

## Notes on some new parasitic mites (Acari, Mesostigmata) from Afrotropical region

by A. FAIN

### Summary

The following new taxa of mites (Acari, Mesostigmata) are described from afrotropical animals (mammals and a spider): *Andreacarus (Andreacarus) hemicentetes* n.sp., from *Hemicentetes nigriceps*, from Madagascar; *Andreacarus (Andreacaroides) matthyssei* n.subg., n.sp., from *Cricetomys gambianus*, from Nigeria; *Ljunghia (Metaljunghia) africana* n.sp., from an unidentified mygalomorph spider of Zaire; *Pseudancoranyssus ruwenzoriensis* n.g., n.sp., from *Rhynchocyon stuhlmanni*, from Zaire. The subspecies *Ljunghia (Metaljunghia) pulleinei aname* FAIN, 1991 is elevated to the species rank.

**Key-words** : New parasitic mesostigmatic mites. Afrotropical Region.

### Résumé

Les nouveaux taxa suivants (Acari, Mesostigmata), parasites d'animaux (mammifères et araignée) de la Région Afrotropicale, sont décrits : *Andreacarus (Andreacarus) hemicentetes* n.sp., ex *Hemicentetes nigriceps*, de Madagascar; *Andreacarus (Andreacaroides) matthyssei* n.subg., n.sp., ex *Cricetomys gambianus*, du Nigeria; *Ljunghia (Metaljunghia) africana* n.sp. ex une Mygale non identifiée, du Zaire; *Pseudancoranyssus ruwenzoriensis* n.g., n.sp. ex *Rhynchocyon stuhlmanni*, du Zaire. La sous-espèce *Ljunghia (Metaljunghia) pulleinei aname* FAIN, 1991 est élevée au rang d'espèce.

**Mots Clé** : Nouveaux acariens mesostigmatiques. Région Afrotropicale.

### Introduction

We describe herein 4 new species, one new genus and one new subgenus of mesostigmatic mites (Acari) from the Afrotropical Region. Three of these species were found on mammals and one on a spider.

#### Abbreviations :

IRSNB = Institut royal des Sciences naturelles de Belgique

MRAC = Musée royal de l'Afrique Centrale, Tervuren

BMNH = British Museum of Natural History.

All the measurements are in micrometers (microns).

### Description of the new taxa

#### FAMILY LAELAPIDAE

#### Genus *Andreacarus* RADFORD, 1953

This genus included, until now, 8 species, among which 2 were described from the Afrotropical Region, 5 from Australia and 1 from New Guinea.

We describe herein 2 new species, one from *Cricetomys gambianus* from Nigeria and one from *Hemicentetes nigriceps* from Madagascar. The species from Madagascar presents all the main characters of the genus *Andreacarus*, whilst that from Nigeria differs from this genus by an important character, i.e. the presence on the coxae I of a strong conical ventral spur directed posteriorly. We think that this difference justifies the separation of this species in a distinct subgenus, *Andreacaroides* n.subg.

The genus *Andreacarus* appears close to the genus *Tur* BAKER and WHARTON, 1952, whose the type species, *Protonyssus uniscutatus* TURK, 1946 was described from *Proechimys calidius*, from Ecuador. Actually *Protonyssus* TURK is a homonym of *Protonyssus* TROUËSSART, 1915, and BAKER and WHARTON (1952) replaced it with the new name *Tur* (see FURMAN and TIPTON, 1958).

*Tur* is very close to *Andreacarus* and apparently the only reliable characters that could separate both genera is the presence in *Tur* of a thick and long pilus dentilis on the fixed digit of chelicerae and the more sclerotisation of this digit.

Taufflieb (1956) surmized that the true host of *A. petersi* (type of the genus) is a rat *Cricetomys* and not the dermapteron as believed by Radford. Personally we have found a series of specimens of that species from *Hemimerus* spp. as well as from the rat host. Moreover the only nymphs of our collection were taken from the dermapteron which indicates that this insect serves probably as a phoretic vector for the mite. It is not excluded

that the mites feed on this insect in their immature stages.

**Key to the african species of *Andreacarus***  
(Females)

1. Coxae I with 2 ventral spurs, a basal large and conical and a postero-apical much smaller and rounded. Dorsal shield with 38 pairs of microsetae (3 long), except the *jl* and *Z5* which are 7 and 12 long. Peritreme narrow . . . . . Subg. *Andreacaroides* n.subg. . . . . One species : *A. (A.) matthyssei* n.sp. Coxae I devoid of ventral spurs. Dorsal shield with well-developed setae . . . . .

- . . . . . Subg. *Andreacarus* RADFORD, 1953
2. Anal shield nearly twice as wide as long. Peritreme 15 wide . . . *A. (A.) zumpti* TAUFFLIEB, 1956 Anal shield longer than wide Peritreme variable . 3
3. Peritreme narrow (5 in its middle part). Vulvar lip triangular anteriorly. Postero-ventral seta of coxa III is a spinous seta attenuated apically . . . . . *A. (A.) petersi* RADFORD, 1953 Peritreme wider (14 wide in its middle part). Vulvar lip rounded anteriorly. Postero-ventral seta of coxa III is a short conical spine (12 long and 6 wide) . . . . . *A. (A.) hemicentetes* n.sp.

