

XCVI.—A REVISION OF *BLADINA* STÅL (NOGODINIDAE:
FULGOROIDEA).

By R. G. FENNAH.

IN 1859 Stål erected the genus *Bladina* for the reception of his new species *B. fuscovenosa*, and in 1861 added two further new species, *fuscana* and *fraterna*. Walker, in 1851, described *Flatoides rudis* and in 1858 *Poeciloptera magnifrons*, both of which were subsequently transferred to *Bladina*. The genus was monographed by Melichar in 1898, when a further species, *B. osborni*, was added.

Bladina ranges from Central America to the southern part of Brazil. Its species are of comparatively uniform size and shape and of sober brown hues. They differ strikingly in the shape of both male and female genitalia, but as such characters have hitherto been little used, and as furthermore, the described species include less than half of those to be found in European museum collections, a revision of the genus is justified.

BLADINA Stål.

Stål, 1859, p. 324. Haplotype, *B. fuscovenosa* Stål.

Head with eyes as wide as or a little wider than pronotum. Vertex transverse, about six times as broad between eyes as long in middle line, length in middle about one-half length at sides; anterior margin very shallowly convex, sometimes concave medially, posterior margin rather deeply concave. Frons quadrate, lateral margins more or less straight, usually slightly diverging to below level of antennæ, thence more or less strongly incurved to suture, width of frons at base greater than width of clypeus at base (1.25:1); median carina percurrent, lateral discal carinæ absent, sometimes a row of small rounded eminences (pustules) a short distance within lateral margins and parallel to them. Eyes moderately large; ocelli present; antennæ with second segment barrel-shaped or globose, usually of moderate size, but in some species globose and enlarged in the male; rostrum reaching to post-trochanters. Pronotum in middle line about twice as long as vertex in middle line, anterior margin strongly and evenly convex, posterior more shallowly concave, median carina feeble, other carinæ obsolete; mesonotum longer than broad, disc flat, tricarinate with lateral carinæ anteriorly arcuate, elsewhere parallel. Legs of normal proportionate length, post-tibiæ laterally 4-spined, apically with 11 spines; basal metatarsal joint moderately long, apically with three small spines. Tegmina approximately 2.4 or 2.7 times as long as broad, in the first case parallel-sided with apical margin rounded-oblique, in the second widening distally and with apical margin truncate-oblique. Wings normal. Abdomen slightly tectiform dorsally. Anal segment of male moderately short.

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ubular, anal foramen at apex, lateroapical margin pressed back upon ventral surface of segment. Pygofer moderately broad, lateral posterior margins more or less straight. Genital styles large, strongly curved, almost U-shaped, in side view moderately narrowing distally, with apical margin shallowly sinuate. Ædeagus bilaterally symmetrical with both callus and phallobase (periandrium) with complex and simple processes. Female with anal segment short. Seventh sternite broader than long with posterior margin more or less convexly produced; ventral surface with or without depressions or eminences.

The species fall into two groups: those with relatively narrow parallel-sided tegmina and those with subtriangular tegmina which expand distally. If a count is made of the number of rows of cells transected by an imaginary line drawn across the tegmen from a point slightly distad of the node to a point slightly distad of the claval apex, it will be found that in tegmina of the first type the number lies between 13 and 18, while in those of the second type it lies between 22 and 27. The shape of the frons is moderately variable between species, though only occasionally markedly so. The tegminal coloration, though including only a few characters, is nevertheless of distinct taxonomic convenience on account of its stability within species. The main venation is practically constant within the genus, with the costal vein lying close to the anterior margin (except near the node), and with a large and wide costal cell separating it from *Sc*. *Sc+R* fork lies about one-fifth from the base of the tegmen, while *M* forks slightly more distad; *Cu 1* is simple, at least to the level of the claval apex.

Very pronounced differences are found between species in the ædeagus of the male: in the figures given below attention is confined to illustrating the significant features. The surface of the pregenital sternite of the female shows appreciable variation in form, most frequently in the development of a broad median longitudinal ridge or isosceles triangle, and rarely in the development of a pair of tubercles.

Pocilloptera ricanioides Spinola (1839, p. 442, t. 6, fig. 6), which Fowler conjectured to be a member of this genus, is a Flatid.

Key to species of *Bladina* Stål.

- (2). Thirteen to 18 rows of cells in tegminal membrane, counted transversely slightly distad of claval apex..... (3).
- (1). Twenty-two to 27 such rows..... (17).
- (4). Frons as broad as long, distinctly ampliate in apical half, lateral margins slightly sinuate..... *B. quadratifrons**.
- (3). Frons longer than broad, if at all ampliate only weakly so... (5).
- (6). Tegmina with all veins pallid, ground of corium and membrane hyaline, that of clavus slightly suffused castaneous; tegmina very obliquely rounded apically. Frons with lateral margins parallel..... *B. pallidinervis**.
- (5). Tegmina not as above; veins darker, frons with margins slightly diverging distad..... (7).
- (8). Tegmina sordid creamy-hyaline with longitudinal veins (except costa) heavily fuscous-piceous, membrane distally sometimes suffused fuscous-piceous..... *B. fuscovenosa* Stål.

* Described below as new species.

- (8) (7). Tegmina not as above..... (9).
 (9) (10). Tegmina translucent, tinged yellow, veins dark brown or light; legs stramineous or mostly so..... (11).
 (10) (9). Tegmina dark brown or if translucent in middle then definitely suffused with dark castaneous elsewhere; legs dark fuscous..... (15).
 (11) (12). Costal cell and clavus with infusate ground; longitudinal veins dark brown, especially *Sc*..... (13).
 (12) (11). Costal cell and clavus translucent; at most with yellow suffusion; longitudinal veins light brown; lateral carinae of frons only very slightly divergent distad..... *B. magnifrons* Wlk.
 (13) (14). Lateral carinae of frons markedly divergent distad..... *B. fowleri**.
 (14) (13). Lateral carinae of frons practically parallel, very little divergent distad..... *B. mimica**.
 (15) (16). Frons pale testaceous; antennae in male swollen; costal margin of tegmina light green..... *B. fraterna* Stål.
 (16) (15). Frons and clypeus castaneous-piceous; antennae in male not swollen; costal margin fuscous..... *B. fuscana* Stål.
 (17) (18). Frons with lateral margins very distinctly diverging distally, ampliate below antennae; corium, except costal cell, yellowish hyaline..... (23).
 (18) (17). Frons with lateral margins only in the slightest degree divergent, little ampliate below antennae; corium not as above..... (19).
 (19) (20). Frons, measured along middle line, slightly more than 1.1 times as long as broad; tegmina with corium translucent-castaneous, except costal cell, with main venation conspicuous, dark russet-fuscous; transverse veinlets of corium dark, and of membrane pale..... *B. malaisei**.
 (20) (19). Frons, similarly measured, slightly less than 1.1 times as long as broad..... (21).
 (21) (22). Tegmina not translucent, very dark castaneous or castaneous-piceous, distal transverse veins dark testaceous..... *B. osborni* Mel.
 (22) (21). Tegmina (except costal cell) transparent with light yellowish-brown suffusion, veins conspicuous, dark reddish brown..... *B. molorchus**.
 (23) (24). Tegmina with *Cu* 1 in basal half, and cross-veins between claval suture and first claval vein pale yellow to translucent..... *B. rudis* (Wlk.).
 (24) (23). Tegmina with *Cu* 1 wholly dark castaneous..... *B. lacydes**.

Bladina fuscovenosa Stål. (Fig. 1 A-D, fig. 3 B.)

Stål, 1859, p. 324.

Male.—Length, 5.0 mm.; tegmen, 7.0 mm. Female.—Length, 6.0 mm., tegmen, 9.0 mm.

Frons with lateral margins slightly ampliate distally. Second antennal joint of male swollen, of female normal. Tegmina with about 14 rows of cells distally, apical and sutural angles broadly rounded, apical margin convex, oblique.

Tegmina with corium subhyaline, sordid creamy-white, longitudinal veins, except costa, dark fuscous-piceous, membrane sometimes suffused more or less heavily fuscous-piceous; clavus more or less suffusedly dilute fuscous-piceous.

