

Spiders of the family Linyphiidae from Nigeria

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Summary

Twenty-eight species of Linyphiidae were collected in Nigeria, mainly from the forest region in the vicinity of Ibadan. The habitats in which collections were made are described and biological notes provided for some of the more abundant species.

Of the 12 Erigoninae found the following are described as new species: *Locketia bicolor* ♂ ♀, *L. minor* ♂ ♀, *Ceratinopsis idanrensis* ♂ ♀, *Walckenaera nigeriensis* ♀, *Oedothis macropthalmus* ♂ ♀, *Pseudomaso longipes* ♂, *Aulacocyba evansae* ♂, *Ibadana cuspidata* ♂ ♀. *Pseudomaso* and *Ibadana* are new genera and the females of *Pseudomicrocentria minutissima* Miller and *Asthenargus myrmecophilus* Miller are here described for the first time.

Of the 16 Linyphiinae the following are described as new: *Meioneta prosectoides* ♂ ♀, *M. insolita* ♂, *M. parva* ♀, *Metaleptyphantes bicornis* ♀, *M. dubius* ♀, *Lepthyphantes hebes* ♂ ♀. Collecting data and morphological comparison indicate that *Centromerus venustus* Locket is a synonym of *Simplicistilus tanuekes* Locket and that *Meioneta usitata* Locket is a synonym of *M. dentifera* Locket.

Ecological notes on the habitats

Most of the collecting during the present study was carried out in the forest region of southern Nigeria by A. Russell-Smith with isolated collections from the Guinea savanna region to the north and from the highland plateau of Obudu in eastern Nigeria. All the forest sites in which collections were made belong to the moist, semi-deciduous type which is found in regions with an annual precipitation of approximately 1200 to 1800 mm. Such forests are

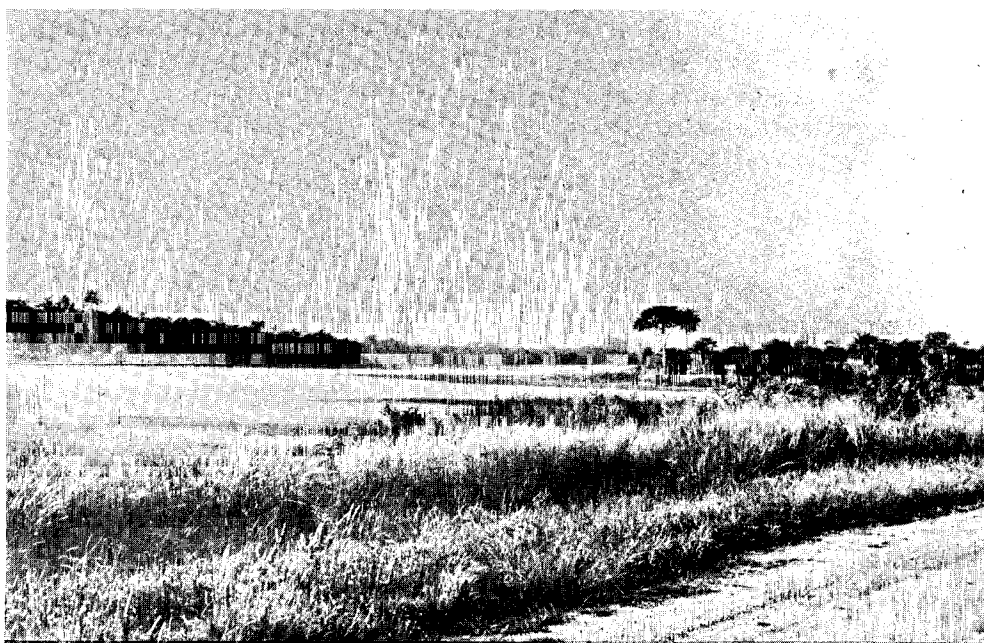
distinguished by a marked seasonal pattern of growth and leaf-fall. During the wet season (May to October) growth is vigorous and leaf-fall at a minimum. When the rains cease in the middle of October, leaf-fall commences and reaches a peak between January and March. However there is a clear sequence of leaf-fall from different tree species through the dry season such that at no one time have all the trees lost their leaves.

Throughout the densely inhabited forest region of Nigeria the traditional "bush fallow" system of agriculture is practised and this has a striking effect on the vegetation. In this system an area of forest is cleared by felling and burning and crops are immediately planted in the clearing. The area is cultivated for a period which can vary from three to six years, by which time soil fertility has fallen to a level below which worthwhile crop yields are not obtained. At this stage the area is allowed to revert to natural vegetation and within a short period a dense growth of shrubs and tree saplings covers the ground. This "fallow bush" forms a complex mosaic with patches of cultivation and secondary forest. The major forest habitat types are described below.

Fallow bush. Mixed broad-leaved deciduous scrub and woodland with a canopy varying in height from two to ten metres. This is the result of recolonisation of previously cultivated land by natural vegetation, and the characteristic ridges and mounds used by farmers are often still visible many years later. The canopy is normally very dense, with the ground beneath heavily shaded, resulting in a poorly developed ground layer consisting of a few creepers and the saplings of tree species. The species composition of the shrub and tree layer is very diverse and includes many leguminous species. On the COPR site at the International Institute of Tropical Agriculture near Ibadan commonly occurring species in 7 year old fallow bush included *Blighia unijugata* Bak., *B. sapida* König, *Lonchocarpus cyanescens* (Schum. & Thonn.) Benth., *Newbouldia laevis* (Beauv.) Seeman ex Bureau and *Alchornea cordifolia* (Schum. & Thonn.) Müll. Arg. Relicts of previous cultivation such as *Theobroma cacao* Linn. (Cocoa), *Elais guineensis* Jacq. (Oil Palm) and *Citrus* spp. were frequent. Creepers and scramblers were abundant and common species included *Hippocratea* spp., *Combretum* spp. and *Mucuna pruriens* (Linn.) D.C. In some areas, during



A



B

Plate 1: **A.** The COPR site at the International Institute of Tropical Agriculture, June 1974. In the foreground cowpea (*Vigna unguiculata*) plots with 7 year old fallow bush in the background.
B. The lake at IITA, Ibadan in August 1974. Note the dense growth of tall grasses around the margin.

the early stages of reinvasion, dense, almost impenetrable strands of *Hippocratea* or *Alchornea* developed. Litter-fall is virtually confined to the dry season months (November to April) and by the end of this period a layer of dead leaves up to 10 cm thick covers the ground. As soon as the rains commence, decomposition and incorporation of this leaf litter proceeds at a very high rate, so that by the end of July very little remains on the surface of the soil. In place of the litter a layer of turret-shaped earthworm casts, produced by *Hyperiodrilus* spp., builds up and covers the soil surface by the end of the rainy season. This type of vegetation covers large areas in southern Nigeria particularly in the vicinity of centres of population.

Secondary Forest. Secondary forest develops from fallow bush if this is left undisturbed for a sufficient length of time. It is characterised by having two tree strata; an upper storey 20 to 25 metres high and a lower storey up to 8 metres in height. The diversity of tree species is high, ranging from 35 species to over 60 species per quarter hectare. The ground layer is poorly developed and consists almost entirely of tree saplings except where gaps have been created in the canopy. The sequence of leaf litter fall and breakdown is identical to that in fallow bush. Beneath the tree canopy light penetration is poor, at least in the wet season, and the temperature and humidity are fairly constant. Many of the tree species have buttress roots, and lianas are abundant. Most of the remaining forests in southern Nigeria are secondary, and only in a few remote areas are relicts of primary forest thought to remain.

Riverine Forest. Along the margins of forest streams the nature of the vegetation differs markedly from the surrounding bush or secondary forest. A dense undergrowth of grasses, tall herbs, ferns and small shrubs is present and this makes penetration of such areas extremely difficult. Palms and Cocoa trees (relicts of cultivation) are frequent and dense stands of bamboo are found, the shade from which excludes all other vegetation. During the dry season most of the smaller streams disappear, but the soil remains relatively moist and the vegetation keeps its green appearance. Where riverine forest areas had been recently cultivated very dense stands of the shrub *Alchornea cordifolia* were often found. Many species of ground-active spider, particularly in the families

Lycosidae, Gnaphosidae and Salticidae, which were distributed throughout the forests during the wet season were restricted to the more moist riverine forest during the dry season.

Primary Forest. As mentioned above, primary forest is rare in Nigeria where pressure on the land has resulted in clearance, at one time or another, of all but the most infertile or inaccessible areas. The only areas of primary forest in which collections were made were isolated patches in the Idanre Hills, described below. Primary forest is distinguished from secondary forest by the presence of a third tree layer 30 metres or more in height, by a greater diversity of tree species than in secondary forest and often by a higher proportion of large trees over 50 m in height. In addition indicators of previous cultivation, such as oil palms, are always absent.

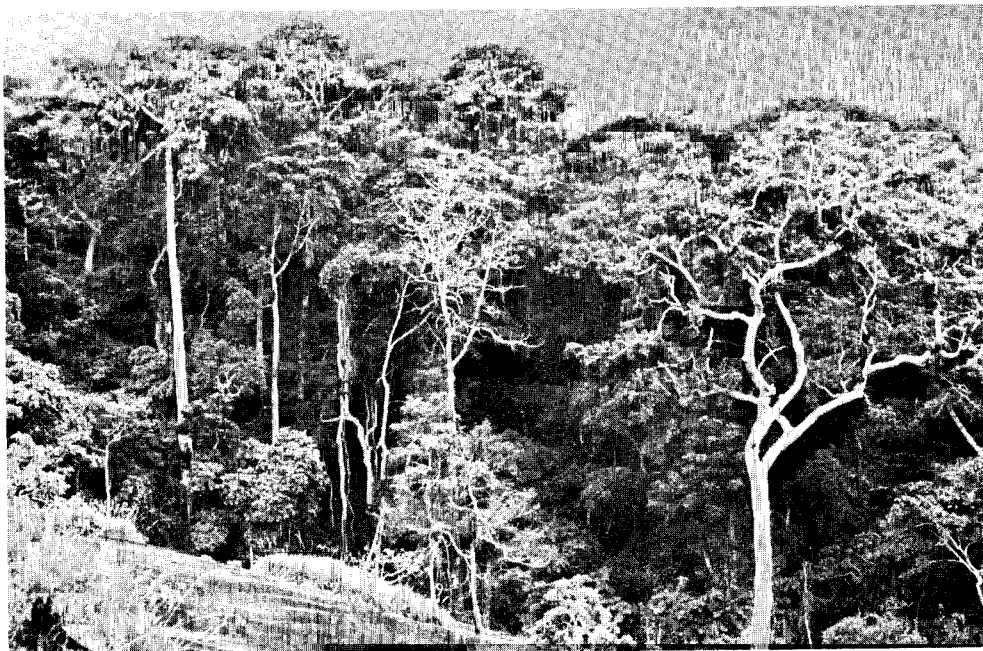
Other habitats in the forest zone. Apart from the major habitat types described above, collections were made in a number of other vegetation types derived from forest by the activities of man. Extensive pitfall trapping was carried out in Cowpea (*Vigna unguiculata* (Linn.) Walp.) crops, an important tropical legume widely grown in Nigeria. Our studies at the International Institute of Tropical Agriculture (IITA) were made in crops of the variety "Prima", an erect, branching legume with white flowers and elongate green pods. The crop was planted either on ridges or on the flat in rows 75 cm apart and reached a height of about 80 cm during the 10 week growing season (Plate 1A). The soil between the rows was bare except for a sparse growth of weeds. In each rainy season two crops were grown, the first being planted in April and the second in September.

Wherever paths or roads are cut through forest or bush a thick growth of grasses and herbs rapidly develops in the wet season. At the IITA the road verges were mowed at 2 to 3 month intervals in the wet season, which produced a herb-rich sward 20-30 cm in height. The spider community of this vegetation was rich in species of Thomisidae, Salticidae and Araneidae. During the dry season this vegetation died back and few spiders were to be found.

Another type of grassland in which collections were made developed along the margins of an artificial lake at IITA. At the end of the dry season considerable draw-down of the water level occurred, leaving a large area of muddy margin exposed. During



A



B

Plate 2: A. The Idanre hills between Ondo and Akure, W. Nigeria. Exposed granite outcrops with densely wooded valleys between.

B. Primary forest in the Idanre hills, W. Nigeria. The layered structure of the canopy is clearly visible.

the following rains a dense growth of tall grasses became established on these margins. The grasses were erect, varying in height from 50 to 100 cm, and the vegetation contained relatively few herb species. As the lake refilled during the wet season much of the grassland was submerged, leaving only a narrow band above the high water mark (Plate 1B).

Idanre Hills. The Idanre hills lie between Ondo and Akure in the western region of Nigeria (Lat. 7° 7' N., Long. 5° 5' E.). They consist of a series of granitic outcrops (inselbergs), the highest peak of which reaches 950 m. Owing to the relatively high rainfall of the region, the exposed granite surfaces are smooth and well rounded and the whole area is intersected by deep, well-wooded valleys (Plate 2A). Wherever soil has accumulated in pockets and cracks in the rocky surfaces the mat-forming sedge *Trilepis pilosa* (Benth.) Boeck. develops, and individual mats vary from a few centimetres to 40 metres in diameter, according to age. The sedge grows to some 50 cm in height, and around the margins of the mats carpets of short mosses were established, particularly where water flowed over the rocks (Plate 3A).

In some of the more isolated valleys of the area patches of what are thought to be primary forest were found, but these never covered more than a few hectares. The layered structure, characteristic growth form of the trees, and the dense shade beneath this type of forest, is shown in Plate 2B.

Savanna Woodland. Very little collecting was carried out in the savanna zone and linyphiids were found only at Mokwa, near the river Niger about 200 miles NE of Ibadan, and in Borgu Wildlife Reserve in Kwara state. Both areas lie within the Guinea savanna zone of West Africa, the characteristic vegetation of which is open deciduous woodland. The tree canopy normally reaches a height of about 15 m, and beneath this there is a dense field layer of grasses about 2 m in height which is burnt annually during the dry season. Common tree species include *Burkea africana* Hook., *Azelia africana* Sm., *Detarium microcarpum* Guill. & Perr. and *Parinari polyandra* Benth., while the tussocky grass layer consists mainly of species of *Andropogon*, *Hyparrhenia* and *Pennisetum*. Linyphiid species were normally found in small webs in and around grass tussocks.

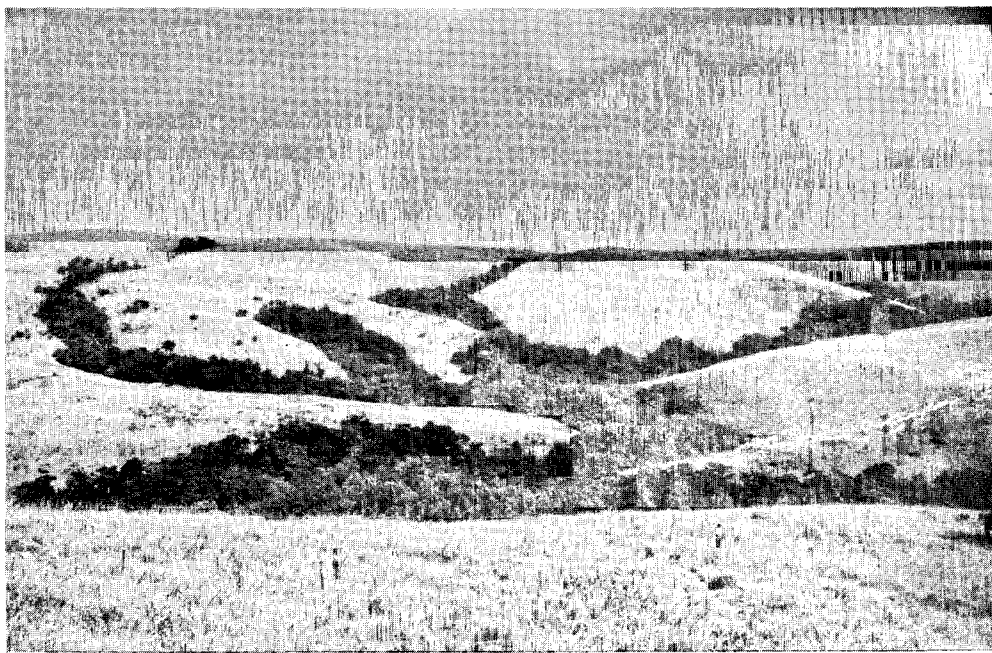
Montane Forest and Grassland. A number of collections were made during December 1974 on the

upland plateau of Obudu in eastern Nigeria, which is an outlier of the more extensive Bamenda highlands of Cameroon. In this area montane forest occupies a zone between approximately 900 m and 1500 m. This is a tall canopied forest typically with one or two tree layers and a dense shrub layer. It is frequently shrouded in mist or low cloud, and epiphytic ferns, mosses and lichens are abundant, the latter particularly near the upper limit of the forest. A characteristic plant of the shrub layer is the tree fern (*Cyathea manniana* Hook.). Within the forest humidity is high and the ground is constantly wet, while temperatures are markedly lower than in the surrounding grasslands. Above 1500 m, and covering the plateau summit, montane grassland is found. The boundary between the forest and grassland is normally very abrupt (Plate 3B), and the grassland is considered to be a biotic climax vegetation maintained by man-made fires. The grasses, which are about one metre in height, consist mainly of *Andropogon* spp. and *Loudetia camerunensis* (Stapf.) C. E. Hubbard, both of which are tussock forming species. There are many flowering herbaceous species in the community.

With the exception of *Locketia minor*, *L. bicolor*, *Aulacocyba evansae*, *Meioneta habra* and *Microlinyphia sterilis*, all of which were swept from various types of grassland, the species in this study were all collected from the soil surface. Throughout 1973 and during the wet season of 1974, pitfall traps were used on the COPR site at IITA both in fallow bush plots and cowpea crops. These traps yielded a total of 15 linyphiid species, including six which were not collected by other methods. In addition, between January and March 1974 pitfall traps were placed in riverine woodland at IITA where three species of linyphiid were trapped. In all other localities, collections were made entirely by hand from litter and amongst the roots and stems of grasses. It was noticeable that linyphiids were never swept or beaten from trees or shrubs, despite intensive collecting using these methods. The habitat distribution of Linyphiidae collected in Nigeria is summarised in Table 1. The term "forest grasslands" is here taken to include sedge stands and moss carpets on the exposed granite outcrops of the Idanre hills. The large number of species collected in fallow bush and crops reflects the intensive pitfall sampling carried out in both these



A



B

Plate 3: A. A mat of the sedge *Trilepis pilosa* growing on exposed granite in the Idanre hills.
B. The Obudu plateau, Eastern Nigeria, an outlier of the Cameroon highlands. The boundary between the montane forest and the grassland is sharply defined.

habitats over a two year period. Conversely the apparent poverty of the fauna of primary forest and savanna habitats is no doubt due to the relatively small amount of time spent in such areas.

