

NEW AND LITTLE-KNOWN NEOTROPICAL KINNARIDAE (HOMOPTERA: FULGOROIDEA)

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Abstract.—The genera *Southia* and *Oeclidius* are redefined, and *Bytrois* is synonymised with the former and *Paroeclidius* is reduced to a subgenus of the latter. Two new species of *Southia* and eight new species of *Oeclidius* are described, two of the latter being wholly cavernicolous.

The kinnarine Kinnaridae of the New World have hitherto been divided between four genera, *Oeclidius* Van Duzee, *Paroeclidius* Myers, *Southia* Kirkaldy, and *Bytrois* Fennah, the last three of which are known from only one or two species. A re-evaluation of the suitability of certain characters for generic definition has suggested that all the material studied can more appropriately be accommodated in two genera that are separable as follows.

Key to the New World genera of Kinnarinae

- 1. Adults flightless; vertex at anterior margin more than twice as broad as long in middle; eyes absent; tegmina not surpassing abdomen; aedeagus bulbous, either entirely or basally *Oeclidius* Van D.
- Adults not flightless; vertex at anterior margin not more than twice as broad as long in middle; eyes present; tegmina much surpassing abdomen; aedeagus bulbous basally, or otherwise 2
- 2. Vertex with anterior margin usually distad of level of middle of eyes; lateral margins of frons sinuately incurved at union with lateral carinae of post-clypeus; rostrum with apical segment longer than subapical; tegmina with transverse veinlet between M and Cu1 at apex of basal cell; aedeagus bulbous at base, and usually with slender vertical cylindrical rod *Oeclidius* Van D.
- Vertex with anterior margin not or scarcely surpassing level of middle of eyes; lateral margins of frons uniting with lateral carinae of post-clypeus in an even uninterrupted curve; rostrum with apical segment shorter than subapical; tegmina without transverse veinlet between M and Cu1 at apex of basal cell; aedeagus very broadly tubular, or with ventral half shallowly basin-like ... *Southia* Kirkaldy.

In the descriptions that follow, the length of the post-tibia is the dorsal length from the base to the base of the metatarsus, and the width is the width at the middle as seen in dorsal view.

Genus *Southia* Kirkaldy

Kirkaldy, 1904:279. Type-species, *Delphax opposita* F., 1803:84.
Bytrois Fennah, 1945:450. Type-species, *Bytrois nemoralis* Fennah. New synonym.

Key to species of *Southia*

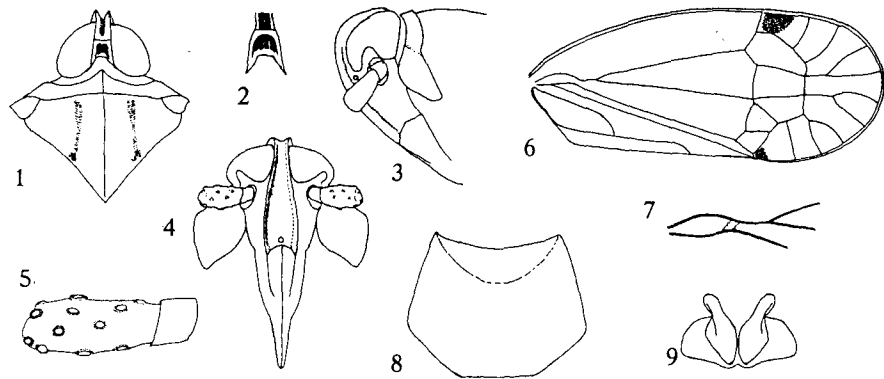
- 1. Tegmina not more than 3.5 mm long; genae distinctly tumid below eye; ground color of body dark fuscous 2
- Tegmina distinctly more than 3.5 mm long; genae at most only feebly tumid below eye; ground color of body yellowish, or light orange-brown 4
- 2. Lateral margins of frons not elevated; lateral and median ocelli small; pronotum creamy-white except on lateral lobes .. *pisenor*, sp. n.
- Lateral margins of frons elevated; lateral and median ocelli relatively large; pronotum mostly reddish-brown or olive-brown 3
- 3. Tegmina with a fuscous spot in first apical (stigmatic) cell; pronotum reddish-brown, only slightly paler along carinae and margins *opposita* (F.)
- Tegmina without a fuscous spot in first apical cell; pronotum olive-brown, greenish-white along carinae and margins *nemoralis* (Fennah)
- 4. Vertex broader at anterior margin than long in middle line; lateral pronotal carinae and lateral mesonotal carinae obscure or absent; pregenital sternum of female laterobasally granulate and with a pair of tumescences; third valvulae of ovipositor each with two distinct lobes distally *capnorhina*, sp. n.
- Vertex not broader at anterior margin than long in middle line; lateral pronotal carinae and lateral mesonotal carinae distinct; pregenital sternum of female smooth, devoid of tumescences; third valvulae of ovipositor each with a single lobe distally *iridescens* Fennah

Southia opposita (Fabricius)

Figs. 1-9

Delphax opposita Fabricius, 1803:84.

The type, and only known specimen, of this species is a female, not a male as given by Stal (1869:95), in the Naturhistoriska Riksmuseet, Stockholm. The shrivelled genitalia (which superficially resemble the genital capsule of a male) are like those of *nemoralis*, as far as can be ascertained without dissection. The median carina of the mesonotum is fine, clearly defined and percurrent to the apex of the mesoscutellum; the lateral carinae



Figs. 1-9. *Southia opposita* (F.): 1, head and thorax, dorsal view; 2, vertex, dorsal view; 3, head and pronotum, left side; 4, face and lateral lobes of pronotum; 5, right antenna; 6, tegmen; 7, basal cell of tegmen, showing diffuse thickening of membrane between Sc+R+M and Cu1; 8, pregenital sternum (of dried specimen); 9, third valvulae of ovipositor, posterior view (of dried specimen).

are obsolete. The pronotum is reddish-brown, and only slightly paler along the carinae and margins.

Southia nemoralis (Fennah), new combination

Figs. 10-14

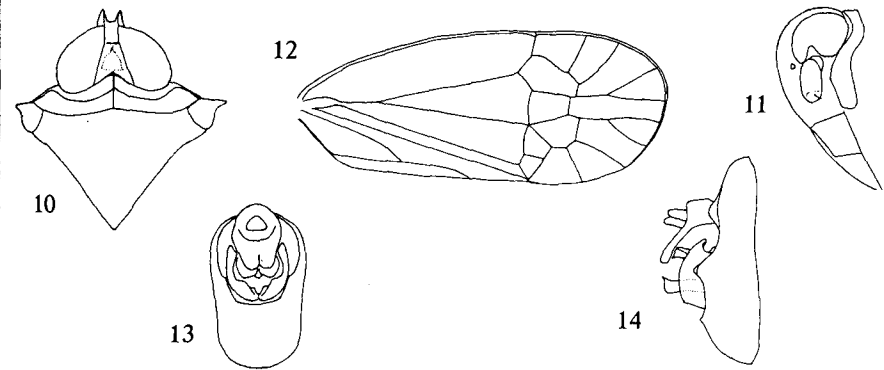
Bytrois nemoralis Fennah 1945:450.

In this species, the type of which is in the U.S. National Museum of Natural History, the median carina of the mesonotum is fine and moderately distinct as far as the base of the mesoscutellum, where it disappears. The pronotum in the typical (Trinidadian) population is olivaceous, and greenish-white along the carinae and margins. A female from British Guiana (Mabaruma, N. W. District, iii.1931, J. G. Myers) in the British Museum (Natural History) which appears to belong to this species has a pronotum that is reddish-brown and has margins and carinae that are stramineous.