Ædeagus with a long, laterally-compressed tapering and distally acuminate process in middle line dorsally near base, directed upward and slightly curving cephalad; just distad of this, also in middle line, a smaller process of approximately similar shape, half as large as the

preceding; laterodistad of this process a pair of broad, rather short, spatulate lobes, placed with their greatest width at right-angles to middle line of ædeagus; distad of these processes an outer pair of long, simple, tapering lanceolate processes with a more slender, equally long, and sometimes asymmetrical * pair arising just mesad of them, both pairs of processes directed dorsad and slightly curved cephalad; mesad of the

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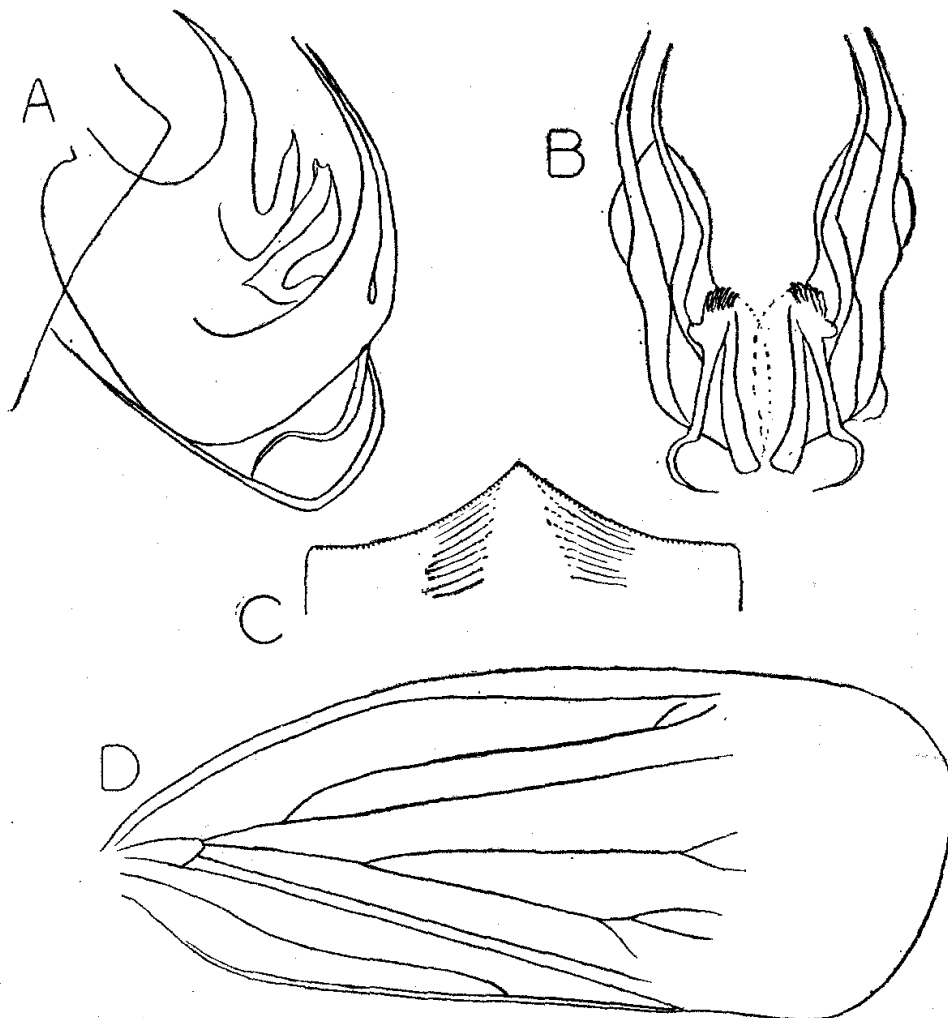
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Bladina fuscovenosa Stål.

A, aedeagus, left side; B, aedeagus, posterior view; C, pregenital sternite of female; D, tegmen.

base of the inner pair of processes a pair of densely spinulose eminences at apex of aedeagus; arising just below them a pair of bifid ribbon-like processes directed ventrad then curved cephalad to lie below aedeagus, each process comprising a short outer limb, directed ventrolaterad

* In Panamanian material these inner processes are symmetrical, but in Venezuelan the right process is angulately bent laterad about a fifth before the apex, then recurved dorsad.

then strongly recurved mesad in a sickle-like curve, and a long inner limb extending below ædeagus to its base.

Pregenital sternite of female moderately short, shallowly convex along middle line; posterior margin obtusely angulately produced caudad, abruptly angulate at middle.

Four males, 50 m., Bobures, Zulia, Venezuela; one female on *Setaria poiretiana*, Ocumare de la Costa, Venezuela, 17. vii. 1951, H. E. Box.

This species stands apart from all others in the striking coloration of the tegmina. The second antennal joint of the male, as in *B. fraterna* and *B. fowleri*, is swollen, though less so than in the former. The number of rows of cells in the tegminal membrane (counting from near node straight across to near apex of clavus) is rather less than in any other species. The ædeagus is distinctive, while the pregenital sternite, though produced caudad as in *B. rudis*, *B. malaisei*, and *B. molorchus*, only comes close to the second. *Bladina magnifrons* Metcalf (1938, p. 389) is considered to be a Panamanian representative this species.

Bladina magnifrons Walker. (Fig. 2 A-D, fig. 4 G, I.)

Poecilopectera magnifrons Walker, 1858, p. 56.

Male.—Length, 7.2 mm.; tegmen, 9.0 mm.

Testaceous-ferruginous, legs paler. Tegmina translucent with yellowish-brown suffusion, costal cell and clavus almost as translucent as intervening corium, at most with a more intense yellowish suffusion; longitudinal veins light brown. Wings with all apical veinlets of *Sc* fuscous.

Ædeagus with unpaired median dorsal lobe vertical, laterally compressed, tapering to a slender point; distad of this, in middle line, a shorter acute process curved caudad and dorsad; laterodistad of median dorsal lobe a pair of shorter moderately broad lobes, not twisted distally, apical margin oblique, ascending mesad to inner apical angle which is produced in a moderately short finger-like process. Distad of these, a pair of very long spinose processes, smooth, gradually and evenly tapering distad to a very slender point, the processes approximated near apex. Mesad of this pair of processes a second pair, almost as long, moderately broad at base with evenly curved, not sinuate, margins, gradually tapering to a slender point, weakly sinuate in posterior view, distal margins minutely and sparsely denticulate. Mesad of the base of these processes a short plate bearing a single moderately short, slender spine directed mesodorsad; with two smaller, curved, parallel spines below it; a broad sclerotized plate underlying apical part of ædeagus.*

The description and figures are of Walker's male holotype from Brazil. The general form of the ædeagus is close to that of *B. fuscana* Stål: the most evident differences lie in (1) the shape of the apical margin of the anterior (broad) pair of processes, (2) the shape, especially distally, of

* The ventrolateral processes of this species have not been dissected out for examination; this broad plate refers only to what is visible in posterior view of the type specimen.