Holm (1979) has suggested that members of the genus *Locketia* are typical of the savanna grasslands of Africa. Two of the species from Nigeria, *L. bicolor* and *L. minor*, appear to be most abundant in grasslands and open ground (crop) habitats within the forest. In the vicinity of Ibadan, such habitats could be considered as transitional to derived savanna grasslands (Clayton, 1958). On the other hand, *L. convexa* has been recorded only from leaf litter in forest or bush habitats, as was the case in Angola (Miller, 1970, sub *Pelecopsis machadoi*). In the cooler, more humid climate of the East African highlands this species has been found in savanna grassland (Holm, 1962, 1979). Members of the genus *Meioneta* from Nigeria were also most common in grassland and open ground

habitats, as is the case with most European members of the genus. *M. insolita* and *M. parva* were however taken from a number of forest habitats, and the latter in particular was found in three very distinct habitat types, fallow bush, savanna woodland and montane forest. In Angola, Machado collected *M. prosectes* and *M. dentifera* from gallery forests (Locket, 1968). *Simplicistilus tanuekes* was recorded from all of the habitat types of the forest region with the exception of secondary forest, and in Angola it was found to be a characteristic species of gallery forest, although females were also taken in grassland (Locket, 1968). *Metaleptyphantes perexiguus* had the widest habitat spectrum of all species from Nigeria, where the only habitat from which it was not recorded was montane forest. It was also widely distributed in Angola where it was found in gallery forest, woody savanna and herbaceous savanna. The two *Neriene* species from the ground layer of montane forests have been taken

	F1	F2	FB	RF	FG	SW	SG	MF	MG	C
<i>Locketia minor</i> sp.n.					+		+			+
<i>L. bicolor</i> sp.n.					+					+
<i>L. convexa</i> (Holm)		+	+							
<i>Ceratinopsis machadoi</i> (Miller)			+	+	+					
<i>C. idanrensis</i> sp.n.					+					
<i>Walckenaera nigertiensis</i> sp.n.		+	+							
<i>Oedothorax macrophthalmus</i> sp.n.			+	+						
<i>Pseudomaso longipes</i> sp.n.										+
<i>Pseudomicrocentria minutissima</i> Miller										+
<i>Aulacocyba evansae</i> sp.n.					+					
<i>Asthenargus myrmecophilus</i> Miller										+
<i>Ibadana cuspidata</i> sp.n.				+						
<i>Meioneta dentifera</i> Locket			+							
<i>M. prosectes</i> Locket			+		+					+
<i>M. prosectoides</i> sp.n.										+
<i>M. habra</i> Locket					+					+
<i>M. insolita</i> sp.n.			+			+				
<i>M. parva</i> sp.n.			+			+		+		
<i>Simplicistilus tanuekes</i> Locket	+	+	+	+	+	+				+
<i>Metaleptyphantes machadoi</i> Locket			+	+						
<i>M. perexiguus</i> (Simon & Fage)	+	+	+	+	+	+			+	+
<i>M. bicornis</i> sp.n.		+	+	+						
<i>M. dubius</i> sp.n.								+		
<i>Bathyphantes spedani</i> Locket										+
<i>Lepthyphantes hebes</i> sp.n.								+		
<i>Neriene kibonotensis</i> (Tullgren)								+		
<i>N. obtusa</i> Locket								+		
<i>Microlinyphia sterilis</i> (Pavesi)										+

Table 1: The habitat distribution of Nigerian Linyphiidae.

F1 = Primary forest, F2 = Secondary forest, FB = Fallow bush, RF = Riverine forest, FG = Forest grasslands, SW = Savanna woodland, SG = Savanna grassland, MF = Montane forest, MG = Montane grassland, C = Crops.

at lower altitudes in gallery forest in Angola, and *N. kibonotensis* is widespread in East Africa where it has occurred in both forest and savanna. *Microlinyphia sterilis* is another widespread species in Africa where it is often frequent in grasslands above 1000 m (Van Helsing, 1970).

Under each species description, a brief account is given of its biology in Nigeria, where known.

Descriptions of the species

Drawings were made from untreated spirit-preserved specimens unless otherwise stated. Palps were sometimes examined in clove oil or expanded in lactic acid; vulvae were examined in lactic acid after removal from the abdomen. Measurements were made with a calibrated eye-piece scale, drawings with an eye-piece grid.

To determine the ratio length/breadth of tibia I, the breadth was measured at the mid point viewed laterally. The positions of tibial spines, expressed as the ratio of their distance from the base of the segment to length of the segment, are for dorsal spines unless otherwise stated. "Tm" indicates the position of the metatarsal trichobothrium expressed in the usual way.

In recording the relative sizes and disposition of the eyes the following symbols and abbreviations have been used to avoid verbiage: The diameters of all eyes are expressed as multiples of that of the anterior medians, as are also the distances separating the anteriors. The distances separating the posteriors are expressed as multiples of the diameter of the posterior medians (which is found in practice more convenient for comparison). Thus in the following example, referring to Fig. 1:

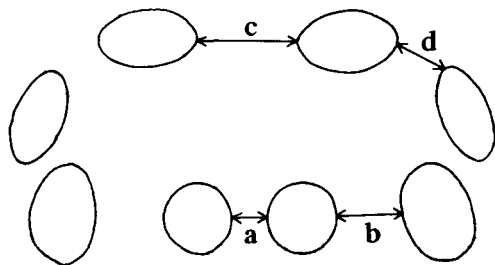


Fig. 1: Diagram to illustrate eye measurements.

AL = diam. of anterior laterals = $1\frac{1}{2}$;

PM = diam. of posterior medians = $1\frac{1}{2}$;

PL = diam. of posterior laterals = $1\frac{1}{2}$;

a = distance between anterior medians = $\frac{1}{2}$;

b = distance between anterior medians and anterior laterals = 1;

c = distance between posterior medians = 1;

d = distance between posterior medians and posterior laterals = $\frac{1}{2}$.

Because eye measurements of individuals of a species often vary considerably, either naturally or owing to shrinkage or distortion, very precise values for size and position are not of much significance; we emphasise this by expressing them as fractions.

All specimens, including holotypes and paratypes of new species, are deposited in the British Museum (Natural History).

Genus *Locketia* A. Holm 1979

Three species have been found belonging to this genus, which has recently been created by Holm in an important paper on the taxonomy of European and East African species of the genera *Pelecopsis* Simon and *Trichopterna* Kulczynski (Holm, 1979). The new genus includes *Locketia bacelarae* (di Caporiacco), *L. bacelarae dundoensis* (Miller) and *L. convexa* (Holm), the type species (originally placed in *Cnephalocotes* (Holm, 1962, p. 123)). In all the species the long embolus originates on the mesal side in almost exactly the same position, none has any great head development and they lack tibial spines. In our collection are *L. convexa* (Holm), *L. bicolor* sp.n. (a large species) and a smaller species *L. minor* sp.n. which is certainly very close to Miller's *Pelecopsis bacelarae dundoensis* (Miller, 1970, p. 107) from which it differs in the outline of the palpal tibia. Dr Holm has been successful in finding and examining the paratypes of *Lophocarenum bacelarae* di Caporiacco and from what he says in his recent paper (Holm, 1979, p. 275 et seq.) it is possible that *P. bacelarae dundoensis* with *P. nonindurata* Miller, from Zaire, as the female (Miller, 1970, p. 111), a new form found on Mount Elgon (Holm, 1979, p. 275 and figs. 108-112) and our *L. minor* are all forms of *L. bacelarae*. Nevertheless, we have given ours a species name and append a description in view of the likelihood of these forms receiving further attention in the future. The

structure and conformation of the palps of *L. bicolor* have been described and figured by Holm (1979) and we give figures of their appearance without dissection (Figs. 2-5) as well as expanded (Fig. 6).

Locketia bicolor sp.n. (Figs. 2-15)

Male

Carapace length: 1.03 mm. *Total length:* 2.20 mm. *Carapace:* Orange-brown, somewhat lighter towards the edges. Head darkened, not much raised (Fig. 11); no post-ocular sulci. Radiating lines of punctuations very faint or absent. *Eyes:* AL = PL = $1\frac{1}{4}$, PM = 1; a = nearly 1, b = $1\frac{2}{3}$, c = $2\frac{1}{4}$ = d. *Sternum:* Coloured as the carapace, darker gradually towards the edges but with no definable borderline; separating coxae IV by about their diameter. *Abdomen:* Scutum orange-brown. Ventrally cream, with an orange-brown scutate area just anterior to the spinners. *Legs:* Light yellow-brown, femora darkened, especially in the apical half. No spines. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.75	0.23	0.70	0.63	0.43	2.74
II	0.73	0.20	0.63	0.60	0.40	2.56
III	0.60	0.18	0.45	0.43	0.38	2.04
IV	0.85	0.23	0.75	0.68	0.40	2.91

Position of Tm, I = 0.40, II = 0.39, III = 0.37. Tibia I length/breadth = 9. *Chelicerae:* Coloured as the leg femora, a little lighter. Stridulating ridges extend to the apex. Outer margin with 3 teeth (Fig. 14), inner with 2 apically. Falces swollen and sclerotised at the base. *Male palp:* Figs. 2-6, 12, 13. Coloured as the leg femora. The tibial apophyses are useful diagnostic characters, but their appearance changes rapidly with position (Figs. 12, 13); the inner branch is folded forward and is longer than it appears when viewed from above. A long faintly sclerotised membrane originates on the supra-tegulum (Fig. 6). The tip of the embolus lacks the membranous widening of *L. minor*.

Female

Carapace length: 1.10 mm. *Total length:* 2.40 mm. *Carapace:* Light orange-brown; the head dark grey, almost black. Some faint radiating punctuations can almost always be seen. *Eyes:* AL = PL = $1\frac{1}{2}$, PM = $1-1\frac{1}{4}$; a = $1\frac{1}{2}$, b = $1\frac{1}{4}$, c = $1\frac{1}{2}$, d = nearly 2. *Sternum:*

Uniform brown, as lighter part of the carapace. *Abdomen:* Not scutate. Light cream dorsally with 4 yellow impressed dots. Sides dark, sometimes nearly black, the contrast with the colour of the back being striking; ventrally a little lighter. *Legs:* Femora I, II, III dark as in the male, femur IV less so. Tibiae I and II darkened a little, the rest coloured as the carapace. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.85	0.30	0.75	0.73	0.50	3.13
II	0.80	0.30	0.73	0.70	0.48	3.01
III	0.75	0.25	0.63	0.63	0.38	2.64
IV	1.05	0.28	0.95	0.80	0.58	3.66

Position of Tm, I = 0.48, II = 0.49, III = 0.50. No spines. Tibia I length/breadth = 7. *Chelicerae:* Coloured as the leg femora. Outer margin with 3 teeth, two of them together apically (Fig. 15). Inner margin with 2 teeth apically, contiguous and of equal size; a third very small tooth sometimes occurs ectally to the others. *Epigyne:* Figs. 7, 8. *Vulva:* Figs. 9, 10.

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, grassy road verge, 20 May 73 (BMNH 1979.7.26.1). Paratypes; IITA, Ibadan, same data as holotype, 11 ♂♂, 3 ♀♀; COPR plots, 22 Apr. 74, 9 ♂♂, 8 ♀♀; grassy road verge, 16 Mar. 74, 30 ♂♂, 14 ♀♀.

Distribution: So far only recorded from the vicinity of the type locality at the International Institute of Tropical Agriculture, Ibadan, Nigeria.

Biology: Unknown. This species was taken by sweeping short grassy road verges in March and April at the beginning of the rainy season, and in pitfall traps in cowpea plots during the same period.

Locketia minor sp.n. (Figs. 16-28)

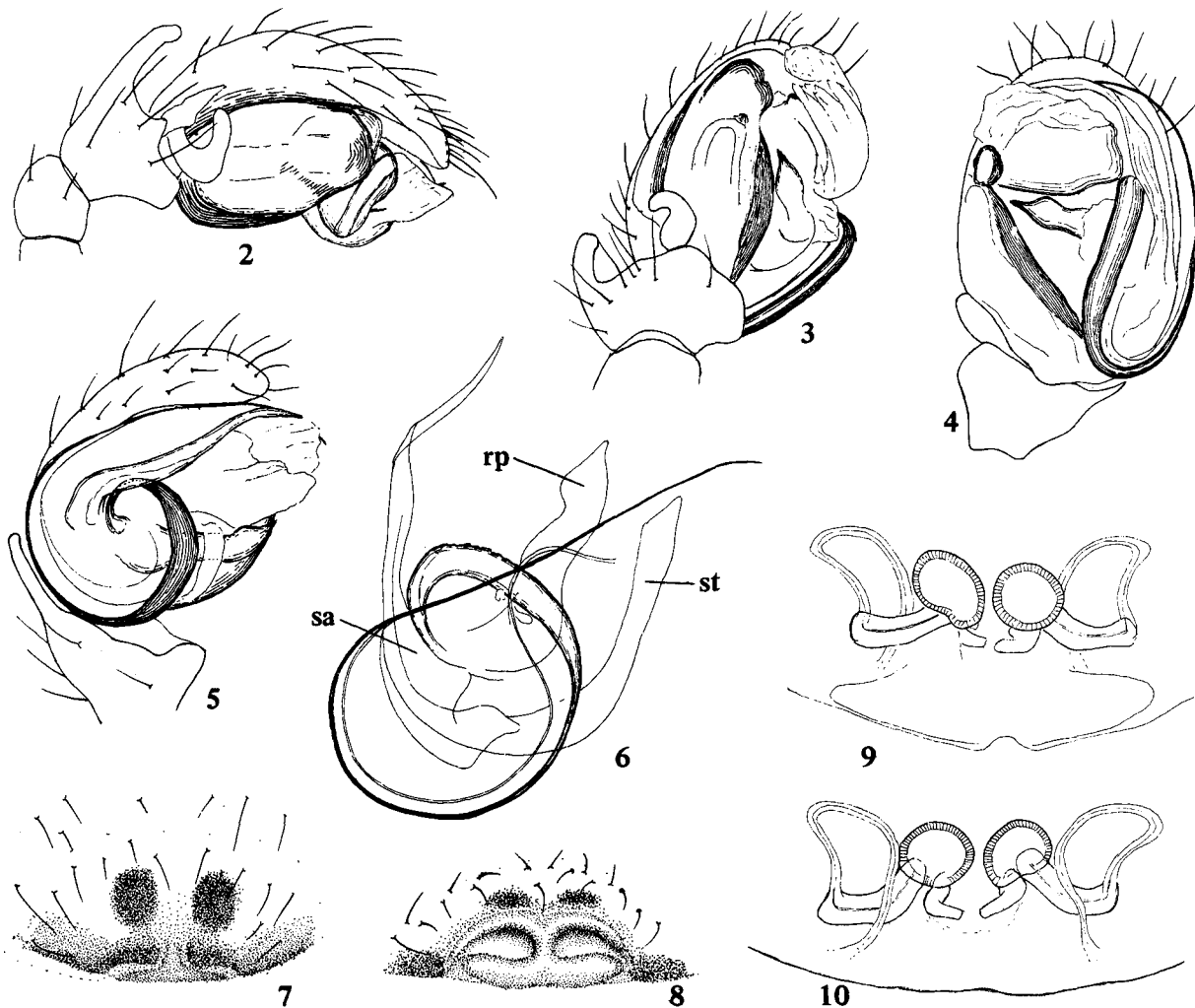
Male

Carapace length: 0.55 mm. *Total length:* 1.26 mm. (There is considerable variation in size, carapace length ranging from 0.50-0.70 mm). *Carapace:* Outline as in Fig. 20. Orange-brown with few radiating punctuations, sometimes with a narrow sub-marginal dark borderline. Head region darker, especially in the ocular area. *Eyes:* AL = PM = $1\frac{1}{4}$, PL = $1\frac{1}{2}$; a = 1, b = $1\frac{1}{4}$, c = d = $1\frac{1}{4}$. *Sternum:* Coloured as the carapace; sometimes darker towards the edges. *Abdomen:* Dorsal scutum coloured as the carapace, reaching to a point distant from the spinners by the diam. of the

spinners area. Spinners ringed with a scutum. *Legs*: Coloured uniformly as the carapace. No spines. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.43	0.14	0.33	0.31	0.26	1.47
II	0.38	0.13	0.30	0.29	0.24	1.34
III	0.32	0.13	0.24	0.24	0.22	1.15
IV	0.45	0.14	0.35	0.33	0.24	1.51

Position of Tm, I = 0.40, II = 0.43, III = 0.41. Tibia I length/breadth = 6. *Chelicerae*: Coloured as the carapace; with teeth as in *L. bicolor*. *Male palp*: Figs. 16-23. The embolus bears a membranous widening at the tip. The tibia is shown in Figs. 16-19 in different positions, ectal to dorsal, as the palp is rotated counter-clockwise (looking forwards along the axis of the palp). Its appearance varies greatly with the view-point.



Figs. 2-10: *Locketia bicolor* sp.n. 2 Right palp (ectal); 3 Ditto (ecto-ventral); 4 Ditto (ventral); 5 Left palp (mesal); 6 Embolic division (expanded); 7 Epigyne (ventral); 8 Ditto (behind); 9 Vulva (ventral); 10 Ditto (dorsal). (rp = radical part, sa = supratergular apophysis, st = supratergulum)

Female

Carapace length: 0.59 mm. *Total length*: 1.34 mm.

Carapace: As in the male, the ocular area black. *Eyes*: AL = PM = PL = $1\frac{3}{4}$; a = nearly 1, b = $1\frac{1}{4}$, c = $\frac{1}{2}$, d = $\frac{3}{4}$. *Sternum*: A little darker than the carapace, with some darkening towards the edges. *Abdomen*: Light grey with four reddish impressed dots. *Legs*: Coloured uniformly as the carapace; no spines. *Measurements*:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.40	0.14	0.36	0.31	0.26	1.47
II	0.38	0.14	0.29	0.28	0.24	1.33
III	0.35	0.13	0.26	0.25	0.23	1.22
IV	0.47	0.14	0.41	0.34	0.25	1.61

Position of Tm, I = 0.37, II = 0.37, III = 0.40. Tibia I length/breadth = 6. *Chelicerae*: With 3 teeth on the outer margin and two on the inner, close together, the mesal one longer (cf. Miller, 1970, Taf. XX, fig. 3). *Epigyne*: Figs. 24, 25. *Vulva*: Figs. 26, 27. The spermathecae, which usually appear circular when viewed ventrally, are in fact elongated, as may be seen when they are displaced by pressure. Fig. 28 shows their positions when undisturbed, as seen from one side with the specimen in clove oil.

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, grassy road verge, 20 May 73 (BMNH

1979.7.26.2). Paratypes; IITA, Ibadan, same data as holotype, 1 ♂, 2 ♀♀; lakeside grass, 2 June 73, 2 ♂♂, 1 ♀; cowpea plots, COPR site, 3 Feb. 73, 1 ♀; as above, 29 Apr. 74, 12 ♂♂, 6 ♀♀; grassy road margin, 26 Mar. 73, 31 ♂♂, 3 ♀♀; Idanre hills, in *Trilepis* mat, 700 m, 13 Apr. 74, 2 ♀♀.

Distribution: Ibadan and Idanre hills, Nigeria. Mokwa, Kwara state.

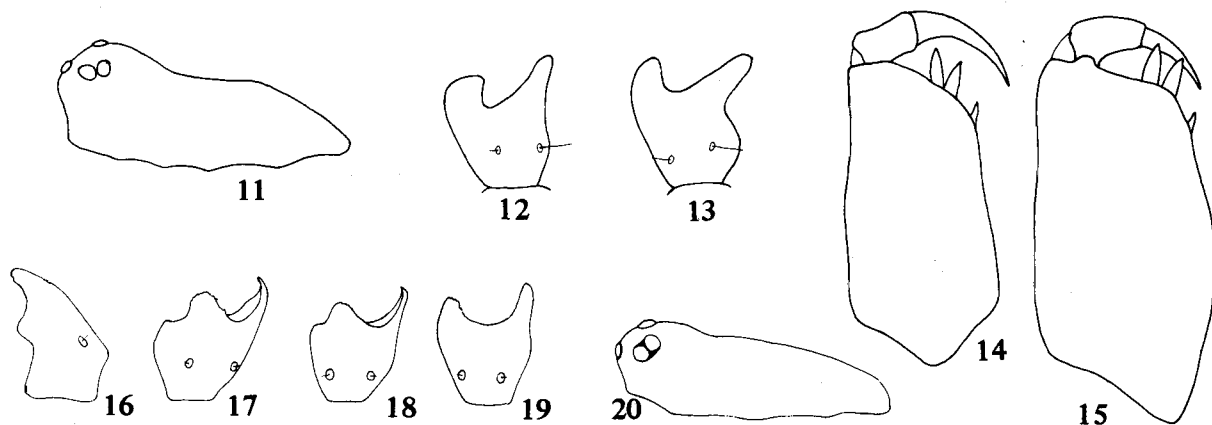
Biology: This species was taken from the same habitats at the same time as *L. bicolor*. It has also been taken in short (mown) grassland at Mokwa in the Guinea savanna zone.

