

Two new ricinuleids from W. Africa (Arachnida: Ricinulei) with a key to the adults of the genus *Ricinoides*

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Introduction

In the past few years our knowledge of the order Ricinulei has increased considerably. Much of the work has involved the discovery of new species, particularly in the New World where the order is represented by the genus *Cryptocellus* Westwood (Cooke 1967, 1971, 1972; Cooke and Shadab, 1973; Dumitresco and Juvara-Bals, 1973; Ewing, 1929; Coronado, 1970; Pittard and Mitchell, 1972).

Nearly four times as many species of *Cryptocellus* have been described as compared with the Old World genus *Ricinoides* Ewing (Guérin-Méneville, 1838); Hansen, 1921; Hansen and Sørensen, 1904; Legg, 1976; Tuxen, 1974).

In 1965 J. Pollock made a collection of ricinuleids whilst he was in Sierra Leone. This collection included specimens of *R. afzelii* (Hansen and Sørensen, 1904) together with an undescribed species. These specimens are deposited in the British Museum (Natural History).

A second collection from Cameroun, was made by F. Puylaert in 1971 and also contained an undescribed species. This collection is the property of the Musée Royal de l'Afrique Centrale, Belgium.

Family Ricinoididae

Ricinoides olounou sp.n. (Figs. 1-8)

Material examined

Holotype male, Olounou, Cameroun, coll. F. Puylaert, 11-19 September 1971 and deposited in the Musée Royal de l'Afrique Centrale, Tervuren, Belgium. Specimen registration R. G. Mus. Afr. Centr. 141.310.

Etymology

This medium sized species (entire length 6.2 mm, excluding cucullus and pygidium) is named after its

type locality in Cameroun.

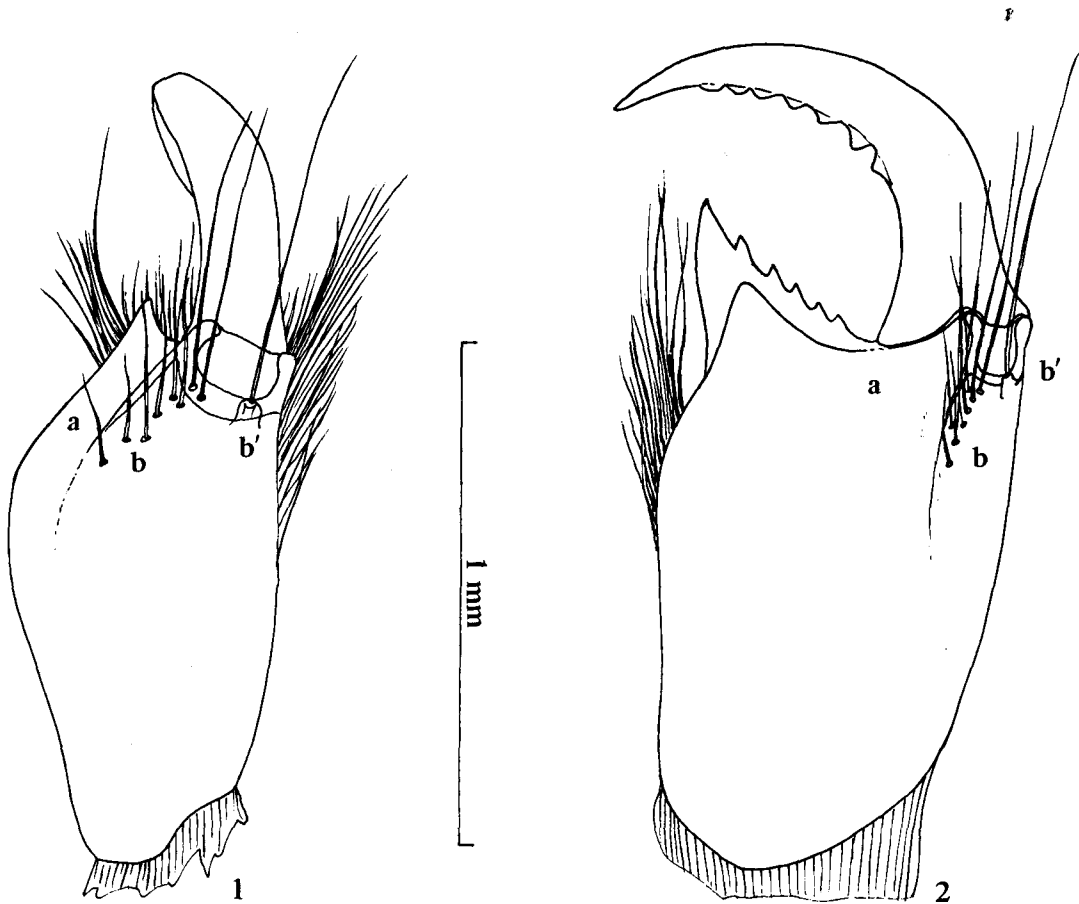
Female: Unknown.

