New and interesting *Cixiidae (Homoptera, Fulgoroidea)* from the Cameroon Highlands.*

by Jan VAN STALLE**.

Abstract

Thirteen Cixiidae are listed from Cameroon, eight of which are described as new to science : *Andes mbami* n. sp., *A. kupei* n. sp., *A. largipennis* n. sp., *Brixia membranifera* n. sp., *B. striatipes* n. sp., *Myndus camerunicus* n. sp., *Cixius manengoubae* n. sp., and *Achaemenes monticola* n. sp.

Introduction

This paper deals with the Cixiidae collected by the second Belgian expedition to Cameroon (January to April 1983). A list of the Tropiduchidae and a brief discussion of the mountains visited was given by VAN STALLE (1984).

The Cameroon territory is characterized by a very great habitat diversity, ranging from lowland rain forest at sea level in the Southeastern part of the country, to a dry savanna vegetation in the North ; this present trip to Cameroon was mainly concentrated on a mountain chain which begins at Mount Cameroon and continues in Northeastern direction along the Nigerian border.

The Cixiidae of Cameroon have hardly been studied : only ten species have hitherto been recorded, mostly occurring in the lowland rain forest. Five more species were recorded from Mount Cameroon and its surroundings by VAN STALLE (1982), and twelve additional species from several mountains more to the North are listed below. Some more species can be expected, as was indicated by the presence of two female specimens from the genera *Brixia* and *Cixius*, which could not be assigned to the species listed below.

It is not clear for the moment, whether these mountain species are endemic or have a wider distribution on the African continent.

Furthermore, the opportunity has been taken to describe a new *Myndus* species from Meiganga (Northeast Cameroon). Although it was not collected on one of the mountains, it is convenient to treat it here.

The entire collection is deposited in the "Koninklijk Belgisch Instituut voor Natuurwetenschappen".

List of species

Andes mbami n. sp.
(fig. 1 to 5)

MATERIAL EXAMINED

Holotype ♂ - Mbam Massif 1800 m, 1-IV-1983, broad galery forest.
Paratype - 1 ♂, same locality.

DESCRIPTION

General colour whitish. Frons with a brown transverse band just below the level of the ocelli. Further, a brown spot along the junction of frons and vertex, and on the posterior edges of the vertex. Mesonotum whitish with indistinct brown fumations along the anterior margin. Tegmina hyaline, with a brown colour pattern and black points on the costal and apical veins similar to those of *Andes decempunctatus* VAN STALLE.
Posttibiae with 6 apical spines ; first and second tarsite with 7 spines each.
Male genitalia : pygofer (fig. 4) simple ; anal segment (fig. 4) short, with a blunt apex. Genital styles (fig. 5) with a hook-shaped apex. Aedeagus (fig. 2 and 3) with 4 spinose processes divided as follows : one spine along the left side running along the flagellum, a second along the dorsal margin, and finally, two more along the right side.
Total length : 5 mm.

