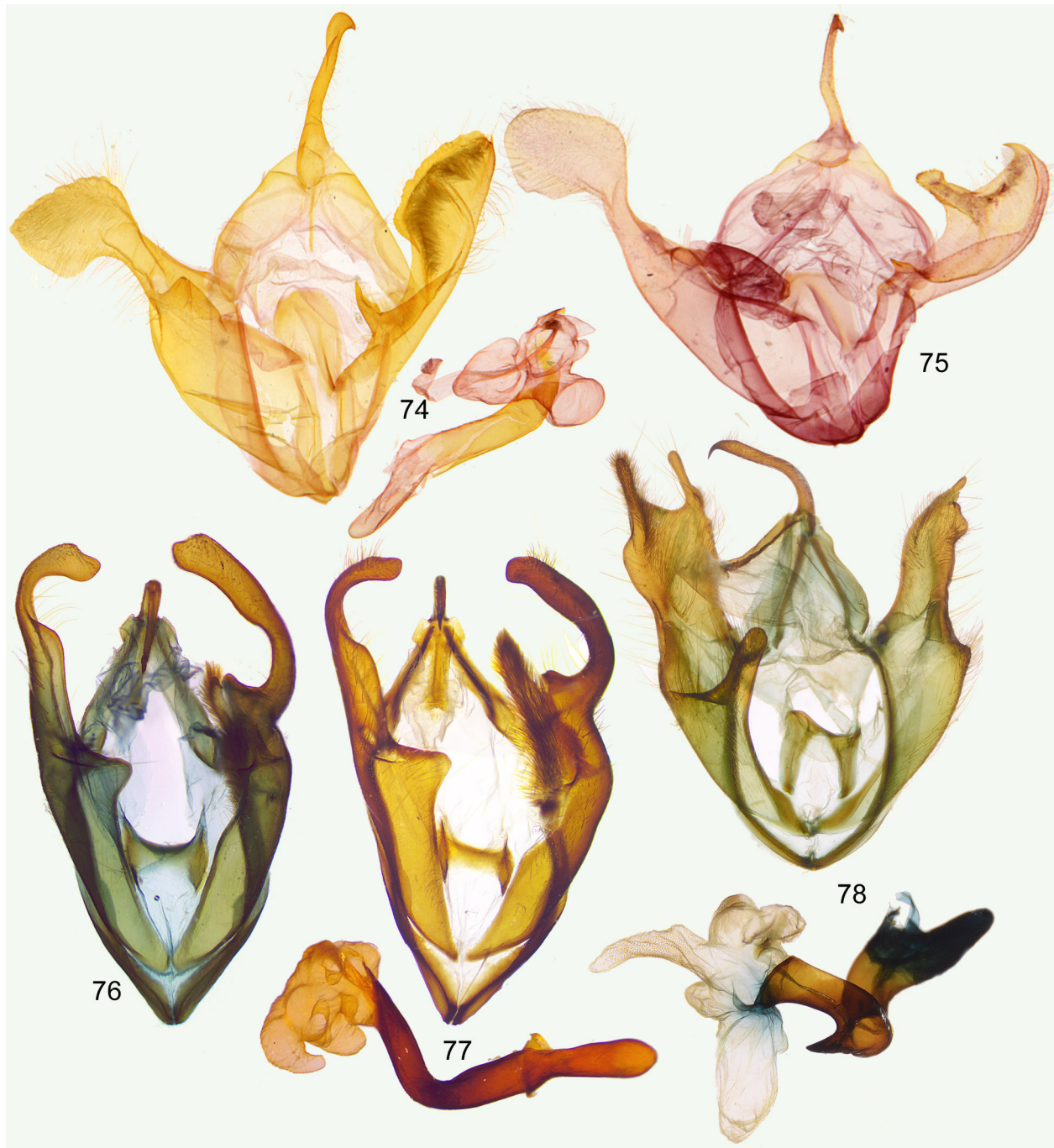
Figures 55–60. Male genitalia. **55)** *Bleptina flavivena*, paratype, North Port, FL. **56)** *Bleptina caradrinalis*, North Port, FL. **57)** *Bleptina biformata*, paratype, Bahia Honda, FL. **58)** *Bleptina extincta*, holotype, Miami-Dade County, FL. **59)** *Bleptina araealis*, Andros, Bahamas. **60)** *Bleptina verticalis*, paratype, Key Largo, FL.



