

A contribution to the taxonomy of *Aetalion* LATREILLE, 1809 (Homoptera : Aetalionidae)

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Summary

The present paper deals with 23 species belonging to the genus *Aetalion* LATREILLE. Six among them are new to science, namely *A. pauciareolum* sp. n., *A. rarobasale* sp. n., *A. nigromarginatum* sp. n., *A. brunovenosum* sp. n., *A. nigrofacum* sp. n. and *A. flavescens* sp. n.. Seven species groups are recognized. Their phylogeny is analysed, a classification system and a key are proposed.

Key-words : Homoptera, Aetalionidae, *Aetalion*, taxonomy, South America.

Résumé

Le présent travail traite 23 espèces du genre *Aetalion* LATREILLE. Six espèces sont décrites comme nouvelles pour la science : *A. pauciareolum* sp. n., *A. rarobasale* sp. n., *A. nigromarginatum* sp. n., *A. brunovenosum* sp. n., *A. nigrofacum* sp. n. et *A. flavescens* sp. n.. Au total sept groupes sont reconnus. Leur phylogénie est analysée, un système de classification est proposé ainsi qu'une clé d'identification.

Mots-clés : Aetalionidae, *Aetalion*, taxonomie, Amérique du Sud.

Preface

In the period May-November 1988 the author had the opportunity to examine the Membracoidea collection of the Royal Belgian Institute for Natural Sciences. There is a rich collection of *Aetalion* LATREILLE, but species identification in this group is difficult. Moreover, certain species of *Aetalion*, for example *A. reticulatum* (LINN.), *A. quadratum* FOWLER etc. are important pests attacking economic plants. They not only make direct damage by piercing and sucking, but also cause indirect serious damage by transmitting phytopathogenic viruses to host plants. It is one of the important tasks for plant cultivators to control them. As species recognition is a first step in pest control we hope to produce a helpful contribution by the taxonomic study presented below.

History on taxonomic research

The genus *Aetalion* was erected by LATREILLE in 1809; the type is *Lystra reticulata* FABRICIUS, 1803, which is a synonym of *Cicada reticulata* LINNÉ, 1758. The name of

Aetalion was first emended, unnecessarily, to *Aethalion* in 1829 by LE PELETIER and SERVILLE.

Depending on the author *Aetalion* has been considered as belonging to Membracidae (STÅL, 1869; FOWLER, 1897; GODING, 1907), or to the Cicadellidae (ASHMEAD, 1889; EVANS, 1946). More recently *Aetalion* has been placed in the family Aetalionidae, Membracoidea (METCALF & WADE, 1965; RICHARDS & DAIVES, 1977; KOSZTARAB, 1892; DEITZ, 1985).

LINNÉ (1758), WALKER (1851, 1858), SIGNORET (1851), FOWLER (1879), STÅL (1869), GODING (1926), DE LAPORTE (1832), and BLANCHARD (1846) described new species. STÅL (1869) and GODING (1907) proposed keys to species and revisions. METCALF & WADE (1965) summarized the above research results in "General Catalogue of the Homoptera, Membracoidea", with in total 15 species and 7 varieties.

In the present work six new species are added to science and a classification system is proposed with a key to the species. Seven species groups are recognised, namely, the *A. reticulatum* group including 5 species, the *A. basale* group including 4 species, the *A. latreillei* group including 4 species, the *A. quadratum* group including 3 species, the *A. punctatum* group including 5 species, and *A. servillei* and *A. gratum* each representing an isolated species.

Materials and methods

Identification was performed with reference to the available literature and where possible with the original type material. Every valid species was described and illustrated with the aid of a camera lucida. Finally a comprehensive analysis was done, a classification system was proposed, and a key to species was made. For the genitalia techniques for cleaning and storage were used as described by DENNIS (1952).

A stereomicroscope of Wild Heerbrug M5-72136, Switzerland, a microscope of Laborlux 12, Leitz Wetzlar Germany, and their additional camera lucida were used for observation and illustration.

For medium and large sized species a short ruler was used to measure lengths of body and tegmina and expanse of

the tegmina. An eyepiece micrometer was used to measure the above measurements for small sized species and the width across the shoulders, the eyes and the carinae of the infralateral lobes of the pronotum. All measurements, are given in mm.

The following types were examined :

Tettigonia minuta FABRICIUS (= *Lystra reticulata* FABRICIUS)

Aetalion hilare WALKER

Aetalion gratum WALKER

Aetalion punctatum WALKER

Aetalion pulchrum WALKER

Aetalion bivittatum WALKER

Aetalion fissum WALKER (type and 2 syntypes)

Aetalion basale WALKER and var. β . WALKER

Aetalion subfascia WALKER

Aetalion nervosopunctatum var. *minor* FOWLER

Aetalion quadratum FOWLER

Aetalion dilatum STÅL (type and 2 paratypes)

Aetalion vitticollis STÅL (type and 1 paratype)

Aetalion variabilis STÅL (type, holotype and 6 paratypes)

307 accession specimens from the "Koninklijk Belgisch Instituut voor Natuurwetenschappen", Brussels and 61 specimens from the British Museum (Natural History), London were examined.

Museum abbreviations

The names of the museums and institutions where the specimen were borrowed and examined are listed in the text with their abbreviations as follows :

KBIN : Royal Belgian Institute for Natural Sciences, Brussels

BMNH : British Museum (Natural History), London

SMNH : Swedish Museum of Natural History, Stockholm

DZM : Denmark Zoological Museum, Copenhagen

EMNWAUC : Entomological Museum, Northwestern Agricultural University of PRC, Yangling, Shaanxi

Key to species

- 1 (18) Ruga or carina of infra-lateral lobe of pronotum obtuse, but not flattened;
- 2 (11) Basal and terminal half of tegmen unicolorous;
- 3 (10) Tegmen with many cross veins, more than 4 cross veins in subcostal area, veins mostly not black;
- 4 (9) Pronotum with or without 1 distinct or obsolete stripe on each side of median carina;
- 5 (8) Frons and anterior area of postclypeus without a half elliptical black marking respectively;
- 6 (7) Testaceous or yellowish red; pronotum with 1 distinct or obsolete straight longitudinal stripe on each side of median carina; veins on tegmen

white or yellowish, areolets adjoining exterior margin more or less black (Fig. 1 A); length * 8.3-10.6 mm width ** 2.6-4.1 mm.

A. reticulatum (LINNÉ)

- 7 (6) Yellowish-red or black, shining; pronotum without a straight longitudinal stripe on each side of median carina; veins on tegmen red or black (Fig. 3 A, C); exterior margin of tegmen black; length 8.4-11.8 mm, width 3.1-4.0 mm.

A. variabile STÅL

- 8 (5) Frons and anterior area of postclypeus with a half elliptical black marking respectively; pronotum black, its margins and median carina white or yellowish, a broad ferruginous stripe on each side of median carina (Fig. 4 A, B); length 10-11.5 mm, width 4.2-4.4 mm.

A. apicale WALKER

- 9 (4) Pronotum with 2 tightly curved black stripes on each side of median carina; tegmen reddish-yellow, its veins yellowish, the areoles adjoining exterior margin black (Fig. 2 A, B, C); length 8.7-10.5 mm, width 3.1-3.6 mm.

A. vitticolle STÅL

- 10 (3) Tegmen with fewer cross veins, less than 3 cross veins in subcostal area, veins mostly black, yellow towards base; pronotum with 1 or 2 slightly curved black stripes on each side of carina (Fig. 5 A, C); length 9.5-12 mm; width 3.6-4.3 mm.

A. pauciareolum YUAN, sp. nov.

- 11 (2) Basal and terminal half of tegmen not unicolorous;

- 12 (13) Basal margin of head straight; pronotum shining black, with yellow median carina, 2 oblique and short stripes and ante-lateral margins; tegmen red, with an irregular black stripe from base; veins mostly yellow (Fig. 6 A, C); length 9.0-12.0 mm, width 3.1-4.6 mm.

A. pictum GODING

- 13 (12) Basal margin of head slightly sinuate; pronotum red or yellow;

- 14 (15) Body red in colour; no reddish oblong mark on each side of 3th to 5th abdominal tergites; length 12-13 mm, width 6.2-6.7 mm.

A. basale WALKER

- 15 (14) Body yellow in colour; a reddish oblong mark on each side of 3rd to 5th abdominal tergite;
- 16 (17) Post-lateral and posterior margins of pronotum yellow; scutellum without a black stripe (Fig. 8, A); length 13-13.5 mm, width 6-6.7 mm.

A. rarobasale YUAN, sp. nov.

- 17 (16) Post-lateral and posterior margins of pronotum black; scutellum with 2 black stripes (Fig. 9 A, C); length 10-13 mm, width 4.5-6.1 mm.

A. nigromarginatum YUAN, sp. nov.

* Length to tip of tegmina, id. below.

** Width across shoulders, id. below.

- 18 (1) Carina of infra-lateral lobe of pronotum flattened;
- 19 (26) Carina of infra-lateral lobe of pronotum oblique and straight or slightly sinuate, but not foliaceously flattened;
- 20 (21) Pronotum and base of tegmen remotely punctured; veins on terminal half of tegmen black; basal margin of head straight; head without transverse band, but with 2 brown spots enclosing ocelli (Fig. 10 A, B, C); length 12.5-14 mm, width 4.9-5.5 mm.
A. parviceps SIGNORET
- 21 (20) Pronotum and base of tegmen densely punctured; veins on tegmen not black; basal margin of head not straight;
- 22 (23) Basal margin of head broadly sinuate at middle, concavity with a short black band (Fig. 11 A); pronotum yellowish; length 10-12.5 mm, width 3.7-4.6 mm.
A. latreillei SIGNORET
- 23 (22) Basal margin of head distinctly concave at middle; pronotum black or brownish;
- 24 (25) Pronotum black, with yellow margins; tegmen brown, with white veins on the radial portion; abdomen black; length 7 mm.
A. nigrum SIGNORET
- 25 (24) Pronotum brownish, with a slightly curved black stripe on each side of median carina (Fig. 12 A); tegmen grey and hyaline, veins brown; abdomen brown; length 8-9.5 mm, width 4.1-4.3 mm.
A. brunovenosum YUAN, sp. nov.
- 26 (19) Carina of infra-lateral lobe of pronotum foliaceously flattened;
- 27 (32) Basal margin of head straight or slightly sinuate in middle;
- 28 (29) Basal margin of head straight; pronotum almost as long as wide; head and pronotum with dark spots; veins of tegmen testaceous; length 9-10 mm.
A. nervosopunctatum SIGNORET
- 29 (28) Basal margin of head slightly sinuate at middle; pronotum broader than long; body length shorter than 7.5 mm.
- 30 (31) Head, pronotum and veins of tegmen with fuscous spots (Fig. 13 A, B); length 6.6 mm, width 2.4 mm.
A. minor FOWLER
- 31 (30) Head, pronotum and veins of tegmen without fuscous spots (Fig. 14 A, B); length 6.5-7 mm, width 2.3-3 mm.
A. quadratum FOWLER
- 32 (27) Basal margin of head deeply emarginate at middle;
- 33 (36) Scutellum slightly convex, not gibbous;
- 34 (35) Carina of infra-lateral lobe of pronotum sinuate anteriorly; pronotum reddish yellow, with 4 broad and black stripes; tegmen mostly white and hyaline, veins black and bordered with black (Fig. 15 A, C); length 8-9 mm; width 2.8-3.8 mm.
A. servillei (DE LAPORTE)
- 35 (34) Carinae of infra-lateral lobe of pronotum roundly flattened outwards; pronotum greenish-yellow, with 3 yellow carinae (including median carina), two of them bordered with black (Fig. 16 A); basal 1/3 of tegmen green, with a yellow stripe, veins black, partly testaceous; length 8-12.8 mm, width 3.8-5.1 mm.
A. gratum WALKER
- 36 (33) Scutellum distinctly gibbous anteriorly;
- 37 (40) Pronotum remotely punctured, the punctures black; tegmen with R curved backwards and M curved forwards (Fig. 17 A, B, 18 A, B);
- 38 (39) Disks of the areolets in tegmen white; R+M stem with red basal half and black terminal half; median carina on pronotum not percurrent (Fig. 17 A, B); length 14 mm, width 5.2 mm.
A. punctatum WALKER
- 39 (38) Disk of areolets in tegmen red; R+M stem with yellow basal half and black terminal half; median carina on pronotum percurrent (Fig. 18 A, B); length 14-16 mm; width 5.4-6 mm.
A. pulchrum WALKER
- 40 (37) Pronotum densely punctured, the punctures concolorous; tegmen with R and M straighter;
- 41 (44) A large black marking on face (Fig. 19 A, 20 A); body longer than 12 mm; middle area of median carina on pronotum black;
- 42 (43) Tegmen yellowish, with 2 obscure brown markings, veins yellowish and black and with yellowish spots enclosed by black (Fig. 19 C); length 14-16.5 mm, width 6.4-6.8 mm.
A. nigrofascium YUAN, sp. nov.
- 43 (42) Tegmen yellowish, without obscure brown markings; veins yellowish, only apical area of Cu black (Fig. 20 C); length 12-14.5 mm, width 4.9-5.7 mm.
A. flavescens YUAN, sp. nov.
- 44 (41) Four black spots in one line on crown, one black band across ocelli; tegmen mostly white and hyaline, veins yellow and brown (Fig. 21 A, B), length 9-11 mm, width 4.2-4.9 mm.
A. fissum WALKER

Systematic account

1. *Aetalion reticulatum* (LINNAEUS) (Fig. 1)

Cicada reticulata LINNÉ, 1758 : 436.

Tettigonia reticulata LINNÉ, FABRICIUS, 1775 : 681.

Lystra reticulata FABRICIUS, 1803 : 60.

Aetalion [sic] *parallelum* SIGNORET, 1851 : 677.

Aetalion [sic] *bivittatum* WALKER, 1851 : 649.

Aetalion [sic] *bivittatum* WALKER, 1851 : 649.

Aetalion [sic] *albinervosum* BLANCHARD, 1846 : 221.