* Scientific Results of the Belgian Cameroon Expeditions 1981 and 1983, Nr. 13.
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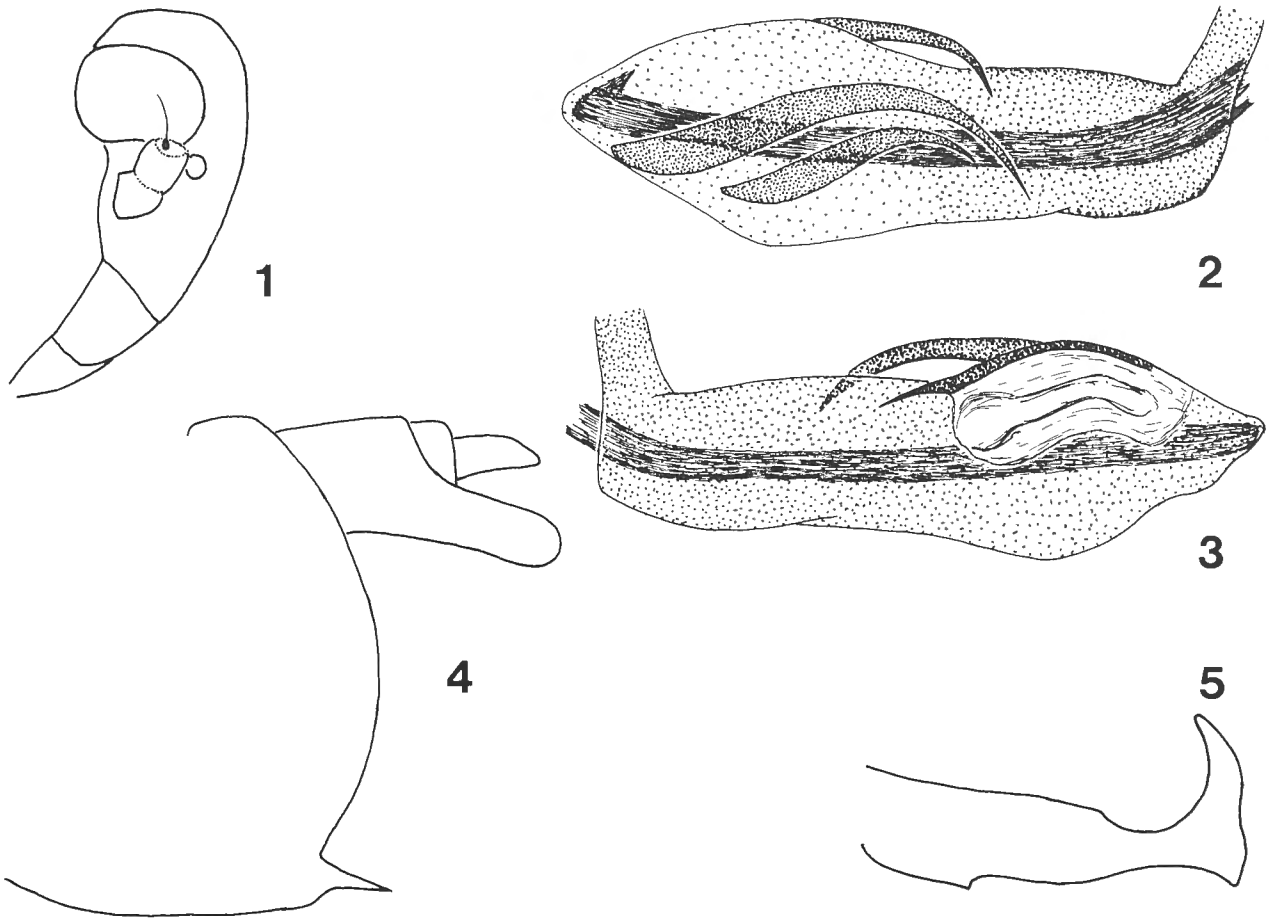


Fig. 1 to 5. - Andes mbami *n. sp.*
1 : head ; 2 : aedeagus, right lateral view ; 3 : aedeagus, left lateral view ; 4 : pygofer and anal segment ; 5 : left genital style.

DIAGNOSIS

This species is closely related to *Andes decempunctatus* VAN STALLE, recorded from Mount Cameroon at an altitude of 1500 m. Both are characterized by the small size, the whitish colour, the brown colour pattern on the tegmina and the similar form of the pygofer, anal segment and genital styles. The aedeagi belong to the same type, but differ from one another by the number of spines : the aedeagus of *Andes decempunctatus* bears three spines, whereas that of *Andes mbami* n. sp. bears four spines, due to the presence of an additional dorsal spine.

ETYMOLOGY

The name refers to the type-locality, the Mbam Massif.

Andes kupei n. sp.
(fig. 6)

MATERIAL EXAMINED

Holotype ♂ - Mount Kupe 900 m, 31-I-1983.

Paratypes - 2 ♂, same locality ; 3 ♂ 1 ♀, Mount Kupe 1600 m, 1-II-1983.

DESCRIPTION

General colour as the preceeding species. Male genitalia : anal segment, pygofer, and genital styles like those of the preceeding species. Aedeagus (fig. 6) bearing two spines, one on each side, the left one running along the dorsal margin and slightly curved upwards.

