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Notes on the genera *Cheletoides* Oudemans  
and *Metacheletoides* Fain  
(Acarina, Cheyletidae)  
with description of three new species

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ABSTRACT

The genus *Metacheletoides* Fain, 1972 is revised and two new species are described: *M. crinifer* sp. n. and *M. gisagarensis* sp. n., both from *Crinifer* spp., Central Africa. A new species of *Cheletoides* Oud., *Ch. chirunduensis* sp. n. is described from *Numida meleagris*, South Africa.

The genus *Metacheletoides* Fain, 1972 was erected for a single species *M. numidae* Fain, 1972, found in the quills of the remiges of *Numida meleagris intermedia*, in Rwanda.

Through the courtesy of Dr. L. Van der Hammen we could examine the types of *Cheletoides uncinatus* Oudemans, the type species of *Cheletoides* Oudemans, 1904. Our new genus is distinguished from the latter by the following characters (in females): apical spine (claw) of palptibia with 2 to 7 teeth, claws of leg I very small and much smaller than those of leg II, propodonal shield large, more or less trapezoidal, it is generally punctate and either not striated or with indistinct striations, absence of a comb or barbed setae on palptarsus (in *Cheletoides uncinatus* Oud. the palptarsus bears a thick internal dorsal seta with very small internal denticles representing a vestige of a comb), body shorter and broader. In the nymphs and the males the palptarsus is devoid of combs or denticulate setae (in the nymphs of *Ch. uncinatus* a comb is present on palptarsus).

In this paper we redescribe *M. numidae* Fain, 1972 and *M. akanyaruensis* (Fain, 1972), the latter being transferred from the genus *Cheletoides* Oudemans in which it was put previously, into *Metacheletoides*. We also describe 2 new species *M. crinifer* and *M. gisagarensis* and add a new species in the genus *Cheletoides* Oudemans.

The types of our new species are deposited in the Musée Royal de l'Afrique Centrale, Tervuren, Belgium.

Key to the genera *Cheletoides* Oud. and *Metacheletoides* Fain  
(Females)

1. Apical spine (claw) of palptibia with one tooth. All tarsi with a pair of claws equal or subequal in size ..... *Cheletoides* Oudemans, 1904 (2)
  - Apical spine of palptibia with 2-7 teeth. Claws of tarsus I much smaller than those of other tarsi ... *Metacheletoides* Fain, 1972 (3)
2. Palptibial spine with a tooth situated slightly closer to its apex than to its base (in females and in nymphs) ..... *Ch. uncinatus* Oudemans, 1904
  - Palptibial spine with a tooth situated in its basal third (in the female and the nymph) ..... *Ch. chirunduensis* sp. n.
3. Palptibial spine with two large unequal basal teeth. Solenidion of tarsus I very close to the apex of tarsus. Claw of tarsus I very small. All dorsal setae barbed. Body very short and thick. Idiosoma 750  $\mu$  long and 690  $\mu$  wide ..... *Ch. numidae* Fain, 1972
  - Palptibial spine with 3-7 basal teeth. Solenidion of tarsus I not close to the apex of tarsus. Body smaller and more elongate .... 4
4. Palptibial spine 45-50  $\mu$  long, with 3-5 unequal teeth (usually 4) starting from the base, the most apical tooth being much larger than the others. Claws of tarsus I very small (3,5  $\mu$  long). Solenidion of tarsus I approximately as long as the tarsus. Setae *vi* much thinner and 3 times shorter (60-70  $\mu$ ) than *ve* (190  $\mu$ ) ..... *Ch. gisagarensis* sp. n.
  - Palptibial spine with 5-7 subequal teeth. Claws of leg I distinctly larger. Setae *vi* either only slightly thinner and shorter than *ve* or longer than *ve* ..... 5

