

New and old species of *Ommatius* Wiedemann (Diptera: Asilidae) from Hispaniola

A. G. Scarbrough

Department of Biological Science
Towson State University
Baltimore, MD 21204

Abstract: Four new species of *Ommatius* Wiedemann, the female of *O. stramineus* Scarbrough, and the male of *O. nigellus* Scarbrough from Hispaniola are described. A lectotype for *O. gwenae* Scarbrough and a neotype for *O. cinnamomeus* are selected. Notes of previously named species, new records, illustrations of terminalia, and a key to the species are included.

Key Words: Asilidae, *Ommatius* Wiedemann, new species, Hispaniola

Introduction

Ten species of *Ommatius* have been reported from Hispaniola, eight modern species (Scarbrough 1984) and 2 extinct species (Scarbrough and Poinar 1992). Recently, new material was collected by Mike Ivie of Montana State University and Robert Davidson and Chen Young of the Carnegie Museum of Natural History. These included 4 new species, the male of *O. nigellus* Scarbrough, and the female of *O. stramineus* Scarbrough. With these additions, 14 species are now known from this island, representing at least 4 natural species groups. Each group will be treated at a later time as a revision of the genus progresses. To provide names of species for studies in progress, I describe here the new material, and include additional records and notes on previously named species to supplement original descriptions. Illustrations of terminalia of most known species, and a key to all known species are also included. Additionally, the holotype and allotype of *Ommatius gwenae* Scarbrough and the holotype of *O. cinnamomeus* Scarbrough were destroyed by dermestid beetles after the original description of the species. Thus, a lectotype of *O. gwenae* and a neotype of *O. cinnamomeus* are designated.

Materials and Methods

General methodology used in this study follows Scarbrough (1990, 1993). Terminalia were cleared in warm KOH for 10-12 hours, neutralized with glacial acetic acid in ETOH for 5 minutes, and placed in glycerol for 24 hours. In most cases, this procedure permitted clear viewing of the internal structures of the female terminalia. Further dis-

section of male terminalia was required for examination of the aedeagus. Illustrations were made using an ocular grid and graph paper under a stereoscopic dissecting microscope. Figures 1-10 list standard measurement scales and abbreviations of the structures of terminalia unless indicated elsewhere. Anatomical terminology used in this study follows McAlpine (1981).

The most frequently used measurements and ratios are defined as follows: Body length = A straight line distance between the anterior margin of the face and the apex of the terminalia. Wing length = The distance from the base of the costal vein to the apex of the wing. Wings were defined as being produced or dilated when their maximum breath occurred beyond the junction of the subcostal and costal veins; wings with a more or less straight costal margin have the greatest breath before this junction. Face-to-head width ratio (FHWR) = Greatest width of head (as measured horizontally from outer margin of one eye to the other) divided by greatest width of the face at base of antenna. Flagellum width-to-length ratio (FWLR) = greatest length divided by greatest lateral width. Hind femur width-to-length ratio (HF-WLR) = dorsal length of hind femur measured from trochanter to apex divided by greatest vertical width. Cell m1 Width Ratios (m1 WR) = width of basal 1/3 and apical 1/3 divided by basal width. Ratios are given as ranges in the text.

Collection and locality data of all species are standardized in the text, and listed sequentially by country, numbers, sex, specific location, elevation, date, collector, and museum. Curators and acronyms of museums who loaned specimens to me are

as follows: Randall Schuh, American Museum of Natural History (AMNH), New York, NY.; Robert Davidson and Chen Young, Carnegie Museum of Natural History (CMNH), Pittsburgh, PA.; Monty Woods, Canadian National Museum (CNC), Ottawa; Stefen Cover, Museum of Comparative Zoology (MCZ), Cambridge, MA; Mike Ivie, Department of Entomology, Montana State University (MSU), Bozeman, MT.; Museum of Zoology, Towson State University (TSU), Baltimore, MD.; George Gavin, Hope Entomological Collections (OXUM), Oxford, England; F. Christian Thompson, Systematic Entomology Laboratory, USDA, ARS, at the United States Natural Museum (USNM), Washington, D. C.

Key to the known species of *Ommatius* from Hispaniola

1. Scutellum with marginal bristles 2
 - Scutellum without marginal bristles 4
2. Fore coxae and femora entirely black; hind femur of male with HFWLR 1/3.6-1/5.0; moderate to large (11-25 mm), robust species 3
 - Fore coxae yellow, femora partly yellow, base and preapical band of hind femur yellow; hind femur of male with HFWLR 1/6.9; smaller (8.0-9.1 mm), slender species; terminalia as in Figs 40-49 *lucidatus*, new species
3. Flagellum long, about 3 times as long as wide; body with abundant, long vestiture; entire face with dense, mostly or entirely, black bristles and setae; male with costal margin of wing straight; terminalia as in Figs 21-29 *haitiensis* Scarbrough
 - Flagellum oval, about as long as wide; body with sparse bristles and setae, none unusually long or abundant; face with only white bristles and setae; male with costal margin of wing moderately dilation; terminalia as in Figs 60-66 *pulverius*, new species
4. Femora largely yellow, apical 1/4 to 1/3 black; large species 16.0-19.0 mm; terminalia as in Figs 8-10 *cinnamomeus* Scarbrough.
 - Femora largely or entirely brown or black 5
5. Hind femur usually entirely dark brown to black, at most narrow base of hind femur yellow to red 6
 - Basal 1/4 or more of hind femur yellow to red 10
6. Face with only whitish or yellowish bristles and setae 9
 - Face with at least a few, black bristles and setae . 7
7. All tibiae entirely black; front coxa with few to several, long, thin, black bristles; face with mostly to entirely black setae and bristles; terminalia as in Figs 50-59 *nigellus* Scarbrough.
 - All tibiae with at least basal 1/2 yellow; front coxa with numerous, thick, whitish bristles; face with mostly whitish or yellowish bristles and setae 8
8. Hind femur ventrally with 3 to 4 black bristles; male with costal margin of wing moderately to strongly dilated; apex of epandrium pointed, not bifurcate; hypandrium with a transverse band of black setae *russelli* Scarbrough.
 - Hind femur ventrally with only whitish bristles; male with costal margin of wing straight, without a dilation; apex of epandrium strongly bifurcate; hypandrium with only scattered setae; terminalia as in Figures 77-86 *vitreus* Bigot.
9. Face yellow tomentose; mesonotum with only very thin, short, dorsocentral setae; hind femur with only yellowish bristles; scutellum with a preapical groove; male with costal margin of wing moderately dilated; terminalia as in Figs 67-76 *stramineus* Scarbrough.
 - Face white to yellowish white tomentose; mesonotum with 2 to 4 pairs of thick, dorsocentral bristles; hind femur ventrally with 3 to 4 black bristles; scutellum without a distinct preapical groove; male with costal margin of wing moderately dilated; terminalia as in Figs 1-7 *atrosus*, new species.
10. Basal 1/3 or more of mid and hind femora yellow to red; male with costal margin of wing sometimes slightly dilated; scutellum with only yellowish or whitish setae 11
 - Mid and hind femora largely black, at most narrow bases reddish; male with costal margin of wing moderately dilated; scutellum with abundant, black setae *russelli* Scarbrough.
11. Basal tarsomere of hind tarsus largely yellow to light brownish yellow; mid femur of male with 3 to 5 short, thick posteroventral bristles, length about 2/3 thickness of mid femur; male with costal margin of wing slightly dilated; terminalia as in Figs 30-39 *hispaniolae* Scarbrough.
 - Basal tarsomere of hind tarsus entirely black; mid femur with long, bristly, posteroventral setae, length greater than width of mid femur; costal margin and terminalia not as above 12
12. Large (14.3-18.5 mm), robust species; fork of vein R4+5 just beyond base of cell m1; male with costal margin moderately dilated; mid femur of male with several long bristles; terminalia as in Figs 11-20 *gwenae* Scarbrough.

— Smaller (11.0-15.0 mm), more slender species; fork of vein R4+5 at or before base of cell m1; male with costal margin of wing straight, without a dilation; mid femur of male with only long, bristly setae; terminalia as in Figs 87-95
..... *vivus*, new species.

***Ommatius atrosus*, new species**
(Figures 1-7)

Male: Black. Body 16.3 mm, wing 11.7 mm. Head largely dull yellow gray to grayish tomentose with pale yellow vestiture; front slightly brownish tomentose; FHWR 1/8.6. Ocellar tubercle and antenna with only blackish vestiture; FWLR 1/1.8. Occiput with 6 to 8 dark brown to black, thin, postocular bristles, none exceptionally long, apical 1/3-1/2 of 2-3 bristles proclinate.

Mesonotum dorsally mostly brown tomentose, dense grayish to yellow-gray in grooves, sides and posteriorly; vestiture sparse, largely blackish, 4 lateral and 3-4 dorsocentral bristles, remaining dorsocentral setae short and thin; thin to bristly setae present laterally and between dorsocentral bristles posteriorly. Scutellum and pleuron yellow-grayish tomentose with thin, pale yellow setae; scutellum with numerous, long setae, bristles absent; anepimeral bristle absent. Halter yellowish white.

Wing with costal margin only slightly dilated, surface slightly brownish, anterior cells darkest microtrichia abundant apically. Cell r4 long, narrow, base of cell r4 just beyond apex of cell d. Crossvein r-m just before middle of cell d. Cell m1 basally wide and perpendicular to long axis of wing, subapical constriction present, m1 WR 1.0:1.5:1.2.