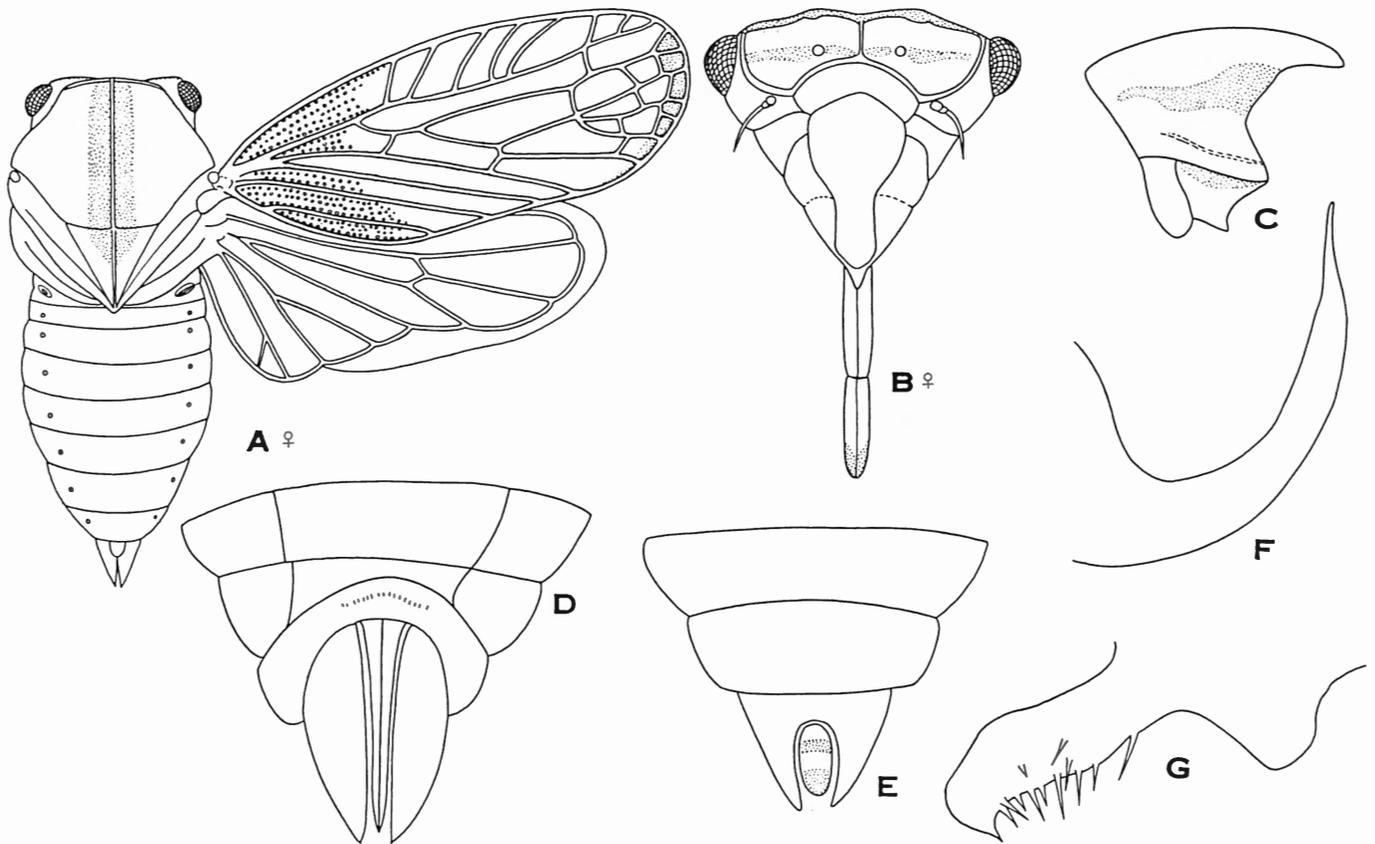


Fig. 1. - *A. reticulatum* (LINNAEUS)

A : female adult; B : head (frontal view); C : pronotum (lateral view); D : apex of female abdomen (ventral view); E : female abdomen (dorsal view); F : aedeagus; G : parameres.

Aethalion [sic] *simile* WALKER, 1859 : 167.

Aethalion [sic] *vicinum* WALKER, 1858 : 167.

Medium sized. Testaceous. Length to tip of abdomen 5.5-10.3 mm, length to tip of tegmina 8.3-10.6 mm, length of tegmen 6.3-8.9 mm, width across shoulders 2.6-4.1 mm, width across eyes 2.5-3.2 mm, expanse of tegmina 11-19 mm.

Differential characters :

Head yellowish-reddish, basal margin slightly sinuate in middle, with two black bands at front view; pronotum yellow-reddish to brownish, densely punctured, median carina percurrent, with one short oblique black stripe on each side anteriorly, sometimes obsolete, and two parallel pale ferruginous to black stripes adjoining the median carina, sometimes obsolete; ante-lateral margins black, infra-lateral lobes of pronotum yellowish-reddish, with an obtuse ruga and black inferior margin; scutellum with two black stripes anteriorly; tegmen yellowish to reddish, blackish along the tip, veins white or yellowish; Legs yellowish, metathoracic tibia long, with a row of cucullate setae below, three black rings, and a transverse row of black apical spurs; abdomen yellow to brownish, a raised ridged trace of tympanic organ on each side of first tergite; exposed part of ovipositor yellow or brownish.

Male generally smaller than female, aedeagus slightly curved upwards, parameres spinose.

Material examined :

1 ♀, The type of *Tettigonia minuta* FABRICIUS (= *Lystra reticulata* FABRICIUS), (DZM); 1 ♀, The type of *aethalion bivittatum* WALKER (BMNH); 54 ♀, 17 nymphes, Camiie, Brazil, coll. VAN VOLXEM, Edm. SCHMIDT det. *A. reticulatum* LINN.; 8 ♀ Cayenne (Fr. Guiana), collected by F. PILLAULT, Edm. SCHMIDT det. *A. reticulatum* LINN.; 17 ♀, 4 ♂, Brazil, Edm. SCHMIDT det. *A. reticulatum* LINN.; 2 ♀, Colombia, V. LALLEMAND det. *A. vicinum* SIGNORET; 1 ♀, Colombia, H. SYNAVE det. *A. vicinum* SIGN.; 52 ♀, 22 ♂, Cayenne, Fr. Guiana, collect. by PILLAULT; 5 ♀, Pubic de Rio Rolofago, coll. VAN VOLXEM; 8 ♀, 5 ♂, Espirilo-Santo, Brazil; 2 ♀, Colombia, collected by F. CLARER; 3 ♀, Brazil; 31 ♀, 1 ♂, Chili, Valdivia, 1975, collected by S. JACQUEMART (all above mat. in KBIN); 1 ♂, Argentine, Bemberg, Allo Pasana, 15-17.III.1934; 1 ♀ Colombia, Lake Sapalora region, Chirignana District, VII-IX.1927, collected by C. ALLEN; 2 ♀, Pasamba (3500 m); 1 ♀ Ecuador, V.1985, collected by ONORE; 3 ♀, Ecuador, S. Domingo, X.1981, collected by ONORE; 2 ♀, 1 ♂, Argentine; 1 ♀, Matto Grosso, Spencer Moone; 1 ♂, Brazil, 17.VII.1923, collected L. G. SAUNDER; 1 ♂, Venezuela; 1 ♂, Brazil, Sta Catharina, near Mafra, W.50 S.26

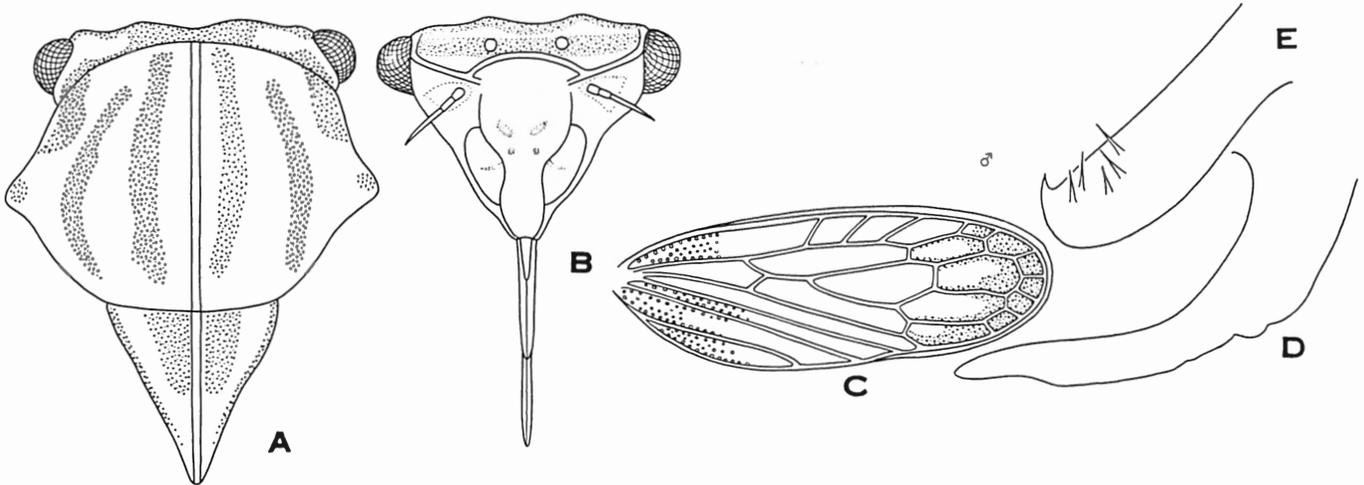


Fig. 2. - *A. vitticolle* STÅL

A : head and pronotum (dorsal view); B : head (frontal view); C : tegmen; D : paramere; E : aedeagus.

(800 m), XI.1929; 2 ♂ Brazil, R.G.D., Pelotas, collected by C. M. BLEZANKE; 1 ♀, Paraguay, XII.1908; 1 ♂, 1 ♀, Venezuela, Merida, 2-19.IV.1965 (all above mat. in BMNH).

Distribution :

Guyana, Surinam, Venezuela, Brazil, Colombia, Costa Rica, Panama, Chile, Bolivia, Ecuador, Peru, Argentina, Paraguay, French Guyana.

Host plant :

Cajanus cajan (L.) Hutsh (Pigeon pea), *Mangifera indica* L. (Mango), *Eriobotrya japonica* (Thunberg) Lindley (Japanese plum), *Morus alba* L. (Mulberry), *Hibiscus tiliaceus* L. (Tinden hibiscus), Various species of *citrus*, *Piper umbellatum* L. (Piperaceae).

2. *Aetalion vitticolle* STÅL (Fig. 2)

Aetalion vitticollis STÅL, 1869 : 297.

Medium sized, yellowish, length to tip of abdomen 8.1-10.2 mm; length to tip of tegmina 8.7-10.5 mm, length of tegmen 7.3-8.5 mm, width across shoulders 3.1-3.6 mm, width across eyes 2.6-2.9 mm, expanse of tegmina 17.6-24 mm.

Differential characters :

Basal margin of head slightly concave in middle; head with two black bands in front view, postclypeus with two oblique short brown stripes anteriorly; pronotum with four slightly curved black stripes on the disc and black antelateral margins; tegmen yellowish, with many cross veins, apical areolets black, veins thin; abdomen yellow, with an oblong reddish stripe on each side of 3rd to 5th tergite; tibia of hind legs with three black rings.

Material examined :

2 ♀, holotype and paratype of *A. vitticollis* STÅL, Bogota (SMNH); 1 ♂, 6 ♀, Tachir, Venezuela (300 m); 4 ♀, Peru (KBIN).

Distribution :

Colombia, Mexico, Panama, Venezuela, Peru.

3. *Aetalion variabile* STÅL (Fig. 3)

Aetalion variabilis STÅL, 1869 : 297.

Medium sized, red or black, shining. Length to tip of abdomen 7.7-11.0 mm, length to tip of tegmina 8.4-11.8 mm. Length of tegmen 7-10.1 mm, width across shoulders 3.1-4.2 mm, width across eyes 2.6-3.2 mm, expanse of tegmina 17-24 mm.

Differential characters :

Basal margin of head slightly concave in middle, head with two black bands in front view, postclypeus with two oblique and short brown stripes anteriorly, anteclypeus with one triangular brown mark; pronotum red or black, median carina yellow, without a long stripe; tegmen red or black, shining, M curved backwards, discoidal cell large, one end of certain cross veins free; legs black, tibia of hind legs with two yellow rings.

STÅL (1869) grouped this species under two varieties, namely var. a and var. b according to the fact that the pronotum and tegmina are red or brown.

Material examined :

4 ♀, 2 ♂, type, Allotype and 4 paratypes of *A. variabilis* STÅL, Bogota (SMNH); 3 ♀, Colombia (KBIN).

Distribution : Colombia.

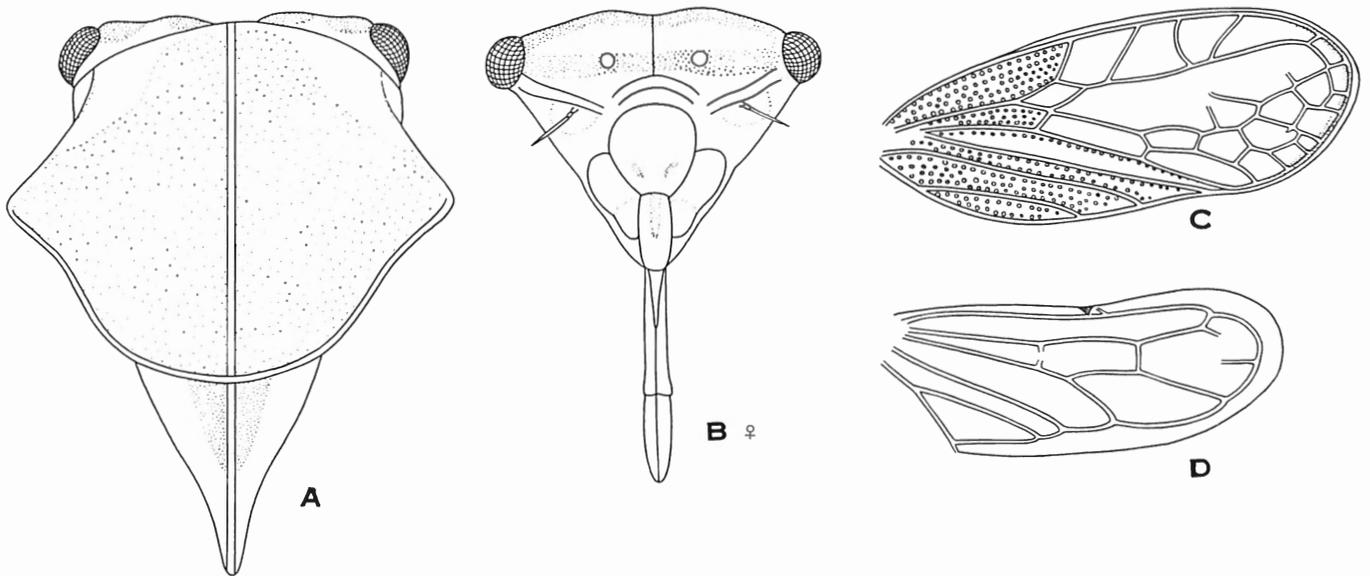


Fig. 3. - *A. variabile* STÅL

A : head and pronotum (dorsal view); B : head (frontal view); C : tegmen; D : hind wing.

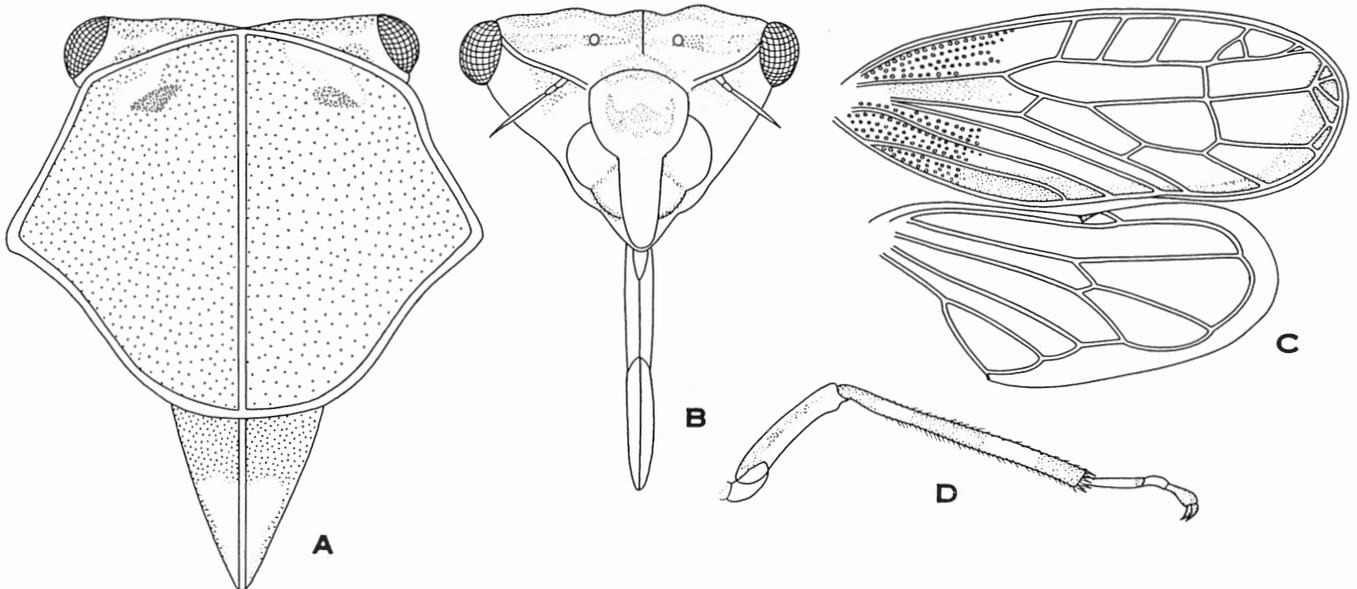


Fig. 4. - *A. apicale* WALKER

A : head and pronotum (dorsal view); B : head (frontal view); C : tegmen; D : hind leg.

