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54	ENTOMOLOGIE	6

SCIENTIFIC RESULTS OF THE BELGIAN
MOUNT-CAMEROON EXPEDITION
(February - April 1981)

III. Fam. Cixiidae, Derbidae, Meenoplidae,
Dictyopharidae, Achilidae, Lophopidae,
and Tettigometridae (Homoptera - Fulgoroidea)

BY

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(With 50 figures in the text)

PREFACE

In February and March 1981 the author had the opportunity to participate in the Belgian Mount-Cameroon expedition as a member of the entomology working-group. The author especially collected Homoptera, which are deposited in the collections of the Koninklijk Belgisch Instituut voor Natuurwetenschappen.

The expedition was financed mainly by grants of the Leopold III Fonds, the Nationaal Fonds voor Wetenschappelijk Onderzoek, and the Stedelijk Schoolmuseum M. Thiery (Gent). For this generous aid, the author wishes to express his sincere gratitude.

INTRODUCTION

As on the other African mountains, there are five different vegetation belts on the Mount-Cameroon (BOUGHEY 1955) :

- lowland rain forest (<700-1000 m);
- submontane rain forest belt (700-1000 m to 1600-1800 m);

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- montane forest belt (1600-1800 m to 2200-2500 m);
- subalpine belt (2200-2500 m to 3350 m);
- afroalpine belt (>3350 m);

Most catches took place along the track going from Buea up to Pic Fako. Additional records were made on the vhf-track (more to the north), on the Small Mount-Cameroon (Etinde), and in the surrounding areas of of the Mount-Cameroon (lowland rain forest). Further details of the Belgian Mount-Cameroon expedition are listed in BOSMANS (in press).

Except for the Araeopidae, the greatest part of the Homoptera belongs to the Cicadelloidea and Cercopoidea. This paper deals with a part of the Fulgoroidea. The Ricaniidae, Tropiduchidae, and Araeopidae will be part of a later publication. 17 species are mentioned, from which 10 are new to science.

LIST OF SPECIES

FAMILY CIXIIDAE

Genus *Andes* MUIR

Andes decempunctatus n. sp.

(Figs. 1 to 5)

Material examined. — Holotype ♂ — Mount-Cameroon 1500 m, 26-II-1981.

Description. — General colour of the head whitish; frons with a transverse band consisting of three brown spots: a median one and two lateral ones on the uprising sides of the frons, these with one more spot at the level of the eyes. Vertex pale, with a brown spot at the hind edges. Pronotum whitish, mesonotum brown, the three longitudinal carinae and the hind margin whitish. Each tegmen with five fuscous, well defined little spots: two along the costal margin, and three in the middle of the apical veins; several translucent brown markings divided as following: a transverse spot between the costal margin and the radius, a spot behind the bifurcation of the claval veins and a transverse band behind the stigma and on the apex of the tegmina.

Male genitalia: Aedaeagus tubular, apex membranous, and a slender spine along its dorsal margin; on the left side a membranous flagellum directed cephalically. Right side with two spines near the apex also directed cephalically: one stout spine dorsally and then curved ventrally, and a slender spine directed cephalically. Anal segment short and tubular ending

into a blunt apex. Lateral posterior margin of the pygofer straight. Genital styles with a hook-shaped apex, directed dorsally.

Total length : 5 mm.

D i a g n o s i s . — This species is characterised by the shape of the male genitalia.

