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New species and new records of spiders of the genus *Langbiana* (Araneae: Zodariidae).

Scientific Report of the Belgian Cameroon Expeditions 1981 and 1983 XVI

by

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With 6 figures

ABSTRACT

The following new species are described: *koupensis* n. sp. (♂ ♀), *albotibialis* n. sp. (♂ ♀), *inflata* n. sp. (♂), *debeiri* n. sp. (♂), *scutata* n. sp. (♂ ♀), *manengoubensis* n. sp. (♂), *mbamensis* n. sp. (♂), *okuensis* n. sp. (♂), *tridentata* n. sp. (♂ ♀), *vandermarlierei* n. sp. (♂ ♀), *mbaboensis* n. sp. (♂ ♀), and *vokrensis* n. sp. (♂ ♀).

INTRODUCTION

Previous papers on spiders collected by the Belgian Expedition 1981 to Mount Cameroon (BOSMANS 1982, BOSMANS & JOCQUÉ 1983 and VAN HOVE & BOSMANS 1984) treated respectively Hahniidae, Linyphiidae and Zodariidae. In 1983, the first author together with staff members of the State University of Gent undertook a second expedition to Cameroon. Spiders were collected on Mount Koupé (2050 m), the Manengouba Massif (2396 m), the Bambouto Mountains (2740 m), the Mbam Massif (2335 m), Mount Oku

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(3008 m), Tohabal Mbabo (2460 m), and the Poli Mountains (Pic Hosséré Vokré, 2040 m). The localities are described in detail in BOSMANS (in press); the same author also gives an account of the collected Linyphiidae. In the present paper, the spiders of the Zodariid genus *Langbiana* are considered.

In the paper treating the Zodariidae of Mount Cameroon, VAN HOVE & BOSMANS (1984) described five new Zodariid species, which they placed in the genus *Suffucioides* Jézéquel. However, *Suffucioides* appeared to be a junior synonym of *Langbiana* Hogg (BOSMANS & VAN HOVE 1986) and all species were therefore transferred to *Langbiana*.

On Mount Cameroon, all collected Zodariidae belonged to *Langbiana*; on the newly sampled mountains however, species belonging to other genera occurred as well (e. g. *Diores*); these will be described by Dr. Jocqué (Tervuren).

Species descriptions are taken to a minimum, and are as in VAN HOVE & BOSMANS (1984). Genital organs are always described in detail; much attention has been paid to the shape of the suprategular apophysis and of the embolus, which are of great diagnostic importance. Females are much more difficult to identify. The epigyne consists of a median plate, completely detached in some species, or connected to the anterior abdominal integument in others. The median plate is bordered by chitinous ridges, which in many species develop into distinct postero-lateral horns.

Holotypes are deposited in the Musée royal d'Afrique centrale in Tervuren (MRAC); paratypes are deposited in the MRAC, the Muséum d'Histoire naturelle de Genève (MHNG), or in the first author's collection.

LIST AND DESCRIPTION OF SPECIES

***Langbiana cameroonensis* (VAN HOVE & BOSMANS)**

Suffucioides cameroonensis VAN HOVE & BOSMANS, 1984: 77.

Langbiana cameroonensis; BOSMANS & VAN HOVE 1986: 22.

Material: Mungo River Forest Reserve, 120 m, 2♂, pitfall in lowland rain forest, 22.IV.1983. Mount Koupé, 550 m, 4♂ 1♀, pitfall in lowland forest, 8.II.1983; 900 m, 3♂ 2♀, pitfall in submontane rain forest, 8.II.1983; 1300 m, 1♂, pitfall in submontane rain forest, 8.II.1983.

Discussion: The specimens were compared with the type material from Mount Cameroon, and the sexual organs appear identical. They are however somewhat larger, and most of them have a unicolorous blackish abdomen.

On Mount Cameroon, *Langbiana cameroonensis* occurred from 700 m up to 1500 m. More to the north, the species apparently also occurs at lower levels.

***Langbiana sylvatica* (VAN HOVE & BOSMANS)**

Suffucioides sylvaticus VAN HOVE & BOSMANS, 1984: 88.

Langbiana sylvatica; BOSMANS & VAN HOVE 1986: 22.

Material: Mount Koupé, 550 m, 1♂, pitfall in lowland rain forest, 8.II.1983.

Discussion: This species was described from Pic Etinde of Mount Cameroon, where a single male was found at 900 m. Thus, this species too occurs at lower levels on Mount Koupé.