4. *Aetalion apicale* WALKER (Fig. 4)

Aethalion [sic] *apicale* WALKER, 1851 : 648.

Medium sized, black and reddish, length to tip of abdomen 8.5-10.5 mm, length to tip of tegmina 10-11.5 mm, length of tegmen 9 mm, width across shoulders 4.2-4.4 mm, width across eyes 3.1-3.4 mm, expanse of tegmina 23-24 mm.

Differential characters :

Basal margin of head slightly concave in middle; head with two black bands and a half elliptical marking on frons, basal and apical area of postclypeus with a small black spot; pronotum black, margins and median carina white, a broad ferruginous stripe on each side of median carina; tegmen reddish-yellow, apical areolets and posterior margin black; abdomen yellow, with a black median stripe at dorsum; hind tibia with three black rings.

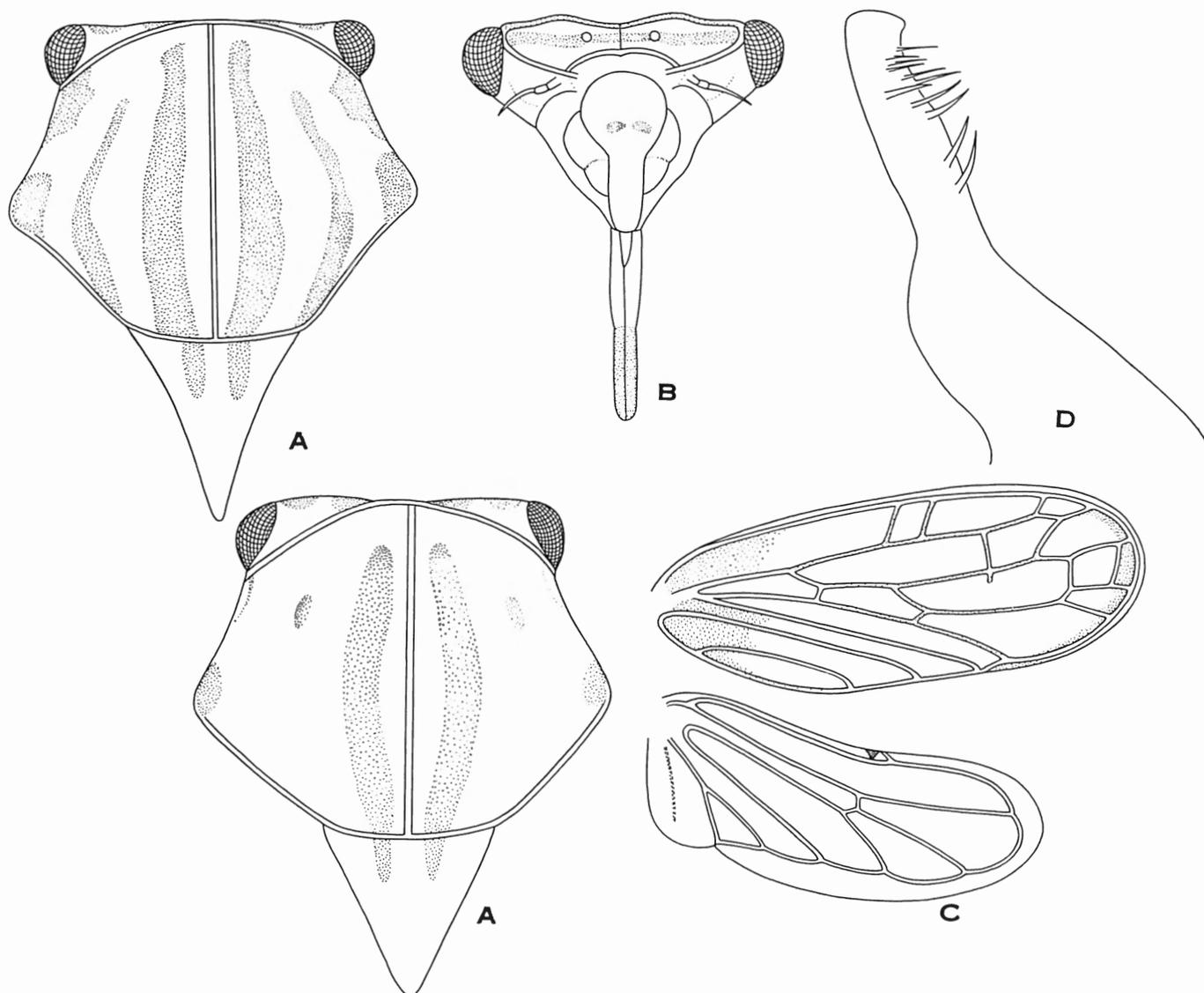


Fig. 5. - *A. pauciareolum* YUAN, *sp. n.*

A : head and pronotum (twice) with black stripes (dorsal view); B : head (frontal view); C : tegmen and hind wing; D : paramere.

Material examined :

1 ♀, type of *Aetalion apicale* WALKER, unknown locality (BMNH); 1 ♀ Camiile, Brazil, Edm. SCHMIDT (1911) det. *Aetalion reticulatum* LINNÉ (KBIN).

Distribution : Brazil, Colombia, Peru.

5. *Aetalion pauciareolum* YUAN, *sp. nov.* (Fig. 5)

Medium sized, yellow-reddish, length to tip of abdomen 7-9 mm, length to tip of tegmina 9.5-12 mm, length of tegmen 8-11 mm, width across shoulders 4.5-5.5 mm, width across eyes 3.6-4.3 mm, expanse of tegmina 20-24 mm.

Description :

Head yellow, crown short, middle of basal margin slightly

concave, with two transverse black bands visible in front view; oculus dark brown, ocelli brown, situated on a line drawn through the center of the eyes, closer to each other than to the eyes, epiconial suture distinct and black; frons convex, antennal ledge oblique and straight, antenna black; postclypeus with convex disc and obvious submarginal area, two oblique black spots anteriorly on disc, rostrum fumated with brown, its terminal segment darker.

Pronotum yellow, almost sexangular, densely and minutely punctured; median carina percurrent, two (sometimes four) slightly curved black stripes on disc; shoulder and ante-lateral margin black; infra-lateral lobe with a ruga. Scutellum yellow and convex, with two black short stripes anteriorly. Tegmen yellow, blackish along apical margin, basal 1/4 coriaceous and densely punctured, the rest subhyaline; veins thick, yellow basally, brown and black distally; M with 2 branches, cross veins 1-3 sc-r, 1-2 r-m, 3-4 m-m, and only a few areolets. Hind wings yellowish, hyaline,

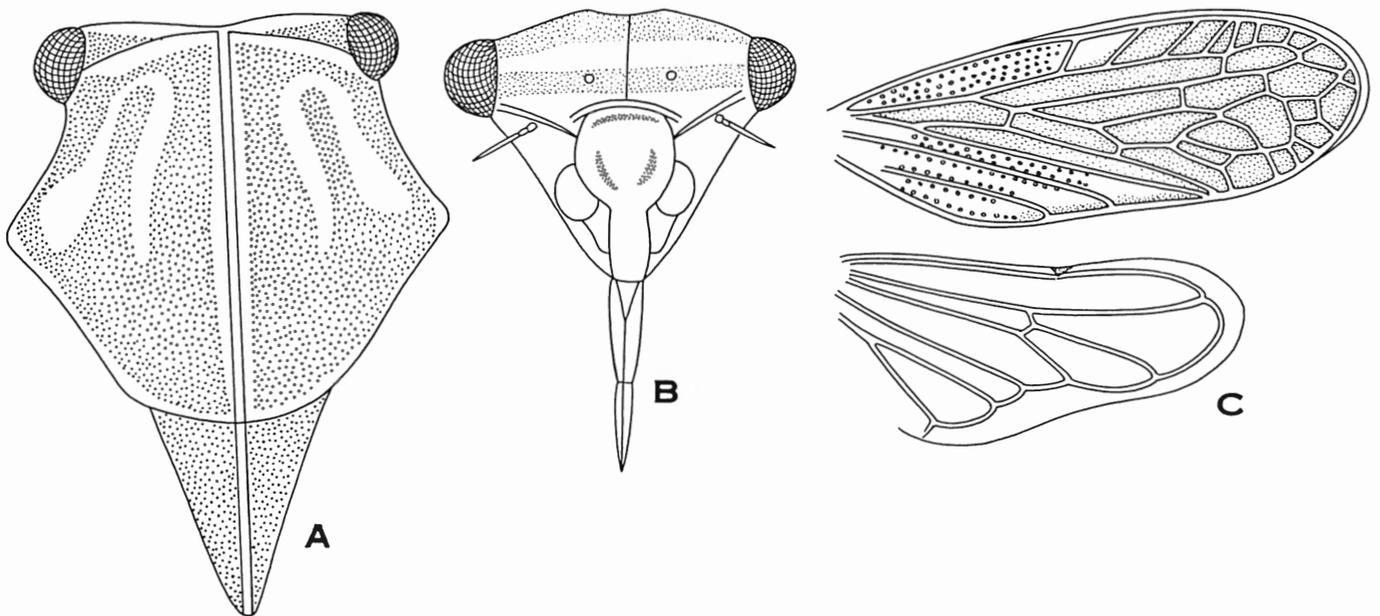


Fig. 6. - *A. pictum* GODING

A : head and pronotum (dorsal view); B : head (frontal view); C : tegmen and hind wing.

with brownish veins. Legs yellow and covered with pubescence; first and second femora with two brown bands on dorsal side, first and second tibiae with one longitudinal brown band; metathoracic tibia long, with one row of cucullate setae ventrally and three broad black rings, and one transverse row of the black apical spurs; tarsomeres of first and second pair of legs brown fumated, hind leg with apex of tarsomeres and claws black.

Abdomen yellow, a raised ridged trace of tympanic organ on each side of the basal tergite, a long reddish marking on each side extending from the 3rd to the 5th tergite; exposed part of ovipositor yellow, brown laterally. Male similar to female, but smaller in size; aedeagus strongly curved upwards, parameres spinose.

Nymph : yellow in colour. Head yellow, crown long and concave in middle, with two black stripes at dorsal view, three or four black bands at front view. Pronotum yellow, median carina thin and percurrent; ante-lateral margin black, two long black stripes and two black spots at disc. Four long black stripes on mesothoracic tergite. 7 longitudinal black stripes on abdominal tergites. Fore-wing buds yellow, posterior margin and apical area black, with a black stripe at basal and subcostal area respectively. Hind wing buds expands beyond fore-wing buds. Legs yellow; hind tibia with two black rings; claws black.

Etymology : the name "*pauciareaolum*" refers to the low number of areolets on the tegmina.

Types : holotype ♀; Allotype ♂. Paratypes 8 ♀, 2 ♂, 3 nymphs, Merida et Est Merida, Venezuela. (1500-8500 ft = 2186-2590 m), 25.XI.1938. Holotype, allotype, 2 ♀, 2 ♂, and nymphs in BMNH, others in KBIN, SMNH and EMNWAUC.

Differential characters :

This new species is closely related to *Aetalion vitticolle* STAL; table 1 gives a summary of the differential characters.

Distribution : Venezuela.

6. *Aetalion pictum* GODING (Fig. 6)

Aethalion [sic] *picta* GODING, 1926 : 105.

Medium sized, red and black. Length to tip of abdomen 6-10 mm, length to tip of tegmina 9-12 mm, length of tegmen 7-8 mm, width across shoulders 3.1-4.6 mm, width across eyes 2.7-3.2 mm, expanse of tegmina 21-23 mm.

Differential characters :

Basal margin of head straight; pronotum shining black, median carina, short stripe on each side and antelateral margins yellow; tegmina red, an irregular black stripe starting on base and widened apically, veins mostly yellow, infra-lateral lobe of pronotum yellow, with obtuse ruga. The species is easily recognized by the combination of yellow, red and black markings.

Material examined :

2 ♀, 2 ♂, Banós, Ecuador (KBIN).

Distribution :

Ecuador.

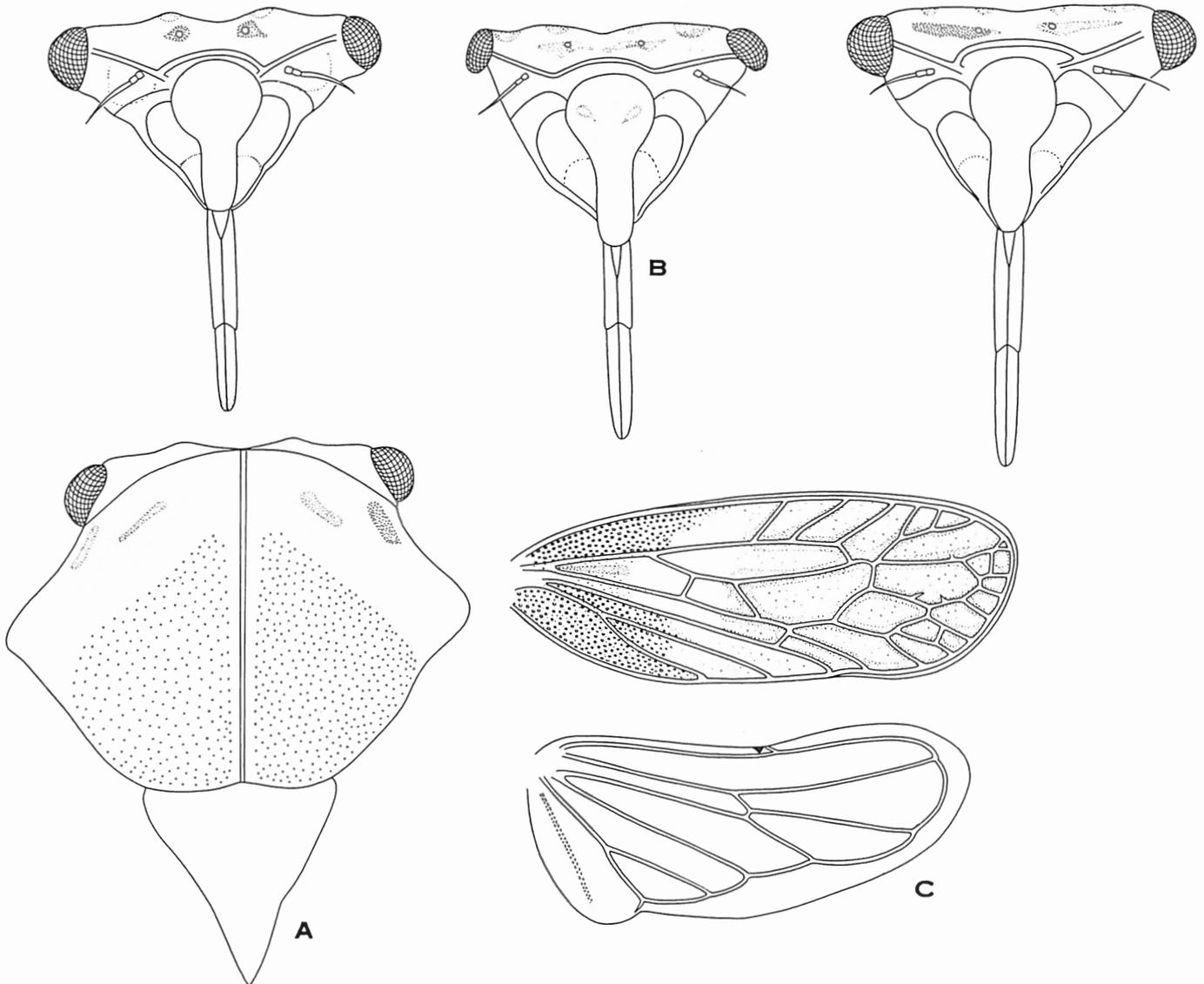


Fig. 7. - *A. basale* WALKER

A : head and pronotum (dorsal view); B : head with black markings (three times); C : tegmen and hind wing.