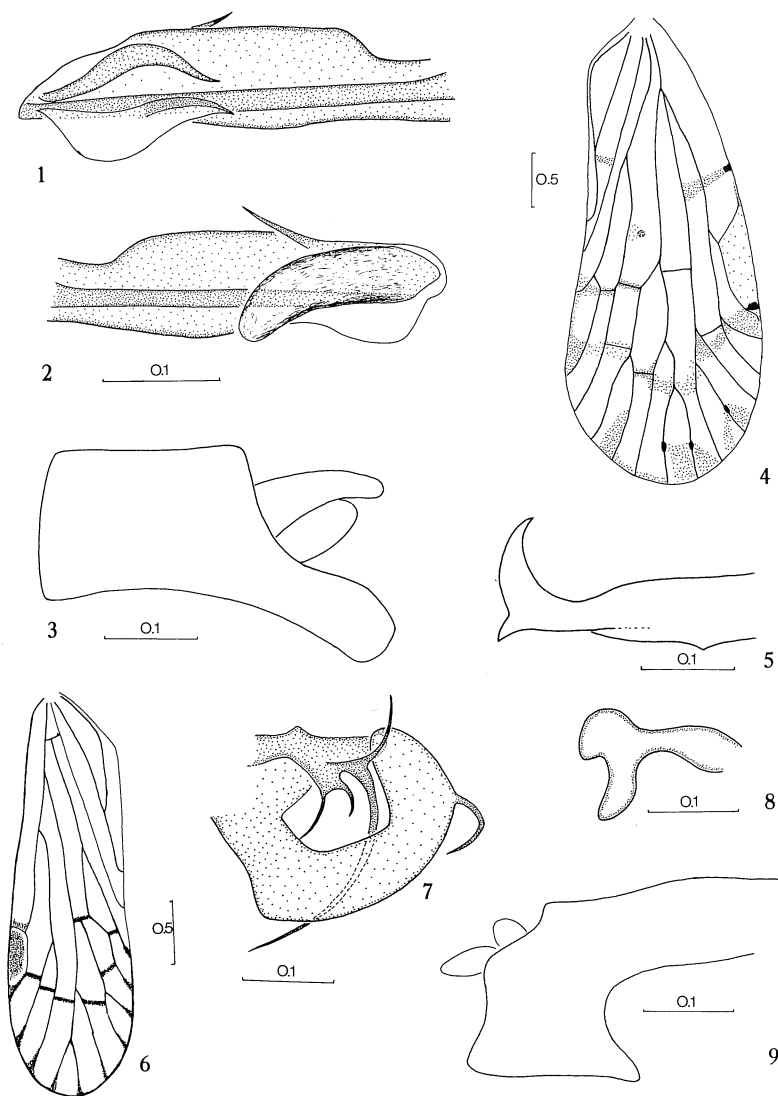


Fig. 1 tot 5. — *Andes decempunctatus* n. sp.

1 : aedeagus, right lateral view; 2 : aedeagus, left lateral view;
3 : anal segment, lateral view; 4 : right tegmen; 5 : right genital style, ventrolateral view.

Fig. 6 to 9. — *Myndus minutus* n. sp.

6 : left tegmen; 7 : aedeagus, right lateral view; 8 : left genital style, ventrolateral view.
9 : anal segment, right lateral view. — Measurements in mm.

Genus *Oliarus* STÅL*Oliarus bingervillei* SYNAVE

Oliarus bingervillei SYNAVE, H., 1968, Ann. Mus. Roy. Afr. Centr. in 8°, Zool., 165, p. 446.

1 ♂, Etinde 100 m, 17-III-1981, on light (HPL-125 W).

This species is known from Bingerville (Ivory Coast).

Oliarus moestus STÅL

Oliarus moestus STÅL, C., 1885, Öfv. Svensk. Vet. Akad. Förh., 12, p. 92.

1 ♂, Etinde 100 m, 2-III-1981.

Genus *Myndus* STÅL*Myndus minutus* n. sp.

(Figs. 6 to 9)

Material examined. — Holotype ♂ — Etinde 100 m, 17-III-1981, on light (HPL-125 W).

Description. — Face pale brown to orange; frons as long as broad; vertex and pronotum pale brown to ochreous, mesonotum more orange brown; tegmina (fig. 6) hyaline, the veins concolorous, except for the costal margin, the transverse veins, and the end of the apical veins, which are coloured with brown. Sc + R forked before the bifurcation of Cu.

Male genitalia: Aedaeagus lamelliform, curved dorsally (fig. 7). Ventral margin of the aedaeagus with a spine near the apex, curved ventrally. A spinose process arising from the phallobase with four slender spines: two short ones curved ventrally, a long one also curved ventrally and continuing beyond the ventral margin of the aedaeagus, and a short spine curved dorsally. Anal segment not bilaterally symmetrical, left ventral margin straight, right ventral margin produced into a flat, square process (fig. 9). Posterior lateral margins of the pygofer slightly convex. Genital styles narrow at the base, abruptly expanding apically, the apex with a U-shaped incision (fig. 8).

Total length: 4 mm.

Diagnosis. — This species is related with *Myndus maculatus* SYNAVE and *Myndus mutakatoensis* SYNAVE; it differs from them by the shape of the aedaeagus and the genital styles.

Genus *Cixius* LATREILLE*Cixius bueae* n. sp.
(Figs. 10 to 15)

Material examined. — Holotype ♂ — Mount-Cameroon 1800 m, 27-II-1981.

Paratypes — 1 ♀, Mount-Cameroon 1200 m, 24-II-1981, on light (HPL-125 W); 1 ♂ 1 ♀, Mount-Cameroon 1200 m, III-1981, Malaise trap; 1 ♀, Mount-Cameron 1300 m, 26-II-1981; 1 ♀, Mount-Cameroon 1500 m, 25-III-1981, in pitfall trap; 1 ♂, Mount-Cameroon 1500 m, 26-II-1981; 1 ♂, Mount-Cameroon 2000 m, 3-III-1981.

Description. — Frons, clypeus, and vertex testaceous, carinae concolorous. Frons (fig. 14) broader than long along the median line (72 : 55); vertex (fig. 15) twice as broad in the hind corners than long along the median line. Pronotum and mesonotum dark brown; mesonotum rugose between the carinae, reticulate on the outer angles. Tegmina tinged with brown, with dark indistinct spots divided as following: two spots between the base of the tegmina and the stigma (along the costal margin), three indistinct spots in the apical cells, and a transverse band at the level of the stigma. Veins concolorous, except for the transverse apical veins which are paler.

Male genitalia: Anal segment long and tubular (fig. 12), with a blunt apex. Pygofer with the posterior lateral margins broadly convex; genital styles (fig. 13) moderately long, almost parallel-sided basally, abruptly expanding apically into a circular lobe. Aedaeagus (fig. 10 and 11) tubular with three stout spines apically directed cephalically: one on the left side curved dorsally, and two on the right side, the ventral one curved ventrally and the dorsal one directed dorsally. Flagellum directed dorsocephalically, then curved through 90 degrees at the middle to point ventrocephalically and ending on the left side of the aedaeagus. In dorsal view, the left side of the flagellum bears three small teeth.

Total length: ♂ 4,5-5 mm; ♀ 6 mm.