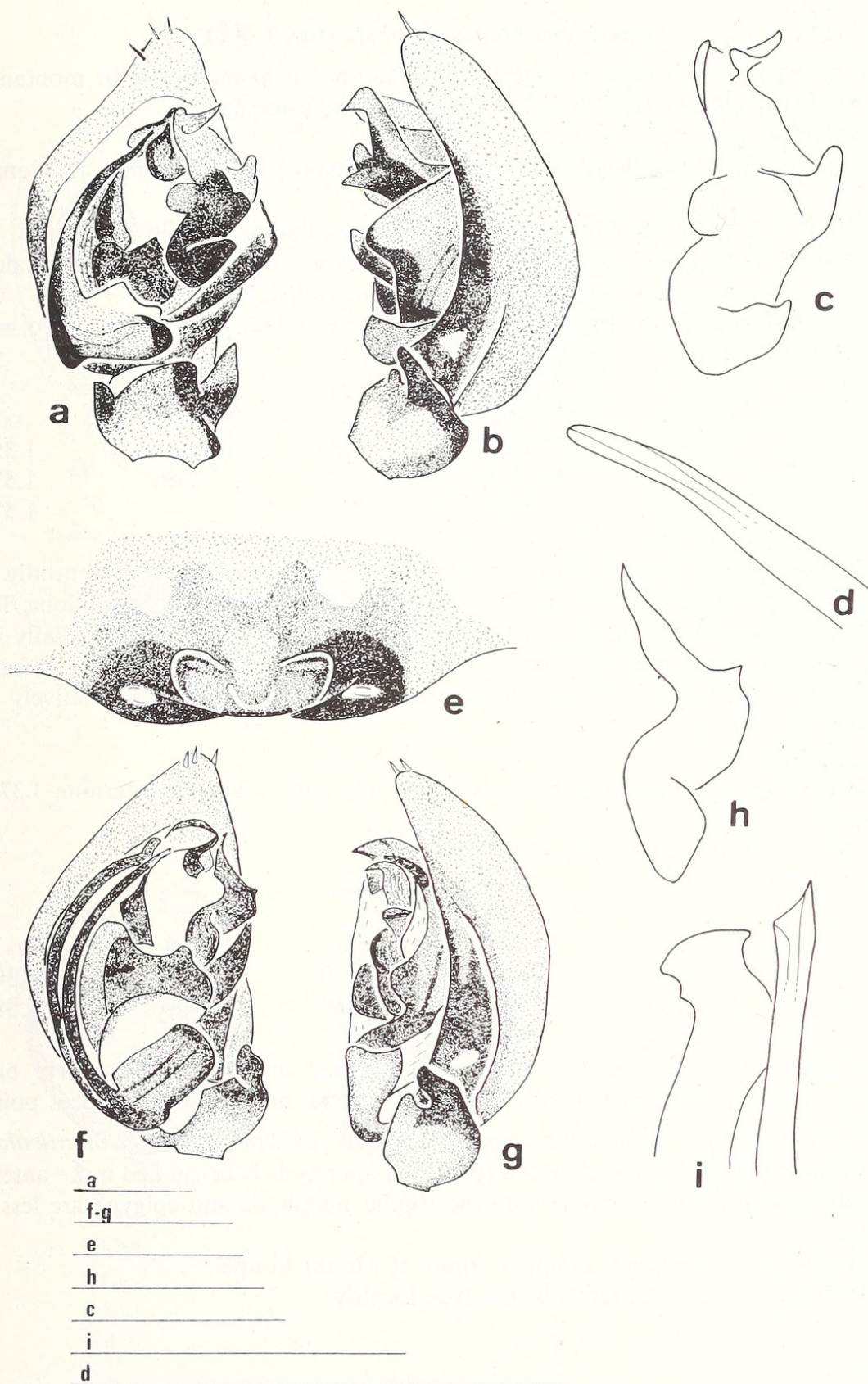


FIG. 1.

Langbiana koupensis n. sp. a. Left male palp, ventral view; b. Idem, lateral view; c. Suprategular apophysis, ventrolateral view; d. Tip of embolus, ventromesal view; e. Epigyne.

Langbiana inflata n. sp. f. Left male pap, ventral view; g. Idem, lateral view; h. Suprategular apophysis, ventrolateral view; i. Tip of embolus, ventromesal view.

Scale line: 0.5 mm (a, f, g), 0.25 mm (c-e, h, i).

Langbiana koupensis n. sp. (figs 1, a-e)

Material: Male holotype: Mount Koupé, 1600 m, pitfall in montane rain forest, 8.II.1983 (MRAC 164 194); 1♂ 2♀ paratypes, same data.

Male holotype

Measurements: Total length 5.69; carapace 3.03 long, 2.3 wide; sternum 1.32 long, 1.20 wide.

Colour: Carapace chestnut brown. Chelicerae and sternum yellowish brown. Coxae yellowish white, other segments of legs yellowish brown. Abdomen greyish black, dorsally 4 pairs of spots, a narrow bar and a terminal spot whitish.

Eyes: AM = 1, AL = PL = 9/10, PM = 4/5; a = 1/2, b = 3/5, c = 1, d = 2.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.16	0.86	1.80	1.75	1.39
IV	2.32	0.89	1.99	2.56	1.51
palp	1.25	0.55	0.36	—	1.51

Male palp (figs 1, a-d): Tibial apophysis relatively long, directed anteroventrally. Cymbial ridge 1/3 the cymbium's length. Tegulum with conspicuous, blunt, lateral lobe. Tegular apophysis broad and complicated: basally with a transverse, large fold, medially with a mesal, rounded lobe and two lateral, ventrally directed teeth; terminally bifurcated. Embolar base in lateral direction, with posterior concavity; embolus relatively short, gradually narrowing.

Female paratype

Measurements: Total length 6.67; carapace 3.27 long, 2.30 wide; sternum 1.37 long, 1.34 wide.

Colour as in the male. Eyes all of equal size.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.16	0.89	1.70	1.53	1.30
IV	2.69	0.96	2.06	2.64	1.58

Epigyne (fig. 1, e): Median plate not detached anteriorly; posteriorly broadly rounded, anteriorly concave, laterally depressed. Lateral horns well-developed, pointed.

Diagnosis: *Langbiana koupensis* n. sp. is closely related to *L. monticola* from Mount Cameroon. In the latter species, the tibial apophysis is orientated more anteriorly, the cymbial ridge is more oblique, and the tegular apophysis and epigyne are less complicated.

Distribution: Cameroon, montane forest of Mount Koupé.

Etymology: The name refers to the type locality.

Langbiana albotibialis n. sp. (figs 2, a-e)

Material: Male holotype: Mount Koupé, 900 m, pitfall in submontane forest, 8.II.1983 (MRAC 164 182). Paratypes: 3♂ 2♀, same data (1♂ 1♀ in MHNG); 550 m, 2♂ in pitfall in lowland rain forest, 8.II.1983. Mungo River Forest reserve, 120 m, 1♂ in pitfall in lowland rain forest, 22.III.1983.