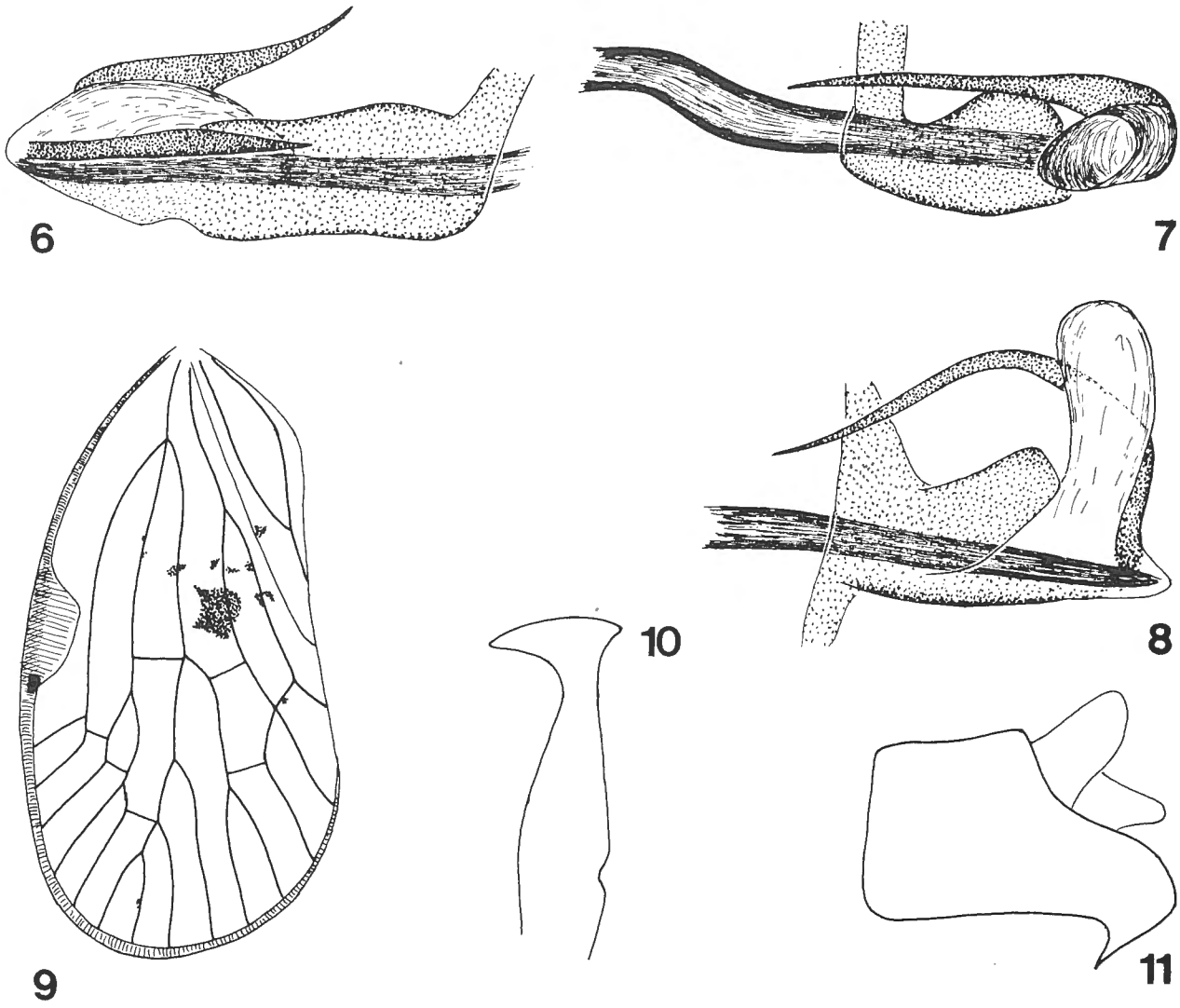
Total length : 5 mm.

DIAGNOSIS

Closely related to *Andes mbami* n. sp. and to *Andes decempunctatus* VAN STALLE, but differing from these species in the number of aedeagal spines.

ETYMOLOGY

The name refers to the type-locality, Mount Kupe.



Andes largipennis n. sp.
(fig. 7 to 11)

MATERIAL EXAMINED
Holotype ♂ - Mount Kupe 900 m, 30-I-1983.

DESCRIPTION
General colour whitish. Postclypeus provided with three transversal brown bands : one along the frontoclypeal suture, one in the middle, and a third on the junction with the anteclypeus ; the latter embrowned apically. Frons whitish, vertex dark brown. Pronotum, mesonotum, legs, and abdomen whitish. Tegmina hyaline, fairly broad, with brown spots as illustrated in fig. 9. Posttibia with 6 spines apically, first and second tarsite each with 7 spines. Male genitalia : anal segment (fig. 11) with a small tooth-like spine along each lateroapical angle. Pygofer simple. Genital styles (fig. 10) with a hook-shaped apex. Aedeagus (fig. 7 and 8) rather short, with one long spine running along the left side.
Total length : 5 mm.

Fig. 6. - Andes kupei *n. sp.*
6 : aedeagus, right lateral view.
Fig. 7 to 11. - Andes largipennis *n. sp.*
7 : aedeagus, left lateral view ; 8 : aedeagus, ventral view ; 9 : left tegmen ; 10 : left genital style ; 11 : anal segment.

DIAGNOSIS
Andes largipennis n. sp. belong to the group of the species described above, but is easily distinguished by the very broad tegmina.

ETYMOLOGY
the name refers to the very broad tegmina.

Brixia membranifera n. sp.
(fig. 12 to 14)

MATERIAL EXAMIND
Holotype ♂ - Mount Kupe 900 m, 6-11-1983, at light.

