ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN
(MINISTERIE VAN WELZIJN, VOLKSGEZONDHEID EN CULTUUR)

Deel 57 no. 1 6 september 1983

LINYPHIIDAE (ARANEAE) FROM IVORY COAST, WITH THE DESCRIPTION OF THREE NEW GENERA

by

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With 32 text-figures

Abstract

Fourteen species of Linyphiidae were collected in Ivory Coast. Of the Erigoninae, three genera with four species are described as new, viz., *Pachydelphus banco* n. gen. n. sp. (♂ ♀), *Pachydelphus tonqui* n. sp. (♀), *Deelemania manensis* n. gen. n. sp. (♂ ♀), and *Eburnella avocalis* n. gen. n. sp. (♂ ♀). Altogether 11 species of Erigoninae and 3 species of Linyphiinae can be mentioned.

Introduction

Ivory Coast is roughly quadrangular in shape and extends from 5° to 10°N, thus covering a wide range of climatic conditions.There are three main vegetation types which occur in belts of approximately the same width, parallel to the coast: 1, rain forest belt; 2, Guinean savanna; 3, savanna of the Sudan type. The second in fact is a mosaic of typical rain forest interspersed with pure grassland savanna. This pattern is supposed to be due to edaphic factors.

The present paper deals with two collections of Linyphiidae from the Ivory Coast. All collecting sites are in the vegetation types 1 and 2, but some specimens from Mali and Sudan, also treated in this paper, were collected in areas of the third type.

The first collection was made by one of us (R.J.) in cooperation with Mrs. E. Tybaert and is the result of one-and-a-half year of pitfall trapping in secondary forest, savanna and gardens, and of some occasional collecting. The second one was made available for study by Mrs. C. Deeleman and is mainly the result of her short collecting trip in 1975. The combined collections comprise 14 species, with only one species (*Simplicistilus tanuekes*) present in both. The explanation for

this is that Linyphiidae are relatively rare in W. Africa (Russell-Smith, 1981) and that Mrs. Deeleman collected in habitats different from those of Jocqué and Tybaert. These two collected in the area with mosaic forest-savanna vegetation in the centre of the country. Although these forests will hereafter be designated as "secondary" they are in fact remnants of primary forest with the highest stratum usually still present, underplanted with cocoa and coffee. Deeleman, on the contrary, mostly collected in true primary forest in the vicinity of Abidjan and Man. This type of vegetation has almost completely disappeared in the southwestern part of the country except for a few minor reserves of which "la réserve du Banco" in the neighbourhood of Abidjan is well-known.

List of species found

	PF	SF	S1	S2	G	O
Ceratinopsis machadoi (Miller)	+					
Deelemania manensis n. gen. n. sp.	+					
Eburnella avocalis n. gen. n. sp.		+				
Erigone prominens Bös. & Str.			+			
Oedothorax macrophthalmus Locket & Russell-Smith		+				
Pachydelphus banco n. gen. n. sp.	+					
Pachydelphus tonqui n. sp.	+					
Pseudomicrocentria minutissima Miller		+				
Tigellinus nigeriensis Locket & Russell-Smith		+				
Tybaertiella minor Jocqué		+	+			+
Tybaertiella peniculifer Jocqué			+			
Meioneta prosectes Locket			+	+		+
Metaleptyphantes perexiguus Simon & Fage		+	+		+	+
Simplicistilus tanuekes Locket	+	+			+	

PF: primary forest; SF: secundary forest; S1: Guinean savanna; S2: savanna of the Sudan type; G: garden; O: other habitat.

Up to now, most genera endemic to Africa became known first from the East African mountains. Some of them prove to have representatives in lowland habitats as well, e.g. *Tybaertiella* and *Metaleptyphantes*. A few genera are known from lowland habitats only (*Simplicistilus*, *Pseudomicrocentria*, *Pseudomaso*) but these are all monotypic and none of them was found in primary forest. Two of the three genera described in this paper may appear to be genera restricted to lowland primary forest. *Pachydelphus* is here described with two species, while two more are known to the authors, the four species all being from lowland rain forest. *Deelemania*, here described from the type species alone, is also known from an undescribed species found in dense rain forest in Gabon.

All this may indicate that secondarization of forests has a strong impact on their soil fauna, which appears to be still very poorly known. The same conclusion may be drawn from the studies of Leleup (1981) and Coulon (in press). Both these authors worked on soil dwelling Pselaphidae (Coleoptera) from Ivory Coast, mainly from the Banco forest reserve near Abidjan, and described an

impressive number of new taxa, although the soil fauna of the area had been studied before by Delamare-Debouteville (1951).

The material treated in this paper is deposited in the Rijksmuseum van Natuurlijke Historie, Leiden (RMNH) and in the Koninklijk Museum voor Midden-Afrika, Tervuren (MRAC).

Descriptions

Pachydelphus n. gen.

Medium sized Erigonids with smooth teguments. Male carapace with a lobe, carrying the posterior median eyes, and with a pair of interocular sulci. Legs of intermediate length, tibiae 7 to 10 times as long as their diameter. Leg IV longer than leg I. Tibial spines long, approaching 4 times the diameter of the segment on tibia IV. Tibiae I and II with two spines, III and IV with one spine. Trichobothrium on metatarsi near the middle of the segment, present on Mt IV. Male palpal tibia mesally expanded and with a broad dorsal apophysis. Paracymbium with three arms as in some linyphiine genera. Bulbus with a forward produced protegulum, partly covered by a sclerite which can be regarded as a lamella. Embolus running a double coil, one inside the bulb and a second one outside where it is very thin and accompanied by a long membranous suprategular apophysis. Epigyne very thick and provided with a roughly triangular large opening in its posterior half. The posterior part of the opening is filled up with a rectangular sclerite, being part of an interior structure of the epigyne.