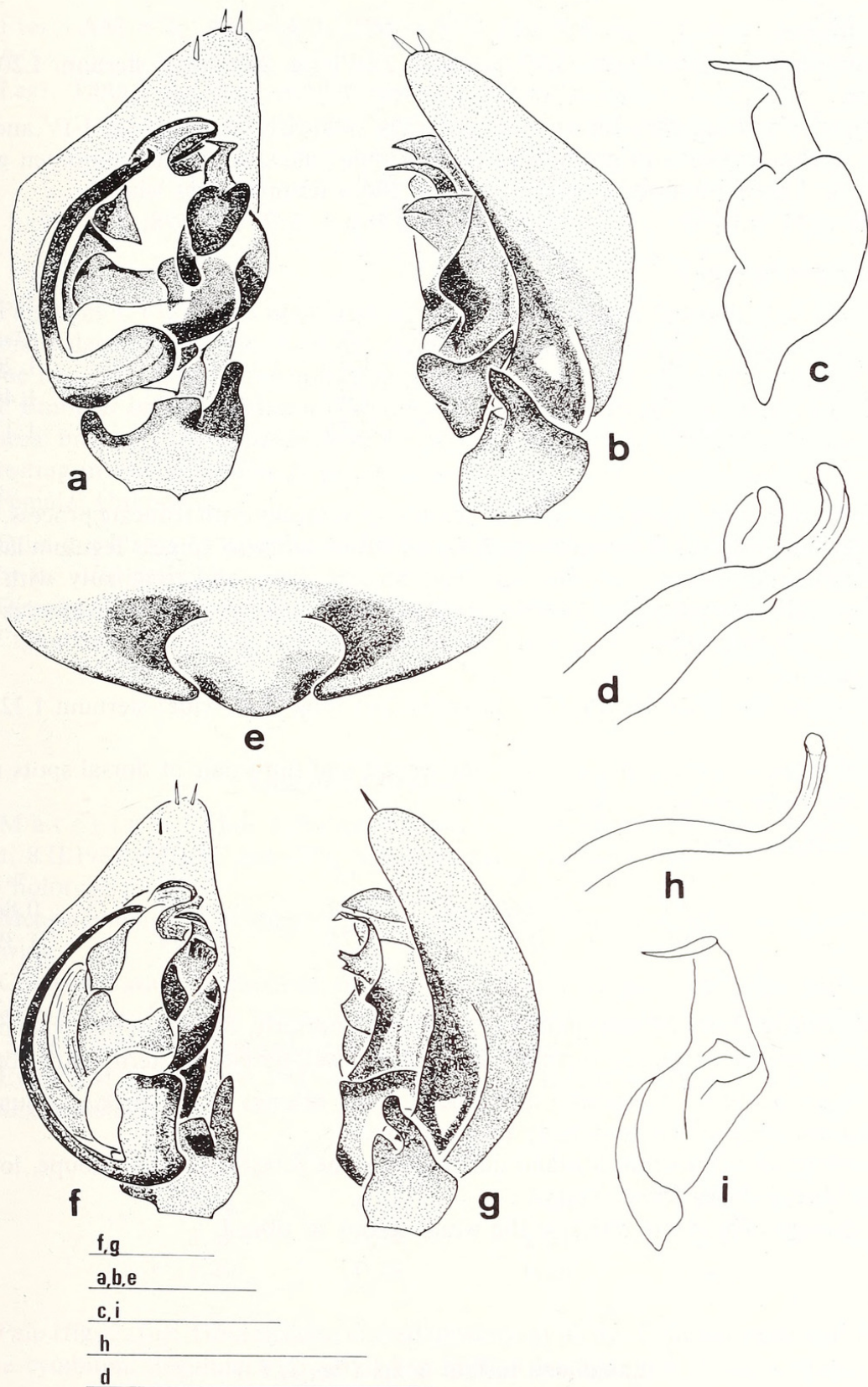


FIG. 2.

Langbiana albotibialis n. sp. a. Left male palp, ventral view; b. Idem, lateral view; c. Suprategular apophysis, ventrolateral view; d. Tip of embolus, ventromesal view; e. Epigyne, ventral view.

Langbiana debeiri n. sp.

f. Left male palp, ventral view; g. Idem, lateral view; h. Tip of embolus, ventromesal view; i. Suprategular apophysis, ventrolateral view. Scale line: 0.5 mm (a, b, e-g), 0.25 mm (d, c, h, i).

Male holotype

Measurements: Total length 5.15; carapace 2.66 long, 2.01 wide; sternum 1.20 long, 1.10 wide.

Colour: Carapace dark brown; legs generally yellowish brown, coxae I-IV and tibia I white, femora brown with greenish gloss. Sternum yellowish brown. Abdomen greyish black, with 3 pairs of spots, 2 transverse bars, and a terminal spot whitish.

Eyes: AM = 1, AL = PL = $\frac{3}{4}$, PM = $\frac{3}{5}$; a = $\frac{3}{7}$, b = $\frac{5}{8}$, c = $\frac{7}{8}$, d = 2.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.68	0.72	1.41	1.39	1.20
I	2.09	0.77	1.75	2.64	1.46
palp	1.08	0.36	0.26	—	1.17

Palp (figs. 2, a-d): Tibia with oblique apophysis, ventrally with truncate process. Cymbium with short ridge of $\frac{1}{3}$ its total length, and with 3 terminal spines. Tegulum laterally raised. Tegular apophysis with median, semi-circular crest, and terminally with long, pointed, mesally curved tooth. Embolar base in postero-mesal direction; embolus short and stout, terminally bifid.

Female paratype

Measurements: Total length 5.76; carapace 2.61 long, 2.08 wide; sternum 1.32 long, 1.25 wide.

General appearance as in the male, but second and third pair of dorsal spots nearly absent, and AME somewhat smaller.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.65	0.60	1.23	1.49	0.84
II	2.01	0.65	1.75	2.64	1.39

Epigyne (fig. 2, e): Median plate not detached anteriorly, oval, posteriorly somewhat protruding over the epigastric furrow. Lateral horns well-developed, terminally obtuse.

D i a g n o s i s : *Langbiana albotibialis* n. sp. belongs to the *nyikae* group. It is easily distinguished by the terminally bifid embolus.

Distribution: Cameroon, lowland and submontane forest of Mount Kouké, lowland forest of Mungo River forest reserve.

Etymology: The name refers to the white colour of tibia I.

***Langbiana inflata* n. sp. (figs 1, f-i)**

M a t e r i a l : Male holotype: Mungo River forest reserve, 120 m, in pitfall in lowland rain forest, 22.III.1983 (MRAC 164 196).

Male holotype

Measurements: Total length 4.49; carapace 2.30 long, 1.73 wide; sternum 0.98 long, 0.93 wide.

Colour: As the preceding species.

Eyes: AM = 1, AL = 4/5, PM = 3/7, PL = 4/5; a = 3/7, b = 1/2; c = 1, d = 9/5.

Legs: Tibia I distinctly swollen ventrally. Measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.65	0.60	1.23	1.49	0.84
II	2.01	0.65	1.75	6.64	1.39
Palp	0.89	0.36	0.22	—	1.03

Palp (figs 1, f-i): Tibial apophysis curved anteroventrally, ventrally with obtuse tooth. Cymbial ridge half the length of the segment. Tegular apophysis distinctly curved, with oblique basal ridge, small mediolateral tubercle, and slender, anteriorly directed terminal tooth. Embolar base in posterior direction, with postero-lateral concavity; embolus bifid, the mesal branch with terminal curve, the lateral branch linear, containing the sperm duct, and resting in the excavation of the conductor.

Female: Unknown.

D i a g n o s i s : *Langbiana inflata* n. sp. is easily recognizable by its swollen Ti I, and by its bifid embolus.

Distribution: Lowland rain forest of Mungo River forest reserve.

Etymology: The name refers to the swollen tibia I.

***Langbiana debeiri* n. sp. (figs 2, f-i)**

M a t e r i a l : Male holotype: Mount Koupé, 1300 m, pitfall in submontane rain forest, 8.II.1983 (MRAC 164 192); one male paratype, same data.

Male holotype

Measurements: Total length 6.18; carapace 3.03 long, 2.25 wide; sternum 1.25 long, 1.32 wide.

Colour: Carapace chestnut brown with darker margins; sternum and chelicerae yellowish orange; legs pale yellow, femora darker, with green gloss; abdomen greyish black, with 5 pairs and one unpaired, terminal whitish spot.

Eyes: AM = 1; AL = PM = PL = 5/7; a = 1/3, b = 2/3, c = 4/9, d = 4/3.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.08	0.80	1.80	1.90	1.49
II	2.42	0.84	2.11	2.85	1.63
palp	1.20	0.48	0.26	—	1.44

Palp (figs 2, f-i): Tibia slender, curved upwards at its tip. Cymbial ridge half the length of the cymbium. Tegulum with small but distinct lateral tooth. Tegular apophysis with oblique basal ridge, two small median teeth, and terminally curved in mesal direction. Embolar base directed posteriorly; embolus linear, rather broad, terminally with a curve.

Female: Unknown.

D i a g n o s i s : *Langbiana debeiri* n. sp. is diagnosed by its posteriorly directed embolar base, and by the shape of the suprategular apophysis. It is close to *L. submonticola*, which has however a white tibia I, and a suprategular apophysis of another shape.

Distribution: Submontane rain forest of Mount Koupé.

Etymology: The species is dedicated to Jan De Beir, who accompanied the first author on the two Cameroon expeditions and assisted with the field work.

Langbiana scutata n. sp. (figs. 3, a-e)

Material: Male holotype: Cameroon, Mount Koupé, 1600 m, pitfall in montane forest, 8.II.1983 (MRAC 164 183). Paratypes: 9♂ 3 ♀, same data (1♂ 1 ♀ in MHNG); 2050 m, 1♂ in pitfall in montane forest near the top, 8.II.1983.