Diagnosis. — This species belongs to the group of *Cixius mubalensis* SYNAVE, *C. mukakensis* SYNAVE, and *C. africanus* SYNAVE, the vertex being twice as long as broad, and the aedaeagus bearing three spines. It differs from the other species by the shape of the aedaeagal spines and the shape of the flagellum. In external features, this species can be recognised from *C. mubalensis* and *C. mukakensis* by the absence of yellow spots at the hind edges of the vertex. It differs from *C. africanus* by the shape of the vertex and also by the shape of the third aedaeagal spine.

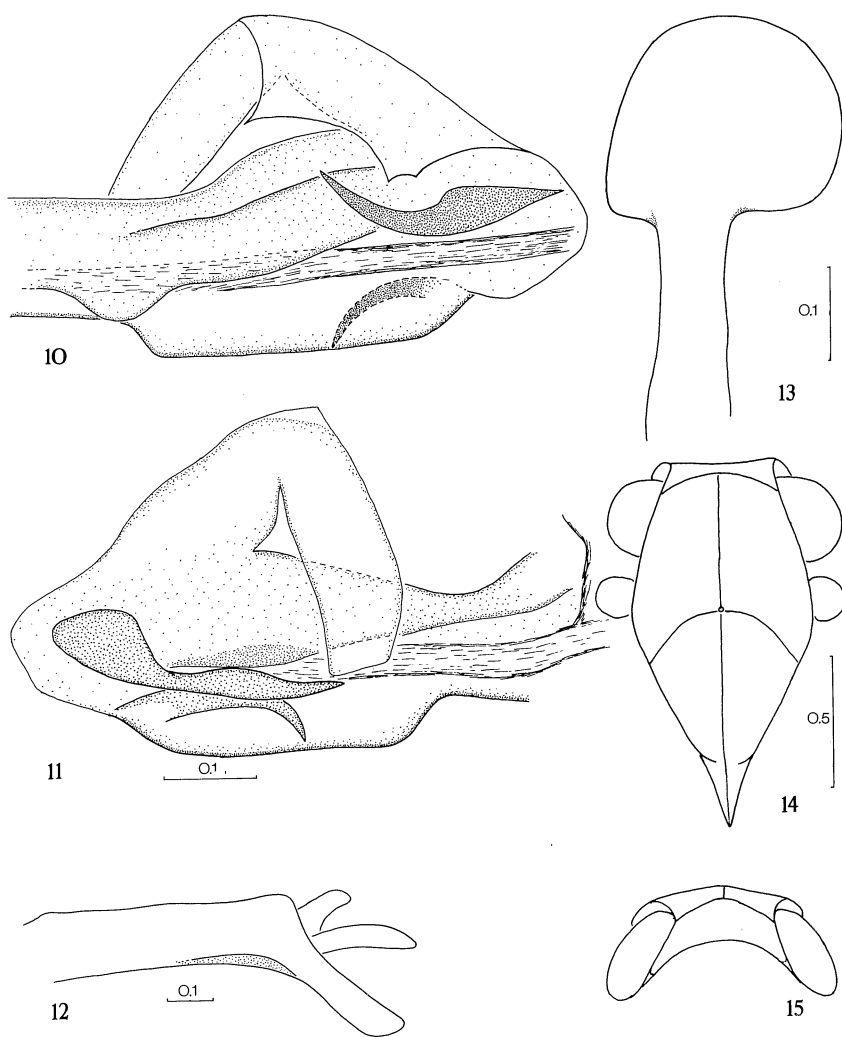


Fig. 10 to 15. — *Cixius bueae* n. sp.

10 : aedeagus, left lateral view; 11 : aedeagus, right lateral view;
 12 : anal segment, lateral view; 13 : right genital style, ventral view;
 14 : face, frontal view; 15 : vertex, dorsal view. — Measurements in mm.

FAMILY DERBIDAE

Genus *Patara* WESTWOOD*Patara appendiculata* n. sp.

(Figs. 16 tot 22)

Material examined. — Holotype ♂ — Mount-Cameroon 1500 m, 26-II-1981.

Description. — Frons ochreous, clypeus almost white. Antennae paler, almost twice as long as broad (fig. 19); subantennal process present. Pronotum pale grey ochreous; mesonotum dark ochreous with three indistinct narrow longitudinal whitish streaks: the median reaches the posterior margin, and the two laterals end at half the length of the mesonotum. Tegmen (fig. 22) generally dark ochreous with hyaline markings: great parts of the costal and subcostal cell hyaline. Apical ends of the longitudinal veins with a hyaline spot and apical edge of the elytra hyaline. Cl 1 whitish, Cu not continuing in the apical transversal veins.

Male genitalia: aedaeagus with eight spines, attached to a periandrium of two lateral sheats which enclose the apical half of the stem: a narrow sheat on the right side produced into a slender dorsocephalic spine; a great membranous sheat on the left side, also with a slender spine. Apex of the aedaeagus with one dorsal and two lateral spines, two others present along the dorsal margin. A long ventral spine runs along the ventral margin which, in ventral view, is produced into a second little spine on about 1/3 of its length (not visible on fig. 17). Apical angles of the anal segment each produced into a long process (figs. 20 and 21); dorsal membranous foramen present (fig. 21). Each genital style with a dark longitudinal ridge, which runs along its ventral surface.

Length of the body: 2,5-3 mm.

Length of the tegmina: 4,5 mm.

Diagnosis. — The species is characterised by the male genitalia.

Patara leopoldi n. sp.