Locketia convexa (Holm)

Cnephalocotes convexus Å. Holm, 1962, p. 123; *C. compar* Å. Holm, 1962, p. 124; *Locketia convexa* Å. Holm, 1979, p. 275.

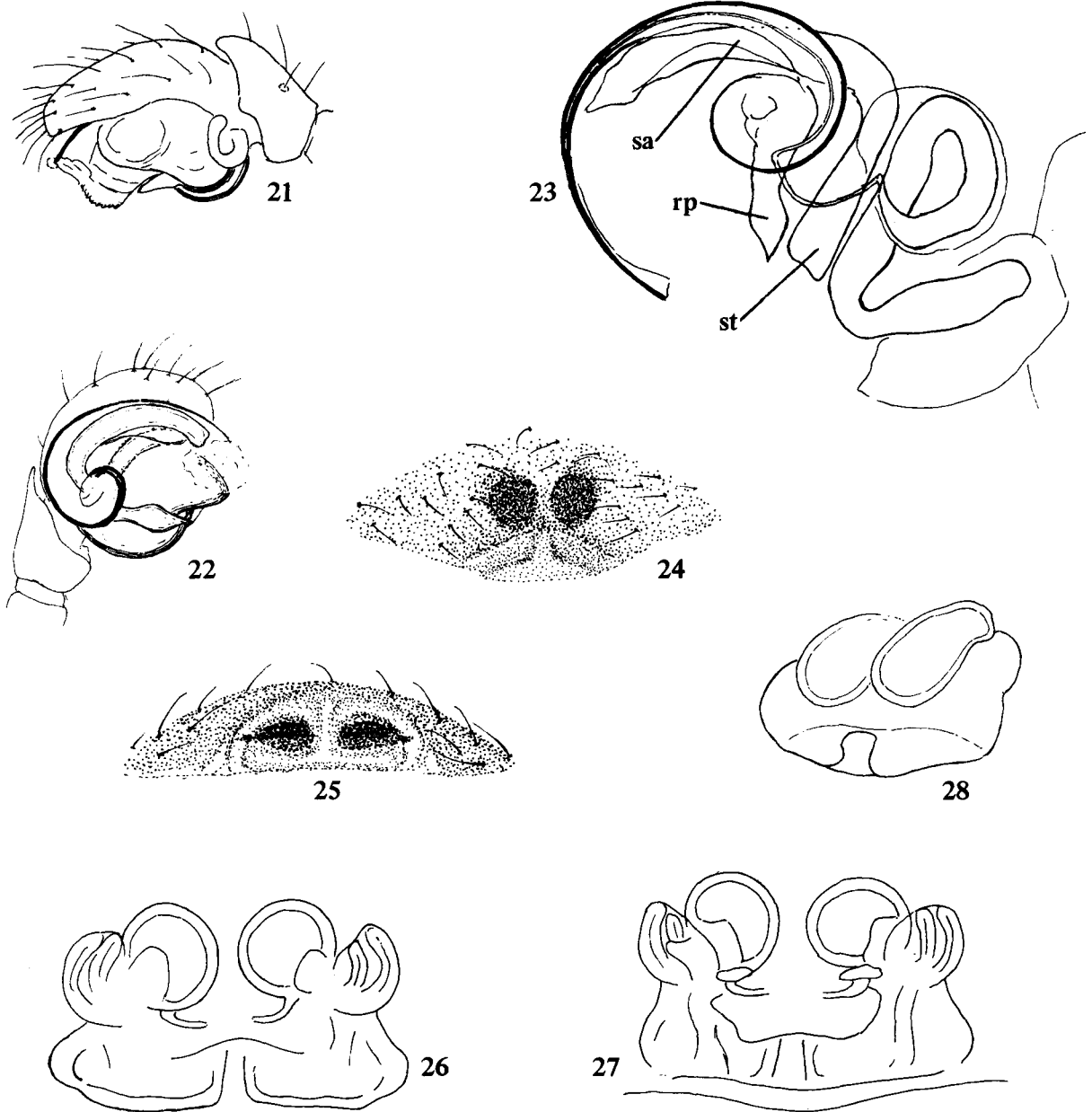
Material examined: IITA, Ibadan; in fallow bush plot, COPR site, 2 Feb. 73, 1 ♀; in litter, secondary forest on west bank of lake, 2 Feb. 73, 1 ♂; in litter, fallow bush, 20 Apr. 73, 1 ♀; in litter, abandoned plantation, 16 May 73, 1 ♀.

Distribution: In Nigeria this species is known only from the neighbourhood of Ibadan. It has previously been recorded from Kenya (Holm, 1962) and Angola (Miller, 1970).



Figs. 11-15: *Locketia bicolor* sp.n. 11 Carapace outline, ♂; 12 Right palpal tibia (dorsal); 13 Ditto (ecto-dorsal); 14 Chelicera, ♂; 15 Chelicera, ♀.

Figs. 16-20: *Locketia minor* sp.n. 16 Left palpal tibia (ectal); 17, 18 Ditto (ecto-dorsal); 19 Ditto (dorsal); 20 Carapace outline, ♂.



Figs. 21-28: *Locketia minor* sp.n. 21 Left palp (ectal); 22 Ditto (mesal); 23 Ditto (expanded); 24 Epigyne (ventral); 25 Ditto (behind); 26 Vulva outlines (ventral); 27 Ditto (behind); 28 Shape of spermathecae seen from the side. (rp = radical part, sa = supratergular apophysis, st = supratergulum)

Biology: All the specimens from Nigeria were found in deep leaf litter under fallow bush and secondary forest between February and May. It was the only member of the genus found in this habitat.

Genus *Ceratinopsis* J. H. Emerton 1882

(*Styloctetor* E. Simon 1884)

Ceratinopsis machadoi (Miller) (Figs. 29-31, 37, 39-41)

Styloctetor machadoi F. Miller, 1970, p. 128.

Males and females from Ibadan and one male (in company with *Ceratinopsis idanrensis*) from the Idanre hills, are assigned to this species. The males correspond to Miller's description and figures (1970) in every respect except the palpal tibia, which in Miller's Taf. XXXI, fig. 4 is shorter (cf. our Figs. 29, 39). However Miller's fig. 5 (of the palp from the inside) shows it as being longer and very close to that of our own specimens and we believe, until the types are available again, that the difference is due to angle of viewing. Leg measurements for both sexes are not far from Miller's, except for the value of Tm I in the female, which he finds is 0.40 as opposed to 0.31 in our specimens.

Material examined: IITA, Ibadan: In fallow bush, COPR site, 18 Oct. 73, 1 ♂; as above, 20 Apr. 73, 1 ♀; grassy road margin, 20 May 73, 1 ♂; riverine woodland, 23 Mar. 74, 1 ♂; riverine woodland, 28 Apr. 74, 3 ♂♂, 4 ♀♀. Idanre hills: In moss fringing *Trilepis* mat, 13 Apr. 74, 1 ♂.

Distribution: Ibadan and the Idanre hills, both in western Nigeria; Angola.

Biology: Not known. Most specimens were taken from damp leaf litter in riverine woodland.

Ceratinopsis idanrensis sp.n. (Figs. 32-36, 38)

The males of this species, collected in the Idanre hills (700 m) in an ephemeral herb community by a stream, differ from all the others in this genus so far described in the form of the tibial apophysis (Figs. 32, 34, 35). The accompanying females are probably mixed with those of *C. machadoi* (of which a single male was found here) and the distinction between the females has not been established with certainty. The

outer cheliceral teeth in *idanrensis* are probably more often 5 than 6 (one specimen has 4); the eyes are more often like Fig. 38 than are those of *machadoi* (Fig. 37); the epigyne is more often as in Fig. 36 and we have not been able to distinguish it from that of *C. benoiti* (Holm) of which we have seen the holotype female.

Male

Carapace length: 0.63 mm. **Total length:** 1.50 mm.

Carapace: Medium brown with faint dark grey striations. **Eyes:** AL = $1\frac{3}{4}$, PM = PL = $1\frac{1}{2}$; a = b = $\frac{3}{4}$, c = $\frac{3}{4}$, d = 1. **Sternum:** Deeper brown than the carapace; surface very finely reticulated. **Abdomen:** Medium to dark grey. **Legs:** Lighter brown than the carapace.

Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.48	0.15	0.40	0.35	0.32	1.70
II	0.40	0.15	0.35	0.33	0.30	1.53
III	0.35	0.15	0.28	0.28	0.23	1.29
IV	0.48	0.16	0.43	0.35	0.28	1.70

Position of tibial spines, I = 0.15, II = 0.17, III = 0.15, IV = 0.17. Position of Tm, I = 0.4, II = 0.37, III = 0.32. Tibia I length/breadth = 8. **Chelicerae:** Coloured as the carapace. Outer margin with 5 teeth, inner with 3-4. **Male palp:** Figs. 32-35. Very close to that of *C. machadoi* (Figs. 29-30, 39-41) except for the tibial apophysis.

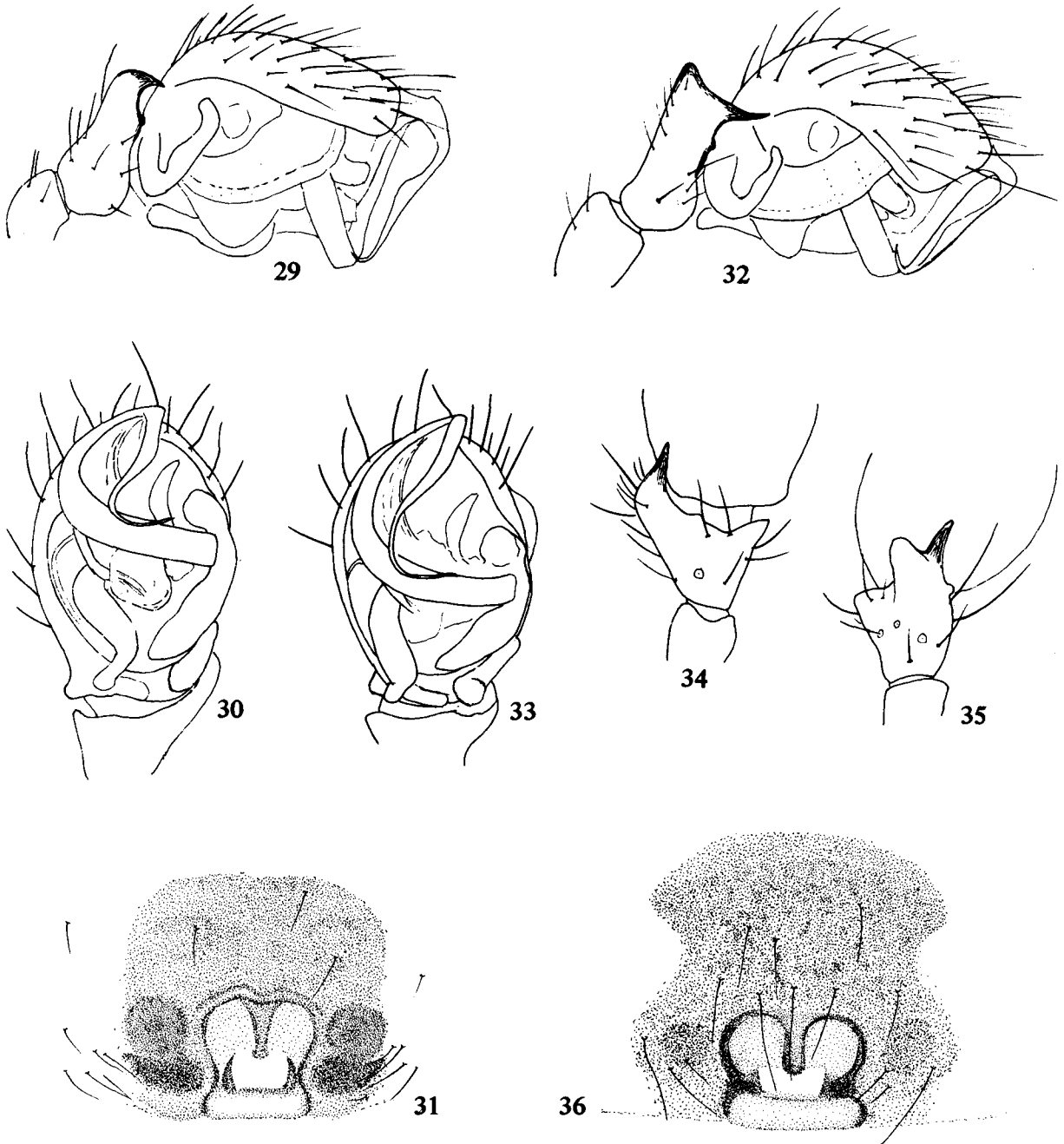
Female

Carapace length: 0.63 mm. **Total length:** 1.40 mm.

Colouration as in the male. **Eyes:** AL = 2, PM = PL = $1\frac{1}{2}$; a = b = 1, c = nearly 1, d = 1 (Fig. 38). **Legs:** Coloured as in the male. **Measurements:**

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.48	0.15	0.40	0.35	0.32	1.70
II	0.40	0.15	0.35	0.32	0.30	1.52
III	0.33	0.13	0.28	0.27	0.25	1.26
IV	0.50	0.15	0.42	0.37	0.28	1.72

Position of tibial spines, I = 0.17, II = 0.16, III = 0.19, IV = 0.17. Position of Tm, I = 0.37, II = 0.36, III = 0.36. Tibia I length/breadth = 6. **Chelicerae:** Outer margin usually with 5 teeth (but sometimes 6); inner usually with 3 (one specimen had 3 teeth on one side, 4 on the other; another had respectively 3



Figs. 29-31: *Ceratinopsis machadoi* (Miller). 29 Right palp (ectal); 30 Left palp (ventral); 31 Epigyne.

Figs. 32-36: *Ceratinopsis idanrensis* sp.n. 32 Right palp (ectal); 33 Left palp (ventral); 34 Left palpal tibia (dorso-mesal); 35 Right palpal tibia (dorsal); 36 Epigyne.

and 5). *Epigyne*: Fig. 36. Not distinguished from those of *C. machadoi* (Miller) and *C. benoitii* (Holm). (All these epigynes vary somewhat).

Material examined: Holotype ♂, NIGERIA, Idanre hills, in ephemeral herb community by stream, 4 Aug. 74 (BMNH 1979.7.26.3). Paratypes; Idanre hills, same data as holotype, 6 ♂♂, 24 ♀♀; in moss fringing *Trilepis pilosa* mat, 700 m, 13 Apr. 74, 11 ♀♀.

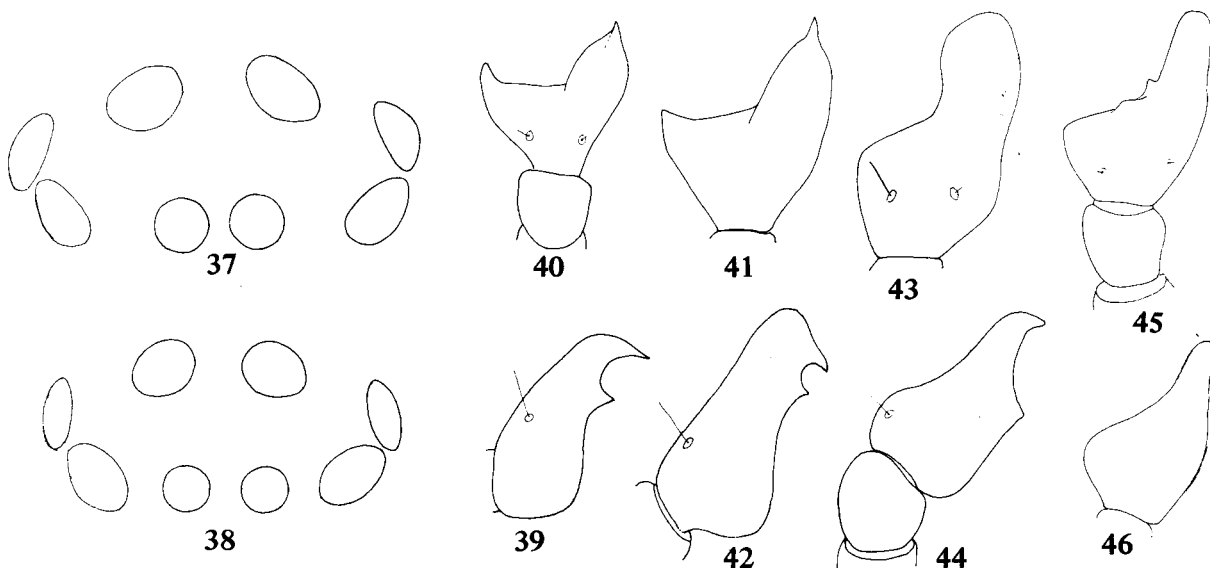
Biology: All the specimens were taken in extremely wet situations amongst granite outcrops of the Idanre hills.

Distribution: So far only recorded from the type locality: Idanre hills, western Nigeria (7° 7' N; 5° 5' E).

Diagnosis: *Ceratinopsis machadoi* (Miller) and *C. idanrensis* sp.n. belong to a group of very closely related species whose separation presents a little difficulty. This group includes *C. benoitii* (Holm) (1968, p. 10) and *C. (Entelecara) africana* (Holm) (1962, p. 91). The most useful character for the males is the palpal tibia (Figs. 34, 35, 39-46). The ectal view of this separates *benoitii* (Fig. 42) owing to the close proximity of the apical and lateral teeth (see Holm, 1968, fig. 16); an examination of the holotype fully

confirms this. *C. idanrensis* is likewise separated because the apical tooth is here drawn out and slightly flexed (Fig. 32). *C. machadoi* is distinguished from *C. africana* (Holm) by the outline of the tibia as seen from above, which in the former species is somewhat dilated before coming to a sharp point (Figs. 40, 41), whereas in *africana* (Figs. 45, 46) this shape is not seen in any position. Also the lateral tooth is further removed from the apex in the latter species (Fig. 44), of which Bosmans has recently given a description of the male (1979, p. 457).

We do not know how to separate the females with certainty, except for *C. africana*, where the darkened area of the epigyne has a little notch in its anterior border (see Holm, 1962, Pl. III, fig. 2) and this is lacking in the other species. The epigyne of *C. africana* is also quite distinct from those of the other species both as regards the median septum and in the position of the spermathecae. Examination of a specimen presented by Dr Holm fully confirms the impression given by his Pl. III, fig. 2 (1962). We are left with *C. machadoi*, *C. idanrensis* and *C. benoitii*. Their epigynes vary and specimens are found which cannot be assigned to any one species on the charac-



Figs. 37-38: Eyes. 37 *Ceratinopsis machadoi* (Miller); 38 *C. idanrensis* sp.n.

Figs. 39-46: Right palpal tibiae. 39 *C. machadoi* (ectal); 40, 41 Ditto (dorsal); 42 *C. benoitii* (Holm) (ectal); 43 Ditto (dorsal); 44 *C. africana* (Holm) (ectal); 45, 46 Ditto (dorsal).

ters so far examined, including measurements. In the specimens available the spacing of the eyes in *C. machadoi* and *C. idanrensis* is slightly different (Figs. 37, 38) but such a character by itself is not thought reliable.