Male holotype

Measurements: Total length 5.15; carapace 2.52 long, 1.82 wide; sternum 1.03 long, 1.01 wide.

Colour: Carapace chestnut brown; sternum and chelicerae pale brown; legs generally yellowish, but Fe I, distal part of Fe II-IV, patella I, distal part of patellae II-IV, and base of tibiae brown. Abdomen with anterodorsal, brown hump; uniformly purplish black with small whitish spot before spinnerets.

Eyes: AM = 1; AL = PM = PM = 8/9; a = b = 5/9, c = 7/9, d = 4/3.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.81	0.60	1.32	1.44	1.13
IV	1.92	0.65	1.58	2.28	1.34
palp	0.89	0.31	0.24	—	1.03

Palp (fig. 3, a-d): Tibial apophysis short. Cymbial ridge 1/3 the length of the cymbium. Tegular apophysis with oblique basal ridge, a large median tooth, and terminally pointed and curved in mesal direction. Embolic base in mesal direction, with small posterior concavity. Embolus rather broad, distal half split into a short, broad mesal branch, and a longer, slightly twisted lateral branch.

Female paratype

Measurements: Total length 4.97; carapace 2.30 long, 1.46 wide; sternum 0.96 long, 0.96 wide.

Generally as in the male, but abdomen without anterodorsal hump.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.53	0.60	1.22	1.20	0.98
IV	1.58	0.65	1.39	1.92	1.17

Epigyne (fig. 3, e): Median plate transverse, with distinct anteromedian incision. Lateral horns poorly developed, pointed.

Diagnosis: *Langbiana scutata* n. sp. is diagnosed by the anterodorsal abdominal hump.

Distribution: Montane forest of Mount Koupé.

Etymology: The name refers to the anterodorsal hump of the abdomen.

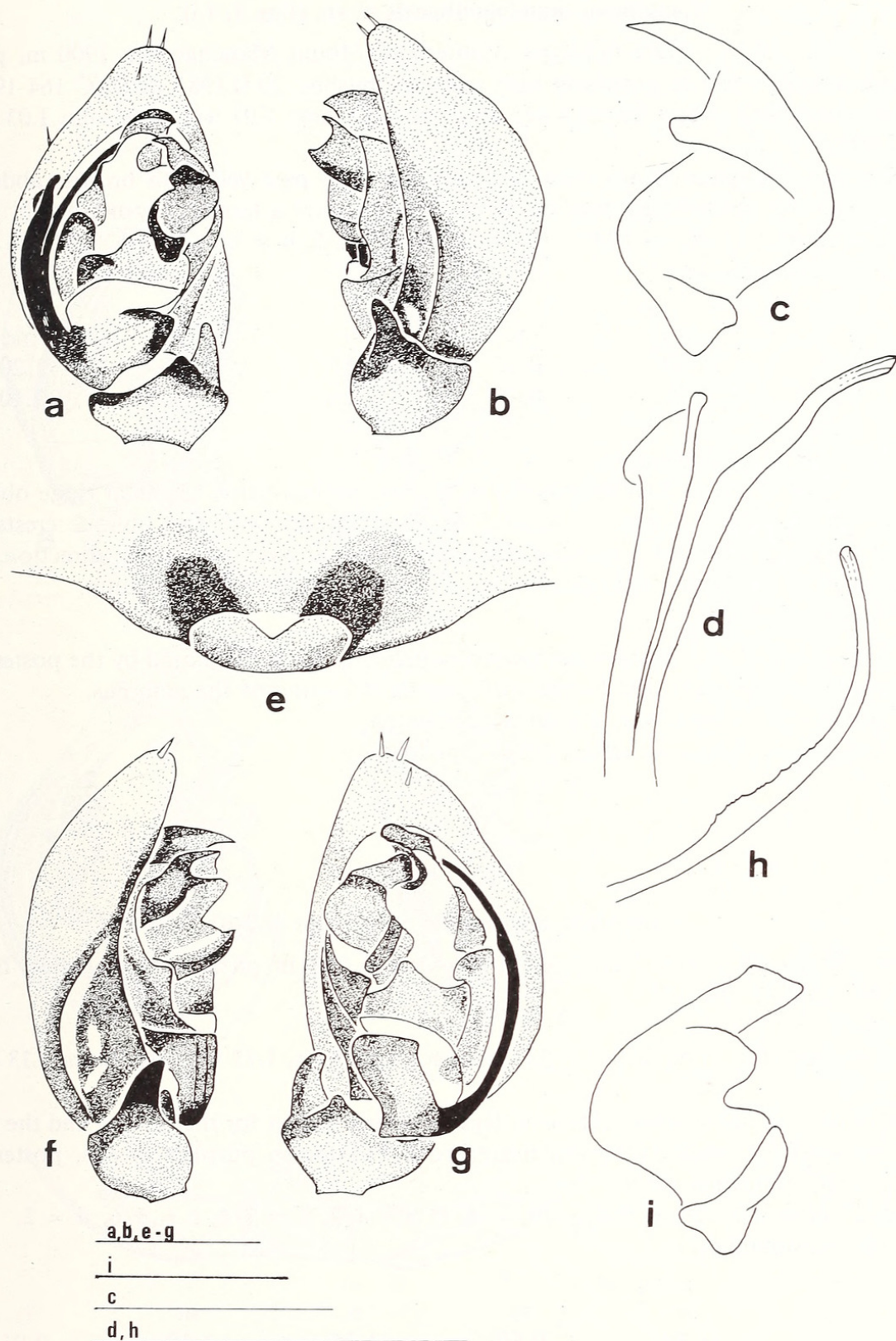


FIG. 3.

Langbiana scutata n. sp. a. Left male palp, ventral view; b. Idem, lateral view; c. Suprategular apophysis, ventrolateral view; d. Tip of embolus, ventromesal view; e. Epigyne, ventral view.
Langbiana manengoubensis n. sp. f. Left male palp, lateral view; g. Idem, ventral view; h. Tip of embolus, ventromesal view; i. Suprategular apophysis, ventrolateral view. Scale line: 0.5 mm (a, b, e-g), 0.25 mm (c, d, h, i).

***Langbiana manengoubensis* n. sp. (figs 3, f-i)**

Material: Male holotype: Cameroon, Mount Manengouba, 1900 m, pitfall around Woman's lake in grassland with scattered bushes, 20.II.1983 (MRAC 164 195).

Measurements: Total length 4.42; carapace 2.69 long, 1.97 wide; sternum 1.03 long, 1.02 wide.

Colour: Carapace brown with dark margin; legs pale yellowish brown; abdomen purplish brown, with paired, median spots, two bars and a terminal spot whitish.

Eyes: AM = 1, AL = PM = PL = 9/10; a = 2/5, b = c = 1/2, d = 6/5.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
IV	1.92	0.67	1.56	2.01	1.20
palp	0.93	0.40	0.26	—	1.10

Both legs I are broken off.