Southia pisenor, new species

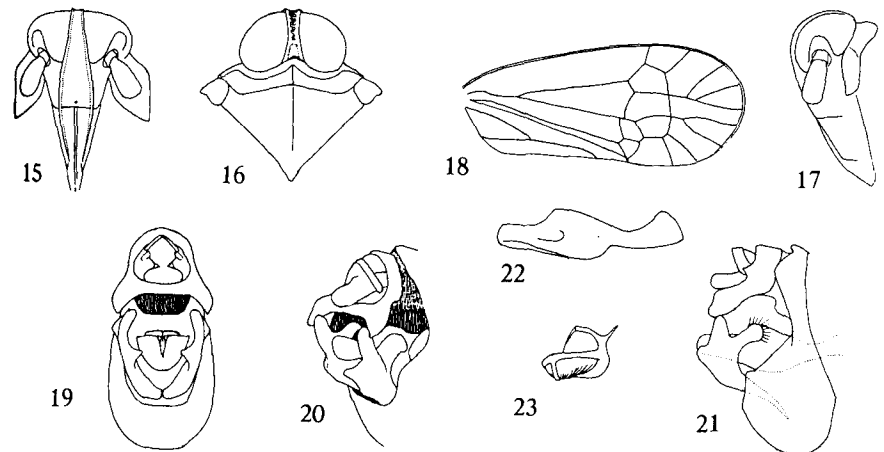
Figs. 15-23

Vertex shorter in middle line than broad at posterior margin (about 1:1.3), almost horizontal, lateral margins straight, strongly converging distad, apical margin obscure, shorter than width at base (about 1:1.5), disc rather deeply hollowed; frons in profile straight in distal two-thirds, strongly curved in basal third, smoothly rounding into vertex, in anterior view longer than broad (about 2.5:1), wider at apex than at base (about 3.5:1), basal margin transverse, lateral margins feebly sinuate, diverging distad, moder-



Figs. 10-14. *Southia nemoralis* (Fennah): 10, head and thorax, dorsal view; 11, head and pronotum, left side; 12, tegmen; 13, male genitalia, posterior view; 14, same, right side, with part of aedeagus visible in transparency.

ately elevated in basal half, weakly so in distal half, apical margin slightly concave, median ocellus present, post-clypeus tricarinate, anteclypeus medially carinate, rostrum slightly surpassing post-trochanters; eyes and lateral ocelli present, blemma above each lateral ocellus, antennae with basal segment not as long as broad, subcylindrical, widening distad, second segment longer than first (3:1), and longer than broad (2:1). Pronotum medially car-



Figs. 15-23. *Southia pisenor*, n. sp.: 15, face and lateral lobes of pronotum; 16, head and thorax, dorsal view; 17, head and pronotum, left side; 18, tegmen; 19, male genitalia, posterior view; 20, same, posterolateral view from right; 21, same, right side, with aedeagus partly seen in transparency; 22, aedeagus, right side; 23, apical portion of aedeagus, posteroventrolateral view from right.

inate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum broader than long (1.3:1), medially carinate, lateral carinae obsolete; legs moderately slender, post-tibiae longer than wide (19.6:1), with seven teeth apically, distinctly separated into two groups, basal metatarsal segment and second segment each with six teeth, tarsal claws small, each relatively stout basally. Tegmina normal, costal margin very feebly produced at base in a shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as stout triangular lobe; Sc+R+M stalk as long as basal cell, five subapical cells present and nine apical cells including stigmatic cell.

Dark fuscous; lateral margins of clypeus, frons, vertex and mesoscutellum, light reddish-brown; rostrum, all tibiae and post-tarsi, light brownish yellow; pronotum creamy-yellow, except on middle portion of lateral lobes. Tegmina hyaline, faintly yellowish, an oblique band from basal cell across clavus to posterior margin, dilute fuscous, veins reddish brown. Wings hyaline, veins fuscous.

Anal segment of male moderately long, shortly tubular in basal half, lateroapical angles each strongly produced laterocaudad and slightly deflexed, apical margin broadly transverse. Pygofer very short, dorso-lateral angles only slightly produced, lateral margins in side view concave, ventral margin rather short, slightly concave. Aedeagus scoop-shaped, with dorsal surface much shorter than ventral surface, the latter submembranous. Styles moderately long, stout, narrow basally, strongly widening beyond middle with inner margin in posterior view concave, with small lobe at middle, in profile with stout vertical process, bluntly rounded at its apex, on dorsal margin at middle.

Male.—Length, 2.7 mm; tegmen, 3.5 mm.

Holotype ♂—Panama: Patino, 19.viii.52, F. S. Blanton, in U.S. National Museum of Natural History.

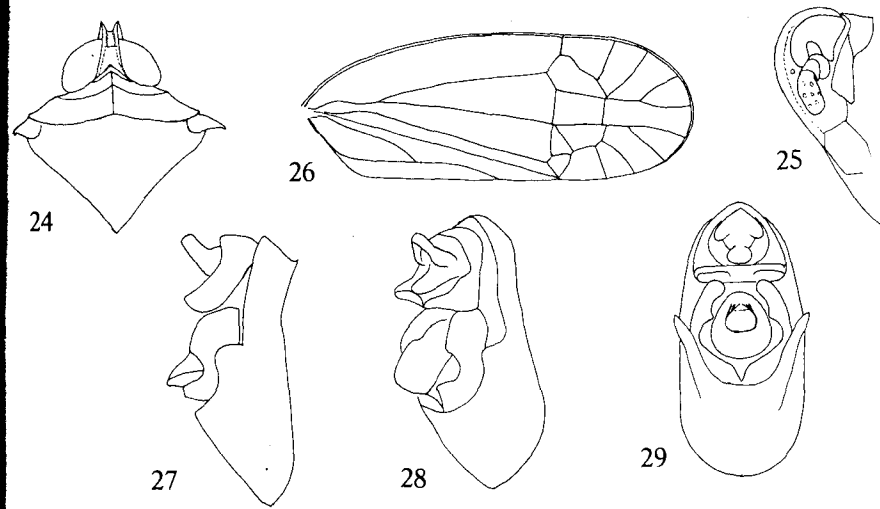
This species stands apart from others in the much less elevated lateral frontal carinae and more acutely pointed mesoscutellum, and is also well distinguished by the form of the male anal segment, aedeagus and styles. In the single specimen available, all ocelli are relatively smaller than in other species, and are deep red in color. The specific name is a classical proper name, and is a noun in apposition.

Southia iridescens Fennah

Figs. 24–29, 36

Fennah 1945:124.

Vertex shorter in middle line than broad at posterior margin (about 1:1.2), lateral margins straight, converging distad, apical margin transverse, shorter than width at base (about 1:1.4), disc deeply hollowed; frons in profile con-



Figs. 24–29. *Southia iridescens* Fennah: 24, head and thorax, dorsal view; 25, head and pronotum, left side; 26, tegmen; 27, male genitalia, right side; 28, same, posterolateral view from right; 29, same, posterior view.

vex, more strongly so in basal half, smoothly rounding into vertex, in anterior view longer than broad (measured between outer edges of lateral margins) (about 3.7:1), wider at apex than at base (about 2.0:1), basal margin slightly concave, lateral margins sinuately convex, diverging to distal fifth, foliate, apical margin transverse, median ocellus present, post-clypeus deeply inserted into frons, tricarinate, anteclypeus medially carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present, a single obscure blemma above each lateral ocellus, antennae with basal segment slightly longer than broad (about 1.2:1), cylindrical, widening distad, second segment longer than first (2.6:1) and longer than broad (2.2:1). Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum broader than long (1.6:1), finely and rather obscurely tricarinate, with carinae parallel; legs slender, post-tibiae longer than wide (24.0:1), with seven teeth apically, separated into two groups, basal metatarsal segment and second segment each with six teeth, tarsal claws small. Tegmina normal, costal margin slightly produced at base in shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as stout shallow flange; Sc+R+M stalk scarcely as long as basal cell, five subapical cells present and nine apical cells.