The 6 Asiatic or Australian species of *Andreacarus* are clearly distinct from the African species by the following characters :

	<i>African species</i>	<i>Asiatic or Australian species</i>
Sternal shield	Wider than long	As long as or longer than wide
Genito-anal shield	Moderately broad	Very broad
Number of setae on opisthogastric cuticle	Less than 10 pairs	About 30 pairs
Dorsal shield	Not covering the dorsum posteriorly	Covering the dorsum posteriorly

***Andreacarus (Andreacarus) petersi* RADFORD, 1953**  
(figs 1-2)

This species has been described from *Hemimerus talpoides* WALKER, living on a *Cricetomys*, from Sierra Leone.

Taufflieb (1956) recorded this species from *Cricetomys gambianus* WATERHOUSE from Brazzaville and the Mayumbe forest, in Congo.

Clifford and Keegan (1963) redescribed the species after specimens found on *Cricetomys gambianus* from Upemba Park, in Zaire (Mission De Witte) and on *Cricetomys emini* from Nigeria.

We found this species from the following hosts and localities :

1. *Hemimerus hanseni* : from Entebbe, Uganda 15.09.1960 (specimens received from Dr F. Zumpt) (3 females).
2. *Hemimerus* sp., off *Cricetomys gambianus* from Mieri, Batouri, Cameroun. (Coll. F. Puylaert, 28.06.1976) (1 female, 2 males and 6 nymphs).
3. From the alcohol of a vial containing *Hemimerus* sp., from Kumanva (Coll. Dr Malaisse, March 1976) (7 females).

4. *Cricetomys gambianus*, from Botanical Garden, Ibadan, Nigeria. Coll. Dr Matthysse, 15.03.1975) (9 females) (figs 1-2).
5. *Cricetomys* sp., from Butare, Rwanda. Coll. Anciaux, 24.05.1966 (4 females).
6. *Cricetomys gambianus*, from Dakar, Senegal. Coll. Absa Nguey, 1987.

***Andreacarus (Andreacarus) zumpti* TAUFFLIEB, 1956**

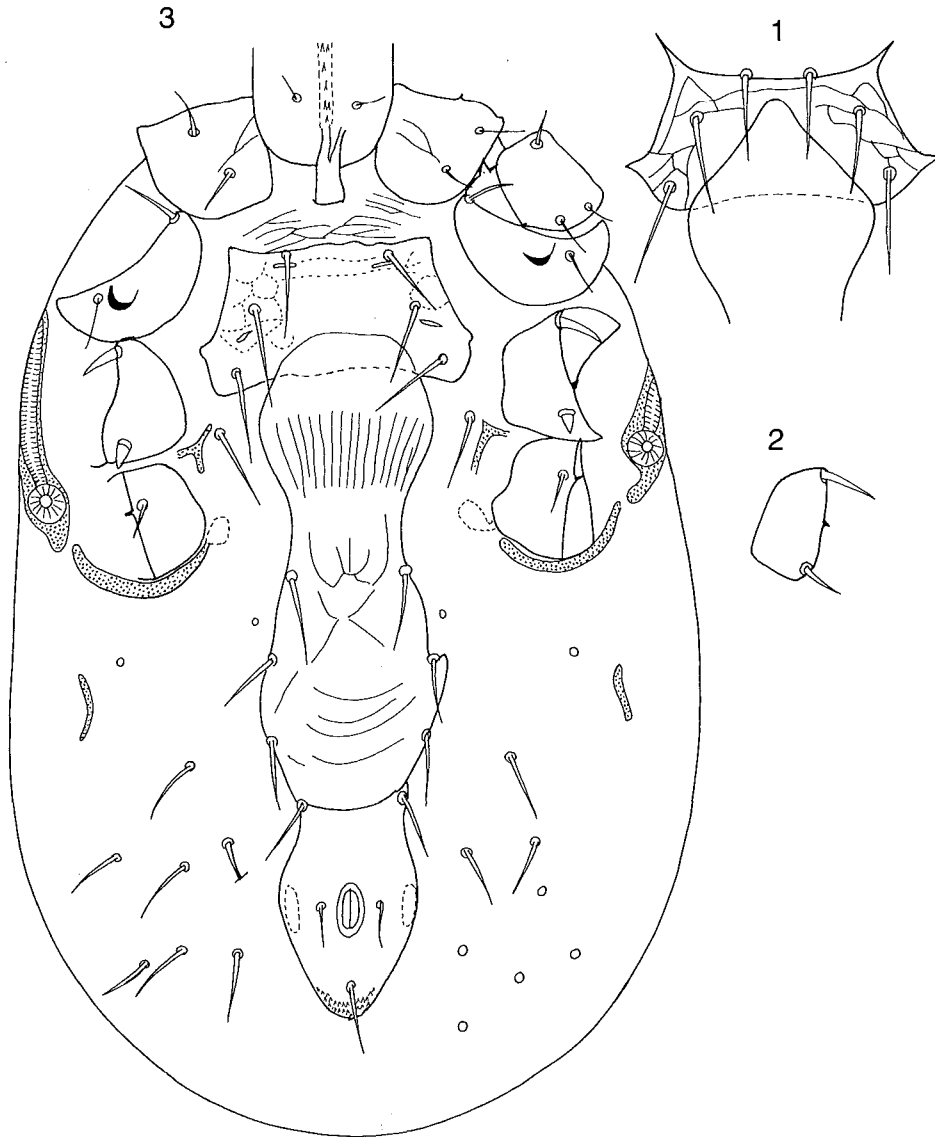
This species was described from *Cricetomys gambianus*, from a locality close to Brazzaville and from the forest of Mayumbe.