Genus *Walckenaera* J. Blackwall 1833

Walckenaera (Tigellinus) nigeriensis sp.n. (Fig. 47)

Two females were taken on the COPR site (one of these is chosen as the holotype) and another on the west bank of the lake which are like Holm's *Tigellinus meruensis*, found at Meru in Tanzania at 3250 m in the ericaceous belt (Holm, 1962, p. 185, fig. 72 and Pl. VI, figs. 12, 13). Comparison with a reference specimen, which Dr Holm kindly made available, showed them to be distinct from that species, notably in having relatively longer and more slender legs and in the eyes.

	Length leg I carapace length	Tibia I length/ breadth	Eye intervals	
<i>W. meruensis</i>	2.6	5.2	a=b=1/2, c=d=1/4	
<i>W. nigeriensis</i>	3.5-3.6	7.3-7.7	a<1/4, b>0, c=d=1/3	

No males were taken of either species. The four African species described by Holm (1962), *Tigellinus ruwenzoriensis*, *T. aberdarensis*, *T. kilimanjaroensis* and *T. meruensis* (the first three of which have males

typical of the genus in their palps and carapace forms) also differ from the European *T. furcillatus* (Menge) in having only one dorsal spine on tibiae I and II.

Female

Carapace length: 0.88 mm. *Total length*: 2.33 mm. *Carapace*: Sepia with darker radiating striae and a thin dark borderline. Ocular area black. *Eyes*: Large and closely grouped, occupying the whole width of the head. AL = PL = 1 1/5, PM ≥ 1; a < 1/4, b → 0, c = d = 1/3. *Sternum*: Coloured as the carapace, darker along the edges. Length: 0.52 mm. *Abdomen*: Medium grey with indefinite white transverse streaks. *Chelicerae*: Coloured as the legs. Outer margin with 5 teeth (apical two are close), inner with 4. Stridulating ridges strong. *Legs*: Medium reddish brown, patellae and ends of segments lighter. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.88	0.28	0.82	0.72	0.45	3.15
II	0.85	0.28	0.72	0.68	0.45	2.98
III	0.73	0.25	0.63	0.60	0.40	2.61
IV	0.92	0.28	0.85	0.82	0.50	3.37

Position of tibial spines, I = 0.16, II = 0.19, III = 0.21, IV = 0.28. Position of Tm, I = 0.50, II = 0.52, III = 0.59, IV = 0.65. Tibia I length/breadth = 7½. *Palp*: Thickest at the tarsal-tibial joint and tapering distally, as usual in the genus. *Epigyne*: Fig. 47. Very like that of *Tigellinus meruensis* Holm.

Material examined: Holotype ♀, NIGERIA, IITA, Ibadan, fallow bush, COPR site, 7 Oct. 74 (BMNH 1979.7.26.4). Paratypes; IITA, Ibadan, secondary forest on west bank of lake, 4 Mar. 74, 1 ♀; fallow bush, COPR site, 16 Nov. 73, 1 ♀. Male unknown.

Distribution: Only known from the immediate vicinity of the type locality at the International Institute of Tropical Agriculture, Ibadan.

Biology: The three specimens all came from leaf litter beneath fallow bush and secondary forest.

Genus *Oedothorax* P. Bertkau 1883

Oedothorax macrophthalmus sp.n. (Figs. 48-57)

This species is placed in *Oedothorax* chiefly on account of the palpal structure. The enlarged sclerotised base of the embolus, joined to the rest of the

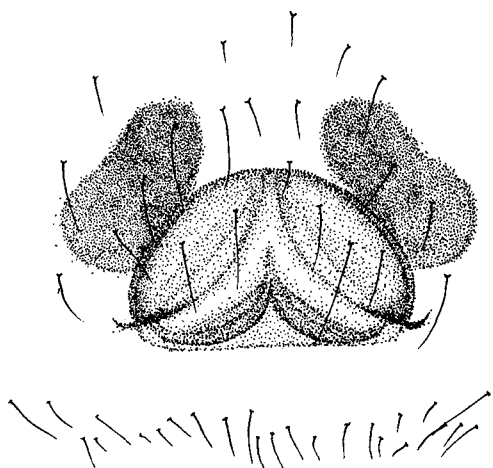


Fig. 47: *Walckenaera (Tigellinus) nigeriensis* sp.n. Epigyne.

embolic division through a membranous region, the course of the looped sperm duct and the presence of a forward-directed apophysis on the embolic division (Fig. 51) are in accordance with *Oedothorax* (cf. Millidge, 1977, fig. 24), although the embolus here is unusually long. It differs from *Callitrichia* Fage and *Toschia* di Caporiacco in which, as Holm (1979) has pointed out, the base of the embolus is less well defined and the sperm duct is not looped. The hairs on the paracymbium (Fig. 53) are close to those of *Oedothorax*. In the female the epigyne and vulva (Figs. 56, 57) are more like some species of *Callitrichia* (e.g. *C. paludicola* Holm, 1962, fig. 58), but *Callitrichia* often comes close to *Oedothorax* in this respect; compare for instance Holm's (1962) fig. 48 of *C. meruensis* with Wiehle's (1960) fig. 820 of *O. agrestis*.

Male

Carapace length: 0.60 mm. *Total length*: 1.34 mm. *Carapace*: Light greyish brown, often with sooty radiating striae, the head and clypeus darker. The head is slightly raised. *Eyes*: Fig. 54. Very large and occupying the whole width of the head. *Sternum*: Coloured sometimes as the carapace, but often darker (the distribution of pigment sometimes gives rise to an appearance of punctuation). *Chelicerae*: Coloured as the ground colour of the carapace; without stridulating ridges. Outer margin with 5 teeth, inner with 4 (closely grouped). *Legs*: Uniform yellowish brown to whitish brown, generally lighter than the carapace, with long spines. *Measurements*:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.60	0.19	0.54	0.51	0.40	2.24
II	0.57	0.19	0.50	0.49	0.37	2.12
III	0.50	0.16	0.40	0.41	0.33	1.80
IV	0.60	0.17	0.61	0.59	0.41	2.38

Position of tibial spines, I = 0.2 and 0.8, II = 0.2 and 0.8, III = 0.18, IV = 0.28. Position of Tm, I = 0.53, II = 0.53, III = 0.50, IV = 0.51. Tibia I length/breadth = 8. Length tibia IV spine/breadth tibia IV = 2.7. *Male palp*: Figs. 48-53. The palp is not unlike that of *Toschia* but the long embolus is enlarged at its base, as usual in *Oedothorax* and the genera of Merrett's Group C (Merrett, 1963, p. 458), to form a sclerotised bulb having, as Merrett says (1963, p. 459) "almost no radical part". The lamella is separate and

bears two anterior apophyses, one contiguous with the tip of the embolus, the other adjacent (Figs. 50, 51). The tibial apophysis is more typical of *Toschia* than of *Oedothorax*.

Female

Carapace length: 0.75 mm. *Total length*: 1.78 mm. The colouring of all parts as in the male. *Carapace*: Fig. 55. *Eyes*: AL = 1½, PM = PL = 2; a = 1/3, b = 1/5, c = d = ¼. Anterior row very slightly procurved. Eyes large as in the male. *Chelicerae*: Outer margin with 5 teeth, inner with 3. *Legs*: *Measurements*:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.68	0.20	0.65	0.62	0.45	2.60
II	0.67	0.20	0.62	0.57	0.40	2.46
III	0.58	0.18	0.43	0.52	0.35	2.06
IV	0.75	0.20	0.68	0.67	0.40	2.70

Position of tibial spines, I = 0.2 and 0.7, II = 0.2 and 0.73, III = 0.29, IV = 0.22. Position of Tm, I = 0.52, II = 0.50, III = 0.50, IV = 0.55. Tibia I length/breadth = 7.8. *Epigyne*: Fig. 56. *Vulva*: Fig. 57.

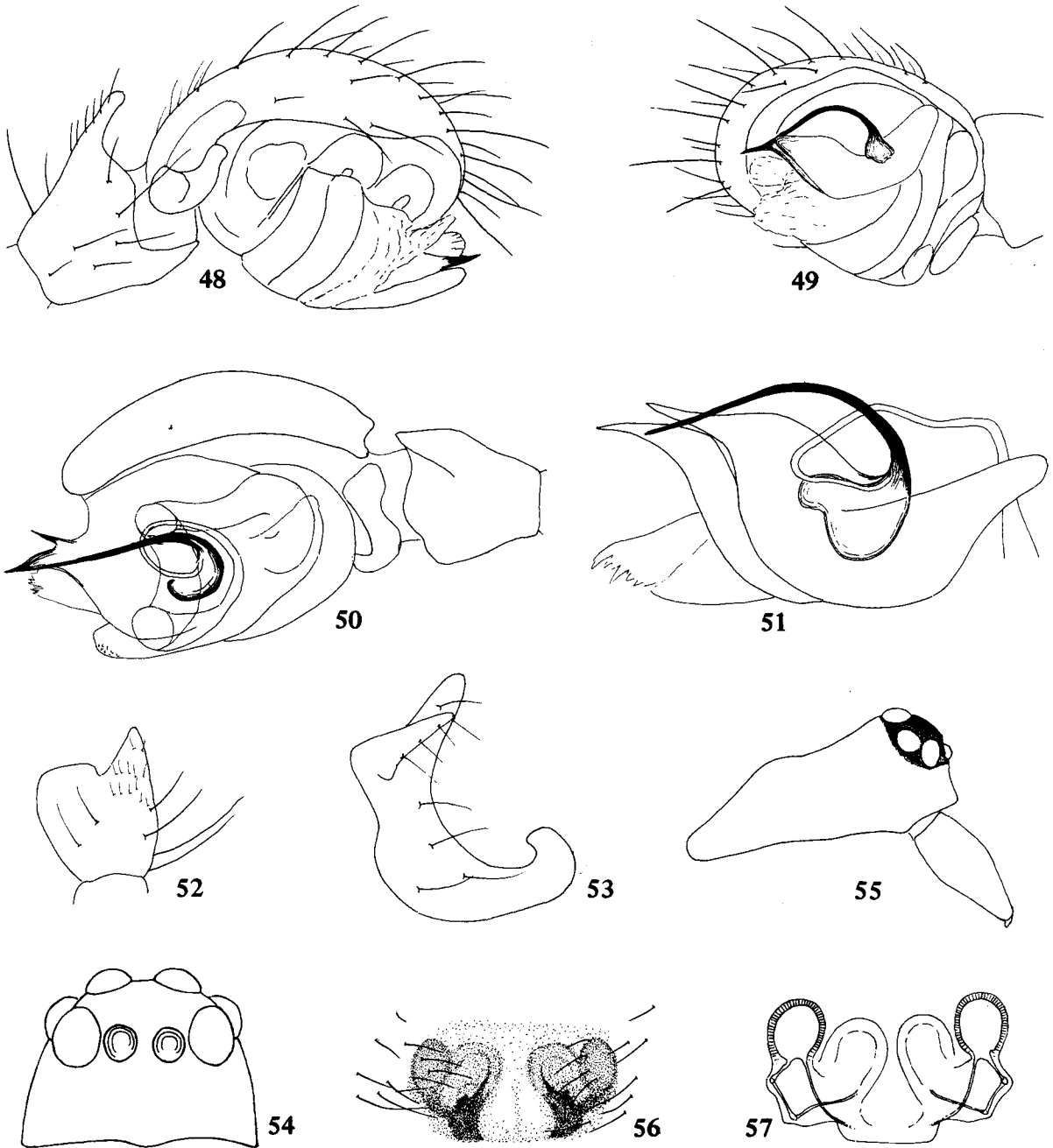
Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, in litter in riverine forest, west bank of lake, 26 Mar. 73 (BMNH 1979.7.26.5). Paratypes; IITA, Ibadan, same data as holotype, 1 ♀; litter in riverine woodland, 22 Apr. 73, 1 ♂; litter in fallow bush, COPR site, 3 Mar. 73, 5 ♀♀; as above, 18 Apr. 73, 1 ♂, 2 ♀♀; litter in riverine woodland, 28 Apr. 74, 2 ♂♂, 5 ♀♀; litter in fallow bush, 9 Sept. 74, 1 ♀.

Distribution: Only known from the vicinity of the type locality near Ibadan, Nigeria.

Biology: The available specimens were taken from litter in fallow bush and riverine forest during the wet season between March and September.

Genus *Pseudomaso* gen.n.

It has not been possible to place the single male here described in an existing genus. The structure and conformation of the palp seems to be close to that of *Maso sundevalli* (Westring) as figured by Millidge (1977, fig. 63) which shows a sudden narrowing of the duct before it follows a similar course to enter the embolic division, which again has a very similar structure. The tegulum, projecting a little and roughened anteriorly, is also similar. However in other respects the species differs markedly from *Maso*, whose short,



Figs. 48-57: *Oedothorax macrophthalmus* sp.n. 48 Right palp (ectal); 49 Ditto (ventral); 50 Ditto (mesal, in clove oil); 51 Embolic division; 52 Right palpal tibia (dorsal); 53 Paracymbium; 54 Eyes, ♂; 55 Carapace outline, ♀; 56 Epigyne; 57 Vulva.

thick legs with strong ventral spines and trichobothria at about 0.9 (and Tm IV present) contrast with the present species' very long thin legs, with Tm about 0.3 and Tm IV absent, and with no palpal tibial apophysis. It is not easy to explain why two species with such similar palps should be so very different in somatic characters unless there has been convergence in evolution. *Oedothorax macrophthalmus* (p. 70) is not unlike the present species and has a palp with rather similar structure, but the tibial spines there are 2.2.1.1. and the legs relatively much shorter. Type species: *Pseudomaso longipes* sp.n.

Pseudomaso longipes sp.n. (Figs. 58-60)

Male

Carapace length: 0.55 mm. *Total length*: 1.30 mm. *Carapace*: Fig. 60. Light brown, a little darker towards the edges. Ocular region dark. *Eyes*: Large, occupying the whole breadth of the head. Anterior row procurved. AL = PL = PM = 1 1/3; a = b = 1/2, c = 1/3, d = 2/3. *Sternum*: Darker brown than the carapace. *Abdomen*: White dorsally, dark grey-brown ventrally. *Legs*: Femora coloured as the carapace, remaining segments a little darker. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.97	0.18	0.86	0.75	0.48	3.24
II	0.87	0.17	0.68	0.65	0.37	2.74
III	0.58	0.15	0.45	0.45	0.33	1.96
IV	0.82	0.17	0.68	0.57	0.35	2.59

Position of tibial spines, I = 0.18, II = 0.20, III = 0.19, IV = 0.22. Position of Tm, I = 0.28, II = 0.33, III = 0.31. Tibia I length/breadth = 14.5. *Chelicerae*: Coloured as the carapace. Outer margin with 2 large teeth and a very small proximal one; inner margin not seen. Fang short and stout. *Male palp*: Figs. 58, 59. This, as seen from inside in clove oil, is remarkable in that the arc formed by the curved sclerotised part of the embolus encloses a membrane (whose sinuous anterior edge can be seen extending from the tip to the base of the embolus) which appears to support the duct which enters the embolus not far from its tip (Fig. 59).

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, in cowpea crop, COPR site, 6 July 74 (BMNH 1979.7.26.6). Female unknown.

Biology and distribution: Unknown. A single male was taken in a pitfall trap in cowpea crops at IITA, Ibadan in July, 1974.

Genus Aulacocyba E. Simon 1926

The species here called *Aulacocyba evansae* sp.n. has been assigned to this genus because the male palp is remarkably like that of *Aulacocyba subitanea* (O. P.-Cambridge), and the other characters are consistent except for the absence in the former of post-ocular sulci. It seems better to place the species in *Aulacocyba* rather than to create yet another genus on account of this one character alone.

Aulacocyba evansae sp.n. (Figs. 61-67)

Male

Carapace length: 0.59 mm. *Total length*: 1.13 mm. *Carapace*: Fig. 61. Deep chestnut brown, surface chagrined but not punctate. No sulci or pits. *Eyes*: AL = PL = PM = 2; a = 1, b = 2, c = 1 1/2, d = about 5. *Legs*: Uniform yellow-brown. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.34	0.11	0.28	0.24	0.21	1.18
II	0.31	0.11	0.25	0.23	0.20	1.10
III	0.26	0.09	0.20	0.18	0.19	0.92
IV	0.36	0.11	0.32	0.23	0.21	1.23

Each tibia has a very small dorsal spine close to the base (position < 0.1) no larger than the accompanying bristles, but erect. Position of Tm, I = 0.46, II = 0.46, III = 0.41. Tibia I length/breadth = 4. *Chelicerae*: Coloured as the carapace. Outer margin with 4 teeth. *Male palp*: Figs. 62-66. It bears a very close resemblance to that of *Aulacocyba subitanea* (O. P.-Cambridge).

This species, of which four males have been taken, but whose female is unknown, is placed in *Aulacocyba* on account of the male palp; the somatic characters are similar, including the foot-claws (Fig. 67), but there are no sulci on the head.

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, in tall grass by lake, swept, 2 July 73 (BMNH 1979.7.26.7). Paratypes; IITA, Ibadan, same data as holotype, 21 Sept. 74, 3 ♂♂. Female unknown.

Distribution: Only recorded from the type locality, Ibadan, Nigeria.

Biology: The few specimens were swept from mixed grass about 1 m tall beside a lake during the wet season.

This species is named after Miss J. M. Evans with-

out whose help these descriptions could not have been made.

Genus *Pseudomicrocentria* F. Miller 1970

Pseudomicrocentria minutissima Miller (Figs. 68-73)

Pseudomicrocentria minutissima F. Miller, 1970, p. 99.

Large numbers of both sexes were taken on the COPR plots at IITA. The males (Figs. 68-70) agree in all the characters mentioned by Miller (1970, p. 99). Figure 69 shows the structure of the expanded palp. The female has not previously been described.

Female

Carapace length: 0.50 mm. *Total length*: 1.38 mm. *Carapace*: Light orange-brown with a thin, often broken, black line close to and parallel with the edge, and sometimes with a patch of black reticulations behind the eyes. *Eyes*: Large and closely grouped. $AL \geq 2$, $PL = PM \leq 2$; $a = 2/3$, $b = 1/3$, $c = 1/2$, $d = 1/3$. *Stemum*: As in the male. At least as wide as long. *Abdomen*: Uniform light medium grey. *Legs*: Coloured as the carapace. Spines very fine, as in the

male. Measurements:

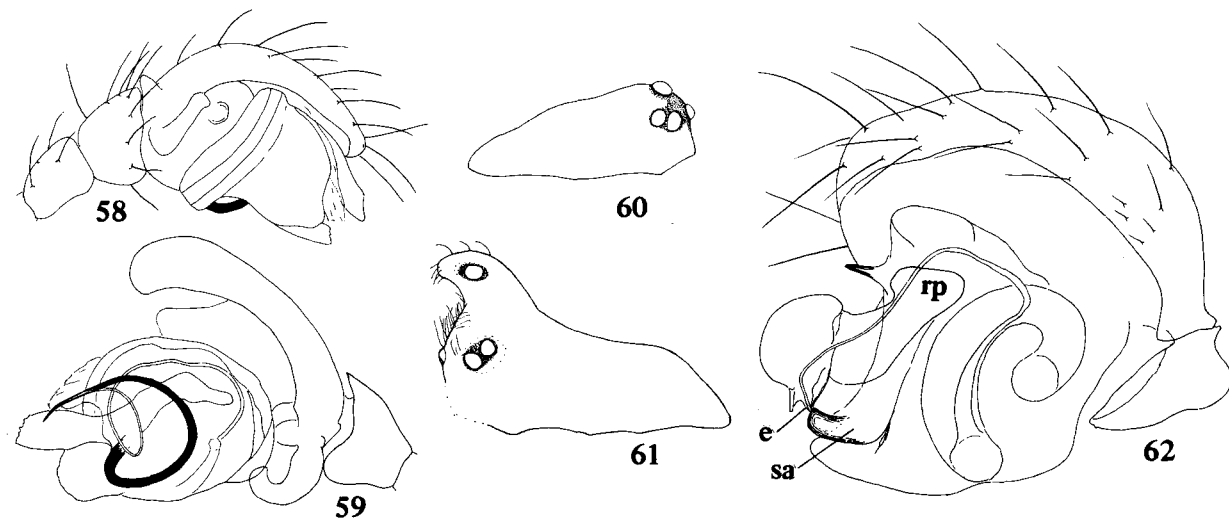
	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.36	0.14	0.28	0.25	0.23	1.26
II	0.33	0.14	0.25	0.23	0.21	1.16
III	0.29	0.11	0.19	0.20	0.20	0.99
IV	0.38	0.14	0.32	0.26	0.20	1.30

Position of tibial spines, I = 0.1 and 0.9, II = 0.1 and 0.9, III = 0.1, IV = 0.1. Position of Tm, I = 0.3, II = 0.3, III = 0.35. Tibia I length/breadth = 5.0. *Chelicerae*: Coloured as the carapace. Outer margin with 5 teeth, inner with 3-4. *Epigyne*: Fig. 71. *Vulva outlines*: Figs. 72, 73.