Light orange-brown; frons, genae, protarsi and mesotarsi, fuscous, basal segment of antennae, carinae of pronotum and femora, pale orange-yellow.

Tegmina hyaline, faintly yellowish, diffuse spot in basal half of stigmatic cell, and small suffusion just beyond claval apex, fuscous. Wings hyaline, veins fuscous.

Anal segment of male rather short, stirrup-shaped, ring-like in basal half, lateroapical angles and apical margin moderately produced caudad, apical margin transverse, thickened on each side of middle. Pygofer short, dorsolateral angles not at all produced, lateral margins produced in rounded lobe at middle, ventral margin moderately broad, slightly concave. Aedeagus relatively large, scoop-like, with lower margin strongly produced caudad, apical margin thin. Styles moderately long, stout, broad basally, narrowed medially and expanding distally, apically slightly inflected mesad. Pregenital sternum of female smooth, with surface evenly convex.

Male.—Length, 3.2 mm; tegmen, 4.5 mm.

Female.—Length, 3.1 mm; tegmen, 5.5 mm.

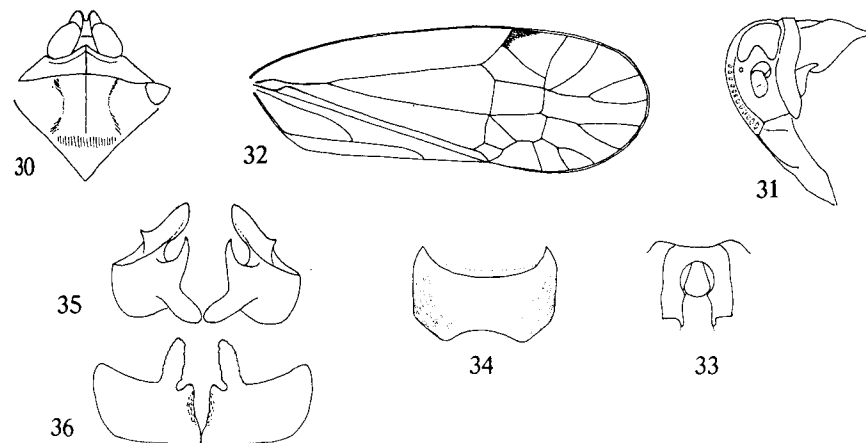
1 ♂ 2 ♀, Trinidad: undergrowth of hill forest, 18.xii.1928; 6.i.1929; Blue Basin, 4.xi.1929, J. G. Myers, in British Museum (Natural History).

This species is distinguished by its relatively large size, the profile of the head, the structure of the pygofer, aedeagus and styles and that of the pregenital sternum.

Southia capnorhina, new species

Figs. 30–35

Vertex shorter in middle line than broad at posterior margin (about 1:1.4), almost horizontal, lateral margins straight, markedly converging distad, apical margin transverse, shorter than width at base (about 1:1.4), disc deeply hollowed; frons in profile convex, more strongly so in basal half, curving evenly into vertex, in anterior view longer than broad (about 4:1), wider at apex than at base (about 2.7:1), basal margin transverse, lateral margins straight, diverging distad, foliate, apical margin transverse, median ocellus present, a pair of blemmata above each lateral ocellus, post-clypeus tricarinate, anteclypeus medially foliately carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present, antennae with basal segment slightly longer than broad (1.1:1), subcylindrical, widening and slightly curved distad, second segment longer than first (2.5:1) and longer than broad (2.4:1). Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, but becoming obsolete at this point; mesonotum a little broader than long, medially carinate except on mesoscutellum, lateral carinae obsolete; legs slender, post-tibiae longer than wide (21.3:1) with 7–8 teeth apically in two groups, basal metatarsal segment and second segment each with 6 teeth, tarsal claws small, each relatively stout basally. Tegmina normal, costal margin slightly produced ventrad in basal third in shallowly convex lobe, wing-tucking apparatus between Cul



Figs. 30–36. *Southia capnorhina* n. sp.: 30, head and thorax, dorsal view; 31, same, left side; 32, tegmen; 33, anal segment of female, dorsal view; 34, pregenital sternum postero-ventral view, with posterior margin uppermost, and paired tumescences near anterior margin below; 35, third valvulae of ovipositor, posterior view. *Southia iridescens* Fennah. 36, third valvulae of ovipositor, posterior view, for comparison for fig. 35.

and Cu2 in basal cell developed as stout narrowly triangular lobe; Sc+R+M stalk scarcely as long as basal cell, M slightly thickened or granulate near base, five subapical cells present and ten apical cells.

Stramineous; lateral margins of frons, clypeus except laterally, post-tibiae apically and metatarsal segments apically, dark fuscous; middle part of disc of pronotum, and mesonotum, light orange-brown with faint greenish-golden sheen, metanotum, abdominal tergites in posterior half, pale yellowish brown. Tegmina milky-hyaline, faintly yellowish, suffusion narrowly overlying R-M transverse vein, Sc and basal quarter of stigmatic cell, fuscous, veins pale brownish yellow, transverse veinlets brown. Wings hyaline, veins yellowish-brown.

Anal segment of female with lateroapical angles each produced and apically truncate, in posterior view with slight papilla near each inner angle. Pregenital sternum broader than long, strongly curving dorsad at middle, with pair of weak tumescences sublaterally towards anterior margin, integument laterad of these finely granulate in oblique rows.

Female.—Length, 3.1 mm; tegmen, 5.0 mm.

Holotype ♀.—British Guiana: New River, 750 ft., 21–23.iii.1938, C. A. Hudson, in British Museum (Natural History).

Other material.—1 ♀, Brazil: Mato Grosso, 12°49'S–51°45'W, 9.xi.1968, W. J. Knight.

This species, which is nearest to *S. iridescens*, differs from it in the less

prominent margin around the antennal foramen, in the proportions of the vertex, the carination of the pronotum and mesonotum, the shape and sculpturing of the pregenital sternum and the shape of the third valvulae. It also differs in tegminal marking, there being no infuscate spot in the membrane just distad of the claval apex. The most distinctive superficial feature is the infuscation of the lateral margins of the frons in their distal half, and of the carinae and intercarinal areas of the clypeus. The specific name, the Greek roots of which refer to this feature, is regarded as a noun in apposition.

Genus *Oeclidius* Van Duzee

Van Duzee, 1914:40. Type-species, *Oeclidius nanus* Van Duzee, 1914:40.
Paroeclidius Myers, 1928:19. Type-species, *Paroeclidius luizi* Myers, 1928:20. Syn. n.

