Zootaxa 1727: 29–38 (2008)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Some remarkable new Neotropical treehoppers (Hemiptera: Cicadomorpha: Membracidae)

C. H. DIETRICH
Section for Biodiversity, Illlinois Natural History Survey, 1816 S. Oak St., Champaign, IL 61820, USA.
E-mail: dietrich@inhs.uiuc.edu

Abstract

The new Neotropical treehopper genera *Smergotomia*, based on *S. clairae*, new species, from Ecuador, and *Braxtonota*, based on *B. enigmata*, new species, from Puerto Rico are described and illustrated. Despite lacking a posterior pronotal process, *Smergotomia* appears to be most closely related to *Smerdalea* Fowler based on the forewing venation and male genitalia, but the subfamily and tribal placement of these two genera is uncertain. *Braxtonota* appears to be related to the two membracid tribes that are endemic to the Caribbean, but lacks the extra hind femoral cucullate setae diagnostic for Monobelini and the large teeth on the second valvulae diagnostic for Nessorhinini. It is provisionally placed in Monobelini. *Smerdalea veracruzensis*, new species from Mexico, with a pronotum considerably less ornate than its congeners, is also described and illustrated and a key to species of *Smerdalea* is provided.

Key words: Homoptera, Auchenorrhyncha, morphology, identification, distribution, phylogeny

Introduction

Recent revisions of the membracid subfamilies Stegaspidinae (Cryan and Deitz 1999), Centrotinae (Wallace and Deitz 2004), and Nicomiinae (Albertson and Dietrich 2005, 2006) have greatly facilitated identification of genera and species in these diverse, plesiomorphic treehopper lineages. These revisions have increased the numbers of known species in various groups by as much as 80% (Albertson and Dietrich 2005, 2006), indicating that the extant treehopper fauna is considerably more speciose than indicated by the number of described species, which now stands at approximately 3,200. Further improvements in knowledge of the Neotropical treehopper fauna are needed to help resolve relationships among the major membracid lineages which, despite several recent morphology- and DNA sequence-based phylogenetic analyses (Dietrich and Deitz 1993, Dietrich *et al.* 2001, Cryan *et al.* 2000, 2003, Lin *et al.* 2004), remain poorly understood. The new genera and species described herein, although based on very sparse material, are important because they embody unusual combinations of morphological features that may bridge gaps between previously known lineages. These taxa are described below and their relationships are discussed.

Morphological terminology follows that of Deitz (1975), Dietrich and Deitz (1993), Dietrich *et al.* (2001), and Wallace and Deitz (2004). Specimens are deposited in the insect collections of the Illinois Natural History Survey, Champaign, IL, USA [INHS]; United States National Museum of Natural History, Washington, DC, USA [USNM]; Universidad Nacional Autonomica de Mexico, Mexico City, D.F. [UNAM], and University of Georgia, Athens, USA [UGA].

Accepted by M. Fletcher: 14 Feb. 2008; published: 14 Mar. 2008

Taxonomy

Membracidae

Smerdalea Fowler
(Figs 1, 2, 6, 9, 12, 17–22)