Figures 61–66. Male genitalia. **61)** *Lascoria coma*, paratype, North Port, FL **62)** *Lascoria orneodalis*, No Name Key, FL. **63)** *Lascoria ambigualis*, Okeechobee County, FL. **64)** *Lascoria alucitalis*, Collier County, FL. **65)** *Melipotis florida*, paratype, Florida City, FL. **66)** *Janzena pyraliformis*, Guanacaste, Costa Rica.



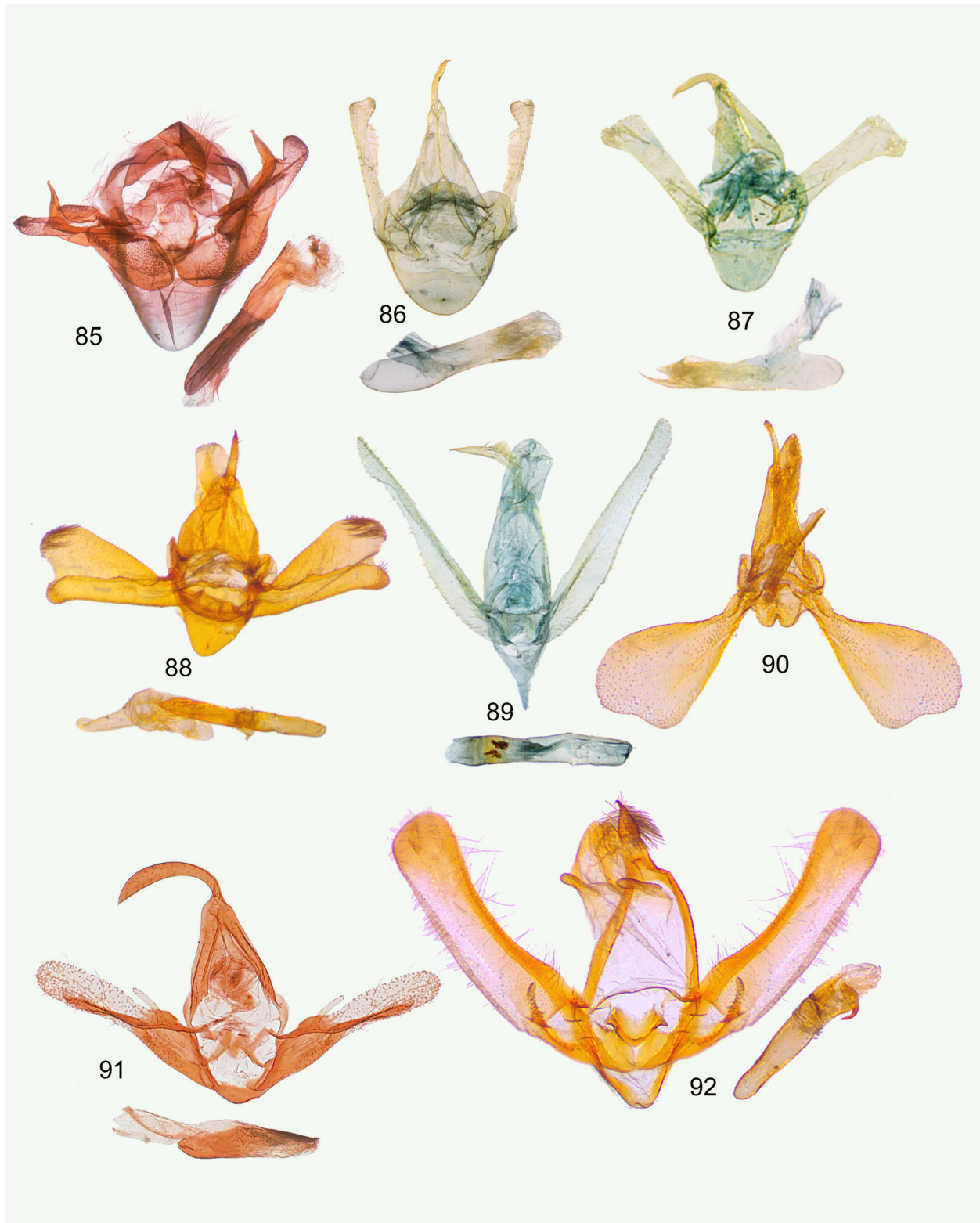
Figures 67–73. Male genitalia. 67) *Metalectra dixoni*, holotype, Key Largo, FL. 68) *Metalectra nigrior*, paratype, North Port, FL. 69) *Athyrma fakahatchee*, paratype, Collier County, FL. 70) *Antiblemma perva*, paratype, North Port, FL. 71) *Toxonprucha killamae*, paratype, Islamorada, FL. 72) *Antiblemma carolae*, Holotype, Florida City, FL. 73) *Litoprosopus linea*, holotype, Port Charlotte, FL.