Male holotype

Cucullus: Broader than long (1.7 mm x 1.8 mm) covered in small groups of tubercles, with 25-30 along the anterior margin, and short acuminate and ensate setae (Legg, 1976). Internally the cucullus bears an anterior median tooth and 30 setae. *Carapace*: Slightly longer than broad (2.4 mm x 2.2 mm) with a shallow median furrow. Widest portion, one third from the posterior margin. Uniformly covered with groups of 2-5 conical tubercles and a few scattered short acuminate setae. Navicular setae (Legg, 1976) ("scales", Hansen and Sørensen, 1904; Tuxen, 1974) are notably absent from the cucullus and the rest of the body. *Opisthosoma*: Much longer than broad, oval (4 mm x 2.9 mm) with a length/breadth ratio of 1.38. Like the carapace the tergites are covered in grouped conical tubercles and a few scattered short acuminate setae. Lateral depressions containing small and tightly grouped tubercles occur in tergites 2, 3 and 4. Pygidium bears a few tubercles and setae, and consists of three segments: 0.4, 0.32 and 0.18 mm long with a posterior median dorsal notch in the first segment. Sternites with single scattered tubercles (not in groups) and more setae than the tergites. *Chelicerae* (Figs. 1-2): Cheliceral hand 1.0 mm x 0.68 mm wide, bearing many setae: a large ventral-prolateral group and nine dorsal-retrolateral setae (cheliceral setae formula 0 + (8+1)). Movable finger with 7 teeth; fixed with 5 teeth. *Pedipalps* (Fig. 3): Femur 1.1 mm long, tibia 1.7 mm; total length 3.9 mm. Coxa, trochanter I, trochanter II and femur clothed in ensate and acuminate setae (see Legg, 1976) and tubercles. A few large conical tubercles are present on the retrolateral hump of trochanter II. Tibia fairly stout, with a breadth/length ratio at its midpoint of 0.084 and covered throughout in tubercles. Those tubercles on the proximal three-fifths are round and "mushroom"-shaped, and these pass through a transition zone to the elongate narrow tubercles of the distal two-fifths. Ensate setae sparsely scattered over entire length of tibia in addition to a few acuminate setae. Movable and fixed fingers without teeth, but with some crenations. *Legs*: Lengths (less coxae) I 4.5 mm, II 9.7 mm, III 9.0 mm, IV 7.3 mm. Typical of the

genus *Ricinoides*, with no particularly distinctive features (except the copulatory apparatus of the male), clothed in tubercles and short acuminate and ensate setae. Femora without dorsal sulcations. *Male copulatory apparatus* (Figs. 4-8): Metatarsus 0.94 mm, tarsus 1 0.32 mm, tarsus 2 0.6 mm long. Metatarsus (Fig. 4, *mt*) provided with a number of "spines" (raised conical tubercles) on its proximal end adjacent to metatarsal process (Fig. 4, *mtp*). The slightly curved metatarsal process is 0.43 mm long and is lightly clothed in acuminate setae and scattered tubercles, except for distal third which is smooth. First and second tarsi expanded dorsally to form *laminae cyathiformes* (Figs. 4, 8, *t1*, *t2*, *lc1*, *lc2*). These

protect the delicate curved tarsal process (Fig. 4, *tp*), which is 1.05 mm long (base 0.35 mm, angled body 0.7 mm long). Lateral lobe (Figs. 4-6, *lb*) elongate and 0.25 mm long with a breadth/length ratio of 0.3). Distally, the tarsal process is elaborated into typically complex lobes *a*, *b*, *b'*, and *c* (Figs. 5-7). Lobe *a* is large, and distinct from the *b-c* complex. Lobe *b* is divisible into a number of regions: a pointed region *b'* and a more fleshy region *b''*. In addition, *b''* bears a small pointed lobe which can be designated *b'''*, below which the accessory piece opens (Figs. 5, 6, *ac*). The accessory piece is a curved tube without a hooked tip, bent at an angle (θ) of about 80-85°.



Figs. 1-2: *Ricinoides olounoua* sp.n. male, right chelicera. 1 retrolateral view; 2 dorsal view; setal formula = $a + (b + b')$ = $0 + (8+1)$.

Relationships

This species is very similar to *R. karschi* (Hansen and Sørensen, 1904; see also Tuxen, 1974). However it differs, although only slightly, in overall size (6.2 mm compared to 6.0 mm of *R. karschi*), and in the absence of the enlarged tibiae of the first legs and second femora of the second legs (male). It also differs in the form of the copulatory apparatus of the male (compare Tuxen, 1974, figs. 32, 33) (Figs. 4-8). Lobe *a* of the tarsal process is larger and more divided and differences occur in the form of the complex lobe *b*. The chelicerae of *R. karschi* and *R. olounoua* sp.n. are also different: cheliceral setal formula of the former 0 + (5+1), of the latter 0 + (8+1).

Ricinoides olounoua sp.n. is found in approximately the same geographical locality as *R. karschi*, namely Cameroun. With the combination of similar, but distinct, morphological features, and almost (?) sympatric distribution with *R. karschi*, *R. olounoua* sp.n. must be considered to be very closely allied to the former species. Before any further comment can be made it is necessary to examine and compare females of both species (particularly the form of the spermathecae) to ascertain their true relationship. It is regretted that only a single specimen was obtained from the type locality (Olounou). It might be worth pointing out here that it is not uncommon to have more than one species existing in the same habitat at the same time, for example *R. afzelii* (Hansen and