(Figs. 23 to 27)

Material examined. — Holotype ♂ — Mount-Cameroon vhf-track 1400 m, 21-III-1981.

Description. — Frons and clypeus pale yellowish, lateral carinae of the frons fused to a single linear ridge throughout (grey ochreous). An-

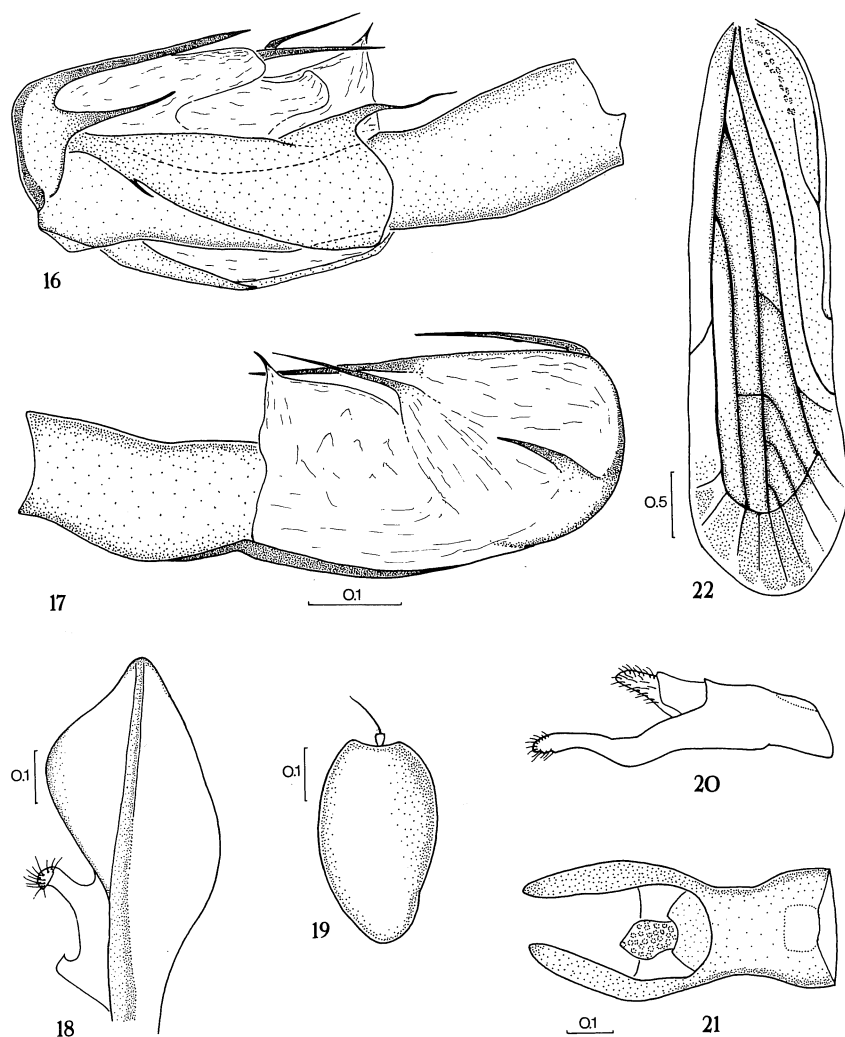


Fig. 16 to 22. — *Patara appendiculata* n. sp.

16 : aedeagus, right lateral view; 17 : aedeagus, left lateral view;
 18 : left genital style, ventral view; 19 : antenna; 20 : anal segment, lateral view;
 21 : anal segment, dorsal view; 22 : left tegmen. — Measurements in mm.

tennae about four times as broad as long (fig. 26). Pronotum pale grey ochreous; mesonotum dark grey anteriorly to pale ochreous and white posteriorly, with a median longitudinal pale streak. Wings hyaline, with veins and clavus ochreous. Sc + R forked at 1/3 of their length. Cu forked before the apex of the clavus, running into the transverse apical veins.

Male genitalia : Aedaeagus (figs. 23 and 24) laterally compressed, with three stout spines : an apical one and two lateral ones, curved cephalically, the left longer than the right. Anal segment short (fig. 27); genital styles (fig. 25) with a small longitudinal ridge on their ventral surface.

Length of the body : 3 mm.

Length of the tegmina : 4 mm.

Diagnosis. — This species remembers to *Patara trispinosa* SYNAVE (from Ile Ife, Nigeria) in the venation of the tegmina, the shape of the antennae, the form of the anal segment, and the form of the aedaeagus. *Patara leopoldi* n.sp. is distinguished by the aedaeagus and the genital styles.