5. Palptibial spine 52-55  $\mu$  long and with 5-6 thick and long teeth. Solenidion of tarsus I much shorter (40-43  $\mu$ ) than tarsus (75  $\mu$ ). Dorsal shield punctate, devoid of striations. Setae *vi* longer (75-80  $\mu$ ) than *ve* (60  $\mu$ ). Body broad, idiosoma 420  $\mu$  long and 345  $\mu$  wide ..... *M. akanyaruensis* (Fain, 1972)
- Palptibial spine 93  $\mu$  long, with 5-7 short and pointed teeth. Solenidion of tarsus I only slightly shorter (75  $\mu$ ) than the tarsus (85  $\mu$ ). Dorsal shield punctate and with indistinct striations. Setae *vi* shorter (190  $\mu$ ) than *ve* (270  $\mu$ ). Body more elongate ..... *M. crinifer* sp. n.

Genus **METACHELETOIDES** Fain, 1972

*Definition : Female :* Body generally shortly ovoidal. Cuticle striated with a propodonal shield always punctate and either faintly striated or not. Coxae forming 2 separated groups, an anterior (coxae I + II) and a posterior (coxa III + III). Gnathosoma large with well developed palps and a large tibial spine bearing 2 to 7 teeth; tarsus without combs or denticulate setae. Peritremes generally in an inverted U. Legs rather slender and relatively long. All tarsi with a multirayed empodium. Tarsi II-IV with a well developed claw, tarsus I with a much smaller claw, sometimes vestigial. In the male the genital orifice is terminoventral and the apical spine of palptibia is longer than in the female.

*Chaetotaxy (females) : Idiosoma :* Are present the setae *ve*, *vi*, *sci*, *sc e*, *h*, *d 1*, *d 2*, *d 3* and *d 5*, *l 1* to *l 5*, *g 1* to *g 5*, *a 1*, *a 2*, *a 3*, *ic 1*, *ic 3*, *ic 4*. The *d 5* is missing in some species. Coxae (I-IV) 2-1-2-2. *Legs :* Trochanters 1-1-2-1, femora 2-2-1-1, genu 2-2-2-2, tibiae 4-4-4-4, tarsi 9-7-7-7. The tarsi bear 1 (tarsus I) or 2 (other tarsi) elongate fan-like setae situated subapically. *Solenidiotaxy :* Tarsi 1-1-0-0-, tibiae 1-0-0-0, genu 1-0-0-0. The solenidion of tibia II is dorsal.

*Type species : Metacheletoides numidae* Fain, 1972.

1. **Metacheletoides numidae** Fain, 1972

Female (fig. 1 - 10): Idiosoma 750  $\mu$  long and 690  $\mu$  wide (in holotype). *Dorsum :* Propodonal shield punctate and very finely striated. All dorsal setae are barbed, the *vi*, *ve*, *sci*, *d 1* and *d 2* are 240-280  $\mu$ , 350-400  $\mu$ , 500-550  $\mu$ , 500-550  $\mu$  and 180  $\mu$  long. *Venter :* coxae I widely sepa-

rated in midline. Gnathosoma very large, with strong palps. Peritremes with  $2 \times 9$  segments. Palptibia with a large slightly recurved apical spine  $96 \mu$  long, bearing 2 unequal basal teeth. Palptarsus without combs. Legs long and narrow. Claws I  $9-10 \mu$  long, claws II  $30 \mu$  long. Ventral setae of tarsi II-IV with long barbs. All the leg setae are barbed except the apical setae of tarsi. Tarsus I  $170 \mu$  long. Solenidion of tarsus I preapical,  $70 \mu$  long.

Male : unknown.

Nymph : Length of idiosoma  $120 \mu$ .