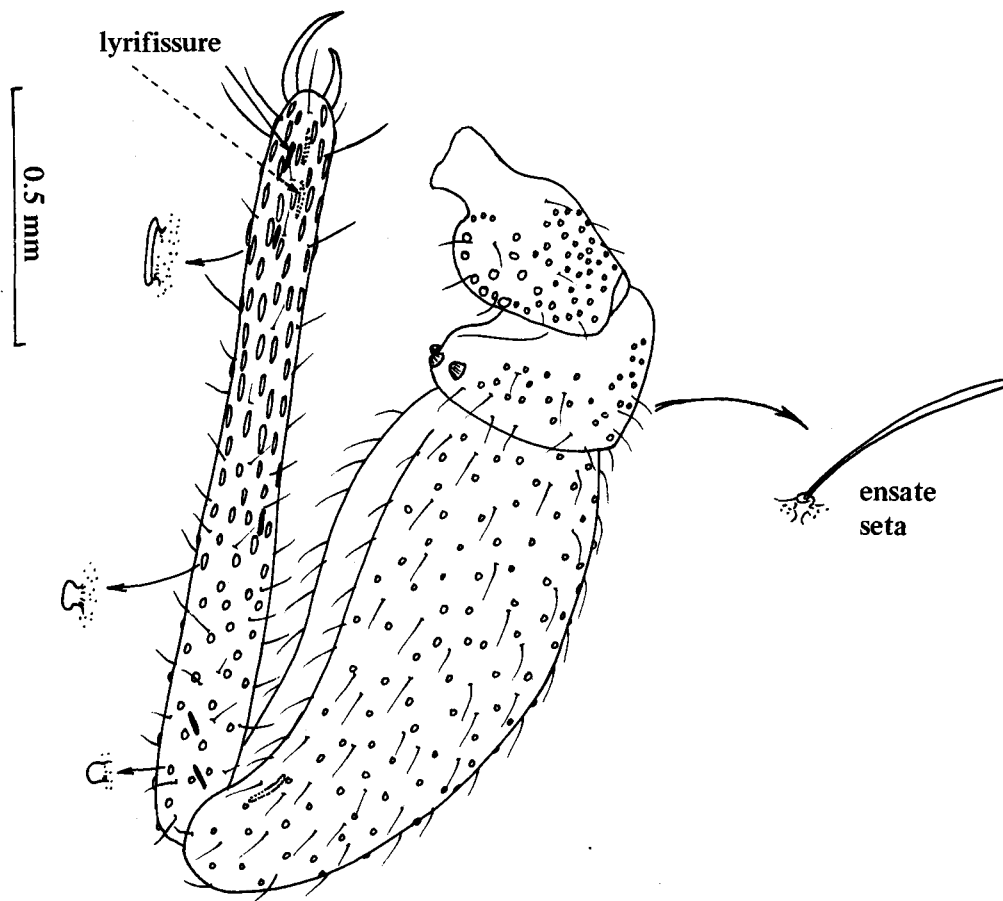
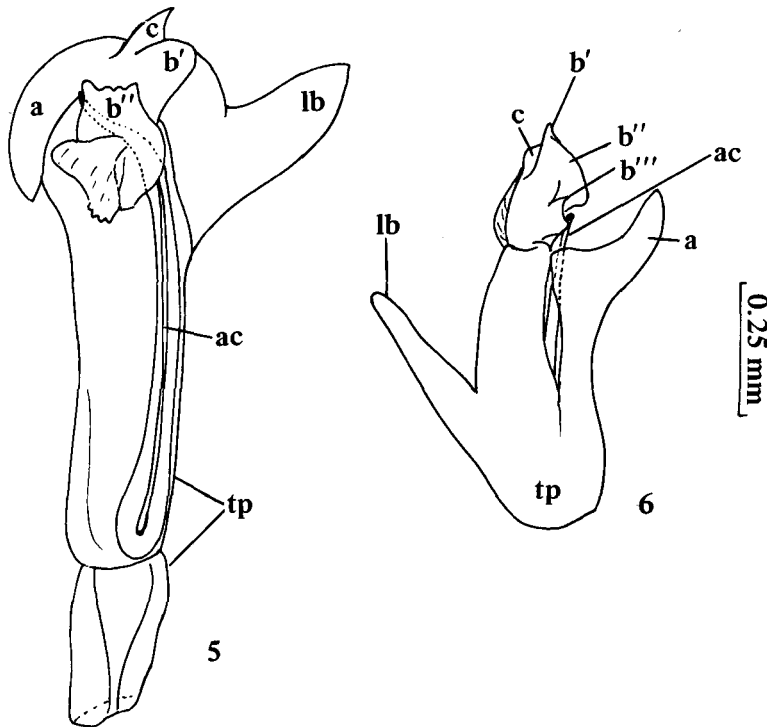
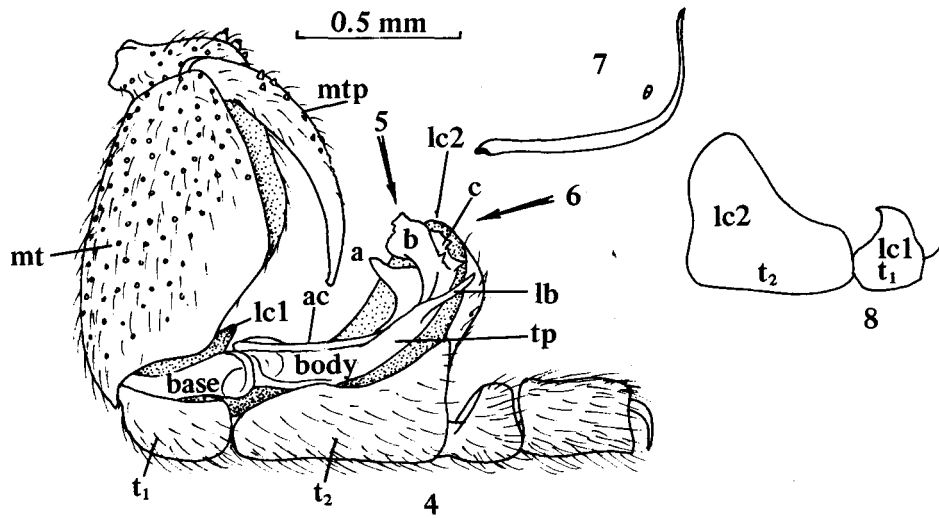


Fig. 3: *Ricinoides olounoua* sp.n. male, retrolateral view of left pedipalp.



Figs. 4-8: *Ricinoides olounoua* sp.n. male, views of the left copulatory apparatus. 4 prolateral view of metatarsus, tarsi and tarsal process; 5 dorsal view of tarsal process showing distal lobes; 6 proximal view of tarsal process; 7 prolateral view of accessory piece (removed from tarsal process); 8 retrolateral view of modified tarsi showing laminae cyathiformes; (mt metatarsus, mtp metatarsal process, tp tarsal process, t₁ t₂ first and second tarsi, lc1, lc2 laminae cyathiformes 1 and 2, ac accessory piece, lb lateral lobe (of tarsal process, a, b, b', c distal lobes of tarsal process)).

Sørensen, 1904) and *R. hanseni* Legg 1976, and *R. afzelii* and *R. leonensis* sp.n. are sympatric. However these species are relatively distinct compared with *R. karschi* and *R. olounoua* sp.n.

Ricinoides leonensis sp.n. (Figs. 9-25)

Material examined

Holotype male, beneath log, Bo, Sierra Leone; coll. J. Pollock, June-October 1964 and deposited in the British Museum (Natural History).