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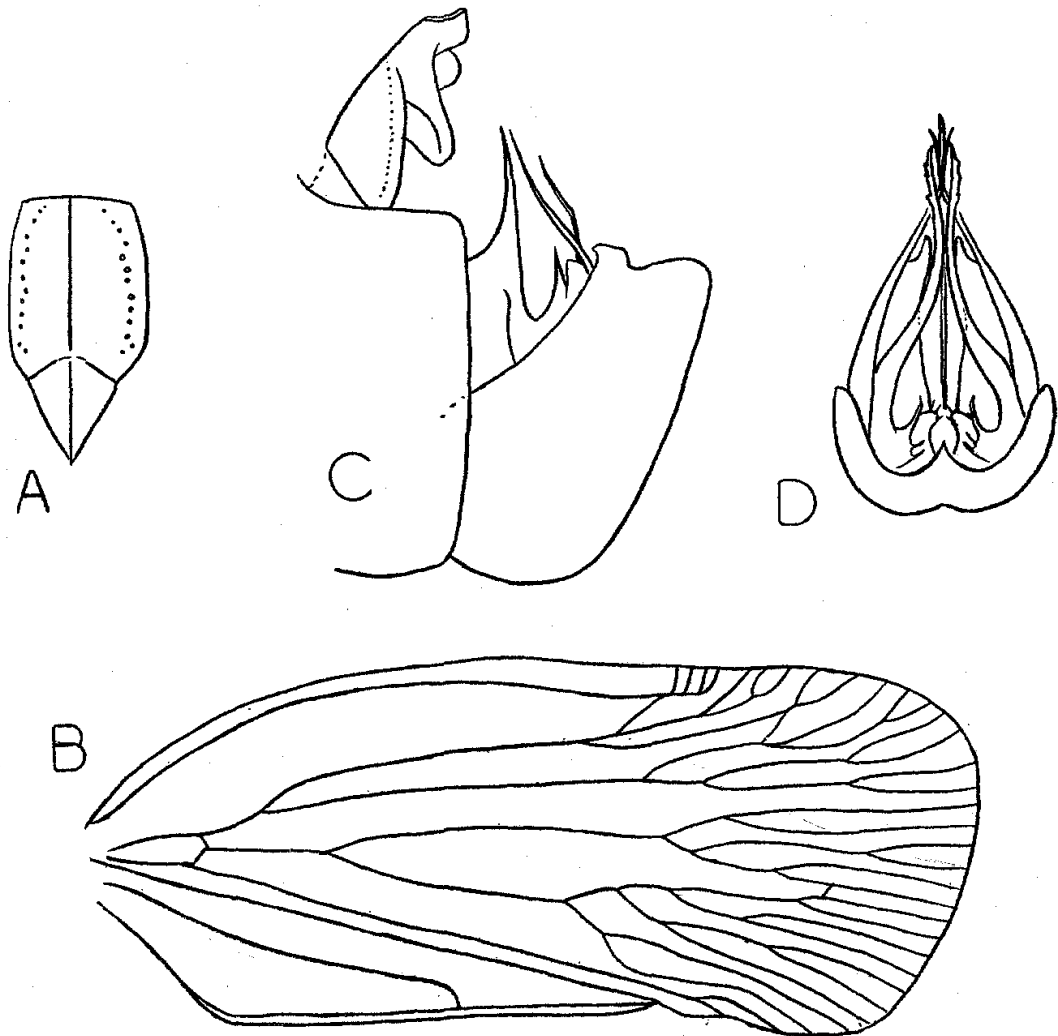
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the second (slender) pair of processes, (3) the denticulate or smooth condition of the mesal margins of the third (slender) pair of processes, (4) the relative length of the three spines on the mesodistad plate at the apex of the aedeagus : in *B. magnifrons* the dorsal spine is relatively

Fig. 2.



Bladina magnifrons Wlk.

A, frons and clypeus ; B, tegmen ; C, male genitalia, left side ; D, aedeagus, posterior view.

much longer, and is more conspicuous, than in *B. fuscana*. While the two species differ very distinctly in the shape of the frons and tegmina, it is quite evident that they belong to the same genitalic group.

Bladina fraterna Stål. (Fig. 3 A.)

Stål, 1861, p. 13.

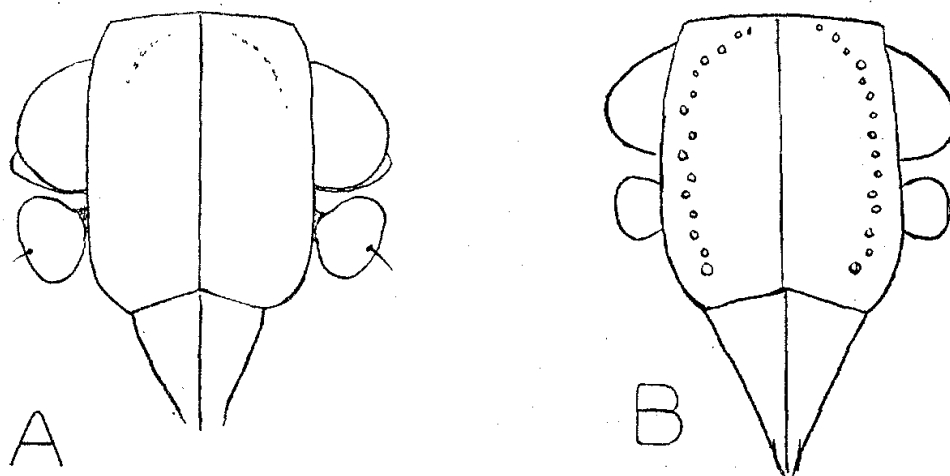
Male.—Length, 7.0 mm. ; tegmen, 10.0 mm.

Sordid yellowish-testaceous, paler below ; mesonotal disc infuscate. Tegmina testaceous-fuscous, with clavus and a small area on costa distad of middle olive green.

Second antennal joint of male exceptionally large.

The genitalia of the type, from which the figure has been made, have not been seen. This species differs from all others known to the writer in the rather abrupt curvature of the lateral margins of the frons distally, in the exceptionally swollen second antennal joint in the male, and in the coloration, of which the conspicuous green zone overlying the costa is the most striking feature, as this colour is found nowhere else in the genus.

Fig. 3.



A, *Bladina fraternus* Stål, frons and clypeus ; B, *Bladina fuscovenosa* Stål, ditto.

Bladina fuscana Stål. (Fig. 4 A-F, H.)

Stål, 1861, p. 13.

Male.—Length, 6.8 mm. ; tegmen, 9.0 mm.

Tegmina with 17 rows of cells in membrane. Ædeagus with unpaired median dorsal lobe and a smaller lobe distad of it, vertical, laterally compressed, and tapering to a point ; laterodistad of median dorsal lobe a pair of shorter moderately broad lobes becoming broader distally, with inner margin longer than outer, and apical margin very oblique, concave. Distad of these a pair of very long spinose processes, smoothly tapering to acuminate apex, directed dorso-mesad and crossing one another in middle line. Mesad of this pair a second pair almost as long, moderately broad near base, directed mesodorsad, then vertical, then laterodorsad, a small tooth or two on mesal edge at distal angle, and two teeth on outer edge distad of them. Mesad of the base of these processes a short plate bearing a small sinuate spine directed dorsad. Anterior to the latter, and overlying ventral surface of ædeagus, a pair of denticulate lobes. A pair of spinose processes, each very roughly Y-shaped, underlying ædeagus and directed cephalad.