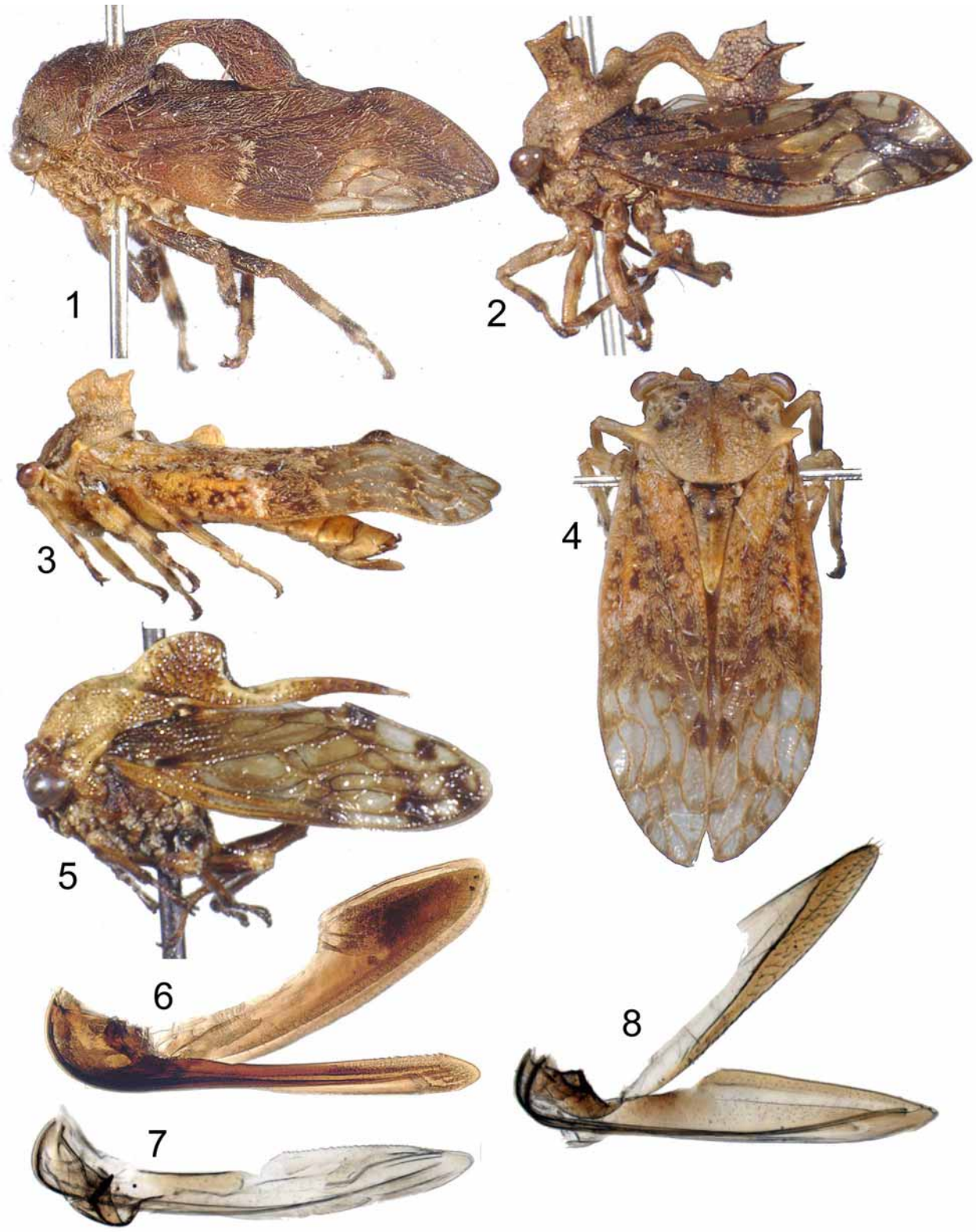
Diagnosis. Species of *Smerdalea* will run to Stegaspidini in the tribal key of Dietrich *et al.* (2001) but differ from other Stegaspidini in having the pronotum with a pair of suprahumeral horns and a distally enlarged posterior pronotal process bearing three or more spines; the forewing with crossvein m-cu_2 joining M distad of its fork, and the first anal vein contacting the claval suture for a short distance preapically; and the hind tibia with cucullate setal row I well developed.

Notes. Deitz (1975) placed *Smerdalea* in Stegaspidinae (as Stegaspinae) based on the acuminate forewing clavus, exposed scutellum, and lack of abdominal punctation. He included it in his tribe Microcentrini based on the presence of dorsal preapical setae on the hind femur and three cucullate setal rows on the hind tibia. Cryan *et al.* (2003) transferred the genus to Stegaspidini, citing the presence of a single r-m crossvein in the forewing, the absence of an articulated dorsally hooked lateral plate on the male genital capsule, and the results of a morphology-based phylogenetic analysis, which grouped *Smerdalea* with other members of Stegaspidini. However, placement of the genus within Stegaspidinae depends, at least in part, on interpretation of the position of the distal m-cu crossvein in *Smerdalea* (i.e., connected to vein M distad of its fork) as a reversal (character 29 state 2 of Cryan *et al.* 2003) rather than a plesiomorphy shared with non-stegaspidines (character 29 state 0). Also, because the forewing venation and hind tibial chaetotaxy of *Smerdalea* differ from those of all other Stegaspidini (other genera of the tribe lack cucullate setal row I on the hind tibia and have crossvein m-cu_2 joining M basad of its fork), placement of *Smerdalea* in this tribe should be considered tenuous at best. Indeed, the most extensive molecular phylogenetic analysis of Membracidae to date (Lin *et al.* 2004) placed *Smerdalea* as sister to a clade comprising Stegaspidinae and Centrotinae, suggesting that the genus represents a lineage distinct from Stegaspidinae sensu Cryan *et al.* (2003). Discovery of the bizarre but apparently related genus, *Smergotomia*, n. gen., described below, seems to reinforce this interpretation (see notes under *Smergotomia*).

Smerdalea was revised by Cryan and Deitz (1995, 1999) who recognized four species. The following key will separate the known species, including a new species described below.

Key to species of *Smerdalea*

1 Scutellum with apex acuminate, not receiving distal node of posterior pronotal process.....2
1’ Scutellum emarginate apically, receiving distal node of posterior pronotal process.....3
2 Scutellum humped preapically (as in Fig. 3).....*S. horrescens* Fowler
2’ Scutellum depressed preapically..... *S. elevata* Cryan & Deitz
3 Suprahumeral horns broad and flattened, with multiple angulate projections (Fig. 2) 4
3’ Suprahumeral horns spinelike, with a single acute point (Fig. 9).....*S. veracruzensis*, **n. sp.**
4 Posterior pronotal process with nodelike dorsal hump at base, clublike distal process with a single angulate dorsal projection in addition to three terminal spines (Fig. 2) .....*S. imminens* Cryan & Deitz
4’ Posterior pronotal process without nodelike dorsal hump at base, clublike distal process with two angulate dorsal projections in addition to three terminal spines ..... *S. circumflexa* Cryan & Deitz



FIGURES 1–8. 1–5, habitus. 1, *Smerdalea veracruzensis*, holotype, lateral view; 2, *Smerdalea imminens*, male (Onkonegare, Orellana, Ecuador), lateral view; 3–4, *Smergotomia clairae*, holotype, lateral and dorsal views; 5, *Braxtonota enigmata*, holotype, lateral view. 6, *S. veracruzensis*, second and third valvulae, lateral view. 7, *S. clairae*, second valvulae, lateral view. 8, *B. enigmata*, second and third valvulae, lateral view.