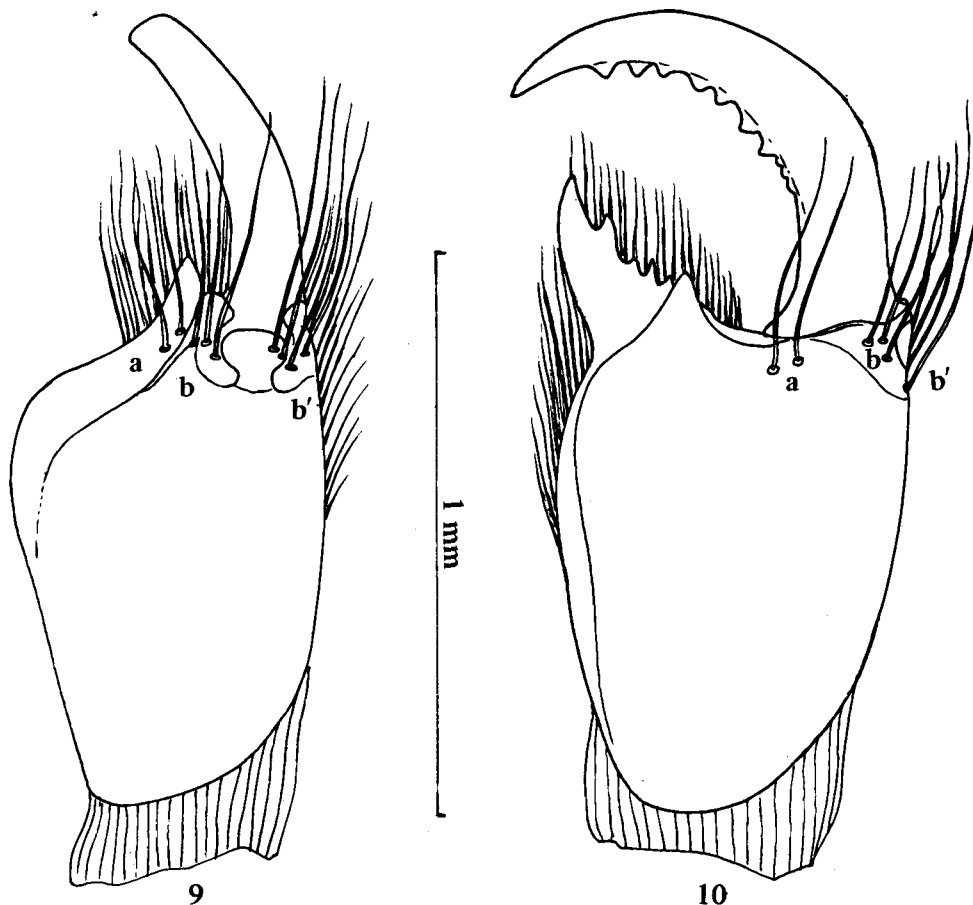
Paratype male, under a piece of wood in forest, Bo, Sierra Leone; coll. J. Pollock, 22 June 1964. Specimen broken up and deposited in the British

Museum (Nat.Hist.).

Two paratype tritonymphs and a single paratype protonymph were sorted from a tube of "mixed" ricinuleids collected by J. Pollock from Bo, Sierra Leone during August 1965. The same tube of specimens (in the B.M.(N.H.), now sorted) also contained various life-stages of *R. afzelii*.

Etymology

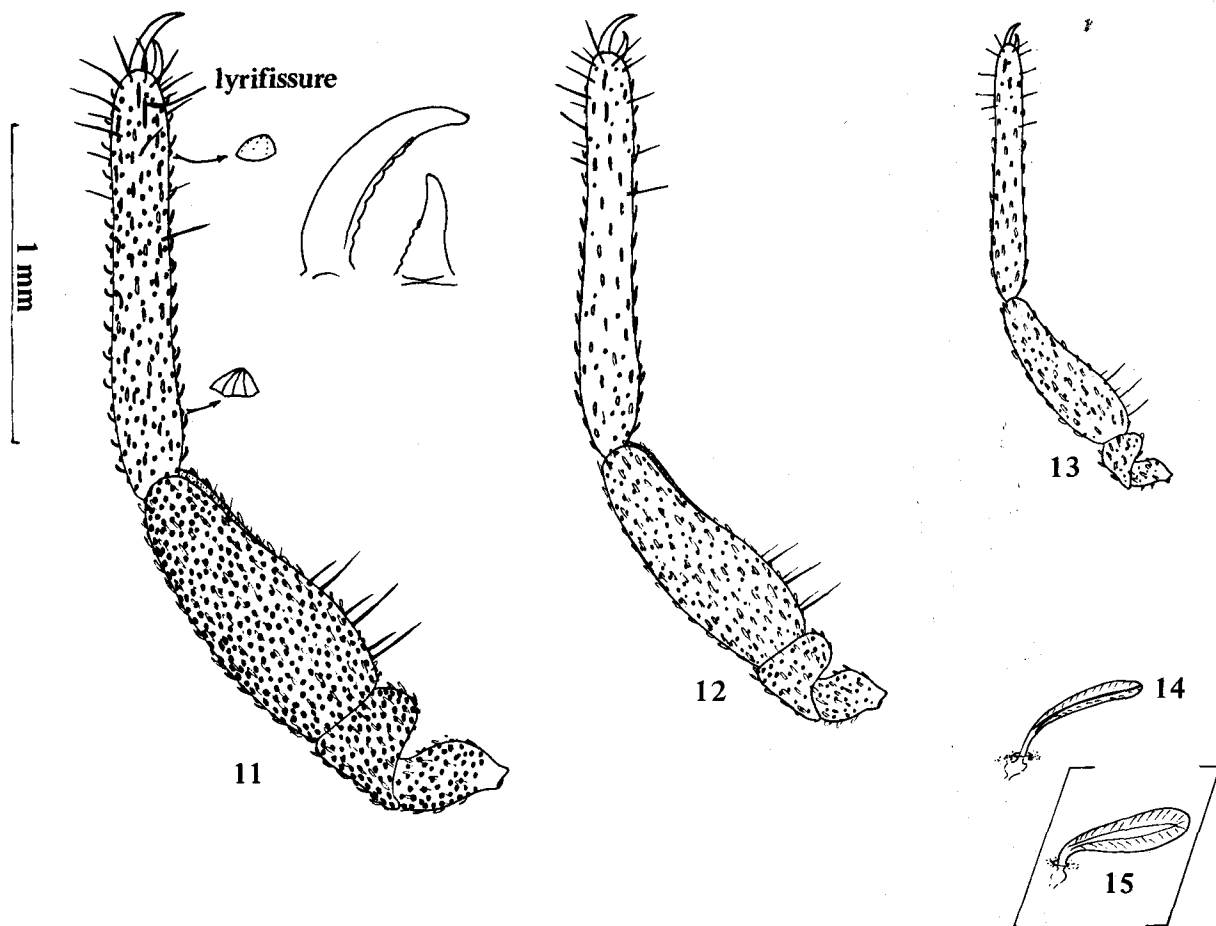
This small species (entire length 5 mm, excluding cucullus and pygidium) is named after the country of origin in which Pollock made his extensive collections.