Key to species of *Oeclidius* of Cuba, Jamaica, and Haiti

1. Vertex at anterior margin more than twice as broad as long in middle; eyes absent; tegmina not surpassing abdomen; integument unpigmented 2
- Vertex at anterior margin not broader than long in middle; eyes present; tegmina much surpassing abdomen; integument pigmented 3
2. Disc of frons ecarinate; mesonotum without a median carina, lateral carinae obscure *minos* sp. n.
- Disc of frons with two arcuate carinae; mesonotum distinctly tricarinate *atricola*, sp. n.
3. Vertex surpassing eyes by length of an eye; frons in profile straight, meeting vertex acutely *luizi* (Myers)
- Vertex relatively shorter; frons in profile convex, more strongly so in basal half 4
4. Mesonotum bright green, with apex of scutellum white *fulgidus* (Van D.)
- Mesonotum not green, apex of scutellum not white 5
5. Tegmina with a fuscous spot at apex of each apical vein *fuscus* (Van D.)
- Tegmina without a fuscous spot at apex of each apical vein 6
6. Vertex in profile evenly rounding into frons 7
- Vertex in profile meeting frons abruptly, the point of junction distinct 8
7. Tegmina with posterior subapical cell (Cu1a) much smaller than cell M3+4, and only about half as long *trinitatis* Myers
- Tegmina with posterior subapical cell not much smaller than cell M3+4, and almost as long *aboraca*, sp. n.

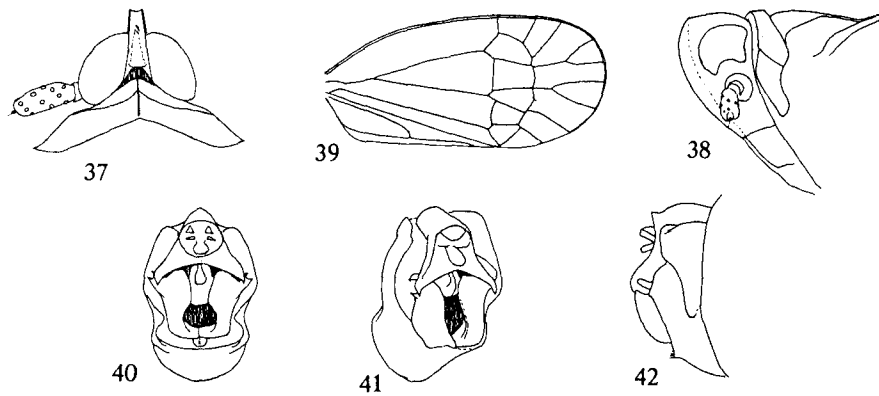
8. Tegmina with subapical cell Cu1a about twice as long as broad .. 9
- Tegmina with subapical cell Cu1a not twice as long as broad 11
9. Post-tibiae with apical teeth evenly spaced in a single line 10
- Post-tibiae with apical teeth in two unequal groups, not in a single line *pelagon*, sp. n.
10. Tegmina with cell Cu1a scarcely twice as long as broad, virtually touching commissural margin; no fuscous spot at stigma; median frontal ocellus absent *persephone*, sp. n.
- Tegmina with cell Cu1a more than twice as long as broad, remote from commissural margin; fuscous spot present at stigma; median frontal ocellus present *hanabanillae* Myers
11. Apex of vertex distad of anterior margin of eyes; frons longer than broad, 5.1:1; distal venation of tegmina reddish-brown *princeps*, sp. n.
- Apex of vertex not distad of anterior margin of eyes; frons longer than broad, 4.2:1; distal venation of tegmina dark fuscous *conopa*, sp. n.

Oeclidius persephone, new species

Figs. 37-42

Vertex longer in middle line than broad at posterior margin (about 2.3:1), almost horizontal, lateral margins straight, converging distad, apical margin transverse, shorter than width at base (about 1:1.7), disc deeply hollowed longitudinally; frons in profile convex, more strongly so in basal half, meeting vertex at obtuse angle, in anterior view longer than broad (about 5.4:1), wider at apex than at base (about 2.3:1), basal margin transverse, lateral margins straight, diverging distad, foliate, apical margin transverse, median ocellus absent, post-clypeus tricarinate, anteclypeus medially carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present, antennae with basal segment about as long as broad, subcylindrical, widening distad, second segment longer than first (3:1) and longer than broad (2:1). Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum little broader than long, tricarinate, with carinae parallel; legs slender, post-tibiae longer than wide (21.9:1), with seven teeth apically, basal metatarsal segment and second segment each with seven teeth, tarsal claws small, each relatively stout basally. Tegmina normal, costal margin slightly produced at base in shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as a stout triangular lobe; Sc+R+M stalk scarcely longer than basal cell, M slightly thickened or granulate near base, five subapical cells present and nine or ten apical cells.

Creamy white; lateral margins of frons and vertex, disc of pronotum and



Figs. 37-42. *Oeclidius persephone* n. sp.: 37, head and pronotum, dorsal view; 38, head and thorax, left side; 39, tegmen; 40, Male genitalia, posterior view; 41, same, posterolateral view from left; 42, same, right side.

mesonotum, except for carinae and posterolateral margins, and legs, dilute fuscous, metanotum, abdominal tergites in posterior half, anal segment of male and inner edge of genital styles, fuscous or reddish brown, suffusion under translucent parts of abdominal terga in posterior half of abdomen, dull red. Tegmina hyaline, faintly yellowish, more distinctly so in first apical cell, veins fuscous. Wings hyaline, veins fuscous.

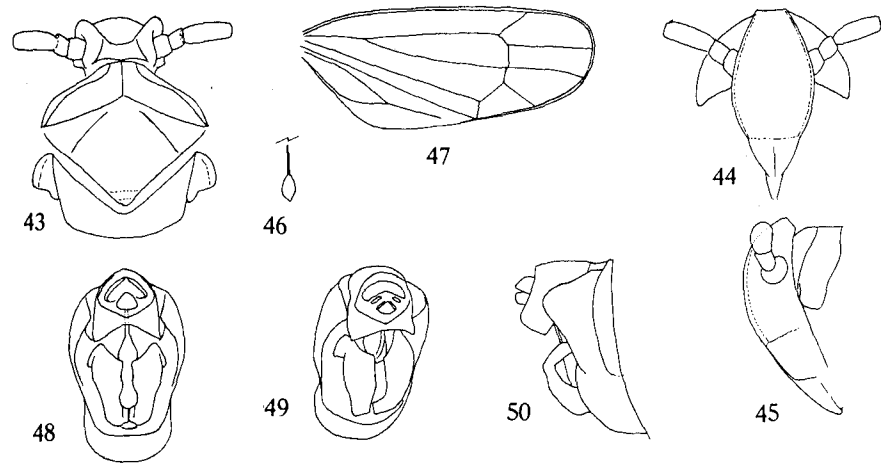
Anal segment of male moderately long, subtubular in basal half, lateroapical angles each strongly produced laterocaudad and deflexed at tip, apical margin broadly concave. Pygofer short, dorsolateral angles only slightly produced, flaring, lateral margins appearing tumid, ventral margin short, transverse or slightly concave. Aedeagus almost bulbous basally, with narrow tubular process at apex recurving dorsad. Styles moderately long, stout, narrow basally, strongly widening and twisted beyond middle with inner margin strongly sinuate, outer margin shallowly concave, apical margin tricuspidate, with two outer cusps closely approximated.

Male.—Length, 3.2 mm; tegmen, 3.8 mm.

Holotype ♂.—Jamaica: Clarendon, Portland Ridge, Portland Caves, 15.viii.74, S. Peck, in the Canadian National Insect Collection.