Material examined: IITA, Ibadan, in cowpea crops, COPR site, 27 June 74, 17 ♂♂, 14 ♀♀; as above, 12 June 73, 1 ♂, 1 ♀.

Distribution: IITA, Ibadan, Nigeria. Manieme district, Zaire (Miller, 1970, p. 100).

Biology: This species was taken in large numbers in pitfall traps in cowpea crops on the COPR plots at IITA during the period May to October, 1974. Peak activity was in the first two weeks of September. Being very small it could well have been overlooked elsewhere.



Figs. 58-60: *Pseudomaso longipes* sp.n., ♂. 58 Right palp (ectal); 59 Ditto (mesal, in clove oil); 60 Carapace outline.

Figs. 61-62: *Aulacocyba evansae* sp.n., ♂. 61 Carapace outline; 62 Right palp (mesal, partly expanded in clove oil). (e = embolus, rp = radical part, sa = supratergular apophysis)

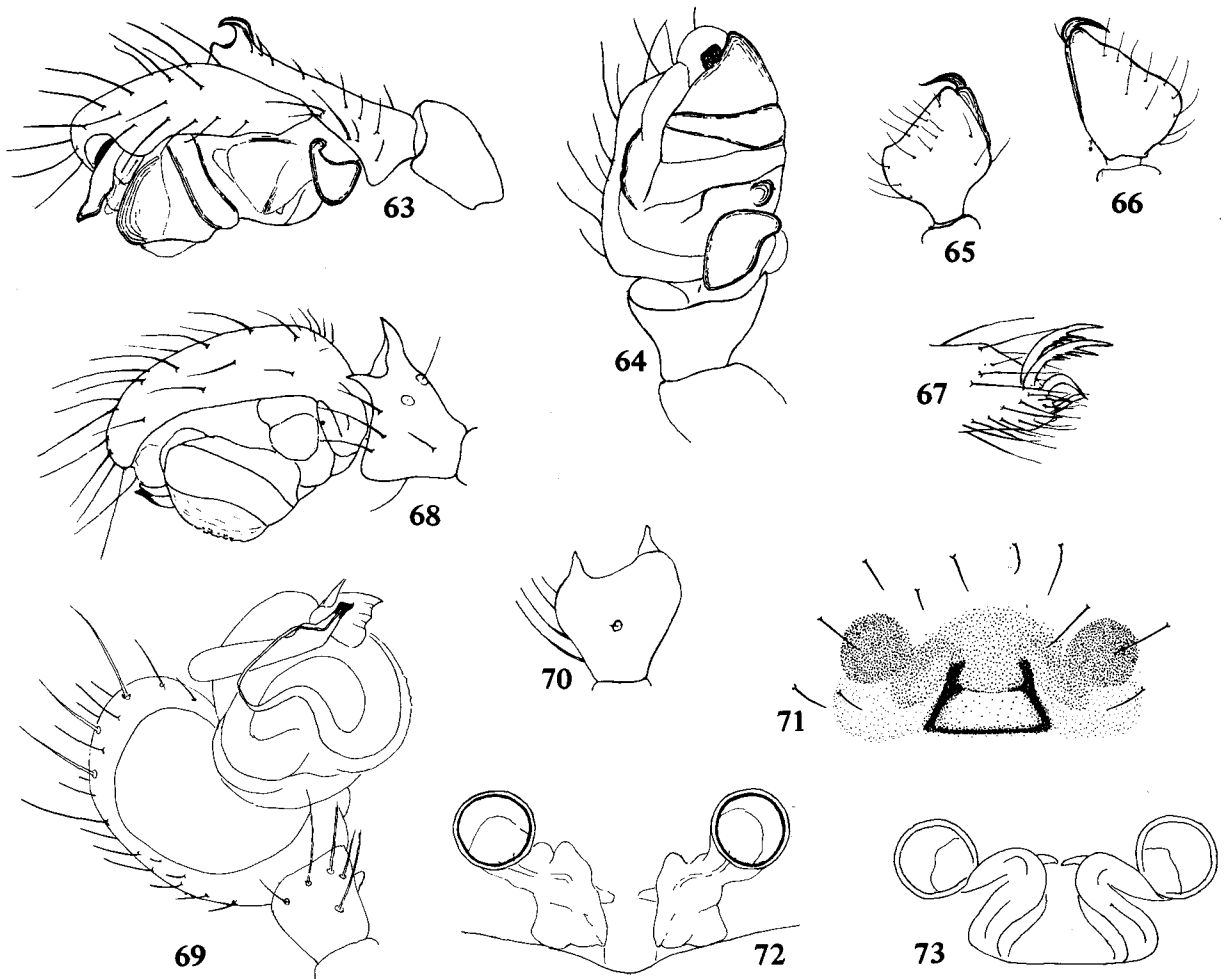
Genus *Asthenargus* E. Simon & L. Fage 1922*Asthenargus myrmecophilus* Miller (Figs. 74-80)

Asthenargus myrmecophilus F. Miller, 1970, p. 94.

Two males and three females of what must almost certainly be this species (although the holotype is not at the moment available) were taken on the COPR site. Miller (1970, p. 94), who had only the male, placed it in *Asthenargus* Simon & Fage, but regarded

it nevertheless as "Aussenseiter" considering the other known species of the genus, noting the large and complicated paracymbium and the thick, rather long, embolus, as well as the wrinkled and densely punctate carapace.

The palpal structure seems to be near that of *Asthenargus* (see Millidge, 1977, fig. 166) and is reminiscent of *A. perforatus* Schenkel as illustrated by Thaler (1978, figs. 1, 2). The epigyne is of the type found in the species *A. longispinus* (Simon) as



Figs. 63-67: *Aulacocyba evansae* sp.n., ♂. 63 Left palp (ectal); 64 Ditto (ecto-ventral); 65 Left palpal tibia (dorsal); 66 Right palpal tibia (dorsal); 67 Foot-claws.

Figs. 68-73: *Pseudomicrocentria minutissima* Miller. 68 Left palp (ectal); 69 Right palp (partly expanded); 70 Left palpal tibia (dorsal); 71 Epigyne; 72, 73 Vulva outlines (different specimens from different angles).

illustrated by Denis (1962, figs. 9-11), *A. helveticus* Schenkel, *A. perforatus* Schenkel and *A. paganus* (Simon) as illustrated by Thaler (1969, figs. 7, 12-14). We think that it is best at the moment to follow Miller in assigning *myrmecophilus* to *Asthenargus*.

The following description of the male differs only slightly from Miller's; the female has not previously been described.

Male

Carapace length: 0.70 mm. *Total length*: 1.70 mm. *Carapace*: Dark chestnut brown, the surface chagrined. The head wide and rounded; clypeus very wide; no post-ocular sulci. *Eyes*: As in the female (Fig. 78). *Sternum*: Rather rugose, coloured as the carapace. Length: 0.39 mm, breadth: 0.37 mm. *Abdomen*: Medium grey. *Legs*: Uniform orange-brown, lighter than the carapace. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.53	0.19	0.44	0.40	0.33	1.89
II	0.46	0.18	0.42	0.37	0.31	1.74
III	0.39	0.14	0.31	0.33	0.26	1.43
IV	0.53	0.18	0.45	0.37	0.28	1.81

Position of tibial spines, I = 0.16 and 0.86, II = 0.11 and 0.84, III = 0.12 and 0.81, IV = 0.30. Position of Tm, I = 0.28, II = 0.30, III = 0.24. Tibia I length/breadth = 6.5. *Chelicerae*: Coloured as the carapace. Outer margin with 4 teeth, inner with 2 (close together), but the spacing of the teeth is not as regular as in the female. *Male palp*: Figs. 74-77. A very large paracymbium bears three long bristles. The embolus projects prominently.

Female

Carapace length: 0.63 mm. *Total length*: 1.38 mm. *Carapace*: Dark brown, sepia, with darker radiating markings; surface chagrined. *Eyes*: Fig. 78. *Sternum*: Rugose; coloured as the carapace, darker towards the edges. *Abdomen*: Dark grey. *Legs*: Uniform orange-brown. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.42	0.14	0.30	0.26	0.26	1.38
II	0.40	0.14	0.28	0.25	0.25	1.32
III	0.28	0.11	0.25	0.22	0.21	1.07
IV	0.47	0.14	0.37	0.30	0.25	1.53

Position of tibial spines, I = 0.15 and 0.82, II = 0.13 and 0.88, III = 0.17 and 0.88, IV = 0.26. Position of Tm, I = 0.38, II = 0.40, III = 0.33. Tibia I length/breadth = 5. *Palp*: Darker than the legs. *Chelicerae*: Fig. 79. Not very different from the male. Outer margin with 4 teeth, the apical one very small (or absent); inner margin with 2. *Epigyne*: Fig. 80. The anterior border is produced into a weakly sclerotised septum which reaches the posterior border.

Material examined: IITA, Ibadan, in cowpea crops, COPR site, 6 May 74-15 Oct. 74, 2 ♂♂, 3 ♀♀.

Biology: Not known. Five specimens were taken in pitfall traps in cowpea crops between May and October, 1974. There was no evidence of association with ants.

Genus *Ibadana* gen.n.

The single species placed in this genus shows some of the characters of the *Linyphiinae*.

Carapace: Low, head raised slightly. *Eyes*: Large, occupying the whole width of the head. Anterior medians much the smallest. *Chelicerae*: Long and fairly divergent, longer in the male, with 4 strong teeth on the outer margin. A cusp on the ventral surface, more developed in the male. *Legs*: Relatively long, 1st pair the longest. Tibiae I-IV with 2 dorsal spines; tibia I with 1 prolateral and 1 retrolateral spine; tibia II (female) with 1 retrolateral spine. *Male palp*: Tibia bears two small apophyses anteriorly close together. Tegulum horizontal. Embolic division large and membranous and carries a sclerotised lamella, which originates close to the base of the rather long embolus. The embolus lies along this lamella and has its base near the posterior end of the alveolus (Figs. 87, 88). The palp is thus unlike that of *Leptorhoptrum* and, apart from the bases of the lamella and embolus being so far in the rear, resembles somewhat that of *Porrhomma* (see Merrett, 1963, p. 378) and perhaps *Mioxena* (Merrett, 1963, p. 384). Type species: *Ibadana cuspidata* sp.n.

Ibadana cuspidata sp.n. (Figs. 81-90)

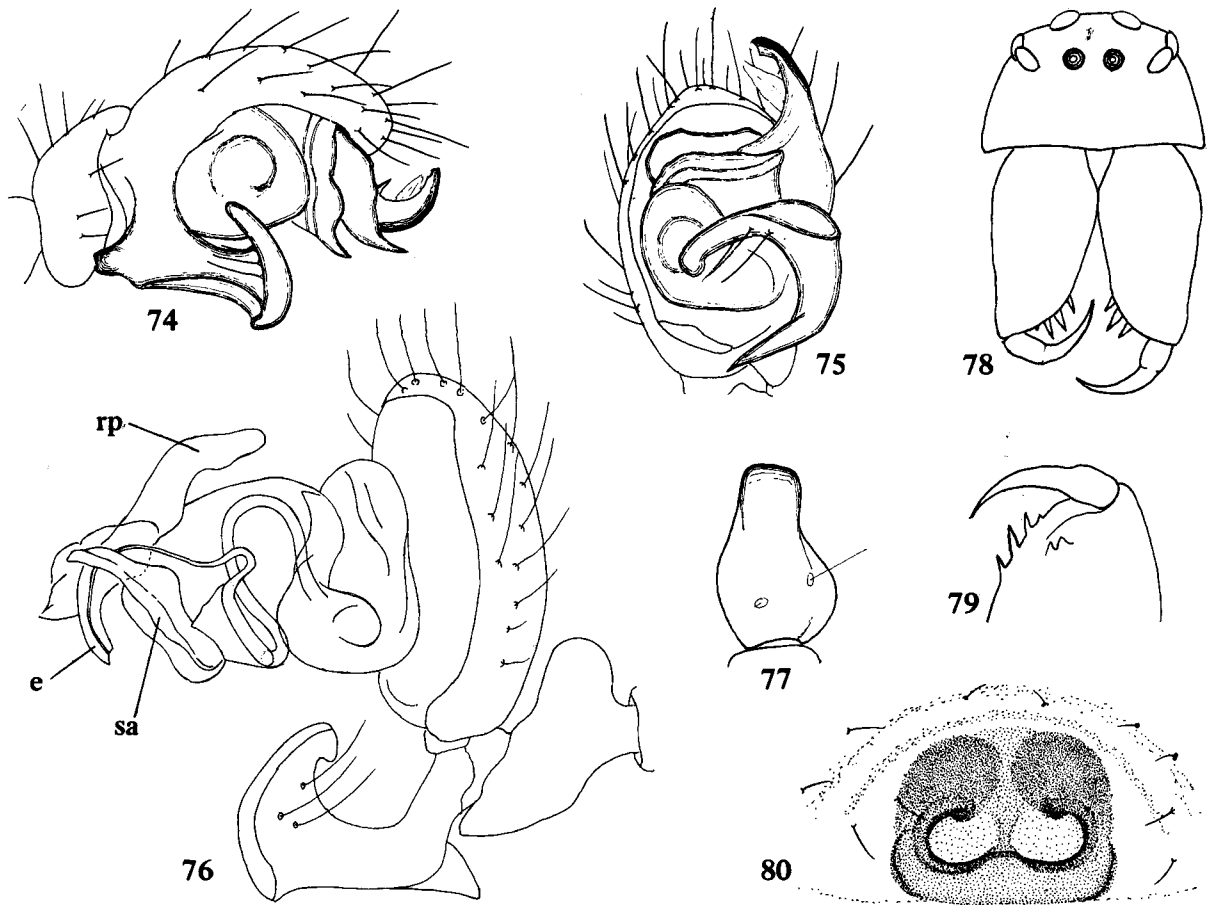
Male

Carapace length: 1.00 mm. *Total length*: 2.00 mm. *Carapace*: Chestnut brown with ill-defined radiating striae; some darkening at junction of head and

thorax. Surface finely reticulate. There is a prominent dorsal cusp in the posterior quarter (Fig. 81). *Eyes*: Very large, occupying the whole width of the head (Fig. 82). *Sternum*: Surface as the carapace but lighter brown flecked with grey. *Abdomen*: Cylindrical, roughly $2\frac{1}{2}$ times as long as wide. Medium grey, with a small sclerotised patch at the anterior end of the dorsal surface. *Legs*: Femora I and II coloured as the carapace, remaining segments light yellow-brown often flecked with grey. Tibia I with one prolateral spine (at 0.6) and one retrolateral spine (at 0.7). No lateral spines found on tibia II. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	1.30	0.20	1.10	1.13	0.70	4.43
II	1.15	0.20	0.92	0.90	0.67	3.84
III	0.70	0.18	0.58	0.65	0.45	2.56
IV	1.00	0.19	0.90	0.83	0.63	3.55

Position of tibial spines, I = 0.05 and 0.83, II = 0.04 and 0.88, III = 0.05 and 0.77, IV = 0.05 and 0.87. Position of Tm, I = 0.14, II = 0.17, III = ?, IV = ? Tibia I length/breadth = 19. *Chelicerae*: Fig. 82. Long and narrow with a cusp bearing a bristle on the posterior surface (Fig. 83). Coloured as the carapace. No teeth discovered on the inner margin. There is an



Figs. 74-80: *Asthenargus myrmecophilus* Miller. 74 Right palp (ectal); 75 Left palp (ventral); 76 Ditto (mesal, expanded in clove oil. The tarsus has become twisted through 180°); 77 Right palpal tibia (dorsal); 78 Facies and chelicerae, ♀; 79 Cheliceral teeth, ♀; 80 Epigyne. (e = embolus, rp = radical part, sa = suprategular apophysis)

unusually large gap between the base of the chelicerae and that of the maxillae. *Male palp*: Figs. 86-89. In Fig. 87 the embolus and lamella are shown still in contact, in Fig. 88 they are separated.

Female

Carapace length: 0.80 mm. *Total length*: 1.83 mm. *Carapace*: Chestnut brown with some irregular grey flecks. Surface chagrined. *Eyes*: Figs. 84, 85. Large, prominent, closely grouped, occupying the whole width of the head. *Stemum*: Yellowish brown flecked with grey, surface as the carapace. *Abdomen*: Medium to light grey with lighter flecks. A narrow pale longitudinal dorsal stripe extends the whole length. *Legs*: Femora coloured as the carapace, other segments lighter brown with some grey. Tibia I with one prolateral and one retrolateral spine (0.56 and 0.72). Tibia II with one dorso-retrolateral spine (0.65). Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	1.13	0.20	0.97	0.95	0.60	3.85
II	1.05	0.20	0.87	0.87	0.55	3.54
III	0.73	0.17	0.57	0.58	0.42	2.47
IV	1.00	0.20	0.75	0.78	0.50	3.23

Position of tibial spines, I = 0.05 and 0.80, II = 0.04 and 0.80, III = 0.10 and 0.80, IV = 0.07 and 0.85. Position of Tm, I = 0.26, II = 0.27, III = 0.37, IV = ? Tibia I length/breadth = 16. *Chelicerae*: Long and somewhat divergent (Figs. 84, 85). Inner margin with 2 teeth. Coloured as the carapace. Projection on the posterior surface blunter than in the male. *Epigyne*: Fig. 90.

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, from pitfall trap in riverine woodland on west bank of lake, 24 Feb. 74 (BMNH 1979.7.26.8). Paratypes; IITA, Ibadan, same data as holotype, 2 ♂♂, 3 ♀♀; as above, 24 Jan. 74, 5 ♂♂; as above, 3 Mar. 74, 1 ♀; as above, 23 Mar. 74, 1 ♀.

Distribution: Known only from the type locality at the International Institute of Tropical Agriculture, Ibadan, Nigeria.

Biology: As far as is known this species is restricted to riverine woodland, where adults have been found in the dry season months of January, February and March.