There are no obvious relationships with known genera. *Pachydelphus* is probably a genus with species adapted to lowland rain forest. In the present paper two species from the rain forest belt in Ivory Coast are described. The authors have seen specimens probably belonging to different species of this genus from forested areas in Gabon and the Kivu Province in Zaïre.

Derivatio nominis. — The name is derived from the Greek pachus: thick and delphus: vulva, because of the unusually deep vulval structures.

Type species. — *Pachydelphus banco* n. sp.

Pachydelphus banco n. sp.
(figs. 1-10)

Male. — Carapace 0.93 mm long, 0.63 mm wide; total length: 1.93 mm.

Colour. — Very pale, obviously just moulted.

Carapace (figs. 1-2). — With a strong lobe carrying the PME and a pair of holes just above the PLE.

Eyes. — Medium sized. Anterior row procurved. AME somewhat more than their diameter apart but less than their radius from ALE which are twice as big. PLE slightly smaller. PME slightly larger than ALE. Clypeus 1.5 times the diameter of an ALE.

Figs. 1-6. *Pachydelphus banco* n. sp. 1. male carapace, lateral view; 2. Ditto, dorsal view; 3. Male palpal tibia, dorsal view; 4. Right male palp, lateral view; 5. Ditto, ventral view; 6. Ditto, mesal view, in methyl salicylate. (Scale line: 0.1 mm).

Chelicerae. — 0.39 mm long, anterior margin with 6 teeth, the most distal one very small. Posterior margin and stridulating file not observed.

Sternum. — As long as wide: 0.49 mm. Coxae of 4th pair of legs separated by about their diameter.

Legs. — Measurements (mm):

	Fe	Pt	T	Mt	t	Tot.
I	0.65	0.19	0.59	0.52	0.45	2.40
II	0.60	0.18	0.52	0.48	0.42	2.20
III	0.52	0.19	0.41	0.41	0.37	1.90
IV	0.67	0.20	0.60	0.58	0.42	2.47

Chaetotaxy. —

		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.54	0.22	?	0.78	?
II	0.48	0.23	?	0.71	?
III	0.41	0.27	2.25	—	
IV	0.48	0.25	3.14	—	

Superior tarsal claws with 6 minute teeth.

Palp (figs. 3-6). — Male palpal tibia mesally expanded, provided with a broad dorsal apophysis based in the middle of the article and toothed at its extremity; three trichobothria. Paracymbium with three arms, the median one with a group of hairs. Bulbus with a very long embolus, which is coiled twice. The second coil runs outside the bulbus, is very thin and accompanied by a twisted membranous suprategular apophysis. The protegulum is well developed and partly covered on its lateral side by what appears to be a lamella-like sclerite.

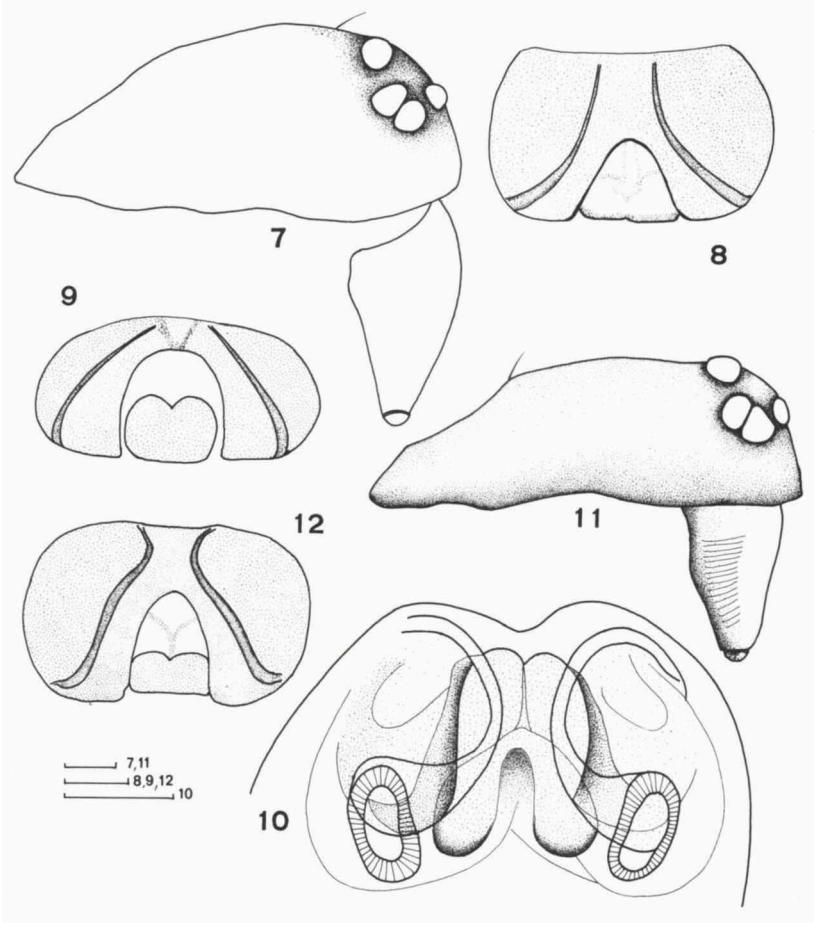
As the only known male of this taxon had obviously just gone through its last moult and thus is hardly sclerotized, its description is rather superficial. More detailed descriptions of the chelicerae and of the palp must be postponed until more material becomes available. An expanded palp will have to be studied to decide whether the sclerite here called lamella, is correctly named so.

Female. — Carapace 0.86 mm long, 0.62 mm wide; total length 1.93 mm.