We found a single female of this species from the same host from Ibadan, Nigeria (Coll. Dr Matthysse, 19.11.1975).

***Andreacarus (Andreacarus) hemicentetes* n.sp.**

This species is known only from the female.

*Female* (holotype) (figs 3-4) :  
Length and maximum width of idiosoma 570 x 355, of



Figs 1-3 – Figs 1-2 : *Andreacarus (A.) petersi* (Radford). Female : Sternal shield and anterior part of the vulvar lip (1); coxa III (2). (Specimen from Ibadan). Fig. 3 : *Andreacarus (A.) hemicentetes* n.sp. Female in ventral view (3).

the dorsal shield 520 x 242. This shield presents a poorly developed network of lines and it bears 39 pairs of stout setae 12 to 45 long. Lengths of some setae : *jl* 12, *j6* 30, *J5* 25, *Z5* 45. Peritreme wide (14) (distinctly wider than in *A. petersi*), reaching the middle of coxa I. Soft cuticle of dorsum with 8 pairs of setae smaller than the scutal setae.

*Venter :*

Sternal shield 69 long (in midline) and 125 wide (at level of the second pair of sternal setae). Maximum width of genital and anal shields : 99 and 78 respectively, both shields being contiguous. Soft cuticle of venter with 8 pairs of setae 32-40 long. Metapodal shield not fused with peritrematal shield.

*Gnathosoma :*

Cheliceral digits badly oriented and difficult to observe.

*Legs :*

Coxae II with 2 small spurs, a rounded ventral and an anterior conical. Coxae III with an anterior ventral thick spinous seta and a postero-ventral short conical spine.

*Host and locality :*

Holotype female and only known specimen, from *Hemicentetes nigriceps* GÜNTHER, from E. Betsileo, Ankafina forest, Madagascar (Animal in alcohol in BMNH, n° 82.3.1.14). Holotype in the BMNH.

*Remarks :*

This species differs from *A. zumpti* by the shape of the anal shield, longer than wide and the narrower genital shield. From *A. petersi* it is distinguished by the combination of the following characters : vulvar lip rounded anteriorly (tapering in *A. petersi*), posterior spine of coxa III shorter and conical (is a thick and longer seta in *A.*

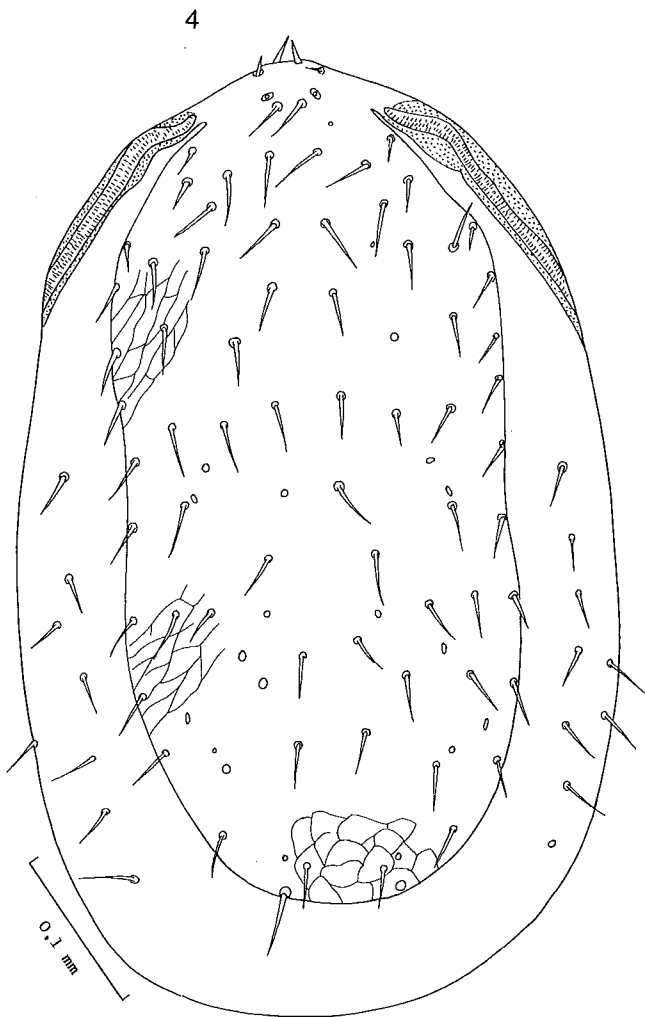


Fig. 4 – *Andreacarus (A.) hemicentetes n.sp.* Female in dorsal view.

*petersi*), scutal setae shorter and thinner, peritreme much wider (14 wide, instead of 5 in *A. petersi*), pattern of network on scutum poorly developed.

***Andreacarus (Andreacaroides) n.subgen.***

**Definition :**

Distinguished from the typical subgenus by the following characters : Coxae I with 2 ventral spurs, one strong conical situated postero-ventrally at the base of the segment, the other much smaller and rounded and situated at the postero-apical part of the segment. Dorsal shield very large with 39 pairs of microsetae. Peritreme very narrow, arriving at the middle of coxa I.

