

## NEW *ALISOTRICHIA* (TRICHOPTERA: HYDROPTILIDAE) FROM CENTRAL AND SOUTH AMERICA AND THE GREATER ANTILLES

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**Abstract.**—Twelve new species of *Alisotrichia*, *A. panamensis*, *A. woldai*, *A. linterna*, *A. asta*, and *A. cuernita* from Panama, *A. neblina* and *A. viuda* from Venezuela, *A. muellita* from Peru, *A. kanukua* from Guyana, *A. cacauplandia* from Brazil, and *A. mathisi* and *A. paxilla* from Jamaica are described and illustrated. A new record of *A. timouchela* Botosaneanu from Venezuela is also provided.

**Key Words:** Trichoptera, Hydroptilidae, *Alisotrichia*, new species, Neotropics

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The genus *Alisotrichia* is widespread throughout Mexico, Central America, northern South America and the West Indies. There are currently 33 species and subspecies, including one fossil species from Dominican amber, assigned to the genus (Flint et al. 1999). This paper describes 12 additional species, primarily from Panama, but also from Venezuela, Peru, Guyana, Brazil, and Jamaica.

Harris and Holzenthal (1993) divided the 32 then known species of *Alisotrichia* into eight monophyletic species groups. Since then, the three basal groups have been elevated to full generic status: the former *A. blantonii* Group as *Mejicanotrichia* Harris and Holzenthal, the former *A. dominicensis* Group as *Cerasmatrichia* Flint, Harris and Botosaneanu, and the former *A. quemada* Group as *Scelobotrichia* Harris and Bueno. Nine of the new species herein described are being placed in the *A. orophila* Group. *Alisotrichia woldai*, *A. cacauplandia*, *A. kanukua*, *A. mathisi*, *A. paxilla*, and *A. neblina* agreeing in all characteristics of that group. *Alisotrichia panamensis* and *A. muellita* although lacking the dorsal process

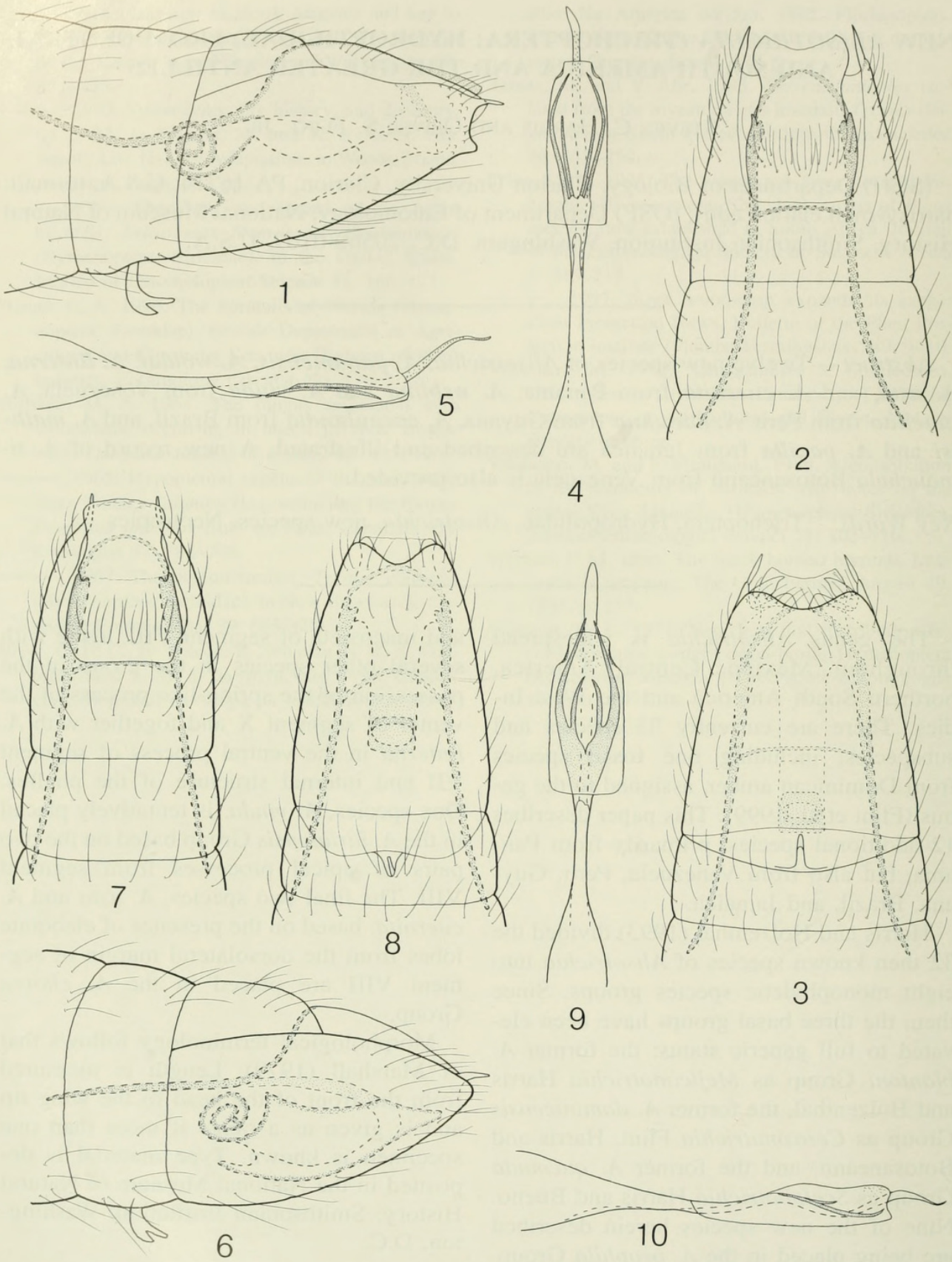
and macroseta of segment VIII, agree with several other species in the group in the possession of the spring-like process of the venter of segment X and together with *A. linterna* in the ventral process of segment VII and internal structure of the phallus. One species, *A. viuda*, is tentatively placed in the *A. hirudopsis* Group based on the two pairs of apical processes from segment VIII. The final two species, *A. asta* and *A. cuernita*, based on the presence of elaborate lobes from the dorsolateral margin of segment VIII are placed in the *A. chorra* Group.

Morphological terminology follows that of Marshall (1979). Length is measured from the front of the head to the wing tip and is given as a range if more than one specimen is known. Type material is deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C.

### *Alisotrichia panamensis* Harris and Flint, new species (Figs. 1–5)

In many respects this species is very similar to *A. muellita*, n.sp., from Peru and *A.*





Figs. 1-10. Male genitalia. 1-5, *Alisotrichia panamensis*. 1, Lateral. 2, Dorsal. 3, Ventral. 4, Phallus, ventral. 5, Phallus, lateral. 6-10, *A. muellita*. 6, Lateral. 7, Dorsal. 8, Ventral. 9, Phallus, ventral. 10, Phallus, lateral.



*woldai*, n.sp., also from Panama. In common with these species, as well as *A. circinata* Flint from Puerto Rico, *A. panamensis* has a single spring-like structure anteroventrally from segment X and lying within the eighth sternite. *Alisotrichia panamensis* is distinguished from these other species on the basis of the presence of a elongate apicodorsal process from the eighth segment and from *A. woldai* and *A. circinata* in lacking the dorsal setate process from the eighth sternum.