Colour. — Carapace and chelicerae yellowish brown; slightly suffused with grey on striae and in ocular region. Sternum yellowish brown, darkened on frontal and anterior lateral margins. Legs yellow. Abdomen dark grey except for a faintly paler median stripe ending in an obvious white patch above the spinnerets, which are pale yellow.

Carapace (fig. 7). — Rounded in profile, reaching its highest point halfway between the PME and fovea.

Eyes. — Rather big; both rows procurved, the posterior one strongly. AME half a diameter apart and only 1/4 that distance from the ALE, which are 1.5 times as big as the AME. PE all of same size as the ALE. PME 2/3 of a diameter apart and 1/3 of that distance from PLE.



Figs. 7-10. *Pachydelphus banco* n. sp. 7. Female carapace, lateral view; 8. Epigyne, ventral view; 9. Ditto, posterior view; 10. Vulva, ventral view.
Figs. 11, 12. *Pachydelphus tonqui* n. sp. 11. Female carapace, lateral view; 12. Epigyne, ventral view. (Scale line: 0.1 mm).

Chelicerae. — Length 0.45 mm; both margins with 5 teeth. Stridulating file very faint.

Sternum. — As long as wide: 0.49 mm; posterior coxae separated by somewhat less than their diameter.

Legs. — Measurements (mm):

	Fe	Pt	T	Mt	t	Tot.
I	0.74	0.22	0.70	0.63	0.47	2.76
II	0.70	0.21	0.62	0.58	0.44	2.55
III	0.62	0.21	0.48	0.52	0.37	2.20
IV	0.80	0.22	0.75	0.72	0.44	2.93

Chaetotaxy. —

		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.56	0.19	2.27	0.76	1.6
II	0.52	0.18	3.14	0.74	1.5
III	0.50	0.23	2.75	—	
IV	0.56	0.33	3.85	—	

Superior tarsal claws with 6 minute teeth.

Epigyne (figs. 8 and 9). — A convex, more or less oval sclerotized area with a roughly triangular opening in its posterior half. The posterior end of the triangle is closed by a plate-like sclerite (fig. 9). A duct is shining through on either side of the opening.

Vulva (fig. 10). — Thick. Receptacula far apart. A strong duct runs over the ventral side, turns at the posterior end and continues along the dorsal side of the vulva.

Derivatio nominis. — The specific name is a noun in apposition taken from the type locality.

Material examined. — Male holotype: Ivory Coast, Abidjan, forêt du Banco Sud, 22.viii.1975, C. Deeleman; female paratype: same data as holotype (both in RMNH).

Pachydelphus tonqui n. sp.
(figs. 11, 12)

Female. — Carapace 0.64 mm wide, 0.81 mm long; total length 1.96 mm.

Colour. — Carapace yellowish brown, darkened in ocular area and on striae; sternum yellow, darkened in front and on anterior lateral margins; legs and chelicerae yellow. Abdomen grey with a very faint paler median stripe ending in a white patch above the spinnerets, which are yellow.

Carapace (fig. 11). — Almost level between fovea and PME, though reaching its highest point between them. Strongly inclined from fovea towards posterior end.

Eyes. — Both rows procurved. AME half their diameter apart and only 1/4 of their radius from ALE, which measure 1.4 times the diameter of an AME. Posterior eyes all of about the same size, slightly smaller than the ALE. PME somewhat more than their diameter apart and just over half their diameter from PLE. Clypeus 1.5 times the diameter of an ALE.

Chelicerae. — Length 0.39 mm: 5 teeth on anterior margin, 4 on the posterior one. Stridulating file weak, with about 20 ridges.

Sternum. — 0.45 mm long, 0.46 mm wide. Posterior coxae separated by their diameter.

Legs. — Measurements (mm):

	Fe	Pt	T	Mt	t	Tot.
I	0.63	0.21	0.58	0.50	0.42	2.34
II	0.60	0.21	0.51	0.48	0.40	2.20
III	0.55	0.20	0.42	0.43	0.32	1.92
IV	0.71	0.20	0.63	0.59	0.41	2.54

Chaetotaxy. —

		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.56	0.22	1.6	0.72	1.5
II	0.56	0.23	2.4	0.72	1.5
III	0.51	0.31	3.4	—	—
IV	0.61	0.27	3.8	—	—

Epigyne (fig. 12). — With a roughly triangular median opening in its posterior half. This opening is longer than wide.

Vulva. — The vulva was not cleared.

Male. — Unknown.

Derivatio nominis. — As in the preceding species, the name is a noun in apposition taken from the type locality.

Material examined. — Female holotype (RMNH): Ivory Coast, Man, Mont Tonqui, 900 m, 22.viii.1975, C. Deeleman.

Diagnosis. — The female differs from *P. banco* by the profile of the carapace and the shape of the epigyneal opening.

Deelemania n. gen.

Medium sized Erigoninae with slightly reticulated, roughly oval carapace and elongated abdomen. No fovea. Male without cephalic lobe, with a pair of interocular holes but no sulci. Legs slender, length of tibiae more than 10 times their diameter. All tibiae with one spine. Trichobothrium in the proximal half of the metatarsus, absent on Mt IV.