**Type species :**

*Andreacarus (Andreacaroides) matthysei n.sp.*

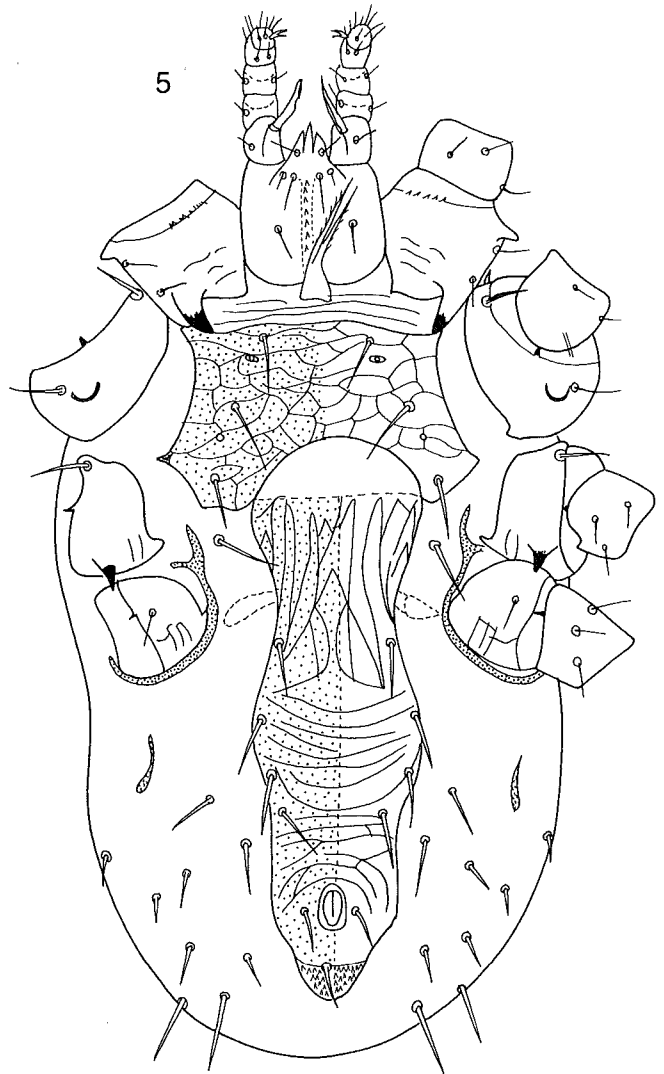


Fig. 5 – *Andreacarus (Andreacaroides) matthysei n.sp.* Female in ventral view.

***Andreacarus (Andreacaroides) matthysei n.sp.***

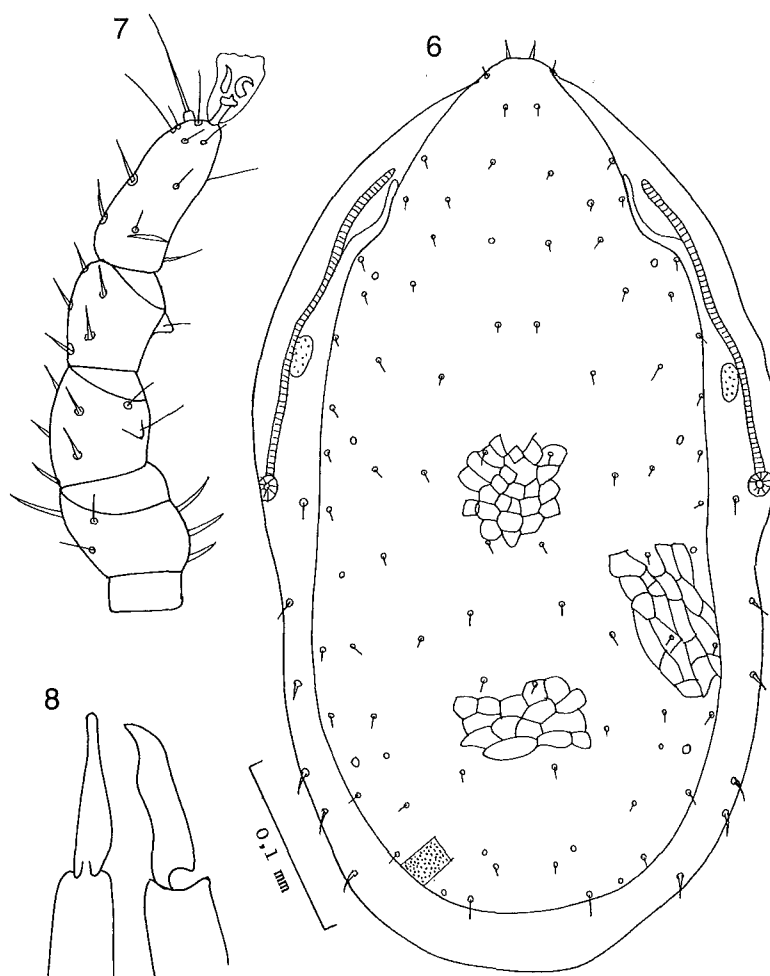
The species is named for Dr J. Matthyse who discovered this mite. Only the female is known.

**Female : (holotype) (figs 5-8) :**

Length and maximum width of idiosoma  $492 \times 280$ , of dorsal shield  $456 \times 219$ . Scutum with 38 pairs of very small setae (3 long) except *jl* (7 long) and *Z5* (12 long). The scutum bears a well-developed network of lines. Peritreme narrow (3-4 wide), reaching the middle of coxa I. Soft cuticle with 6 pairs of small setae.