Genus *Meioneta* J. E. Hull 1920

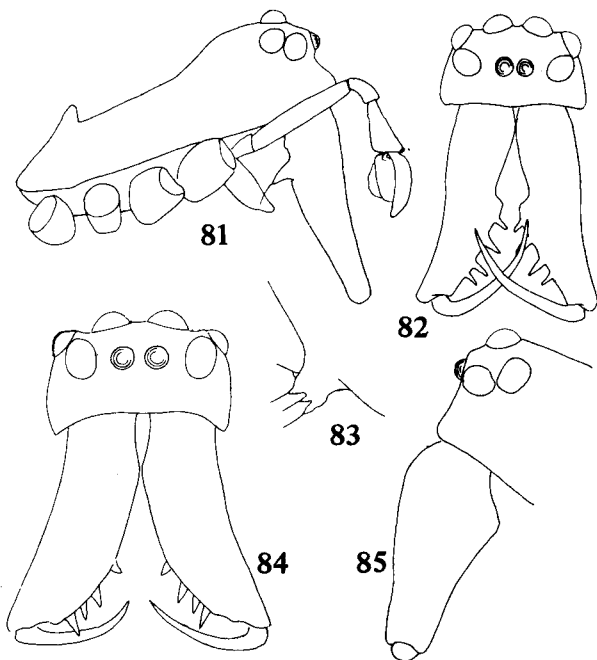
It seems very probable that *Meioneta dentifera* Locket and *M. usitata* Locket are conspecific (and if this is confirmed, *dentifera* will take precedence). One female (*usitata*) was found with a male (*dentifera*) in litter under fallow bush on the COPR plots at IITA in February, 1973. Unfortunately the male has suffered the loss of most of the leg segments, but the palps are in perfect condition and the colouration and proportions of the body are close to those of the accompanying female of *M. usitata*.

Meioneta dentifera Locket

Meioneta dentifera G. H. Locket, 1968, p. 72.

Male

Carapace length: 0.52 mm. *Total length*: 1.20 mm. *Carapace and sternum*: Coloured as in *M. usitata*. *Eyes*: AL = PM = 1 1/3, PL = 1 1/4; a = 3/4, b = 1/3, c = 1/2, d = 1/3. *Abdomen*: Medium grey ground colour;



Figs. 81-85: *Ibadiana cuspidata* sp.n. 81 Outline of carapace, chelicera and palp, ♂; 82 Facies and chelicerae, ♂; 83 Cheliceral cusp, ♂ (from outside and distally); 84 Facies and chelicerae, ♀; 85 Eyes and chelicera, ♀ (from side).

dorsally lighter on anterior half and with a broad light patch in the posterior quarter. *Legs*: (most segments lost) a little lighter than the carapace. Measurements: Femora: I = 0.50, II = 0.47, III = 0.38, IV = 0.50. Other segments of IV: Pat. = 0.14, Tib. = 0.45, Met. = 0.41, Tars. = 0.18. Total IV = 1.68 mm. *Chelicerae*: A little lighter than the carapace. Not divergent or specially developed. Outer margin with 4 teeth. *Male palp*: As figured by Locket (1968, fig. 3).

Meioneta usitata Locket

Meioneta usitata G. H. Locket, 1968, p. 81.

Female

Carapace length: 0.52 mm. *Total length*: 1.13 mm. *Carapace*: Medium olive-brown with variable sooty radiating striae; an indistinct dark borderline. Surface faintly chagrined. *Sternum*: Coloured as the carapace. Length = breadth = 0.30 mm. *Abdomen*: Light to medium grey; lighter dorsally and with a broad light

(dorsal) patch on the posterior quarter (also present in the male *dentifera*). *Chelicerae*: Lighter than the carapace with darker medio-mesal areas. Outer margin with 4 teeth. *Legs*: Coloured uniformly as the carapace or a little lighter. Measurements:

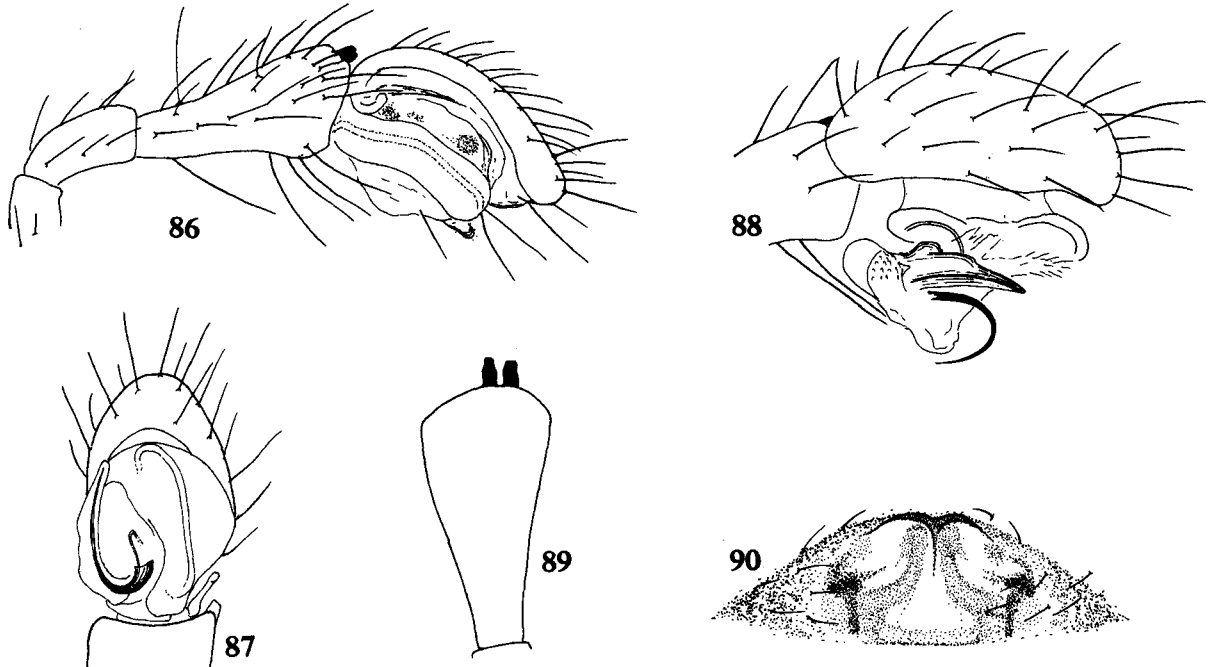
	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.52	0.15	0.47	0.44	0.33	1.91
II	0.48	0.13	0.38	0.37	0.28	1.64
III	0.37	0.12	0.28	0.30	0.25	1.32
IV	0.50	0.13	0.44	0.39	0.27	1.73

Position of tibial spines, I = 0.18 and 0.64, II = 0.21 and 0.61, III = 0.24 and 0.65, IV = 0.29 and 0.73. Position of Tm, I = 0.20, II = 0.23, III = 0.23. Tibia I length/breadth = 7.5. *Epigyne*: Figured by Locket (1968, figs. 11C and 12A).

Material examined: IITA, Ibadan, in fallow bush, COPR site, 26 Feb. 73, 1 ♂, 1 ♀.

Biology: Unknown.

Distribution: Dundo, Angola (Locket, 1968); Ibadan, Nigeria.



Figs. 86-90: *Ibadana cuspidata* sp.n. 86 Right palp (ectal); 87 Left palp (ventral); 88 Ditto (mesal, partly expanded); 89 Right palpal tibia (dorsal); 90 Epigyne.

Meioneta prosectes Locket (Figs. 91-96)

Meioneta prosectes G. H. Locket, 1968, p. 75; R. Bosmans, 1979, p. 56.

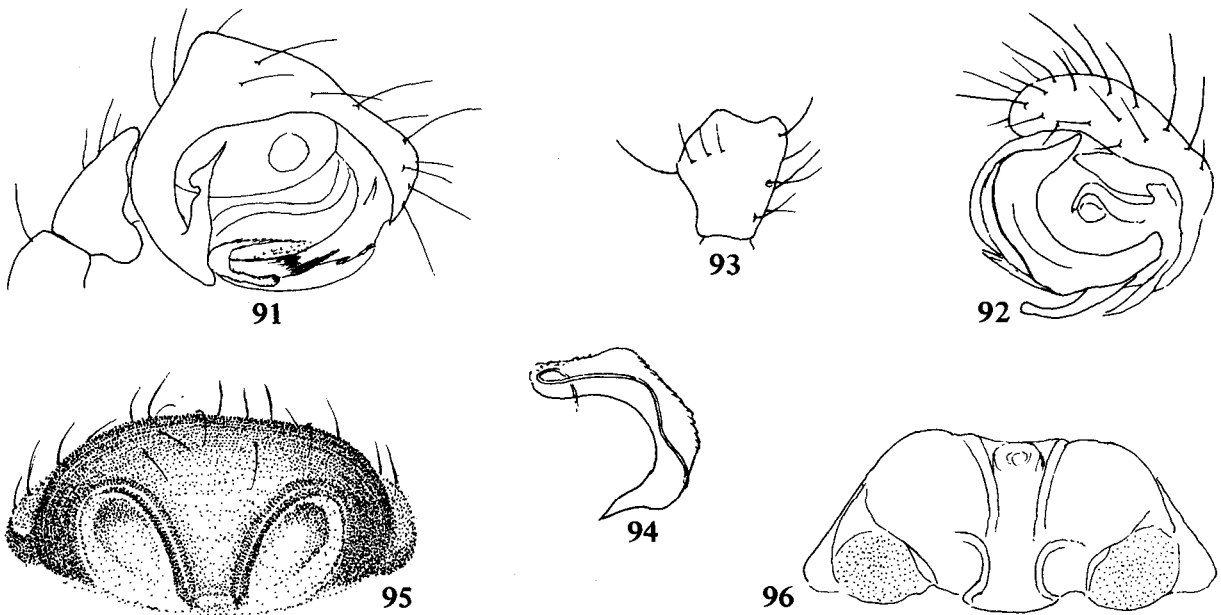
This species occurred on the COPR plots and road margins at Ibadan. There seems little doubt of the identity of the specimens although the holotype at Dundo is not available at the moment. Bosmans has also found this species among material collected by the Belgian Mount Kenya Bio-Expedition in 1975 and gives a description (1979, p. 56). He believes that *Meioneta* sp. of Locket (1968, p. 84) is the female of *M. prosectes* and that the female of Holm's *M. gracilipes* (Holm, 1968, p. 45) is conspecific. A female from St. Helena was also described under *M. gracilipes* Holm by Van Helsdingen (1977, p. 168) who suspected the same thing. In view of the distances separating the finds and the existence of closely related species found in African material we append a description of Nigerian specimens. Our females are smaller than Bosmans' but the relative lengths of the legs are very close and we believe Bosmans' views on the synonymy to be correct.

Male

Carapace length: 0.70 mm. *Total length*: 1.70 mm. *Carapace*: Rather dark sepia; black striae variable. *Eyes*: AL = $1\frac{1}{2}$, PM \leq $1\frac{1}{2}$ = PL; a = $\frac{1}{2}$, b = $\frac{2}{3}$, c = $\frac{1}{2}$, d = $\frac{2}{3}$. *Sternum*: Coloured as the carapace. *Abdomen*: Dark grey. *Legs*: Uniform light yellow. *Measurements*:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.70	0.18	0.70	0.70	0.43	2.71
II	0.63	0.16	0.63	0.60	0.40	2.42
III	0.50	0.14	0.40	0.48	0.30	1.82
IV	0.73	0.14	0.68	0.65	0.38	2.58

Position of tibial spines, I = 0.21 and 0.78, II = 0.20 and 0.70, III = 0.25 and 0.75, IV = 0.22 and 0.79. Position of Tm, I = 0.28, II = 0.26, III = 0.25. Tibia I length/breadth = 10.4. *Chelicerae*: Uniform dark brown, as the carapace. Outer margin with 3 teeth, inner with 2. *Male palp*: (Figs. 91-94, see also Locket, 1968, fig. 5). The base of the embolus differs from that of *M. prosectoides* sp.n., which was found with it, in having only very small teeth at the base, and the lamella, although similar, is less strongly developed



Figs. 91-96: *Meioneta prosectes* Locket. 91 Right palp (ectal); 92 Ditto (mesal); 93 Right palpal tibia (dorsal); 94 Embolus; 95 Epigyne (ventral); 96 Ditto (behind, outline).

(the ectal arm is often quite difficult to see from the outside). Cymbium length about 0.23 mm. The definite roughening of the ventral surface of the tegulum is always visible.

Female

Carapace length: 0.60 mm. *Total length:* 1.70 mm. *Carapace:* Sepia, variable in depth of colour; sometimes with striae and sooty markings. Ocular area darker, and sometimes the middle of the clypeus. *Eyes:* AL = $1\frac{1}{2}$, PM \geq PL = $1\frac{1}{2}$; a = 1, b = $\frac{2}{3}$ ($\frac{3}{4}$, $\frac{1}{2}$), c = d = $\frac{2}{3}$. *Sternum:* Generally darker than the carapace (pigment gives the impression of a granular surface). *Abdomen:* Uniform light to medium grey. *Legs:* Light yellow-brown. Femora I and II sometimes darkened pro- and retro-laterally. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.75	0.21	0.65	0.66	0.44	2.71
II	0.68	0.20	0.60	0.56	0.38	2.42
III	0.58	0.16	0.43	0.46	0.31	1.94
IV	0.81	0.18	0.68	0.64	0.36	2.67

Position of tibial spines, I = 0.26 and 0.77, II = 0.25 and 0.71, III = 0.26 and 0.68, IV = 0.28 and 0.74. Position of Tm, I = 0.24, II = 0.27, III = 0.30. Tibia I length/breadth = 8.5. *Chelicerae:* Ground colour as the legs, usually with a darker stripe from near the base inside to near the apex outside. Outer and inner margin with 3 teeth each. *Palps:* Darkened. *Epigyne:* Figs. 95, 96. Typical of the genus, not distinguished.

Material examined: IITA, Ibadan; fallow bush, COPR site, 20 Mar. 73, 1 ♂; in short grass by road margin, 26 Feb. 73, 5 ♂♂; in cowpea crops, COPR site, 27 Apr. 73, 1 ♂; in pitfall traps in cowpea crops, COPR site, 27 Apr. 74, 15 ♂♂; as above, 23 May 74, 13 ♀♀.

Biology: The majority of specimens were taken in pitfall traps in cowpea crops during the wet season together with *M. prosectoides* and *M. habra*.

Distribution: Dundo, Angola (Locket, 1968) and Ibadan, Nigeria.

Meioneta prosectoides sp.n. (Figs. 97-104)

This species resembles *M. prosectes* and was found with it on the COPR plots, but it is larger and there are differences in the palpal tibiae (see Figs. 93 and 101), paracymbium and palpal organs (see below). It

is thought that the accompanying female, here described, may be that of this species.

Male

Carapace length: 0.88 mm (smallest 0.70 mm). *Total length:* 2.15 mm. *Carapace:* Sepia, with no constant markings. *Eyes:* Rather large and closely grouped. AL $\geq 1\frac{1}{2}$, PM = PL = $1\frac{2}{3}$; a = $\frac{1}{2}$, b = $\frac{2}{3}$, c $\leq \frac{1}{2}$, d = $\frac{1}{2}$. *Sternum:* Coloured as the darkest parts of the carapace. *Abdomen:* Uniform dark grey. *Legs:* Rather light orange-yellow, femora usually (but not always) darkened. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.82	0.21	0.80	0.75	0.47	3.05
II	0.70	0.21	0.70	0.69	0.42	2.72
III	0.58	0.18	0.52	0.55	0.35	2.18
IV	0.85	0.20	0.78	0.75	0.41	2.99

Position of tibial spines, I = 0.26 and 0.73, II = 0.28 and 0.72, III = 0.36 and 0.74, IV = 0.39 and 0.81. Position of Tm, I = 0.29, II = 0.27, III = 0.32. Length tibia I spine = 0.067 mm. Tibia I length/breadth = 11. Diam. tibia I = 0.075 mm. *Chelicerae:* A little lighter than the carapace; wide and divergent (typical of the genus). Outer margin with 3 teeth, inner with 2. *Male palp:* Figs. 97-101. All segments darkened. Cymbium length = ca 0.3 mm. Palpal sclerites somewhat like those of *M. prosectes*. Lamella with two branches, the ventral one blunt and toothed along the ectal edge, the ectal one slender (Figs. 97, 98). Embolus with well developed teeth at the base (Fig. 100). (The lamella of *M. prosectes* is similar (Locket, 1968, fig. 5A, B) but the ectal branch there is very fine and transparent and is easily overlooked. *M. prosectes* lacks the strong teeth at the base of the embolus (though it has very small ones) and the roughening of the ventral surface of the tegulum is there more easily seen. It is generally a smaller species). The outer arm of the paracymbium is different in the two species (Figs. 91, 97).

Female

Carapace length: 0.78 mm. *Total length:* 2.00 mm. *Carapace:* Sepia, sometimes with striae, variable in depth of colour. *Eyes:* AL ≤ 2 , PM = $1\frac{3}{4}$, PL = 2; a = b = 1, c = d = $\frac{3}{4}$. *Sternum:* Somewhat darker than the carapace. *Abdomen:* Grey, variable in depth. *Legs:* Light to medium orange-brown. Sides of femora I-III

sometimes darkened. Measurements:

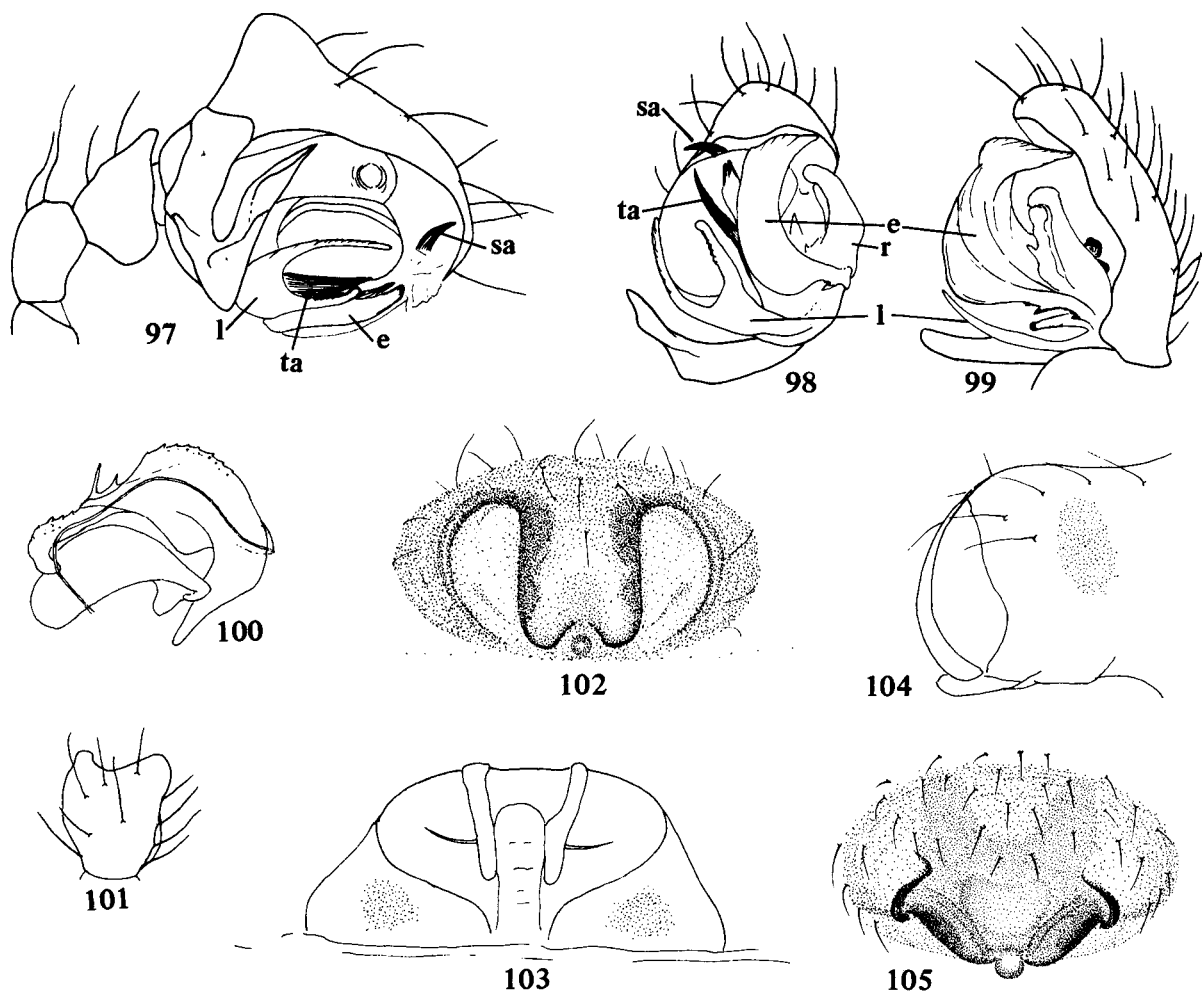
	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.73	0.21	0.68	0.63	0.43	2.68
II	0.65	0.20	0.58	0.55	0.40	2.38
III	0.58	0.18	0.45	0.48	0.30	1.99
IV	0.75	0.20	0.70	0.68	0.40	2.73

Position of tibial spines, I = 0.21 and 0.69, II = 0.24 and 0.73, III = 0.28 and 0.69, IV = 0.35 and 0.66. Position of Tm, I = 0.32, II = 0.30, III = 0.29. Tibia I

length/breadth = 9. *Palps*: Darkened. *Epigyne*: Figs. 102-104. With a strongly arched scape and parallel sides.