Palp (figs 3, f-i): Tibial apophysis stout, with median bend. Cymbial ridge oblique, 2/5 the length of the cymbium. Tegular apophysis broad, with two oblique crests, terminally rounded. Conductor pointed terminally. Embolar base in posterior direction, with posteromedian concavity; embolus linear, with small mediolateral widening.

Female: Unknown.

Diagnosis: *Langbiana manengoubensis* n. sp. is diagnosed by the posteriorly orientated embolar base, and by the mediolateral widening of the embolus.

Distribution: Cameroon, Mount Manengouba.

Etymology: The name refers to the type locality.

***Langbiana mbamensis* n. sp. (figs 4, a-d)**

Material: Male holotype: Mbam Massif, 1550 m, pitfall in small gallery forest, 3.IV.1983 (MRAC 164 185).

Male holotype

Measurements: Total length 4.85; carapace 2.42 long, 1.75 wide; sternum 1.13 long, 0.96 wide.

Colour: Carapace chestnut brown; legs yellowish, except for the femora and the proximal two third of tibiae II-IV, which are brown. Abdomen purplish brown, posteriorly white; venter yellowish white.

Eyes: AM = 1, AL = PM = PL = 6/7; a = 1/2, b = 7/6, c = 5/6, d = 2.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.51	0.60	1.25	1.10	0.91
IV	1.77	0.70	1.39	1.92	1.03
palp	0.89	0.90	0.29	—	1.10

Palp (figs 4, a-d): Tibial apophysis slightly curved anteroventrally. Cymbial groove short. Tegular apophysis broad, with medio-mesal, subterminal and terminal, laterally directed teeth. Embolar base in transverse position, with posterior concavity; embolus split

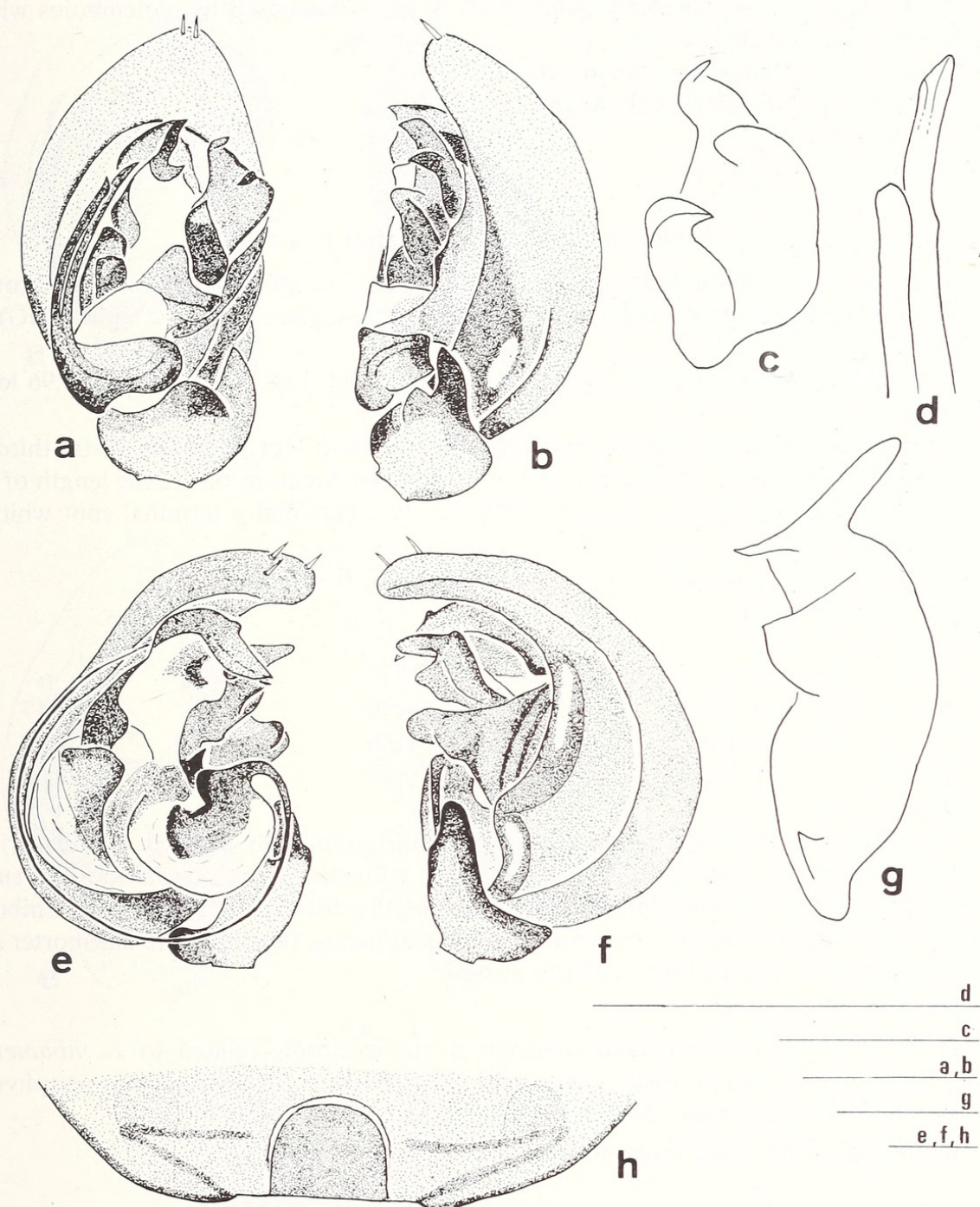


FIG. 4.

Langbiana mbamensis n. sp. a. Left male palp, ventral view; b. Idem, lateral view; c. Suprategular apophysis, ventrolateral view; d. Tip of embolus, ventromesal view.

Langbiana vokrensis n. sp. e. Left male palp, ventral view; f. Idem, lateral view; g. Suprategular apophysis, ventrolateral view; h. Epigyne, ventral view. Scale line: 0.5 mm (a, b, e-h), 0.25 mm (c, d).

into two branches, the mesal one somewhat shorter, the lateral one containing the sperm duct.

Female: Unknown.

D i a g n o s i s : *Langbiana mbamensis* n. sp. is diagnosed by the embolus which is split into two branches.

Distribution: Cameroon, Mbam Massif.

Etymology: The name refers to the type locality.

Langbiana okuensis n. sp. (figs 5, a-d)

M a t e r i a l : Male holotype: Mount Oku, 2200 m, pitfall in open forest around lake Oku, 8.III.1983 (MRAC 164 193); 3 male paratypes, same data (1♂ in MHNG).

Male holotype

Measurements: Total length 4.97; carapace 2.47 long, 1.88 wide; sternum 0.96 long, 0.96 wide.

Colour: Carapace yellowish brown with dark margin; legs yellowish, distal third of femora slightly darkened. Abdomen with poorly expressed scutum of 1/3 the length of the abdomen; greyish black, with two pairs of spots, two bars and a terminal spot whitish. Venter yellowish white.