Coxae yellowish gray tomentose with pale yellow vestiture; fore coxa with several, strong bristles. Femora entirely black. Mid femur with mostly strong, yellowish bristles; 1 anterior and 1 posterior black bristle. Hind femur anteriorly and anteroventrally with strong, yellowish bristles; mostly black posteroventral bristles present, 3 to 4 yellowish bristles basally; HFWLR 1/5.2. Tibiae mostly yellow, apices and anterior stripe black; tibiae with 1 apically and at least 3 pale yellow bristles laterally. Tarsi blackish; fore, mid, and hind tibiae with 6, 4, and 2 yellowish bristles, respectively.

Abdomen black, sterna entirely and all or most terga with dense, pale yellowish gray tomentum laterally, mostly pale yellow vestiture present. Terga partly or completely with dense, brown tomen-

tum dorsally; terga 5 to 8 with sparse to abundant, dark brown to black setae.

Terminalia largely shiny black. Apical 1/3 of epandrium gradually narrow, apex subtruncate. Ventral lamella ventrally with a thick, median spine, apex truncate, and a large ventrolateral, subtriangular plate. Gonostylus flat in lateral view, wide basally, apex with acute point. Aedeagus apically tubular, with a large, dorsal aperture and a wide, ventral, triangular flange. Gonocoxite with a long, digitate process dorsally, a shorter, much thinner seta ventrally, and an erect, horizontal flange. Hypandrium with sparse, thin setae, anterior margin with a small triangular process medially.

Female. Unknown.

Holotype ♂. Dominican Republic: Prov. Pedernales, 26 km N Cabo Rojo, 18° 6' N, 71° 38' W, 730 m, 31.vii.1990, J. Rawlins, C. W. Young, S. Thompson, (CMNH).

Etymology. Latin *atrosus*, meaning "full of or wholly", referring to the wholly black body of the insect.

Remarks. A medium sized, black, robust species with abundant yellowish gray tomentum and mostly yellowish vestiture; absence of scutellar bristles, black tarsi with few to several, yellow bristles, a weak, dilated costal margin of the wing, and combined structures of the terminalia characterize the species.

***Ommatius cinnamomeus* Scarbrough**
(Figures 8-10)

Ommatius cinnamomeus Scarbrough, 1984:147-149.
Type locality La Hotte, Haiti, holotype ♀ (USNM).

Male: Unknown.

Female: Body 16-25 mm; wing 14.0-17.5 mm; FHWR 1/6.3-1/6.7; FWLR 1/1.6-1/1.8; HFWLR 1/5.3-1/5.8. Palpus mostly to entirely yellow. Wing with anterior apical 1/2 brownish; apical 1/3 with dense microtrichia. Cell r4 long, base just beyond apex of cell d. Cell m1 wide basally, m1 WR 1.0:1.0:1.7:1.2-1.0:1.9:1.5. Basal tarsomere of hind tarsus with base narrowly to basal 1/2 yellow.

Terminalia. Tergum 9 long, about 1/2 as long as cercus, apical corner pointed, folded, and fused below cerci. Sternum 8 apically with narrow, v-shaped emargination, posteriorly with a v-shaped row of bristly setae and bristles; anteriorly and medially with wide, shiny stripe. Spermatheca parabolical, apically narrow.

New records. Dominican Republic: 2 ♀♀, Prov. Pedernales, 26 km N Cabo Rojo, 18° 06' N, 71° 38' W, 730 m, wet deciduous forest, intercept trap, 19-25.vii.1990, L. Masner, J. Rawlins, C. Young; 1 ♀, Pedernales, 3.3 mi NE Los Arroyos, 18° 15' N, 71° 45' W, 1450 m, sweep sample in montane forest, 16-18.vii.1990, Lubomir Masner, (CMNH).

Remarks. A large (16 to 20 mm), dark brown species with mostly yellow legs and yellow palpi; head with light yellowish tomentum and vestiture; femora with apical 1/5-1/3 black and only pale yellow bristles; basal tarsomeres of tarsi yellow to reddish basally; and combined structures of the terminalia characterize the species.

Because the above specimens are essentially identical to the destroyed holotype, the larger female is selected as neotype.

Ommatius gwenae Scarbrough

(Figures 11-20)

Ommatius gwenae Scarbrough, 1984: 139-142. Type locality, Dominican Republic, Constanza, holotype ♂ & allotype ♀ (USNM), ♂ paratype (TSU), ♀ paratype (AMNH).

Male: Body 16.0-18.5 mm; wing 11.0-14.4 mm; FHWR 1/7.1-1/9.0; FWLR 1/1.1-1.4; HFWLR 1/4.2-1/4.4. Wing with cell r4 beyond apex of cell d. Cell m1 wide, base perpendicular to long axis of wing, m1 WR 1.0:1.3:1.1-1.0:1.5:1.2.

Female: Body 14.3-17.0 mm; wing 11.9-13.9 mm; FHWR 1/12.6; FWLR 1/1.6; cell m1 WR 1.0:1.5:1.4.

Specimens examined. Holotype ♂, allotype ♀, ♂ & ♀ paratypes. New records. Dominican Republic: 2 ♂♂, Prov. Hato Mayor, Parque Los Haitises, 3 km W Cueva de Arena, 19° 04' W, 69° 29' W, mesic lowland forest, 10-20 m, 7-9.v.1992, R. Davidson, C. Young, S. Thompson, J. Rawlins; 1 ♀, same data and collectors, coastal vegetation on limestone; 1 ♂, same location and collectors, La Altagracia, 2 km w, Bayahibe, dry seasonal forest on limestone, 18° 23' N, 68° 51' W, 10 m, 3.vii.1992, (CMNH).

Remarks. Medium to large black flies, with a white tomentose face, oval flagellum, black femora with narrow bases of mid and hind femora reddish; hind femur with most or all ventral bristles black; tarsi entirely black; and combined structures of the terminalia characterize the species. The male is also distinguished by a moderately dilated costal margin and a slightly clavate abdomen.

Because the holotype and allotype were destroyed, the male paratype with the label "Dominican Republic, La Toma, N of San Cristobal, 9-10 June, 1969, Flint & Gomez" (TSU) is hereby designated lectotype.

Ommatius haitiensis Scarbrough

(Figures 21-29)

Ommatius haitiensis Scarbrough, 1984: 132-135. Type locality, Haiti, ♂ holotype, ♀ allotype, ♂ paratype, Haiti (MCZ).

Male: Body 13.5-17.3 mm; wing 11.0-14.2 mm; FHWR 1/7.0-1/7.3; FWLR 1/2.9-1/3.0; HFWLR 1/3.8-1/3.6. Face entirely with abundant, thin, black setae, oral margin with pale yellow setae. Mesonotum with abundant, long, black setae, especially anteriorly, laterally, and between rows of dorsocentral setae; rows of dorsocentral setae extend to anterior margin of mesonotum; numerous, long, bristly setae present. Scutellum with 2 black, marginal bristles and numerous, long, black, and yellow setae, length slightly shorter than marginal bristles. Pleuron with 2-3 long, black, anepimeral bristly setae.

Wings with costal margin straight, apical 1/3 with dense microtrichia. Cell r4 long, base just beyond apex of cell d. Cell m1 basally wide and obliquely angled toward wing apex, m1 WR 1.0:2.0:2.0.

Legs and tarsi entirely dark brown to black with abundant, long, thin setae forming a "wooly" appearance. Fore coxa with abundant, long, thin, pale yellowish setae and 3 to 4 black bristly setae.

Abdomen with abundant, long, thin, pale yellowish setae, especially ventrally.

Female: Body 12.2-14.0 mm; wings 11.0-12.3 mm; FHWR 1/5.7-1/6.8; FWLR 1/2.7-3.3; m1 WR 1.0:2.1:2.0-1.0:2.7:2.6; HFWLR 1/5.4-1/5.8. One or more femora basally sometimes with extreme narrow reddish to yellowish band or small spot, posteriorly. Tibiae mostly yellow, apices black. Tarsi entirely black or basal tarsomeres partly reddish to yellow. Terminalia with cerci and sternum 8 yellow to reddish. Tergum 9 long, at least 1/2 as long as cercus, apical corner folded and fused ventrally. Sternum 8 anteriorly strongly produced, slightly longer than wide, apex subtruncate when dry but more rounded when treated in KOH. Spermatheca parabolical, weakly crenulate.

Specimens examined. ♂ holotype, ♀ allotype and ♂ paratype (MCZ). New records: Domin-

ican Republic: 1 ♂, Prov. Pedernales, 7 km NE Los Arroyos, 1870 m, 18° 06' N, 71° 44' W, intercept trap, 15.vii.1990, L. Masner, C. Young, J. Rawlins; 1 ♀, same location and collectors except 9.7 km NE of Los Arroyos, 2070 m, 15-16.vii.1990; 1 ♀, Pedernales, 3.3 km NE Los Arroyos, 18° 15' N, 71° 45' W, 1450 m, sweep sample in montane forest, 16-18.vii.1990, L. Masner; 2 ♀♀, same locality and collectors except 37 km N Cabo Rojo, 10°09' N, 71° 35' W, 1500 m, grassland with pine, 25.vii.1991; 1 ♀, Independencia, 3 km ESE El Aguacate, north slope Sierra de Baoruco, 1980 m, 18° 18' N, 71°42' W, pine woodland, 28-29.vii.1991, J. Rawlins, C. Young, S. Thompson, R. Davidson, (CMNH).

Remarks. A large, black species with abundant, long, black vestiture; flagellum 3 times as long as wide; black femora, and combined structures of the terminalia characterize the species.