7. *Aetalion basale* WALKER (Fig. 7)

Aethalion [sic] *basale* WALKER, 1851 : 647.

Aethalion basale var β , WALKER, 1851 : 648.

Aethalion subfascia WALKER, 1858 : 168.

Large sized, red and brown in colour. Length to tip of abdomen 10-12 mm, length to tip of tegmina 12-13 mm, length of tegmen 10.5-11.5 mm, width across shoulders 6.2-6.7 mm, width across eyes 4.5-4.6 mm, expanse of tegmina 27-29 mm.

Differential characters :

Basal margin of head slightly concave in middle, 2 or 4 black spots adjoining the crown and 1 or 2 short black bands enclosing 2 ocelli; pronotum red, median carina red or yellow; tegmen with basal 1/3 red and minutely punctured, terminal 3/5 yellowish and subhyaline, the rest white and hyaline. Veins red, reddish apically and bordered with

black, a long black stripe behind R+M stem; legs reddish or yellow, hind tibia with 3 black marks.

Material examined :

3 ♀, types of *A. basale* WALKER. *A. basale* var. B WALKER and *A. subfascia* WALKER (BMNH).

Distribution :

Colombia, Bolivia.

8. *Aetalion rarobasale* YUAN, sp. nov. (Fig. 8)

Large sized, yellow and brown in colour, length to tip of abdomen 10-11 mm, length to tip of tegmina 13-13.5 mm, length of tegmen 11.5 mm, length of tegmen 11.5 mm, width across shoulders 6-6.7 mm, width across eyes 4.3-4.5 mm, expanse of tegmina 26.5-26.7 mm.

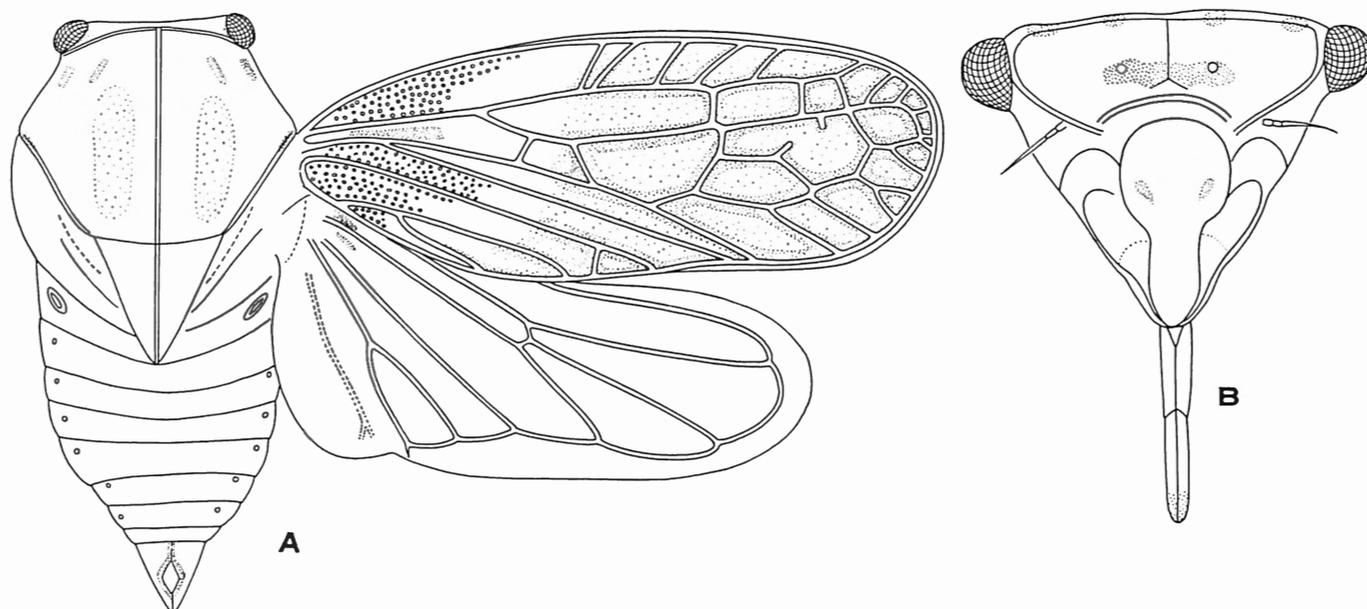


Fig. 8. - *A. rarobasale* YUAN, sp. n.

A : female adult ; B : head (frontal view).

Description :

Head testaceous, crown short, basal margin slightly concave in middle, and with 4 black spots adjoining crown; ocelli yellow, situated far below a line drawn through the center of the eyes, closer to each other than to the eyes, and a black band between them; epicranial suture distinct and testaceous; postclypeus with a black basal margin and two oblique black spots anteriorly; frons compressed; antennal ledge oblique and slightly sinuate; antennae black; apex of terminal segment of rostrum black.

Pronotum yellowish, almost sexangular, densely and minutely punctured, two oblique and short black stripes on each side anteriorly, post-lateral margins yellow and carinate, median carina percurrent, two larger reddish markings on disk, shoulders black; infra-lateral lobe testaceous, with a distinct, yellow and curved carina, not flattened. Scutellum convex anteriorly, black laterally. Tegmina suboblong, apical margin rounded, basal 2/5 yellow, terminal 3/5 brownish; veins yellowish, bordered with black at terminal 3/5; a long black stripe behind R+M stem. Hind wings white, hyaline, with brown veins. Legs testaceous, curved with pubescence; metathoracic tibia long, with one row of cucullate setae on ventral margin, three black markings dorsally, and a transverse row of apical spurs; basal part of tarsomeres, and most of dorsum of 3th tarsomere, and claw black.

Abdomen yellow, with a raised ridged trace of tympanic organ on each side of basal tergite, and an oblong reddish mark on each side extending from the 3rd to the 5th tergite; 9th tergite with a black stripe which is forked caudally; all spiraculæ black; 8th sternum, exposed part of ovipositor and its sides black.

Male unknown.

Types : Holotype ♀, paratype 1 ♀, Mugo, Colombia, KBIN.

Differential characters :

This new species is closely related to *A. basale* WALKER, but may be distinguished by the following characters : pronotum yellow; tegmen with yellow basal 2/5 and brownish terminal 3/5; the presence of a reddish oblong mark on each side extending from the 3rd to the 5th abdominal tergite; 9th abdominal tergite with a black stripe which is forked caudally in the female.

Distribution :

Colombia.

9. *Aetalion nigromarginatum* YUAN, sp. nov. (Fig. 9)

Medium to large sized species, yellow in colour, length to tip of abdomen 9-11 mm, length to tip of tegmina 10-13 mm, length of tegmen 9-11 mm, width across shoulders 4.5-6.1 mm, width across eyes 3.5-4.3 mm, expanse of tegmina 22-26 mm.

Description :

Head yellow, crown short, basal margin slightly concave in middle, and with two irregular black stripe; eye dark; ocelli reddish, situated below a line drawn through the centers of the eyes, closer to each other than to the eyes, with a black band between them; epicranial suture distinct and black; postclypeus with a black basal margin and two oblique and black spots anteriorly; lora with a triangular spot anteriorly; frons strongly elevated; antennal ledge oblique and straight, antennae black; apical 1/4 of terminal segment of rostrum black.

Pronotum almost sexangular, yellow, densely punctured, 2 oblique, short black stripes anteriorly on each side, post-lateral and posterior margins black, median carina distinct;

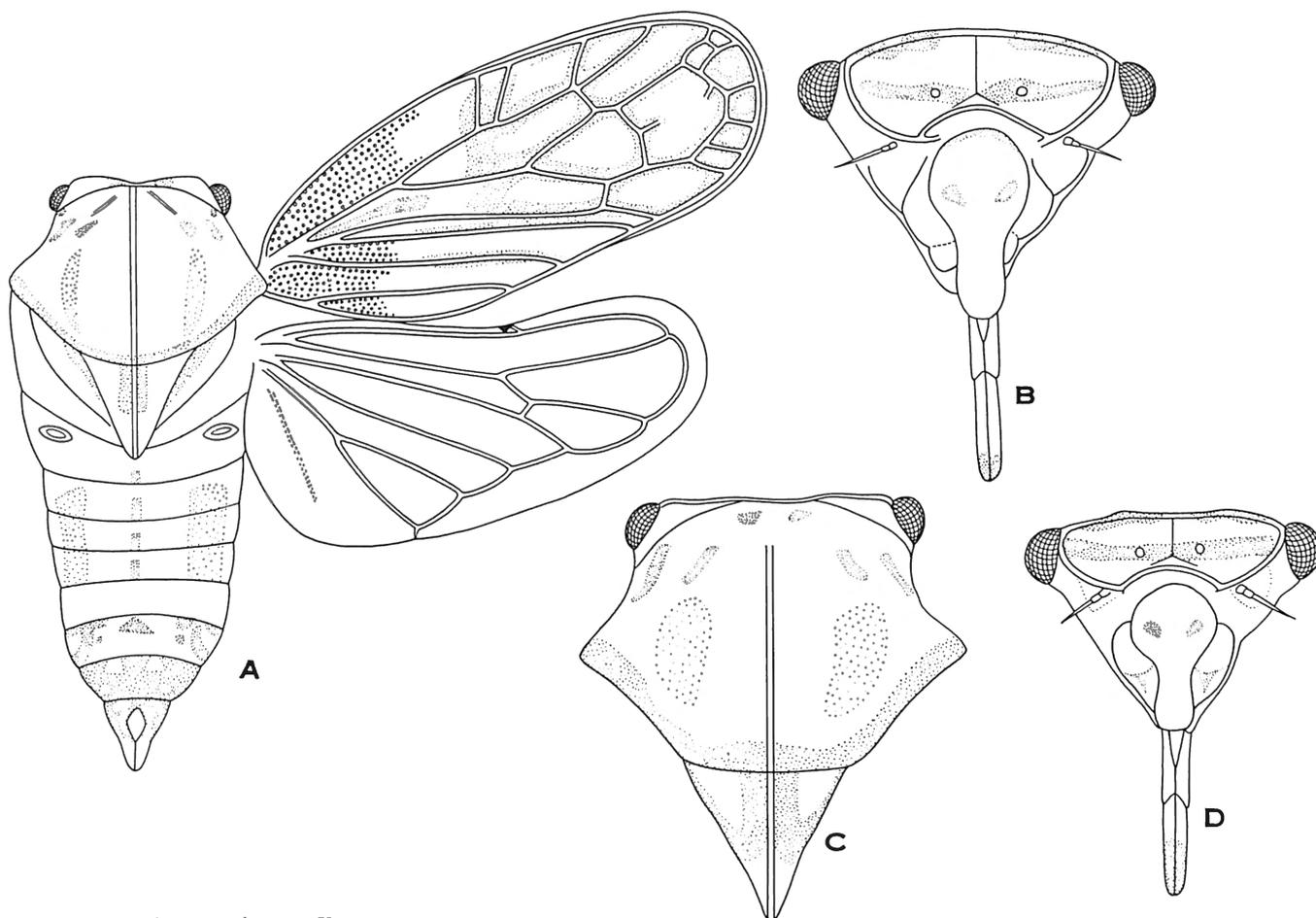


Fig. 9. - *A. nigromarginatum* YUAN, *sp. n.*

A : female adult ; B : female head (frontal view) ; C : male head and pronotum (dorsal view) ; D : male head (frontal view).

one reddish marking on each side posteriorly; infra-lateral lobe reddish, with a yellow carina, not flattened. Scutellum convex anteriorly, its side margin black, with oblong markings. Tegmina yellowish, basal 1/4 coriaceous and densely punctured, veins yellowish, bordered with black in terminal half, a long black stripe behind R+M stem. Hind wing white and hyaline, veins yellow. Legs yellow, covered with pubescence, metathoracic tibia long, with one row of cucullate setae on ventral margin, three black marks dorsally, and a transverse row of spurs apically; dorsum of 2nd and 3rd tarsus and claws black.

Abdomen yellow, with a raised ridged trace of tympanic organ on each side of the basal tergite; a black median stripe and a reddish oblong markings on each side extending from the 3rd to the 5th tergite, and various black bands, stripes and spots at 7th, 8th and 9th tergites; spiraculæ black; 8th sternum, exposed part of the ovipositor and its side black.

Male smaller than female, pronotum with two black spots anteriorly.

Types : holotype ♀, allotype ♂, paratypes 3 ♀, 1 ♂, Colombia, 15.XI.1974, collected by G. B. ROBLE. Holotype, allotype and 1 ♂ paratype in BMNH; others in KBINB, BMNH and EMNWAUC respectively.

Differential characters :

This new species is closely related to both *A. rarobasale* YUAN, n. sp. and *A. basale* WALKER. The differential characters are given in table 2.

Distribution :

Colombia.

10. *Aetalion parviceps* SIGNORET

Aethalion [sic] *parviceps* SIGNORET, 1851 : 671.

Large sized, testaceous, length to tip of abdomen 10-11 mm, length to tip of tegmina 12.5-13 mm, length of tegmen 10-11 mm, width across shoulders 4.9- 5.5 mm, width across eyes 3.1-3.2 mm, expanse of tegmina 24-26 mm.