***Smerdalea veracruzensis* n. sp.**
(Figs 1, 6, 9, 12, 17–22)

Diagnosis. This species is readily distinguished from other species in the genus by the structure of the pronotum, which has the suprahumeral horns depressed and spinelike, the posterior process lacking a dorsal node basally and the terminal node clublike rather than strongly compressed and lacking a dorsal projection.

Description. *Measurements (mm)*. Length, male 9.8, female 10.8–11.1; head width, male 4.2, female 4.2; pronotum width, male 4.7, female 4.9–5.2; forewing length, male 8.5, female 9.4–9.5; *Coloration***.** Nearly uniform brown dorsally with face, thoracic pleuron and abdominal sternites dull yellow; forewing with broad dark brown macula extended across midlength; tibiae dark brown with broad yellow area near midlength. *Vestiture*. Head, pronotum, scutellum, and basal two-thirds of forewing conspicuously pubescent. *Structure*. Head (Fig. 9) without dorsal projections; ocelli sessile; dorsomedian concavity shallow; frontoclypeus without median carina. Pronotum (Figs 1, 9) depressed anteriorly; suprahumeral horns short, spinelike, not elevated above midline, projecting laterally slightly beyond humeri; median carina not elevated anterad of horns; posterior process without basal hump, slightly arcuate in lateral view, lateral carina absent; posterior node resting in posterior emargination of scutellum, flattened dorsally with weak median carina, with pair of short posterolateral spines, posterodorsal spines and angulate dorsomedial projection absent. Scutellum humped basally, depressed distally, apex emarginate with lateral lobes rounded. Hind femur with few scattered preapical cucullate setae dorsally; tibia with cucullate setal rows I–III well developed, row I double. Forewing (Figs 1, 12) with opaque sclerotization in basal two-thirds, darkly pigmented and pubescent except in hyaline area between vein M and costal margin in distal third. Male pygofer (Fig. 17) with prominent posterolateral lobe; subgenital plate (Fig. 18) narrower than sternite IX, tapered distally; aedeagus in ventral view (Fig. 22) with expanded distal section occupying ca. one-third length of shaft; ejaculatory duct internal, not extended beyond base of gonopore; gonopore margin with numerous microtrichia. Female with second valvulae slender throughout length (Fig. 6).

Material examined. Holotype male, MEXICO, Veracruz, Estacion Biologica Los Tuxtlas, 9 October 1989 (H. Rojas, J. L. Colin) [UNAM]; 1 female paratype, same data except 20 September 1989 [UNAM]; 1 female paratype, same data except 3 December 1998 (E. Mejorada) [INHS].

Notes. Because this species has the least ornate pronotum of all known *Smerdalea* species, it may be the most plesiomorphic member of the genus. It is also unusual in having the female second valvulae narrow throughout their length; the other species of the genus have the second valvulae abruptly broadened preapically. The species name, an adjective, refers to the Mexican state in which all known specimens were collected.

***Smergotomia* n. gen.**
(Figs 3, 4, 7, 10, 13, 14, 19–24)

Type species: *S. clairae*, n. sp.

Diagnosis. This genus resembles *Smerdalea* in the structure of the head and legs, in having forewing vein 1A contacting the claval suture for a short distance preapically, and in the presence of numerous minute setae around the gonopore margin of the aedeagus, but differs in having the forewing with 2–3 r-m crossveins and R 4-branched, the hind femur without dorsal preapical cucullate setae, and the pronotum lacking a posterior process.

Description. Large (10–10.5 mm), depressed membracids with coloration mottled orange-brown. Head (Fig. 10) broad, pubescent; eyes stalked, extended laterad of pronotum; dorsal paired submedial processes prominent, conical; dorsomedial concavity well developed; ocelli located below centro-ocular line, somewhat elevated medially, closer to midline than to corresponding eye; vertex with ventrolateral lobes prominent,