***Ommatius hispaniolae* Scarbrough**
(Figures 30-39)

Ommatius hispaniolae Scarbrough, 1984: 137-139. Type locality, Dominican Republic, Barahona, holotype ♂ & allotype ♀ (MCZ), 10 paratypes (AMNH, CNC, USNM, TSU).

Male: Body 9.5-14.0 mm; wing 8.0-10.5 mm; FHWR 1/5.8-1/6.9; FWLR 1/1.3-1/1.5; HFWLR 1/4.0-1/4.3. Costal margin of wing slightly to moderately dilated, a brownish spot posteriorly. Cell r4 long, base at or just before apex of cell d. Base of cell m1 slightly oblique, perpendicular to longitudinal axis of wing, m1 WR 1.0:1.4:1.0-1.0:2.0:1.6. Face sometimes with 2-3 black bristles. Mesonotum posteriorly with 3-4 pairs of short, dorsocentral bristles. Scutellum with numerous, long, thin setae, and sometimes 2-3 long, thin, marginal setae. Fore femur usually with narrow base partly or completely yellow and 4-5 ventral bristles. Mid femur basally with anterior 1/3 and posterior 1/2 yellow, and 3-5 posteroventral bristles. Hind femur with basal 1/3 yellow. Tarsi with basal tarsomeres mostly yellow.

Terminalia. Epandrium narrow, 2.5 times as long as wide, with short, narrow apex. Ventral lamella basolaterally with flat, elongate process. Gonostylus narrow with small, birdhead-like apex. Gonocoxite with 2 short, spine-like bristles. Aedeagus anteriorly tubular, thin flange-like collar and a pair of flat, claw-like processes present ventrally. Hypandrium apically triangular, transverse band of bristly setae posteriorly.

Female: Body 11.0-12.0 mm; wing 8.7-9.8 mm; FHWR 1/6.4-1/7.5; FWLR 1/1.2-1/1.3; cell m1 WR 1.0:1.6:1.3-1.0:1.9:1.5; HFWLR 1/5.0-1/6.1. Basal 1/2 of hind femur yellow. Tergum 9 medially short, 1/6 as long as cercus; apical corner projecting ventrally free of sternum 9. Sternum 8 apically with deep, median emargination, and posteriorly with v-shaped row of numerous, thick bristles. Spermatheca oval, only slightly longer than wide.

Material examined. Holotype ♂, allotype ♀, 2 paratypes. New records, Dominican Republic: Prov. Pedernales, 1 ♂, 24 km N Cabo Rojo, 610 m, wet forest, 19.viii.1988, M. Ivie, Philips & Johnson; 2 ♂♂, same region, ca. 35 km NW Cabo Rojo, pine forest, 1250-1430 m, Elacitillar, Las Abejas, 20,23.viii.1988, (USNM); same region, 2 ♂♂, 37 km N Cabo Rojo, 1500 m, 10° 09' N, 71° 35' W, grassland with pines, 25.ix.1991, R. Rawlins, R. Davidson, C. Young, S. Thompson; 1 ♂, 3 ♀♀, same region & collectors, Azua, 8 km NE Padre de las Casas, Rio Las Cuevas, 580 m, 18° 46' N, 70° 53' W, riparian growth in arid thorn-shrub, 3-4.x.1991; same region & collectors, Monte Cristi, 5 km NNE Botoneillo, 50 m, 19° 46' N, 71° 24' W, arid scrub, 29-30.xi.1992, S. Thompson (CMNH).

Remarks. A small to medium sized black species, with an oval flagellum, black femora with yellow bases, each with several short, whitish bristles ventrally, basal tarsomeres largely yellow, and combined structures of the terminalia characterize the species. In addition, the slightly dilated anterior margin of the wing and slightly clavate abdomen of the male further distinguished the species.

***Ommatius lucidatus*, new species.**
(Figures 50-59)

Male: Dark brown to black. Body 8.0-9.1 mm, wing 7.0-8.0 mm. Face bright gray tomentose with mostly whitish to pale yellowish white vestiture; 6 long, thin, dark brownish bristles present; FHWR 1/7.7-1/8.0. Palpus with yellowish vestiture. Antenna largely brown with dark brown vestiture, scape yellow to brownish yellow; pedicel with 1 bristle slightly longer than flagellum; FWLR 1/1.8-1/1.9. Style basally thick, apical 1/2 with 5 long setae, basal 1/2 with 2-3 unusually short setae, 1/3 or less as long as longest seta. Front slightly converging dorsally, vertex subequal to face at antenna; dull yellow-gray tomentum and whitish setae present. Ocellar tubercle with 2 long, thick bristles and a few short setae, all dark brown to blackish; 6

postocular bristles present, apical 1/3-1/2 of 3 bristles strongly proclinate.

Mesonotum black with mostly brownish tomentum, laterally and posteriorly yellowish gray; vestiture sparse, all dark brown; 4 lateral bristles present. Row of dorsocentral setae extend to anterior 1/4 of mesonotum, with mostly short, thin, brown setae, 1 pair of long, thick bristles present posteriorly; sparse, thin, brown setae present anteriorly between dorsocentral rows and laterally above wings. Scutellum and pleuron brownish gray to gray tomentose; scutellum with 2 long, thick, brownish bristles, and 2-3 thin setae. Pleuron with mostly whitish vestiture; 1 thin, bristly anepimeral seta and 3-5 black katatergal bristles present. Halter yellow.

Wing with costal margin straight; apical 1/2 of wing and posterior margin with dense microtrichia. Cell r4 narrow with vein R5 weakly convex medially; base of cell r4 well beyond apex of cell d. Base of cell m1 unusually narrow, much wider beyond basal 1/4; WR 1.0:5.5:5.0; vein M1 basally with oblique angle anteriorly, subbasally curved horizontally toward wing margin.

Coxae grayish tomentose with whitish vestiture; fore coxa largely yellow, about 3/5 as long as fore femur. All femora thin, slender; HFWR 1/6.9. Fore and mid femora largely yellow, with apical 2/5-1/3 brown. Fore femur with a row of 9-10 thin, black, posterodorsal setae; a row of long, yellow setae and bristles present ventrally. Mid femur with 3 long, thin bristles anteriorly, a row of 12-13 thin, brown anteroventral bristles and a posteroverentral row of long, yellow setae and bristles; preapical, black, thin, posterodorsal bristle present. Hind femur largely brown, with narrow base and preapical band yellow; 1 yellow and 1 black bristle anteriorly, all ventral bristles yellow; anteroventral row with 5-7 bristles, basal bristles shortest with each bristle sequentially being progressively longer, apical bristles longest and thickest, basal most bristle about 1/3 as long as and as thick as longest bristle; posteroverentral row of bristles more numerous than those in anteroventral row, all thin and most as long as longest anteroventral bristles, 2 of these bristles about 1/2 as long as hind femur. Fore and mid tibiae largely yellow, narrow apices and narrow anterior stripe brownish, 3-6 long, lateral bristles present; fore tibia laterally with several, thin, yellow setae. Hind tibia largely brown, narrow base yellow. Fore and mid tarsi with basal tarsomeres largely yellow, all remaining tarsomer-

es and entire hind tarsus brown; tarsi with dark brown bristles.

Abdomen narrow, subshiny to shiny black dorsally, apical margin of most segments narrowly yellow; dull brownish gray to grayish tomentum, most dense on basal segments, apical 2 to 3 segments with tomentum sparse to absent, shiny black; vestiture largely dark brown to black dorsally with thin, yellow setae on most segments laterally and ventrally; callus of tergum 1 and apical margins of most terga with 2-4 long, blackish bristles; apical corners of terga 3-5 with 1-2 yellow bristles; sterna 4-5 laterally with a row of 5-8 yellow bristles. Sternum 6 with 3 dense tufts of fine, yellow setae, 1 in each apical corner and 1 basomedially, apices of many setae proclinate, and 2-4 short, black, claw-like bristles mediolaterally; sterna 7-8 with dense, tuft of setae medioapically and a row of long, black setae and bristles apically; sternum 8 with blackish setae and bristles.

Terminalia elongate and narrow, at least 2.5x as long as wide. Epandrium foot-like, apically curved upward. Gonostylus small. Aedeagus subhorizontal, barrel-shape, thick in cross-section, apex curved dorsally. Hypandrium short, triangular.

Female: Body 8.7-12.4 mm, wing 7.0-9.0 mm; FWLR 1/2.0-1/2.1; FHWR 1/5.0-1/7.5; HFWR 1/5.5. Face usually dull yellowish gray tomentose, front slightly brownish gray to yellow tomentose with sparse, brown setae. Scape and pedicel often brownish yellow. Mesonotum with 2 to 3 long, thick pairs of dorsocentral bristles. Fore femur posteroverentrally without a row of thin, brown setae; often 1 or 2 brown, ventral bristles present. Mid femur anteriorly with 4 long bristles, row of dark brown anteroventral bristles, extending to apical 1/3 of femur, apical 1/3 of posteroverentral row with 4 to 6 long, brown bristles. Hind femur anteriorly and anteroventrally usually with only dark brown bristles, 1 female with only pale yellow bristles. Tibiae with only dark brown bristles. Sterna 4 to 5 with a dark brown or yellow bristle in each apical corner; sterna 6 to 7 laterally with 3 to 4 long, brown bristles, remaining setae of sternum 6 largely yellow and setae of sternum 7 entirely dark brown. Sternum 8 slightly longer than wide with apical margin dilated to or near apex of cercus, apical 1/5-1/3 yellowish with a median split or fissure; vestiture entirely dark brown with several, long bristles, none aligned in distinct rows. Tergum 9 1/2 as long as cercus, apical corner folded below cercus. Spermatheca ovate with pointed apex.