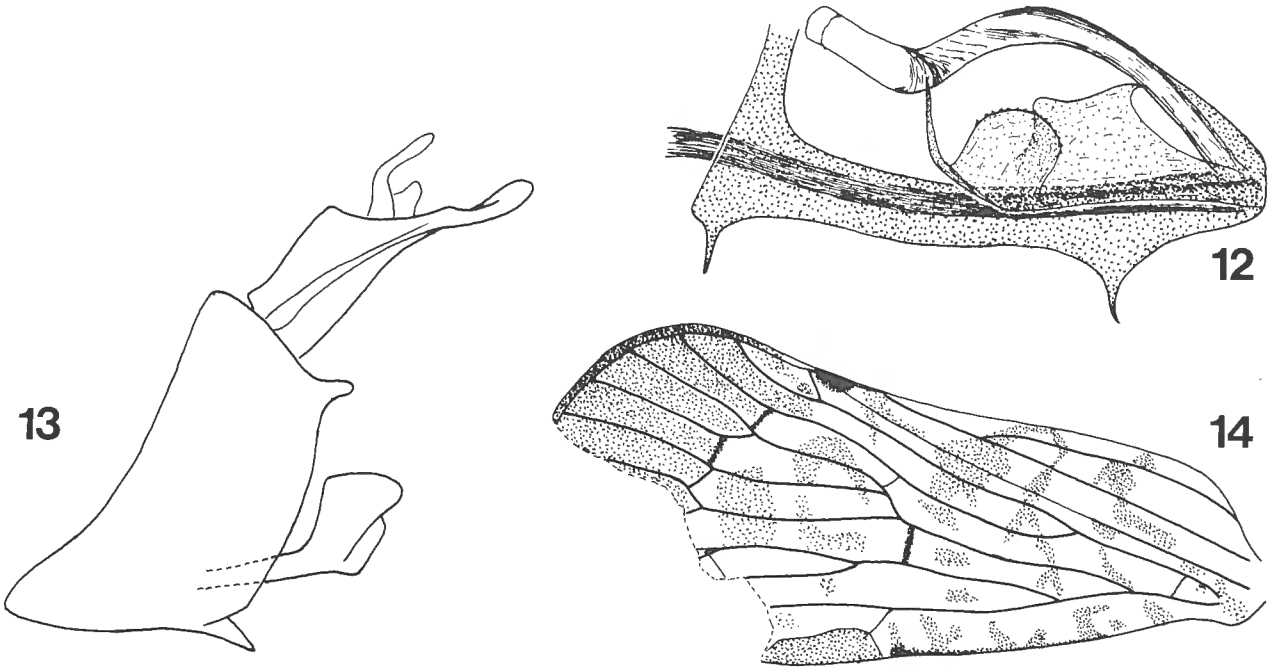


Fig. 12 to 14. - Brixia membranifera *n. sp.*
12 : aedeagus, left lateral view ; 13 : anal segment, pygofer, and genital style ; 14 : right tegmen.

DESCRIPTION

Vertex and frons ivory white, genae with two distinct black bands just above the ocellus, like those of *Brixia striatipes* n. sp. Postclypeus white near the frontoclypeal suture, more yellowish near the anteclypeus. Anteclypeus yellowish brown, dark brown along the median carina. Antennae black. Pro- and mesonotum, and abdomen brown. ; pectoral plates of the pronotum ivory white. Tegmina (fig. 14) yellowish, translucent, with irregular brown suffusions as illustrated. Veins concolorous, densely covered by dark pustules ; wings brown. Legs yellowish brown ; profemora somewhat darker. Protibiae with a brown spot proximally and a brown ring in the distal half. First segment of posttarsi with six, second with eight teeth.

Male genitalia : anal segment moderately long ; pronotum with a short blunt projection dorsally ; genital styles with the apex subquadrate (fig. 13). Aedeagus (fig. 12) with two short spines inserted along its ventral margin : one near the base, and an other at one third of its apex. Further, a thin membraneous translucent process covering the apical half of the dorsal margin and consisted of a thin spine, a circular, minutely denticulated process, and a flat anterior lamella. Flagellum long, almost extending to the base of the aedeagus.

Total length : 5.5-6 mm.

DIAGNOSIS

This species can be distinguished from any other species by the colour of the tegmina, the form of the pygofer, and the typical membraneous process on the aedeagus.

ETYMOLOGY

The name refers to the membraneous process on the aedeagus.

Brixia striatipes n. sp.
(fig. 15 to 20)

MATERIAL EXAMINED

Holotype ♂ - Mount Kupe 1600 m, 1-II-1983.

DESCRIPTION

Frons and postclypeus yellowish-brown beneath the level of the ocellus, the first with two black streaks near the junction with the vertex (fig. 16) ; anteclypeus brown. Vertex ivory white, lateral carinae brown. Antennae with basal segment black, second segment brown. Pro- and mesonotum brown, the first white along the middle line and on the pectoral plates. Abdomen dark brown. Tegmina (fig. 15) with three dark spots between base and stigma, a dark streak extending from the anteapical cells to the common claval vein, and a fine dark line running from the stigma over the apical transverse veinlets. Legs whitish ; profemora with a brown ring in the distal half ; mesofemora almost completely brown. Pro- and mesotibiae each provided with two distinct brown rings ; tarsi dark brown, second and third segment whitish apically. Apex of the posttibiae dark brown, provided with six teeth. First posttarsal segment with six, second with seven minute teeth.