Male.—Length 1.8–1.9 mm. Antenna cream colored, black at tip with 18 segments, scape greatly enlarged and setose. Head and thorax with central mass of white hair dorsally. Forewing with extensive white hairs, black on margin, with diffuse black bands or spots. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII roughly rectangular in lateral view, truncate posteriorly with elongate dorsolateral process, and short, lobate ventrolateral process; in ventral view longer than wide, with shallow mesal incision distally. Segment IX short, incomplete ventrally, apparently fused with X dorsally. Tergum X concave posteriorly in dorsal aspect, anteriorly with pair of slender apodemes extending through segment VII; highly modified tubular structure attached to venter of these apodemes and elaborately coiled anteriorly (this structure appears to be loosely attached to venter of X, as it will move anteriorly and posteriorly). Phallus wide basally, tubular sheath posteriorly enclosing two pairs of slender lateral rods which originate at the same level, lateralmost rods longer than inner rods; slender ejaculatory duct protruding tongue-like beyond sheath.

Female.—Unknown.

Type material.—Holotype, ♂: Panama, Barro Colorado Island, Canal Zone, July 1967, W. W. Wirth, Malaise trap. Paratypes: same data as holotype, 1 ♂; same, but Snyder-Molino trail, marker 3, light trap III, 19–25 August 1987, H. Wolda, 1 ♂; same, but 25 November–1 December 1987, 1 ♂;

same, but 9–15 December 1987, 1 ♂; same, but 2–8 November 1988, 1 ♂; same, but 23–29 November 1988, 1 ♂; same, but 11–17 January 1989, 2 ♂; same, but 29 November–5 December 1989, 1 ♂; same, but 2–8 January, 1991, 1 ♂; same, but light trap I, 4–10 November 1987, 1 ♂; same, but 2–8 January 1988, 1 ♂; same, but 28 December 1988–3 January 1989, 1 ♂; same, but 6–12 December 1989, 3 ♂; same, but 13–19 December 1989, 2 ♂; same, but 3–9 January 1990, 1 ♂.

Etymology.—Named for the country of Panama.

***Alisotrichia muellita* Harris and Flint,  
new species**

(Figs. 6–10)

This is another species of the group possessing a spring-like structure from the venter of segment X. *Alisotrichia muellita* is very similar to *A. panamensis* differing primarily in the structure of the phallic rods which are united basally into an enlarged plate and the shape of the eighth segment that is conical apically with an elongate process projecting from the inner dorsal margin.

Male.—Length 1.7–1.9 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, scape greatly enlarged and setose. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII narrowing to rounded apex in lateral view, with elongate process projecting from inner posterodorsal margin; in ventral view longer than wide, shallow mesal incision distally. Segment IX short, incomplete ventrally, apparently fused with X dorsally. Tergum X rounded posteriorly, anteriorly with pair of slender apodemes extending through segment VII; 1 highly modified tubular structure attached to venter of these apodemes and elaborately coiled anteriorly. Phallus wide basally, tubular sheath posteriorly enclosing two pairs of thin lateral rods, lateralmost rods about twice length inner rods, inner rods originating from mesal margins of lateral rods;



slender ejaculatory duct protruding tongue-like beyond sheath.

Female.—Unknown.

Type material.—Holotype, ♂: Peru, Madre de Dios, Manu, Pakitza, 11°56'S, 71°18'W, el. 250 m, 12–18 September 1989, N. Adams et al., kitchen stream, Malaise trap, night collection. Paratypes: same data as holotype, 2 ♂.

Etymology.—Spanish, “small spring,” referring to the structure within segment VIII.

***Alisotrichia woldai* Harris and Flint,  
new species  
(Figs. 11–15)**

Although similar to *A. muellita* in the structure of the phallus, and *A. panamensis* in the shape of segment VIII, *A. woldai* appears to be more closely related to *A. circinata* in the presence of seta-bearing processes from the dorsal margin of segment VIII. In common with all of these species, *A. woldai* has a spring-like structure within sternum VIII. *Alisotrichia woldai* is distinguished from these other species on the basis of the lateralmost pair of phallic rods which arise from a large, rectangular base.

Male.—Length 1.4–1.7 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, scape greatly enlarged and setose. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII tapering posteriorly to truncate apex in lateral view, anterodorsally with seta-bearing process on each side; in ventral view rectanguloid with wide mesal incision distally, forming inwardly hooked lobes laterally. Segment IX elongate dorsally and apparently fused with X, incomplete ventrally. Tergum X thin with mesal incision posteriorly, anteriorly with pair of slender apodemes originating from ventrolateral margin IX + X and extending anteriorly through segment VII; highly modified spring-like structure attached to the venter of these apodemes. Phallus wide basally, tubular sheath posteriorly enclosing two pairs of sclerotized rods, lateralmost

rods longer than inner rods and widened at base, inner rods thin over length and originating from base of lateral rods; slender ejaculatory duct protruding tongue-like beyond sheath.

Female.—Unknown.