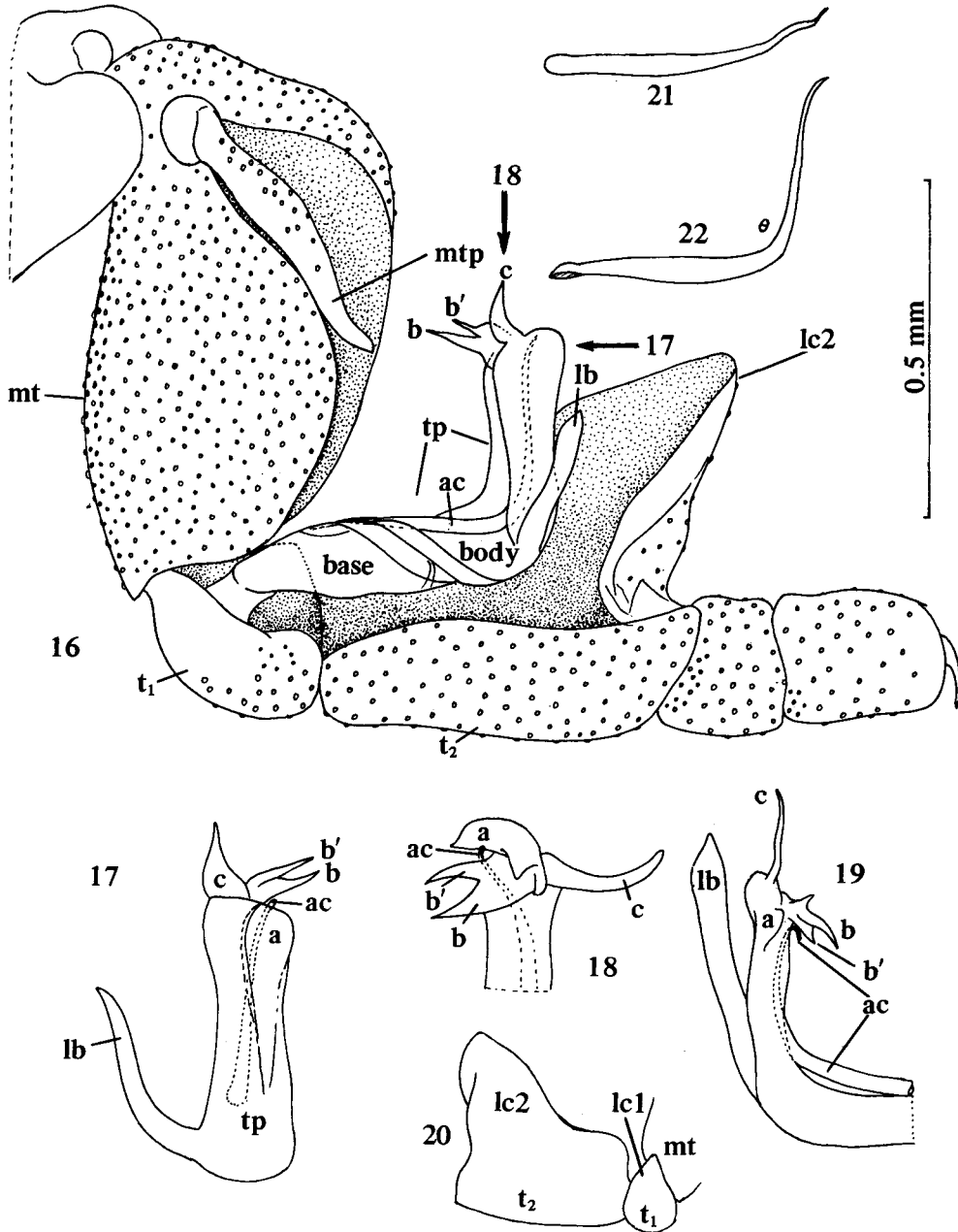
Male holotype

Cucullus: Distinctly broader than long (1.3 mm x 2.0 mm), covered in individual tubercles (not clumps) with 35-40 along the anterior margin. Broad ensate setae are scattered over the surface of the cucullus together with acuminate setae along the anterior margin. The cucullus bears a subanterior median internal tooth and approximately 26 internal setae. **Carapace:** Longer than broad (1.9 mm x 1.75 mm) and covered in individual large and small tubercles. Widest region one third from the posterior margin. A shallow median furrow extends from a point 0.4 mm from the anterior margin to within 0.5 mm of the

posterior margin. This furrow is lined with small tubercles and progressively deepens posteriorly. It ends at the foot of a distinct conical protuberance which bears 12 large tubercles. Lateral to the median furrow and slightly anterior to the widest part of the carapace, there are a pair of shallow depressions. A similar, but smaller pair of depressions occur laterally, 0.2 mm from the posterior margin of the carapace. The surface of the carapace appears to be devoid of setae, but ensate setae are present lying very close to the surface of the integument. Large navicular setae are notably absent. **Opisthosoma:** Much longer than broad (4.1 mm x 2.5 mm), elongate, with a



Figs. 11-15: *Ricinoides leonensis* sp.n., retrolateral views of left pedipalp. 11 adult male; 12 tritonymph male; 13 protonymph; 14 navicular seta; 15 navicular seta (scale) of *R. crassipalpis* for comparison.