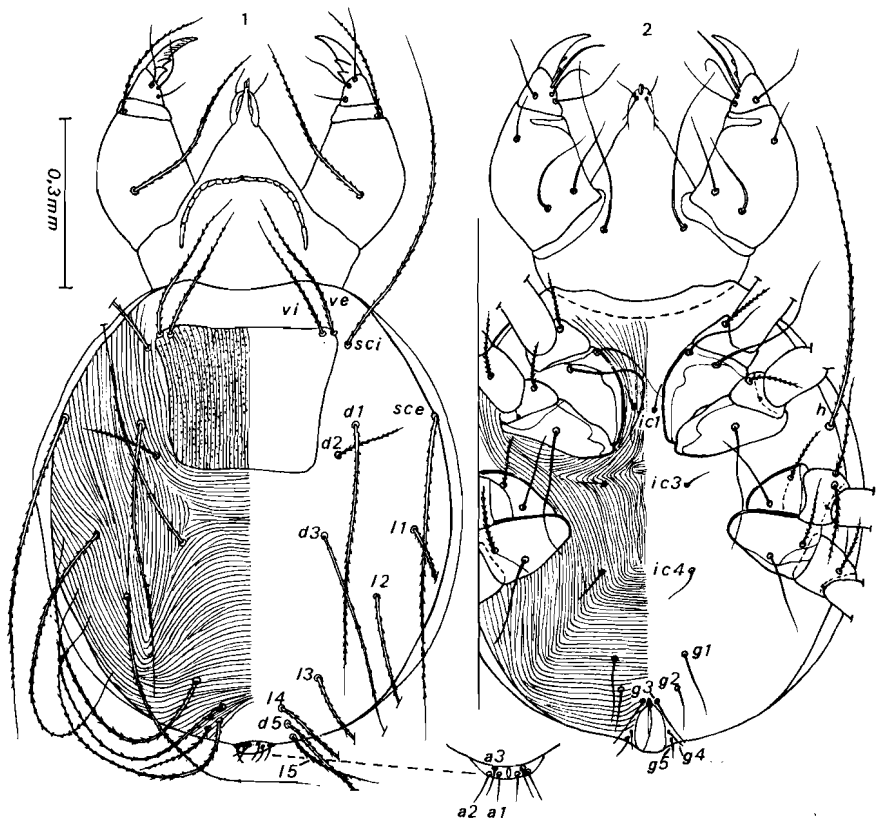


Fig. 1-2. — *Metacheletoides numidae* Fain. - Female: 1. dorsal view; - 2. ventral view.

*Host and locality.*

1. In the quills of the remige feathers of *Numida meleagris intermedia*, near Akanyaru River, Rwanda, 22.XI.1955 and XI.1956: holotype MRAC 151524 and 6 paratype females, 4 nymph paratypes (Coll. A. Fain). Types in Musée de Tervuren. From the same host in Bujumbura, Burundi, bird captured 29.I.1926 by Schouteden (1 female).
2. In the quills of feathers of *Numida m. meleagris*, Ethiopia, 19.XI.1934. Bird in the Museum of Tervuren (1 female).