Male palpal tibia broad with a median and a mesal apophysis and two trichobothria. Embolus relatively short. Embolic division complex: with two strong apophyses. Suprategular apophysis well-developed. Epigyne large, strongly protruding in front where there are two "anchoring holes", and behind. Concave in the middle. The genus obviously belongs in the *Mioxena*-group (Millidge, 1977) and is strongly related to *Tapinocyboides* Wiehle, with which it shares the lack of a fovea, the chaetotaxy of the legs and the number of trichobothria (2) on the male palpal tibia. *Tapinocyboides* differs by the postocular pits with backwards extending sulci, the strong development of the protegulum, the much longer coiled embolus, the small suprategular apophysis which is invisible from the inside and the absence of a mesal tibial apophysis. The epigyne is much more strongly developed and provided with a pair of anchoring holes in *Deelemania*. It should be mentioned that in *Tapinocyboides pygmaea* (Menge), the

only species in that genus, the epigyne has a single hole near its anterior margin, probably for the same purpose as the anchoring holes in *Deelemania*. Locket & Millidge (1953) as well as Wiehle (1960) omitted this structure in their figure of the epigyne. The darker "V" they both mark in front of the spermathecae, encloses the single hole. *Deelemania*'s vulva is different from that of *Tapinocyboides* by having the spermathecae close to its posterior end.

Derivatio nominis. — The genus is called after Mrs. Deeleman-Reinhold, who collected the specimens. The gender is considered feminine.

Type-species: *Deelemania manensis* n. sp.

Deelemania manensis n. sp.
(figs. 13-23)

Male. — Carapace: 0.85 mm long, 0.70 mm wide; total length 1.95 mm.

Colour. — Carapace orange to reddish brown, cephalic area darkened; legs, palps, chelicerae and sternum yellowish to orange brown. Abdomen evenly grey. Spinnerets yellowish brown.

Carapace (figs. 13 and 14). — In profil rising steadily from posterior end to PME where it reaches its highest point. Provided with a pair of holes between PME and PLE.

Eyes. — Posterior row straight, anterior one slightly procurved. AME half their diameter apart and $1^1/_4$ times that distance from the ALE which are 1.75 times as big. PE equal; the PME half their diameter apart and one diameter from PLE. Clypeus 1.7 times the diameter of an ALE.

Chelicerae. — Length 0.41 mm; anterior margin with 5 teeth, posterior with 4 teeth. Well-developed stridulating file.

Sternum. — Exactly as long as broad (0.52 mm); the posterior tip separates the coxae by 1 diameter.

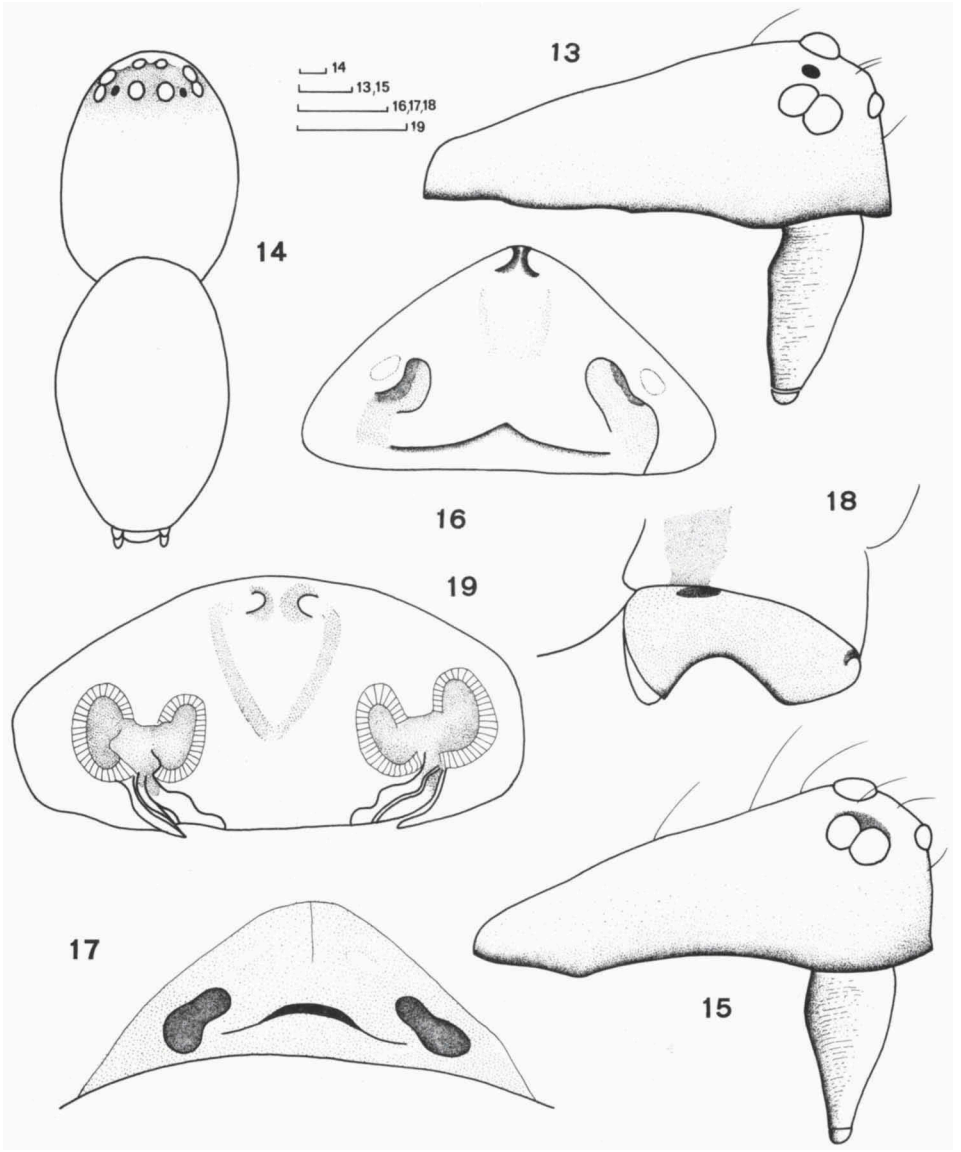
Legs. — Measurements (mm):