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, in pitfall traps, cowpea crops, COPR site, 20 June 74 (BMNH 1979.7.26.9). Paratypes; IITA, Ibadan, same data as holotype, 9 ♂♂; as above, 23 May 74, 6 ♀♀; as above, 27 Apr. 73, 1 ♂.

Biology: All the specimens of this species were taken in pitfall traps in cowpea crops during the latter



Figs. 97-104: *Meioneta prosectoides* sp.n. 97 Right palp (ectal); 98 Ditto (ventral); 99 Ditto (mesal); 100 Embolus and radix; 101 Right palpal tibia (dorsal); 102 Epigyne (ventral); 103 Ditto (behind, outline); 104 Ditto (side, outline). (e = embolus, l = lamella, r = radix, sa = supratibial apophysis, ta = terminal apophysis)

Fig. 105: *Meioneta parva* sp.n. Epigyne.

half of the rainy season. They were accompanied by *M. prosectes*, which they closely resemble, and *M. habra*.

Distribution: Only known from the vicinity of the type locality at Ibadan.

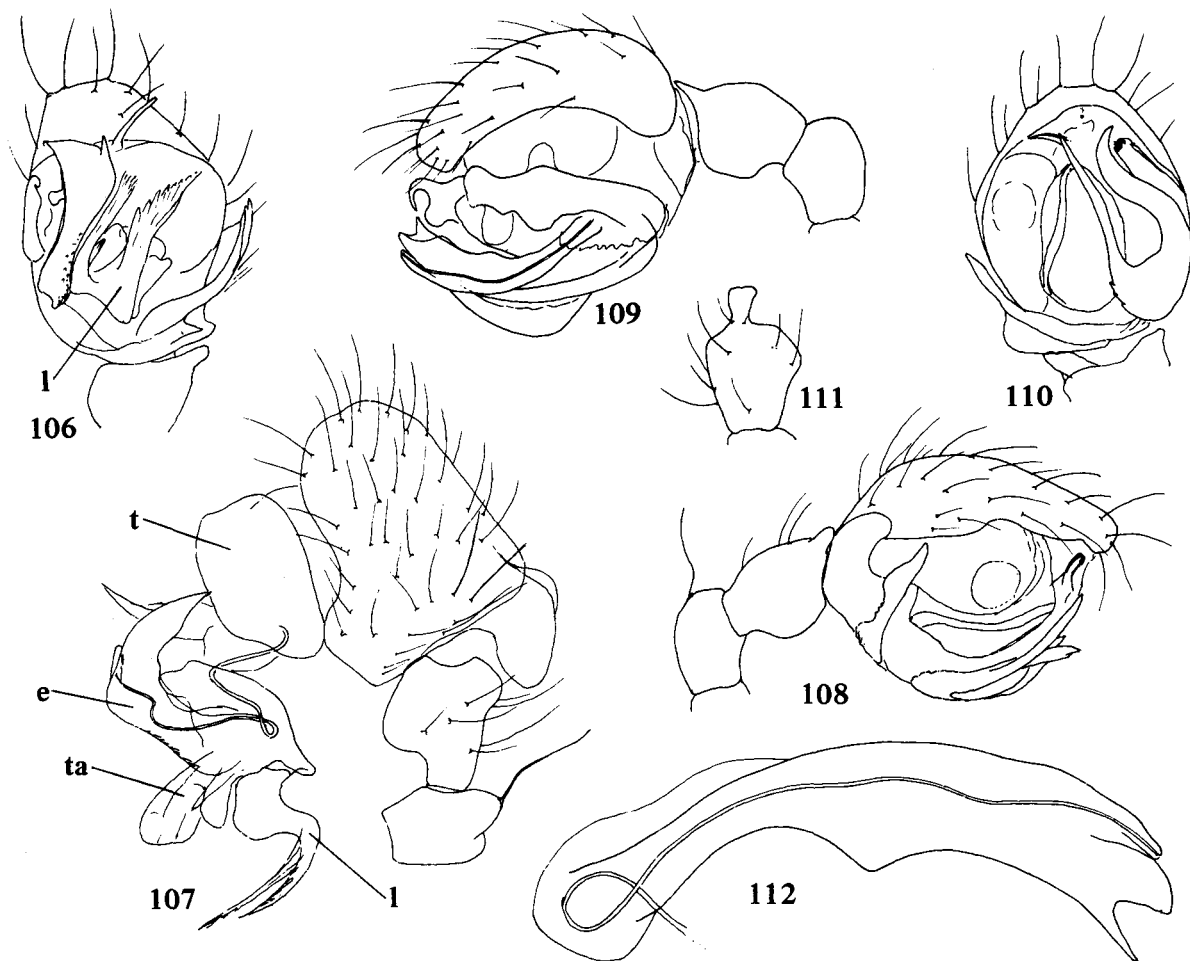
Meioneta parva sp.n. (Fig. 105)

Three females were found and are placed provisionally in *Meioneta* in the absence of the male. The specimens are pale coloured, the integument being

weakly sclerotised.

Female

Carapace length: 0.52 mm. *Total length*: 1.26 mm. *Carapace*: Light yellow-brown with a faint dark borderline. *Eyes*: Rather large and closely grouped (the tissue had shrunk away from the integument and measurement was difficult). $AL = 1 \frac{2}{3}$, $PM = 1 \frac{1}{2}$, $PL = 1 \frac{1}{3}$; $a = \frac{2}{3}$, $b = \frac{1}{3}$, $c = \frac{1}{3}$, $d = \frac{2}{5}$. *Sternum*: Medium grey, darker than the carapace; reticulated.



Figs. 106-107: *Meioneta habra* Locket. 106 Left palp (ventral); 107 Ditto (expanded). (e = embolus, l = lamella, t = tegulum, ta = terminal apophysis)

Figs. 108-112: *Meioneta insolita* sp.n., ♂. 108 Right palp (ectal); 109 Ditto (mesal); 110 Ditto (ventral); 111 Left palpal tibia (dorsal); 112 Embolus.

Legs: Coloured as the carapace; apices of the patellae and tibiae slightly darker. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.54	0.16	0.46	0.50	0.38	2.04
II	0.50	0.14	0.38	0.42	0.30	1.74
III	0.38	0.12	0.30	0.34	0.24	1.38
IV	0.52	0.14	0.50	0.44	0.30	1.90

Position of tibial spines, I = 0.14 and 0.67, II = 0.17 and 0.68, III = 0.17 and 0.67, IV = 0.24 and 0.80. Position of Tm, I = 0.23, II = 0.24, III = 0.18. Tibia I length/breadth = 8. *Chelicerae:* Coloured as the carapace. Outer margin with 4 teeth. *Epigyne:* Fig. 105. This has a slight depression as shown.

Material examined: Holotype ♀, NIGERIA, IITA, Ibadan, in fallow bush, COPR site, 11 Nov. 74 (BMNH 1979.7.26.10). Paratypes; Obudu plateau, E. Nigeria, in mist forest at 1600 m, 2 Dec. 74, 1 ♀; Mokwa, Kwara state, in 14 yr savanna regrowth, 31 Aug. 74, 1 ♀. Male unknown.

Biology and distribution: Unknown.

Meioneta habra Locket (Figs. 106-107)

Meioneta habra G. H. Locket, 1968, p. 77; R. Bosmans, 1979, p. 55.

The occurrence on the COPR plots of well sclerotised specimens in good condition gave a welcome opportunity for revising the description of this species.

Male

The following description is of a specimen from this collection (amplified from other specimens taken with it when variation occurred). *Carapace length:* 0.73 mm. *Total length:* 1.68 mm. *Carapace:* Medium brown to sepia, often with a dark borderline; head darker. *Eyes:* $AL \leq PM = PL = 2$; $a = b \geq \frac{1}{2}$, $c = d = \frac{1}{2}$. *Sternum:* Darker than the carapace. *Abdomen:* Uniform dark grey. *Legs:* Yellow-brown, a little lighter than the carapace. Femora sometimes a little darkened. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.68	0.20	0.65	0.64	0.44	2.61
II	0.63	0.18	0.56	0.55	0.40	2.32
III	0.55	0.18	0.40	0.43	0.28	1.84
IV	0.65	0.19	0.61	0.60	0.35	2.40

Position of tibial spines, I = 0.27 and 0.69, II = 0.29 and 0.73, III = 0.31 and 0.68, IV = 0.31 and 0.80. Position of Tm, I = 0.27, II = 0.27, III = 0.26. Tibia I length/breadth = 8 to 9. *Chelicerae:* Coloured as the legs. Typical of the genus; outer margin with 3 teeth, inner with 2. *Male palp:* The tibia is abruptly turned up at its anterior end. The parts are as figured for the holotype (Locket, 1968, fig. 7), but the labelling of that weakly sclerotised specimen, at that time tentative, is now seen to be incorrect in fig. 7B and D. An expanded palp from the present series shows the lamella and terminal apophysis clearly (Figs. 106, 107).

Female

Carapace length: 0.73 mm (smallest specimen 0.63 mm). *Total length:* 1.65 mm. *Carapace:* Sepia, sometimes with striae, variable in depth of colour; a dark borderline variable; ocular area sometimes darkened, also the clypeus, especially in the middle. *Eyes:* $AL = PL = PM \geq 1\frac{1}{2}$; $a = \frac{1}{2}$, $b \geq \frac{1}{2}$, $c = d \leq \frac{1}{2}$. *Sternum:* Darker than the carapace. *Abdomen:* Uniform light to medium grey. *Legs:* Orange-brown. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.68	0.18	0.60	0.58	0.43	2.47
II	0.63	0.18	0.53	0.46	0.38	2.18
III	0.43	0.14	0.38	0.39	0.29	1.63
IV	0.65	0.16	0.63	0.58	0.35	2.37

Position of tibial spines, I = 0.25 and 0.71, II = 0.26 and 0.68, III = 0.33 and 0.77, IV = 0.38 and 0.79. Position of Tm, I = 0.24, II = 0.27, III = 0.22. Tibia I length/breadth = 9. *Chelicerae:* Slightly divergent apically. Outer margin with 4 teeth, inner with 3-4. *Palps:* Usually darkened. *Epigyne:* As figured by Locket (1968, fig. 8).

Material examined: IITA, Ibadan; in cowpea crops, COPR site, 20 Apr. 74, 14 ♂♂; as above, 23 May 74, 14 ♀♀; swept from short grass, west bank of lake, 7 Mar. 74, 1 ♀; as above, 6 July 74, 1 ♀.

Biology: Specimens were collected from pitfall traps in cowpea crops and swept from short grass during the wet season of 1974.

Distribution: Capeio, Angola (Locket, 1968) and Ibadan, Nigeria.

Meioneta insolita sp.n. (Figs. 108-114)

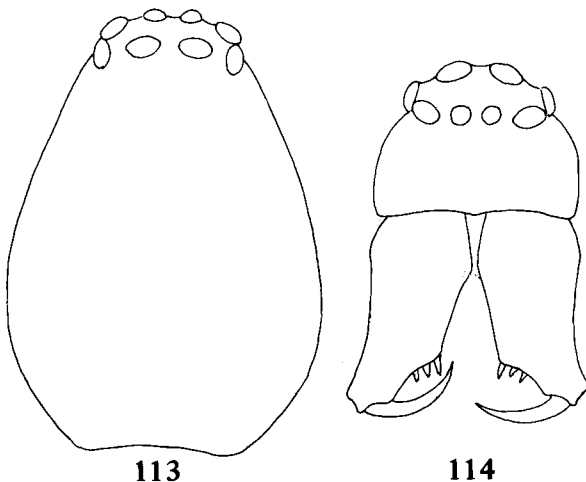
Two males of this species were collected, one on the COPR site at Ibadan and one in savanna regrowth at Mokwa, Kwara state.

Male

Carapace length: 0.70 mm. *Total length*: 1.55 mm. *Carapace*: Fig. 113. Rather narrow; coloured sepia with a narrow dark borderline. *Eyes*: Fig. 114. *Sternum*: Darker than the carapace, the pigment giving a punctate appearance. *Abdomen*: Cylindrical and dark grey. *Legs*: Light brown; femora with colouration as the carapace retro- and pro-laterally. *Measurements*:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.78	0.20	0.75	0.65	0.45	2.83
II	0.65	0.18	0.63	0.60	0.38	2.44
III	0.55	0.15	0.45	0.45	0.30	1.90
IV	0.78	0.18	0.73	0.63	0.38	2.70

Position of tibial spines, I = 0.23 and 0.80, II = ? and 0.84, III = 0.23 and 0.81, IV = 0.24 and ? Position of Tm, I = 0.24, II = 0.21, III = 0.24. Spines unusually short (length tibia IV spine/breadth tibia IV = 0.75). Tibia I length/breadth = 1.3. *Chelicerae*: Moderately divergent (Fig. 114). Outer margin with 3 teeth, inner with 2. *Male palp*: Figs. 108-112. Tibia with an apophysis on the anterior margin. Radix large; lamella



Figs. 113-114: *Meioneta insolita* sp.n., ♂. 113 Carapace outline; 114 Facies and chelicerae.

with two arms, pointed at their ends. The embolus is rather small for a *Meioneta* but seems to be constructed on the same general plan. A membranous process with a toothed edge may represent the terminal apophysis.

The species is probably best assigned to *Meioneta* in spite of the short spines and rather unusual embolus.

Material examined: Holotype ♂, NIGERIA, IITA, Ibadan, in pitfall trap, fallow bush, COPR site, 8 Aug. 74 (BMNH 1979.7.26.11). Paratype; Mokwa, Kwara state, in 14 yr savanna regrowth, 31 Aug. 74, 1 ♂. Female unknown.

Biology and distribution: Unknown.

Genus *Simplicistilus* G. H. Locket 1968

Simplicistilus tanuekes Locket and *Centromerus venustus* Locket

Simplicistilus tanuekes G. H. Locket, 1968, p. 113; 1974, p. 174.

Centromerus venustus G. H. Locket, 1968, p. 117; 1974, p. 174.

It seems certain to us now that the suggestion (due to A. R.-S.) that *Centromerus venustus* is the female of *Simplicistilus tanuekes* (Locket, 1974, p. 174) is correct, the two having been found together on five occasions, four times on Ibadan sites and once in the Idanre hills. The latter name has priority. (They had not been found together in Angola, although both had been collected at different times in the litter of gallery forest on the banks of the Luachimo at Dundo (Locket, 1968, p. 118)). The suggestion is supported by the similarity in body colour and measurements of the leg segments, spine and trichobothria positions and by comparison of the genitalia with the paratypes. The Angolan specimens are paler, especially those from forest litter. The suggestion was made (Locket, 1968) that *C. venustus* could be the female of *C. scambus*, but if that were the case some specimens of *C. scambus* must surely have been captured with so many *C. venustus* in that part of Nigeria, where it seems to be the commonest linyphiid. The eyes vary a good deal in a series of specimens of these species, but the following measurements of *C. venustus* ♀ indicate that it is closer to *S. tanuekes* ♂ than to *C. scambus* ♂.

Paratypes:

Ang.344.3: AL = PL = PM = 1 1/3; a = b = 1/2, c = 1/2, d = 1/3

Ang.401.6: AL = PL = PM = 1 1/2; a = 1, b = 3/4, c = 2/3, d = 1/3

Nigeria: AL = PL = PM = 1 1/2; a = b = 2/3, c = 2/3, d = 1/3

(In the description of the holotype (Locket, 1968, p. 117) in place of "d = 3" read "d = 1/3"). In *C. scambus* the anterior medians are much smaller relatively to the others: AL = PL = PM = 2 1/2 whereas in *S. tanuekes* (Locket 1968, fig. 37A) they are much closer to those of *C. venustus*. The following leg measurements are for a male and female found together on the COPR site, 14 Sept. 73:

Male

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.59	0.15	0.54	0.50	0.41	2.19
II	0.56	0.15	0.49	0.47	0.35	2.02
III	0.40	0.13	0.34	0.34	0.27	1.48
IV	0.59	0.15	0.54	0.51	0.35	2.14

Position of Tm, I = 0.27, II = 0.26, III = ? (0.27 on another specimen). Tibia I length/breadth = 8.

Female

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.56	0.16	0.52	0.46	0.32	2.02
II	0.50	0.16	0.44	0.43	0.29	1.82
III	0.40	0.14	0.37	0.38	0.26	1.55
IV	0.57	0.15	0.56	0.57	0.33	2.18

Position of Tm, I = 0.26, II = 0.22, III = ? Tibia I length/breadth = 8.

Material examined: IITA, Ibadan: On grassy road verge, 1 Apr. 73, 1 ♀; in abandoned cocoa plantation, 26 May 73, 1 ♂, 2 ♀♀; in pitfall traps, fallow bush, COPR site, 14 Sept. 73, 19 ♂♂, 12 ♀♀; as above, 26 Apr. 73, 5 ♂♂, 8 ♀♀; in riverine forest, 12 May 74, 2 ♂♂, 7 ♀♀. Ijebu-ode, western state, in riverine forest, 24 Feb. 74, 1 ♂. Gambari forest reserve, Ibadan, in secondary forest, 8 Apr. 73, 1 ♀, 1 ♂. Mokwa, Kwara state, in 14 yr savanna regrowth, 31 Aug. 74, 1 ♂. Idanre hills, primary forest at 550 m, 13 Apr. 74, 2 ♂♂, 5 ♀♀.

Biology: *S. tanuekes* was the most abundant species of the ground layer of fallow bush and

secondary forest in the Ibadan region of western Nigeria. In fallow bush plots at IITA it accounted for 27% of all adult spiders taken in pitfall traps during 1973. Peak activity was observed from the middle of May to the end of June during the heaviest rains, and very few adults were trapped during the dry season from November to April. Smaller numbers (about 5% of total adult numbers) were also taken in cowpea crops adjacent to the fallow bush plots. A single male was taken in savanna woodland at Mokwa about 300 miles north of Ibadan.

Distribution: Various localities in Angola, Sounda, Zaire (Locket, 1968), southern Nigeria.

Genus *Metaleptyphantes* G. H. Locket 1968*Metaleptyphantes machadoi* Locket (Figs. 115-121)

Metaleptyphantes machadoi G. H. Locket, 1968, p. 99; 1974, p. 173.