Holotype ♂, Dominican Republic: Prov. Pedernales, 26 km N Cabo Rojo, 18° 06' N, 71° 38' W, 730 m, 19-25.vii.1990, wet deciduous forest, intercept trap, L. Masner, J. Rawlins, C. Young, (CMNH); Allotype ♀, data as holotype except 13.vii.1990, (CMNH). Paratypes: 1 ♂, data as holotype except 31.vii.1990; 1 ♀, data as allotype; 1 ♀, data as allotype except 23.5 km N Cabo Rojo, 540 m, 19-21.vii.1990; 1 ♀, data as allotype except 31.vii.1990; 1 ♀, Prov. Independencia, 4 km S Los Pinos, Loma de Vientos, 475 m, 18° 35' N, 71° 46' W, 12.x.1991, semiarid deciduous forest with pastures, R. Davidson, C. Young, S. Thompson, J. Rawlins, (CMNH).

Etymology. Latin, *lucidatus*, meaning "shiny or bright", referring to the dorsal surface of the abdomen.

Remarks. A small, slender species with thin legs, a shiny abdomen, a bristly anepimeral seta, yellow fore coxa, the unusual setation of the femora and 4 to 8 sterna, and combined structures of the terminalia characterize the species. *Ommatius lucidatus* is similar to *O. lineolatus* Scarbrough (Scarbrough 1988) from Cuba, *O. fimbriatus* Scarbrough & Poinar (1992), an extinct species also from the Dominican Republic, and *O. abana* Curran from Bimini (Curran 1953). These small species have small, thin bodies and only a few, long setae below the stylus. Furthermore, males of *O. fimbriatus*, *O. lineolatus*, and *O. lucidatus* have an unusual pattern of sternal vestiture and an elongated terminalia. In the latter 2 species, the aedeagus is subhorizontal and barrel-shaped with a tapered apex and a small, reduced gonostylus. *Ommatius lucidatus* differs from these species in the characters of the wings, color and vestiture of the femora, vestiture of the abdominal sterna, and combined structures of the terminalia.

Ommatius nigellus Scarbrough

(Figures 50-59)

Ommatius nigellus Scarbrough, 1984: 144-145. Type locality Furcy, Haiti, holotype ♀ (AMNH).

Male: Body and legs entirely black. Body 15.0-16.2 mm, wing 11.0-11.5 mm; FHWR 1/6.7-1/6.8, FWLR 1/2.1-1/2.4, HFWLR 1/4.4-1/4.7. Face with abundant, dense, black vestiture. Occiput with numerous, thin, black setae; a row of numerous, thin, postocular bristles extends to midlateral margin of eye, apical 1/2 of 4-5 bristles strongly proclinate.

Pleuron with 1, rarely 2, black, anepimeral bristly seta, rarely yellow or absent. Wing with costa margin moderately dilated; wing largely brownish with anterior apical 1/2 darkest, anterior apical 2/3 and posterior apical 1/3 with dense microtrichia. Cell r4 long, with base before apex of cell d. Crossvein r-m before middle of cell d. Cell m1 wide, weak subapical constriction present, base of cell perpendicular to long axis of wing, m1 WR 1.0:1.4:1.1.1. Halter reddish brown.

Fore coxa with 7-11 black, bristly setae and bristles. Fore femur ventrally with moderately long, yellow setae. Mid femur with 4 thick, black bristles anteriorly and 3 posterodorsally; most ventral vestiture long, thin, and yellowish, with 3-4 strong, black, anteroventral bristles medially. Hind femur anteriorly with only yellowish bristles; most ventral bristles black, with 2-3 yellowish bristles present on basal 1/4 in each ventral row. Fore and mid tibiae laterally with 2 to 3 yellow bristles; fore tarsus with 2 yellow bristles.

Abdomen dorsally with mostly brown tomentum and dark vestiture; sterna entirely and broad lateral margins of terga 1-7 grayish tomentose with yellowish vestiture; tergum 7 with a strong bristle in each apical corner, and sternum 7 medially with 2 thin bristles; segment 8 apically with numerous, long bristles. Tergum 8 basally with a deep, membranous v-shaped notch, about 2/3-3/4 as long as tergum.

Terminalia compact, largely black. Epandrium basally wide, apically with 2 narrow, opposing claw-like processes, 1 slightly shorter, thinner, with pointed apex, the other flat, wider, slightly longer with rounded apex. Ventral lamella apically slender, basally with 2 large cup-like depressions. Gonostylus flat, angled 90° vertically at basal 1/3, apical 2/3 gradually narrowed with subapex slightly bent forward. Each gonocoxite dorsally with 1 long, flat, cruciate process and 1 shorter, spine-like seta. Aedeagus apically thick in cross-section, subhorizontal; subbasally 1 thick, wing-like process. Hypandrium apically broadly convex, with numerous, short, posterior setae.

Female: Body 12.0-13.7 mm; wing 10.0-11.6 mm; FHWR 1/6.4-1/6.9; FWLR 1/2.0; HFWLR 1/5.6-1/6.4. Wing with costal straight, cells only slightly brown. Fore and mid coxae with only 1 black bristle. Tergum 8 with 3-4 long, black bristles laterally, apex extending to apical margin of cercus. Tergum 9 dorsally about 1/3 as long as cercus, apical corner folded below cercus, forming a sclerotized bridge, sides projecting ventrally. Sternum 8

apically with shallow w-shaped emargination, and posteriorly a v-shaped row of bristles. Spermatheca pyriform, narrow apically.

Specimens examined. Holotype ♀, (AMNH). New records: Dominican Republic: 2 ♂♂ & 2 ♀♀, Prov. Pedernales, ca 35 km N Cabo Rojo, Las Abejas, 1250 m, mixed forest, 25.vii.1988, Mike Ivie, Philip & Johnson, (USNM); 1 ♂, 3 ♀♀, Prov. Pedernales, 38 km NW Cabo Rojo, 18° 09' N, 71° 38' W, 1250 m, 19.vii.1987, John E. Rawlings, Robert L. Davidson, (CMNH).

Remarks. A black, robust species with abundant black facial, mesonotal and scutellar vestiture, and no scutellar bristles. The black, fore coxal, bristly setae and bristles, wholly black legs, color and venation of the wing, and combined structures of the terminalia further characterize the species.

Ommatius pulverius, new species

(Figures 60-66)

Male: Body and femora black. Body 14.3 mm, wing 11.7 mm. Head grayish tomentose, vestiture mostly whitish, dorsal setae of pedicel, 2 ocellar and 5 to 6 postocular bristles, black. Lower 1/2 of face slightly dilated; FHWR 1/6.2. Flagellum oval, about as long as wide, style inserted on dorsal 1/4-1/3; FWLR 1/1.1. Postocular bristles thin, apical 1/3-1/2 of 1-2 bristles on each side of head proclinate.

Mesonotum with a wide middorsal stripe and 2 large adjacent spots, all densely brown tomentose; sides and prescutellum, entire scutellum and pleuron with fine, powdery gray or white tomentum; each side of mesonotum with 4 dorsocentral and 4 lateral bristles, all black; setae sparse, limited to prescutellum and sides, mostly white except for sparse black setae laterally. Scutellum inflated, without preapical groove, dorsally with numerous, long, whitish setae; 1 black and 1 white marginal bristle present, as long as but thicker than dorsal setae. Halter yellow.

Wing with costal margin moderately dilated, apical 1/2 or more of wing slightly brownish with blackish microtrichia and weak ripples, darkest immediately behind swollen costal vein. Cell r4 long, base at apex of cell d. Crossvein r-m before middle of cell d; cell d unusually narrow medially with apical and basal ends much wider. Cell m1 wide basally, base perpendicular to longitudinal axis of wing; a weak, subapical constriction present; m1 WR 1.0:1.5:1.1.

Coxae with white tomentum and vestiture; fore coxa with numerous, long, thick bristles. Femora

wholly black. Fore femur ventrally with a row of short, white, bristly setae and bristles, bristles as long as greatest diameter of femora. Mid femur with mostly whitish to pale yellow vestiture, only 3 black bristles present anteriorly; preapical, posterodorsal bristle and ventral bristles thick, with basal 4 to 5 bristles in each ventral row thickest. Hind femur with mostly black bristles, 3 anterior and 2-4 basal bristles in each ventral row, whitish; apical 1/2 of hind femur posteriorly with several, short, thick, whitish bristles; HFWLR 1/3.7. Tibiae yellowish with apices of fore and mid tibiae, and apical 1/2 of hind tibia brown. Tarsi dark brown with mostly or only black bristles; fore tarsus with 1-2 whitish bristles.

Abdomen dark brown to black with dust-like gray tomentum and whitish to pale yellow vestiture; apical 3-4 segments dull brownish to blackish tomentose with black setae dorsally.

Terminalia black. Epandrium apically narrow, apex rounded. Ventral lamella with 2 short, admedial spines. Gonostylus flat, sickle-like. Aedeagus apically short, tube-like, with short, thick, ventrolateral flanges. Gonocoxite with 2 acutely pointed processes, ventral process slightly long, flat, blade-like; dorsal process more narrow and shorter. Hypandrium broadly rounded apically, apical 1/2 with sparse, short setae, basal 1/2 with longer, thicker bristles.