This species, which is almost certainly endemic, differs from the known Jamaican species of *Oeclidius*, *O. fulgidus* Van D. and *O. fuscus* Van D. in the absence of a median ocellus. From the former it also differs in the color of the mesonotum, and from the latter in the color of the frons and the lower part of the body.

The specific name is a classical proper name and is a noun in apposition.



Figs. 43-50. *Oeclidius minos*, n. sp.: 43, head and thorax, dorsal view; 44, face and lateral lobes of pronotum; 45, head and pronotum, left side; 46, third segment of antenna; 47, tegmen; 48, male genitalia, posterior view; 49, same, posterolateral view from left; 50, same, right side.

Oeclidius minos, new species

Figs. 43-50

Head in dorsal view broader than long, with basal part of frons amply visible. Vertex broader at hind margin than long in middle line (2.7:1). Anterior margin carinate, concave, lateral margins carinate, concave, converging distad, posterior margin transverse, sinuate, disc slightly transversely depressed; frons in middle line longer than broad, widest at about four-sevenths from base, convex transversely and in profile, basal margin shorter than apical margin, lateral margins markedly convex, subfoliately produced anterolaterad, disc smooth, ecarinate, frontoclypeal suture weakly impressed; clypeus relatively small, tricarinate, rostrum long, slender, reaching to middle of abdomen, eyes and ocelli absent, antennae with basal segment cylindrical, slightly widening distad, only slightly longer than broad, second segment cylindrical, longer than broad (about 2.4:1), rounded-truncate apically, third segment subovoid, about twice as long as broad, flagellum long, about four-fifths as long as tegmen. Pronotum relatively large, anterior margin convex, not carinate, not overlapping vertex medially, posterior margin shallowly angulately excavate, median carina distinct, lateral carinae obscure, sinuately diverging from near middle line to lateral angles; tegulae present; mesonotum broader than long (about 1.3:1), slightly convex transversely, almost ecarinate, with only feeble indication of a pair of lateral carinae that strongly diverge caudad; post-tibiae longer than wide (20:1),

laterally unarmed, apically with six teeth, basal metatarsal segment with four teeth, second segment with four teeth, tarsal claws slender, small, pulvilli small. Tegmina relatively small, reaching scarcely beyond middle of abdomen, broadest near base, tapering distad and narrowly rounding at apex, Sc+R, M and Cu1 present, each forking at transverse line of veinlets, claval suture distinct, common claval vein apparently not attaining margin. Wings each reduced to a small lobe on metapleuron.

Creamy white; all sclerites of thorax and abdomen faintly suffused yellowish brown, lateral margins of frons, median carina of pronotum, legs and male genitalia, brown. Tegmina yellowish hyaline, veins and margin of tegmen yellowish brown.

Anal segment of male short, relatively deep, lateroapical angles rectangular. Pygofer short, dorsolateral angles a little produced, convex, slightly inflected, ventral margin entire. Aedeagus tubular, broad at base, rapidly narrowing into slender tube directed dorsad. Styles rather broad, each directed dorsad and strongly bent cephalad in distal third, widest at about two-thirds from base, rounded-truncate apically.

Male.—Length, 2.7 mm; tegmen, 1.7 mm.

Holotype ♂.—Jamaica: Clarendon, Jackson Bay, Jackson Bay Cave, 2.viii.74, S. Peck, on roots on moist clay floor, in Canadian National Insect Collection.

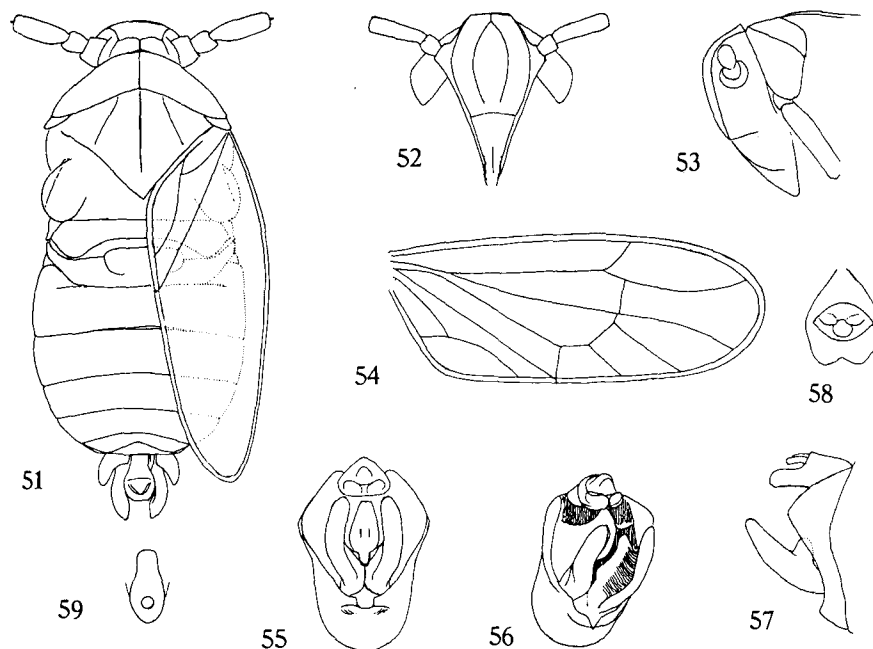
This species is distinguishable from both normally-developed species of *Oeclidius* and the wholly subterranean *O. hades* Fennah (Fennah, 1973:442) by the shape of the head and the weaker carination of the mesonotum, and from *O. hades* it differs also in the more slender legs. The male genitalia are quite distinctive, but conform in broad structure to the pattern common in the genus.

The specific name is a classical proper name, and is a noun in apposition.

Oeclidius antricola, new species

Figs. 51–59

Head in dorsal view broader than long, with basal part of frons amply visible. Vertex broader at hind margin than long in middle (3.5:1), anterior margin shallowly concave, weakly carinate, lateral margins carinate, straight, converging distad, posterior margin transverse, disc not depressed, medially carinate; frons longer than broad (up to 1.2:1, according to viewpoint), widest at middle, transversely subconvex, with median third flat, moderately convex in profile, basal margin little shorter than apical margin, lateral margins distinctly convex, pair of arcuate carinae, united little before base of frons, percurrent to apex or nearly so, not meeting distally, frontoclypeal suture slightly impressed, clypeus relatively small, laterally carinate, postclypeus obscurely medially carinate, but distinctly so at junction



Figs. 51–59. *Oeclidius antricola*, n. sp.: 51, body and right tegmen, dorsal view; 52, face and lateral lobes of pronotum; 53, head and pronotum, left side; 54, tegmen; 55, male genitalia, posterior view; 56, same, posterolateral view from left; 57, same, right side; 58, anal segment of male, posterior view; 59, aedeagus, posterior view.

with anteclypeus, which also is medially carinate, rostrum long, slender, slightly tapering near apex, reaching to basal third of abdomen; eyes and ocelli absent, antennae with basal segment barrel-shaped, slightly longer than broad, second segment cylindrical, longer than broad (3:1), rounded-truncate apically, third segment rather elongate, flagellum longer than third segment (about 2.5:1). Pronotum relatively large, anterior margin strongly carinate, broadly convex, not overlapping vertex medially, posterior margin sinuately concave, median carina weak, lateral lobes of pronotum flat; tegulae present; mesonotum broader than long (about 1.7:1), moderately convex transversely, distinctly tricarinate, with lateral carinae strongly diverging basad; post-tibiae longer than wide (21.7:1), laterally unarmed, apically with 6–7 teeth, basal metatarsal segment with five teeth, second segment with four teeth, tarsal claws slender, small, pulvillus moderately well developed. Tegmina reaching to apex of abdomen, broadest near base, tapering distad and narrowly rounding at apex, Sc+R, M and Cu1 present, each forking at transverse veinlets, position of furcation of veins rather irregular, claval suture distinct. Wings each reduced to small broadly rounded scale.