Male

Carapace length: 0.80 mm. *Total length:* 1.92 mm. The male (from woodland at Ibadan) is close to *M. machadoi* Locket from Angola. The colouration, surface of carapace and sternum, general form of the palpal organs and palpal tibia are characteristic (Figs. 115-118). However, the hook at the end of the lamella is longer and more slender in the Nigerian specimens (Fig. 119) than that of Angolan material (Fig. 122), and there is some difference in the paracymbium (Figs. 120, 121, 123) and also in the spacing and relative size of the eyes. (The long arm of the paracymbium in fig. 26A (Locket, 1968) is relatively longer than it appears, being inclined slightly inwards). *Eyes:* AL = PL = PM = 2 1/2; a = 1/2; b = 3/4; c = 1/4; d = 1/2. *Chelicerae:* Outer margin with 4 teeth, inner with 3. *Legs:* Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.67	—	—	—	—	—
II	0.62	0.18	0.62	0.58	0.37	2.37
III	0.50	0.17	0.50	0.49	0.32	1.98
IV	0.70	0.18	0.73	0.65	0.38	2.64

Position of dorsal tibial spines, I = ?, II = 0.3 and 0.7, III = ? and 0.7, IV = ? and 0.8. Position of Tm, II = 0.24, others lost. Tibia II length/breadth = 8.

Material examined: IITA, Ibadan; in fallow bush, COPR site, 12 June 73, 2 ♂♂; in riverine woodland,

28 Apr. 74, 1 ♂.

Distribution: Various localities in Angola (Locket, 1968) and Ibadan, Nigeria.

Biology: Unknown.

Metaleptyphantes perexiguus (Simon & Fage)

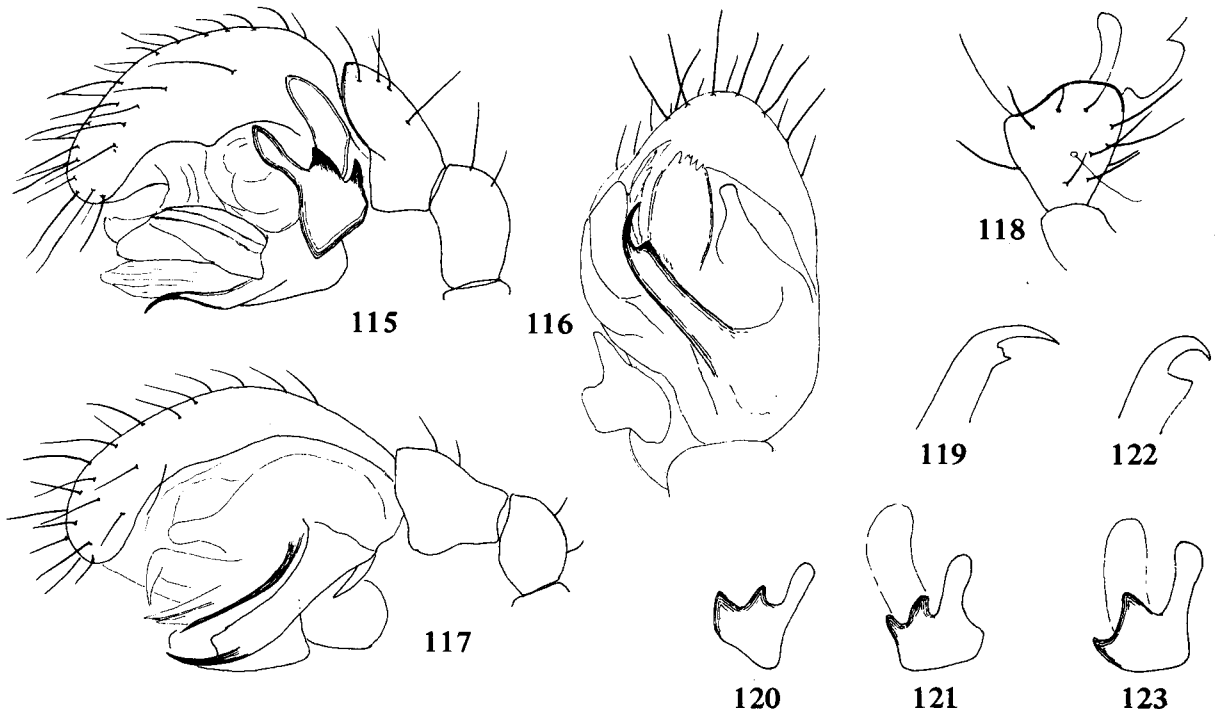
Material examined: IITA, Ibadan: In cowpea crops, COPR site, 3 Feb. 73, 1 ♂; as above, 1 May 73, 1 ♂; as above, 14 Sept. 73, 1 ♀; as above, 24 Apr. 74, 14 ♂♂, 7 ♀♀; as above, 2 May 74, 1 ♀; as above, 29 May 74, 1 ♀; in tall grass by lake, 21 June 73, 1 ♀; in fallow bush, COPR site, 20 Feb. 73, 1 ♀; in leaf litter in dried out stream bed, secondary forest, 20 May 73, 1 ♀; in riverine woodland, 12 May 74, 3 ♂♂, 7 ♀♀. Olokomeji forest reserve, western state: In secondary forest on bank of R. Ogun, 15 Apr. 73, 2 ♂♂. Idanre hills: In primary forest at 550 m, 13 Apr. 74, 1 ♂; as above, in *Trilepis* mat on granite outcrop, 4 Aug. 74, 1 ♀. Mokwa, Kwara state: In 14 yr savanna regrowth, 31 Aug. 74, 1 ♂; as above, in cultivated

savanna, 2 Sept. 74, 2 ♂♂, 1 ♀. Obudu plateau, E. Nigeria: In dry montane grassland at ca 1600 m, 3 Dec. 74, 2 ♀♀. Borgu game reserve, Kwara state: In grass on river bank, 6 May 73, 1 ♂, 4 ♀♀.

Biology: This species, although not as abundant as *Simplicistilus tanuekes* in the forest region, had a wider habitat distribution than any other linyphiid species recorded from Nigeria. It ranged from primary forest through savanna woodland and grassland to montane grassland at 1600 m. Catches in pitfall traps set in cowpea crops at Ibadan suggested that it was most active in June at the height of the rainy season, but it has also been taken both in fallow bush and montane grassland during the dry season.

Metaleptyphantes bicornis sp.n. (Figs. 124-125)

Ten females were taken at Ibadan, but no males. The epigyne is clearly of the same kind as those of *Metaleptyphantes clavator* Locket, *M. vicinus* Locket, *M. uncinatus* Holm and *M. dentiferens* Bosmans



Figs. 115-121: *Metaleptyphantes machadoi* Locket, Nigerian specimens, ♂. 115 Left palp (ectal); 116 Right palp (ventral); 117 Ditto (mesal); 118 Right palpal tibia (dorsal); 119 Tip of lamella; 120, 121 Paracymbium.

Figs. 122-123: *M. machadoi*, Angolan specimens, ♂. 122 Tip of lamella; 123 Paracymbium.

(1979), but is distinct from all of these.

Female

Carapace length: 0.65 mm. *Total length:* 1.52 mm. *Carapace:* Dark brown with darker radiating striae. *Eyes:* AL = 1¾, PM = PL = 2; a = 1, b = ½, c = 1/3, d = 1/3. *Sternum:* Coloured as the carapace. *Abdomen:* Uniform dark grey, almost black. *Legs:* Light yellow-orange-brown; prolateral and retrolateral surfaces of the femora sometimes darkened. *Measurements:*

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.60	0.18	0.54	0.54	0.38	2.24
II	0.58	0.17	0.50	0.50	0.34	2.09
III	0.50	0.16	0.40	0.40	0.28	1.74
IV	0.62	0.16	0.62	0.54	0.32	2.26

Position of tibial spines, I = 0.16 and 0.78, II = 0.16 and 0.76, III = 0.30 and 0.75, IV = 0.33 and 0.86. Tibia I length/breadth = 7.5. *Chelicerae:* Outer margin with 4 teeth, the apical two close together; inner margin with 3 teeth. *Epigyne:* Figs. 124, 125.

Material examined: Holotype ♀, NIGERIA, IITA, Ibadan, in fallow bush, COPR site, 26 Feb. 73 (BMNH 1979.7.26.12). Paratypes; IITA, Ibadan, same data as holotype, 5 ♀♀; as above, 11 July 74, 1 ♀; Gambari forest reserve, Ibadan, in secondary forest, 8 Sept. 74, 1 ♀; IITA, Ibadan, in riverine woodland, 7 Mar. 74, 2 ♀♀. Male unknown.

Distribution: Known only from the Ibadan area, Nigeria.

Biology: Unknown.

Metaleptyphantes dubius sp.n. (Figs. 126-127)

The characters and measurements support the assignment of this species to *Metaleptyphantes* pending the discovery of the male.

Female

Carapace length: 0.63 mm. *Total length:* 1.75 mm. *Carapace:* Medium grey-brown with faint radiating lines and a narrow dark borderline. Width of clypeus about 2½ times diam. of AL eye. *Eyes:* AL = PL = PM = 2; a = nearly 1, c = d = about ¾. *Sternum:* Much darker than the carapace, nearly black. *Abdomen:* Uniform light whitish grey. *Legs:* Uniform light yellow-brown. *Measurements:*

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.65	0.16	0.55	0.55	0.40	2.31
II	0.58	0.16	0.50	0.49	0.34	2.07
III	0.50	0.14	0.38	0.38	0.23	1.63
IV	0.58	(missing)				

Position of tibial spines, I = 0.2 and 0.7, II = 0.2 and 0.75, III = 0.25 and 0.7. Position of Tm, I = 0.25, II = 0.25. Tibia I length/breadth = 8. *Chelicerae:* Coloured as the legs with a faint sooty median patch. Outer margin with 4 teeth, inner with 3. *Epigyne:* Figs. 126, 127.

Material examined: Holotype ♀, NIGERIA, Obudu plateau, E. Nigeria, in mist forest, 2 Dec. 74 (BMNH 1979.7.26.13). Male unknown.

Biology and distribution: Unknown.

Neriere kibonotensis (Tullgren)

Material examined: Obudu plateau, E. Nigeria, in mist forest, ca 1600 m, 2 Dec. 74, 1 ♂.

Biology: Unknown.

Neriere obtusa Locket

Material examined: Obudu plateau, E. Nigeria, in mist forest, ca 1600 m, 2 Dec. 74, 2 ♀♀.

Biology: Unknown.

Microlinyphia sterilis (Pavesi)

Material examined: Obudu plateau, E. Nigeria, in dry montane grassland, ca 1600 m, 3 Dec. 74, 7 ♀♀.

Biology: Females of this species were found in typical *Linyphia* hammock webs between tussocks of grass about 70 cm in height in montane grassland. They were accompanied by many immature individuals.

Bathyphantes spedani Locket

Material examined: IITA, Ibadan, in cowpea crops, COPR site, 5 Aug. 74, 7 ♂♂.

Biology: Males of this species were taken in pitfall traps in cowpea crops at Ibadan between mid-May and the beginning of August, during the rainy season. There was no clearly defined period of peak activity.

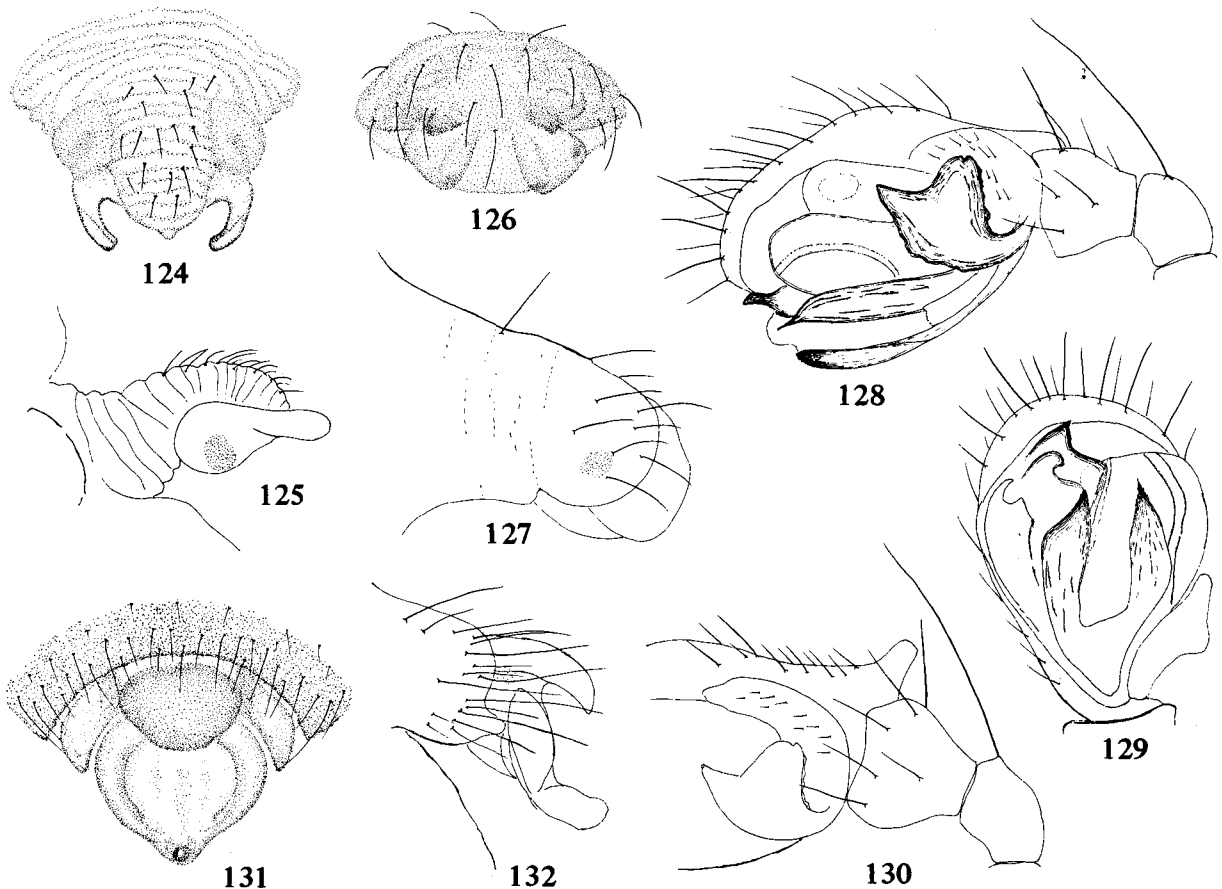
Genus *Lepthyphantes* A. Menge 1866*Lepthyphantes hebes* sp.n. (Figs. 128-132)

Two females and a male were taken in mist forest at about 1600 m at Obudu plateau, E. Nigeria in December, 1974. The species is close to *L. bifurcus* Locket (1968, p. 88) from which it differs notably in the tips of the bifid arm of the paracymbium being blunter (hence the name given to the species). Van Helsdingen has recently (1977, p. 171) synonymised *L. bifurcus* (male) with *L. extensus* Locket (female), and the female of the present species provides

support for this synonymy, the epigyne having the same structure as that of *L. extensus* (although the proportions of the scape are different).

Male

Carapace length: 0.70 mm. *Total length*: 1.50 mm. *Carapace*: Creamy white becoming medium grey towards the edges. *Eyes*: Typical of the genus. $AL = 1\frac{3}{4}$, $PM = PL = 1\frac{1}{2}$; $a = b = \frac{3}{4}$, $c = \frac{1}{2}$, $d = \frac{1}{4}$. *Sternum*: Medium grey (as the edges of the carapace). *Abdomen*: Cream-white, pattern represented only by broken transverse bars on the posterior half. *Legs*:



Figs. 124-125: *Metaleptyphantes bicornis* sp.n. 124 Epigyne (ventral); 125 Ditto (side).

Figs. 126-127: *Metaleptyphantes dubius* sp.n. 126 Epigyne (ventral); 127 Ditto (side).

Figs. 128-132: *Lepthyphantes hebes* sp.n. 128 Left palp (ectal); 129 Ditto (ventral); 130 Ditto (base of cymbium to show projection); 131 Epigyne (ventral); 132 Ditto (side). (e = embolus, l = lamella, r = radix)

Uniform light yellow-brown. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	1.25	0.20	1.15	1.38	0.80	4.78
II	0.93	0.20	1.00	1.08	0.65	3.86
III	0.58	0.18	0.60	0.68	0.45	2.49
IV	0.85	0.20	0.85	0.93	0.58	3.41

Position of tibial spines, I = 0.33 and 0.88, II = 0.25 and 0.78, III = 0.25 and 0.62, IV = 0.33 and 0.70. Position of metatarsal spines, I = 0.14, II = 0.24, III = 0.24. Position of Tm, I = 0.13. Tibia I prolateral spine at 0.61, retrolateral at 0.74. Tibia II retrolateral spine at 0.63. Length of tibia II basal spine = 0.25 mm. Tibia I length/breadth = 17. *Male palp*: Figs. 128-130. This is clearly related to that of *L. extensus* Locket (= *L. bifurcus* Locket) (from Angola) and *L. hamata* (Emerton).

Female

Carapace length: 0.83 mm. *Total length*: 1.83 mm.

Carapace: Coloured as in the male, sometimes with an ill-defined median dark line. *Eyes*: AL = PL = 2, PM = nearly 2; a = b = $\frac{3}{4}$, c = $\frac{3}{4}$, d = $\frac{1}{2}$. *Sternum*: Coloured as the dark part of the carapace. *Abdomen*: Cream-white with a pair of dark patches dorsally, which are variously developed, followed by 3-4 transverse bars. *Legs*: Coloured as in the male. Measurements:

	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	1.25	0.25	1.25	1.28	0.80	4.83
II	1.13	0.23	1.02	1.08	0.63	4.09
III	0.80	0.20	0.67	0.80	0.43	2.90
IV	1.10	0.23	0.92	1.00	0.60	3.85

Position of tibial spines, I = 0.28 and 0.68, II = 0.28 and 0.67, III = 0.30 and 0.63, IV = 0.24 and 0.63. Position of metatarsal spines, I = 0.21, II = 0.21. Position of Tm, I = 0.15, II = 0.14. Lateral and ventral spines: tibia I: prolateral at 0.6, retrolateral at 0.6, ventral at 0.52; tibia II: retrolateral at 0.64, ventral at 0.39. Metatarsus I (left) of one specimen has a second dorsal spine at 0.65. Length of basal tibia III spine = 0.36 mm. Tibia I length/breadth = 15. *Epigyne*: Figs. 131, 132. This is of the same type as that of *L. extensus*, but the proportions are different.

Material examined: Holotype ♂, NIGERIA, Obudu plateau, E. Nigeria, in mist forest at ca 1730 m, 4 Dec. 74 (BMNH 1979.7.26.14). Paratypes; Obudu

plateau, same data as holotype, 2 ♀♀.

Biology: Unknown.

Distribution: Only known from the type locality.

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Addendum

Since this paper went to press we have received a paper by Jocqué (1979) describing two species placed in a new genus, *Tybaertiella*. It is clear from his figures that *Tybaertiella* is identical with *Locketia* Holm, and since Jocqué's paper was published in September 1979 while that of Holm was published in December 1979, the name *Tybaertiella* has priority over *Locketia*.

Reference

- JOCQUÉ, R. 1979: Description of *Tybaertiella peniculifer* n. gen., n. sp. and *T. minor* n. sp., erigonid twin species from Ivory Coast (Araneida, Erigonidae). *Revue Zool.afr.* **93**(3): 751-759.

* R. Bosmans (1979, p. 55) is mistaken in stating that the volume of *Publicações Culturais Co.Diam.Angola* containing this paper "was only published in 1974". The paper was in fact published in *Publ.Cult.* No. 71 on 30 December 1968. A second paper, "Notes on some African linyphiid spiders" appeared in *Publ.Cult.* No. 88 in 1974 and the two have obviously been confused.