Female. Unknown.

Etymology. Latin *pulverius*, meaning powdery, referring to the whitish powder-like tomentum present on the body of this fly.

Holotype ♂, Dominican Republic: Prov. Pedernales, Cabo Rojo, 08-09.ix.1988, at light, 0-10 m, M. A. Ivie, T. K. Philips, and K. A. Johnson, (USNM).

Remarks. A black, robust, medium sized species with abundant powdery gray tomentum, the whitish vestiture of the face and scutellum, presence of marginal bristles, and combined structures of the terminalia characterize the species. It differs from *O. haitiensis* Scarbrough and *O. nigellus* Scarbrough in the short, oval flagellum, and the characters listed above.

Ommatius russelli Scarbrough

Ommatius russelli Scarbrough, 1984: 142-144. Type locality La Palma, Dominican Republic, ♂ holotype & ♂ paratype (USNM).

Remarks. This species was described from 2 males from the Dominican Republic. Unfortunately, the type specimens were destroyed by dermestid

beetles following the publication of the original description, and others are unknown.

***Ommatius stramineus* Scarbrough**
(Figures 67-76)

Ommatius stramineus Scarbrough, 1984: 145-146. Type locality Hispaniola, ♂ holotype (USNM), ♂ paratype (MCZ).

Male. Body 12.8-13.0 mm, wing 10.0 mm; FHWR 1/6.5; FWLR 1/1.2; HFWLR 1/4.3. Occiput laterally with 5-6 thick, postocular bristles, apical 1/4 of 1-2 dorsal bristles slightly proclinate.

Mesonotum with thin, short, dorsocentral setae, longest about 1/3 as long as lateral bristles. Scutellum with sparse, yellow setae and a deep, preapical groove, margin with a few, long, thin setae; bristles absent.

Wing with costal margin moderately dilated, anterior apical 1/2 brownish, with numerous ripples. Cell r4 long, with base just beyond apex of cell d. Cell m1 basally wide, oblique and perpendicular to longitudinal axis of wing; m1 WR 1.0:1.4:1.0; a weak, subapical constriction present.

Fore coxa with several, strong, yellowish bristles. Fore and mid femora brown or blackish; narrow base of hind femur yellow to red. Fore femur ventrally with a row of long, yellowish, bristly setae. Mid femur anteriorly with 1 yellow and 3 strong, brown bristles, yellow bristle unusually short and weak; most bristles of anteroventral row weak, short, and yellow, 2 long, thick bristles and 1-2 brown bristles present; preapical, posterodorsal bristle brown. Hind femur with only yellowish bristles, 5 strong bristles anteriorly, 9-10 anteroventrally and 8 posteroventrally; HFWLR 1/4.2.

Abdomen slightly clavate.

Terminalia dark brown, epandrium apically subtruncate. Apical 2/3 of gonostylus flat, narrow, sickle-like. Gonocoxite basally with 2 acutely pointed processes. Distiphallus apically beak-like, basolaterally with 2 tuberculated processes; ventral spire present.

Female: Body 10.5 mm, wing 10.1 mm; FHWR 1/6.7; FWLR 1/1.2; m1 WR 1.0:1.7:1.8; HFWLR 1/6.3. Occiput with 2 to 5 brown postocular bristles present. Scutellum with shallow, preapical groove, margin with 2 thin setae, about as thick as and as long as dorsal setae. Halter reddish yellow. Wing with costal margin straight, not dilated; base of cell m1 more narrow than in male and without a clearly defined, subapical constriction. Fore coxa with long,

thin bristles, none as thick as in male. Mid femur with base yellowish posteriorly and only 3 bristles anteriorly, apical bristle twice as thick as other bristles. Fore tarsus with only 2-3 yellow bristles. Tergum 9 long dorsally, at least 1/2 as long as cercus, wide apical corner projecting vertically. Sternum 8 medially emarginate with a low ridge. Spermatheca parabolical to pyriform.

Material examined. Holotype ♂ and paratype ♂. New records: Dominican Republic: 1 ♂, 1 ♀, Peveris, 2 km E Los Ranchitos, 10 km SSE San Jose de Ocoa, 100 m, 18° 28' W, 70° 28' W, semiarid woodland, 4.x.1991, R. Davidson, C. Young, S. Thompson, J. Rawlins, (CMNH).

Remarks: A small to medium sized, brown species with yellow vestiture of the face and abundant yellow tomentum of the body; only unusually short, thin dorsocentral setae, a preapical groove on the scutellum, dark brown to blackish femora, and combined structures of the terminalia characterize the species. The male is further characterized by a moderately dilated costal margin of the wing.

***Ommatius vitreus* Bigot**
(Figures 77-86)

Ommatius vitreus Bigot, 1875: 246. Type locality, Haiti, ♀ holotype (OXUM). Martin & Papavero, 1970: 60. Scarbrough, 1984: 135-137, redescribed species, designated Lectotype ♀.

Male: Body 11.0-14.0 mm; wing 10.5 mm; FHWR 1/7.9; FWLR 1/1.7; m1 WR 1.0:1.8:1.2; HFWLR 1/5.6.

Female: Body 11.9-14.0 mm; wing 9.1-11.1 mm; FHWR 1/5.7-5.8; FWLR 1/1.3-1/1.5; m1 WR 1.0:1.9:1.5-1.0:2.0:1.6.

Specimens studied. Lectotype ♀, 6 ♂♂, 9 ♀♀

Remarks. A small to moderate sized black species with sparse dark facial bristles and setae, 2-4 pairs of thick, dorsocentral bristles, absence of marginal scutellar bristles, blackish femora with only whitish, ventral bristles, and combined structures of the terminalia characterize the species. The male is further characterized by the absence of a dilation on the costal margin of the wing.

***Ommatius vivus*, new species**
(Figures 87-96)

Male: Black. Body 11.8-15.0 mm, wing 9.4-10.3 mm. Face brownish yellow tomentose, front brown-

ish and occiput yellowish gray to yellow; palpus, face, and front with only yellowish vestiture; FHWR 1/8.9-1/10.3. Antenna with mostly brown setae, scape ventrally with mostly or entirely yellow setae; FWLR 1/1.5-1/2.3. Ocellar tubercle with 2 long, blackish and 2 contrastingly short setae. Occiput with mostly pale yellowish vestiture, beard whitish; 6-7 thin, blackish postocular bristles present, apical 1/3 of 3-4 dorsal bristles strongly proclinate.

Mesonotum dorsally dark brown tomentose, laterally and posteriorly brownish yellow to grayish yellow; vestiture largely blackish, setae rather abundant, bristly and long on side and between rows of dorsocentral bristles posteriorly; 4 lateral and 3-4 dorsocentral bristles present. Scutellum largely light brownish yellow tomentose with numerous, long, thin, yellow setae and a shallow preapical groove; marginal bristles absent. Pleuron mostly yellowish gray tomentose with yellowish vestiture, brownish yellow tomentose anteriorly; anepimeral bristle absent. Halter knob slightly brownish yellow.

Wing with costal margin straight; anterior apical 1/2 of wing slightly brownish with weak ripples, costal and m1 cells darkest. Crossvein r-m at middle of cell d; cell r4 long, base at or just before apex of cell d. Cell m1 wide basally, base perpendicular to longitudinal axis of wing, a moderate, ventral constriction present on apical 1/3; m1 WR 1.0:1.5:1.0.

Fore coxa with abundant, strong, whitish bristles. Femora largely black; fore and mid femora with narrow bases reddish to slight yellow, at least basal 1/3-1/2 posteriorly and ventrally yellowish to reddish; fore femur ventrally with a row of several bristles, basal 5 to 6 moderately thick. Mid femur ventrally with bristles largely yellowish, thin, and long, anteriorly 3 and anteroventrally 2 black bristles present; preapical, posterodorsal bristle yellowish. Hind femur with at least basal 1/3 yellowish; 3 anterior bristles and all or most ventral bristles pale yellow, usually 2-5 posteroventral bristles black; HFWLR 1/4.3-1/5.5. Tibiae mostly yellowish; narrow apices of fore and mid tibiae and apical 1/2 of hind tibia blackish; tibiae with mostly black bristles, fore tibia laterally with 3 yellowish bristles. Basal tarsomeres of fore and mid tarsi mostly yellowish; fore tarsus with 4 yellowish bristles.

Abdomen dark brown, slightly clavate. Terga largely dark brown tomentose with dark brown setae, broad lateral margins of terga 1 to 7 and all sterna dull brownish yellow tomentose with pale yellow vestiture.

Terminalia largely black, with a narrow epan-drium, apical 1/3 dorsally slightly angled obliquely downward, apex pointed. Ventral lamella basally wing-like, basolateral margins elongated and projecting downward into genital cavity. Gonostylus flat laterally, wide and strongly angled subbasally, and with sparse thick setae. Gonocoxite dorsolaterally with a long, thick spine-like process; ventrobasally, shorter, thinner seta present. Hypandrium apically triangular, with a transverse ridge bearing numerous, thin, yellow setae. Aedeagus apically subhorizontal, thick in cross-section, with 1 low, erect flange on each side.