**Venter :**

Sternal shield with a network of lines poorly developed in the postero-median part of the shield, it is 93 long and 144 wide (at level of 2d pair of sternal setae). Lengths of sternal setae (1 to 3) : 34-42-39. Metasternal



Figs 6-8 – *Andreacarus (Andreacaroides) matthyssei* n.sp. Female in dorsal view (6); leg I (7); cheliceral digits (8).

setae situated on the soft skin, 30 long. Maximum width of genital shield 93, of anal shield 70, both shields with well-marked, mostly transverse, lines. Soft cuticle of venter with 9 pairs of thick setae.

#### Legs :

Coxa I with 2 unequal ventral spurs, one basal strong and conical, the other apical smaller and rounded. Coxa II with a small anterior spur and a postero-ventral rounded spur. The postero-ventral seta of coxa III is modified into a small conical spine or spur.

#### Gnathosoma :

There are 6 rows of deutosternal denticles, each with 1 to 3 denticles.

#### Host and locality :

Holotype from *Cricetomys gambianus*, from Botanical Garden, Ibadan, Nigeria, J.G.M. 15.3.1975 (Coll. Dr J. Matthysse). One paratype female with the same data. Holotype in the MRAC. One paratype in the IRSNB.

#### Genus *Ljunghia* OUDEMANS, 1932

The genus *Ljunghia* includes two subgenera : *Ljunghia* OUDEMANS, 1932 and *Metaljunghia* FAIN, 1989. They differ from each other by the following characters (in the females) :

	Subgenus <i>Ljunghia</i>	Subgenus <i>Metaljunghia</i>
Metasternal setae	present	absent
Opisthoventral setae	numerous	maximum 8 pairs
Scutal setae	32 to 36 pairs	15 to 25 pairs
Fixed digit of chelicerae	subequal to moveable digit	distinctly shorter than moveable digit

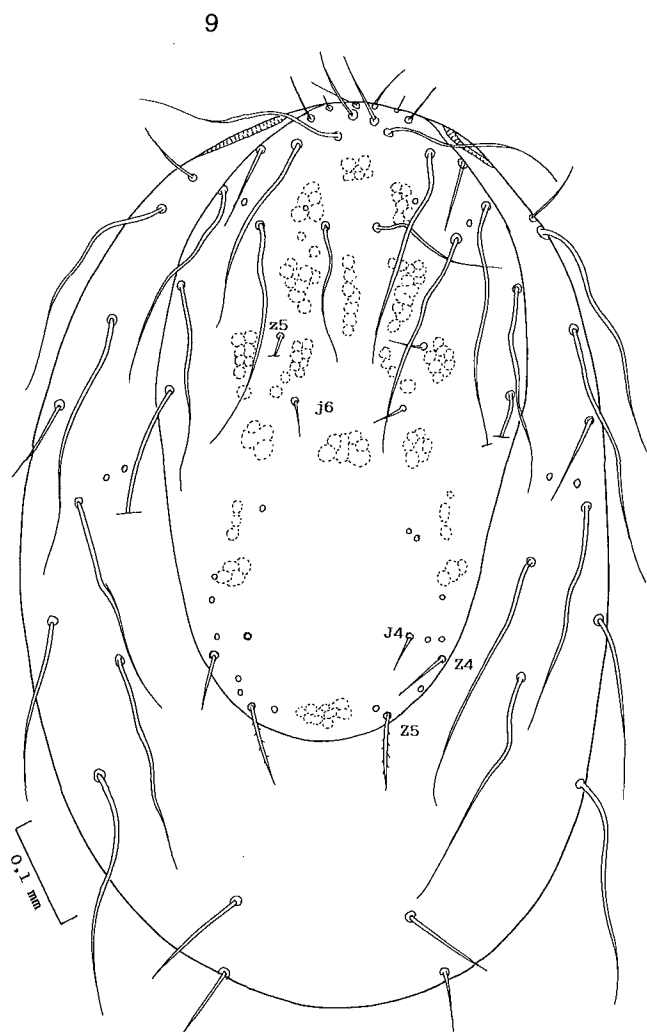
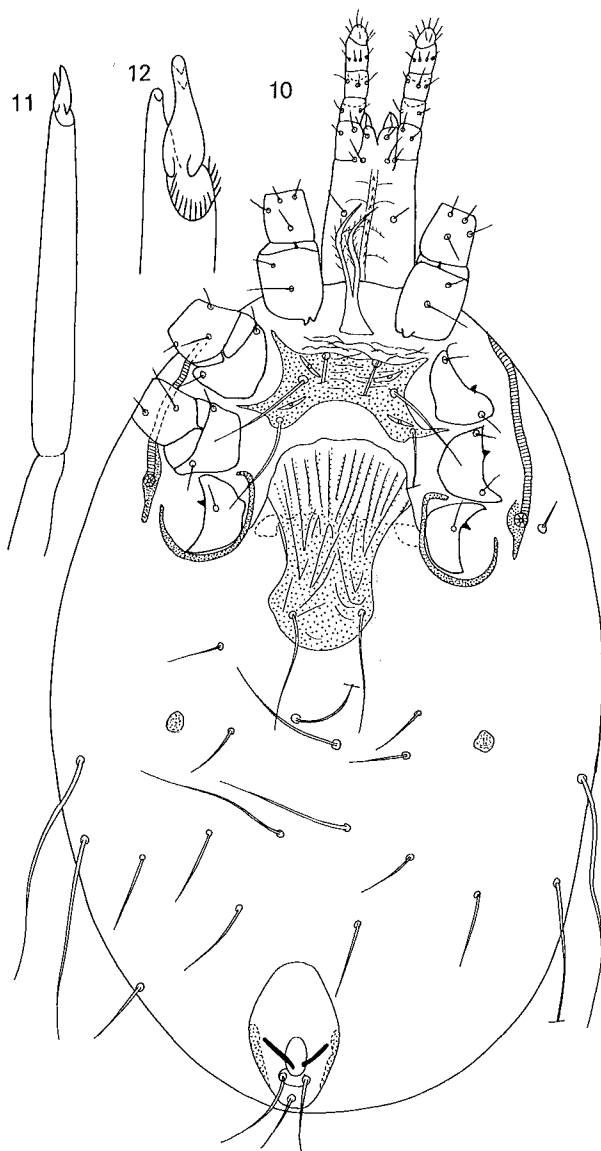