angulate laterally; frontoclypeus depressed with weak median distal carina, not produced ventrally in profile; rostrum extended to hind coxae. Pronotum (Figs 3, 4, 10) densely punctate, clothed with pale recumbent setae, and with numerous small setigerous tubercles; with compressed median dorsal crest bearing vertical carina on each side; metopidium weakly elevated; supraocular callosities strongly depressed; humeral angles spinelike, produced dorsolaterad; suprahumeral horns and posterior process absent. Proepimeron with weak carina extended posteroventrad and well developed posteromedial projection. Scutellum (Figs 3, 4) elongate, acute, humped basally, with prominent posterior preapical keel. Pro- and mesothoracic legs without cucullate setae, tibiae not expanded. Metathoracic femur with only apical ablateral cucullate seta present; tibia with rows I–III each with single row of small cucullate setae, surface between row I and II sulcate; tarsomere I without cucullate setae. Forewing (Figs 4, 13) opaquely sclerotized, pubescent and sparsely tuberculate in basal half, hyaline distally; veins with tubercles, distinctly sinuate beyond midlength; vein R initially divided into R_{1+2+3} and R_{4+5}, with four branches extended to wing margin; 2–3 r-m crossveins present, all distad of crossvein s; vein M fused with Cu basally, diverging distad of midlength of clavus; 2 m-cu crossveins present, distal crossvein connected to M_{3+4}; clavus with two veins visible, 1A contacting claval suture for short distance then diverging preapically. Hind wing (Fig. 14) apex with arcuate chaetoids; veins R_{4+5} and M_{1+2} free, connected by crossvein; crossvein m-cu oblique, longer than basal segment of M_{4+5}. Male pygofer (Fig. 19) simple, dorsomedial lobe produced over base of anal tube; with paired posterolateral lobes but without articulated lateral plate absent; sternite IX fused to subgenital plate (Fig. 20), articulated to pygofer, suture not visible, lobes divided through most of length, tapered distally. Aedeagus narrowly U-shaped, apex acuminate, with numerous small setae adjacent to gonopore. Style apex hooklike, with several conspicuous setae. Female with second valvulae (Fig. 7) abruptly broadened near midlength and evenly tapered toward apex, dorsal margin with row of close-set fine teeth.

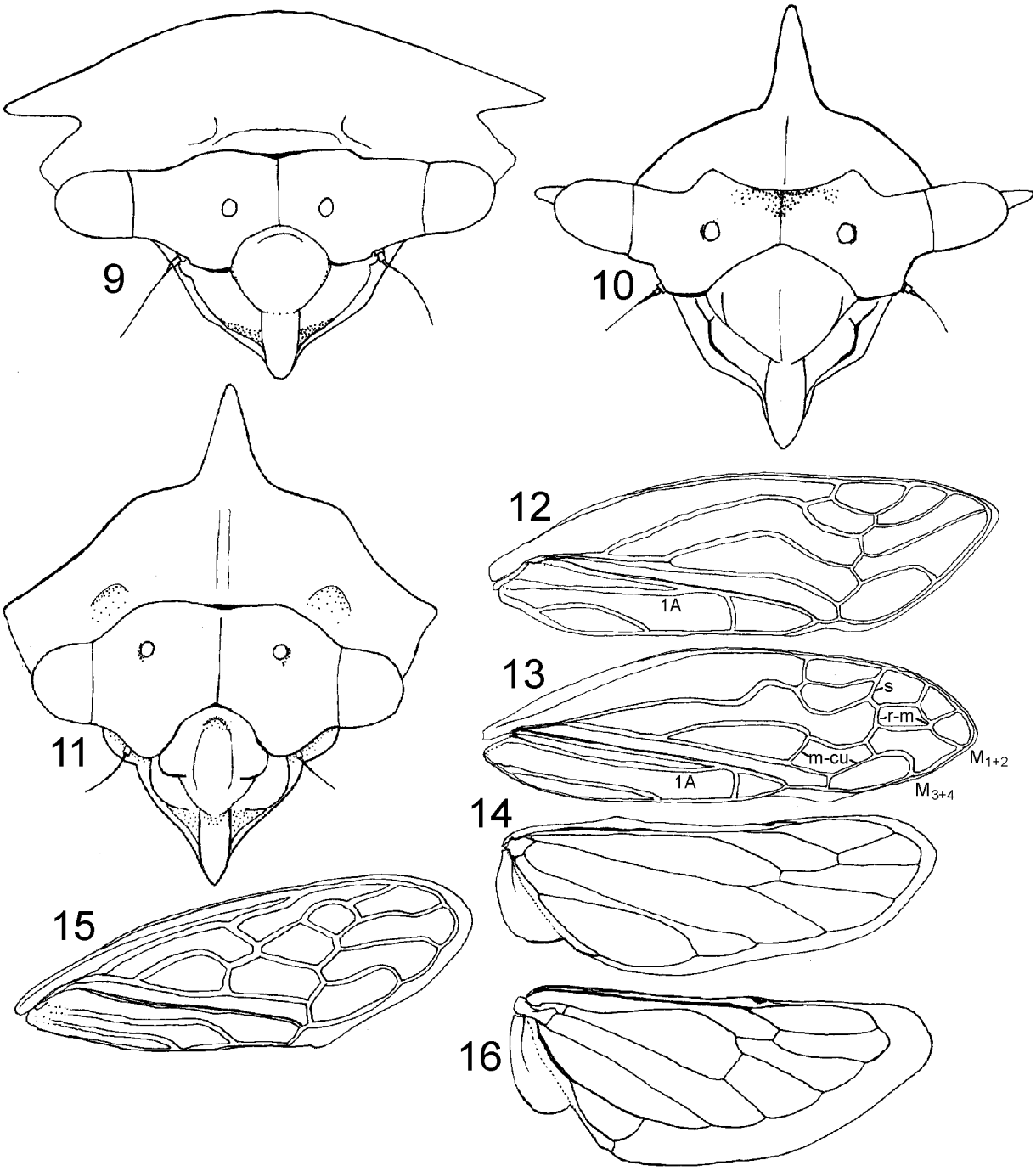
Notes. Because *Smergotomia* has the hindwing apex with arcuate chaetoids, and the forewing with the clavus acuminate and two r-m crossveins, it will run to Microcentrini in the tribal key of Dietrich *et al.* (2001). The depressed form, conspicuously pubescent pronotum and forewing, and slender tibiae of the new genus also resemble those present in that tribe. However, because the pronotum lacks a posterior process, the male genital capsule lacks a posterodorsally hooked lateral plate, forewing vein R is initially divided into R_{1+2+3} and R_{4+5}, and the r-m crossveins are all distad of crossvein s, the resemblance to Microcentrini seems superficial.