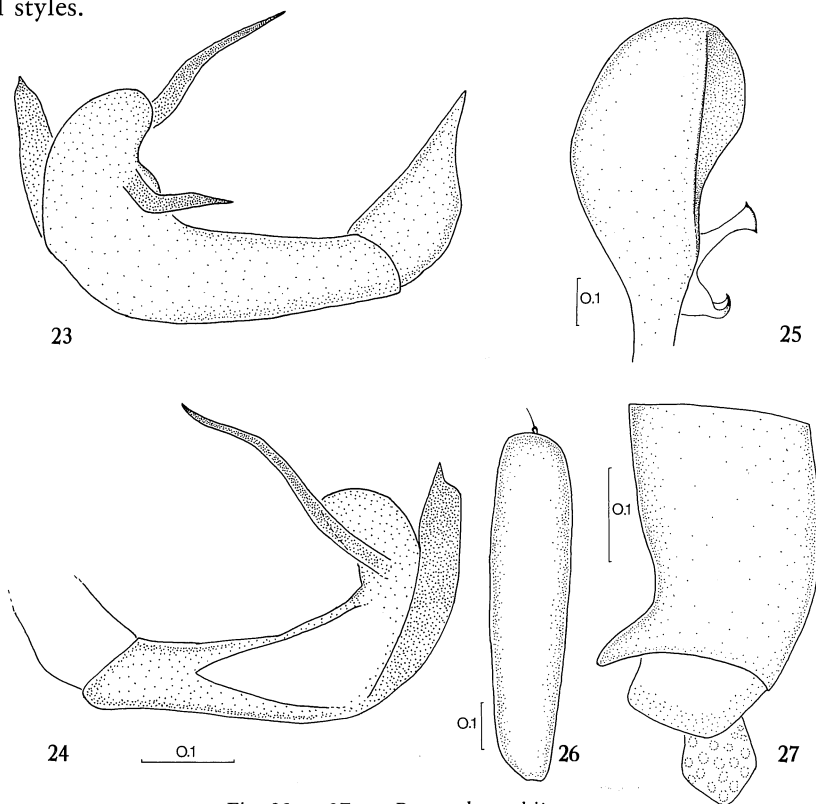


Fig. 23 to 27. — *Patara leopoldi* n. sp.

23 : aedaeagus, right lateral view; 24 : aedaeagus, left lateral view;
25 : right genital style; 26 : antenna; 27 : anal segment, lateral view.

Measurements in mm.

Patara unimaculata n. sp.

(Figs. 28 to 33)

Material examined. — Holotype ♂ — Mount-Cameroon 1600 m, 6-III-1981.

Description. — Head and pronotum pale. Mesonotum pale brown with light longitudinal streaks: a long median and two short laterals half the length of the mesonotum. Tegmina (fig. 32) hyaline, rugose, venation dark grey to brown, and an ochreous spot in the apical median cell.

Male genitalia: The aedaeagus (figs. 28 and 29) bears two stout spines (a dorsal one and a ventral one), and six little spines: dorsal margin with a slender spine on each side and a stout spine inserted on the right side. Three slender spines on the left side (hardly visible), and a great spine on the right side. Ventral margin with a stout spine forked distally into two greater and a few little teeth. Genital styles and anal segment see fig. 30 and 33.

Length of the body: 2,5-3 mm.

Length of the tegmina: 4 mm.

Diagnosis. — This species is related with *Patara apicemaculata* SYNAVE, from which it is distinguished by the shape of the aedaeagus.

Genus *Malenia* HAUPT*Malenia complicata* n. sp.

(Figs. 34 to 38)

Material examined. — Holotype ♂ — Mount-Cameroon 1500 m, 26-II-1981.

Paratype — 1 ♀, same locality.

Description. — Colour of the head, pronotum and mesonotum yellowish white. Frons almost twice as long as broad (37 : 20), with the lateral carinae convex in the lower part, concave in the upper half; median carina absent; on the lower part a yellow evanescent spot. Mesonotum with a dark median line. Tegmina (fig. 34) hyaline, the costal part fumated with brown except for the veins and the stigma, which are whitish.

Male genitalia: aedaeagus (figs. 36 and 38) consisting of two main elements: a ventral tubular part directed caudally, and a dorsal part, laterally compressed, emerging from the apex of the first, directed cephalically and slightly decurved to the right. Phallobase with a great spinose process on each side: the left directed slightly upwards and caudally, the