	Fe	Pt	T	Mt	t	Tot.
I	0.90	0.21	0.80	0.69	0.54	3.14
II	0.84	0.21	0.71	0.65	0.51	2.94
III	0.64	0.19	0.51	0.52	0.40	2.26
IV	0.88	0.18	0.75	0.68	0.46	2.95

Chaetotaxy. —

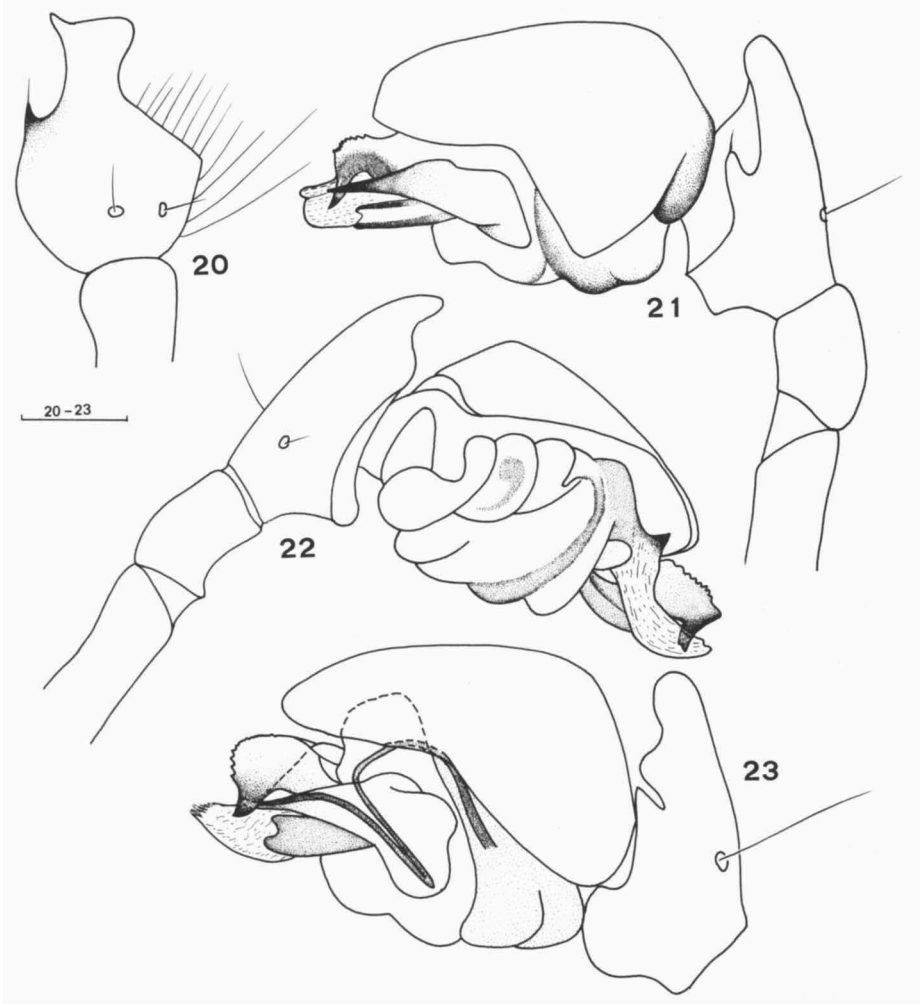
		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.42	0.21	1.0	none	
II	0.42	0.24	?		
III	0.41	0.27	1.0		
IV	—	0.28	1.0		

Superior tarsal claws without teeth.



Figs. 13-19. *Deelemania manensis* n. sp. 13. Male carapace, lateral view; 14. Ditto, dorsal view; 15. Female carapace, lateral view; 16. Epigyne, ventral view; 17. Ditto, posterior view; 18. Ditto, lateral view; 19. Vulva, ventral view. (Scale line: 0.1 mm).

Palps (figs. 20-23). — Palpal tibia with a broad dorsal apophysis and a small mesal one bearing a hair at its pointed extremity. Paracymbium simple, without hairs. Embolic division complex: with a broad basal part, in which the sperm duct runs up- and downward, and with two big apophyses.



Figs. 20-23. *Deelemania manensis* n. sp. 20. Male palpal tibia, dorsal view; 21. Right male palp, mesal view; 22. Ditto, lateral view; 23. Ditto, mesal view. (Scale line: 0.1 mm).

Female. — Carapace 0.67 mm wide, 0.86 mm long; total length 2.32 mm.

Colour. — As in the male, but the abdomen is grey dorsally with two longitudinal white patches, one on either side of a broad grey median stripe. In some specimens the patches coalesce to form one big white spot on the anterior end of the abdomen.

Carapace (fig. 15). — Roughly similar to that of the male except for the absence of the interocular holes.

Eyes. — Exactly the same relative size and arrangement as in the male. Clypeus also of the same relative height as in the male.

Chelicerae. — 0.40 mm long. With 5 teeth on the anterior margin, 4 on the posterior one. Stridulating file present.

Sternum. — 0.50 mm long, 0.52 mm wide. Posterior tip separating coxae IV by their diameter.

Legs. — Measurements (mm):

	Fe	Pt	T	Mt	t	Tot.
I	0.98	0.25	0.81	0.76	0.58	3.38
II	0.93	0.25	0.77	0.71	0.54	3.20
III	0.74	0.22	0.57	0.59	0.43	2.55
IV	1.01	0.22	0.83	0.75	0.51	3.32

Chaetotaxy. —

		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.38	0.20	1.0	none	
II	0.41	0.23	1.0		
III	0.37	0.24	1.0		
IV	—	0.23	1.0		

Superior tarsal claws without teeth.

Epigyne (figs. 16-18). — Strongly bulging in front and behind, thus delimiting a central concavity. Two closely set anchoring holes in front.