Fig. 9 – *Ljunghia (Metaljunghia) africana n.sp.* Female in dorsal view.



Figs 10-12 – *Ljunghia (Metaljunghia) africana n.sp.* Female in ventral view (10); chelicera (11), cheliceral digits (12).

*Metaljunghia* appears more reduced and therefore more evolved than *Ljunghia*. The typical subgenus includes 2 species, *L. (L.) selenocosmia* OUDEMANS, 1932 and *L. (L.) minor* FAIN, 1989 both described from *Selenocosmia javanensis* (WALCKENAER), from Indonesia. *Metaljunghia* included until now 3 species and one subspecies, all from Mygalomorph spiders from Australia, i.e. *L. (M.) pulleinei* WOMERSLEY, 1956 (emend. Fain, 1991), from *Selenocosmia stirlingi* HOGG, *L. (M.) pulleinei aname* FAIN, 1991, from *Aname diversicolor* (HOGG), *L. (M.) hoggi* DOMROW, 1975 from *Aganippe subtristis* and *Eucystops* sp., and *L. (M.) rainbowi* DOMROW, 1975 from an unidentified spider.

In the present paper we elevate *L. pulleinei aname* to the species rank, and describe *L. (M.) africana n.sp.* from an unidentified Mygalomorph spider from Zaire.

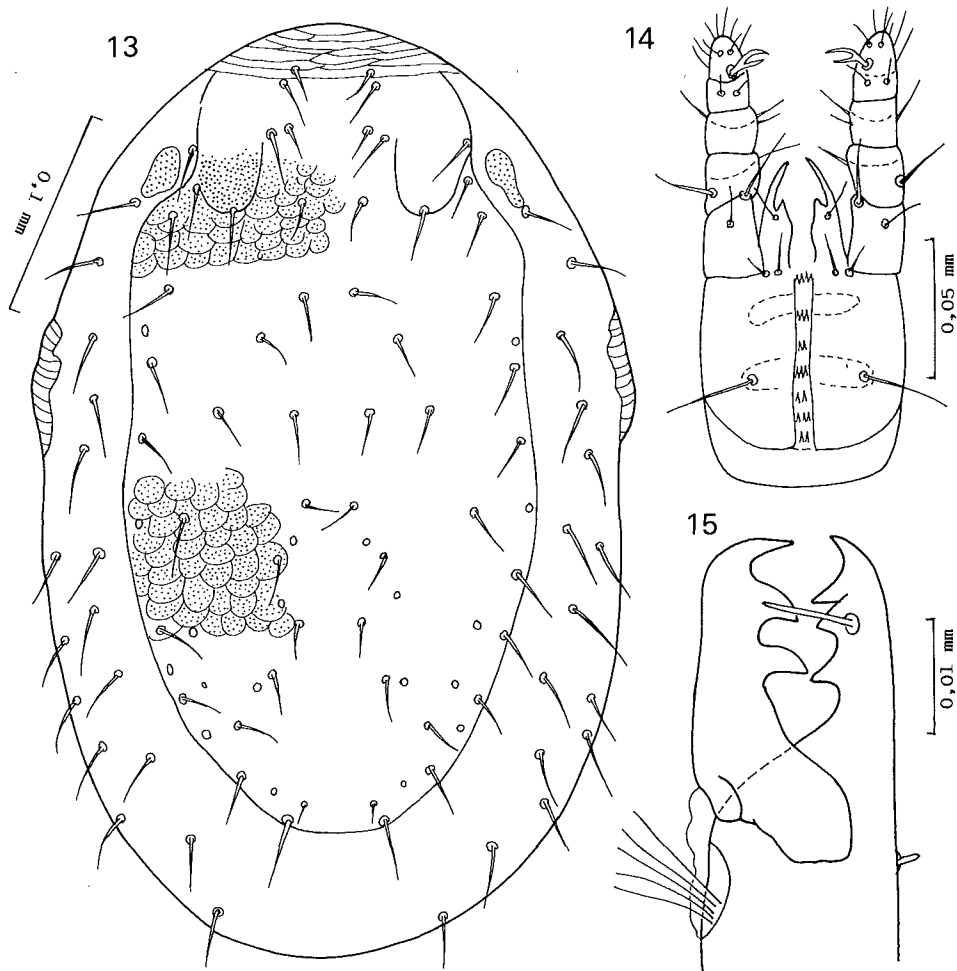
***Ljunghia (Metaljunghia) aname* FAIN, 1991 nov. taxon**

= *Ljunghia pulleinei* DOMROW, 1975 in part, nec Womersley, 1956.