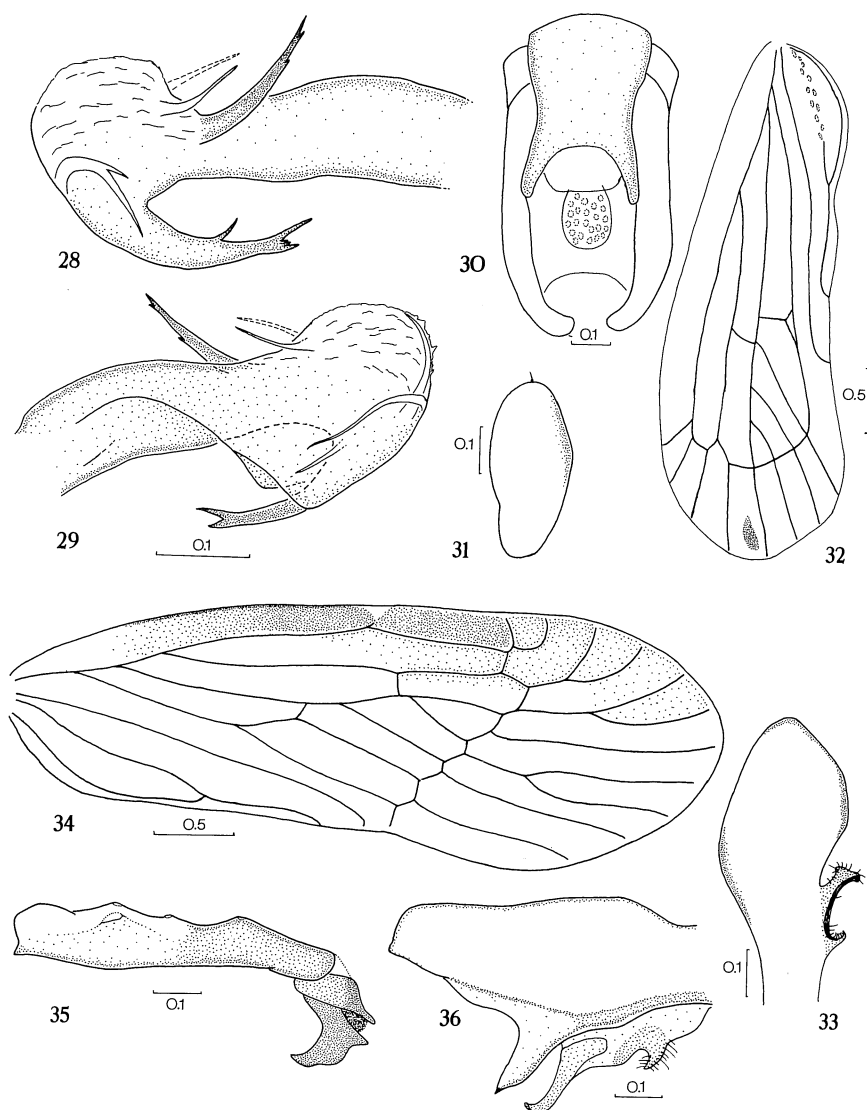


Fig. 28 to 33. — *Patara unimaculata* n. sp.

28 : aedeagus, right lateral view; 29 : aedeagus, left lateral view;

30 : anal segment and dorsal margin of the pygofer, dorsal view;

31 : antenna; 32 : left tegmen; 33 : right genital style.

Fig. 34 to 36. — *Malenia complicata* n. sp.

34 : right tegmen; 35 : anal segment, lateral view; 36 : left genital style.

Measurements in mm.

right directed ventrocaudally and then upwards. An other process emerges from the dorsal part of the aedaeagus and is directed ventrocaudally, with several great and little spines. Anal segment (fig. 35) long and tubular. Genital styles (fig. 36) with a stout spinose process on their outer margin.

Length of the body : 3 mm.

Length of the tegmina : 4,5 mm.

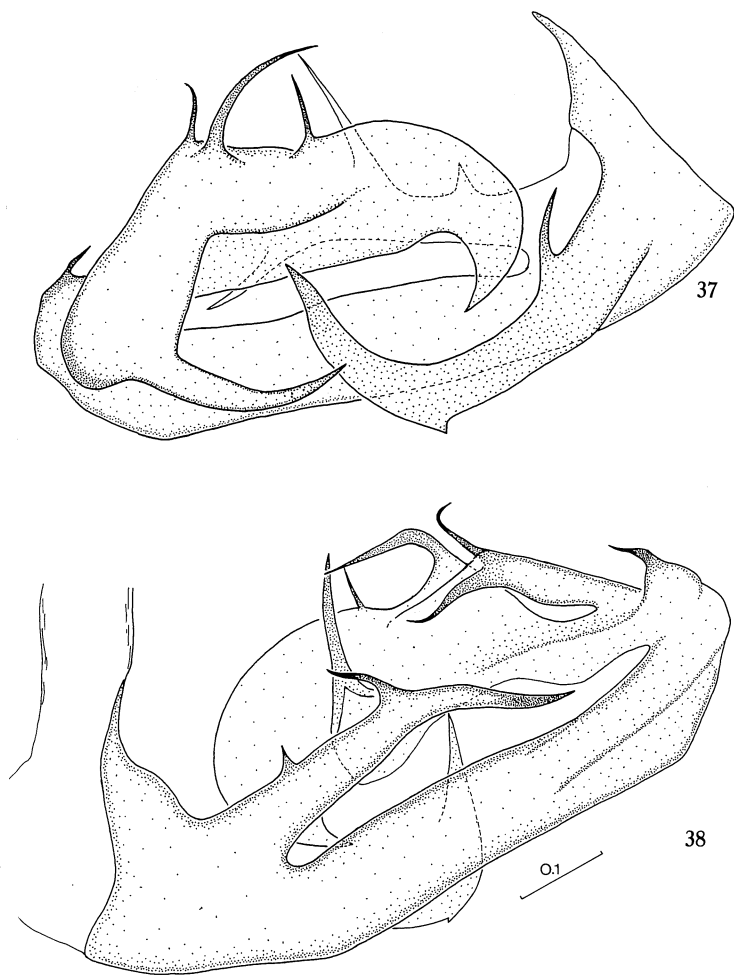


Fig. 37 and 38. — *Malenia complicata* n. sp.
37 : aedaeagus, right lateral view; 38 : aedaeagus, left lateral view.
Measurements in mm.

Diagnosis. — According to the descriptions given by SYNAVE (1972), this species is distinguished by the brown costal margin of the tegmina. Concerning the characters of the male genitalia, this species is related to *Malenia ndelelensis* SYNAVE. These are the only two *Malenia* species with a spinose process arising from the dorsal part of the phallobase. *Malenia complicata* n. sp. is distinguished from *M. ndelelensis* SYNAVE by the shape of the aedaeagus.

FAMILY MEENOPLIDAE

Genus *Meenoplus* FIEBER

Meenoplus maculatus n. sp.

(Figs. 39 to 42)

Material examined. — Holotype ♀ — Etinde 700 m, 2-III-1981.