Female: Body 12.5-15.0 mm, wing 9.5-11.0 mm; FHWR 1/7.3-1/9.0; FWLR 1/1.6-1/2.0; HFWLR 1/5.6-1/6.4. Face often with several, blackish bristles. Antenna with only blackish setae; postocular bristles slightly shorter and thicker than in male. Wing without brownish tint in anterior cells, r-m beyond middle of cell d. Fore coxa without strong bristles. Fore tibia laterally with 1 black bristle; fore tarsus with only 2 yellow bristles. Abdomen with sides parallel; tergum 8 shiny black with sparse tomentum. Tergum 9 about 1/4 as long as cercus, apical corner folded and fused below cercus. Sternum 8 apically with a shallow, median w-shaped emargination and posteriorly a v-shaped row of bristles. Spermatheca ovate, slightly longer than wide, apex slightly pointed.

Holotype ♂, Dominican Republic: Prov. Pedernales ca 35 km N Cabo Rojo, Las Abejas, 1250 m, malaise trap, 26.vii-09.ix.1988, M. A. Ivie, T. K. Philips & K. A. Johnson; allotype ♀, data same as holotype except 24 km N Cabo Rojo, 20-25.viii.1988, wet forest (USNM). Paratypes. 2 ♀♀ (1 teneral), same data as holotype; 5 ♀♀, same data as allotype; 1 teneral ♀, same data as holotype except 09.ix.1988, beating vegetation; 2 ♂♂ and 5 ♀♀, Pedernales, 37 km N Cabo Rojo, 1500 m, 18° 09' N, 71° 35' W, 25.ix.1991, J. Rawlins, R. Davidson, C. Young, S. Thompson, (CMNH).

Etymology. Latin *vivus*, meaning living or inhabiting, referring to species of this genus occupying a tree-lined interface.

Remarks. A black, small to medium sized, slender species. *Ommatius vivus* is similar to *O. hispaniolae* Scarbrough and *O. russelli* Scarbrough but differs in the longer, slender body, and combined structures of the terminalia. The male also differs in the brownish color of the anterior apical 1/2 of the wing, and in the absence of a dilated costal margin. The female differs by the presence of sev-

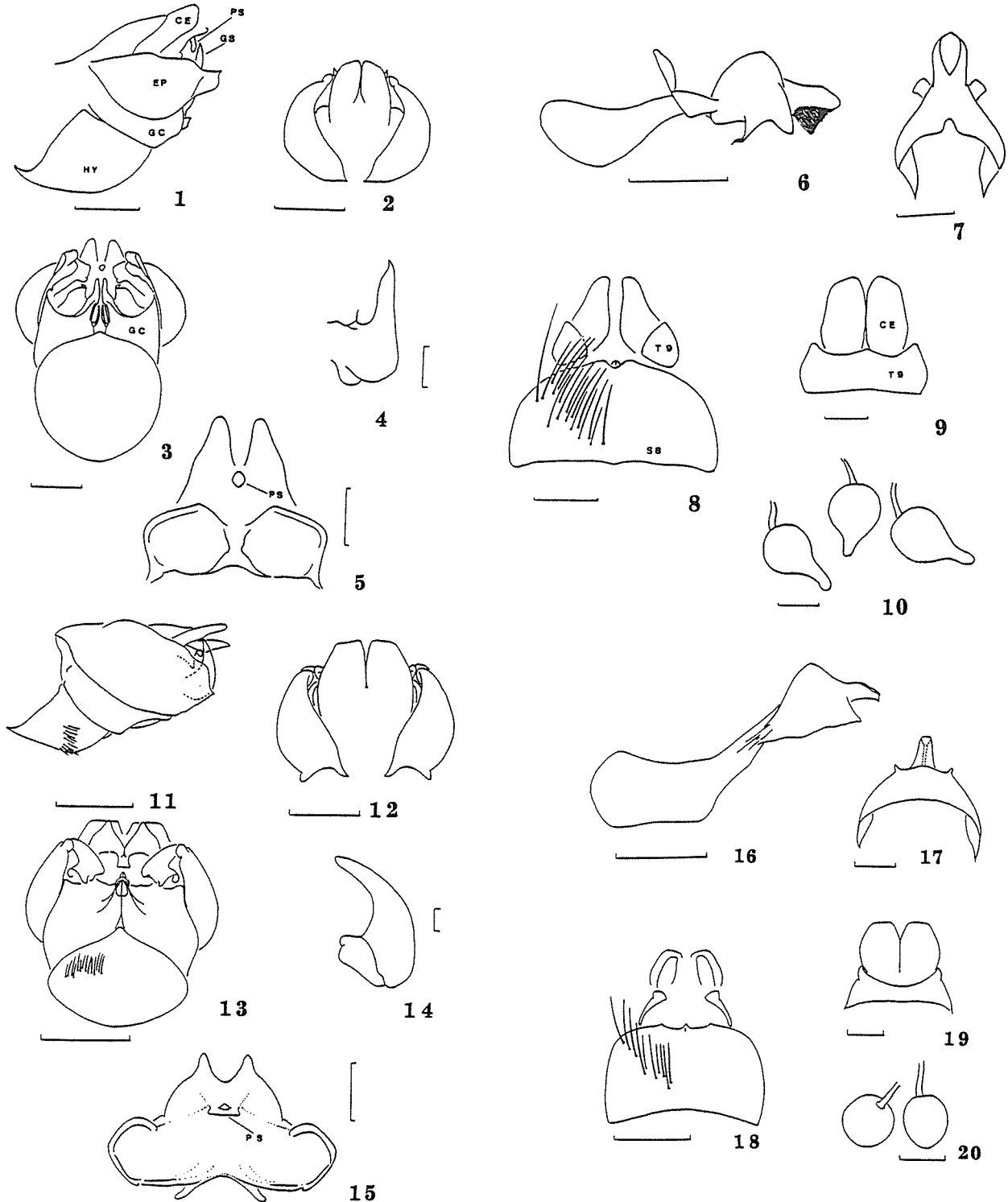
eral blackish facial bristles, and in the shape of the spermatheca.

Acknowledgements

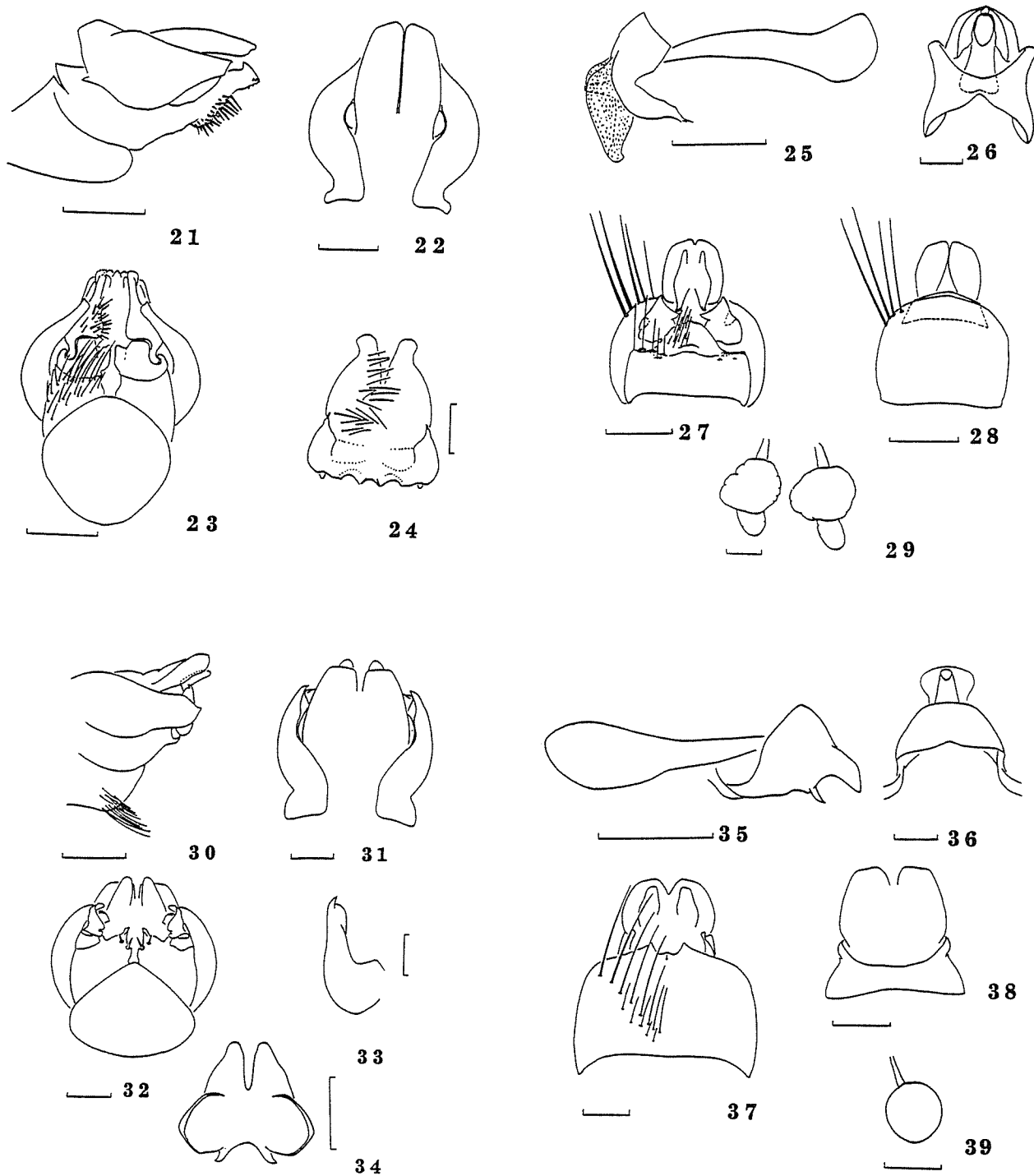
Specimens examined during the course of this study were borrowed from several museums. I gratefully acknowledge the curators listed in the introduction of this paper for their assistance. I also thank 2 reviewers for critically reading and providing comments on a draft of this manuscript.