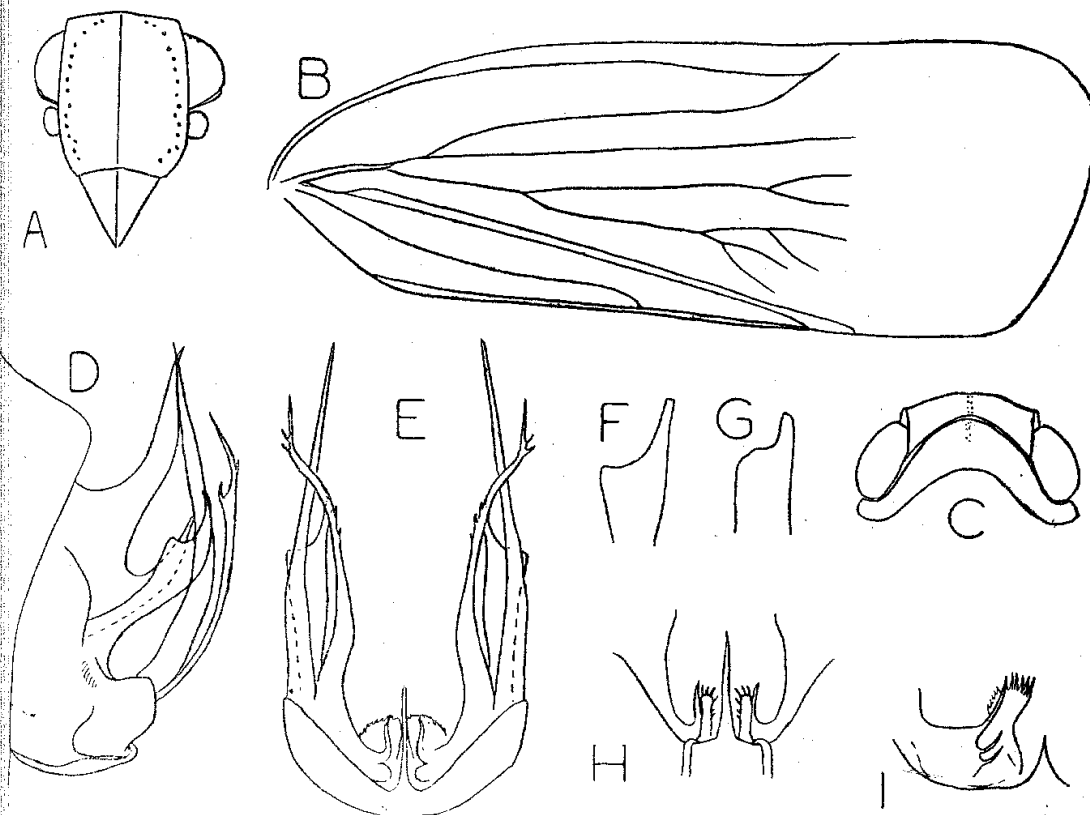
Frons fuscous-piceous, pustules ochraceous ; vertex, pronotum, mesonotum, and femora very dark castaneous, legs fuscous-testaceous

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or subcastaneous, abdominal ventrites dilute fuscous with testaceous
pustules and narrowly dark fuscous margins.

Tegmina with ground colour of corium testaceous, sub-transparent,
costal cell and clavus infuscate, membrane slightly infuscate; longi-
tudinal veins fuscous, transverse veinlets of corium transparent, con-
colorous with ground, transverse veins of membrane concolorous with
ground or slightly paler.

Fig. 4.



Bladina fuscana Stål.

A, frons and clypeus; B, tegmen; C, vertex and pronotum; D, aedeagus, left side;
E, ditto, posterior view, median process omitted, remainder widely separated;
F, apex of one of basal pair of laterodorsal processes, posterior view; G, *Bladina magnifrons* Walker,
detail as in F, for comparison; H, spinose ornamentation of aedeagal apex, posterior view; I, detail as in H, one-half only figured for comparison.

The general coloration is as in *B. magnifrons* Wlk., but more deeply
infuscate (in a comparison of the type and a paratype with the unique
type of the latter). The figures are of the type.

Bladina rudis Walker. (Fig. 5 A-G.)

Platoides rudis Walker, 1851, p. 421.

Female.—Length, 8.3 mm.; tegmen, 11.0 mm.

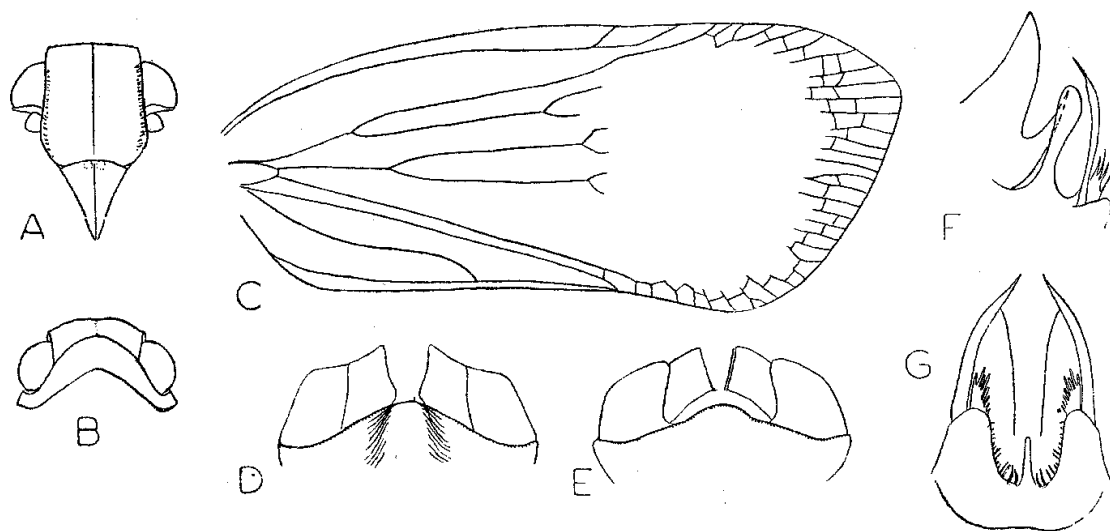
Tegmina with about 24 rows of cells in membrane. Frons, clypeus,
genæ and legs, except for infuscation on femora, testaceous or light
brown. Vertex and pronotum pale fuscous, latter with darker spots;

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mesonotum castaneous-fuscous, pale at apex of mesoscutellum ; abdominal ventrites yellowish testaceous, margins fuscous. Corium of tegmina moderately translucent, tinged yellowish brown, membrane slightly more infusate, *Sc*, *R*, *M*, entirely, and *Cu* 1 in distal half, and claval veins dark castaneous, *Cu* 1 in basal half and transverse veinlets between claval suture and first claval vein pale yellow, subtransparent ; costal cell, and posterior half of clavus castaneous-piceous.

Fig. 5.

*Bladina rudis* Wlk.

A, frons and clypeus ; B, vertex and pronotum ; C, tegmen ; D, pregenital sternite of female (holotype) ; E, ditto (specimen from Trinidad, B.W.I.) ; F, processes of aedeagus, left side ; G, aedeagus, posterior view (ventrolateral processes omitted in F and G).

Pregenital sternite of female broadly and very shallowly convex along middle line, posterior margin broadly and shallowly convex, broadly rounded at middle.

The type, here figured, is a female from Venezuela (Dyson, 1847). The species is readily distinguished by the characters given in the synopsis. The material from Trinidad, B.W.I., assigned by the writer to *B. fuscana* Stål (Fennah, 1945, p. 484) is now provisionally transferred to this species. Until males of *B. rudis* from Venezuela have been examined it is not possible to decide with finality whether the Trinidad form really belongs here.

Bladina osborni Melichar. (Fig. 6 A-E.)

Melichar, 1898, p. 299.

Female.—Length, 9.3 mm. ; tegmen, 12.0 mm.

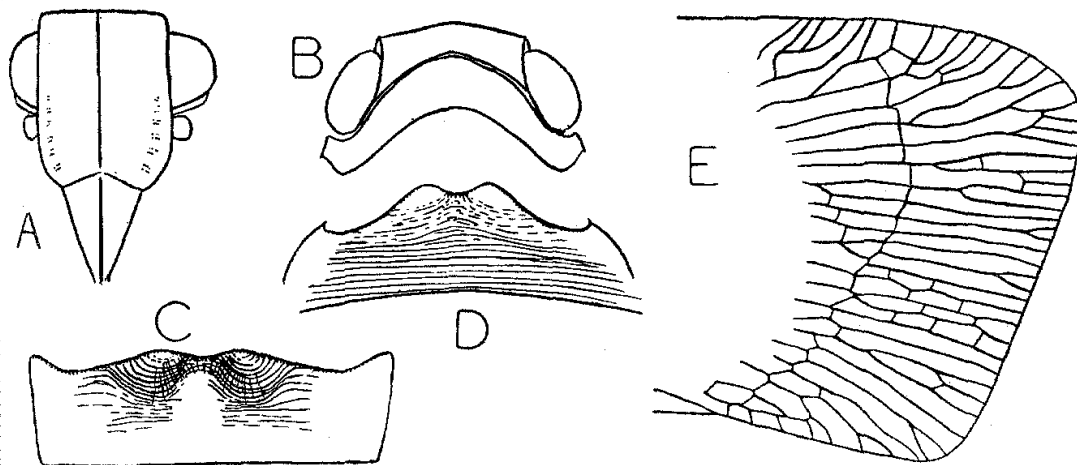
Frons devoid of pustules, and with only traces of a few transverse ridges sublaterally. Tegmina with 22 or 23 rows of cells in membrane. Frons and clypeus uniformly fuscous.