Creamy white; legs pale stramineous, carinae of head and thorax fuscous. Tegmina hyaline, pallid stramineous, veins concolorous.

Anal segment of male short, in dorsal view widening distad in basal two-thirds, then narrowing in apical third, apical margin shallowly excavate. Pygofer with dorsolateral angles convex, slightly produced, markedly flaring laterocaudad, ventral margin produced in slight lobe on each side of middle. Aedeagus short and broad, vertical, with a circular orifice in middle at widest part. Styles relatively long and broad in side view with dorsal margin deeply concave, apical margin narrowly rounded, in posterior view gradually widening distad, moderately curved, rounded apically.

Male.—Length, 3.0 mm; tegmen, 2.0 mm.

Holotype ♂.—Jamaica: Clarendon, Jackson Bay, Jackson Bay Cave, 2.viii.74, S. Peck, on roots on moist clay floor, in Canadian National Insect Collection.

Other material.—6 ♂, 25 nymphs of different stages, with same data as type.

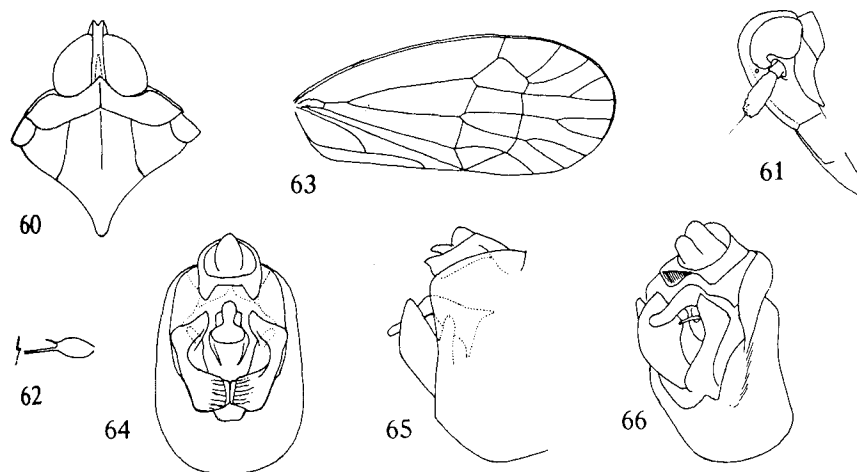
This greatly modified species can only be compared with the Mexican *O. hades* Fenn. From this it differs in the proportions of the vertex and of the second antennal segment, the shape and venation of the tegmina, and the shape of every element of the male genitalia.

The specific name is from the Latin *antrum*, cave, and suffix *-cola*, inhabitant, and is a noun in apposition.

Oeclidius aboraca, new species

Figs. 60–66

Vertex longer in middle line than broad at posterior margin (about 3.5:1), almost horizontal, lateral margins straight, converging distad, apical margin concave, shorter than width at base (about 1:2.0), disc deeply hollowed longitudinally; frons in profile shallowly convex, rounding smoothly into vertex, in anterior view longer than broad (about 3.5:1), wider at apex than at base (about 3.6:1), basal margin transverse, lateral margins slightly sinuate, diverging distad to one-sixth from apex, foliate, apical margin transverse, median ocellus small, postclypeus tricarinate, anteclypeus medially carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present and pair of blemmata on each side, antennae with basal segment about as long as broad, subcylindrical, widening distad, second segment longer than first (3:1) and longer than broad (2.7:1), third segment with short arista in addition to flagellum. Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum a little broader than long, tricarinate, with carinae almost parallel; legs slender, post-tibiae longer than wide (25:1), with seven teeth apically in two unequal groups, basal metatarsal



Figs. 60–66. *Oeclidius aboraca*, n. sp.: 60, head and thorax, dorsal view; 61, head and pronotum, left side; 62, base of third segment of antenna; 63, tegmen; 64, male genitalia, posterior view; 65, same, left side; 66, same, posterolateral view from right.

segment and second segment each with six teeth, tarsal claws small, each relatively stout basally. Tegmina normal, costal margin slightly produced at base in shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as stout triangular lobe; Sc+R+M stalk about as long as basal cell, five subapical cells present and ten apical cells. Last subapical cell (cell Cu1a) longer than broad at base (2.7:1).

Pale yellow; lateral margins of frons and vertex very narrowly, basal segment of antennae, disc of mesonotum, except mesoscutellum, dark fuscous, fore- and middle legs striped with fuscous, abdominal terga and anal segment of male, dilute fuscous, suffusion under translucent parts of abdominal terga in posterior half of abdomen, dull red. Tegmina hyaline, faintly yellowish, veins dull yellow. Wings hyaline, veins fuscous.

Anal segment of male short, ring-like, lateroapical angles each broadly and weakly produced ventrad, apical margin transverse. Pygofer short, dorsolateral angles only slightly produced, flaring, lateral margins weakly sinuate, ventral margin short, transverse or slightly concave. Aedeagus almost bulbous basally, with stout tubular process at apex directed caudad, slender process a little below this, also directed caudad. Styles moderately long, stout, widening distad and bent mesodorsad in apical third, acute apically, moderately long vertical peg-like process on dorsal margin towards base.

Male.—Length, 2.8 mm; tegmen, 4.0 mm.

Holotype ♂.—Jamaica: Howard Gap, vii. 1961, J. Maldonado Capriles, in U.S. National Museum of Natural History.

This species, which is almost certainly endemic, differs from *O. fulgidus* Van D. in the colour of the mesonotum, and from *O. fuscus* Van D. in that of the frons.

The specific name is a classical proper name, and is a noun in apposition.

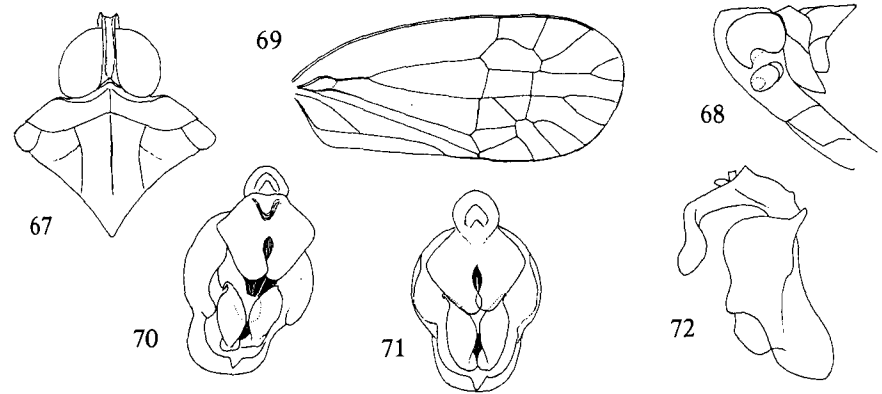
Oeclidius pelagon, new species
Figs. 67-72

Oeclidius fuscus Myers 1928:18 (misidentification).