Despite its lack of a posterior pronotal process, *Smergotomia* appears to be related to *Smerdalea*, which Cryan and Deitz (1999) transferred from Microcentrini to Stegaspidini (see notes under *Smerdalea* above). *Smerdalea* and *Smergotomia* both have the first anal vein of the forewing contacting the claval suture and diverging abruptly before reaching the anal margin of the wing. This feature has not been observed in other membracids and may be a unique synapomorphy uniting these two genera. Other possibly derived features shared by the two genera include the stalked eyes, angulate projection on the ventral lobe of the vertex (not present in all *Smerdalea* species), median carina of the frontoclypeus, and the presence of numerous minute setae around the male gonopore margin. The posteriorly humped scutellum of *Smergotomia* resembles that of *Smerdalea horrescens* (Fowler).

Despite these possibly synapomorphic similarities, *Smergotomia* differs from *Smerdalea* in several important respects: the forewing has two or three r-m and two m-cu crossveins (*Smerdalea* has one of each); the pronotum lacks suprahumeral horns and a posterior process (both well developed in *Smerdalea*), the hind femur lacks preapical cucullate setae (numerous setae present in *Smerdalea*), and the second valvulae have the toothed distal section longer than the basal stem (the toothed section is much shorter in *Smerdalea*).

Smergotomia also resembles the endemic Caribbean membracid genera *Antillotolania* Ramos (currently unplaced within Stegaspidinae, Cryan *et al.* 2003) and *Togotolania* Cryan and Deitz (2002, unplaced to subfamily) in some respects. Both of these genera also lack a posterior pronotal process, have supranumerary crossveins in the forewing, the frontoclypeus flattened, and the vertex with a pair of conical projections dor-

sally. Among these two genera, *Smergotomia* is most similar to *Togotolania*. Like, *Smergotomia*, *Togotolania* has a compressed median dorsal pronotal process, an extra r-m crossvein in the forewing, and the toothed section of the second valvulae longer than the stem; but the latter genus differs in having forewing vein R three-branched, only one m-cu crossvein present, vein 1A free throughout its length, and the male genital capsule with an articulated lateral plate.



FIGURES 9–16. 9–11, head, anterior view. 9, *S. veracruzensis*, holotype; 10, *S. clairae*, holotype; 11, *B. enigmata*, holotype. 12–16, wings. 12, *S. veracruzensis*, forewing; 13–14, *S. clairae*, fore- and hind wing; 15–16, *B. enigmata*, fore- and hind wing.

The presence of four R branches in the forewing also suggests a possible relationship between *Smergotomia* and Nicomiinae, but species of the latter subfamily also have vein M with three branches reaching the wing margin. Although, as noted above, *Smergotomia*, *Togotolania*, and *Smerdalea* share certain attributes

with Stegaspidinae, Nicomiinae, or both, these genera lack the key synapomorphic features that define both of these families (i.e, forewing crossvein m-cu_2 connected to M basad of its fork in Stegaspidinae, and forewing vein M with 3 or more branches reaching the wing margin in Nicomiinae). This suggests that the three genera arose very early in the evolution of the stegaspidine-nicomiine lineage and should be considered unplaced within Membracidae until their relationships can be elucidated further.

The genus name, which is feminine, was formed by combining parts of the names of other treehopper genera, *Smerdalea*, *Togotolania*, and *Nicomia* in recognition of the apparently mixed morphological affinities of the taxon.

***Smergotomia clairae* n. sp.**
(Figs 3, 4, 7, 10, 13, 14, 19–24)

Description. *Measurements*. Length, male 10.0–10.5; head width, male 3.6; pronotum width, male 4.0; forewing length, male 8.5; Length of male 10.5, head width 3.5–3.6, width across humeri 4.0, forewing length 8.8; female measurements unknown (only known female is teneral). *Coloration.* Overall color dull stramineous, marked with orange, yellow, and dark brown. Head without distinct markings. Pronotum dark orange medially, paler laterally. Scutellum brown basally, orange distally, median carina bright yellow. Forewing veins orange, membrane hyaline with dark brown pigment in basal half, in band extended from R_{2+3} to M fork, and at apices of R_3, M_{3+4}, and Cu. Prothoracic tibiae with two transverse brown bands; meso- and metathoracic tibiae each with three transverse brown bands. *Structure*. Pronotum in profile with median crest subquadrate anteriorly, emarginate posterodorsally with acute posterodorsal projection; posterior margin with group of 4–5 setigerous tubercles on either side of midline. Aedeagus with shaft slender throughout length and parallel to dorsal apodeme, posteroventral surface with two parallel longitudinal rows of conspicuous setae with 6–7 setae per row, anterodorsal surface with two parallel rows of irregular teeth.