References

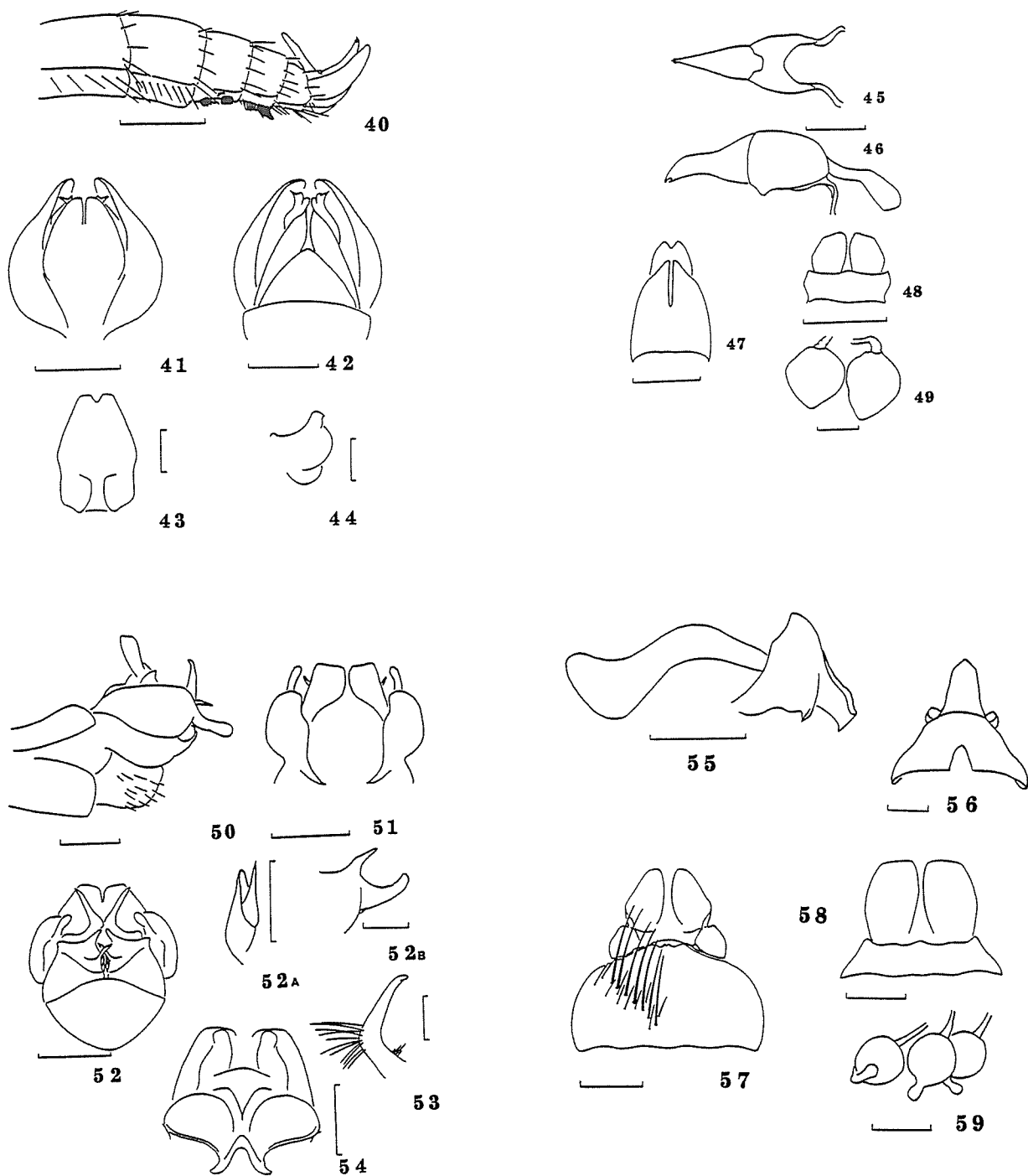
- Bigot, J. M. F.** 1875. Dipteres nouveaux ou peu connus. 4e partie V. Asilides exotiques nouveaux. Annales de la Societe Entomologique de France. 5(5): 237-248.
- Curran, C. H.** 1953. The Asilidae and Mydidae of the Bimini Islands, Bahamas, British West Indies (Diptera). American Museum Novitates. 1644: 5-6.
- Hull, F. H.** 1962. Robber flies of the world: the genera of the family Asilidae. Bulletin of the United States National Museum, Pt 2, 224: 443-446.
- McAlpine, J. F.** 1981. Morphology and terminology - Adults. In: McAlpine, J. F. et al., Manual of Nearctic Diptera. Vol. 1. Ottawa: Agriculture Canada. Monograph no. 28, pp.9-63.
- Martin, C. H., and Nelson Papavero.** 1970. Family Asilidae. In: A catalogue of the Diptera of the Americas South of the United States. Museu de Zoologia Universidade de Sao Paulo 35b: 1-139.
- Scarborough, A. G.** 1984. Synopsis of *Ommatius* Wiedemann (Diptera: Asilidae) from Hispaniola. Journal of the New York Entomological Society. 92:131-149.
- Scarborough, A. G.** 1988. New robber flies (Diptera: Asilidae) from Mayaguana Island, Bahamas and Cuba. Entomological News 99(2): 90-94.
- Scarborough, A. G.** 1990. Revision of the New World *Ommatius* Wiedemann (Diptera: Asilidae). I. The *pumilus* species group. Transactions of the Entomological Society of America. 116: 65-102.
- Scarborough, A. G.** 1993. Revision of the New World species of *Ommatius* Wiedemann (Diptera:Asilidae): the neotropical *costatus* species group. Revista de Biologia Tropical. 41(3): 729-753.
- Scarborough, A. G., and George O. Poinar, Jr.** 1992. Upper Eocene robber flies of the genus *Ommatius* (Diptera: Asilidae) in Dominican Amber. Insecta Mundi 6: 13-18.



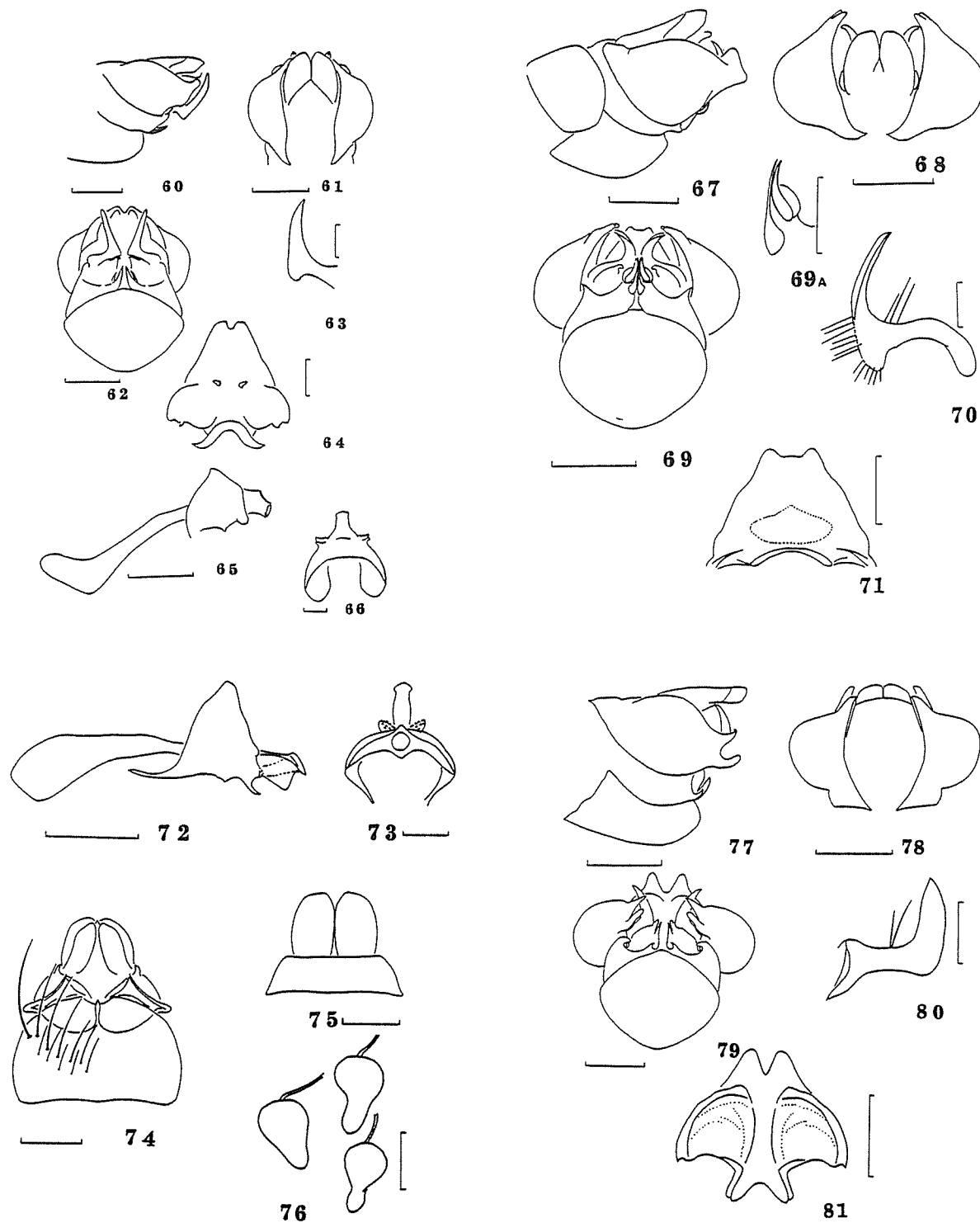
Figs. 1-20. Figs. 1-5. *Ommatius atrosus*, new species, male terminalia & measurements. 1-3. Lateral, dorsal, & ventral views; 0.5 mm. Figs. 4. Gonostylus; 0.2 mm. 5. Ventral lamella; 0.3 mm. Abbr. CE=cercus, EP=epandrium, GC=gonocoxite, GS = gonostylus, HY=hypandrium, PS=process of ventral lamella. Figs. 6-7. *Ommatius atrosus*, new species, male terminalia. Aedeagus, lateral & dorsal views; 0.3 & 0.1 mm. Figs. 8-10. *Ommatius cinnamomeus* Scarborough, female terminalia & measurements. 8-9. Ventral & dorsal views; 0.4 & 0.3 mm. 10. Spermathecae; 0.1 mm. Abbr. S8=sternum 8, T9=tergum 9. Figs. 11-15. *Ommatius gwenae* Scarborough, male terminalia. 11-13. Lateral, dorsal & ventral views. 14. Gonostylus, 0.2 mm. 15. Ventral lamella. Figs. 16-17. *Ommatius gwenae* Scarborough, male terminalia. Aedeagus, lateral & dorsal views. Figs. 18-20. *Ommatius gwenae* Scarborough, female terminalia. 18-19. Ventral & dorsal views, 0.2 mm. 20. Spermathecae.