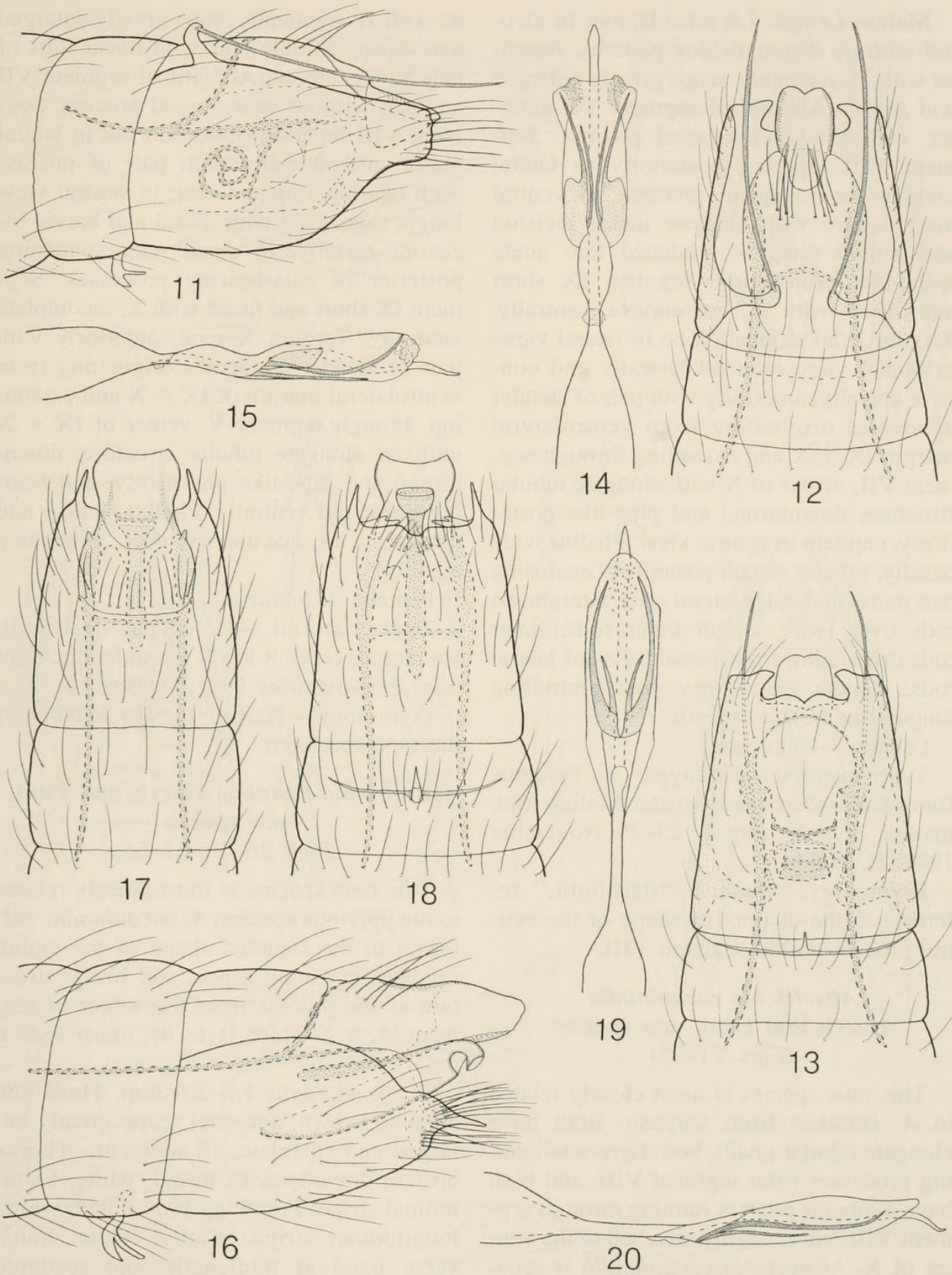
Type material.—Holotype, ♂: Panama, Barro Colorado Island, Snyder-Molino trail, marker 3, light trap I, 7–13 December 1988, H. Wolda. Paratypes: same data as holotype, but 21–27 December 1988, 1 ♂; same, but 26 September–2 October 1990, 1 ♂; same, but light trap III, 28 October–3 November 1987, 1 ♂; same, but 28 December 1988–3 January 1989, 1 ♂; same, but 2–8 January 1991, 1 ♂.

Etymology.—Named for Dr. Henk Wolda, who collected most of the Panama material.

***Alisotrichia linterna* Harris and Flint,  
new species  
(Figs. 16–20)**

This new species is difficult to place. In some respects, notably the structure of the phallus, *A. linterna* is similar to the preceding species, but it lacks the spring-like structure from the venter of segment X. Instead, this species has a tubular structure, which is similar to the three following new species, *A. cacaullandia* n.sp. from Brazil, *A. kanukua* n.sp. from Guyana, and *A. mathisi* n.sp. from Jamaica. It is possible, although difficult to verify, that all of these species are united by the presence of the development of the venter of segment X, the structure of this development simply varying from species to species, spring-like in some, tubular in others. From *A. panamensis*, *A. muellita*, and *A. woldai*, *A. linterna* differs in the lack of the spring-like process, and from *A. cacaullandia*, *A. kanukua*, and *A. mathisi* in the lack of a pair of dorsal setigerous lobes from segment VIII. Both *A. linterna* and *A. mathisi* have a ventromesal process from segment VII, but the phallus of *A. linterna* bears two pairs on internal spines which are lacking in *A. mathisi*.





Figs. 11–20. Male genitalia. 11–15, *Alisotrichia woldai*. 11, Lateral. 12, Dorsal. 13, Ventral. 14, Phallus, ventral. 15, Phallus, lateral. 16–20, *A. linterna*. 16, Lateral. 17, Dorsal. 18, Ventral. 19, Phallus, ventral. 20, Phallus, lateral.



**Male.**—Length 1.8 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, scape greatly enlarged and setose. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII tapering posteriorly in lateral view to acute apical process; in ventral view square with shallow mesal incision and lateral margins produced into acute spine-like projections. Segment IX short and fused with X, incomplete ventrally. Tergum X an elongate lobe in lateral view, in dorsal view rounded laterally and concave apically, anteriorly with pair of slender apodemes originating from ventrolateral margin IX + X and extending through segment VII; venter of X with elongate tubular structure, downturned and pipe-like posteriorly, capitate in ventral view. Phallus wide basally, tubular sheath posteriorly enclosing two pairs of slender lateral rods, lateralmost rods over twice length inner rods, inner rods originating from mesal bases of lateral rods; slender ejaculatory duct protruding tongue-like beyond sheath.

**Female.**—Unknown.

**Type material.**—Holotype, ♂: Panama, Barro Colorado Island, Snyder-Molino trail, marker 3, light trap I, 23–29 November 1988, H. Wolda.

**Etymology.**—Spanish “flashlight,” referring to the distinctive shape of the ventral process within segment VIII.

***Alisotrichia cacaullandia*  
Harris and Flint, new species**  
(Figs. 21–25)

This new species is most closely related to *A. kanukua* from Guyana. Both have elongate tubular phalli, both have seta-bearing processes from segment VIII, and both have a tubular process running through segment VIII, but probably attached to the venter of X. *Alisotrichia cacaullandia* is separated from *A. kanukua* on the basis of the scoop-shaped eighth segment, and the extra ventral process from X within this segment.

**Male.**—Length 1.9 mm. Brown in alcohol with no distinguishing patterns. Anten-

na with 18 segments, scape greatly enlarged and setose. Middle legs with linear tufts of hair along femora. Abdominal segment VII annular, without ventromesal process. Segment VIII tapering posterodorsad in lateral view, anterodorsally with pair of process each bearing elongate seta; in ventral view longer than wide with mesal and lateral incisions distally, in dorsal view widening posterior of seta-bearing processes. Segment IX short and fused with X, incomplete ventrally. Tergum X oval, anteriorly with pair of slender apodemes originating from ventrolateral margin of IX + X and extending through segment V; venter of IX + X with an elongate tubular structure, downturned and pipe-like posteriorly, and bearing linear rod ventrally. Phallus slender and tubular, with ejaculatory duct protruding distally.