Male genitalia : anal segment (fig. 19) short. Pygofer (fig. 19) caudally produced into a subquadrate lobe. Genital styles (fig. 20) apically provided with three subequal, finger-like processes. Aedeagus (fig. 17 and

18) with three long spinose processes, two along the right side, and one along the left side ; further, a long and slender flagellum, circularly curved near its apex. Total length : 5.5-6 mm.

DIAGNOSIS

Brixia striatipes n. sp. is characterized by the combination of the following features : tegmina with three dark spots along the costal margin between base and stigma, frons with two dark streaks and anteclypeus brown, the dark rings on the tibiae, three long spines on the aedeagus, and finally, the typically finger-like appendiges of the genital styles.

ETYMOLOGY

The name refers to the brown rings on the legs.

Oliarus nemea **Fennah**

oliarus nemea Fennah, R.G., 1958, Bull. I.F.A.N., 20(2), p. 468

MATERIAL EXAMINED

13 o 4 o, Poli Mountains, Hosseré Vokré, 270 m, 22-IV-1983, at light in open savanne along the river Faro ; 5 o 24 o, same locality, 400 m, 17-IV-1983, at light in cultivated area with savanna relicts ; 2 o, same locality, 800 m, 20-IV-1983, at light.

Oliarus nemea is a common species of the Sudanese Savanna Zone, with records from Senegal up to the Sudan.

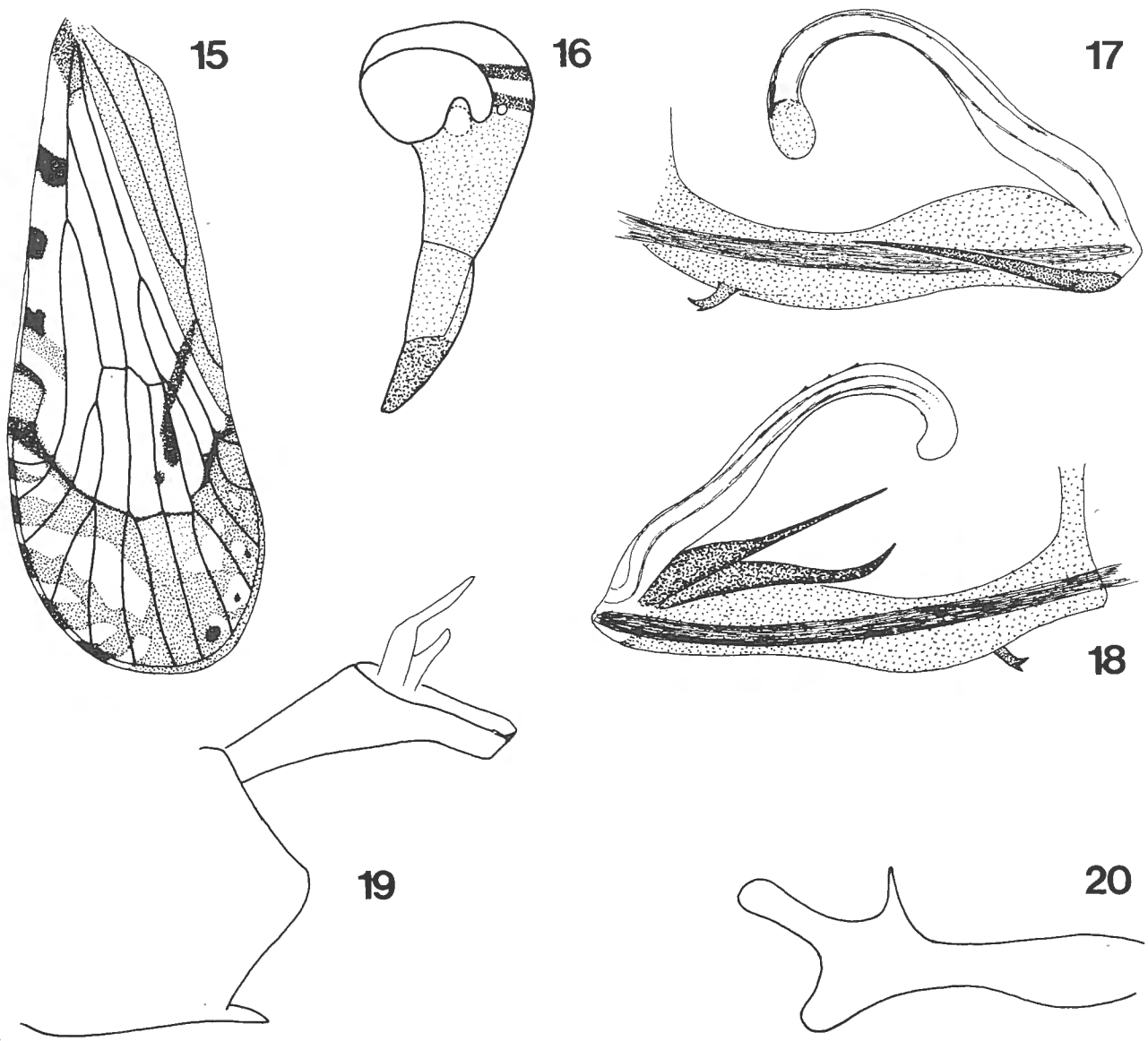


Fig. 15 to 20. - Brixia striatipes *n. sp.*
15 : left tegmen ; 16 : head ; 17 : aedeagus, left lateral view ; 18 : aedeagus, right lateral view ; 19 : anal segment and pygofer ; 20 : right genital style.