Eyes: All eyes equal; $a = 5/8$, $b = 3/4$, $c = 2/3$, $d = 3/2$.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.68	0.67	1.56	1.61	1.17
IV	1.96	0.67	1.56	1.96	1.10
palp	1.01	0.29	0.29	—	1.08

Palp (figs 5, a-d): Tibial apophysis gently curved, terminally pointed. Cymbial ridge 2/5 the length of the cymbium. Tegular apophysis with strong, basomesal tooth, a small basolateral tooth, a median ridge, and a strong, mesally directed terminal hook. Embolar base orientated in posteromesal direction; embolus bifurcate, the mesal branch shorter and nearly straight, the lateral branch gently curved.

Female: Unknown.

D i a g n o s i s : *Langbiana okuensis* n. sp. is closely related to *L. mbamensis* n. sp., from which it can be easily separated by the shape of the suprategular apophysis.

Distribution: Cameroon, Mount Oku.

Etymology: The name refers to the type locality.

Langbiana tridentata n. sp. (figs 6, e-h)

M a t e r i a l : Male holotype: Tchabal Mbabo, 2000 m, among stones in stony grassland, 12.IV.1983 (MRAC 164 188). Paratypes: One female, same data as holotype; 1250 m, 1♂ in *Carex* tussocks, 9.IV.1983; 1250 m, 1♀ in pitfall in open savannah grassland, 3.IV.1983; 1400 m, 1♀ in litter of gallery forest, 11.IV.1983 (MHNG); 1600 m, 2♀ in litter of small relict of montane forest, 11.IV.1983; 1700 m, 1♂ in grass tussocks, 10.IV.1983 (MHNG).

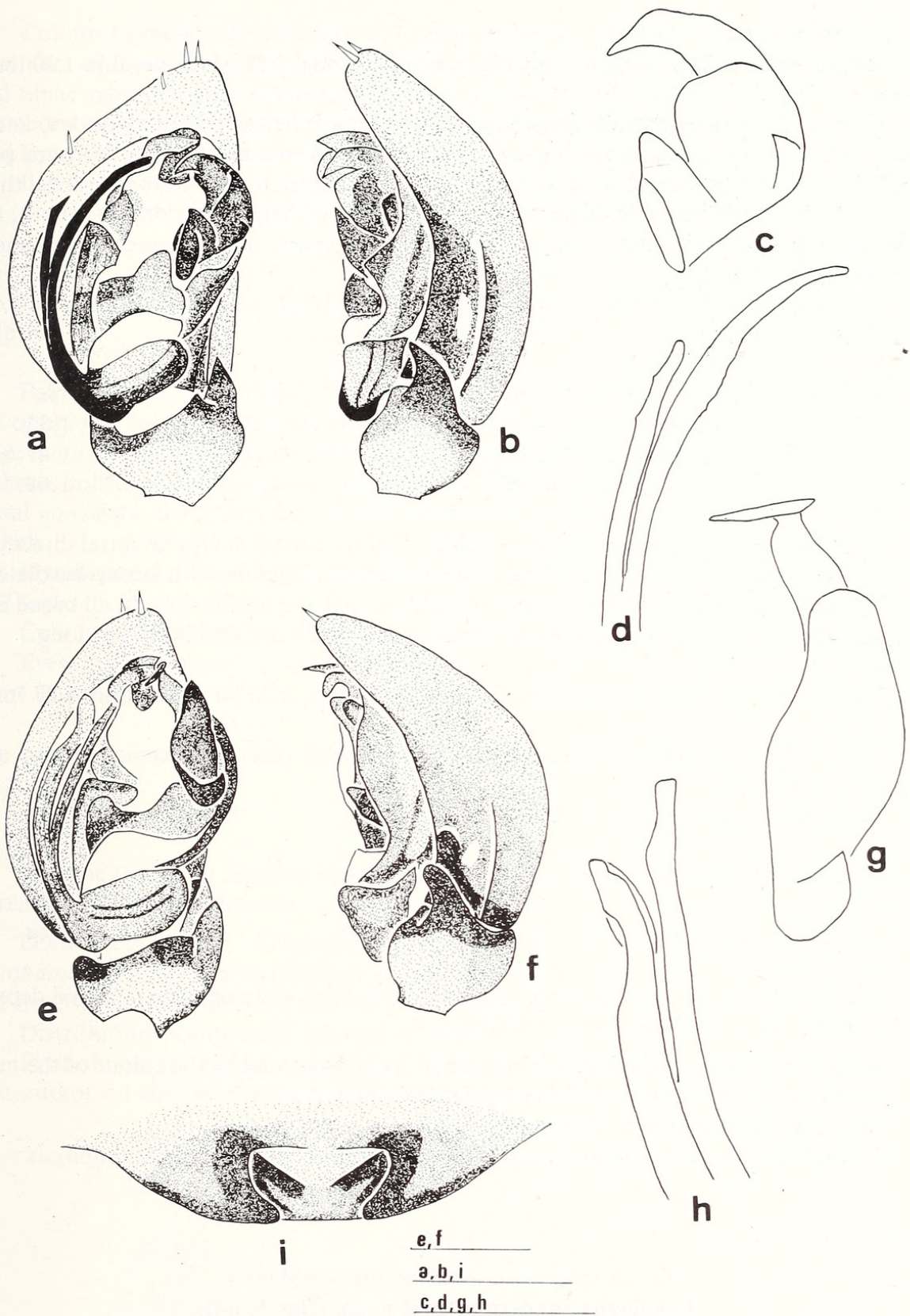


FIG. 5.

Langbiana okuensis n. sp. a. Left male palp, ventral view; b. Idem, lateral view; c. Suprategular apophysis, ventrolateral view; d. Tip of embolus, ventromesal view.

Langbiana vandermarlierei n. sp. e. Left male palp, ventral view; f. Idem, lateral view; g. Suprategular apophysis, ventrolateral view; h. Tip of embolus, ventromesal view; i. Epigyne, ventral view.

Scale line: 0.5 mm (a, b, e, f, i), 0.25 mm (c, d, g, h).

Male holotype

Measurements: Total length 6 mm; carapace 2.87 long, 2.18 wide; sternum 1.20 long, 1.15 wide.

Colour: Carapace generally brown, a V-shaped mark before the fovea darker, and a broad lateral stripe in the thoracic part yellowish. Chelicerae pale brown, sternum pale yellowish with darker margin. Legs generally yellowish, except for the brownish distal third of the femora. Abdomen with large, dark brown scutum of half the abdomen's length; the distal part dark grey to black, with two pairs of small spots, three transverse bars and a terminal spot whitish.

Eyes: AM = 1, AL = PL = 7/6, PM = 4/3; a = 3/5, b = 1/2, c = 9/10, d = 5/4.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.99	0.78	1.70	1.80	1.32
IV	2.18	0.81	1.94	2.80	1.41
palp	1.13	0.96	0.24	—	1.68

Palp: (figs 6, e-g): Tibial apophysis slender, slightly curved in anteroventral direction; distally rounded. Cymbial ridge as long as the cymbium. Tegulum with strong basolateral tooth. Tegular apophysis with basal, median, subterminal and terminal teeth, all broad and lamellar at their base. Embolar base in anterolateral direction; embolus very long.