**Female.**—Unknown.

**Type material.**—Holotype, ♂: Brazil, Rondonia, creek 8 km S Cacaullandia, light trap, 21 November 1991, D. Petr.

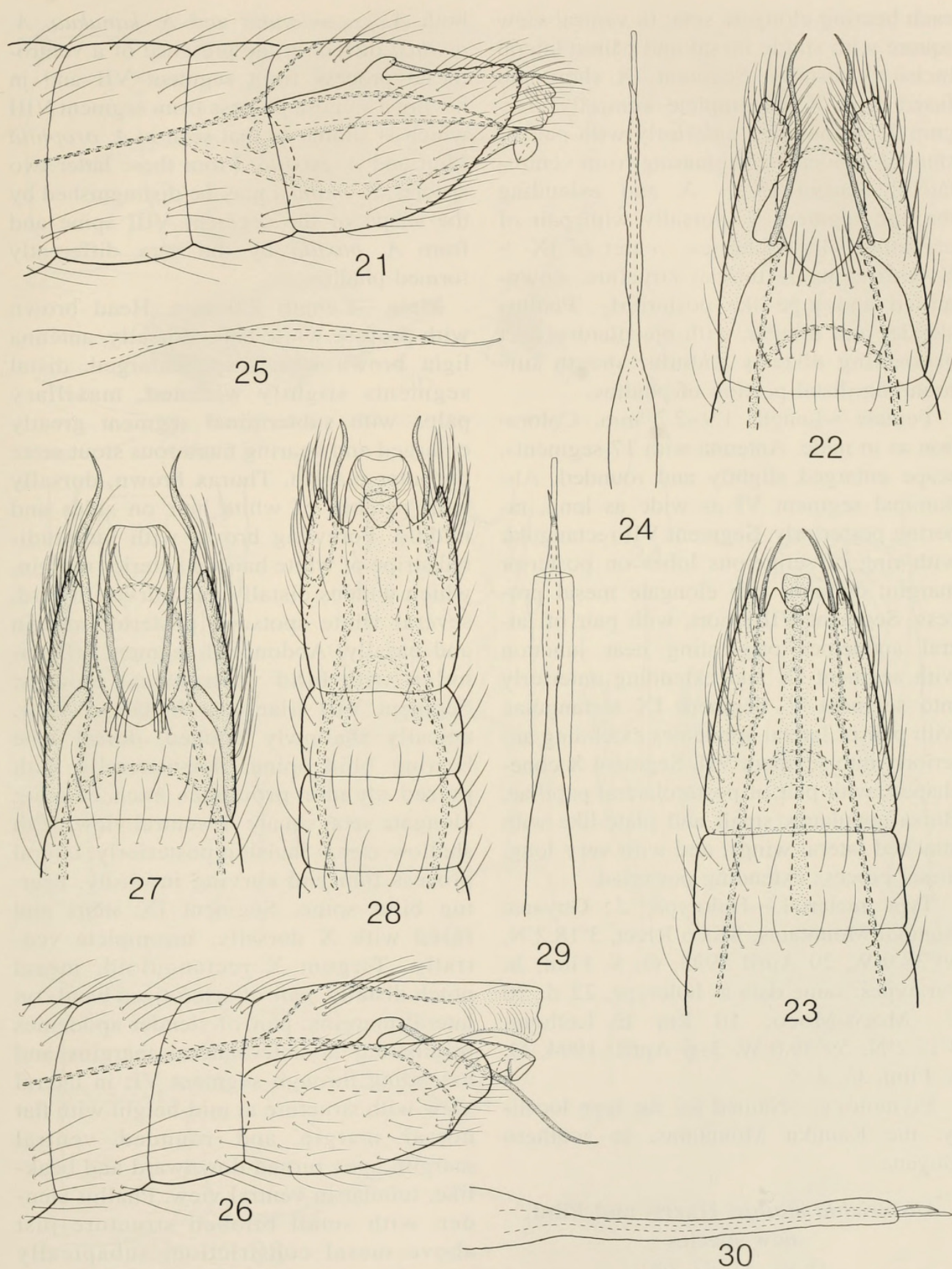
**Etymology.**—Named for the locality of the type specimen.

***Alisotrichia kanukua* Harris and Flint,  
new species**  
(Figs. 26–30, 63–65)

This new species is most closely related to the previous species, *A. cacaullandia*, differing in the rounded shape of the eighth segment in lateral aspect and in the structure of the process from the venter of segment IX + X which lacks the linear ventral rod.

**Male.**—Length 1.8–2.0 mm. Head and antenna brown, antennal scape greatly enlarged and spatulate, 18 segments. Thorax brown, dorsally with mesal, white, longitudinal stripe. Forewing brown with white, longitudinal stripe basally, white, transverse band at midlength, and scattered white spots posteriorly. Abdominal segment VII annular, without ventromesal process. Segment VIII oval, slightly tapering posteriorly to rounded apex in lateral view, anterodorsally with pair of process





Figs. 21–30. Male genitalia. 21–25, *Alisotrichia cacaulandia*. 21, Lateral. 22, Dorsal. 23, Ventral. 24, Phallus, ventral. 25, Phallus, lateral. 26–30, *A. kanukua*. 26, Lateral. 27, Dorsal. 28, Ventral. 29, Phallus, ventral. 30, Phallus, lateral.



each bearing elongate seta; in ventral view square with single mesal and paired lateral incisions distally. Segment IX short and fused with X, incomplete ventrally. Tergum X rectangular, anteriorly with pair of slender apodemes originating from ventrolateral margin IX + X and extending through segment V; dorsally with pair of parenthesis-like sclerites; venter of IX + X with elongate tubular structure, downturned and pipe-like posteriorly. Phallus slender and tubular, with ejaculatory duct protruding distally; tubular sheath surrounding distal portion of phallus.

Female.—Length 1.9–2.2 mm. Coloration as in male. Antenna with 17 segments, scape enlarged slightly and rounded. Abdominal segment VI as wide as long, tapering posteriorly. Segment VII rectangular with ring of setigerous lobes on posterior margin; dorsum with elongate mesal process. Segment VIII short, with pair of lateral apodemes originating near junction with segment IX and extending anteriorly into segment V. Segment IX rectangular, with pair of lateral apodemes extending anteriorly into segment VII. Segment X cone-shaped, with pair of posterolateral papillae. Bursa copulatrix small and plate-like with attached lateral wings, and with very long, mesal process extending posteriad.

Type material.—Holotype, ♂: Guyana, Kanuku Mountains, Moco River, 3°18.2'N, 59°38.9'W, 29 April 1995, O. S. Flint, Jr. Paratypes: same data as holotype, 22 ♂, 20 ♀. Moco-Moco, 10 km E Lethem, 3°18.2'N, 59°39.0'W, 3–6 April, 1994, O. S. Flint, Jr., 4 ♂.

Etymology.—Named for the type locality, the Kanuku Mountains, in southern Guyana.

***Alisotrichia mathisi* Harris and Flint,  
new species**

(Figs. 31–37, 68)