Vulva as in fig. 19, showing double spermathecae and anchoring holes at its anterior end.

Derivatio nominis. — The specific name refers to the type locality.

Material examined. — Male holotype (RMNH), Ivory Coast, Man, Mont Tonqui, 1200 m, 12.viii.1975, litter, C. Deeleman; paratypes (in RMNH and MRAC): 1 male, 8 females, same data as holotype; 1 male, 5 females, same data except altitude: 900 m.

Eburnella n. gen.

Medium sized Erigoninae with smooth teguments. Male carapace without lobe and cephalic sulci or holes. Legs rather slender: length-width ratio of tibia near to 10. Leg I longer than leg IV. Tibial spines 2211, rather long: between 1.5 and 2.5 times the diameter of the segment. All metatarsi with a trichobothrium. Tm I in proximal half but near the middle of the metatarsus. Male palpal tibia with a short dorsal apophysis and two trichobothria. Paracymbium simple; with a group of hairs on its proximal arm. Bulbus with a long curved embolus rising from a big embolic division, almost completely covering the ventral and mesal side of the bulbus. Beside this plate-like posterior part, E.D. with a forward projecting apophysis and a membrane. Suprategulum small, its apophysis only visible from the lateral side. Epigyne simple, with a triangular area near its posterior margin. Vulva rather complex: with two pairs of spermathecae and rather complicatedly coiled ducts.

There seems to be some relationship with *Oedothorax* species, which have a similar chaetotaxy, trichobothrial pattern and epigyne, and, as in *Oedothorax macrophthalmus* Locket & Russell-Smith from Nigeria, large eyes. However, the structure of the male palp is quite different from that of *Oedothorax*. The main differences lie in the strongly developed basal part of the embolic division, the long coilded embolus, and the shape of the terminal part of the embolic division.

Derivatio nominis. — Derived from the latin for Ivory: ebur; the gender is considered feminine.

Type-species. — *Eburnella avocalis* n. sp.

Eburnella avocalis n. sp.
(figs. 24-32)

Male. — Carapace 0.67 mm long, 0.55 mm wide; total length 1.64 mm.

Colour. — Carapace pale yellow, slightly suffused with grey on radiating striae and in ocular region. Legs and chelicerae very slightly darker. Sternum yellow, suffused with dark grey. Sclerotized parts of bulbus reddish brown.

Carapace (fig. 28).

Eyes. — Anterior row straight, posterior one slightly recurved. AME somewhat more than 1/3 of their diameter apart and at the same distance from the ALE, which are 1.7 times as big. PE all of the size of the ALE and equidistant: 0.6 times their diameter apart. Clypeus concave, its height about 1/5 times the diameter of an ALE.

Chelicerae. — Length: 0.32 mm. Anterior margin with 6 widely spaced teeth, posterior one with 4 closely set teeth. Without stridulating file.

Sternum. — 0.41 mm wide, 0.44 mm long; posterior tip separating coxae by their diameter.

Legs. — Measurements (mm):

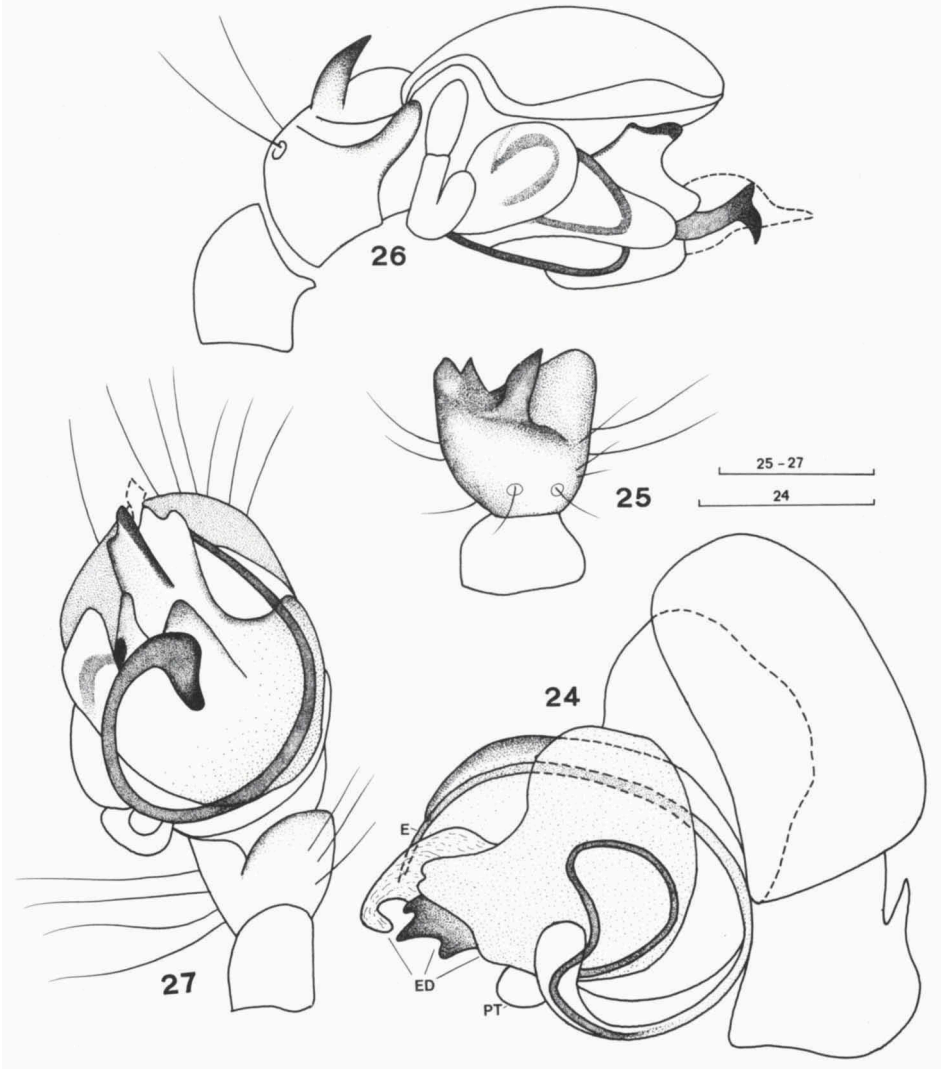
	Fe	Pt	T	Mt	t	Tot.
I	0.80	0.19	0.74	0.70	0.53	2.96
II	0.74	0.19	0.66	0.64	0.47	2.19
III	0.62	0.16	0.50	0.54	0.37	2.70
IV	0.80	0.17	0.71	0.71	0.44	2.83