Female

Measurements: Total length 7.69; carapace 3.09 long, 2.20 wide; sternum 1.37 long, 1.37 wide.

Colour: Carapace brown, thoracic part only somewhat paler. Chelicerae, sternum and legs as in the male.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.13	0.91	1.73	1.68	1.30
IV	2.44	0.93	2.09	2.91	1.44

Epigyne (fig. 6, h): Median plate fully detached, oval, situated in a trapezoid depression. Lateral horns well-developed, pointed.

D i a g n o s i s : *Langbiana tridentata* n. sp. is diagnosed by the colour of the male carapace, and by the dentition of the tegular apophysis.

Distribution: Cameroon; Tchabal Mbabo.

Etymology: The name is an allusion to the dentition of the tegular apophysis.

***Langbiana vandermarlierei* n. sp. (figs 5, e-i)**

M a t e r i a l : Male holotype: Cameroon, Tchabal Mbabo, 1950 m, in litter of montane forest, 12.IV.1983 (MRAC 164 187); one female paratype, same data.

Male holotype

Measurements: Total length 7.15; carapace 3.21 long, 2.42 wide; sternum 1.37 long, 1.30 wide; chelicerae 1.03 long.

Colour: Carapace chestnut brown. Chelicerae brown. Sternum yellowish brown. Proximal part of femora, metatarsi and tarsi yellowish brown, distal part of femora, patellae and tibiae yellowish grey. Abdomen generally greyish black; anterodorsal brown spot 1/3 the abdomen's length; posterodorsally some small greyish spots.

Eyes: All eyes equal; $a = 8/9$, $b = 10/9$, $c = 1$, $d = 2$.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.06	0.84	1.68	1.77	1.25
IV	2.42	0.91	1.96	2.51	1.25
palp	1.22	0.50	0.36	—	1.41

Palp (figs 5, e-h): Tibial apophysis slightly curved. Cymbial ridge 1/3 the length of the cymbium. Tegular apophysis very slender, with strong, basolateral tooth, subterminal ridge and terminal hook. Conductor distinctly pointed. Embolar base in lateral direction; embolus split into two branches, the mesal one stronger, shorter, and with a subterminal mesal concavity, the lateral one slightly narrowed subterminally.

Female

Measurements: Total length 7.69; carapace 3.09 long, 2.20 wide; sternum 1.37 long, 1.37 wide.

Colour as in the male, but legs less contrasting.

Eyes: All eyes equal; $a = 8/9$, $b = 10/9$, $c = 1$, $d = 2$.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.28	0.91	1.73	1.73	1.20
IV	2.40	0.98	2.04	2.62	1.32

Epigyne (fig. 5, i): Median plate transverse, with deep anteromedian incision. Lateral horns well-developed, pointed.

Diagnosis: *Langbiana vandermarlierei* n. sp. is closely related to *L. mbamensis* n. sp. and *L. okuensis* n. sp., which have similar emboli, and from which it can be distinguished by the slender tegular apophysis.

Distribution: Cameroon: Tchabal Mbabo.

Etymology: The species is dedicated to Edwin Vandermarliere, who accompanied the first author on the two Cameroon Expeditions, and assisted with the field work.

***Langbiana mbaboensis* n. sp. (figs 6, a-d)**

Material: Male holotype: Cameroon, Tchabal Mbabo, 1250 m, in pitfall below *Terminalia* trees in savannah, 13.IV.1983 (MRAC 164 189). Paratypes: 8♂, 1♀, 1 subadult ♂, same data (1♂ in MHNG).

Male holotype

Measurements: Total length 5.83; carapace 2.97 long, 2.34 wide; sternum 2.62 long, 2.34 wide.

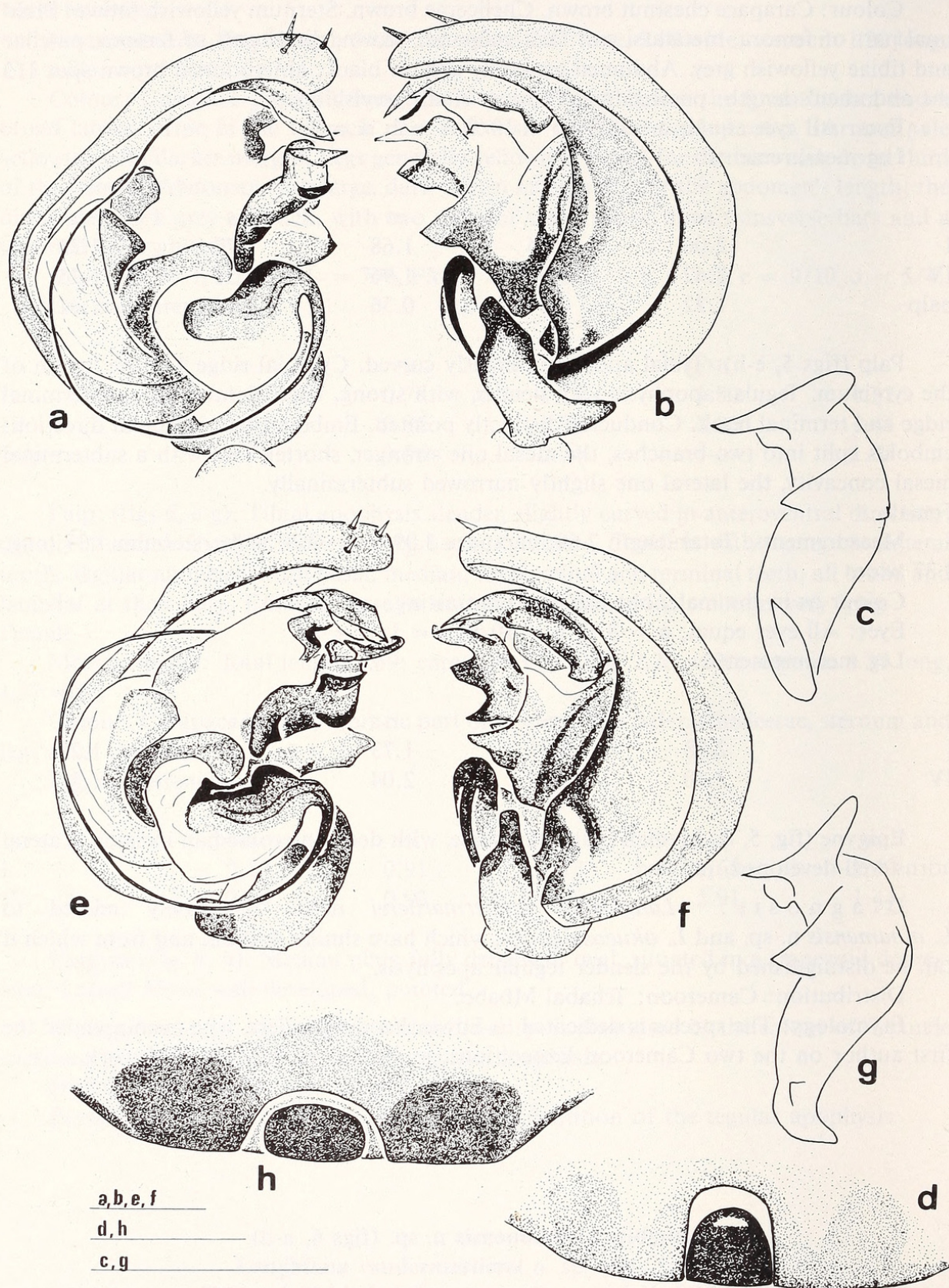


FIG. 6.