Figures 74–78. *Zale* male genitalia. 74) *Z. lafontainei*, paratype, No Name Key, FL. 75) *Z. erilda*, Mayagüez, PR. 76) *Z. minerea*, Lambton Shores, ON. 77) *Z. clandestina*, holotype, Citrus County, FL. 78) *Z. vargoi*, holotype, Sugarloaf Key, FL.



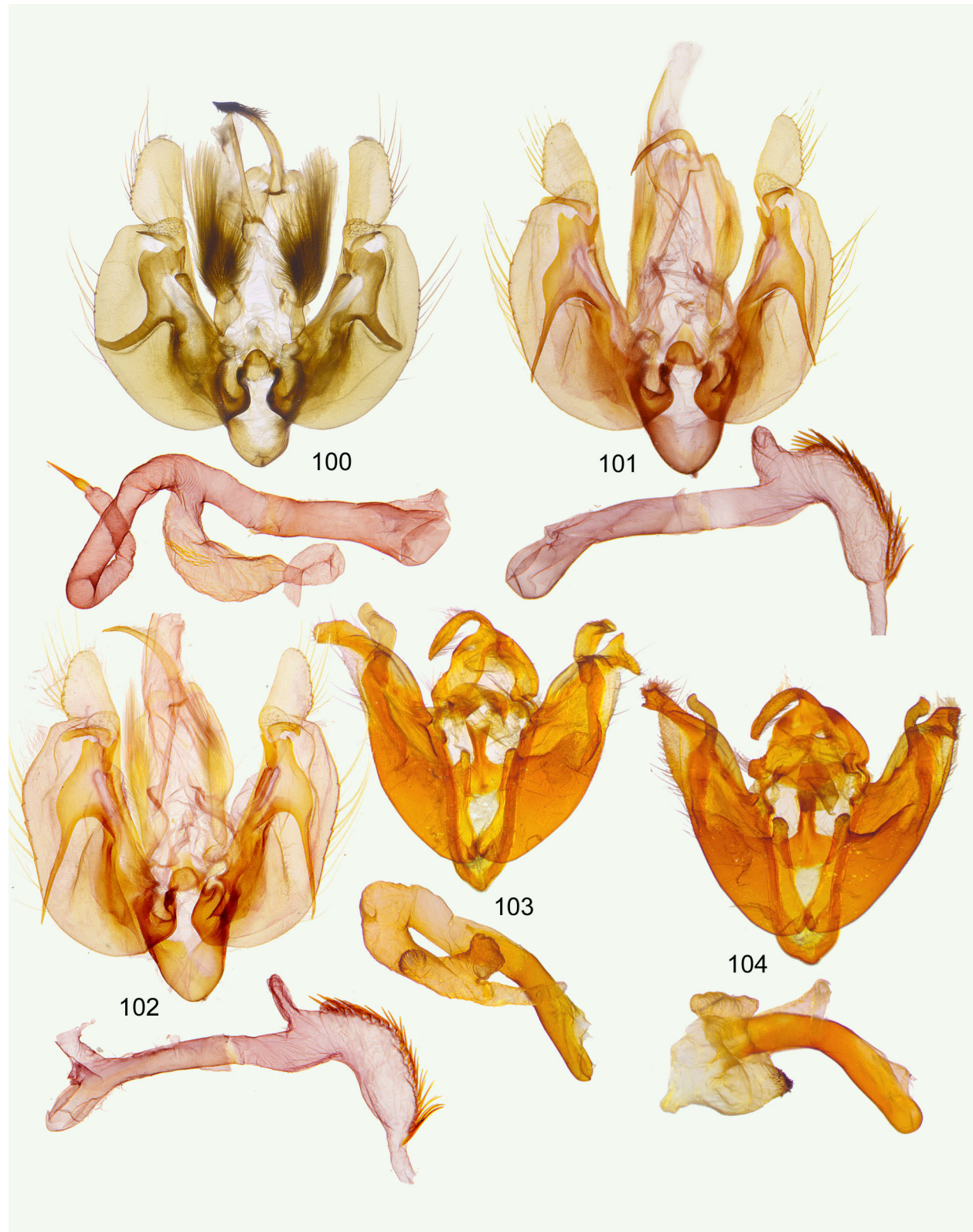
Figures 79–84. Male genitalia. **79)** *Doryodes acta*, holotype, Dixie County, FL. **80)** *Doryodes unica*, holotype, Dixie County, FL. **81)** *Doryodes fulva*, holotype, Dixie County, FL. **82)** *Hemeroplanis floccalis*, North Port, FL. **83)** *Tripudia calusa*, paratype, Bahia Honda, FL. **84)** *Hemeroplanis scopulepes*, Highlands County, FL.