Chaetotaxy. —

		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.44	0.23	1.7	0.78	1.1
II	0.44		?		?
III	0.42	0.34	2.5		—
IV	0.48	0.28	2.3		—

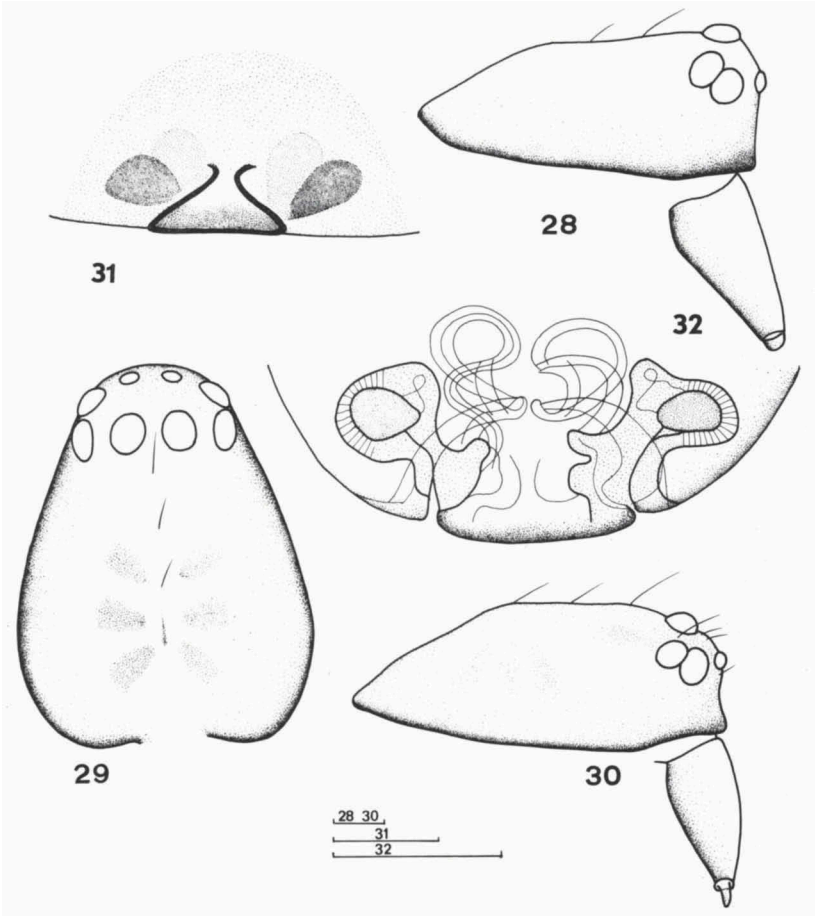
Superior tarsal claws without teeth.

Palp (figs. 24-27). — Palpal tibia with a sharp dorsal apophysis rising from a transversal ridge; provided with two trichobothria. Paracymbium with a group



Figs. 24-27. *Eburnella avocalis* n. sp. 24. Right male palp, partly expanded in methyl salicylate, mesal view; 25. Male palpal tibia, dorsal view; 26. Right male palp, lateral view; 27. Ditto, ventral view. (Scale line: 0.1 mm).

of hairs on its proximal arm. Embolus long, describing 3/4 of a circle. Embolic division big: the large plate-like basal part almost completely covers the ventral and mesal side of the bulbus. Apart from this there is a forward projecting apophysis and a short membrane, all part of the E.D. The suprategulum is small and its apophysis is only visible from the lateral side.



Figs. 28-32. *Eburnella avocalis* n. sp. 28. Male carapace, lateral view; 29. Female carapace, dorsal view; 30. Ditto, lateral view; 31. Epigyne, ventral view; 32. Vulva, ventral view. (Scale line: 0.1 mm).

Female. — Carapace 0.77 mm long, 0.61 mm wide; total length 1.93 mm.

Colour. — As in the male.

Carapace (fig. 29).

Eyes. — Arrangement as in the male. Relative size of the ALE a little larger. Clypeus obviously concave, 1.2 times as high as the diameter of an ALE.

Chelicerae. — 0.40 mm long; anterior margin with 6 teeth, posterior one with 4 teeth as in the male. No stridulating file.

Sternum. — 0.45 mm wide, 0.48 mm long. Posterior coxae separated by their diameter.

Legs. — Measurements (mm):

	Fe	Pt	T	Mt	t	Tot.
I	0.82	0.21	0.76	0.70	0.51	3.00
II	0.78	0.21	0.69	0.63	0.45	2.76
III	0.67	0.19	0.54	0.55	0.37	2.32
IV	0.86	0.19	0.77	0.70	0.43	2.95

Chaetotaxy. —

		Tibial spines			
		Proximal		Distal	
	Tm	position	length (Ø)	position	length (Ø)
I	0.47		?	0.75	1.5
II	0.49	0.22	2.7	0.75	1.7
III	0.49	0.23	2.9	—	
IV	0.44	0.28	3.3	—	

Superior tarsal claws without teeth.