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Tegmina with ground colour and longitudinal veins dark reddish fuscous; costal area, costal cell and clavus fuscous-piceous; transverse veinlets of membrane testaceous.

Pre-genital sternite of female produced on each side of middle line near posterior margin in a short bluntly conical eminence; posterior margin shallowly convex, slightly concave at middle.

Fig. 6.



Bladina osborni Mel.

A, frons and clypeus; B, vertex and pronotum; C, pre-genital sternite of female, ventral view; D, ditto, antero-ventral view; E, apical part of tegmen.

This is perhaps the largest species in the genus. The type locality is Bahia, Brazil. While Melichar's description and measurements were clearly based on this species, two other species, represented by females in the Haglund collection, were referred to *osborni* by him: these are described below.

Bladina malaisei, sp. n. (Fig. 7 A-E.)

Bladina osborni Melichar (*pars*), 1898, p. 299.

Female.—Length, 8.6 mm.; tegmen, 10.0 mm.

Frons in middle line longer than broad (1.2 : 1), lateral margins only in very slight degree divergent distad, rather abruptly meeting fronto-clypeal suture; sublateral pustules small, distinct but not prominent or coarse. Post-tibiae laterally 4-spined, apically with 11 spines, basal metatarsal joint with four apical spines.

Frons, clypeus, vertex, disc and lateral lobes of pronotum, mesonotum, except for a small pallid spot near each tegula and at posterior extremity, dark castaneous or castaneous-fuscous; genæ dorsally pale yellow, ventrally suffused fuscous; pronotum behind eyes yellowish with fuscous spots; legs mostly pale fawn with femora rather darker; ventrites of abdomen testaceous-yellow with a dark fuscous band near each anterior

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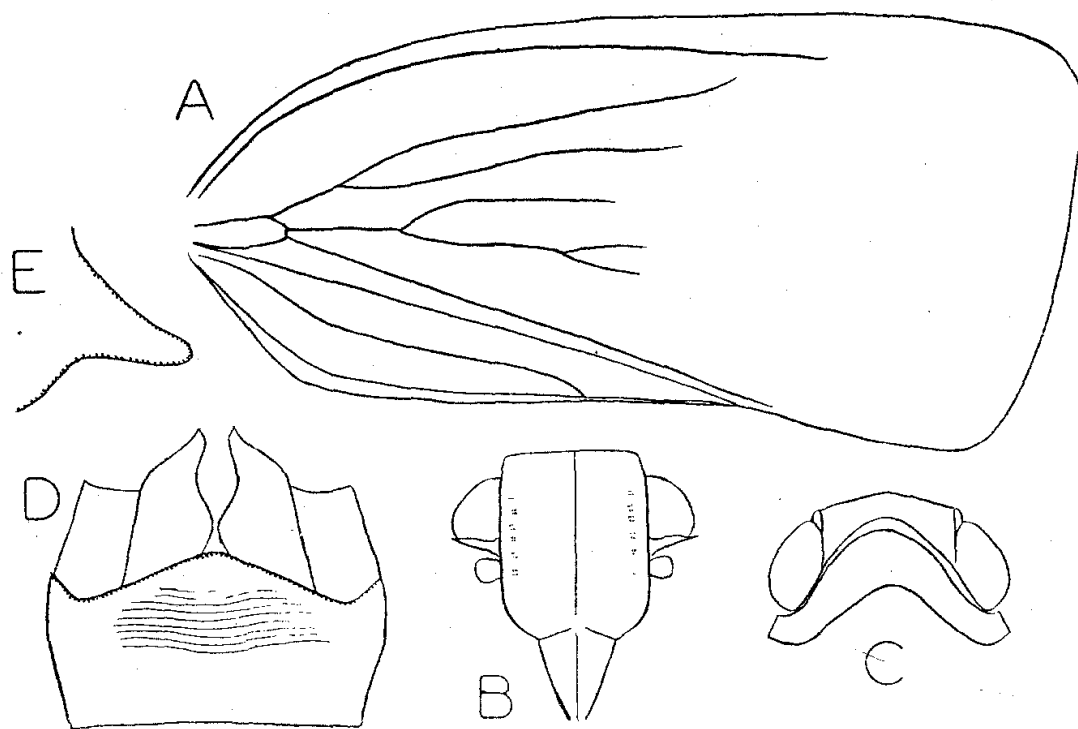
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and posterior margin. Tegmina with corium subtransparent, castaneous, except costal cell, with main longitudinal veins prominent, dark reddish fuscous; transverse veinlets of corium dark, and of membrane pale.

Anal segment of female very short, lateral angles triangularly produced, apical margin obtusely excavate. Pregenital sternite with ventral surface smoothly rounded, devoid of ridges or impressions, median area deflexed ventrally in its distal third; posterior margin in ventral view distinctly obtusely angulate (135°).

Fig. 7.

*Bladina malaisei*, sp. n.

A, tegmen; B, frons and clypeus; C, vertex and pronotum; D, pregenital sternite of female; E, posterior margin of pregenital sternite in profile.

One female, Pebas, Amazon sup., coll. Haglund, labelled "*osborni*" by Melichar. This species differs from *osborni* Mel. in its rather smaller size, relatively longer frons with lateral margins relatively less ampliate distally, in the more rounded apical and sutural angles of the tegmina, in the more distinct transparency of the corium, and in the shape of the pregenital sternite.

Type in Naturhistoriska Riksmuseet, Stockholm.

Bladina molorchus, sp. n. (Fig. 8 A-D.)

Bladina osborni Mel. (*pars*), 1898, p. 299.

Female.—Length, 7.2 mm.; tegmen, 10.2 mm.

Frons in middle line only slightly longer than broad (less than 1.1:1), lateral margins only in very slight degree divergent distad, not very

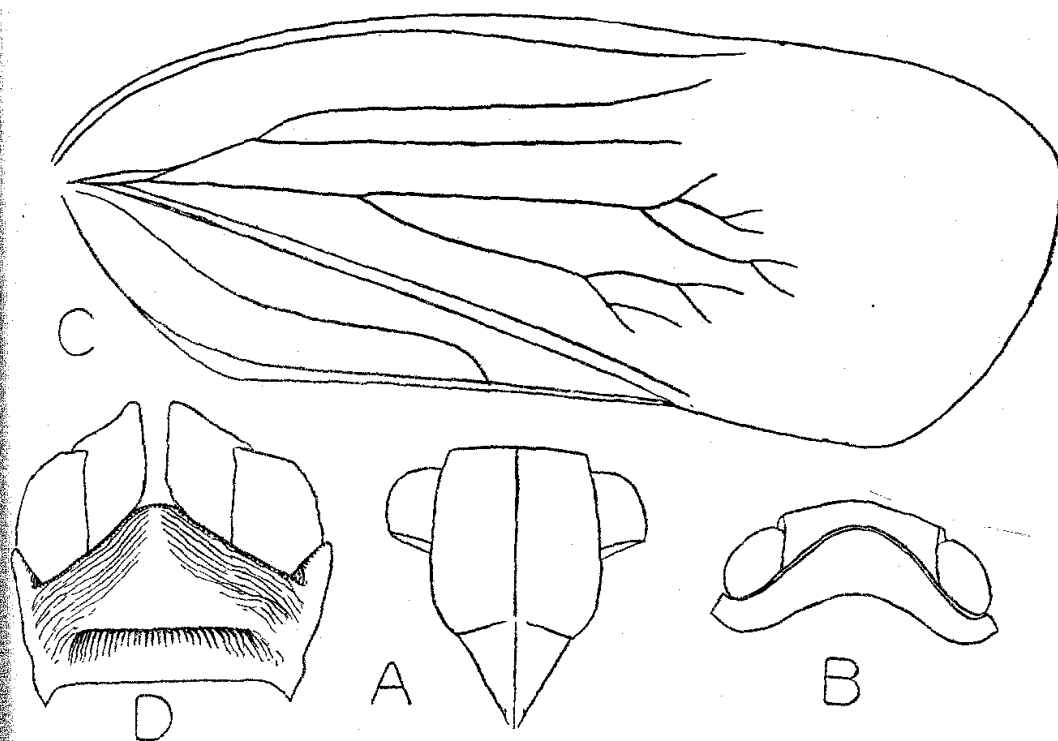
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abruptly meeting frontoclypeal suture; sublateral pustules distinct, moderately prominent, relatively large. Post-tibiæ laterally 4-spined, apically 11-spined, basitarsus 4-spined.