Oliarus mendax SYNAVE

Oliarus mendax SYNAVE, H., 1960, Expl. Parc. nat. Garamba, 18(2), p. 30.

MATERIAL EXAMINED
1 ♂, Poli Mountains, Hosseré Vokré, 270 m, 22-IV-1983, at light in open savanna along the river Faro ; 1 ♂, same locality, 800 m, 20-IV-1983, at light in a cultivated area with savanna relicts.

Oliarus mendax is a common West African savanna species, with about the same distribution as *Oliarus nemea*. Records are available from Senegal up to the Garamba National Parc in Zaïre.

Oliarus pidigalensis SYNAVE

Oliarus pidigalensis SYNAVE, H., 1960, Expl. Parc. nat. Garamba, 18(2), p. 31.

MATERIAL EXAMINED
♂, Poli Mountains, Hossere Vokre, 800 m, 20-IV-1983, at light in a cultivated area with savanna relicts.

Previously reported from the Garamba National Parc in Zaïre.

Myndus camerunicus n. sp.
(fig. 21 to 24)

MATERIAL EXAMINED
Holotype ♂ - Meiganga, 15-IV-1983, at light in village.

DESCRIPTION
General colour yellowish brown. Tegmina hyaline, like those of *Myndus liberianus* SYNAVE ; veins yellow, densely covered with black pustules. Apical margin from the stigma to the tip of the clavus, and apical veins suffused with brown. Further, a conspicuous dark oval mark on the third branch of M, nearly touching the costal margin.
Male genitalia : anal segment (fig. 23 and 24) short, as broad as long and asymmetrical in dorsal view. Pygofer (fig. 23) symmetrical, lateral margins gently rounded in profile. Genital styles (fig. 22) with a large tapering apex bearing one more additional tooth. Aedeagus (fig. 21) with three spinose processes as follows : a small one inserted apically along the dorsal margin, a long spine inserted ventrally near the apex and directed caudally, and a third process inserted basally and running caudally parallel to the ventral margin, bearing a small spine near its base, and divided apically into two slender spines.
Total length : 5.5 mm.

DIAGNOSIS
This species belongs to the group of *Myndus kekenboschi* SYNAVE, *M. kivuensis* SYNAVE, *M. liberianus* SYNAVE, and *M. miserabilis* SYNAVE. From *M. kekenboschi* it is easily distinguished by the body size (3 mm) ; it differs from *M. kivuensis* in the markings on the tegmina, which bear a conspicuous U-shaped mark in *M. kivuensis*, and finally, it can easily be separated from the two other species by details of the aedeagal structure.

ETYMOLOGY
The name refers to the country of the type locality.

Cixius chinai SYNAVE

Cixius chinai SYNAVE, H., 1953, Expl. Parc nat. Upemba, 23, p. 37.

MATERIAL EXAMINED
♂, Tchabal Mbabo Massif 1700 m, 10-IV-1983.

This species was previously reported from the Upemba and Virunga National Parc in Zaire by SYNAVE (1953 and 1963), and from the Sudan (Kateri and Gilo) by LINNAVUORI (1973).

Cixius almon FENNAH

Cixius almon FENNAH, R.G., 1957, Ann. Mus. Congo belge, in 8°, 59, p. 31.

MATERIAL EXAMINED
♂, Tchabal Mbabo 1700 m, 11-IV-1983, captured among detritus in galery forest.

Previously known from Zaïre (Kamogobe).

Cixius manengoubae n. sp.
(fig. 25 to 29)

MATERIAL EXAMINED
Holotype ♂ - Manengouba Mountains, 2250 m, 25-II-1983, captured among detritus in montane rain forest.

DESCRIPTION
Frons, postclypeus, vertex, and pronotum yellow, Vertex (fig. 29) about twice as long as broad. Mesonotum black anteriorly and yellow in the posterior one third. Tegmina hyaline, stigma and veins yellow, the latter densely covered with black pustules ; apical border black. Legs yellowish, first and second segment of the posttarsi each with six teeth apically.