Differential characters :

Head proportionally small, basal margin straight, with two brown spots enclosing ocelli in front view; pronotum and base of tegmen yellowish-brown, remotely black punctured; tegmen mostly white and hyaline, with irregular black veins; carina of infra-lateral lobe of pronotum slightly

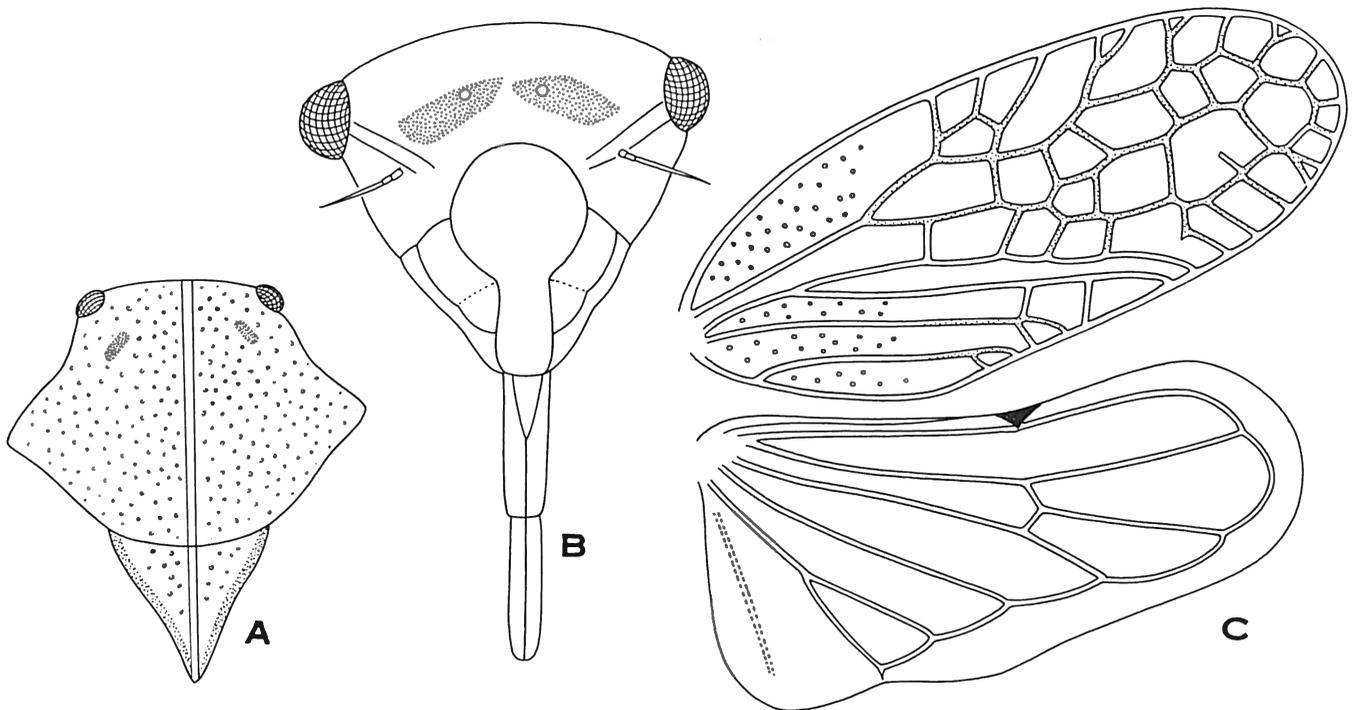


Fig. 10. - *A. parviceps* *SIGNORET*
 A: head and pronotum (dorsal view); B: head (frontal view); C: tegmen and hind wing.

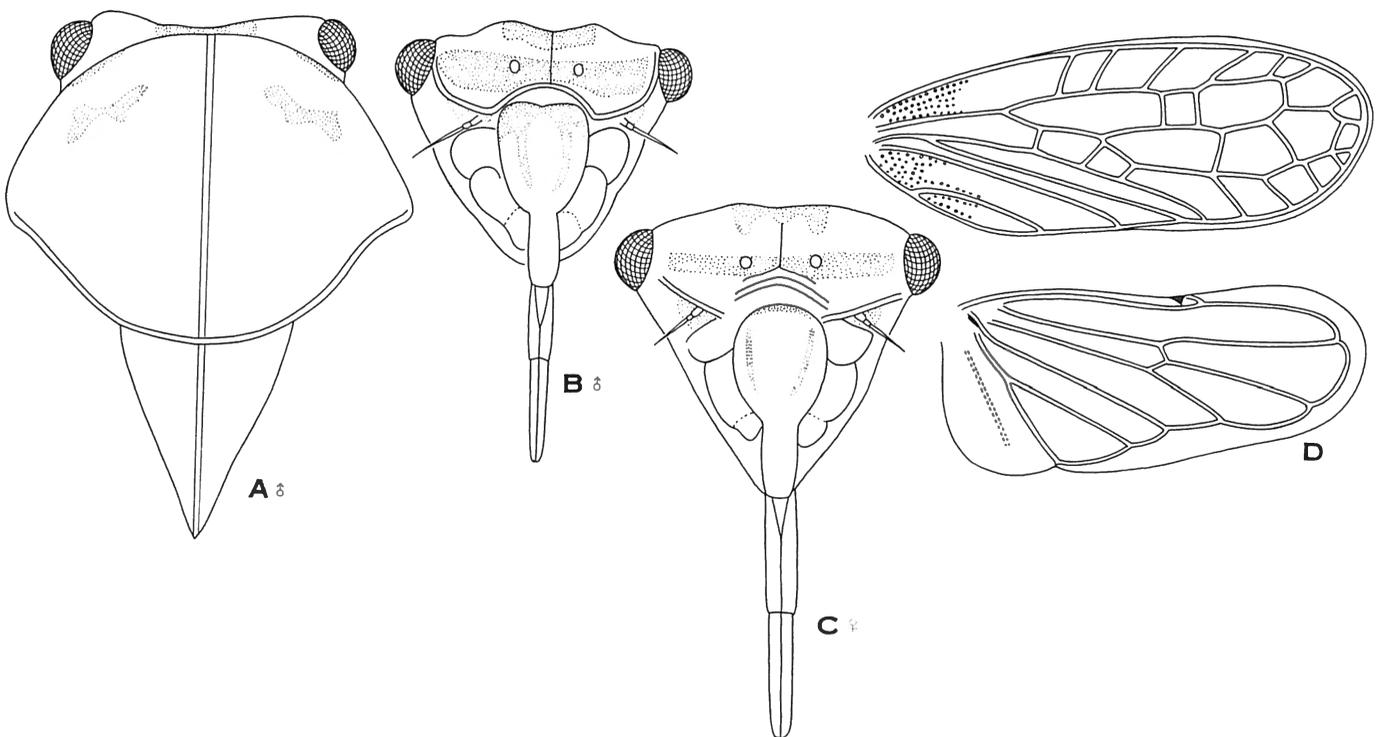


Fig. 11. - *A. latreillei* *SIGNORET*
 A: head and pronotum (dorsal view); B: male head (frontal view); C: female head (frontal view); D: tegmen and hind wing.

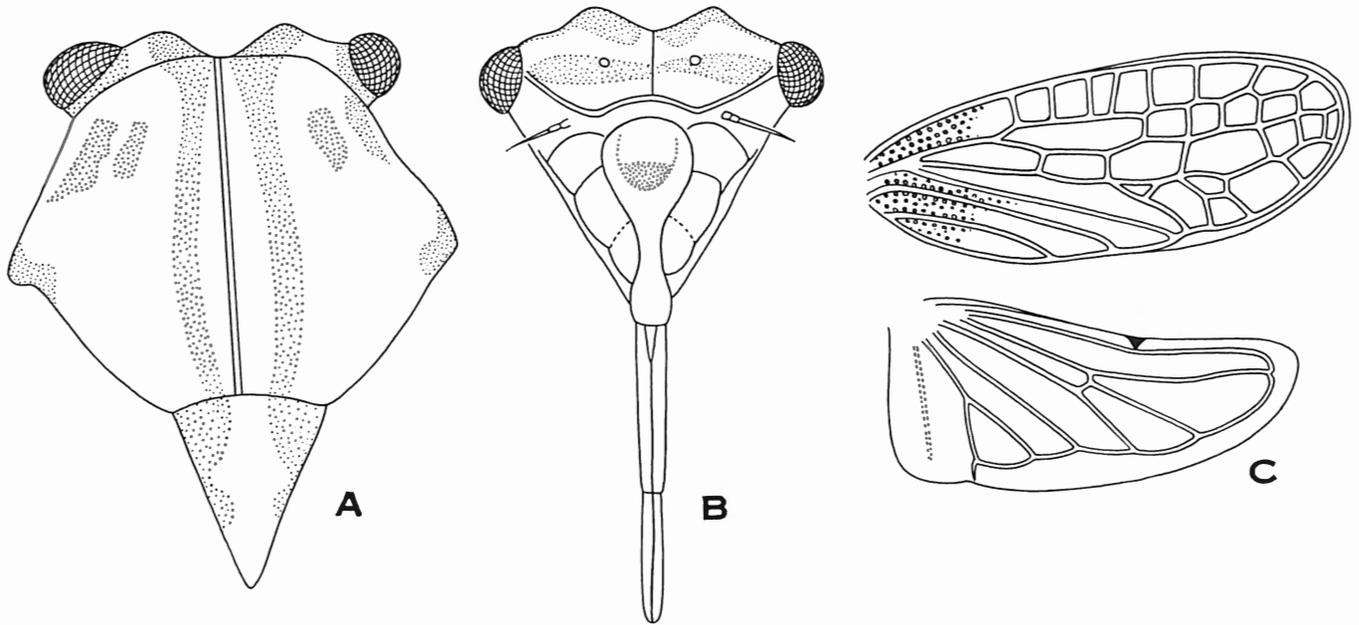


Fig. 12. - *A. brunonervosum* YUAN, sp. n.

A. head and pronotum (dorsal view); B : head (frontal view); C : tegmen and hind wing.

flattened and expanded outwards; metathoracic tibia with two black rings.

Material examined :

1 ♀ choachi, Colombia, V. LALLEMAND determined; 1 ♀ Camiie, Brazil, coll. VAN VOLXEM (KBIN).

Distribution :

Brazil, Venezuela, Chile, Colombia (new record).

11. *Aetalion latreillei* SIGNORET

Aethalion [sic *latreillei* SIGNORET, 1851 : 672.

Aethalion [sic] *unicolor* SIGNORET, 1851 : 672.

Large sized, yellowish, length to tip of abdomen 8-11 mm, length to tip of tegmina 10-12.5 mm, length of tegmen 9-10 mm, width across shoulders 3.7- 4.6 mm, width across eyes 2.7-3.2 mm, expanse of tegmina 22-24 mm.

Differential characters :

Basal margin of head sinuate, the broad concavity in middle occupied by short black band, and a transverse black band across eyes; pronotum densely punctured with irregular black spots on side anteriorly; tegmen yellowish-brownish, subhyaline, veins concolorous, metathoracic tibia with three black rings.

Material examined :

Limbani, Peru (9500 ft = 1695 m), (KBIN).

Distribution :

Chile, Peru (new record).

12. *Aetalion nigrum* SIGNORET

Aethalion [sic] *nigrum* SIGNORET, 1851 : 677.

Measurements : medium sized, brown-black in colour, length to tip of tegmina 7 mm (SIGNORET, 1851).

Differential characters :

Basal margin of head distinctly sinuate in middle; pronotum black, densely and minutely punctured, median carina developed, margins yellow; tegmen brown, with white veins on the radial portion; abdomen black; legs brown, metathoracic tibia with a yellowish ring.

No specimens examined by me (YF), but easy to recognise by the above characters described by SIGNORET and GODING.

Distribution :

Brazil.

13. *Aetalion brunovenosum* YUAN, sp. nov. (Fig. 12)

Medium sized, brown in colour, length to tip of abdomen 6.5-8 mm, length to tip of tegmen 8-9.5 mm, length of tegmen 6.5-8 mm, width across shoulders 4.1-4.3 mm, width across eyes 3.1-3.2 mm, expanse of tegmina 15-16 mm.

Description :

Head yellow, a broadly triangular concavity on the middle of the basal margin, two black bands at front view, one of them near the crown, more sinuate, the other across the eyes, these brown; ocelli yellow, situated below a line

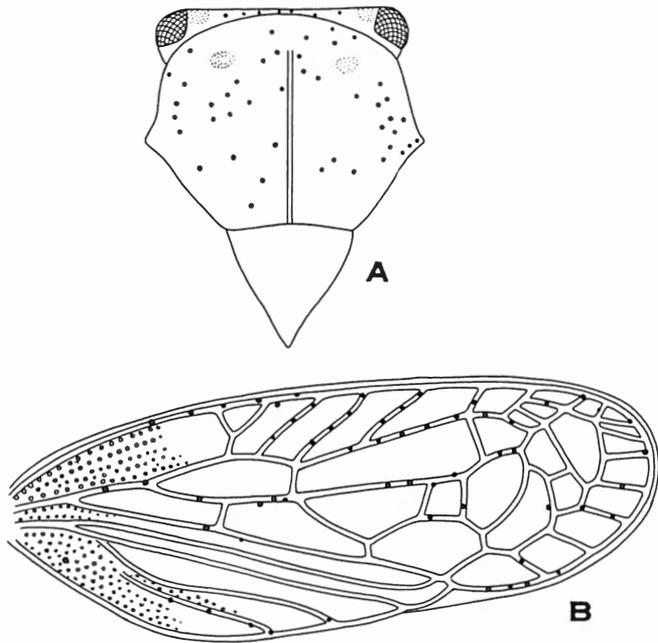


Fig. 13. - *A. minor* FOWLER
A : head and pronotum (dorsal view); B : tegmen.

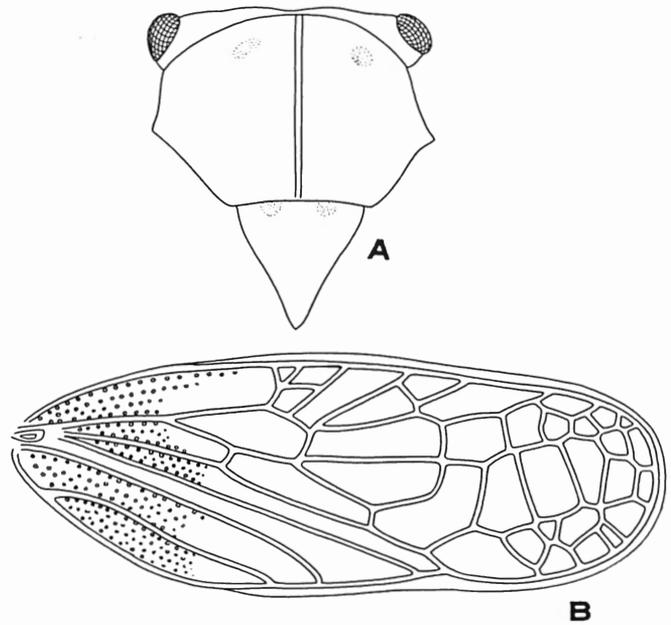


Fig. 14. - *A. quadratum* FOWLER
A : head and pronotum (dorsal view); B : tegmen.

drawn through the centers of the eyes, equidistant from each other and from the eyes; epicranial suture distinct and brown; frons convex, antennal ledge oblique and slightly sinuate; postclypeus with convex disc and submarginal area, a semicircular dark mark on disc anteriorly; rostrum yellow.

Pronotum brownish, almost sexangular, densely and minutely punctured, median carina percurrent, two slightly curved, longitudinal black stripes on disc, with, more laterally, two black short stripes close to anterior margin; shoulders black, carina of infra-lateral lobe slightly flattened and expanded outwards. Scutellum convex and punctured anteriorly, two black markings on each side, the anterior one larger. Tegmina with basal 1/4 coriaceous and punctured, yellow-brown, remaining part grey, hyaline, and veins brown. Legs yellow-brown, metathoracic tibia long, with one row of cucullate setae below, two dark brown rings, and a transverse row of black apical spurs; last tarsomere of each tarsite and claw embrowned.

Abdomen brown, 2 brown spots on the 7th tergite and 4 brown spots on 8th tergite; exposed part of ovipositor and its side black.

Types : holotype ♀, paratype 1 ♀, Paraguay, XII-1956, kept in BMNH.

Differential characters :

This new species is related to *A. nigrum* SIGNORET. The differential characters are given in table 3.

Distribution :

Paraguay.

14. *Aetalion nervosopunctatum* SIGNORET

Aethalion [sic] *nervosopunctatum* SIGNORET, 1851 : 679.