Material examined. Holotype male, ECUADOR, Napo, Res. Ethnica Waorani, 1 km S Onkone Gare Camp, Trans. ent. 12 February 1995, 220m, 00º39’10”S 076º26’W (T. L. Erwin, *et al.*, canopy fogging, lot#1049); 2 male paratypes, same data except 4 October 1994 (lot#862) and 8 February 1995 (lot#958).

Note. This species is named in honor of my daughter, Claire Evelyn Dietrich.

Centrotinae

Monobelini

***Braxtonota* new genus**
(Figs 5, 8, 11, 15, 16)

Type species: *B. enigmata* n. sp.

Diagnosis. This genus resembles other Caribbean Centrotinae in having the pronotum contacting the scutellum dorsally throughout its length, the mesothoracic femur without cucullate setae, and the abdominal terga with anterior borders modified into irregular ridges, but may be readily distinguished by the following combination of features: frontoclypeus in profile not projecting ventrad; pronotum without suprahumeral horns, not concealing scutellum laterally, with pair of lateral carinae extended posterolaterad from midline; hind femur without supranumerary cucullate setae; second valvulae broad at midlength, tapered towards apex, without large teeth.

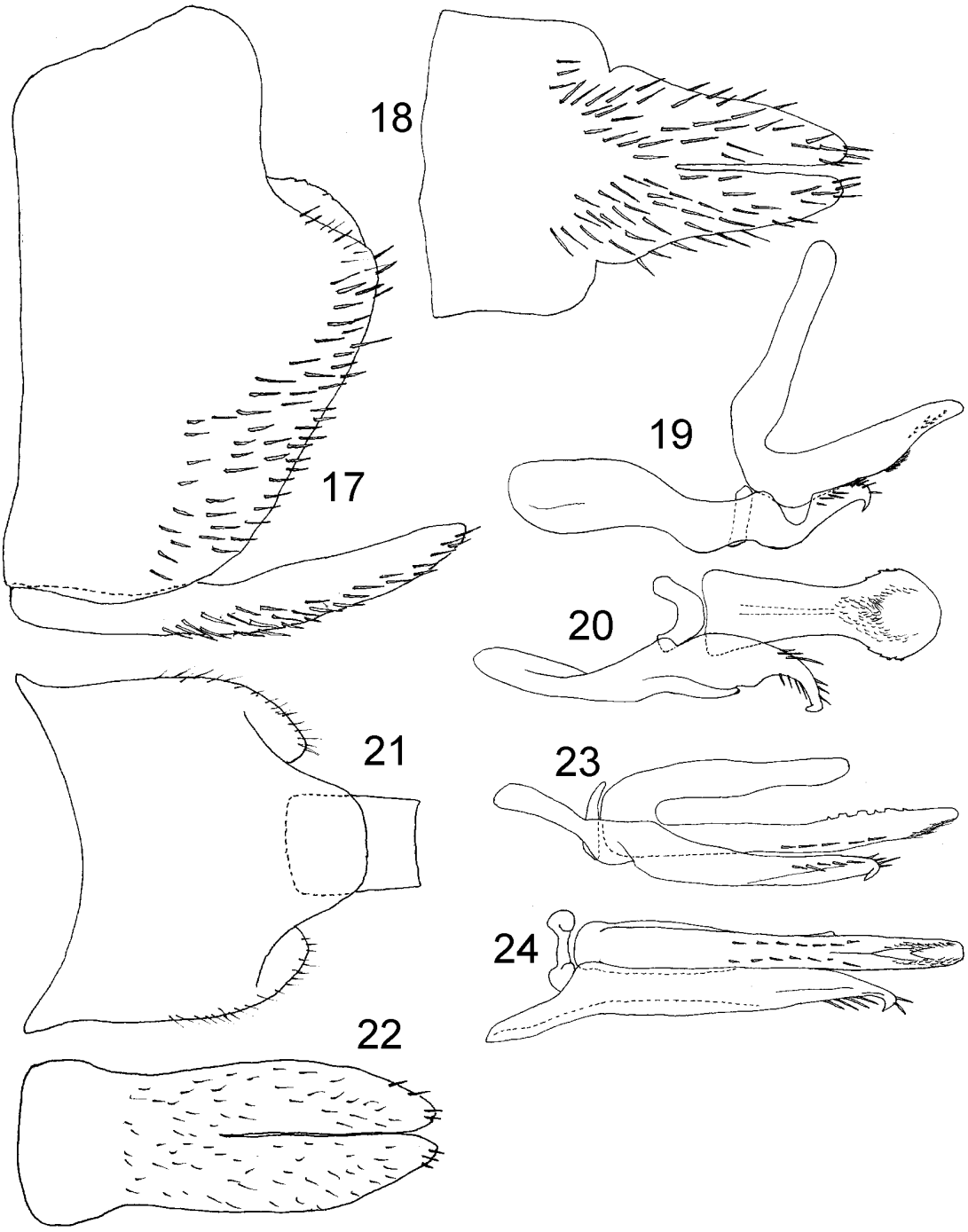
Description. Medium sized (7 mm). *Coloration.* Mottled brown. *Structure***.** Head (Fig. 11) with vertex slightly less than twice as wide as long, with distinct dorsomedial concavity, elevated medially but without