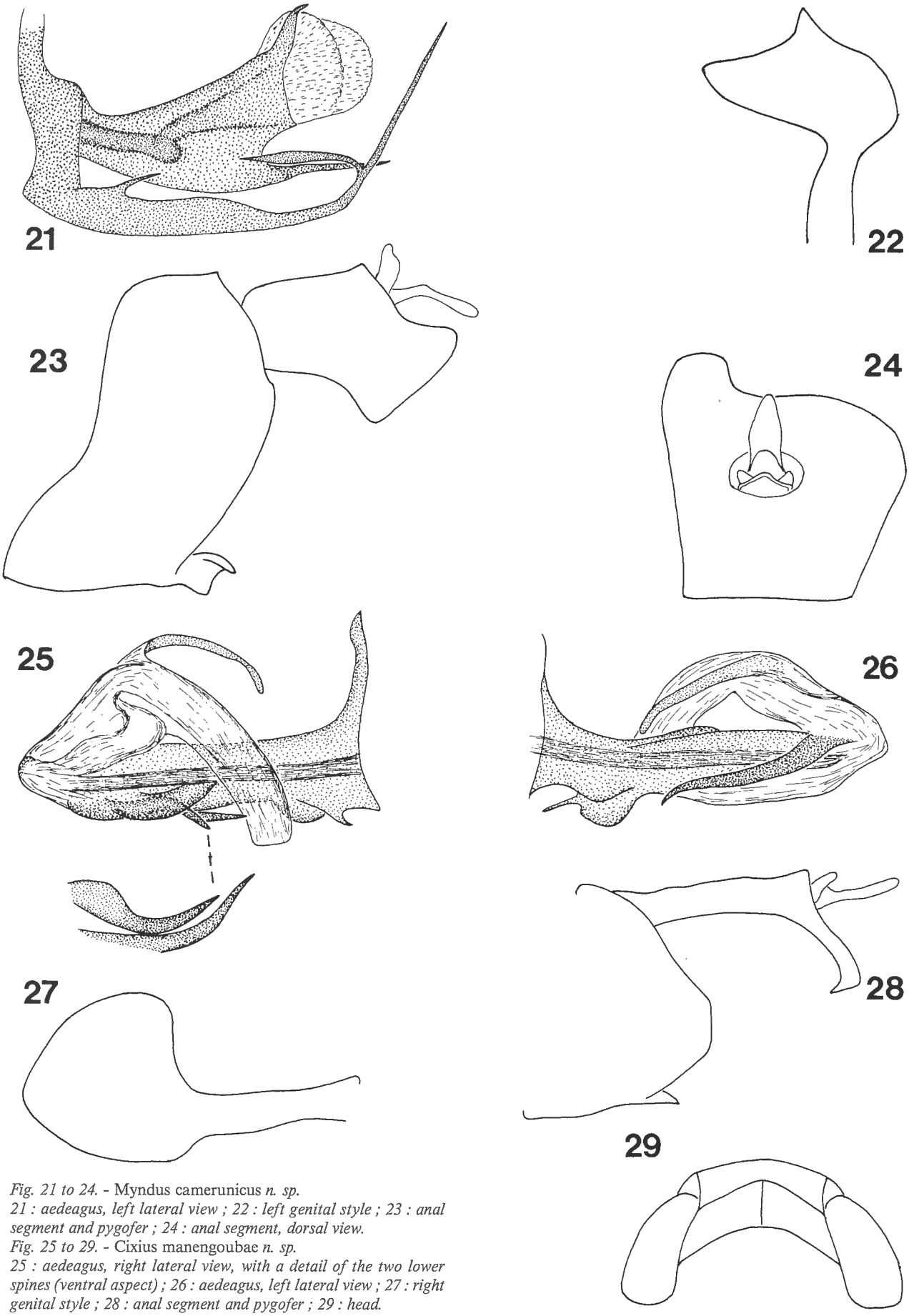
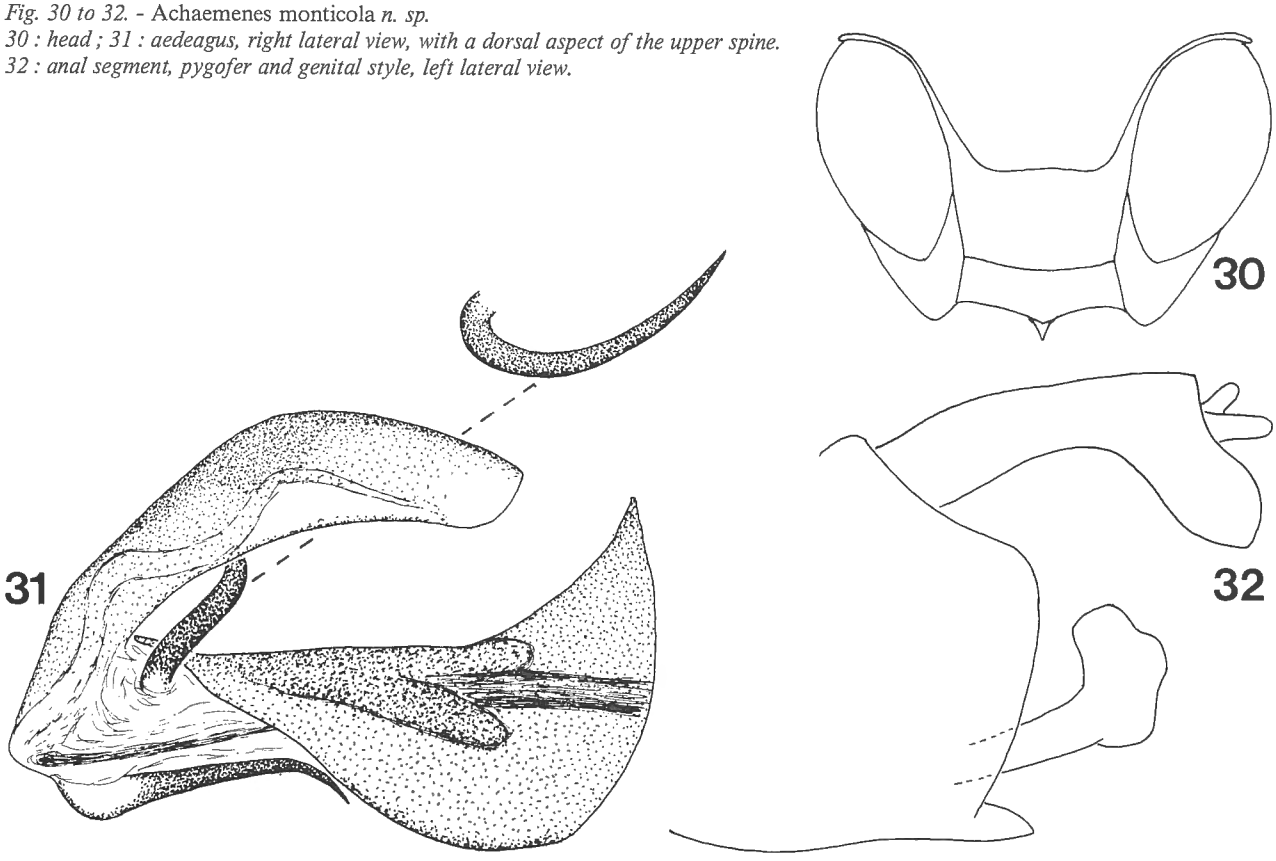