Medium sized, dull brownish, length to tip of tegmina 9-10 mm (SIGNORET, 1851).

Differential characters :

Basal margin of head straight; dark spots on the testaceous veins of tegmina, on head and pronotum; metathoracic tibia with 3 rings.

No specimen examined by me (YF), but easily recognizable by the above characters.

Distribution :

Mexico, USA (Arizona), West Indies, Ecuador.

15. *Aetalion minor* FOWLER (Fig. 13)

Aethalion [sic] *nervosopunctatum* var. *minor* FOWLER, 1897 : 172.

Small sized, testaceous, length to tip of abdomen 5.1 mm, length to tip of tegmina 6.6 mm, length of tegmen 5.1 mm, width across shoulders 2.4 mm, width across eyes 2.1 mm, expanse of tegmina 12.2 mm, width across carinae of infralateral lobe of pronotum 2.4 mm.

Differential characters and discussion :

Basal margin of head slightly sinuate in middle; frons

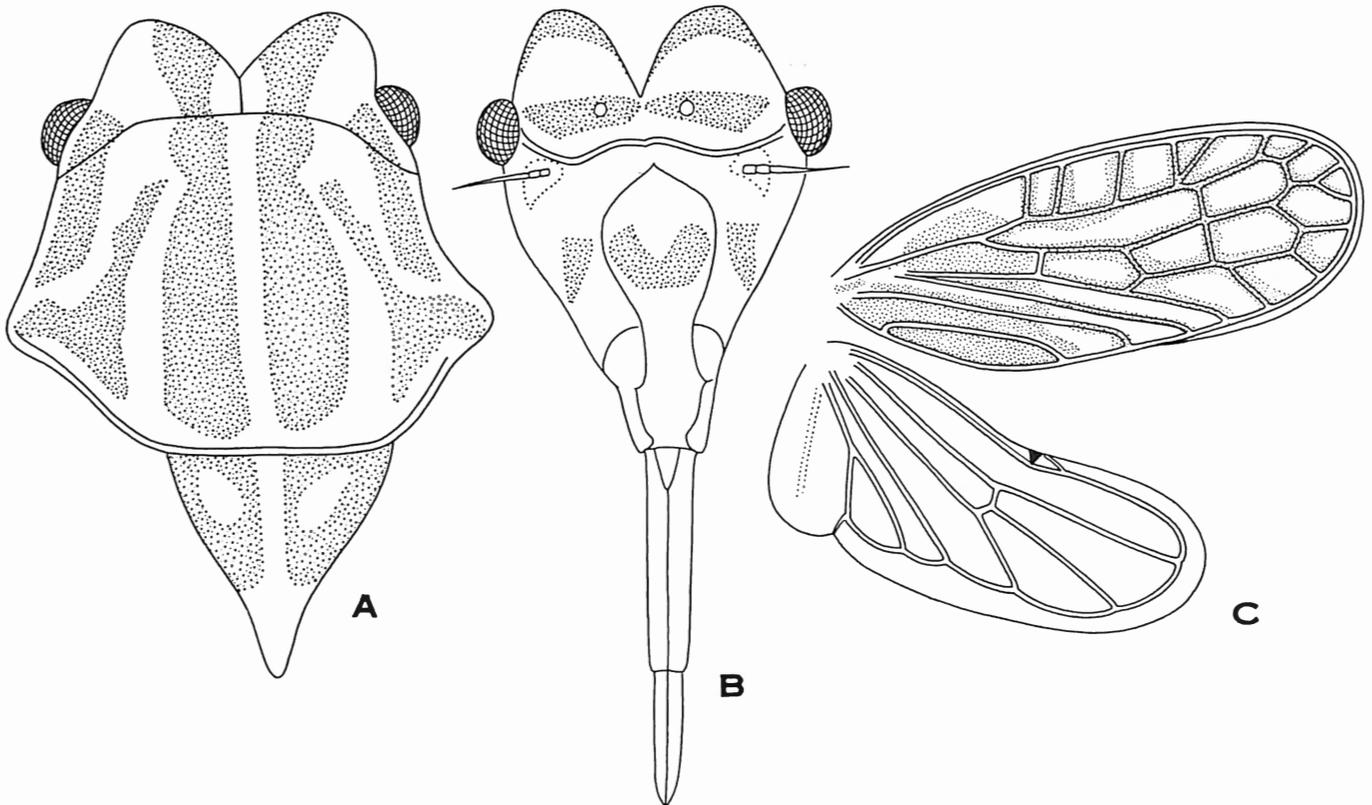


Fig. 15. - *A. servillei* (DE LAPORTE)

A : head and pronotum (dorsal view); B : head (frontal view); C : tegmen and hind wing.

convex with an obsolete black band across the eyes. pronotum in proportion shorter and more declivitous as compared to *A. nervosopunctatum*, carinae of infra-lateral lobes foliaceously flattened and expanded outwards; brownish spots on head, pronotum and veins of pronotum. Metathoracic tibia long, with one row of cucullate setae below, one row of spines, and a transverse row of black apical spurs, without black stripes or rings.

Aetalion minor FOWLER and *A. nervosopunctatum* SIGNORET are treated here as separate species. *A. minor* is much shorter (6.6 mm), the basal margin of the head is slightly sinuate and not straight as in *A. nervosopunctatum*, and the pronotum is almost as long as wide in *O. nervosopunctatum*, while wide than long in *A. minor*.

Material examined :

1 ♀, the type of *A. nervosopunctatum* var. *minor* FOWLER (BMNH).

Distribution :

Mexico.

16. *Aetalion quadratum* FOWLER (Fig. 14)

Aethalion [sic] *quadratum* FOWLER, 1897 : 172.

Polydontoscelis cintifrons ASHMEAD, 1899 : 387.

Small sized, griseo-testaceous, length to tip of tegmina 6.5-7 mm, length of tegmen 5.5 mm, width across shoul-

ders 2.3-3 mm, width across eyes 2.3 mm, expanse of tegmina 13.3 mm, width across carinae of infra-lateral lobe of pronotum 2.3 mm.

Differential characters :

Oblong, subparallel; basal margin of head slightly sinuate; head without black band on face; pronotum and scutellum without dark spots, densely punctured; pronotum distinctly wider than long, median carina percurrent; two brown callosities on side anteriorly; carinae of infra-lateral lobes of pronotum flattened and expanded outwards; tegmen grey and hyaline, veins dark brown.

Material examined :

The type of *A. quadratum* FOWLER, (BMNH).

Distribution :

Panama, U.S.A. (Florida), Costa Rica.

Host plant :

Ilex glabra (gall-berry bushes).

17. *Aetalion servillei* (DE LAPORTE) (Fig. 15)

Schizia Serville DE LAPORTE, 1832 : 224.

Aethalion [sic] *serville* var. *hilare* WALKER, 1858 : 169.

Medium sized, with red, yellow and black, length to tip of abdomen 7.2-9 mm, length to tip of tegmina 7.8-9 mm,

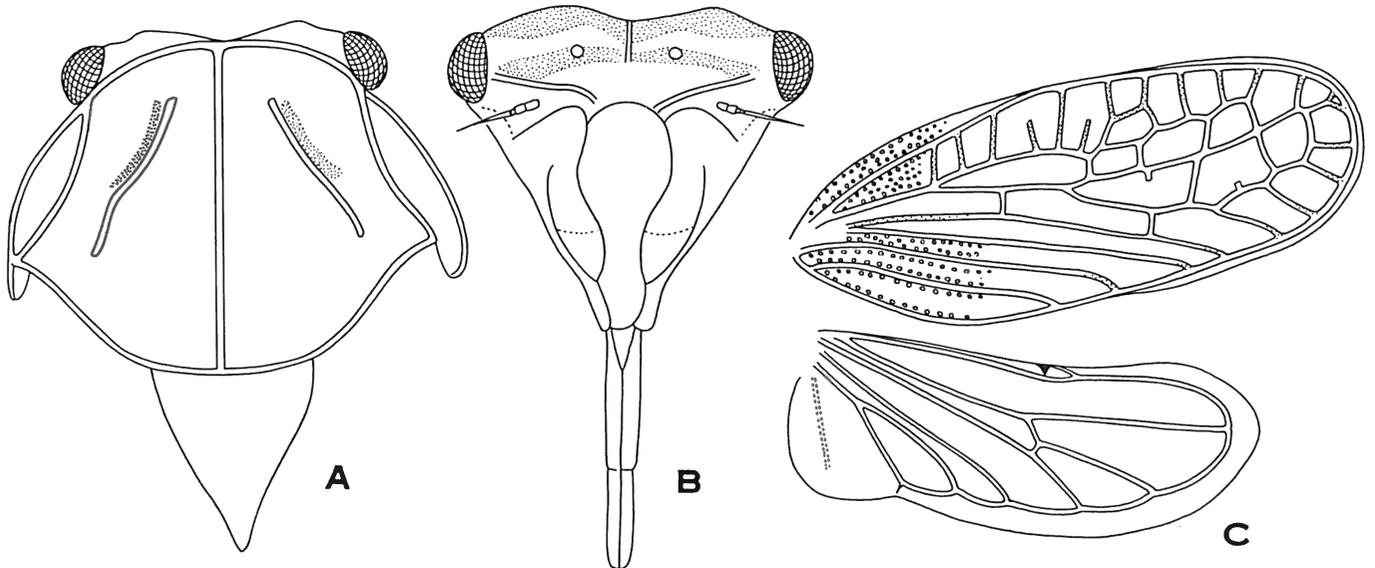


Fig. 16. - *A. gratum* WALKER

A: head and pronotum (dorsal view); B: head (frontal view); C: tegmen and hind wing.

length of tegmina 5.8-7.5 mm, width across shoulders 2.8-3.8 mm, width across eyes 2.3-2.8 mm, expanse of tegmina 14-19 mm.

Differential characters :

Crown with a deep notch in middle, a conical horn on each side partly bordered by black; a transverse black band

across eyes; pronotum yellowish-red, with 4 broad black stripes on disc, ante-lateral margins black; carina of infra-lateral lobe yellow, foliaceously flattened, and sinuate anteriorly; basal 1/3 of tegmen coriaceous and punctate, the remaining part white and hyaline, veins black and bordered with black, yellowish towards base; abdomen yellow, with black spots; legs yellow, metathoracic tibia with two black rings.

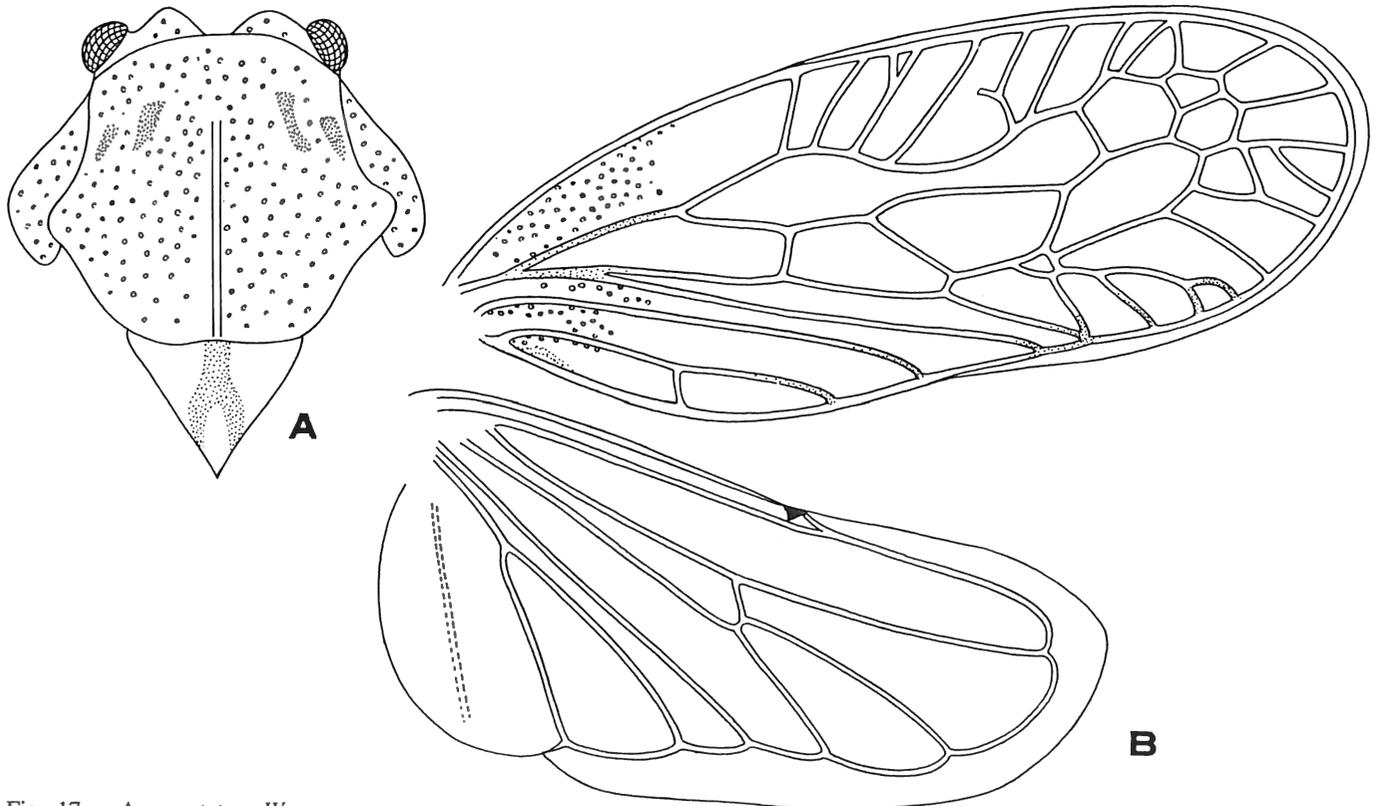


Fig. 17. - *A. punctatum* WALKER

A: head and pronotum (dorsal view); B: tegmen and hind wing.

Material examined :

1 ♀, the type of *A. hilare* WALKER (BMNH); 1 ♀, Camiie, Edm. Schmidt det. *A. servillei* (KBIN); 11 ♀, 2 ♂, Parana, Brazil, 15- XII-1979, leg. R. D. BLAUWE (KBIN).

Distribution :

Brazil, Colombia, Peru.

18. *Aetalion gratum* WALKER (Fig. 16)

Aethalion [sic] *gratum* WALKER, 1858 : 169.

Aethalion [sic] *dilatatum* STÅL, 1864 : 73.

Medium sized, green and brownish, length to tip of abdomen 7-9.4 mm, length to tip of tegmen 8-12.8 mm, length of tegmen 7-10.3 mm, width across shoulders 3.8-5.1 mm, width across eyes 3.7 mm, expanse of tegmina 18.5-24.8 mm; width across carinae of infra-lateral lobes of pronotum 4.5-5.5 mm.

Differential characters :

A large impression on the middle of crown, head in front view with two black bands; pronotum greenish yellow, with three yellow black-bordered carinae, margins yellow and carinate; carinae of infra-lateral lobe roundly flattened; basal 1/3 of tegmen green, densely punctured, with a yellow stripe; the remaining part white, hyaline, veins black, partly testaceous; legs yellow, metathoracic tibia long, with black and reddish marks at base.

Material examined : 1 ♂, the type of *A. gratum* WALKER (BMNH); 2 ♂, 2 ♀, types of *A. dilatatum* STÅL (SMNH); 2 ♀, 1 ♂, Uruapa, Mich. III-1942; 1 ♂, unknown locality (KBIN).

Distribution :

Mexico, Guatemala, Panama, U.S.A. (new records).