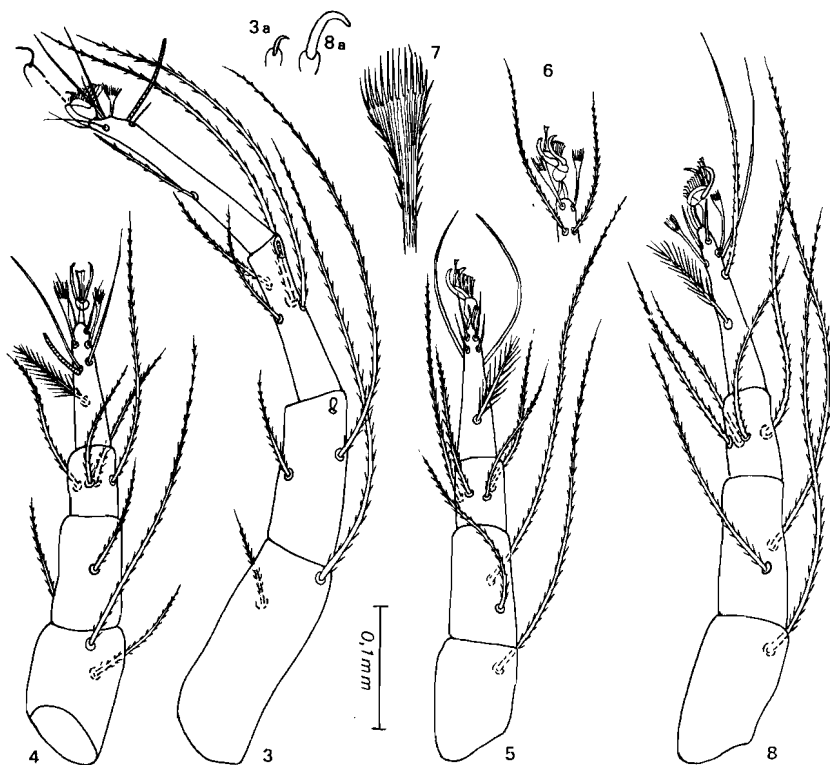


Fig. 3-8. — *Metacheletoides numidae* Fain. - Female: 3. leg I; - 3a. claw I; - 4. leg II; - 5. leg. III; - 6. apex of tarsus III dorsally; - 7. subapical lateral setae; - 8. leg IV; - 8a. claw IV.

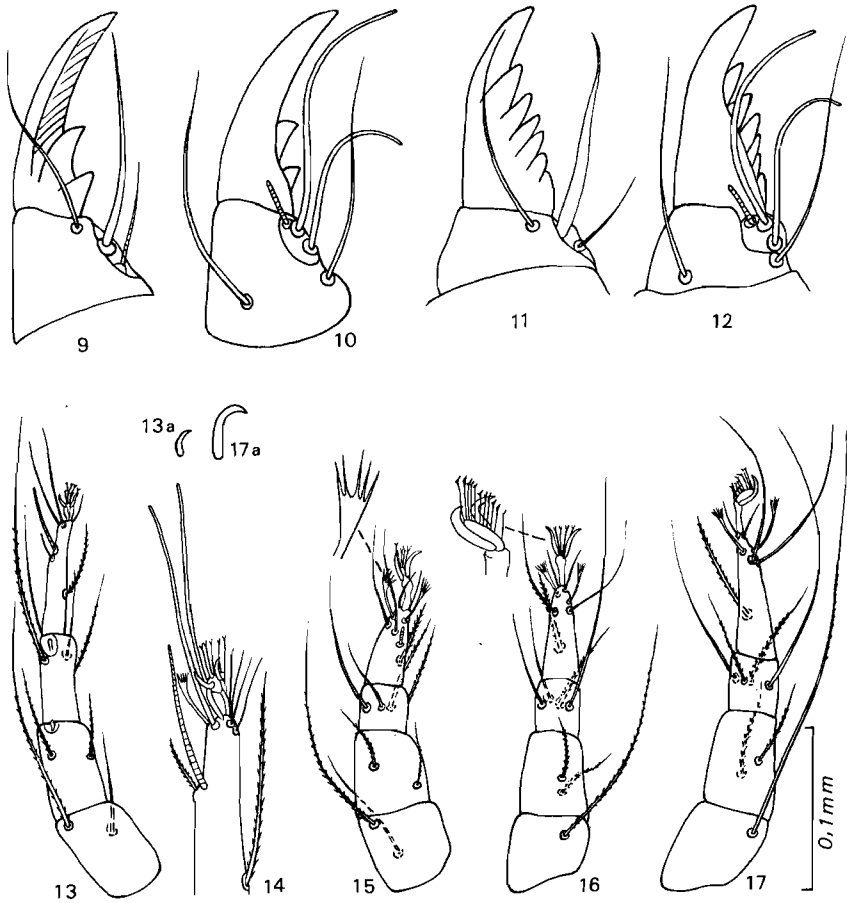


Fig. 9 - 17. — 9-10. *Metacheletooides numidae* Fain. Female: Palp-tibiotarsus dorsally (9) and ventrally (10).  
11-17. *Metacheletooides akanyaruensis* (Fain). - Holotype female :  
11-12. palp-tibiotarsus dorsally (11) and ventrally (12); - 13. leg I; - 13a. claw I; -  
14. tarsus I; - 15. leg II; - 16. leg III; - 17. leg IV; - 17a. claw IV.