paired dorsal projections, median carina weak; ventral lobes broadly rounded, weakly produced, and slightly upturned. Ocellus slightly closer to corresponding eye than to midline, approximately even with dorsal margins of eyes. Frontoclypeus flat, depressed dorsomedially, not projecting ventrad in profile; lateral lobes well developed, extended to midlength. Rostrum extended well beyond posterior coxae. Pronotum extended over and covering scutellum dorsally but only partially concealing scutellum laterally; suprahumeral horns absent; pair of lateral carinae extended from midline just anterad of humeral angles posterolaterad to lateral margin just dorsad of exposed part of scutellum; median crest present posterad of humeral angles; posterior process extended beyond apex of abdomen; dorsal postocular carina obsolete anteriorly; ventral postocular carina absent. Scutellum emarginate, exposed posterolateral lobes pilose. Forewing (Fig. 15) with opaque punctate sclerotization restricted to small areas adjacent to base of costal margin and base of clavus; R_1 relatively long, continuous with R stem; Rs contacting M at single point or crossvein r-m_1 very short; crossvein r-m_2 equidistant from s and Rs fork; M_{3+4} abruptly bent toward anal margin distally near apex; pterostigma absent. Hind wing with R_{1+2} and M_{3+4} free, connected by crossvein. Pro- and mesothoracic legs lacking cucullate setae, tibiae slender. Metathoracic femur with ablateral cucullate seta present near apex; adlateral cucullate seta distinctly preapical; tibia with three well developed single rows of cucullate setae. Abdominal terga without distinct paired dorsomedial swellings; tergum III with upcurved anterolateral groove; sternites without carinae. Female with second valvulae (Fig. 8) gradually broadened from base to midlength, thence evenly tapered to apex; dorsal margin finely serrate, without prominent teeth. Male unknown.

Notes. Given the features mentioned above in the diagnosis, *Braxtonota* will key to couplet 9 in the tribal key of Wallace and Deitz (2004), comprising the two tribes of Centrotinae endemic to the Caribbean region: Monobelini and Nessorhinini. Because it lacks "extra" cucullate setae at the apex of the metathoracic femur (a key feature for Monobelini), *Braxtonota* will key to Nessorhinini. The structure of the head of *Braxtonota* is similar to that of *Nessorhinus* in that the frontoclypeus is flat, without a ventral projection, and the midline of the vertex is carinate; these features are lacking in Monobelini. The posterior pronotal crest of *Braxtonota* is also somewhat similar to that of *N. vulpes* Amyot & Serville. Nevertheless, the new genus lacks two key features of Nessorhinini: paired dorsal abdominal swellings and slender second valvulae with prominent teeth. It also lacks the median longitudinal carina that is present on the frontoclypeus of many members of Nessorhinini and has the scutellum exposed laterally, which is rare in that tribe. The broad, finely serrate second valvula of *Braxtonota* resembles that of *Monobelus* (Wallace and Deitz (2004): Fig. 17.4D), but this apparently plesiomorphic form is found in many other centrotine and non-centrotine membracids, and the other two genera of Monobelini have the second valvulae narrow with prominent teeth, as in Nessorhinini. Based on the combination of features present in the new genus, including its lack of suprahumeral horns, the genus seems most appropriately placed in Monobelini, although this placement should be considered tentative.

Discovery of *Braxtonota*, which shares unique features with both Monobelini and Nessorhinini, but lacks the definitive synapomorphies that would place it unequivocally in either of those tribes, suggests that these endemic Caribbean groups are more closely related than implied by the phylogenetic results of Wallace and Deitz (2004). Indeed, although the phylogeny presented by Wallace and Deitz placed Monobelini as sister to a clade comprising Boocerini and Gargarini and Nessorhinini as sister to Platycentrini, Monobelini and Nessorhinini are similar in many respects. As noted above, they key to the same couplet in Wallace and Deitz (2004) based on their pronotal structure and leg chaetotaxy. Although the relationship suggested by these possibly synapomorphic key features was outweighed by other characters included in the analyses of Wallace and Deitz (2004), some of the putative synapomorphies that united Monobelini with Boocerini and Gargarini in their analysis—e.g., a longitudinal carina on abdominal sternum III, forewing crossvein r-m_1 arising near or distad of initial division of R—also occur in some Nessorhinini. Likewise, some synapomorphies that supported Nessorhinini in their analysis—e.g., presence of large teeth on second valvulae, style clasp truncate with acuminate projection—are present in some Monobelini.

The genus is named in honor of my wife, Susan M. Braxton, combining her surname with *–nota*, a suffix commonly employed in forming membracid generic names. The gender is feminine. This genus is based on a single female specimen of a new species, described below.