Figs. 16-22: *Ricinoides leonensis* sp.n. male, views of left copulatory apparatus. 16 prolateral view of metatarsus, tarsi and tarsal process (*in situ* and bent slightly to the right); 17 proximal view of tarsal process; 18 dorsal view of lobed tip of tarsal process; 19 retrolateral view of distal end of tarsal process; 20 retrolateral view of modified tarsi showing laminae cyathiformes; 21 dorsal view of accessory piece (removed from tarsal process); 22 prolateral view of accessory piece; (setae omitted; mt metatarsus, mtp metatarsal process, tp tarsal process, t_1 , t_2 first and second tarsi, lc1, lc2 laminae cyathiformes 1 and 2, ac accessory piece, lb lateral lobe (of tarsal process), a, b, b', c distal lobes of tarsal process).

length/breadth ratio of 1.64. Tergites evenly covered in medium sized tubercles (small tubercles are notably absent) and a few ensate setae, which are difficult to discern. Large depressions containing aggregations of tubercles occur in tergites 2, 3 and 4. Pygidium consists of three segments 0.32, 0.3 and 0.15 mm long with a posterior median dorsal notch in the first segment; many small-medium sized tubercles and very few setae are present. Pleurites covered in many medium sized tubercles. Sternites covered in medium and small tubercles and almost invisible ensate setae. *Chelicerae* (Figs. 9-10): Cheliceral hand 0.9 mm x 0.6 mm; bearing many setae: a large ventral-prolateral group and seven dorsal-retrolateral setae (cheliceral setae formula 2 + (3+4)). Movable finger with 6 large teeth and 3 small ones; fixed with 4 teeth. *Pedipalps* (Fig. 11): Femur 0.9 mm long, tibia 1.4 mm; total length 2.9 mm. Entire pedipalp clothed in broad ensate setae which lie very close to the surface of the integument. Tubercles also cover the surface of the pedipalp. Three pairs of long acuminate setae are present on the retrolateral side of the femur adjacent to the groove which the tibia occupies when it is folded down on to the femur. The distribution of lyrifissures on distal end of tibia can be seen in Fig. 11. The tibia, at its mid-point, has a breadth/length ratio of 1.64. Fixed and movable fingers provided with crenations and not distinct teeth. *Legs*: Lengths (less coxae): I 4 mm, II 7.5 mm, III 5.8 mm, IV 6.5 mm. Legs and coxal area evenly covered in medium and small tubercles and low-lying ensate setae. Femora without dorsal sulcations. *Male copulatory apparatus* (Figs. 16-22): Metatarsus 0.92 mm, tarsus 1

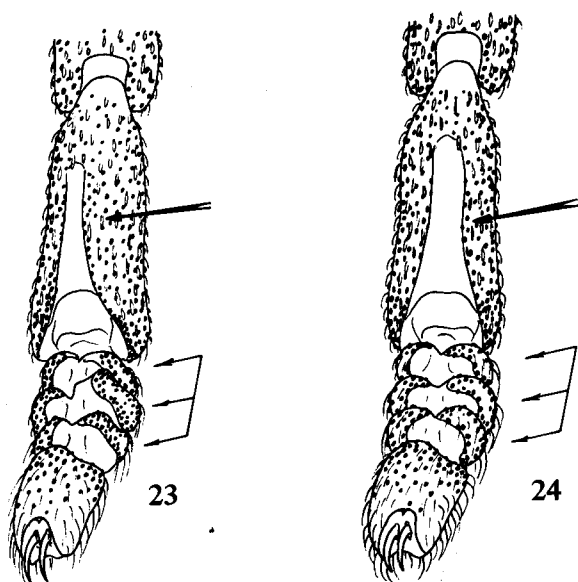
0.35 mm, tarsus 2 0.58 mm long. All podomeres covered in tubercles and setae. The curved metatarsal process (Fig. 16, *mt*) is 0.45 mm long and provided with setae and tubercles except for its glabrous tip which is directed towards the mid-line. Tarsi 1 and 2 provided with laminae cyathiformes (Figs. 16, 20, *lc1*, *lc2*, *t1*, *t2*). That of tarsus 1 is developed to a greater extent than *lc1* of the previous species (*R. olounoua* sp.n.). Tarsal process (Fig. 16, *tp*) distinctly bent and 0.55 mm long with a distal vertical portion 0.4 mm tall. The base is 0.33 mm long and the body 0.22 mm (excluding the vertical portion). Such a basal region of the tarsal process constitutes a relatively large and robust structure (for comparison see Fig. 4, *R. olounoua* sp.n.). Lateral lobe of tarsal process is elongate (Figs. 16, 17, 19, *lb*), 0.32 mm x 0.048 mm (breadth/length = 0.15). The complex distal tarsal process lobes (Figs. 16-19, *a*, *b*, *b'*, *c*) are well defined. Lobe *a* is fleshy, lobes *b* and *b'* pointed, blade-like and directed postero-ventrally, and lobe *c* long, pointed with a broad base and directed vertically. Accessory piece (Figs. 16, 21, 22, *ac*) angled ($\theta = 82^\circ$) with a hooked tip that opens between lobes *b* and *a* of the tarsal process (Figs. 17-19). The distal half of the accessory piece is protected by the folded vertical portion of the tarsal process when at rest.