2. *Metacheletoides akanyaruensis* (Fain, 1972) nov. comb.

*Cheletoides akanyaruensis* Fain, 1972.

Female (fig. 11 - 19): Idiosoma 420  $\mu$  long and 345  $\mu$  wide. *Dorsum* : Propodonotal shield punctate, not striate. The setae *vi*, *ve* and *sce* are relatively short and barbed; *vi* is longer (75-80  $\mu$ ) than *ve* (60  $\mu$ ). Setae *sci* and *d1* with a few barbs in their apical half; other dorsal

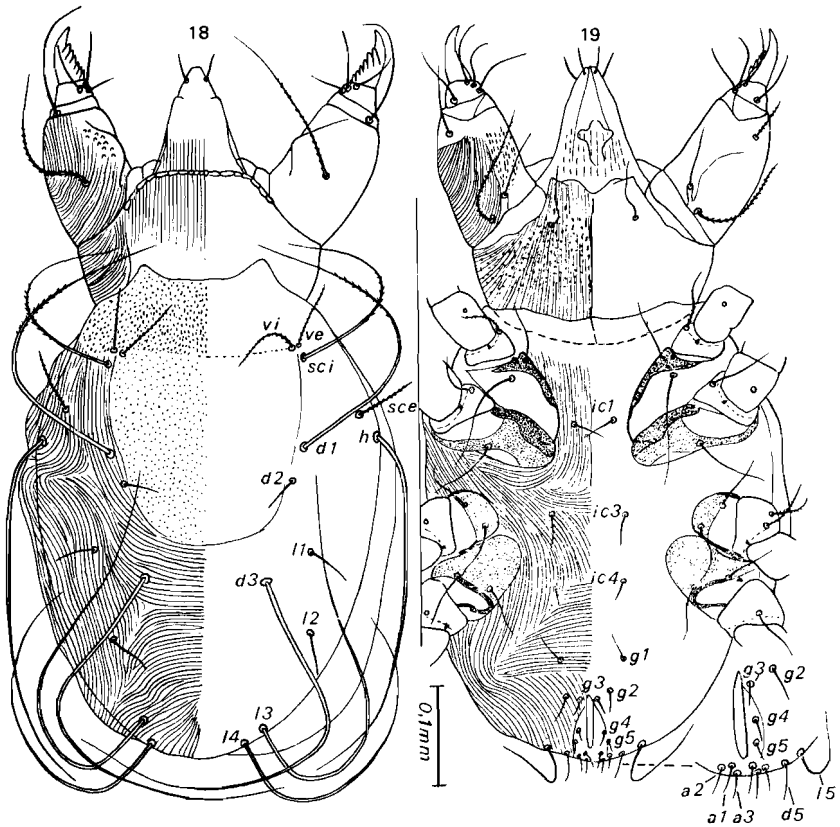


Fig. 18 - 19. — *Metacheletoides akanyaruensis*'s (Fain). - Female, holotype: 18. in dorsal view; - 19. in ventral view.

setae smooth. Setae *d2*, *l1*, *l2* and *d5* short and thin. *Venter* : Vulva terminoventral. Coxae well sclerotized. Gnathosoma large. Peritremes with 7 to 8 branches at each side. Apical spine of palptibia 52-55  $\mu$  long, with 5-6 thick and long unequal teeth (rarely 7 at one side and

6 at other side). Legs: claws I 8-9  $\mu$  long, claws II 18  $\mu$  long. Tarsus I 75  $\mu$  long, with a solenidion 40-43  $\mu$  long, the guard seta is 15-16  $\mu$  long.

Male: unknown.

*Host and locality.*

In the quills of the remige feathers of *Numida meleagris intermedia* near Akanyaru River, Rwanda, 22.XI.1955 (holotype MRAC 151520 and 2 paratype females) (Coll. A. Fain). These specimens were associated with *M. numidae*. One additional female was found from the same host from Bugesera, Rwanda (Bird in Musée de Tervuren), it was associated with *M. gisagarenis*.