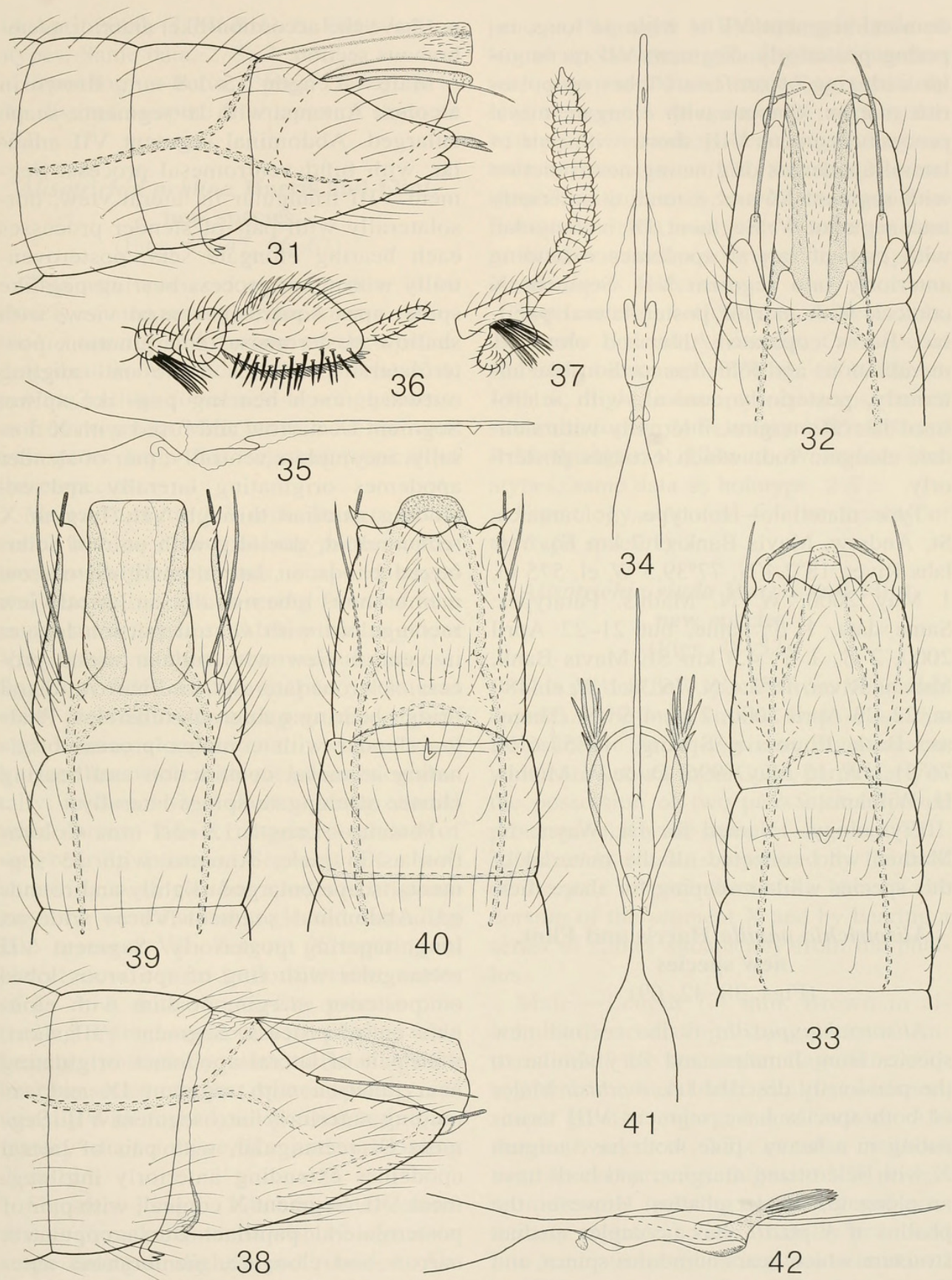
*Alisotrichia mathisi* is similar to the previous two species based on the development of the venter of segment X and in possession of a simple tubular phallus. From

both *A. cacaulandia* and *A. kanukua*, *A. mathisi* differs in the presence of a ventromesal process from segment VII and in having a spinose process from segment VIII which is similar to that seen in *A. orophila* Flint and *A. paxilla*. From these latter two species, *A. mathisi* may be distinguished by the shape of the segment VIII spine and from *A. paxilla* by the very differently formed phallus.

Male.—Length 2.0 mm. Head brown with profuse white hairs dorsally, antenna light brown with scape enlarged, distal segments slightly widened, maxillary palps with subterminal segment greatly enlarged and bearing numerous stout setae on outer margin. Thorax brown, dorsally with patches of white hair on sides and middle. Forewing brown with longitudinal stripe of white hair on anterior margin, which widens distally and curves inward, several white spots on posterior margin and basally. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII triangular in lateral view, apically shallowly bilobed, dorsal lobe bearing bifid spine, dorsolaterally with paired slender processes each bearing elongate seta; square in ventral view, with shallow mesal incision posteriorly, lateral process thin and curving inwardly, bearing bifid spine. Segment IX short and fused with X dorsally, incomplete ventrally. Tergum X rectanguloid, mesal notch distally, pair of sclerotized bands on lateral margins; pair of slender apodemes originating at anterolateral margins and extending through segment VI; in lateral view with structure at mid-height with flat dorsal margin and rounded ventral margin, apex turned downward and beak-like, tubular in ventral view. Phallus slender, with small bilobed structure just above mesal constriction, subapically with thin, triangular lamella protruding from venter.

Female.—Length 2.0–2.2 mm. Coloration as in male. Antenna with 17 segments, scape enlarged slightly and rounded. Ab-





Figs. 31–42. 31–37, *Alisotrichia mathisi*, male. 31, Genitalia, lateral. 32, Same, dorsal. 33, Same, ventral. 34, Phallus, ventral. 35, Phallus, lateral. 36, Maxillary palpus, mesal. 37, Antenna, anterior. 38–42, *A. paxilla*, male genitalia. 38, Lateral. 39, Dorsal. 40, Ventral. 41, Phallus, ventral. 42, Phallus, lateral.



dominal segment VI as wide as long, tapering posteriorly. Segment VII rectangular with ring of setiferous lobes on posterior margin; dorsum with elongate mesal process. Segment VIII short, with pair of lateral apodemes originating near junction with segment IX and extending anteriorly into segment V. Segment IX rectangular, with pair of lateral apodemes extending anteriorly into segment VII. Segment X conical, with pair of posterolateral papillae. Bursa copulatrix thin and elongate, membranous and folded accordion-like anteriorly, posteriorly conical, with sclerotized lateral margins, internally with slender, elongate rod, which extends posteriorly.

Type material.—Holotype, ♂: Jamaica, St. Andrew, Mavis Bank (1.7 km E), Yallahs River, 18°2.4'N, 77°39.5'W, el. 575 m, 1 May 2000, W. N. Mathis. Paratypes: Same data, 1 ♂; same, but 21–22 April 2000, 2 ♂, 1 ♀. 4.3 km SE Mavis Bank, Yallahs River, 18°1.4'N, 76°38.1'W, el. 480 m, 22–23 April 2000, 2 ♂, 4 ♀. St. Thomas, Bath Fountain Spring, 17°57.6'N, 76°21.3'W, 15 May 1996, D. & W. Mathis, H. Williams, 2 ♀.

Etymology.—Named for Dr. Wayne N. Mathis, who collected all the material of this species while sweeping for shore flies.

***Alisotrichia paxilla* Harris and Flint,  
new species**  
(Figs. 38–42, 69)

*Alisotrichia paxilla* is the second new species from Jamaica, and very similar to the previously described *A. mathisi*. Males of both species have segment VIII terminating in a heavy spine, both have tergum X with sclerotized margins, and both have an elongate, slender phallus. However, the phallus of *A. paxilla* has a complex median structure which bears numerous spines, and the posterior spine from segment VIII is peg-like rather than bifid and acute, as seen in *A. mathisi*. Although the females of the two species are similar, both having a simple, thin bursa copulatrix, *A. paxilla* does

not have the accordion-like, anterior, membranous section.