= *Ljunghia pulleinei aname* FAIN, 1991.

This species has been described as a subspecies of *L. pulleinei*. We think now that the differences in chaetotaxy of the scutum justify their separation in a distinct species.

This species has been collected from a spider *Aname diversicolor* (HOGG) (holotype and paratypes) from Western Australia, and from *Aname* sp. from South Australia (See Domrow, 1975).



Figs 13-15 – *Pseudancoranyssus ruwenzoriensis* n.sp. Female in dorsal view (13); gnathosoma (14); cheliceral digits (15).

***Ljunghia (Metaljunghia) africana* n.sp.**

This species is represented only by the holotype female.

*Female* (holotype) (figs 9-12) :

Length and maximum width of idiosoma 870 × 590, of dorsal shield 610 × 350.

*Dorsum* :

The shield bears (17 pairs of very unequal setae (*J4* is lost at one side), the shortest is 18, the longest 210 long. Most of these setae are sinuous. Soft cuticle with 10 pairs of setae 70 to 210 long.

*Venter* :

Sternal shield well sclerotized, much wider (130 at the level of 2d pair of sternal setae) than long (69 in midline), with posterior margin deeply excavated and bearing 3 pairs of setae of which only the second pair is complete and 135 long. Metasternal setae lacking. Metapodal shields small, rounded. Genital shield expanded in its posterior third, bearing a pair of setae 120

long. Anal shield oval, 160 long (cribrum included) and 93 wide, the anus is situated in its posterior half. Anterior anal setae strong, 98 long, posterior median setae thinner, 50 long. Soft cuticle of opisthogaster with 19 setae 70 to 100 long. Peritremes narrow ending at the level of posterior third of coxa I.

*Gnathosoma* :

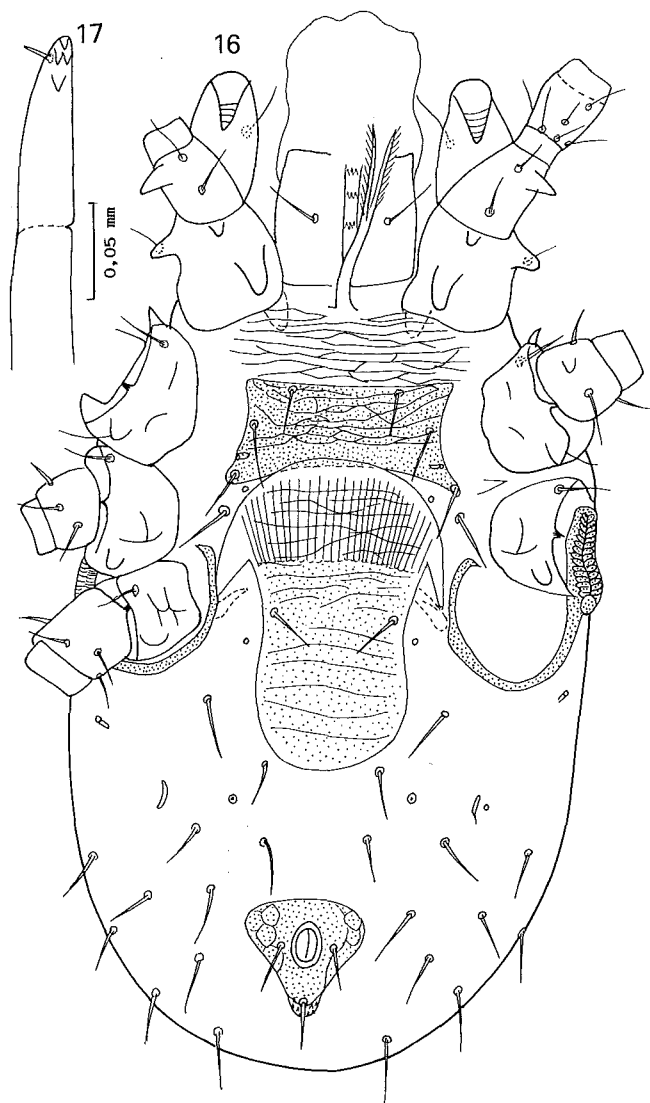
Deutosternum with 10 rows of denticles, each row with 3-1-1-1-1-1-2-1-5 denticles. Corniculi long and thick. Cheliceral digits small, the moveable digit longer (26) than the fixed one (19 long) and with poorly developed teeth. Tectum not observed. Claws I-IV strongly modified.

*Host and locality* :

Holotype and only known specimen from a mygalomorph spider from Boende, Tshuapa, Zaire (Coll. A. Fain, December 1975). Holotype in MRAC.

*Remarks* :

This species is the most close to *L. (M.) pulleinei*



Figs 16-17 – *Pseudancoranyssus ruwenzoriensis* n.sp. Female in ventral view (16); chelicera (17).

WOMERSLEY, described from *Selenocosmia stirlingi* HOGG (Theraphosidae), from South Australia.

It differs from that species by the following characters : 1. Dorsal shield relatively broader in its posterior half (setae  $z_6$  are 325 apart), the ratio length/width is 1,75 : 1 (instead of 2 : 1 in *L. pulleinei*, from the drawing of Domrow, 1975).