3. **Metacheletoides crinifer** spec. nov.

Female (fig. 20-24): Idiosoma 770  $\mu$  long and 250  $\mu$  wide. In 2 paratypes 840  $\mu$   $\times$  600  $\mu$  and 795  $\mu$   $\times$  500  $\mu$ . *Dorsum*: Propodonal shield trapezoidal, punctate and partly striated. Dorsal setae barbed, in posterior setae the barbs are less distinct. Setae *vi*, *ve*, *sci*, *sc e*, *d 1*, *d 2* and *d 3*, 175  $\mu$ , 240  $\mu$ , 400  $\mu$ , 470  $\mu$ , 480  $\mu$ , 155  $\mu$  and 570  $\mu$ . Setae *d 4* and *d 5* are missing. *Venter*: Coxae punctate, anterior coxae well formed. Vulva ventral. Gnathosoma large, palps relatively long. Palptibial spine rather narrow, 93  $\mu$  long, with 6 pointed subequal teeth at one side and 5 teeth at other side. Peritremes with 7 to 8 segments at each side. Legs narrow. Tarsus I 85-90  $\mu$  long, with 2 small claws 9  $\mu$  long and a solenidion 75  $\mu$  long with a thin bifid guard seta 25  $\mu$  long. Claws of tarsus II 30  $\mu$  long.

*Chaetotaxy of the idiosoma and legs*: as in the other species except that *d 5* is missing. *Solenidiotaxy*: as in *M. numidae*.

Male (fig. 25): Idiosoma 660  $\mu$  long and 390  $\mu$  wide. *Dorsum* as in female except that the setae *d 2* and *l 2* are much shorter (60-70  $\mu$ ). Genital orifice in the posterior region of opisthonotum. There are 5 pairs of genital setae: 2 long pairs ventral and 3 pairs shorter bifid dorsal around the genital orifice. Gnathosoma and legs as in female but the teeth on the palptibial spine are smaller.

*Host and locality.*

1. In the quills of the remiges of *Crinifer zonurus* (Cuculiformes, Musophagidae), Butare, XI.1954 and Gisagara, 25.IV.1955, both