Vertex longer in middle line than broad at posterior margin (nearly 4.0:1), almost horizontal, lateral margins almost straight, parallel, apical margin transverse, only little shorter than width at base, disc deeply hollowed longitudinally; frons in profile convex, more strongly so in basal half, meeting vertex almost rectangulately, in anterior view longer than broad (about 5.4:1), wider at apex than at base (about 2.3:1), basal margin transverse, lateral margins straight, diverging distad, foliate, apical margin transverse, median ocellus absent, post-clypeus tricarinate, anteclypeus medially carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present, antennae with basal segment about as long as broad, subcylindrical, widening distad, second segment longer than first (3:1) and longer than broad (2:1). Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum little broader than long, tricarinate, with carinae subparallel; legs slender, post-tibiae longer than wide (18:1), with seven teeth apically, basal metatarsal segment and second segment each with seven teeth, tarsal claws small, each relatively stout basally. Tegmina normal, costal margin slightly produced at base in shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as stout triangular lobe; Sc+R+M stalk scarcely longer than basal cell, five subapical cells present and nine or ten apical cells.

Dark reddish brown; lateral margins of frons and vertex, postclypeus, disc of pronotum and outer third of lateral lobes and tegulae dorsally, pale ochraceous, basal segment of rostrum, carinae and posterolateral margins of mesonotum, mesotibiae and post-tibiae, anal segment of male and third valvulae of female, pale brownish yellow, metanotum and abdominal terga in posterior half, dark fuscous. Tegmina milky hyaline, faintly yellowish, veins yellowish brown. Wings hyaline, veins fuscous.

Anal segment of male exceptionally long, subtubular in basal half, latero-apical angles each greatly dilated into broad, apically-rounded lobe that is produced ventrad and slightly overlaps its counterpart apically. Pygofer, moderately long, dorsolateral angles broadly produced, lateral margins appearing tumid, ventral margin short, transverse or slightly concave, notched medially. Aedeagus almost bulbous basally, with a narrow tubular process



Figs. 67-72. *Oeclidius pelagon*, n. sp.: 67, head and thorax, dorsal view; 68, head, pronotum and mesonotum, left side; 69, tegmen; 70, male genitalia, posterolateral view from left; 71, same, posterior view; 72, same, right side.

at apex directed dorsad. Styles moderately long, stout, narrowest at base, strongly widening beyond middle with inner and outer margins sinuately convex in posterior view, apical margin strongly oblique, with outer angle acute.

Male.—Length, 3.2 mm; tegmen, 3.8 mm.

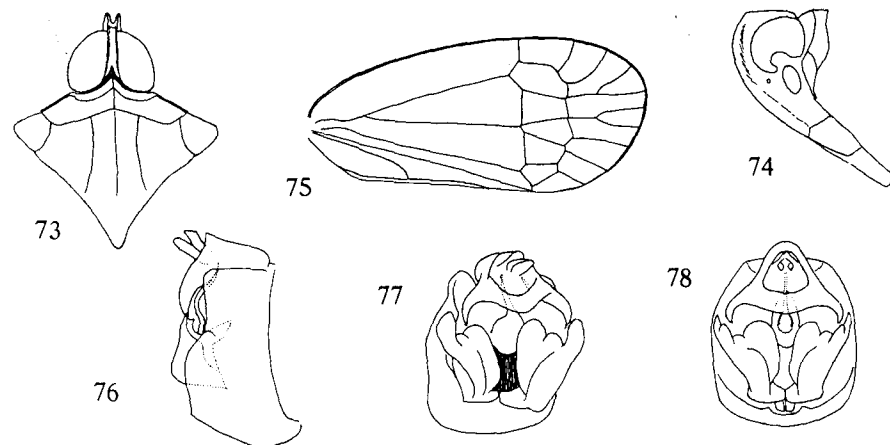
Holotype ♂.—Cuba: Soledad, 28.iii.1925, J. G. Myers, BM 1937-789, in British Museum (Natural History).

This species, which is almost certainly endemic, differs from the Jamaican *O. fuscus* VanD. in its smaller size, in the color of the basal antennal segment and in the absence of infuscation on the apical veinlets of the tegmen where they join the apical margin.

The specific name is a classical proper name and is a noun in apposition.

Oeclidius princeps, new species
Figs. 73-78

Vertex longer in middle line than broad at posterior margin (about 3.0:1), almost horizontal, lateral margins straight, converging distad, apical margin transverse, shorter than width at base (about 1:2.4), disc deeply hollowed longitudinally; frons in profile convex, more strongly so in basal half, meeting vertex at obtuse angle, in anterior view longer than broad (about 5.0:1), wider at apex than at base (about 2.5:1), basal margin transverse, lateral margins straight or feebly concave, diverging distad, foliate, apical margin concave, median ocellus distinct, post-clypeus tricarinate, anteclypeus medially carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present, blemmata apparently absent, antennae with basal segment

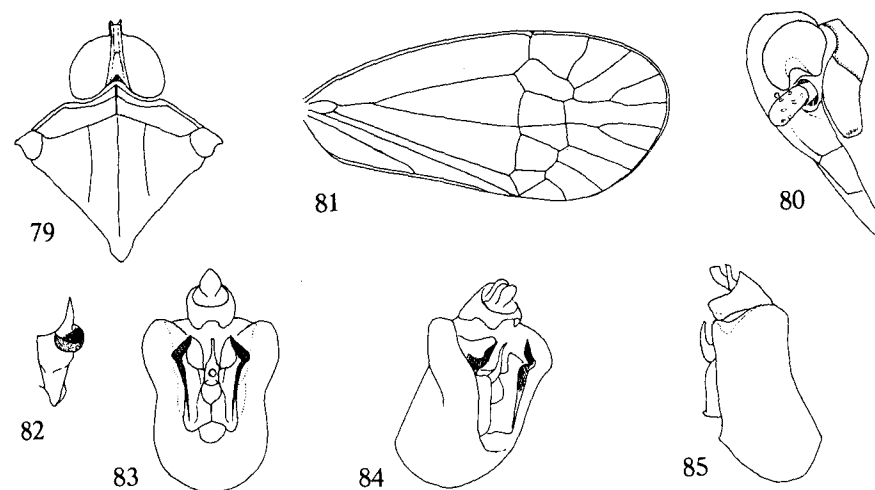


Figs. 73–78. *Oeclidius princeps*, n. sp.: 73, head and thorax, dorsal view; 74, head and pronotum, left side; 75, tegmen; 76, male genitalia, right side; 77, male genitalia, posterolateral view from left; 78, same, posterior view.

short, not as long as broad, cylindrical, second segment longer than first (3:1) and longer than broad (2:1), third segment without arista. Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum little broader than long, tricarinate, with carinae parallel; legs slender, post-tibiae longer than wide (23:1), with seven teeth apically, not separated into two groups, basal metatarsal segment and second segment each with seven teeth, tarsal claws small. Tegmina normal, costal margin slightly produced ventrad at base in shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as stout triangular lobe; Sc+R+M stalk as long as basal cell, five subapical cells present and ten apical cells.

Pallid ochraceous; mesonotum, except for carinae and posterolateral margins, orange-brown, metanotum, abdominal tergites in part, reddish brown. Tegmina hyaline, faintly yellowish, veins dull yellow. Wings hyaline, veins fuscous.

Anal segment of male moderately long, subtubular in basal half, lateroapical angles each strongly produced laterocaudad and deflexed at tip, apical margin broadly concave. Pygofer short, dorsolateral angles only slightly produced, not flaring, ventral margin relatively long, transverse or slightly concave. Aedeagus almost bulbous basally, with narrow tubular process at apex recurving dorsad. Styles moderately long, stout, rather narrow basally, strongly widening beyond middle with inner margin convex, outer margin shallowly concave, subcrenulate or trilobed, with two outer lobes closely approximated.