Frons, sublateral areas and median carina of clypeus testaceous; submedian areas of clypeus infuscate; vertex, disc and lateral lobes of pronotum testaceous, partly suffused fuscous; pronotum with dark fuscous spots, mesonotum mostly castaneous, pale on scutellum and in a minute area near each tegula; genæ and legs pale fawn, femora longitudinally fuscous; abdominal sclerites pallid ochraceous, with all margins more or less broadly fuscous. Tegmina, except costal area, costal cell and clavus, subtransparent with yellowish-brown suffusion, membrane slightly more infuscate, veins brown, including transverse veinlets of

Fig. 8.



Bladina molorchus, sp. n.

A, frons and clypeus; B, vertex and pronotum; C, tegmen;
D, pregenital sternite of female.

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corium; transverse veins of membrane testaceous; costal area, costal cell and clavus suffused castaneous, darker near margins, veins, including regular veinlets, testaceous.

Anal segment of female as in *B. malaisei*. Pregenital sternite with a transverse groove across middle; medial area distad of this inflated, constricted to a medial ridge as it approaches hind margin; posterior margin obtusely convex,

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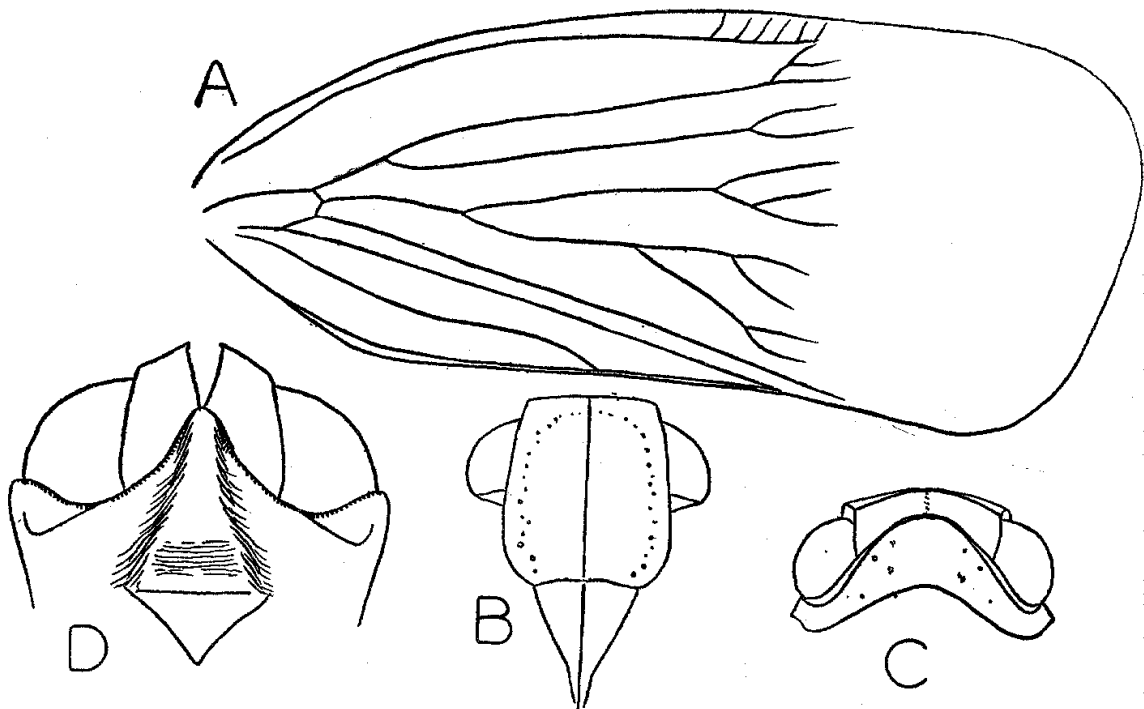
One female, Bogota, Colombia, coll. Lindig (Haglund 476). This species appears to be near *rudis* Wlk. but has a relatively narrower and distinctly more pustulate frons. The coloration is also different: in *B. rudis* there is a pallid spot at each side of the median carina of the clypeus at its base. Type in Naturhistoriska Riksmuseet, Stockholm.

Bladina lacydes, sp. n. (Fig. 9 A-D.)

Female.—Length, 7.0 mm.; tegmen, 9.3 mm.

Frons longer than broad with lateral margins slightly divergent distally, not very abruptly meeting frontoclypeal suture, sublateral pustules present, moderately large, but feebly developed; post-tibiae laterally 4-spined, apically 11-spined; basal metatarsal joint 3-spined. Tegmina with about 22 rows of apical cells, sutural and apical angles moderately broadly rounded.

Fig. 9.



Bladina lacydes, sp. n.

A, tegmen; B, frons and clypeus; C, vertex and pronotum; D, pregenital sternite of female.

Frons, clypeus (except submedially), genæ and legs except for infuscation on femora, testaceous to light orange-brown; vertex and pronotum pale fuscous, latter with piceous spots; mesonotum castaneous, creamy white at apex of mesoscutellum and in a spot on each side near tegulæ. Abdominal ventrites yellowish testaceous, margins fuscous. Tegmina

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with corium subtransparent, tinged yellowish brown, membrane slightly more infuscate, *Sc*, *R*, *M*, *Cu* 1 throughout, and claval veins dark castaneous, some transverse veinlets on corium castaneous, some transparent, transverse veins in membrane testaceous; costal area, costal cell, clavus in posterior half, a spot on *M* 1+2 near its base and on *Cu* 1 near base castaneous-piceous, costa and reticulum of veinlets in costal cell and posterior half of clavus reddish brown.

Anal segment of female as in *B. malaisei*. Pregenital sternite with a transverse groove one-third from base, across median area; distad of this the median area is elevated, and becomes laterally compressed into a ridge caudad; posterior margin in ventral view medially acutely convex.

One female, Santarem, Brazil (52, 96). This species closely resembles *B. rudis* Wlk.: it differs in the relatively narrower frons, which is less ampliate distally than in *rudis* and in the distinctly more prominent gustules, which are obsolete or absent in *rudis*. The colour of the basal part of *Cu* 1 is different in the two species, as is also the shape of the pregenital sternite of the female. Type in Brit. Mus. (N.H.).

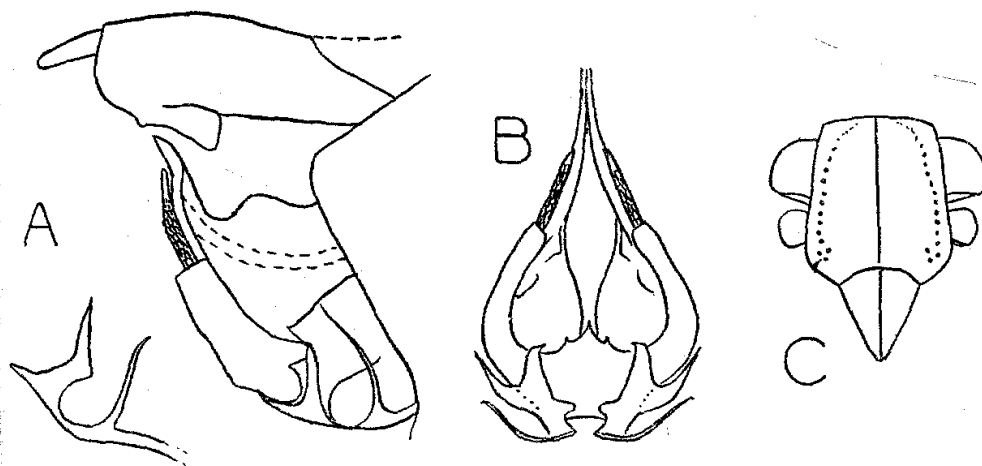
Bladina fowleri, sp. n. (Fig. 10 A-C.)