Paratype male

This specimen was partially disarticulated prior to this study. It is very similar to the holotype, but differs in a number of minor ways. The paratype male

| Region | Holotype Male | Paratype Male | Paratype Tritonymph 1 | Paratype Tritonymph 2 | Paratype Protonymph |
|--------------------|---------------|---------------|-----------------------|-----------------------|---------------------|
| Entire I | 5.0 | 5.1 | 3.9 | * | 2.85 |
| Cucullus I | 1.0 | 1.05 | 0.9 | 0.9 | 0.62 |
| Cucullus b | 1.3 | 1.4 | 1.2 | 1.25 | 0.8 |
| Carapace I | 1.9 | 2.0 | 1.7 | 1.75 | 1.1 |
| Carapace b | 1.75 | 1.9 | 1.55 | 1.6 | 1.0 |
| Opisthosoma I | 4.1 | 3.9 | 2.4 | 2.6 | 1.65 |
| Opisthosoma b | 2.5 | 2.5 | 2.1 | 2.2 | 1.4 |
| Opisthosoma I/b | 1.64 | 1.56 | 1.14 | 1.185 | 1.175 |
| Pedipalp tibia I | 1.4 | 1.32 | 1.25 | 1.28 | 0.8 |
| Pedipalp tibia b/I | 0.115 | 0.119 | 0.117 | 0.119 | 0.118 |

Table 1: Selected measurements in mm of *Ricinoides leonensis* sp.n. (l = length, b = breadth, * not known since the specimen was disarticulated prior to this study).



Figs. 23-24: *Ricinoides leonensis* sp.n. tritonymphs, distal regions of the left third legs. 23 male; 24 female; (arrows denote sexually dimorphic features of the metatarsi and tarsi).

is markedly darker, a dark-brown colour in contrast to the almost sienna of the holotype. Such a colour difference is worthy of note since in several descriptions of ricinuleids the colour has been a significant character used in the description of the species. An explanation for this colour difference could be that the paler form is a newly moulted adult with a relatively lightly tanned cuticle, whilst the darker form is a much older male with a fully tanned (and hence dark) integument. There are slight variations in the body measurements compared with the holotype (Table 1) but no significant structural differences.

Immature stages

Table 1 gives the body measurements of the five specimens examined including the three immature stages. As typical immature forms of the genus *Ricinoides* they are paler than the adults and have fewer tubercles (Legg, 1976, 1977). The pedipalps are of similar proportions to those of the adults but carry fewer tubercles (Figs. 11-13). The chelicerae possess the same number of teeth on the movable finger (6), with 4 and 2 teeth on the fixed fingers of the tritonymph and protonymph respectively. This follows a

similar pattern to the numbers of teeth on the chelicerae of *R. hanseni* Legg 1976. The relative sizes of the legs remain fairly constant for the three instars (Fig. 25).

A close examination of the two paratype tritonymphs revealed that the complete specimen was a male and the partly disarticulated specimen a female. This identification was determined from the form of the metatarsi and first and second tarsi of the third legs (Figs. 23, 24). In one specimen (Fig. 23) the metatarsus is deeply grooved and the retrolateral side is developed to a greater extent, and the first and second tarsi are asymmetrical when viewed from above. These modifications are precursors of the modified metatarsus and tarsi + laminae cyathiformes of a male. Such modifications are absent in the other tritonymph which must therefore be presumed to be a female. Because of the fragility of the male on the one hand and the damage to the female on the other, it was not possible to confirm the sexuality of the two tritonymphs by looking for a penis in the male or genital lips in the female.

Relationships

Ricinoides leonensis sp.n. is very similar in size to the small species, *R. crassipalpis* (Hansen and Sørensen, 1904) (mean adult length 4.55 mm). It is also

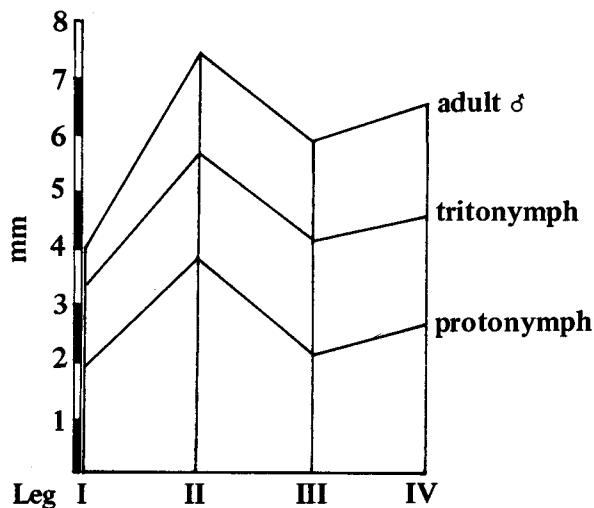


Fig. 25: *Ricinoides leonensis* sp.n., relative leg lengths of the protonymph, tritonymph (mean of two specimens) and adult male.

similar in respect to the lack of dorsal femoral sulcations, and lack of enlarged femora of the second legs of the male. *R. leonensis* sp.n. in common with *R. crassipalpis* possesses navicular setae, but these are much narrower than the very broad setae of *R. crassipalpis* (Figs. 14, 15). Although superficially similar to *R. crassipalpis*, *R. leonensis* sp.n. is distinctive in the form of the male copulatory apparatus (Figs. 16-22, compare with Tuxen, 1974, figs. 43, 44). The pedipalps are also different from *R. crassipalpis* but show similarities with those of *R. feae* (Hansen, 1921), a moderate-sized species.

It is important to note that the similarity of *R. leonensis* sp.n. to *R. crassipalpis* is probably only superficial since the former species has been found in Sierra Leone whilst the latter has only been found in Cameroun at the opposite end of the West African coast. Thus, it would appear that the two species are geographically isolated.