19. *Aetalion punctatum* WALKER (Fig. 17)

Aethalion [sic] *punctatum* WALKER, 1851 : 646.

Large sized, testaceous, length to tip of abdomen 14 mm, length to tip of tegmina 16 mm, length of tegmen 12 mm, width across shoulders 5.2 mm, width across eyes 4.0 mm, expanse of tegmina 30 mm, width across carinae of infra-lateral lobes of pronotum 5.7 mm.

Differential characters :

Head yellow, a large and triangular notch on the middle of crown, in front view with two black bands; pronotum testaceous, remotely black-punctured, with 4 short black stripes anteriorly, median carina distinct in the middle and posteriorly; scutellum distinctly gibbous anteriorly, with a black stripe forking near the tip; basal 1/4 of tegmen coriaceous and remotely black-punctured, the rest whitish and hyaline, veins testaceous, partly dark brown, R+M

stem with red basal and black terminal half, R curved backwards, M curved forwards; legs testaceous, metathoracic tibia with irregular black spots; carinae of infra-lateral lobes of pronotum roundly flattened and expanded beyond shoulders; disc of areolets of tegmina white.

Material examined :

1 ♀, the type of *A. punctatum* WALKER (BMNH).

Distribution :

Colombia.

20. *Aetalion pulchrum* WALKER (Fig. 18)

Aethalion [sic] *pulchrum* WALKER, 1851 : 647.

Aethalion [sic] *curvatum* SIGNORET, 1851 : 678.

Large sized, testaceous, disc of areolets of tegmina red, length to tip of abdomen 10-12 mm, length to tip of tegmina 14-16 mm, length of tegmen 10-12 mm, width across shoulders 5.4-6.0 mm, width across eyes 4.2-4.7 mm, expanse of tegmina 26-27 mm, width across carinae of infra-lateral lobes of pronotum 6.4-7.2 mm.

Differential characters and discussion :

A. pulchrum WALKER is very similar to *A. punctatum* WALKER, and it was considered as synonymous of the latter by all subsequent authors. After examination of the types of both taxa and some additional material we consider them as two separate species. The differences are given in table 4.

According to SIGNORET's description and figure *A. curvatum* SIGNORET (1851) is a junior synonym of *A. pulchrum* WALKER, and not of *A. punctatum* WALKER.

Material examined :

1 ♂, the type of *A. pulchrum* WALKER (BMNH); 1 ♀, camiie, Brazil, collected by VAN VOLXEM, Edm. SCHMIDT (1911) determined *A. curvatum* SIGNORET; 1 ♀, Colombia, V. LALLEMAND det. *A. pulchrum* WALKER (KBIN).

Distribution :

Colombia, Brazil.

21. *Aetalion nigrofacum* YUAN, sp. nov. (Fig. 19)

Large sized, yellowish, tegmina with two obscure brown markings, veins yellow and black. Length to tip of abdomen 14-17 mm, length to tip of tegmina 14-16.5 mm, length of tegmen 12-13.5 mm, width across shoulders 6.4-6.8 mm, width across eyes 3.9-4.2 mm, expanse of tegmina 27-28 mm, width across carinae of infra-lateral lobes of pronotum 6.5-6.9 mm.

Description :

Head yellow, covered with long hairs; crown short, vertex with a large, triangular notch, two small spots along basal

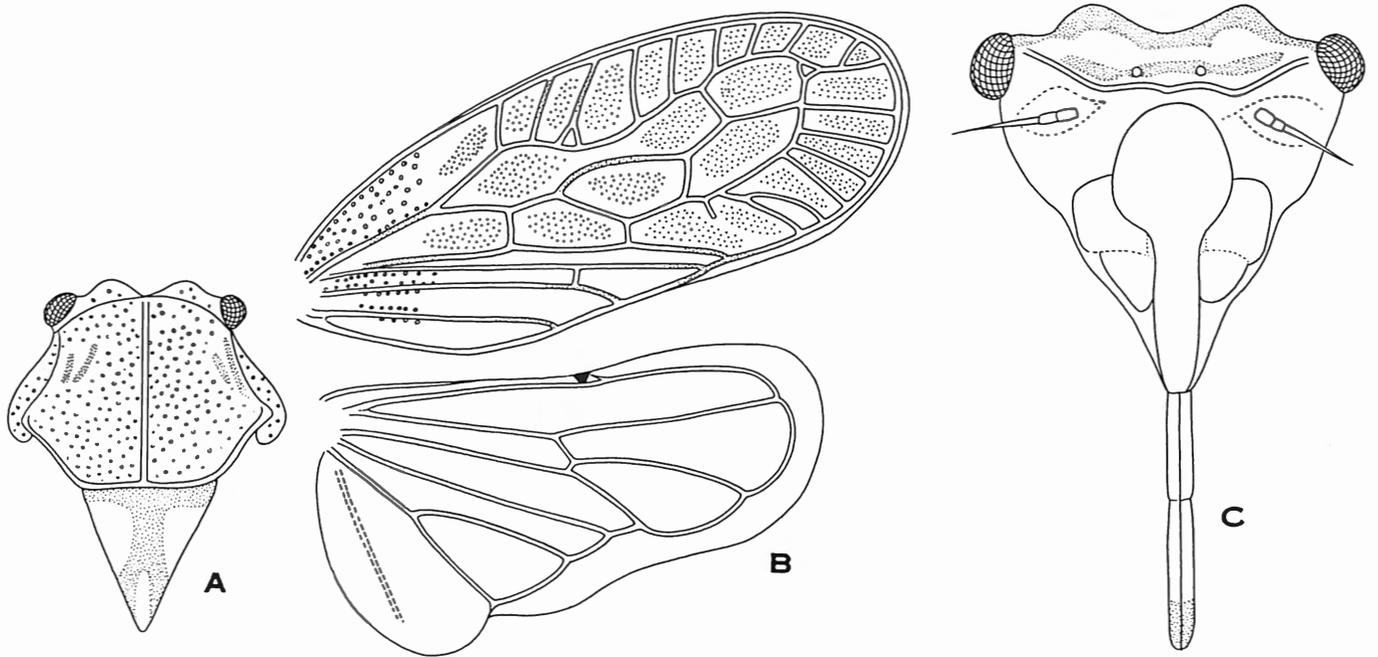


Fig. 18. - *A. pulchrum* WALKER

A : head and pronotum (dorsal view); B : tegmen and hind wing; C : head (frontal view).

margin; oculus brownish; ocelli testaceous, situated slightly below a line drawn through the centers of the eyes, closer to each other than to the eyes; epicranial suture distinctly black; face with a large black marking between a line drawn through the superior margin of the eyes and a line drawn through inferior margin of the eyes; frons yellow except for its black middle; antennal ledge oblique and slightly sinuate, antennal impression deep, black,

antennae dark brown; terminal segment of rostrum black. Pronotum yellowish, almost sexangular, densely and minutely punctured, with a fuscous irregular and concave stripe on each side anteriorly; median carina percurrent, its middle black; carina of infra-lateral lobes roundly flattened, slightly expanded beyond the shoulders. Scutellum subtriangular, gibbous on disk, two small black spots anteriorly, sides black. Tegmen yellowish, basal 1/4 coriaceous

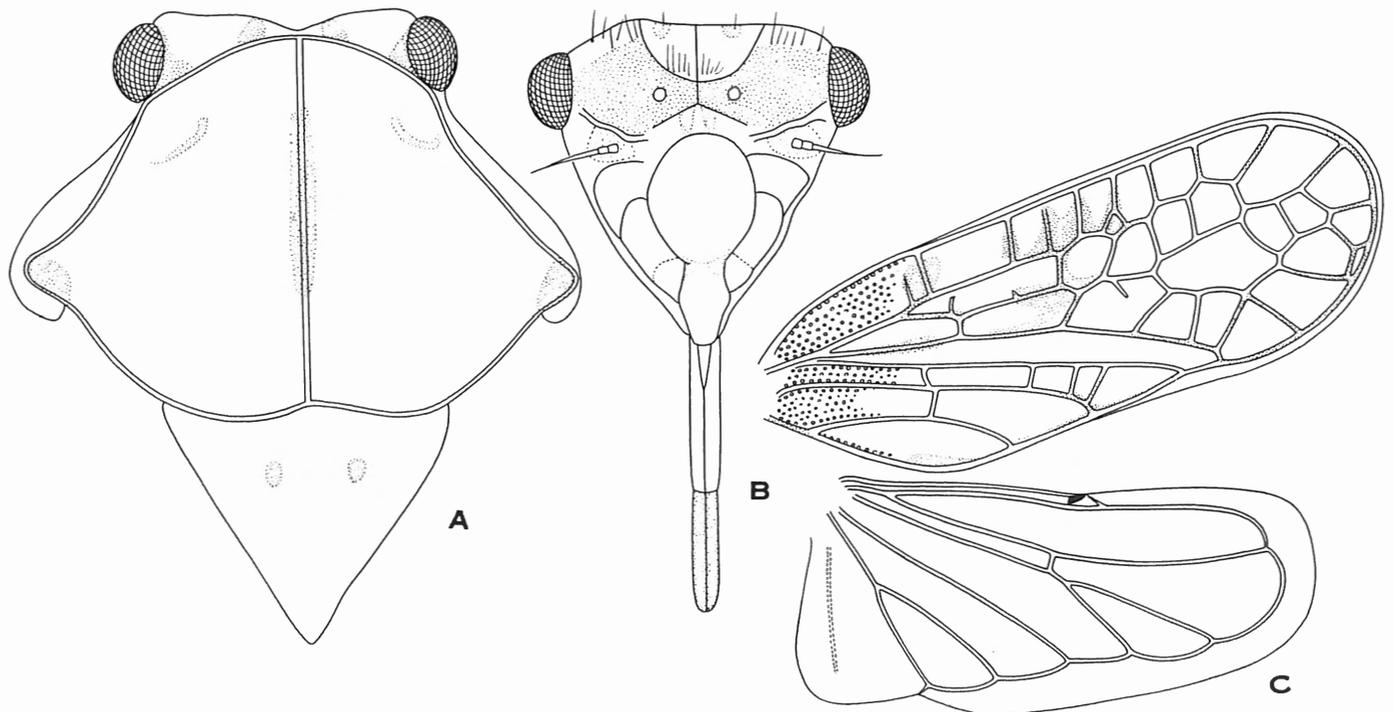


Fig. 19. - *A. nigrofacum* YUAN, sp. n.

A : head and pronotum (dorsal view); B : head (frontal view); C : tegmen and hind wing.

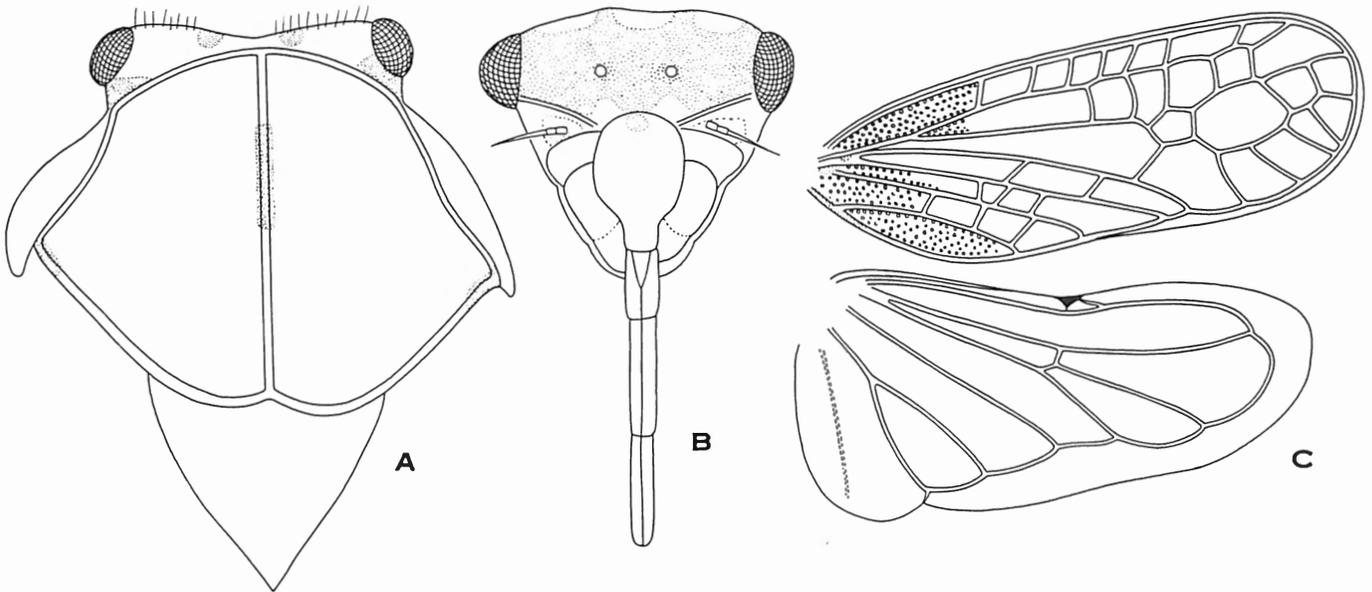


Fig. 20. - *A. flavescens* YUAN, sp. n.

A : head and pronotum (dorsal view); head (frontal view); C : tegmen and hind wing.

and densely punctured, the rest hyaline with a brown irregular spot at 1/4 and 1/2 distance of base respectively, veins yellowish and black. Hind wings white and hyaline, veins yellowish. Legs yellow, covered with long hairs, metathoracic tibia long, with one row of cucullate setae below, and three black stripes at dorsum and a transverse row of black apical spurs, black spots of variable size on each tarsomere, claw brown.

Abdomen yellow with a broad black band from the base and narrowing distally into smaller black isolated spots situated along median line; spiraculæ black; exposed part of ovipositor black.

Male unknown.

Nymph: head black in colour, with long hairs; two yellow markings on the crown; pronotum yellow, two black round markings anteriorly; mesotergite mostly black, two yellow spots adjoining anterior margin, the middle and posterior margin yellow, fore buds yellow, a long longitudinal black stripe in middle; legs with black markings and long hairs, metathoracic tibia long; black marking at its terminal part, apical part of 1st and 3rd tarsus and claw black.

Types: holotype ♀, Paratypes 7 ♀, 2 nymphes, Canor, Ecuador (2600 m), P. O. SIMONS. Holotype in BMNH, others in BMNH, KBIN, and EMNWUC respectively.

Differential characters:

This new species resembles *Aetalion punctatum* WALKER, but may be distinguished by the following characters: tegmen yellowish, with an irregular brownish mark on 1/4 and 1/2 distance of base respectively; veins yellowish and black, with yellowish cells enclosed by black veins; R not curved backwards, M not curved forwards; tip of abdomen is as long as one of tegmina sometimes expands beyond tip of tegmina.

Distribution:

Ecuador.

Etymology: The name refers to the black colour of the face.

22. *Aetalion flavescens* YUAN, sp. nov. (Fig. 20)

Large sized, yellowish, length to tip of abdomen 9-14 mm, length to tip of tegmina 12-14.5 mm, length of tegmen 9.5-12 mm, width across shoulders 4.9- 5.7 mm, width across eyes 3.6-3.8 mm, expanse of tegmina 24-27 mm, width across carina of infralateral lobes of pronotum 5.2-5.9 mm.

Description:

Head yellow, covered with long hairs, crown yellow, with, in dorsal view, two black spots, and vertex with a large notch; oculus brownish; ocelli yellow, situated below a line drawn through the centers of the eyes, closer to each other than to the eyes; epicranial suture distinctly black; face with a large black marking between a line drawn through the superior margin of the eyes and superior margin of the frons, frons yellow except for its black middle; antennal ledge yellow, oblique and slightly sinuate, antennal impression deep and dark, antennae brown; terminal segment of rostrum black.