Male.—Length 1.5–1.8 mm. Brown in alcohol. Antenna with 16 segments, scape enlarged. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII triangular in lateral view, dorsolaterally with pair of slender processes each bearing elongate seta, posteroventrally with inner process bearing peg-like spine; apex square in ventral view, with shallow posteromesal emargination, posterolateral processes acute and angling outward, each bearing peg-like spine. Segment IX narrow and fused with X dorsally, incomplete ventrally; pair of slender apodemes originating laterally and extending anteriorly through VII. Tergum X rectanguloid, dorsally with pair of sclerotized bands on lateral margins, narrow membranous lobe mesally; in lateral view rectanguloid with ventral portion lobate; in ventral view with tubular mesal process, sclerous laterally, and narrow, distal bridge bearing numerous tubercles. Phallus slender with complex process originating at mesal constriction and bearing cluster of elongate spines laterally.

Female.—Length 1.9–2.1 mm. Coloration as in male. Antenna with 13 segments, scape enlarged slightly and rounded. Abdominal segment VI as wide as long, tapering posteriorly. Segment VII rectangular with ring of setiferous lobes on posterior margin; dorsum with elongate mesal process. Segment VIII short, with pair of lateral apodemes originating near junction with segment IX and extending anteriorly into segment VII. Segment IX rectangular, with pair of lateral apodemes extending anteriorly into segment VII. Segment X conical, with pair of posterolateral papillae. Bursa copulatrix narrow and elongate, membranous anteriorly with slender mesal sclerite, posteriorly with long, slender process, tapering apicad, bifid basally.

Type material.—Holotype, ♂: Jamaica, St. Elizabeth, Elim, 18°7.1'N, 77°40.5'W,



14 April 2000, C. M. & O. S. Flint, Jr. Paratypes: Same data, 2 ♂, 2 ♀.

Etymology.—Latin, “peg,” referring to the distinctive spine from apex of segment VIII.

***Alisotrichia neblina* Harris and Flint,  
new species**

(Figs. 43–47, 66–67)

This new species does not appear to be closely related to any of the known *Alisotrichia* species. Like many of the species described from islands of the Caribbean, *A. neblina* has the dorsal seta-bearing processes from segment VIII, but it lacks the ventral spines from this segment, typical of these species.

Male.—Length 1.3 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, scape enlarged and setose, but not covering front of face as in most species. Abdominal segment VII annular, without ventromesal process. Segment VIII mitten-shaped in lateral view, anterodorsally with pair of processes each bearing elongate seta; in ventral view longer than wide with mesal incision distally; in dorsal view short tapering caudad with narrow lateral margin posteriad of seta-bearing process. Segment IX short, anteriorly with slender apodeme originating from ventrolateral angle and extending into segment VII. Tergum X tapering in lateral view, square in dorsal view; venter of IX + X with tongue-like process protruding beyond segment VIII. Phallus wide basally, posteriorly with tubular sheath bearing series of short spines apically, internally with forked, sclerotized rod; ejaculatory duct tongue-like and protruding distally.

Female.—Length 1.4–1.6 mm. Coloration as in male. Antenna with 17 segments, scape enlarged slightly and rounded. Abdominal segment VI as wide as long, tapering posteriorly, dorsally with median sclerotized projection. Segment VII rectangular with ring of setigerous lobes on posterior margin; dorsum with elongate mesal

process. Segment VIII short, with pair of lateral apodemes originating near junction with segment IX and extending anteriorly into segment V. Segment IX rectangular, with pair of lateral apodemes extending anteriorly into segment VII. Segment X cone-shaped, with pair of posterolateral papillae. Bursa copulatrix oval with slender anterior process, internally with rectangular plate, membranous posteriorly.

Type material.—Holotype, ♂: Venezuela, Territorio Federal Amazonas, Cerro de la Neblina, basecamp, 0°50'N, 66°10'W, el. 140 m, flight intercept trap across small stream in forest, 24 February 1985, P. J. and P. M. Spangler, R. Faitoute, W. Steiner. Paratypes: same data as holotype, 2 ♀.

Etymology.—Named for the locality of the type specimen.

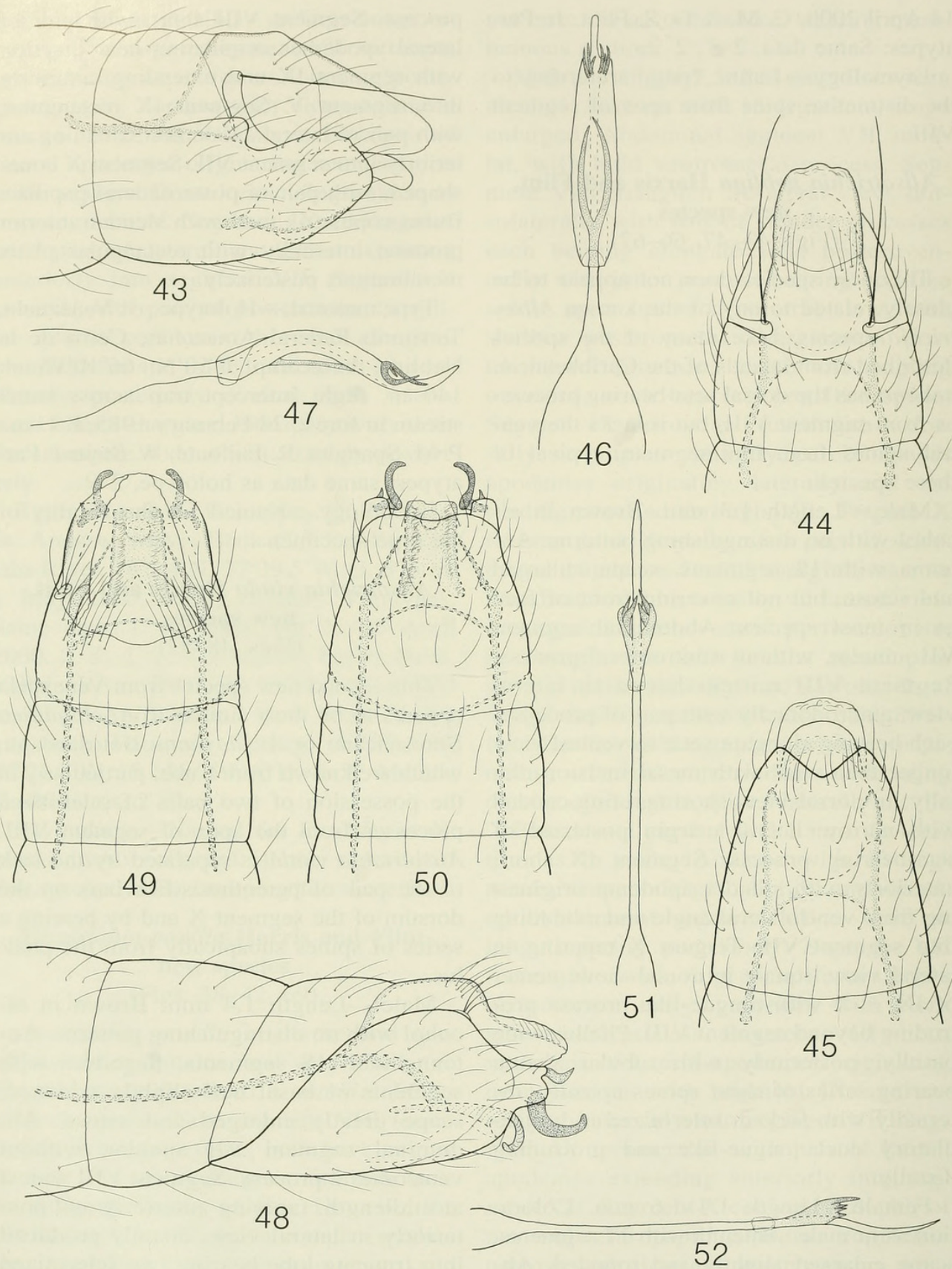
***Alisotrichia viuda* Harris and Flint,  
new species**

(Figs. 48–52)

This second new species from Venezuela appears to be most similar to *A. chiquitica* Botosaneanu or *A. alayoana* Botosaneanu, which are known from Cuba, particularly in the possession of two pairs of sclerotized processes from the apex of segment VIII. *Alisotrichia viuda* is separated by the lack of the pair of parenthesis-like bars on the dorsum of the segment X and by bearing a series of spines subapically from the phallus.