2. Setae  $j_5$  lacking and  $j_6$  are far apart and both setae are short. In the drawings of Womersley (1956) the setae  $j_5$ ,  $j_6$  and  $z_5$  are long and subequal. In the drawing of Domrow (1975)  $j_5$  and  $z_5$  are short and  $j_6$  are three times longer than the latter and are situated close together. In our species  $J_4$  is present only at one side (it is lost at the other side) and is more anterior than  $Z_4$ , the latter being slightly shorter than  $Z_5$ . In the drawing of Womersley only  $Z_5$  is present and is longer than in our species. According to Domrow  $J_4$  is much shorter than  $Z_4$  and situated on the same transverse line as  $Z_4$ .

3. Genital shield shorter and broader, distinctly expanded in its posterior half.
4. Anal shield narrower and with anus more posterior. Posterior anal seta shorter than the paired anterior anal setae (the three setae being equal in the drawing of Womersley).
5. Chelicerae shorter than in the drawing of Domrow, with digits relatively shorter.
6. Palpal tibia with 14 setae (only 11 setae in *L. pulleinei*, according to Domrow, 1975).

### Genus *Pseudancoranyssus* n.g.

#### Definition :

Based only on the female. Dorsal shield entire, bearing 28 pairs of short and thin setae and bearing a scaly pattern of lines except in its anterior part which is transversely striated. This shield is abruptly narrowed in its anterior fifth where it is flanked by a pair of small rounded shields. Chelicerae with the shafts not fused basally, the apical segment is slightly longer than the basal segment; both digits equal, bearing strong teeth, the fixed digit with a narrow, relatively long pilus dentilis. Moveable digit without membranes. Corniculi sclerotized but relatively short and narrow and curved inside. Deutosternum with 7 rows of teeth, the basal ones with 2 to 3 teeth, the apicals with 3 teeth. Pedipalp tibia with 10 setae. Genital shield with one pair of setae. Legs I modified, the trochanters bearing dorsally a strong ventrally-recurved spur forming a powerful hook by means of which the mite is attached to the skin of the host. All the coxae with rounded ventral projections or spurs, some being setigerous (2-2-1-1 spurs).

#### Type species :

*Pseudancoranyssus ruwenzoriensis* n.sp.

By the presence of retrorse spurs on the coxae and a very strong recurved hook on leg I this genus resembles superficially the genus *Ancoranyssus* EVANS and FAIN, 1968 (Hirstionyssinae), described from *Trichys lipura*, from Sarawak. However, by all the other characters (e.g. cheliceral digits with well-developed teeth, shafts not fused, corniculi sclerotized and pointed apically etc...) it is more related the Laelapinae.

### *Pseudancoranyssus ruwenzoriensis* n.sp.

This species is known only by female specimens.

#### Female (holotype) (figs 13-17) :

Idiosoma 471 long and 305 wide at the level of the stigmata, more or less ellipsoidal in shape. Dorsal shield 405 long and 204 wide bearing 28 pairs of setae 12 to 33 long and an well-developed pattern of scales except in its anterior fifth where it is striated transversely. Tectum almost straight.



*Venter* :

Sternal shield 45 long and 105 wide (at level of st. 2 setae), with a pattern of lines, the soft cuticle in front of the shield striated transversely. Sternal setae (I to III) 28 to 33 long; metasternal setae situated on the soft cuticle. Genital shield 180 long and 87 wide, striated transversely and carrying one pair of setae. Soft cuticle of opisthogaster with 7 pairs of setae 27-33 long. Anal shield triangular, 69 long (cribrum included) and 75 wide, with the anterior pair of setae shorter (27) than the posterior seta (33). Peritreme short and wide, ending at level of the middle of coxa III.

*Legs* :

Coxae with 2-1-1-1 rounded ventral spurs, some of them setiferous; coxae II with in addition an anterior conical spur. Trochanter I with a very strong dorsal spur recurved posteroventrally, and 3 small ventral spurs. Chaetotaxy : Coxae 1- 2-1-1, trochanters 4-5-5-5, femora 12-10-6-6, genua 12-11-9-10, tibiae 13-10-8-10. All the tarsi with normal claws.

*Gnathosoma* :

Deutosternum with 6 rows of small teeth (1 to 3 per row). Corniculi sclerotized, narrow, pointed apically where they are curved inwards. Cheliceral digits with well-developed teeth and a narrow pilus dentilis. Chaetotaxy of palps : trochanter to tibia : 2-5-6-10 setae.

*Host and locality* :

Holotype female was found on the bottom of a jar containing a *Rhynchocyon stuhlmanni* MATSCHIE from Mutsora, Ruwenzori (Expedition De Witte on Parc National Albert, 1953), Zaire. Paratypes : 6 females with the same data as the holotype, 1 female from the same host from Epulu (Ituri Forest, Zaire); 1 female found in the alcohol containing *Rhynchocyon stuhlmanni* from Mambasa, near Irumu (Ituri forest) (3.7.1954), 1 female from *Myonax melanurus* MART. from Zombae, Nyasaland (animal in collection of the BMNH n° 30.2.20.7); 1 female from a "wild cat" near the village of Kyanika, near Ruwenzori Mountain, Zaire (Expedition De Witte 18.9.1953). Holotype and 2 paratypes in MRAC, 1 paratype in the BMNH; other paratypes in the IRSNB.

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