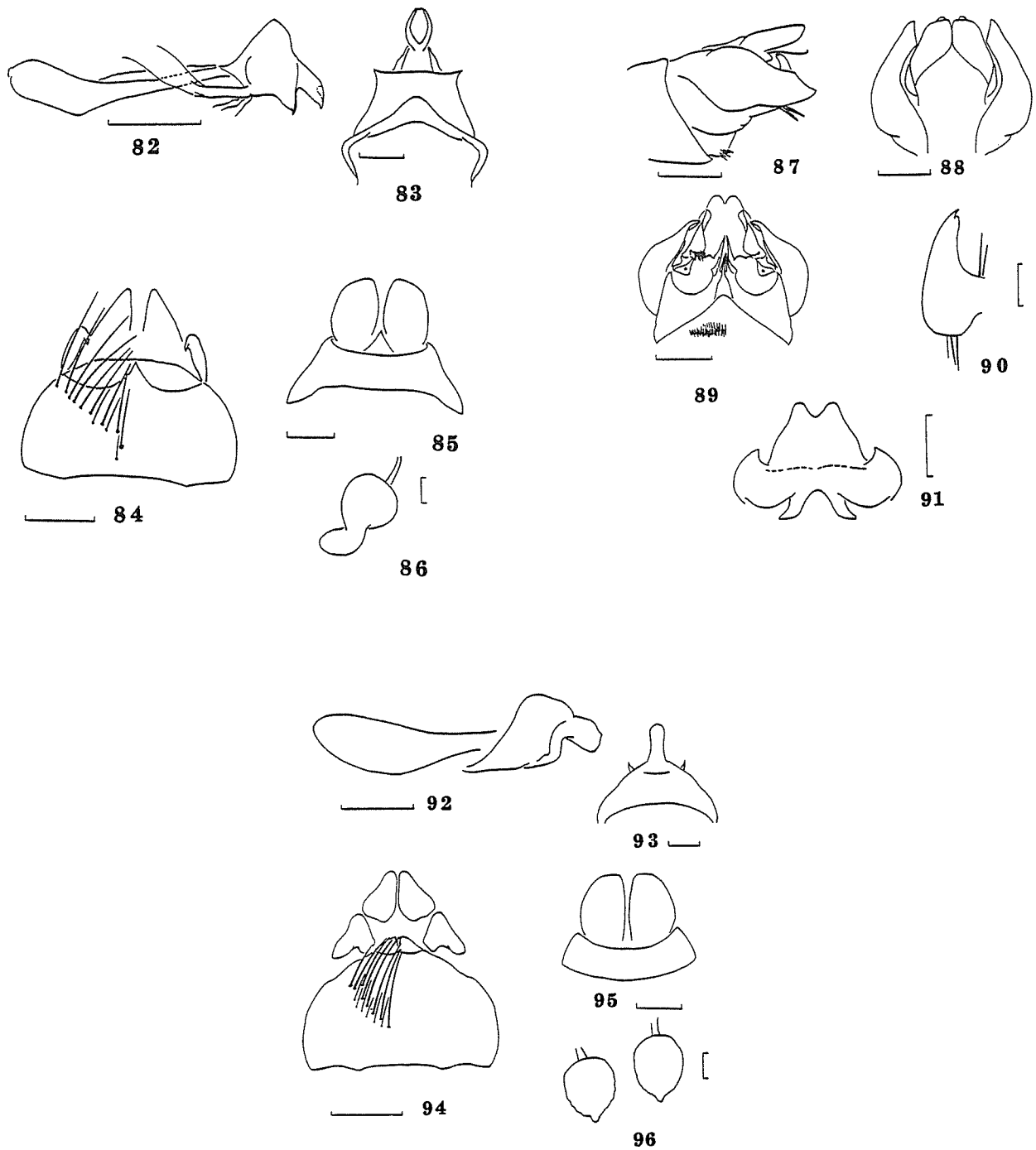
Figs. 21-39. Figs. 21-24. *Ommatius haitiensis* Scarbrough, male terminalia. 21-23. Lateral, dorsal & ventral views. 24. Ventral Lamella. Figs. 25-26. *Ommatius haitiensis* Scarbrough, male terminalia. Aedeagus, lateral & dorsal views. Figs. 27-29. *Ommatius haitiensis* Scarbrough, female terminalia. 27-28. Ventral & dorsal views, 0.5 & 0.4 mm. 29. Spermathecae, 0.05 mm. Figs. 30-34. *Ommatius hispaniolae* Scarbrough, male terminalia. 30-32. Lateral, dorsal & ventral views. 33. Gonostylus, 0.2 mm. 34. Ventral lamella. Figs. 35-36. *Ommatius hispaniolae* Scarbrough, male terminalia. Aedeagus, lateral & dorsal views. Figs. 37-39. *Ommatius hispaniolae* Scarbrough, female terminalia. 37-38. ventral & dorsal views, 0.4-0.2 mm. 39. Spermathecae.



Figs. 40-59. Figs. 40-44. *Ommatius lucidatus*, new species, male terminalia. 40-42. Lateral, dorsal & ventral views. 43. Ventral lamella. 44. Gonostylus, 0.2 mm. Figs. 45-46. *Ommatius lucidatus*, new species, male terminalia. Aedeagus, lateral & dorsal views, 0.4 mm. Figs. 47-49. *Ommatius lucidatus*, new species, female terminalia. 47-48. Ventral (0.5 mm) & dorsal views. 49. Spermathecae. Figs. 50-54. *Ommatius nigellus* Scarbrough, male terminalia. 50-52. Lateral, dorsal & ventral views. 52A. Gonocoxal bristle, 0.1 mm. 53B. Divided apex of epandrium, 0.4 mm. 53. Gonostylus, 0.2 mm. 54. Ventral lamella. Figs. 55-56. *Ommatius nigellus* Scarbrough, male terminalia. Aedeagus, lateral & dorsal views. Figs. 57-59. *Ommatius nigellus* Scarbrough, female terminalia. 57-58. Ventral & dorsal views. 59. Spermathecae.



Figs. 60-81. Figs. 60-64. *Ommatius pulverius*, new species, male terminalia. 60-62. Lateral, dorsal & ventral views. 63. Gonostylus, 0.2 mm. 64. Ventral lamella, 0.2 mm. Figs. 65-66. *Ommatius pulverius*, new species, male terminalia. Aedeagus, lateral & dorsal views. Figs. 67-71. *Ommatius stramineus* Scarbrough, male terminalia. 67-69. Lateral, dorsal & ventral views. 69A. Two gonocoxal bristles, 0.1 mm. 70. Gonostylus. 71. Ventral lamella. Figs. 72-73. *Ommatius stramineus* Scarbrough, male terminalia. Aedeagus, lateral & dorsal views. Figs. 74-76. *Ommatius stramineus* Scarbrough, female terminalia. 74-75. ventral & dorsal views. 76. Spermathecae, 0.2 mm. Figs. 77-81. *Ommatius vitreus* Bigot, male terminalia. 77-79. Lateral, dorsal & ventral views. 80. Gonostylus, 0.2 mm. 81. Ventral lamella.



Figs. 82-96. Figs. 82-83. *Ommatius vitreus* Bigot, male terminalia. Aedeagus, lateral & dorsal views. Figs. 84-86. *Ommatius vitreus* Bigot, female terminalia. 84-85. Ventral & dorsal views. 86. Spermathecae. Figs. 87-91. *Ommatius vivus*, new species, male terminalia. 87-89. Lateral, dorsal & ventral views. 90. Gonostylus. 91. Ventral lamella. Figs. 92-93. *Ommatius vivus*, new species, male terminalia. Aedeagus, lateral & dorsal views. Figs. 94-96. *Ommatius vivus*, new species, female terminalia. 94-95. Ventral & dorsal views. 96. Spermathecae.