Male.—Length 1.4 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, flagellum with segments of basal half slightly widened, scape greatly enlarged and setose. Abdominal segment VII annular, without ventromesal process. Segment VIII widest at midlength, tapering anteriorly and posteriorly in lateral view, distally produced into truncate lobe bearing two sclerotized processes, upper process short and spinous, lower process elongate and upturned apically; dorsal margin with small, setiferous knob; apex in ventral view nearly square, with distal, sclerotized-pro-





Figs. 43-52. Male genitalia. 43-47, *Alisotrichia neblina*. 43, Lateral. 44, Dorsal. 45, Ventral. 46, Phallus, ventral. 47, Phallus, lateral. 48-52, *A. viuda*. 48, Lateral. 49, Dorsal. 50, Ventral. 51, Phallus, ventral. 52, Phallus, lateral.



cess curved mesad. Segment IX incomplete ventrally, dorsally fused with segment X. Tergum X a lobate shelf posteriorly, anteriorly produced into a pair of slender apodemes which extend into segment VI, in dorsal view a membranous lobe; venter of X sclerotized, shelf-like in lateral view, with downward curving process distally, in ventral view appearing rectanguloid. Phallus slender, elongate, wide basally and subapically, which bears a series of stout spines; ejaculatory duct slender, extending beyond spinous apex.

Female.—Unknown.

Type material.—Holotype, ♂: Venezuela, Sucre, Parque Nacional Peninsula de Paria, Uquire, Rio La Viuda, 10°42.83'N, 61°57.66'W, el. 15 m, 30 March–1 April 1995, Malaise trap, day and night, R. Holzenthal, O. Flint, and C. Cressa.

Etymology.—Named for the Rio La Viuda, locality of the type specimen.

***Alisotrichia asta* Harris and Flint,  
new species  
(Figs. 53–57)**

This species and the following form a closely related group, which appear to be most similar to *A. chorra* Flint on the basis of an elaborate process from the dorsal margin of segment VIII. *Alisotrichia asta* may be recognized by the structure of this process, and the simplicity of the phallus.

Male.—Length 1.8 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, flagellum with segments of basal half slightly widened, scape greatly enlarged and setose. Middle leg with cluster of long hairs from its tibia. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII, tapering posteriorly in lateral view to an acute apex, anterodorsally with small, setate lobe, posterodorsally with thin sclerotized process, deeply serrate on posterodorsal surface; in ventral view rounded, apex with mesal incision; in dorsal view, with dorsolateral setate plates, flared sclerotized processes distally. Segment IX

short and band-like dorsally, incomplete ventrally. Segment X truncate, shelf-like posteriorly, anteriorly produced into a pair of thin apodemes which extend through segment VIII; tergum cone-like, with lateral margins lightly sclerotized. Phallus slender and elongate, wide basally and submesally; apex slender and whip-like in lateral view.

Female.—Unknown.

Type material.—Holotype, ♂: Panama, Barro Colorado Island, Snyder-Molino trail, marker 3, light trap III, 23–29 November 1988, H. Wolda.

Etymology.—Spanish word for “antler,” referring to the distinctive processes from segment VIII.

***Alisotrichia cuernita* Harris and Flint,  
new species  
(Figs. 58–62)**

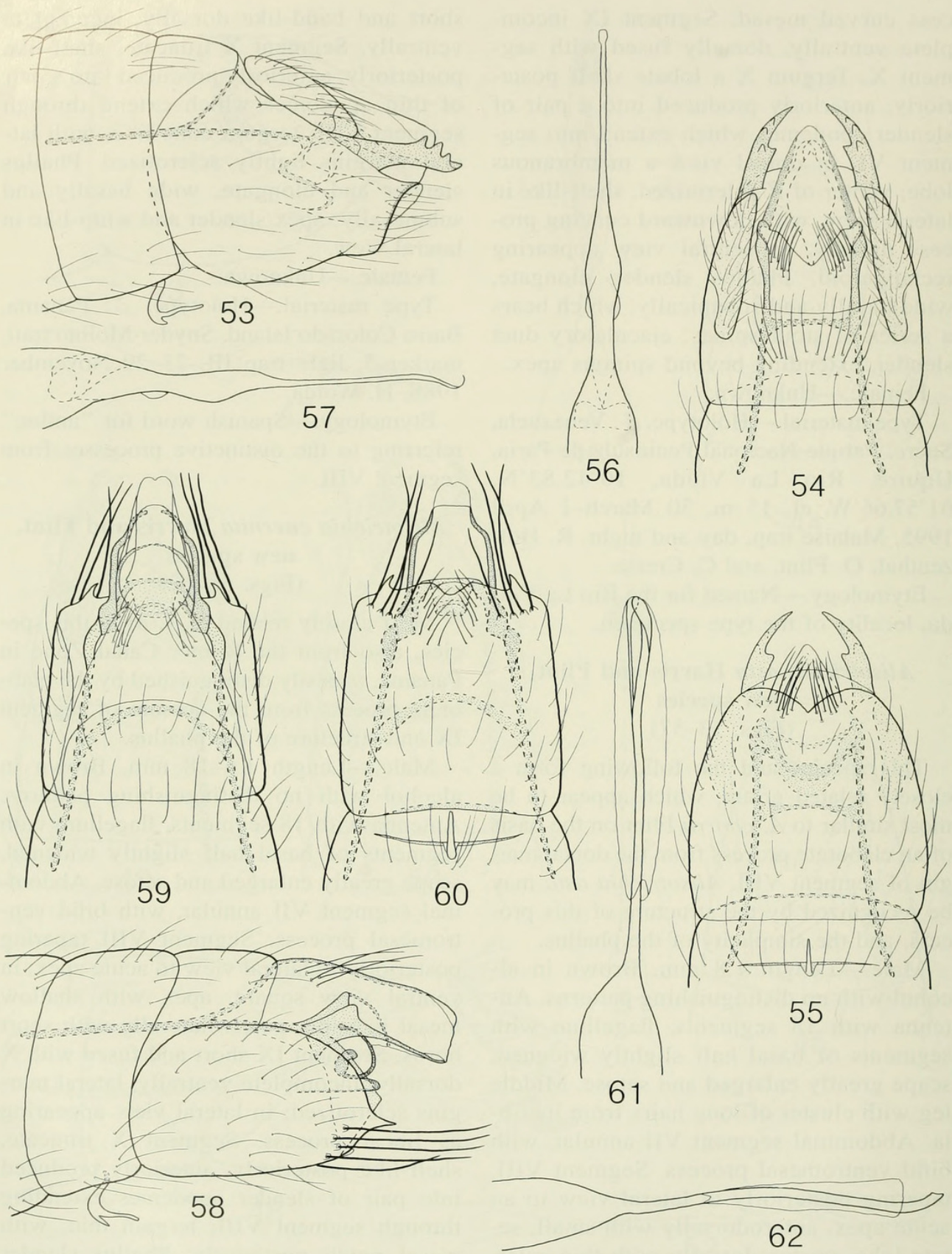
Most closely related to *A. asta*, this species, also from the former Canal Zone in Panama, is easily distinguished by the elaborate process from the dorsum of segment IX and structure of the phallus.