FIGURES 17–24. male genitalia. 17–20, *S. veracruzensis*: 17, pygofer and subgenital plate, lateral view; 18, sternite IX and subgenital plate, ventral view; 19–20, aedeagus, style, and connective, lateral and ventral views. 21–24, *S. clairae*: 21, pygofer and segment X, dorsal view; 22, sternite IX and subgenital plate, ventral view; 23–24, aedeagus, style, and connective, lateral and ventral views.

***Braxtonota enigmata* n. sp.**

Description. *Measurements.* Length 7.0; head width 2.7; pronotum width 3.0; forewing length 5.8; *Coloration.* Head reddish brown, antennal pits, ventral part of lorum, and border of ocellus black. Pronotum golden

yellow, crest and subapical portion of posterior process orange brown. Forewing dull yellow, with dark brown diffuse markings at apices of longitudinal veins. Legs with coxae black, femora and tibiae orange brown, femora and pro- and mesothoracic tibiae heavily marked with black ventrolaterally. Abdomen orange brown. Head, thoracic pleuron, and abdomen clothed with golden pubescence. *Vestiture*. Pronotum coarsely punctate with one recumbent gold seta associated with each pit. *Structure.* As described for genus.

Material examined. Holotype female, PUERTO RICO, Caribbean National Forest, Mt. Britton Trail, 25 May 1994 (R. Turnbow) [UGA].

Note. The species name, an adjective, refers to the enigmatic combination of features found in this species.

Acknowledgments

I am grateful to Jason Cryan for calling my attention to the specimens of *Smergotomia* in the Smithsonian's Amazonian canopy fogging samples, to C. Smith (UGA), W. Steiner and T. Erwin (USNM) for lending specimens, to M. Wallace for helpful discussions, and two anonymous referees whose constructive criticism improved the manuscript. This work was supported in part by NSF PEET grant DEB0529679 to J. Cryan, C. Dietrich, and C. Simon.

References

Albertson, J.L. & Dietrich, C.H. (2005) Systematics and phylogeny of the Neotropical treehopper subfamily Nicomiinae (Hemiptera: Membracidae). *Revista Brasileira de Zoologia*, 22, 231–283.

Albertson, J.L. & Dietrich, C.H. (2006) Revision of the Neotropical treehopper genus *Tolania* (Hemiptera: Membracidae). *Revista Brasileira de Zoologia*, 23, 915–992.

Cryan, J.R. & Deitz, L.L. (1995) Revision of the Neotropical treehopper genus *Smerdalea* (Homoptera: Membracidae) with two new species. *Annals of the Entomological Society of America*, 88, 5–11.

Cryan, J.R. & Deitz, L.L. (1999) Review of the New World treehopper tribe Stegaspidini (Hemiptera: Membracidae: Stegaspidinae): I: *Bocydium* Latreille, *Lirania* Stål, and *Smerdalea* Fowler. *Proceedings of the Entomological Society of Washington*, 101, 469–489.

Cryan, J.R. & Deitz, L.L. (2002) Enigmatic treehopper genera (Hemiptera: Membracidae): *Deiroderes* Ramos, *Holdgatiella* Evans, and *Togotolania*, new genus. *Proceedings of the Entomological Society of Washington*, 104, 868–883.

Cryan, J.R., Wiegmann, B.M., Deitz, L.L. & Dietrich, C.H. (2000) Phylogeny of the treehoppers (Insecta: Hemiptera: Membracidae): evidence from two nuclear genes. *Molecular Phylogenetics and Evolution*, 17, 317–334.

Cryan, J.R., Deitz, L.L. & Robinson, J. (2003) *The Neotropical treehopper tribe Microcentrini (Hemiptera: Membracidae): monographic revision and phylogenetic position*. Thomas Say Publications (Entomological Society of America), Lanham, Maryland, iii + 108 pp.

Cryan, J.R., Wiegmann, B.M., Deitz, L.L., Dietrich, C.H. & Whiting, M.F. (2004) Treehopper trees: phylogeny of Membracidae (Hemiptera: Cicadomorpha: Membracoidea) based on molecules and morphology. *Systematic Entomology*, 29, 441–454.

Deitz, L.L. (1975) Classification of the higher categories of the New World treehoppers (Homoptera: Membracidae). *North Carolina Agricultural Experiment Station Technical Bulletin*, 225, 1–177.

Dietrich, C.H. & Deitz, L.L. (1993) Superfamily Membracoidea (Homoptera: Auchenorrhyncha). II. Cladistic analysis and conclusions. *Systematic Entomology* 18, 297–312.

Dietrich, C.H., McKamey, S.H. & Deitz, L.L. (2001) Morphology-based phylogeny of the treehopper family Membracidae (Hemiptera: Cicadomorpha: Membracoidea). *Systematic Entomology*, 26, 213–239.

Lin, C.-P., Danforth, B.N. & Wood, T.K. (2004) Molecular phylogenetics and evolution of maternal care in membracine treehoppers. *Systematic Biology*, 53, 400–421.

Wallace, M. & Deitz, L.L. (2004) Phylogeny and systematics of the treehopper subfamily Centrotinae (Hemiptera: Membracidae). *Memoirs on Entomology International*, 19, iv + 1–377.