Description. — Frons ivory, the broadest part near the base, narrowing above and slightly excavate between the eyes. Clypeus and side of the head pale brown. Pronotum ivory, mesonotum pale brown, dark brown anteriorly, with a median whitish longitudinal streak. Tegmina (fig. 42) with a series of brown, well defined markings: one on the clavus before the junction of the claval veins, near the claval commissure, one at the base of the tegmina, one on the embranchement of Sc + R and M, and one on the apical half of the median cell. Apical veins bordered with brown. Mesotibia with two brown rings, posttibia with one brown apical ring (protibia missing).

Female genitalia: Anal segment (fig. 39) tubular, membraneous in the lower part. Posterior lateral margins of the pygofer (fig. 39) sinuate, with a small excavation; valvulae (fig. 41) with a deep excavation on their outer apical edge. Ovipositor (fig. 40) flat, short, with a membraneous hyaline lamella on each side.

Total length: 4 mm.

Diagnosis. — The species is well defined by the pattern of the tegmina.

Meenoplus radialis n. sp.

(Figs. 43 to 46)

Material examined. — Holotype ♂ — Mount-Cameroon 1800 m, 27-II-1981.

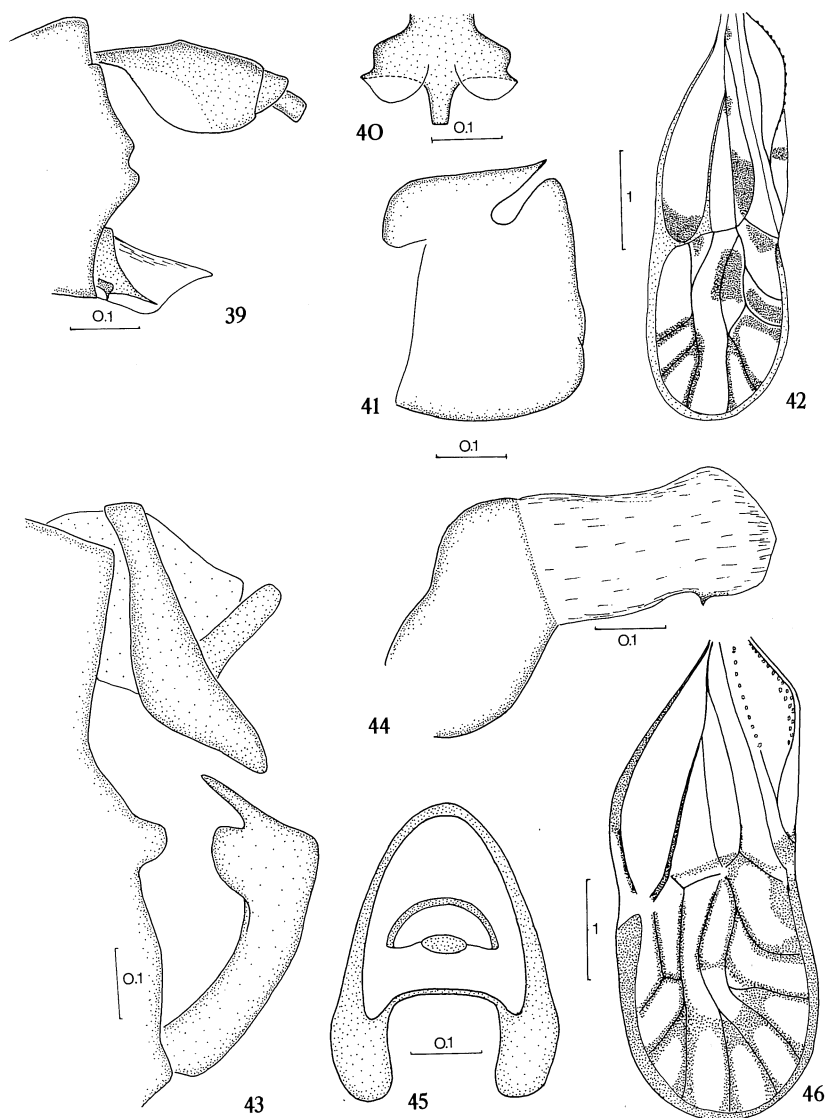


Fig. 39 to 42. — *Meenoplus maculatus* n. sp.
 39 : female genitalia, left lateral view; 40 : ovipositor, dorsal view;
 41 : right valvula; 42 : left tegmen.

Fig. 43 to 46. — *Meenoplus radialis* n. sp.
 43 : anal segment, pygofer and genital style, left lateral view;
 44 : aedaeagus, left lateral view; 45 : anal segment, caudal view;
 46 : left tegmen. — Measurements in mm.

Paratype — 1 ♂, Mount-Cameroon vhf-track 1500 m, 21-III-1981.

Description. — Frons orange brown. The broadest part near the base, narrowing above and slightly excavate between the eyes. Upper part of the animal orange brown, tegulae dark brown. Tegmina (fig. 46) orange brown; the apical veins and the apical part of the tegmina bordered with brown.

Male genitalia: anal segment short (figs. 43 and 45), the hind edges ending in a blunt projection; lateral margins of the pygofer with a blunt tooth. Genital styles with their outer edge dilatated into a blunt projection with a deep U-shaped incision. Aedaeagus (fig. 44) with the phallobase sclerotised, distal part totally membranous.

Total length: 6 mm.

Diagnosis. — This species is distinguished by the shape of the male genitalia.