Epigyne (fig. 31).

Vulva. — With two pairs of spermathecae and complex coiled ducts (fig. 32).

Derivatio nominis. — Avocalis means "without a voice" in Latin.

Material examined. — Male holotype (MRAC 154 540): Ivory Coast, Kossou, 28.iv-13.v.1975, lowland rain forest underplanted with cocoa and coffee, pitfall trap, R. Jocqué; all paratypes from same locality; 2 ♀ : same date as holotype; 4 ♂, 9 ♀ : 14-28.iv.1978; 1 ♀ : 9-23.vi.1975; 1 ♀ : 23.vi-7.vii.1975.

Other records

Ceratinopsis machadoi (Miller)

Ivory Coast: Abidjan, Banco Sud, primary forest, leaf litter, 29.viii.1975, C. Deeleman, 1 ♀ (RMNH).

Deeleman's collection contained another specimen from Kenya: Kisumu, ii.1981, A. Lansberg, 1 ♀ (RMNH).

These identifications are tentative since—as pointed out by Locket & Russell-Smith (1980)—females of African *Ceratinopsis* cannot yet be identified with absolute certainty.

Erigone prominens Bös. & Str.

Ivory Coast: Kossou, humid bank of very small impoundment, 14.v.1975, R. Jocqué, 1 ♀ (MRAC).

Another record of this species was mentioned in Jocqué (1979).

Oedothorax macrophthalmus Locket & Russell-Smith

Ivory Coast, Kossou, secondary forest, pitfall, 25.xi-9.xii. 1974, E. Tybaert, 1 ♀; same locality and habitat, 17.iii.1975, R. Jocqué, 1 ♂. Both in MRAC. This species so far was only known from the type locality at Ibadan, Nigeria.

Pseudomicrocentria minutissima Miller

Ivory Coast: Kossou, secondary forest, pitfall, 31.viii.1975, R. Jocqué, 1 ♀ (MRAC). The species was previously known from Nigeria and Zaïre.

Tigellinus nigeriensis Locket & Russell-Smith

Ivory Coast: Kossou, 9.vi.1974, secondary forest, pitfall trap, R. Jocqué, 1 ♀ (MRAC). This species up till now was only known from the type locality at Ibadan, Nigeria.

Tybaertiella peniculifer Jocqué and **T. minor** Jocqué

The data on these species were published in Jocqué (1979).

Meioneta prosectes Locket

Ivory Coast: Kossou, humid bank of tiny impoundment, 14.vi.1975, E. Tybaert and R. Jocqué, 7 ♀ (MRAC); Bouaké, Foro Foro, savanna, pitfall, 29-31.x.1972, D. Duviard, 1 ♂ (RMNH).

Mali: Kassarola, viii-ix.1971, G. Pierrard, 1 ♂; Lutana, viii-ix.1969, G. Pierrard, 2 ♂; N'Pesoba, viii-ix.1969, 1 ♂ and ix-x.1969, G. Pierrard, 1 ♂; Fana, ix.1969, G. Pierrard, 1 ♂ (MRAC).

Sudan: Darfur, Golol, western slope of Djebel Maura, 1340 m, xi.1964, Cloudsley-Thompson, 1 ♂ (MRAC).

This species appears to have an enormous range and is—among strictly African Linyphiid species—the one with the largest distribution. It is now known from the Sahel zone in the north to as far south as Transvaal (unpublished data). It is also known from the island Saint Helena (Helsdingen, 1977), where it was mitaken for *M. gracilipes* Holm (Bosmans, 1979). The species is one of the few that seems perfectly adapted to live in semi-arid conditions.

Metaleptyphantes perexiguus Sim. & Fage

Ivory Coast: Kossou, secondary forest, pitfall, 14.v.1975, E. Tybaert, 1 ♀; 14.viii.1975, R. Jocqué, 6 ♂, 2 ♀; garden, pitfall, 20.v.1974, E. Tybaert, 1 ♂, 1 ♀; 3.vi.1974, R. Jocqué, 2 ♂, 1 ♀; 30.vii.1974, R. Jocqué, 1 ♀; aeronautic, 11.ix.1974, R. Jocqué, 1 ♂; savanna, pitfall, 13.viii.1974, E. Tybaert, 1 ♂; under stones near dam, 17.ix.1974, R. Jocqué, 1 ♀. All in MRAC.

Simplicistilus tanuekes Locket

Ivory Coast: Kossou, secondary forest, pitfall, 5.viii.1974, 4 ♀; 7.xi.1974, 1 ♂; 13.iv.1975, 4 ♂; 13.v.1975, 2 ♂, 2 ♀; 7.viii.1975, 1 ♂; 14.viii.1975, 4 ♂; garden, pitfall, 17.iv.1974, 1 ♂, E. Tybaert et R. Jocqué (MRAC).

Abidjan, Banco, primary forest, leaf litter, 16.viii.1975, 1 ♂; 29.viii.1975, 1 ♀, C. Deeleman; Bouaké, Foro Foro, savanna, pitfall, 25-27.ix.1972, 1 ♂; 16-18.x.1972, 2 ♂, D. Duviard (RMNH).

ACKNOWLEDGEMENTS

We are very much indebted to Mrs. C. Deeleman, who was so kind to submit her Ivory Coast collection for study. We thank Dr. A. F. Millidge who checked our interpretation of the palpal conformation of *Eburnella* n. gen. and Dr. Grasshoff (Senckenberg Museum) for the loan of some specimens of *Tapinocyboides*.

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