R. leonensis is sympatric with *R. afzelii* (Thorell, 1892) but shows no close similarities. *R. hanseni* is also found in Sierra Leone (and Liberia) and is also sympatric with *R. afzelii*, but it has not yet been found with *R. leonensis*. *R. leonensis* sp.n. bears certain similarities with *R. hanseni*, for example in the number and position of the dorsal and retrolateral cheliceral setae (cheliceral setae formulae, *R. leonensis* 2 + (3 + 4), *R. hanseni* 2 + 3). The copulatory apparatus of the male bears certain superficial similarities to that of *R. hanseni*, particularly in the general shape of the distal tarsal process lobes, the lateral lobe of the tarsal process and the form of the accessory piece. However, on close examination the copulatory apparatus of both species is distinctive (Figs. 16-22, Legg, 1976, fig. 27), being generally more robust in *R. leonensis* sp.n. The pedipalps of the two species are also different. Therefore *R. leonensis* sp.n. forms a further discrete species to be found in Sierra Leone.

Modified key to adult stages of the African species of *Ricinoides*

The following key to the nine known African species of *Ricinoides* includes adults only. Legg (1976) wrote an earlier key to the then, eight known species of *Ricinoides* which included *R. plebejus* (Hansen and Sørensen, 1904). This latter species was described from an immature specimen, and as it now

seems that the status of this species is in question (Legg, 1977, in press) *R. plebejus* is omitted from this present key. In addition to the inclusion of *R. plebejus* in the earlier key, the key itself suffered from a number of defects which it is hoped have been eliminated from this revised key.

The initial character employed in this key is the presence or absence of dorsal furrows (sulcations) in the leg femora. This is a very distinctive feature whose presence clearly separates four species (*afzelii*, *feae*, *hanseni* and *westermanni*) from the rest of the known species. The second important character is the presence or absence of navicular setae (scales) (which also may or may not be present in the four previously separated species). This character is not as distinctive as it first appears, since there is to some extent a gradation between narrow and very broad setae. However, the species group possessing very large scales or broad blade-like setae are distinctive enough to be separable from the group without such setae. Below these two levels of the key (dorsally sulcate femora and \pm navicular setae) species are separated on the distinctive forms of their pedipalps, chelicerae, form of the male copulatory apparatus and size.

1. Dorsa of leg femora sulcate 2
 - Dorsa of leg femora not sulcate 5
2. Femur and tibia of second pair of legs enlarged in male; medium-large species (7.0 - 10.0 mm*); robust pedipalpal tibia (breadth/length = 0.122 - 0.164) covered in tubercles throughout its length; horizontal portion of accessory piece of tarsal process of male less than 1.4 times longer than vertical 3
 - Femur and tibia of second pair of legs not enlarged in male; small-medium species (3.6 - 8.5*); slender pedipalpal tibia (breadth/length 0.075 - 0.082) with few or no tubercles throughout its length, or tubercles restricted to distal third; horizontal portion of accessory piece of tarsal process of male more than 1.8 times longer than vertical 4
3. Large species (8.0 - 10.0*); opisthosoma length/breadth = 1.15 - 1.2; approximately 40 tubercles along anterior margin of cucullus; cucullus of male with anterior median dorsal knob⁺; pedipalpal tibia 6.1 times as long as broad; lobe of tarsal process body of male 2.4 times longer than broad *afzelii* (Thorell, 1892)

* entire length in mm excluding pygidium and cucullus.

⁺ Legg 1977, in press.

- Medium sized species, smaller than *afzelii* (6.5 – 7.8*); opisthosoma with almost parallel sides, 1.5 times longer than broad; approximately 25 tubercles on anterior margin of cucullus; cucullus of male without anterior median dorsal knob; pedipalpal tibia 8.2 times as long as broad; lobe of tarsal process body of male 6.1 times longer than broad *fae*(Hansen, 1921)
4. Very small species (3.6*); 2-4 ventral tubercles on pedipalpal tibia; no lyrifissures on pedipalpal femur; movable finger of pedipalp 1.8 times as long as fixed; body of tarsal process of male less than 1.7 times as long as its lobe and 3.4 times as long as the base *hanseni* (Legg, 1976)
- Medium-large species (7.5*); many tubercles on distal third of robust pedipalpal tibia; lyrifissures on retrolateral side of pedipalpal femur *westermanni* (Guérin-Méneville, 1838)
5. Navicular setae (scales) or broad ensate setae present .. 6
 — Navicular setae of broad ensate setae absent 7
6. Small species (4.5*); pedipalpal tibia more than 1.8 times as long as femur with distal two-thirds covered in tubercles; movable finger of pedipalp over 1.5 times as long as fixed finger; lateral lobe of tarsal process body elongate and pointed, 10.4 times longer than broad *crassipalpis* (Hansen and Sørensen, 1904)
- Small species (5.0*); pedipalpal tibia less than 1.8 times as long as femur with tubercles throughout its length; movable finger of pedipalp less than 1.5 times as long as fixed finger; lateral lobe of tarsal process 12 times longer than broad *leonensis* sp.n.
7. Medium sized species (7.0*); opisthosoma 1.5 times as long as broad; distal end of pedipalpal tibia markedly expanded dorso-ventrally; distal region of pedipalpal tibia with ovate tubercles (resembling fishes' otoliths, Tuxen 1974); very robust pedipalpal tibia (breadth/length = 0.14); accessory piece of male, bent, $\theta = 60^\circ$ (not curved) with a hooked tip *sjostedti* (Hansen and Sørensen, 1904)
- Small-medium species (6.0 – 6.2*); opisthosoma 1.4 or less times as long as broad; distal end of pedipalpal tibia not expanded dorso-ventrally; mid to distal region of pedipalpal tibia with many elongate tubercles, proximal region with mushroom-shaped tubercles; fairly elongate pedipalpal tibia (breadth/length = 0.084 – 0.114); accessory piece of male sharply bent with a curved distal third, $\theta = 75-85^\circ$ or more (tip not hooked) 8
8. Small-medium species (6.0*); tibia of first leg of male with median expansion; femur of second leg of male very broad; chelicerae with 3-4 prolateral setae *karschi* (Hansen and Sørensen, 1904)
- Small-medium species (6.2*); tibia of first leg and femur of second leg of male not enlarged; chelicerae with 9 prolateral setae *olounoua* sp.n.

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