FAMILY DICTYOPHARIDAE

Genus *Philotheria* MELICHAR

Philotheria africana SYNAVE

Philotheria africana SYNAVE, H., 1965, Expl. Parc Nat. Upemba, Miss. H. De Saeger, 47, p. 21, figs. 14, 33, 38.

1 ♀, Etinde 100 m, 17-III-1981, on light (HPL-125 W).

Genus *Phaenodictyon* FENNAH

Phaenodictyon ellipticum (WALKER)

Dictyophara elliptica WALKER, F., 1851, List. Hom. Ins., 2, p. 312.

5 ♂ and 5 ♀, Etinde 100 m, 17-III-1981, on light (HPL-125 W).

There is a little difference in the shape of the aedaeagus of the specimens collected from Etinde. The ventral membranous part (fig. 50) is less developed than the aedaeagi figured by FENNAH (1957) and SYNAVE (1965). I consider these differences as not being of specific value.

Genus *Pseudaphanella* FENNAH*Pseudaphanella similis* n. sp.

Material examined. — Holotype ♂ — Mount-Cameroon 1200 m, 10-III-1981.

Description. — In general appearance, this species remembers to *Pseudaphanella regina* FENNAH. In external features it is distinguished by the shape of the vertex, which is about twice as long as broad in *Pseudaphanella similis* n. sp. (35 : 61) (fig. 47), and more than twice as long in *P. regina* (fig. 49). The last segment of the anterior and mid-tarsi is darkened in *P. similis*, whereas it is concolorous in *P. regina* (specimen of St.-Edouard : Kamande — 925 m — 1-X-1935, leg. L. Lippens, Parc National Albert).

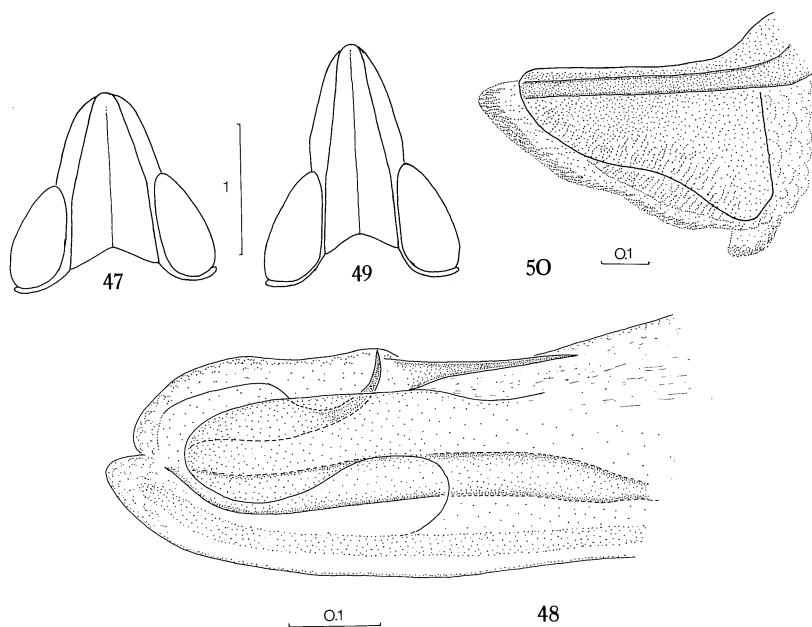


Fig. 47 and 48. — *Pseudaphanella similis* n. sp.
47 : head, dorsal view; 48 : aedaeagus, right side.

Fig. 49. — *Pseudaphanella regina* FENNAH
49 : head, dorsal view.

Fig. 50. — *Phaenodictyon ellipticum* (WALKER)
50 : aedaeagus, right lateral view. — Measurements in mm.

Male genitalia : Anal segment, Pygofer, genital styles, and general shape of the aedaeagus as in *P. regina*, but right spine of the aedaeagus running cephalically, then strongly curved dorsally.

Total length : 10 mm.

D i a g n o s i s. — This species belongs to the group of *Pseudaphanel-la montana* LALLEMAND and *P. regina* FENNAH. It is characterised by the shape of the vertex and the shape of the right aedaeagal spine.

FAMILY ACHILIDAE

Genus *Cnidus* STAL

Cnidus candidus SYNAVE

Cnidus candidus SYNAVE, H., 1971, Bull. Inst. r. Sci. Nat. Belg., 47 (39), p. 24.

1 ♂ and 1 ♀, Etinde 100 m, 17-III-1981, at light (HPL-125 W).

This species is known from Nigeria

FAMILY LOPHOPIDAE

Genus *Lophops* SPINOLA

Lophops africana (SCHMIDT)

Brixoides africana SCHMIDT, E., 1912, Rev. Zool. Afr., 1, p. 358.

1 ♂, lake Barombi Mbo, 13-III-1981.

This species is known from Cameroon, Zaire, and Togo.

FAMILY TETTIGOMETRIDAE

Genus *Euphyonarthex* SCHMIDT

Euphyonarthex phyllostoma SCHMIDT

Euphyonarthex phyllostoma SCHMIDT, E., 1912, Deutsche Ent. Zeit., 1912, p. 461.

1 ♀, Mount-Cameroon 1200 m, 10-III-1981.

SUMMARY

17 species of Homoptera Fulgoroidea are listed from Mount-Cameroon and surrounding areas, from which 10 species are new to science.

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