Langbiana mbaboensis n. sp. a. Left male palp, ventral view; b. Idem, lateral view; c. Suprategular apophysis, ventrolateral view; d. Epigyne, ventral view.

Langbiana tridentata n. sp. e. Left male palp, ventral view; f. Idem, lateral view; g. Suprategular apophysis, ventrolateral view; h. Epigyne, ventral view. Scale line: 0.5 mm.

Colour: Carapace two-coloured: cephalic part reddish brown, thoracic part yellowish red. Trochanters and femora of legs yellow, other segments yellowish brown. Abdomen with brown scutum of half its length, rest of the abdomen blackish, with 3 small paired spots and 4 transverse bars white.

Eyes: All eyes equal; $a = 3/5$, $b = c = 6/7$, $d = 8/5$.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.22	0.82	1.90	2.02	1.42
IV	2.40	0.87	2.16	3.06	1.42
palp	1.28	0.42	1.24	—	1.66

Palp (figs 6, a-c): Tibial apophysis curved in anteroventral direction, obtuse terminally. Cymbial ridge as long as the cymbium; cymbium with three terminal spines. Tegular apophysis with sharp basal tooth, median ridge, and large terminal lobe. Embolar base in anterolateral direction; embolus very long, threadlike. Tegulum with large, lateral tooth. Conductor sharply pointed terminally.

Female

Measurements: Total length 7.07; carapace 2.92 long, 1.96 wide; sternum 1.25 long, 1.23 wide.

Colour: Carapace brown, thoracic part somewhat paler, not distinctly two-coloured as in the male. Legs as in the male. Abdomen purplish black, with 5 pairs of chevrons, the posterior two touching, and a terminal spot white.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.02	0.83	1.62	1.49	1.26
IV	2.10	0.90	1.98	2.58	1.28

Epigyne (fig. 6, d): Median plate fully detached, square, anteriorly rounded, posteriorly straight.

D i a g n o s i s : *Langbiana mbaboensis* n. sp. is easily distinguished from other *Langbiana* species by its two-coloured carapace. *Langbiana bicolor* from Ivory Coast has an identical colour, but lacks the large tooth on the tegulum.

Distribution: Cameroon: Tchabal Mbabo.

Etymology: The name refers to the type locality.

***Langbiana vokrensis* n. sp. (figs 4, e-h)**

M a t e r i a l : Holotype male: Cameroon, Hosséré Vokré, 1070 m, in litter of small gallery forest, 17.IV.1983 (MRAC 164 180). Paratypes: 1 ♀, 1 subadult ♂, same data. Holotype male

Measurements: Total length 6.3; carapace 3.10 long, 2.3 wide; sternum 1.25 long, 1.20 wide.

Colour: As the preceding species.

Eyes: All eyes equal; $a = 3/4$, $b = c = 5/6$, $d = 2$.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	2.23	0.84	1.92	2.04	1.32
IV	2.51	0.91	2.23	3.10	1.39
palp	1.20	0.46	0.31	—	1.68

Palp (figs 4, e-g): Almost identical to the preceding species, but differing in the straight tibial apophysis, the notched tooth on the tegulum, and the presence of a small anterior tubercle on the conductor.

Female

Measurements: Total length 7.85; carapace 3.03 long, 2.01 wide; sternum 1.32 long, 1.30 wide.

Colour: As the preceding species, but carapace more reddish brown.

Leg measurements:

	Fe	Pa	Ti	Mt	Ta
I	1.92	0.86	1.56	1.63	1.32
IV	2.30	0.91	1.99	2.76	1.37

Epigyne (fig. 4, h): Median plate somewhat broader than in the preceeding species, and flanked by a transverse stripe.

D i a g n o s i s : *Langbiana vokrensis* n. sp. is closely related to *L. mbaboensis* n. sp. Males differ in the tibial apophysis, the tooth on the tegulum, and the tubercle on the conductor. Females have an epigyne with a somewhat broader plate, but we do not know at present wether this is constant, as we possess only one female of each species. The transverse lateral stripes in the epigyne of *vokrensis* may be caused by differences in translucency.

Distribution: Cameroon: Poli Mountains, Hosséré Vokré.

Etymology: The name refers to the type locality.

	Mount Cameroon	Mount Koupé	Mount Manengouba	Mbam Massif	Mount Oku	Tchabal Mbabo	Hosséré Vokré
Langbiana decurtata	500-900 m						
Langbiana etindei	700 m						
Langbiana sylvatica	900 m	550 m					
Langbiana cameroonensis	700-1500 m	120-1300 m					
Langbiana submonticola	1200-1600 m						
Langbiana monticola	1600-2100 m						
Langbiana inflata		120 m	1900 m				
Langbiana albotibialis		550-900 m					
Langbiana debeiri		1300 m					
Langbiana koupensis		1600 m					
Langbiana scutata		1600-2050 m					
Langbiana manengoubensis				1550 m			
Langbiana mbamensis					2200 m		
Langbiana okuensis						1250-2000 m	
Langbiana tridentata						1950 m	
Langbiana vandermarlierei						1250 m	
Langbiana mbaboensis							1070 m
Langbiana vokrensis							
Total number of species	6	7	1	1	1	3	1

FIG. 7.
Distribution of Langbiana species in the Cameroonian Highlands.

DISCUSSION

Figure 7 summarizes the distribution of *Langbiana* species in the Cameroonian Highlands, as established by the results of the Belgian Cameroon Expeditions.

On Mount Cameroon, 6 species of the genus occurred; on Mount Koupé, 7 species; on Tchabal Mbabo, 3 species; on Mount Manengouba, the Mbam Massif, Mount Oku and Hosséré Vokré, only 1 species. This distribution is clearly related with the occurrence of natural forest. On Mount Cameroon, where a full altitudinal gradient from sea level up to 4000 m was studied, *Langbiana* species only occurred up to 2200 m (VAN HOVE & BOSMANS 1983). On the other mountains as well, species never appear to occur above 2200 m. This altitude coincides with the boundary between montane forest and montane grassland. *Langbiana* species thus appear to be inhabitants of forest litter, and those mountains having the best developed and most diverse natural forest, are richest in species. On Mount Koupé, natural forest occurs up to the top and ranges from lowland forest to sub-montane and montane forest, explaining clearly the species diversity. Tchabal Mbabo is another mountain with large remnants of montane forest, and here three species were found. On Mount Manengouba, Mount Oku, the Mbam Massif and Hosséré Vokré, the forest is generally reduced to very small remnants, especially in valleys along rivulets. On all of them, only one species occurred. On the very degraded Bambouto Mountains, situated in the most densely populated part of Cameroon, they were absent completely.

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