Bladina magnifrons Fowler (not Walker), 1900, p. 69.

Male.—Length, 6.2 mm.; tegmen, 7.5 mm. Female.—Length, 6.8 mm. Tegmen, 8.0 mm.

Second antennal joint of male swollen, of female normal. Frons slightly ampliate distally. Tegmina with about 16 rows of cells in membrane, with apical angles rounded and apical margin slightly convex.

Fig. 10.



Bladina fowleri, sp. n.

A, male genitalia (except genital styles), right side; B, aedeagus posterior, view; C, frons and clypeus.

Coloration closely similar to that of *B. magnifrons* Wlk., but differing in the costal cell and clavus of the tegmina being pronouncedly infuscate (and not yellowish brown), and all apical branches of *Sc* in the wing,

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except the last two, pallid, slightly paler than the pale fuscous ground and quite inconspicuous, not fuscous and distinct as in *magnifrons*.

Ædeagus with median dorsal lobe curved dorsad to form a triangular plate, with its distal portion, in posterior view, acutely rounded but not spine-like; distad of this process a pair of broader lobes, directed dorsad, obliquely rounded or acute at apex; distad of these two pairs of long spines, the second more heavily pigmented and shagreen in their distad third; posterior to these, and closely overlying them at base a pair of rather broad lobes, about half as long as the preceding spines, rounded at apex, more or less transparent.

Pregenital sternite of female with a fairly broad deep sulcus along middle line.

Type in Brit. Mus. (N.H.). The paratype series of the *Biologia* material, seven specimens from Teapa, Tabasco, one from Torola and one from Coatepeque, is conspecific. Notwithstanding its superficial similarity to *B. magnifrons* Wlk. this species stands far apart in genitalic structure.

Bladina mimica, sp. n. (Fig. 11 A-D.)

Bladina rudis Fennah (not Walker), 1945, p. 485.

Male.—Length, 5.5 mm.; tegmen, 7.9 mm.

Frons with lateral margins almost parallel, very little divergent distally. Tegmina with 18 rows of cells in membrane.

Reddish brown; rostrum, ventral aspect of thorax, legs except for longitudinal stripes on femora, anterior portion of abdominal ventrites, including sublateral pustules, testaceous or tawny. Tegmina sub-transparent with faint reddish-brown suffusion; costal area and costal cell ferruginous-fuscous, with costa distally, its cross-veinlets to margin, and the reticulum of veinlets in costal cell ochraceous. Veins elsewhere ferruginous with exception of distal transverse veinlets which are pallid, membrane with slightly darker suffusion of reddish brown; clavus more deeply ferruginous, anterior claval vein still darker, ferruginous-piceous; posterior claval vein, commissural margin, and cell between them ochraceous. Wings hyaline, powdered grey, lightly suffused ferruginous-fuscous on distal third. Veins fuscous.

Ædeagus with median dorsal eminence almost triangularly conical, in profile tapering upward to a vertically-directed spine, in posterior view slightly hollowed out. Posterior to this process, a pair of lobes linear in profile, with subparallel sides and an obliquely truncate apex in posterior view. Distad of these a pair of long spines, moderately broad at base, evenly and gradually tapering distally, surpassing the preceding lobes and equalling the height of the median dorsal lobe. Behind these, a pair of much shorter processes, directed dorsad, each forked distally, the outer branch again bifid near apex into two short prongs, the inner giving off about five subequal spinose branches; near base of last pair of processes a group of spinose teeth on an eminence; a pair of long ribbon-like processes underlying ædeagus each giving off mesally a pair of narrow subparallel branches.

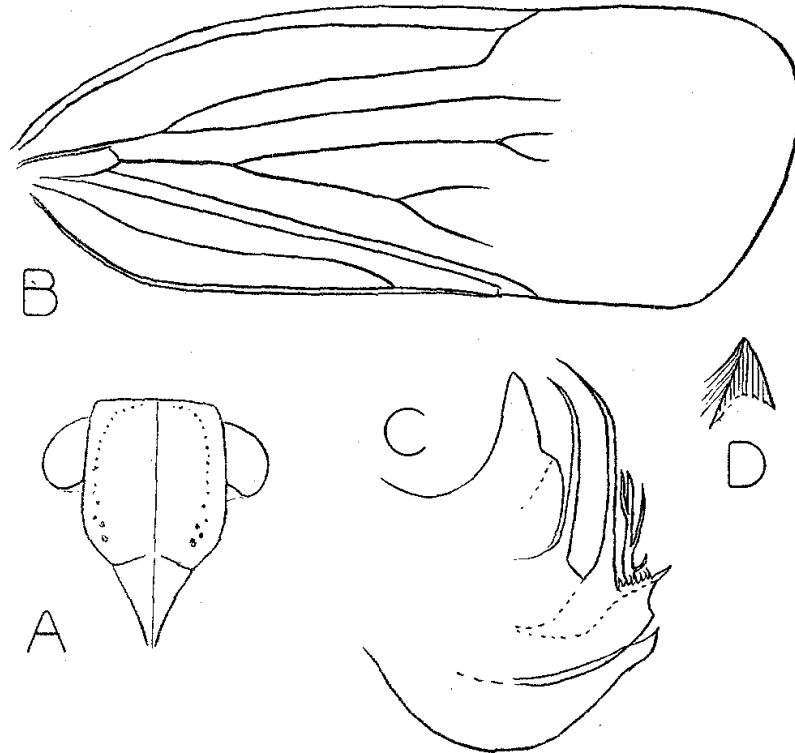
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On male, Venezuela (coll. No. 601.) Type in Brit. Mus. (N.H.). This species is distinguished from *B. rudis* Wlk. by the fewer rows of cells in the apical part of the tegmina, and from *B. fowleri* by the shape of the frons and of the male genitalia.

Fig. 11.



Bladina mimica, sp. n.

A, frons and clypeus ; B, tegmen ; C, aedeagus, left side ; D, sketch of part of median process in postero-lateral view.

Bladina pallidinervis, sp. n. (Fig. 12 A-E.)

Male.—Length, 5.9 mm. ; tegmen, 7.3 mm. Female.—Length, 6.2 mm. ; tegmen, 7.9 mm.

Frons with lateral margins parallel ; second joint of antennæ in male normal size, as in female. Tegmina with 16 rows of cells in distal portion, apical and sutural angles rounded, apical margin shallowly convex, very oblique.

Light brown.