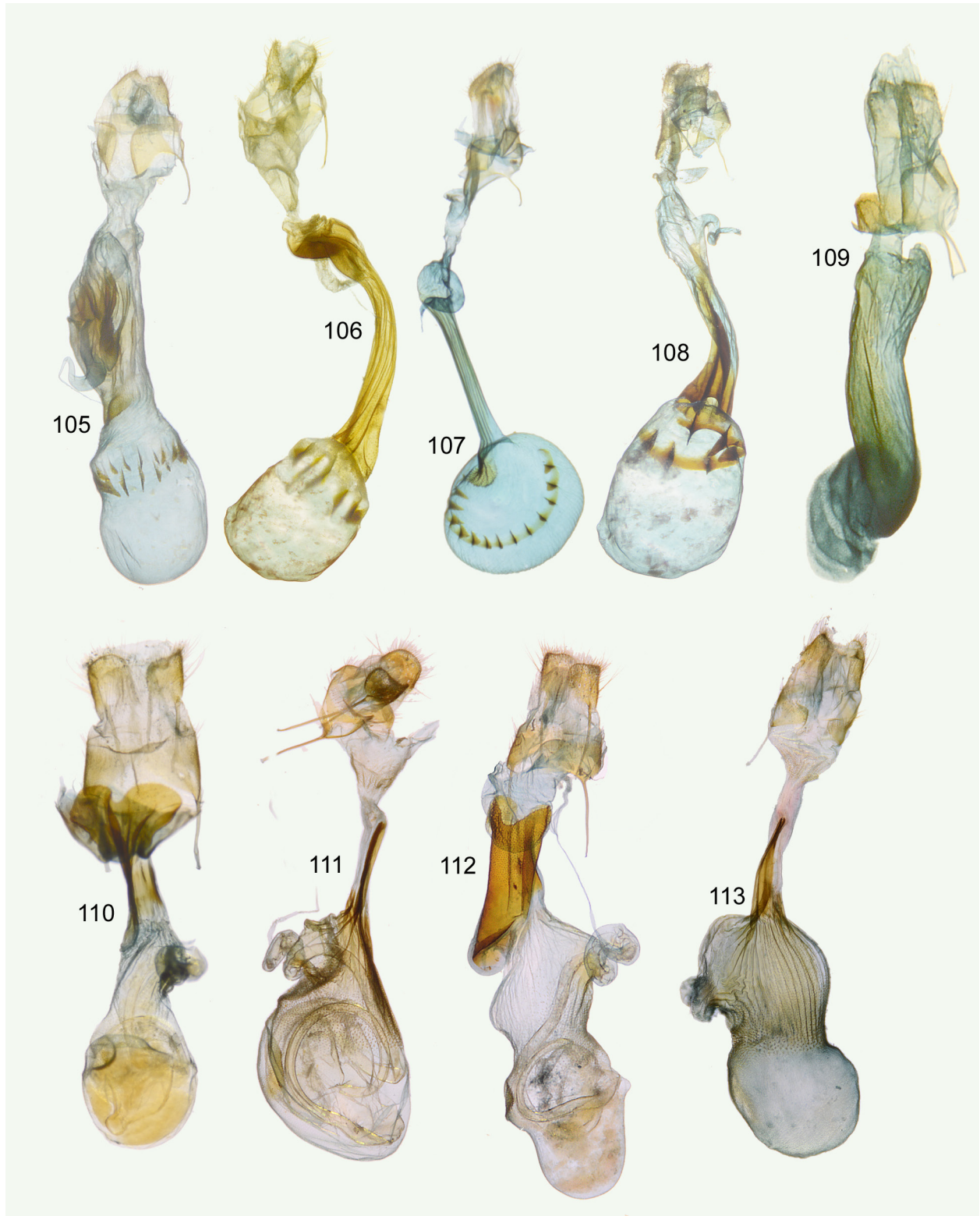
Figures 85–92. Male genitalia. **85)** *Sigela sordes*, paratype, Highlands County, FL. **86)** *Sigela lynx*, paratype, North Port, FL. **87)** *Sigela rosea*, paratype, No Name Key, FL. **88)** *Sigela incisa*, paratype, Collier County, FL. **89)** *Sigela subincisa*, holotype, No Name Key, FL. **90)** *Sigela minuta*, paratype, Miami-Dade County, FL. **91)** *Dyspyralis ocala*, paratype, Gainesville, FL. **92)** *Meganola georgei*, paratype, North Port, FL.



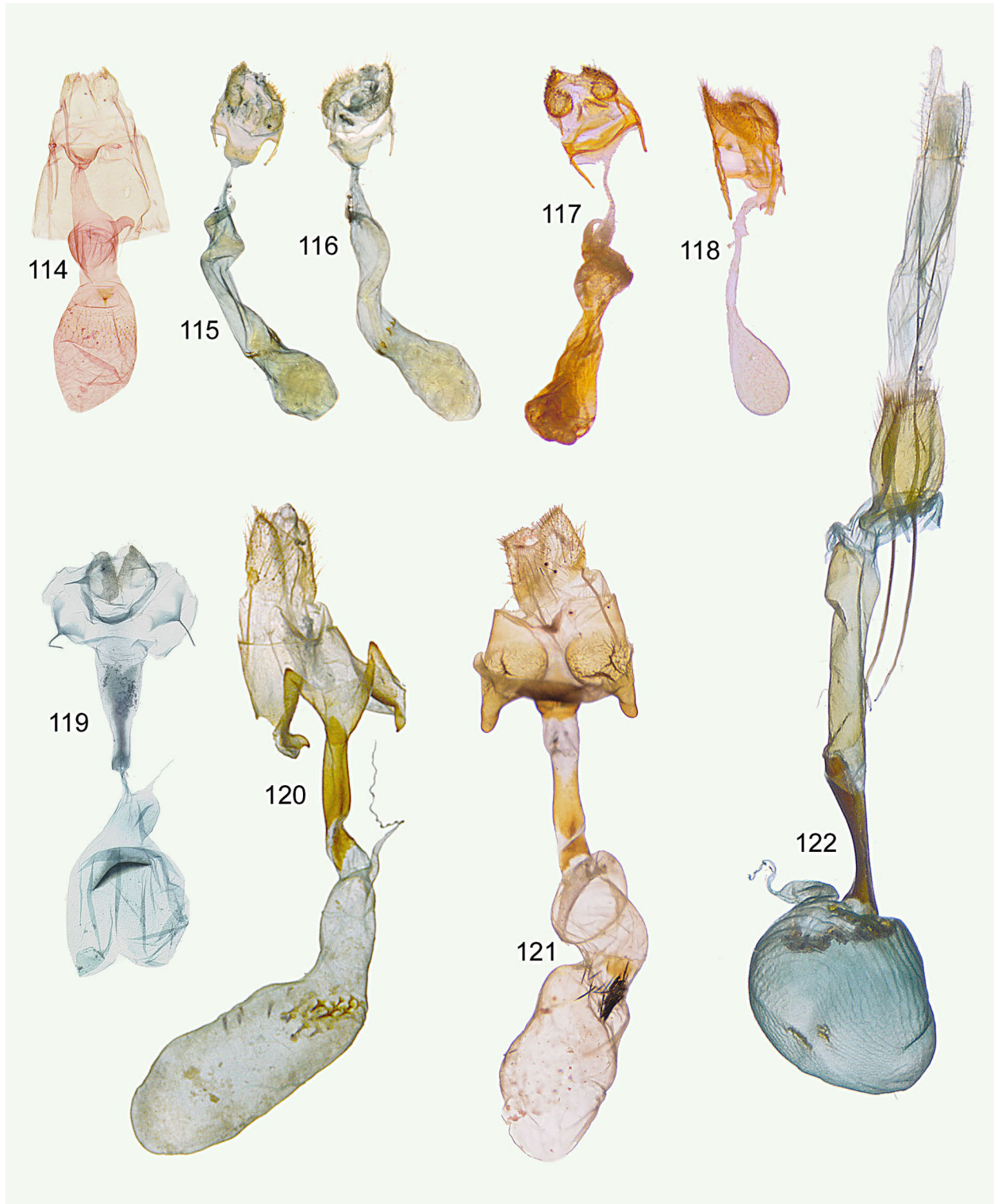
Figures 93–99. Male genitalia. **93)** *Catabenoides insularis*, holotype, Key Largo, FL. **94)** *Catabenoides vitrina*, Key Largo, FL. **95)** *Condica