Fig. 21 to 24. - Myndus camerunicus *n. sp.*
21 : aedeagus, left lateral view ; 22 : left genital style ; 23 : anal segment and pygofer ; 24 : anal segment, dorsal view.
Fig. 25 to 29. - Cixius manengoubae *n. sp.*
25 : aedeagus, right lateral view, with a detail of the two lower spines (ventral aspect) ; 26 : aedeagus, left lateral view ; 27 : right genital style ; 28 : anal segment and pygofer ; 29 : head.

Fig. 30 to 32. - Achaemenes monticola *n. sp.*
30 : head ; 31 : aedeagus, right lateral view, with a dorsal aspect of the upper spine.
32 : anal segment, pygofer and genital style, left lateral view.



Male genitalia : pygofer, anal segment and genital styles symmetrical (fig. 27 and 28). Aedeagus (fig. 25 and 26) with three spines, two of which inserted along the ventral border, and one inserted along the right side. Flagellum long, with a long spinose process along its dorsal margin.
Total length : 7 mm.

DIAGNOSIS
Cixius manengoubae is easily distinguished from all other *Cixius* species by the long process on the flagellum.

ETYMOLOGY
The name is derived from the type-locality.

Achaemenes monticola n. sp.
(fig. 30 to 32)

MATERIAL EXAMINED
Holotype ♂ - Mount Oku 2500 m, 8-III-1983
Paratypes - 1 ♂ 4 ♀, Bambouto Mountains 2180 m, 16-I-1983, swept in galery forest.

DESCRIPTION
Colour brown ; mesonotum yellowish brown, space between the shoulders and outer keels brown. Vertex as illustrated (fig. 30). Tegmina hyaline, veins densely covered with brown pustules ; apical cells fumated with brown.

Male genitalia : anal segment, pygofer, and genital styles as illustrated (fig. 32). Aedeagus (fig. 31) with two spines and a long flagellum ; the first spine running ventrally along the right side, the second inserted on the right side and curved to the left between the aedeagal stem and the flagellum.
Total length : 5-6 mm.

DIAGNOSIS
This species resembles *Achaemenes hyleorias* LINNAVUORI by the shape of the aedeagus. However, the ventral aedeagal spine is longer than that of *Achaemenes hyleorias*, as illustrated by LINNAVUORI (1973). Furthermore, *Achaemenes monticola* can be distinguished by its smaller size, the proportions of the vertex and the shape of the genital styles.

ETYMOLOGY
The name refers to the habitat (mountain).

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