Pronotum yellowish, almost sexangular, densely and minutely punctured, a brown irregular and concave stripe on each side anteriorly, median carinae percurrent, its middle black; shoulders black; post-lateral margins and posterior margin yellow and carinate; carinae of infra-lateral lobe roundly flattened and expanded beyond the shoulders. Scutellum subtriangular, disk gibbous. Tegmen yellowish, basal 1/5 coriaceous and densely punctured, with black

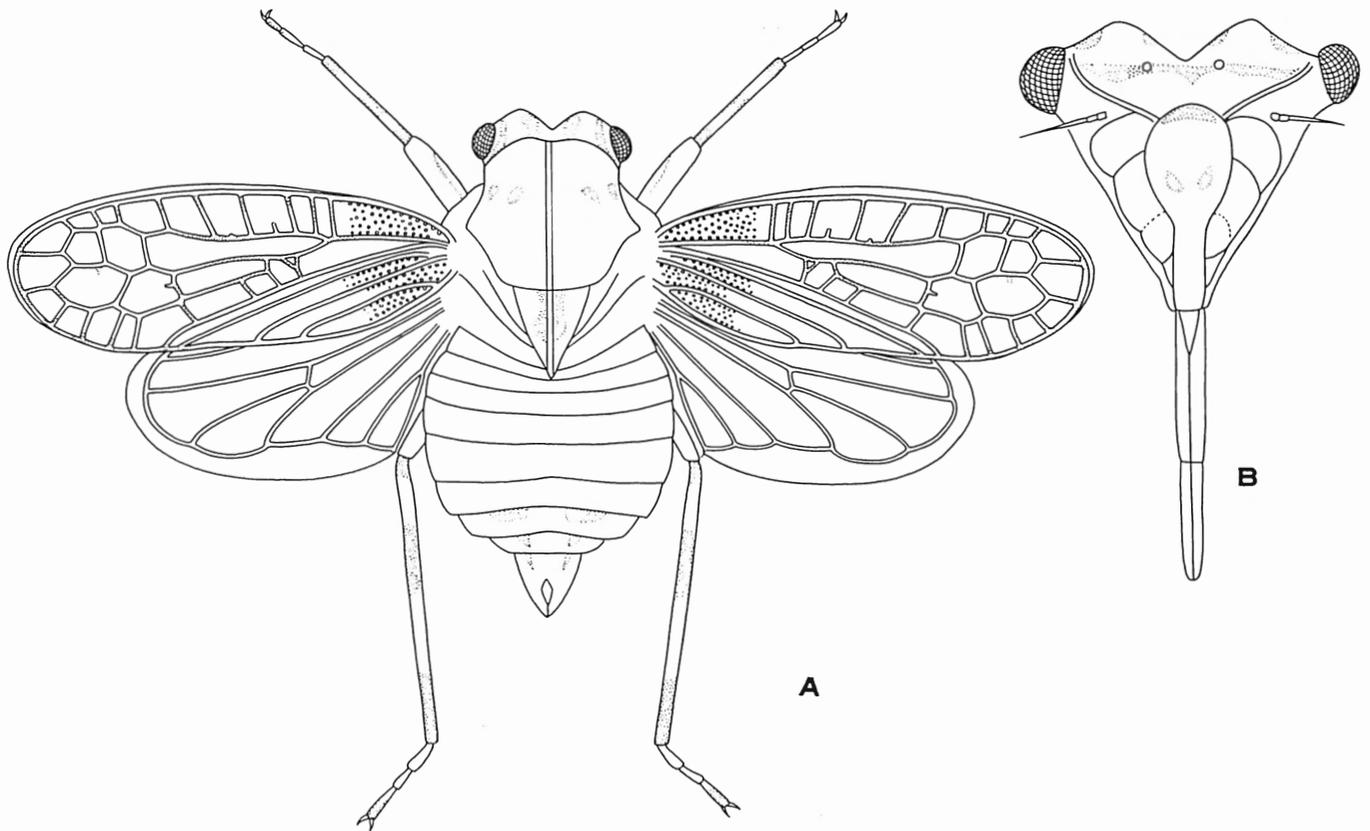


Fig. 21. - *A. fissum* WALKER
A. female adult; B: head (frontal view).

posterior margin, veins yellow except for Cu which has a black apex, two small irregular black spots near basal angle of tegmen. Hind wings grey, veins yellowish. Legs testaceous, covered with long hairs, metathoracic tibia long, with one row of cucullate setae below, three black stripes at dorsum, and a transverse row of black apical spurs; basal and terminal part of 1st and 3rd tarsus, and claw black.

Abdomen testaceous, five basal tergites black, black stripes and spots on 6th to 8th tergites; exposed part of ovipositor testaceous, its side black.

Male similar to female, but smaller.

Types: holotype ♀, allotype ♂, Culillin Riobomba, Ecuador (3000-4000 mm), kept in KBIN.

Differential characters:

This species is closely related to the preceding *Aetalion nigrofacum*, and can be distinguished by the following characters: tegmina yellowish, lack of any fuscous marks; tegmina with yellow veins and apex of Cu black.

Distribution:
Ecuador.

23. *Aetalion fissum* WALKER (Fig. 21)

Aetalion [sic] *fissum* WALKER, 1851: 648.

Aetalion [sic] *fissum* var. B WALKER, 1851: 648.

Medium sized, testaceous, length to tip of abdomen 7.5-9 mm, length to tip of tegmina 9-11 mm, length of tegmen 7-9 mm, width across shoulders 4.2-4.9 mm, width across eyes 3.3-3.8 mm, expanse of tegmina 19-24 mm, width across carinae of infra-lateral lobes of pronotum 4.5-5.6 mm.

Differential characters:

Head yellow, 4 black spots in a line on crown, a large triangular notch on the middle of crown, 4 black spots adjoining the crown at frontal view, a black band across oculus, three black spots on postclypeus; pronotum testaceous, four oblique short black stripes anteriorly, tips of shoulders black; carina of infra-lateral lobes of pronotum soundly flattened and expanded beyond shoulders; scutellum gibbous anteriorly; tegmen mostly white and hyaline, veins yellow and black; legs yellow, metathoracic tibia long, with three black wings; abdomen ferruginous.

Material examined:

2 ♀, 1 ♂, the type and syntype of *A. fissum* WALKER, Colombia (BMNH), here designated as lectotype (♀), allolectotype (♂) and paralectotype (♀). Lectotype is illustrated (fig. 21); 1 ♀, Camiie, Brazil, collected by VAN VOLXEM (KBIN).

Distribution:

Colombia, Brazil.

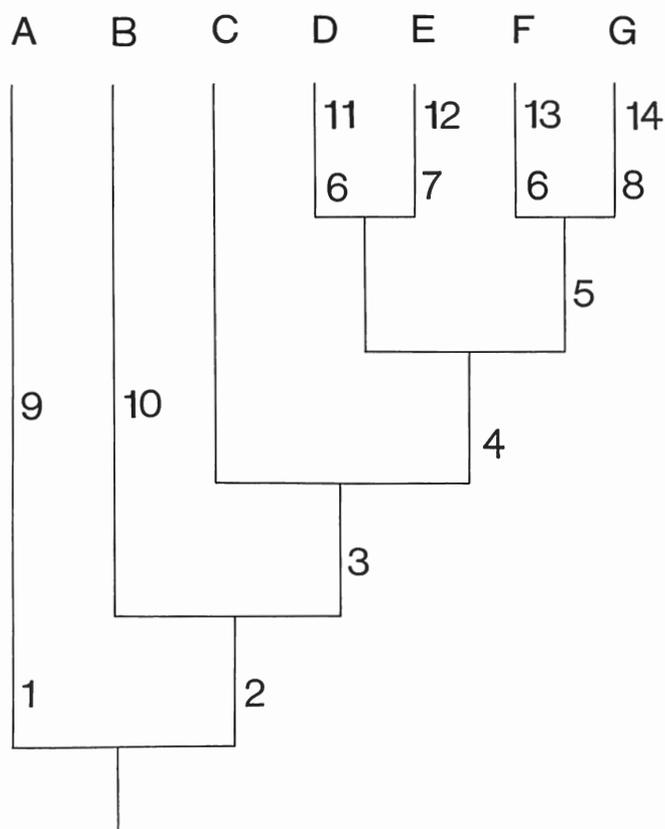


Fig. 22. - Cladogram of *Aetalion*; numbers : see references in text.

Conclusions

As a result of the present study the genus *Aetalion* LATREILLE consists of 23 species and among them 6 are new to science, namely, *A. pauciareolum*, *A. rarobasale*, *A. nigromarginatum*, *A. brunovenosum*, *A. nigrofacum*, and *A. flavescens*. Their distribution (table 5) is limited to the Neotropical and Nearctic Region, namely, Colombia, Ecuador, Venezuela, Guyana, Surinam, French Guyana, Peru, Brazil, Bolivia, Paraguay, Chile, Argentina, Mexico, Costa Rica, Panama, Guatemala, West Indies and U.S.A. Colombia (12 species) and Brazil (7 species) have a rich fauna for *Aetalion*.

The following characters with their character states are used for the phylogenetic analysis and classification :

1. obtuse ruga on infra-lateral lobe of pronotum;
2. carina on infra-lateral lobe of pronotum;
3. slightly flattened carina on infra-lateral lobe of pronotum;
4. foliaceously flattened carina on infra-lateral lobe of pronotum;
5. roundly flattened carina on infra-lateral lobe of pronotum;
6. basal margin of head straight or sinuate;
7. basal margin of head distinctly concave;
8. basal margin of head deeply notched;
9. basal and terminal half of tegmen concolorous;
10. basal and terminal half of tegmen not concolorous;
11. veins in tegmen without dark borders;

12. veins in tegmen with dark borders;
13. scutellum convex;
14. scutellum gibbous.

1. Ruga and carina in the infra-lateral lobes of pronotum : obtuse ruga (1) ---> carina (2) ---> slightly flattened (3) ---> foliaceously flattened (4) ---> roundly flattened and expanded beyond shoulders (5).
2. Basal margin of head : straight or lightly sinuate (6) ---> distinctly concave (7) ---> deeply notched (8).
3. Tegmina : concolorous (9) ---> not concolorous (10).
4. Veins on tegmen : without black borders (11) ---> with black borders (12).
5. Scutellum : convex (13) ---> gibbous (14).

Characters status and phylogenetic analysis as shown in Fig. 22.

As a result of the phylogenetic analysis, 7 species groups are recognised as follows :

- A = *A. reticulatum* group
 B = *A. basale* group
 C = *A. latreillei* group
 D = *A. quadratum* group
 E = *A. servillei* group
 F = *A. gratum* group
 G = *A. punctatum* group.

A. *Aetalion reticulatum* group : medium sized; basal margin of head slightly sinuate in middle; an obtuse ruga on the infra-lateral lobes of pronotum ; tegmina unicolorous; scutellum convex. This group includes *A. reticulatum* (LINNÉ), *A. vitticolle* STÅL, *A. variabile* STÅL, *A. apicale* WALKER and *A. pauciareolum*, sp. nov. and is distributed in Southern and Central America.

B. *Aetalion basale* group : medium to large sized; margin of head straight or slightly sinuate in middle; a carina on the infra-lateral lobes of pronotum; tegmina not unicolorous; scutellum convex. This group includes *A. basale* WALKER, *A. rarobasale*, sp. nov., *A. nigromarginatum*, sp. nov. and *A. pictum* GODING and is distributed in Southern America.

C. *Aetalion latreillei* group : medium to large sized, basal margin of head straight or distinctly sinuate in middle; carina on the infra-lateral lobes of the pronotum slightly flattened; tegmen unicolorous; scutellum convex. This group includes *A. latreillei* SIGNORET, *A. parviceps* SIGNORET, *A. nigrum* SIGNORET and *A. brunovenosum* sp. nov. and is distributed in Southern America.

D. *Aetalion quadratum* group : small to medium sized; basal margin of head straight or slightly sinuate in middle; carina on the infra-lateral lobes of pronotum foliaceously flattened; scutellum convex. This group includes *A. quadratum* FOWLER, *A. minor* FOWLER and *A. nervosopunctatum* SIGNORET, and is distributed in Southern, Northern and Central America.

E. *Aetalion servillei* group : medium sized; basal margin of head deeply notched; carina on infra-lateral lobes of pronotum foliaceously flattened and sinuate anteriorly; scutellum convex. This group consists of *A. servillei* (DE LAPORTE) and is distributed in Southern America.

F. *Aetalion gratum* group : medium sized, basal margin of head distinctly concave; carina on the infra-lateral lobes of pronotum roundly flattened and expanded beyond the shoulders; scutellum convex. This group consists of *A. gratum* WALKER, and is distributed in Central and Northern America.

G. *Aetalion punctatum* group : medium to large sized; basal margin of head largely and deeply notched; carina on the infra-lateral lobes of pronotum roundly flattened and expanded beyond shoulder; scutellum gibbous. This group includes *A. punctatum* WALKER, *A. pulchrum* WALKER, *A. nigrofacum* sp. nov., *A. flavescens* nov. sp. and *A. fissum* WALKER, and is distributed in Southern America.

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Table 1.
Differences between *A. pauciareolum*, sp. n. and *A. vitticolle* STÅL.

	<i>A. pauciareolum</i> sp. n.	<i>A. vitticolle</i> STÅL
Length to tip of tegmina	9.5-12 mm	8.7-10.5 mm
Width across shoulders	3.6-4.3 mm	3.1-3.6 mm
Longitudinal black stripes on disc of pronotum	generally 2	generally 4
Veins on tegmina	thick, mostly black, cross veins fewer, subcostal crossveins 1-3	thin, yellowish, cross veins more, subcostal crossveins more than 4

Table 2.
The differences between *A. nigromarginatum* sp. nov., *A. rarobasale* sp. nov. and *A. basale* WALKER.

	<i>A. basale</i> WALKER	<i>A. rarobasale</i> YUAN, sp. nov.	<i>A. nigromarginatum</i> YUAN, sp. nov.
Length to tip of tegmina	12-13 mm	13-13.5 mm	10-13 mm
Width across shoulders	6.2-6.7 mm	6-6.7 mm	4.5-6 mm
Pronotum	red	yellow	yellow
Basal area of tegmen	red	yellow	yellowish
Sides of 3rd to 5th abdominal tergite	lack of reddish marking	with a oblong reddish marking	with an oblong reddish marking
Scutellum	lack of black stripe	lack of black stripe	with 2 black stripes
Post-lateral and posterior margin of pronotum margins	with thin yellow	with thin yellow margins	with broad black margins
7th and 8th abdominal tergites in female	with 1 dark band	with 1 dark band	with complex black markings

Table 3.
Differences between *A. nigrum* and *A. brunnovenosum* sp. nov.

	<i>A. nigrum</i> SIGNORET	<i>A. brunnovenosum</i> YUAN, sp. nov.
Body colour	brown-black	brown
Pronotum	black, with yellow margins	brownish, with two slightly curved black stripes at disc and two short oblique black stripes anteriorly
Tegmina	brown, with white veins in the radial portion	grey, hyaline, with brown veins
Abdomen	black	brown

Table 4.
The differences between *A. pulchrum* WALKER and *A. punctatum* WALKER.

	<i>A. pulchrum</i> WALKER	<i>A. punctatum</i> WALKER
Median carina on pronotum	distinctly percurrent	destitute of anteriority
Disks of areolets on tegmen	red	white
R+M stem	yellow basal and black terminal half	red basal and black terminal half