collaris*, holotype, Bahia Honda, FL. **96)** *Homophoberia australis*, holotype, North Port, FL. **97)** *Homophoberia cristata*, Cayuga, ON. **98)** *Diastema leo*, paratype, Highlands County, FL. **99)** *Neogalea caracara*, holotype, Key Largo, FL.



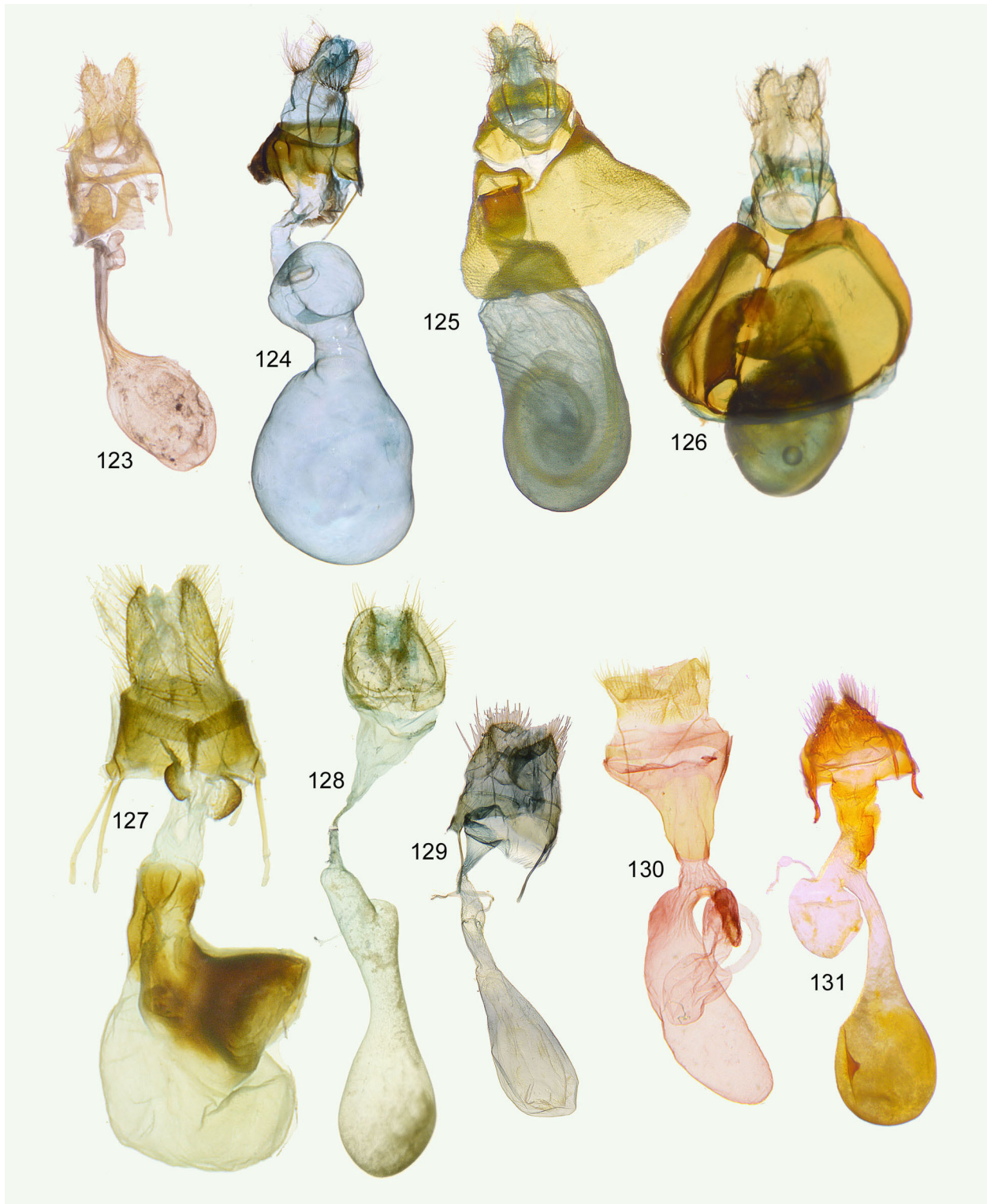
Figures 100–104. Male genitalia. **100)** *Leucania elephas*, paratype, Bahia Honda, FL. **101)** *Leucania februalis*, San Diego, CA. **102)** *Leucania humidicola*, Calabozo, Venezuela. **103)** *Pyreferra slotteni*, holotype, Gainesville, FL. **104)** *Pyreferra pettiti*, Cayuga, ON.



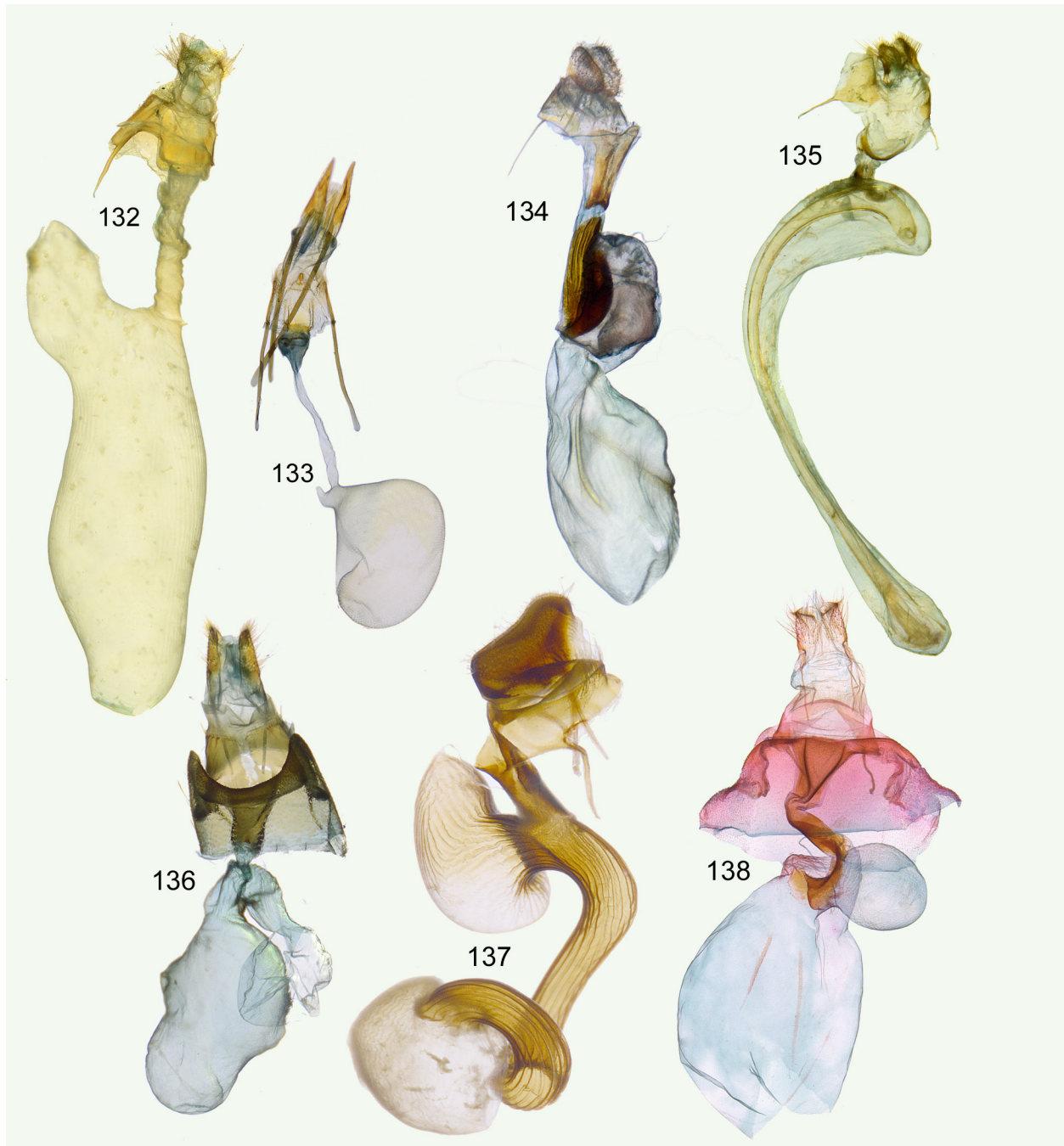