Male.—Length 1.6–18 mm. Brown in alcohol with no distinguishing patterns. Antenna with 18 segments, flagellum with segments of basal half slightly widened, scape greatly enlarged and setose. Abdominal segment VII annular, with bifid ventromesal process. Segment VIII tapering posteriorly in lateral view to acute apex; in ventral view square, apex with shallow mesal incision, posterolaterally with short horns. Segment IX short and fused with X dorsally, incomplete ventrally, lateral margins sclerotized; in lateral view appearing as linear process. Segment X truncate, shelf-like posteriorly, anteriorly produced into pair of slender apodemes extending through segment VIII; tergum thin, with mesal notch posteriorly. Phallus slender and elongate, wide basally and enclosed within a sheath posteriorly.

Female.—Unknown.

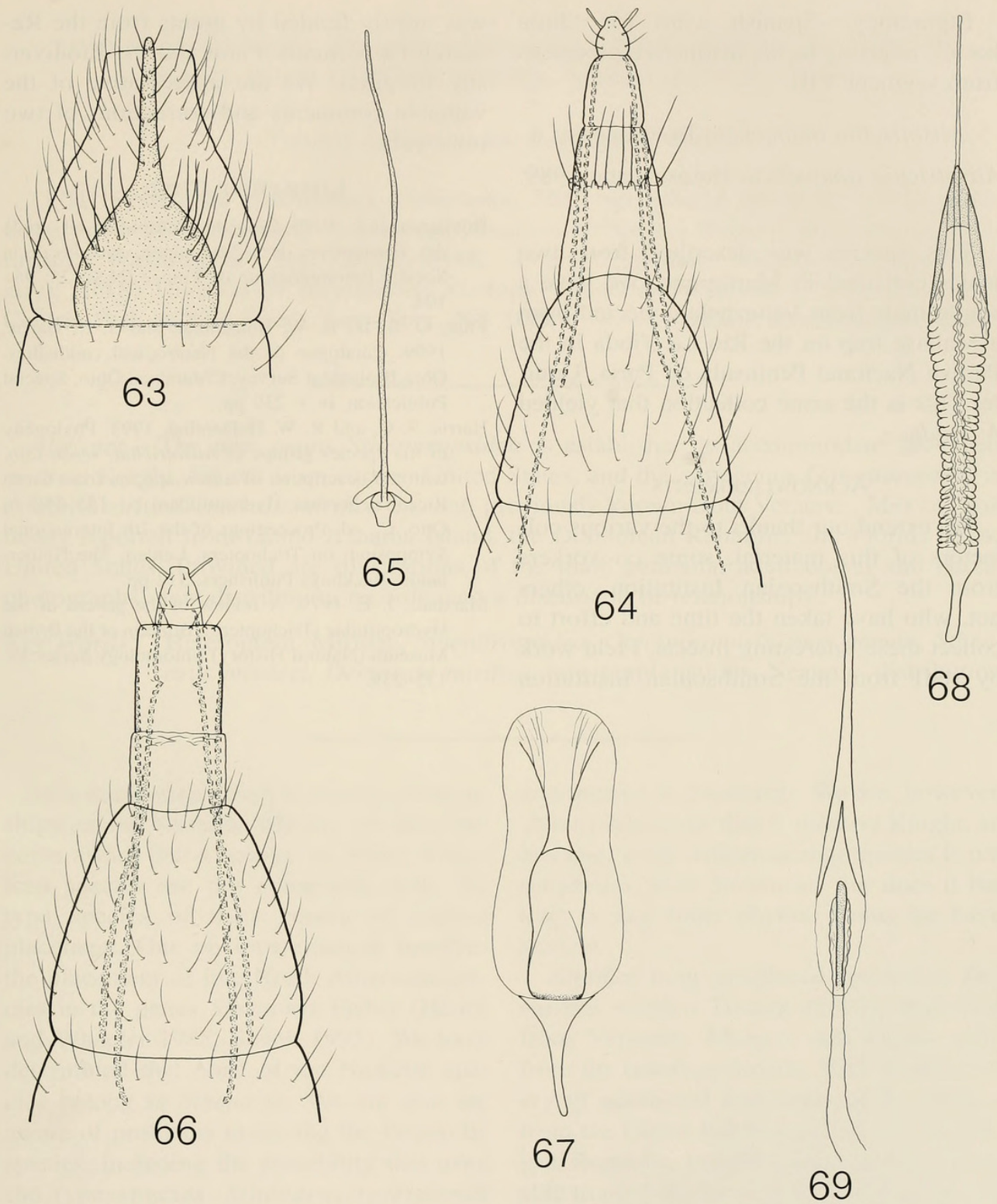
Type material.—Holotype, ♂: Panama, Barro Colorado Island, Snyder-Molino trail,





Figs. 53-62. Male genitalia. 53-57, *Alisotrichia asta*. 53, Lateral. 54, Dorsal. 55, Ventral. 56, Phallus, ventral. 57, Phallus, lateral. 58-62, *A. cuernita*. 58, Lateral. 59, Dorsal. 60, Ventral. 61, Phallus, ventral. 62, Phallus, lateral.





Figs. 63–69. Female terminalia. 63–65, *Alisotrichia kanukua*. 63, Abdominal segment VII, dorsal. 64, Abdominal segments, ventral. 65, Bursa copulatrix, ventral. 66–67, *A. neblina*. 66, Abdominal segments, ventral. 67, Bursa copulatrix, ventral. 68, *A. mathisi*, bursa copulatrix, ventral. 69, *A. paxilla*, bursa copulatrix, ventral.

marker 3, light trap I, 6–12 December 1989, H. Wolda. Paratypes: same data as holotype, but 13–19 December 1989, 1 ♂; same, but 21–27 December 1988, 1 ♂;

same but light trap III, 13–19 December 1989, 1 ♂; same, but 10–16 January 1990, 1 ♂; same, but 30 January–5 February 1991, 1 ♂.



Etymology.—Spanish word for “little horn,” referring to the distinctive processes from segment VIII.

*Alisotrichia timouchela* Botosaneanu

*Alisotrichia timouchela* Botosaneanu 1989: 98.

This species was described from two males collected in Martinique. We have a single male from Venezuela collected from a Malaise trap on the Rio La Viuda in the Parque Nacional Peninsula de Paria, Uquire. This is the same collection that yielded *A. viuda*.

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