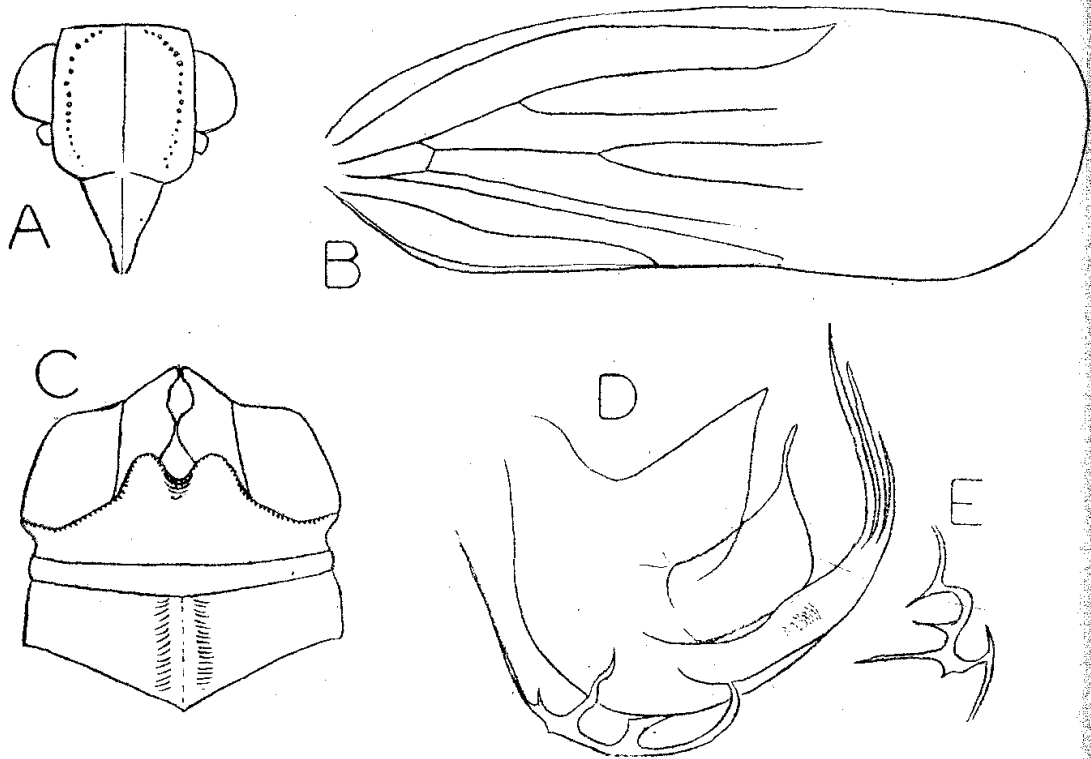
Tegmina with corium and membrane almost hyaline, with light fuscous suffusion, clavus slightly suffused castaneous, costal area, costal cell and veins pallid.

Aedeagus with a thin vertical plate, triangular in profile, dorsally in middle line near base ; no median subsidiary process distad of this, but pair of rather short and distinctly broad lobes, each L-shaped in dorsal view, and with a small lobe at lower distal angle (as seen in profile) ;

distad of these processes a pair of complex processes, each deeply cleft to form three to five long ensiform processes, each tapering to slenderly acuminate apex; mesally, near base of these processes, and near apex of ædeagus, a pair of slight eminences densely beset on dorsal surface with short, slightly curved tooth-like spines; a pair of complex spines, arising at apex of ædeagus, and directed cephalad below it.

Pregenital sternite of female moderately short, with a very shallow impression transversely across middle; posterior margin near middle produced caudad in a pair of short bluntly rounded lobes, each convex below and separated by a short trough.

Fig. 12.

*Bladina pallidinervis*, sp. n.

A, frons and clypeus; B, tegmen; C, female genitalia, ventral view; D, ædeagus, left side; E, basal part of one of ventro-lateral processes.

One male, El Castaño, nr. Maracay, and one female, Guanare (29.i.1950, P. Parades). This species is immediately distinguishable from all the others by the pallid venation of the tegmina. The shape of the ædeagus is not very close to that of any other species while that of the pregenital sternite can only be compared with *B. osborni*; the shape of the eminences is, however, quite different in the two species, as in the present species the axis from base to apex is directed caudad, whereas in *B. osborni* the axis is directed ventrad.

Type in Brit. Mus. (N.H.).

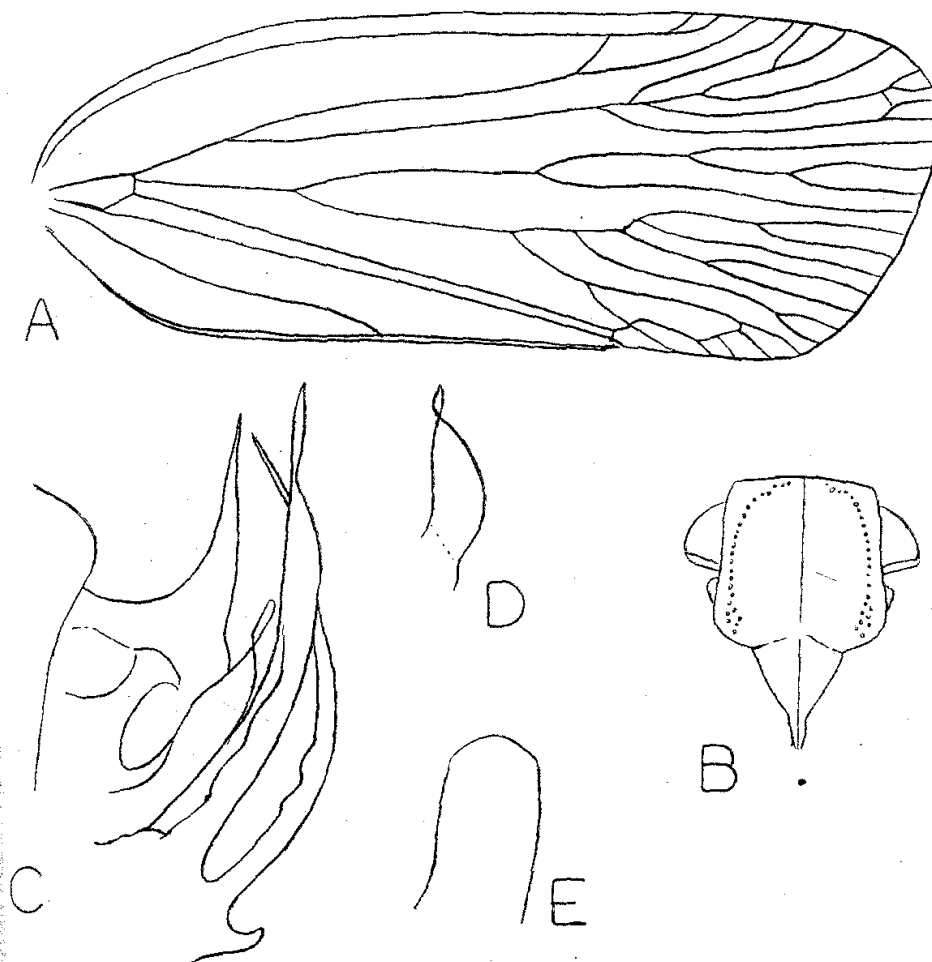
Bladina quadratifrons, sp. n. (Fig. 13 A-3 E.)

Bladina fuscovenosa Fennah (not Stål), 1945, p. 484.

Male.—Length, 5 mm. ; tegmen, 7.2 mm.

Ferruginous ; genæ, lower side of body and legs except for a faint stripe and apical spot on pro- and mesofemora, testaceous. Tegmina almost hyaline, suffused ferruginous between the two claval veins ; costa and its transverse veinlets, posterior claval vein, commissural margin and the cell between them, ochraceous ; transverse veins on corium colourless ; veins otherwise, including apical transverse veinlets, ferruginous. Wings hyaline, powdered grey, veins dark ferruginous.

Fig. 13.



Bladina quadratifrons, sp. n.

A, tegmen ; B, frons and clypeus ; C, aedeagus, left side (lower surface omitted) ; D, apex of one of basal pair of laterodorsal processes, side view ; E, ditto, posterior view.

Edeagus with unpaired median dorsal lobe vertical, laterally compressed, tapering to a narrow point ; distad of this in middle line a smaller acute vertical process ; laterodistad of median dorsal lobe a pair of smaller, broad lobes, bluntly rounded apically and slightly twisted.

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Distad of these a pair of very long spinose processes, flattened and straplike for most of their length, rather abruptly constricted one-fifth from apex; distad of constriction subulate, not flattened, with apex curved caudad. Mesad of this pair of processes a second pair, almost as long, broad at base with distinctly sinuate margins, distally gradually tapering to a slender point; margins smooth, devoid of teeth. Mesad of the base of these processes, a short plate with two very small slender spines, perhaps three, directed mesodorsad; two bifurcate processes underlying apical part of ædeagus.

Redescribed from one male, Venezuela (J. G. Myers, coll. No. 807). The figure of the ædeagus previously given by the writer (Fennah, 1945, pl. 14, fig. 397) was made from a slightly compressed slide preparation. In this species the shorter limb of the subædeagal processes is C-shaped, not S-shaped as in *B. fuscovenosa*.

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