Figures 105–113. Female genitalia. **105)** *Bleptina biformata*, paratype, Key Largo, FL. **106)** *Bleptina extincta*, paratype, Miami-Dade County, FL. **107)** *Bleptina flavivena*, paratype, Collier County, FL. **108)** *Bleptina verticalis*, paratype, Key Largo, FL. **109)** *Janzena pyraliformis*, Guanacaste, Costa Rica. **110)** *Lascoria coma*, paratype, North Port, FL. **111)** *Lascoria orneodalis*, Key Largo, FL. **112)** *Lascoria ambigualis*, Highlands County, FL. **113)** *Lascoria alucitalis*, Key Largo, FL.



Figures 114–122. Female genitalia. **114)** *Sigela sordes*, paratype, Collier County, FL. **115)** *Sigela lynx*, paratype, North Port, FL. **116)** *Sigela rosea*, paratype, No Name Key, FL. **117)** *Sigela incisa*, paratype, Collier County, FL. **118)** *Sigela minuta*, paratype, Okeechobee County, FL. **119)** *Dyspyralis ocala*, paratype, Gainesville, FL. **120)** *Metalectra nigrior*, paratype, North Port, FL. **121)** *Metalectra dixoni*, paratype, Florida City, FL. **122)** *Melipotis florida*, paratype, Florida City, FL.



Figures 123–131. Female genitalia. **123)** *Toxonprucha killamae* paratype, Islamorada, FL. **124)** *Zale lafontainei*, paratype, Key Largo, FL. **125)** *Zale vargoi*, paratype, No Name Key, FL. **126)** *Zale clandestina*, paratype, Citrus County, FL. **127)** *Athyra fakahatchee*, paratype, Collier County, FL. **128)** *Antiblemma perva*, paratype, Collier County, FL. **129)** *Antiblemma carolae*, paratype, Florida City, FL. **130)** *Paectes hercules*, holotype, Key Largo, FL. **131)** *Meganola georgei*, paratype, Highlands County, FL.



Figures 132–138. Female genitalia. **132)** *Litoprosopus linea*, Islamorada, FL. **133)** *Tripudia calusa*, paratype, Islamorada, FL. **134)** *Catabenoides insularis*, paratype, Key Largo, FL. **135)** *Homophoberia australis*, paratype, Highlands County, FL. **136)** *Diastema leo*, paratype, Highlands County, FL. **137)** *Leucania elephas*, paratype, Bahia Honda, FL. **138)** *Pyreferra slotteni*, paratype, Grenada County, MS.