Figs. 79–85. *Oeclidius conopa*, n. sp.: 79, head and thorax, dorsal view; 80, head and pronotum, left side; 81, tegmen; 82, right styles, dorsal view; 83, male genitalia, posterior view; 84, same, posterolateral view from left; 85, same, right side.

Male.—Length, 3.4 mm; tegmen, 4.5 mm.

Holotype ♂.—Haiti: Port au Prince, ii.1925, G. N. Wolcott, in British Museum (Natural History).

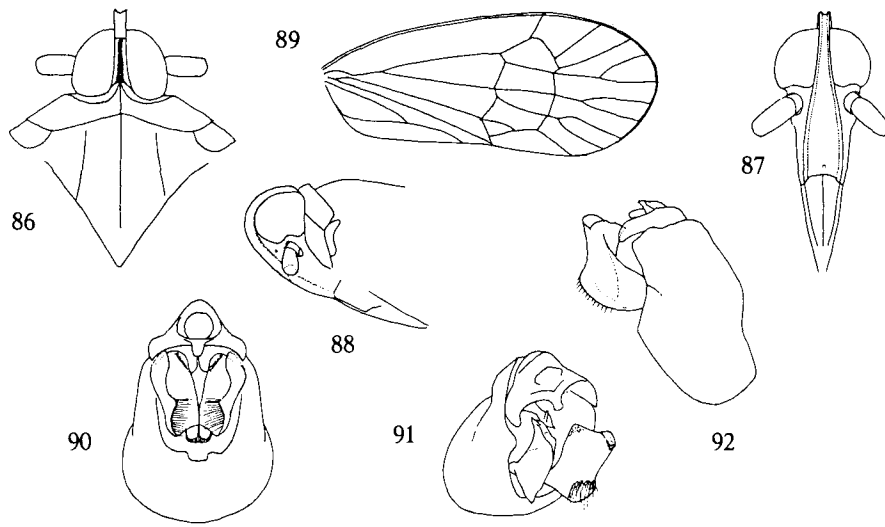
This species, which is almost certainly endemic, is apparently a Haitian counterpart of the Jamaican *O. persephone*, but differs markedly from this species in the shape of the styles.

The specific name is the Latin term for prince, and is used as a noun in apposition.

Oeclidius conopa, new species

Figs. 79–85

Vertex longer in middle line than broad at posterior margin (about 2.1:1), almost horizontal, lateral margins straight, converging distad, apical margin transverse, shorter than width at base (about 1:2.0), disc deeply hollowed longitudinally; frons in profile convex, more strongly so in basal half, meeting vertex at an obtuse angle, in anterior view longer than broad between outer edges of lateral margins (about 4.0:1), wider at apex than at base (about 2.2:1), basal margin transverse, lateral margins shallowly sinuate, diverging to distal sixth, foliate, apical margin between carinae transverse, median ocellus present, post-clypeus tricarinate, anteclypeus medially carinate, rostrum reaching to middle of abdomen; eyes and lateral ocelli present, blemmata apparently absent, antennae with basal segment about as long



Figs. 86–92. *Oeclidius trinitatis* Myers: 86, head and thorax, dorsal view; 87, face; 88, head and pronotum, left side; 89, tegmen; 90, male genitalia, posterior view; 91, same, posterolateral view from left; 92, same, right side.

as broad, subcylindrical, widening distad, second segment longer than first (3:1) and longer than broad (2:1). Pronotum medially carinate, fine carina along anterior margin from middle to near level of lower margin of eye, then bent obliquely towards tegula; mesonotum little broader than long (about 1.3:1), tricarinate, with carinae subparallel; legs slender, post-tibiae longer than wide (23:1), with seven teeth apically, not clearly separated into two groups, basal metatarsal segment and second segment each with seven teeth, tarsal claws small, each relatively stout basally. Tegmina normal, costal margin slightly produced mesad at base in a shallow convex lobe, wing-tucking apparatus between Cu1 and Cu2 in basal cell developed as stout narrowly-triangular lobe; Sc+R+M stalk about as long as basal cell, five subapical cells present and ten apical cells including stigmatic cell.

Pallid ochraceous; disc of mesonotum, except for carinae, and posterolateral margins and mesoscutellum, fuscous, more dilute in lateral fields, metanotum darker fuscous, abdominal terga 3–5 except in posterior half, and ceriferous segments 6–8 of female, fuscous. Tegmina hyaline, faintly yellowish, a little more distinctly so in stigmatic cell, veins fuscous. Wings hyaline, veins fuscous.

Anal segment of male short, almost ring-like, lateroapical angles each feebly produced ventrad in broadly rounded lobe, apical margin concave. Pygofer moderately long, dorsolateral angles only slightly produced, moderately inflected mesad, lateral margins straight, ventral margin short, trans-

verse or slightly concave. Aedeagus almost bulbous basally, with a narrow tubular process at apex recurving dorsad. Styles long, stout, broad basally, slightly narrowed at middle, where inner margin is strongly concave, outer margin straight, apical margin strongly trilobate, with outer lobe narrow, acute, directed dorsomesad and strongly pigmented.

Male.—Length, 2.5 mm; tegmen, 4.1 mm.

Female.—Length, 2.6 mm; tegmen, 5.0 mm.

Holotype ♂, Haiti: Port au Prince, vii.1961, J. Maldonado Capriles, in U.S. National Museum of Natural History.

This species, which is almost certainly endemic, differs from all known Caribbean species of *Oeclidius* in the form of the styles.

The specific name is a classical proper name and is a noun in apposition.

Oeclidius trinitatis (Myers)

Figs. 86–92

Myers, 1928:18.

The opportunity is taken to figure the male genitalia of this Cuban species, the type of which is in the British Museum (Natural History).

Subgenus *Paroeclidius* Myers

Oeclidius (Paroeclidius) luizi (Myers), new combination

Paroeclidius luizi Myers 1928:20.

In view of the great variability between species of *Oeclidius* in the length of the vertex and the degree of development of the mesonotal carinae, there appears to be insufficient ground for maintaining *Paroeclidius*, which includes only one species, as a separate genus on the basis of differences associated with these structures.

Literature Cited

- Fabricius, J. C. 1803. *Systema Rhyngotorum*: 1–314.
- Fennah, R. G. 1945. The Fulgoroidea, or lanternflies, of Trinidad and adjacent parts of South America.—*Proc. U.S. Nat. Mus.* 95:411–520.
- . 1973. Three new cavernicolous species of Fulgoroidea (Homoptera) from Mexico and Western Australia.—*Proc. Biol. Soc. Washington* 86 (38):439–446.
- Kirkaldy, G. W. 1904. Bibliographical and nomenclatorial notes on the Hemiptera. No. 3.—*Entomologist* 37:279–383.
- Myers, J. G. 1928. Notes on Cuban Fulgoroid Homoptera.—*Studies on Cuban Insects* 1928:13–28.
- Stål, C. 1869. Hemiptera Fabriciana 2.—*Handl. Svenska Vet. Akad.* 8(1):1–130.
- Van Duzee, E. P. 1907. Notes on Jamaican Hemiptera: a report on a collection of Hemiptera made on the island of Jamaica in the spring of 1906.—*Bull. Buffalo Soc. nat. Sci.* 8(5): 3–79.

———. 1914. A preliminary list of the Hemiptera of San Diego County, California.—*Trans. San Diego Soc. Nat. Hist.* 2:1-57.

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