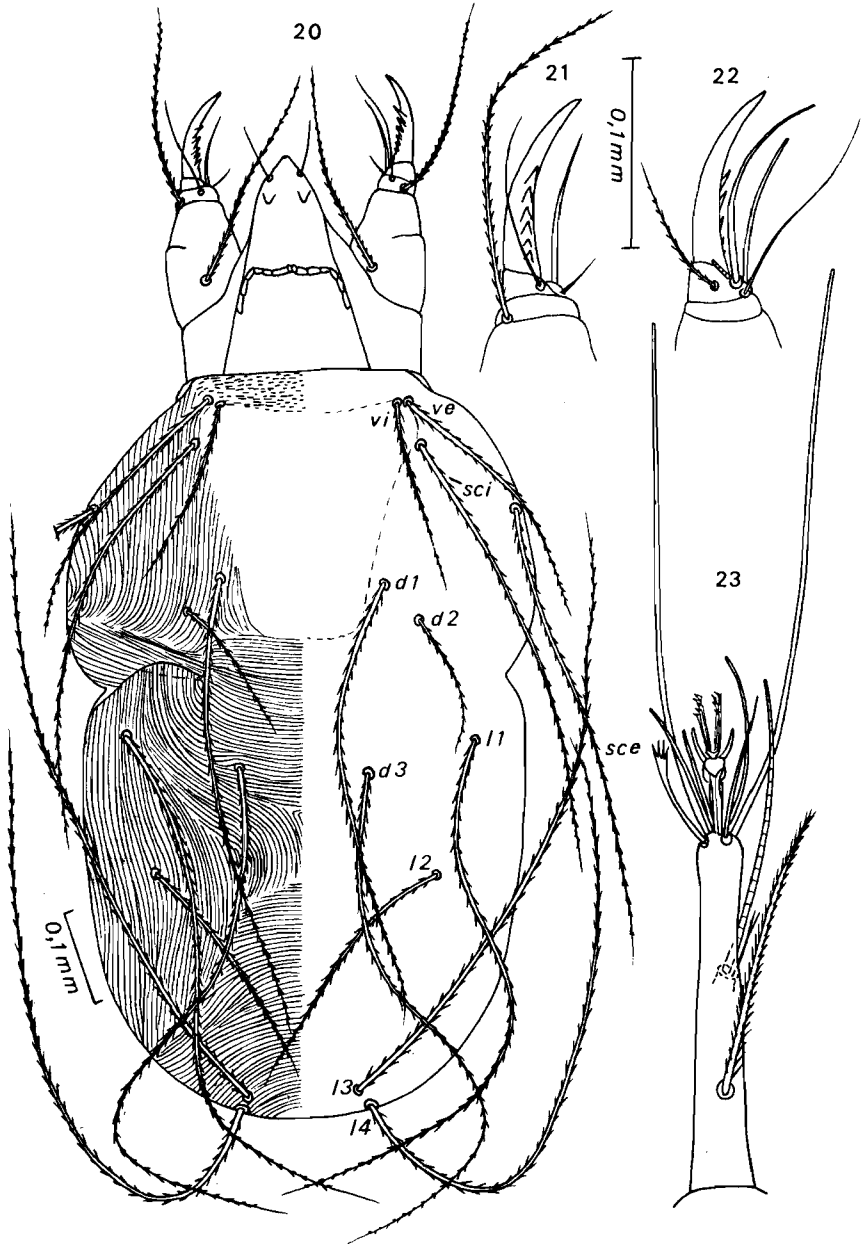


Fig. 20-23. — *Metacheletoides crinifer* sp. n. - Female, holotype:  
20. in dorsal view; - 21-22. extremity of palps (dorsally and ventrally); -  
23. tarsus I ventrally.

- localities in Rwanda (Holotype MRAC 151521 and 8 paratype females, 2 paratype males, 1 paratype nymph) (Coll. A. Fain).
2. In the feather quills of *Crinifer piscator*, Maroua, Cameroun. Bird in the Musée de Tervuren (7 paratype females). Other specimens (2 paratype females) from the same host Lama Kara, Togo, 11.VIII. 1968 (Mission Verheyen and al.).
  3. From feather quills of *Corythaixoides leucogaster*, Lotanoko, Zaïre. Bird collected on 8.VII.1926 (3 paratype females).

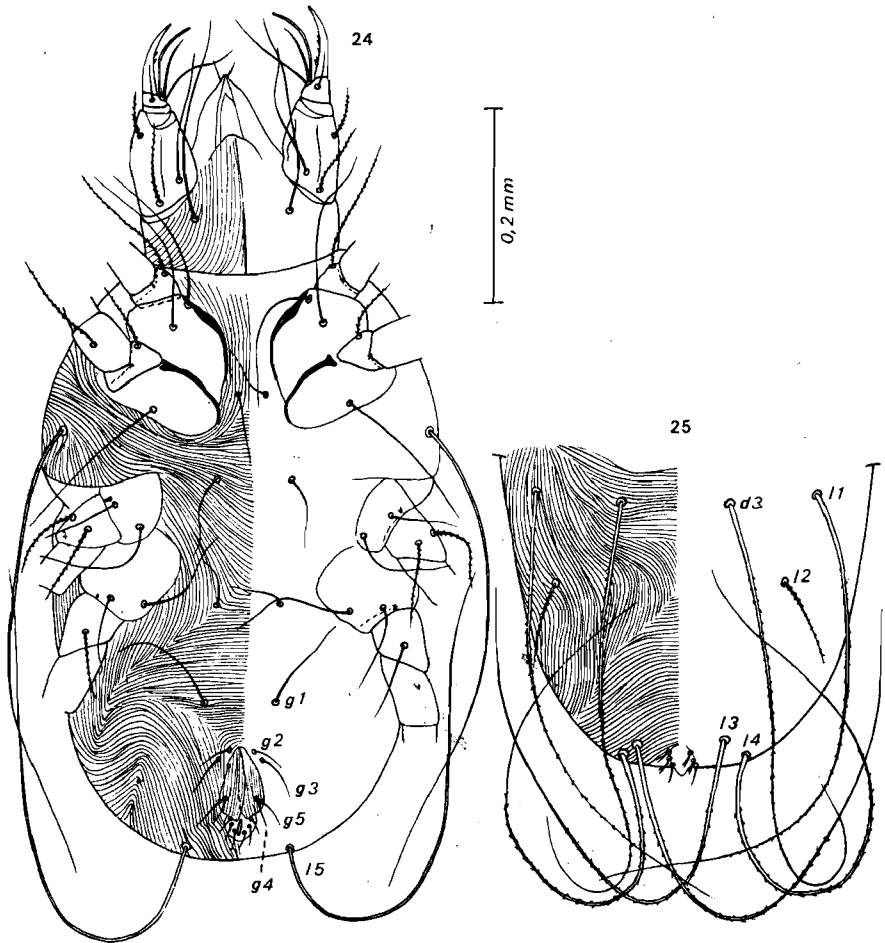


Fig. 24 - 25. — *Metacheletoides crinifer* sp. n. - 24. female holotype ventrally; - 25. male, opisthonotum.

4. *Metacheletoides gisagarensis* spec. nov.

This species was found mixed with *M. crinifer* in the same bird.

Female (fig. 26-29): Idiosoma 540  $\mu$  long and 345  $\mu$  wide. In 2 paratypes: 600  $\mu$   $\times$  360  $\mu$  and 525  $\mu$   $\times$  330  $\mu$ . *Dorsum*: Propodonotal shield large, rounded posteriorly, punctate and with very thin striations. Setae *vi*, *ve*, *sci*, *sc e*, *d 1*, *d 2*, *d 3*, 70  $\mu$ , 190  $\mu$ , 290  $\mu$ , 250  $\mu$ , 300  $\mu$ , 120  $\mu$  and 380  $\mu$ . Setae *ve* and *d 2* thin and barbed. Other setae either smooth or with short barbs mainly on their apical half. Setae *d 5* are missing. *Venter*: Only the coxae I-II are well sclerotized. Vulva ventral. Gnathosoma longer than wide. Apical spine of palptibia thick, 50  $\mu$  long with 4 unequal teeth, the apical tooth being much larger than the others. Peritreme with median part concave anteriorly, with 2  $\times$  6 segments. Legs narrow. Tarsus I 65  $\mu$  long, with a solenidion 60-65  $\mu$  long, flanked by a short and thin guard seta; it bears a pair of claws much smaller (3,5  $\mu$  long) than those of leg II (18  $\mu$ ).

Male: Allotype 375  $\mu$  long, 180  $\mu$  wide. *Dorsum* as in female but setae shorter. Genital orifice terminal. Aedeagus very narrow and short (45  $\mu$ ). There are 5 pairs of genital setae (2 long ventral and 3 around the genital orifice).

*Host and locality.*

1. In the quills of feathers of *Crinifer zonurus*, Butare, Rwanda, XI. 1954 (Holotype MRAC 151523 and 20 paratype females, allotype and 5 paratype males, 3 paratype nymphs). The typical slide contains the holotype female of *M. gisagarensis* and a paratype male of *M. crinifer* (Coll. A. Fain).
2. In the same habitat, from *Crinifer piscator*, Molegbe, Zaïre, 9.VIII. 1957 (2 paratype females). Bird in the Museum of Tervuren.
3. In the same habitat, from Lama Kara, Togo, 11.VIII.1968, Mission Verheyen (1 female and 1 male paratypes).

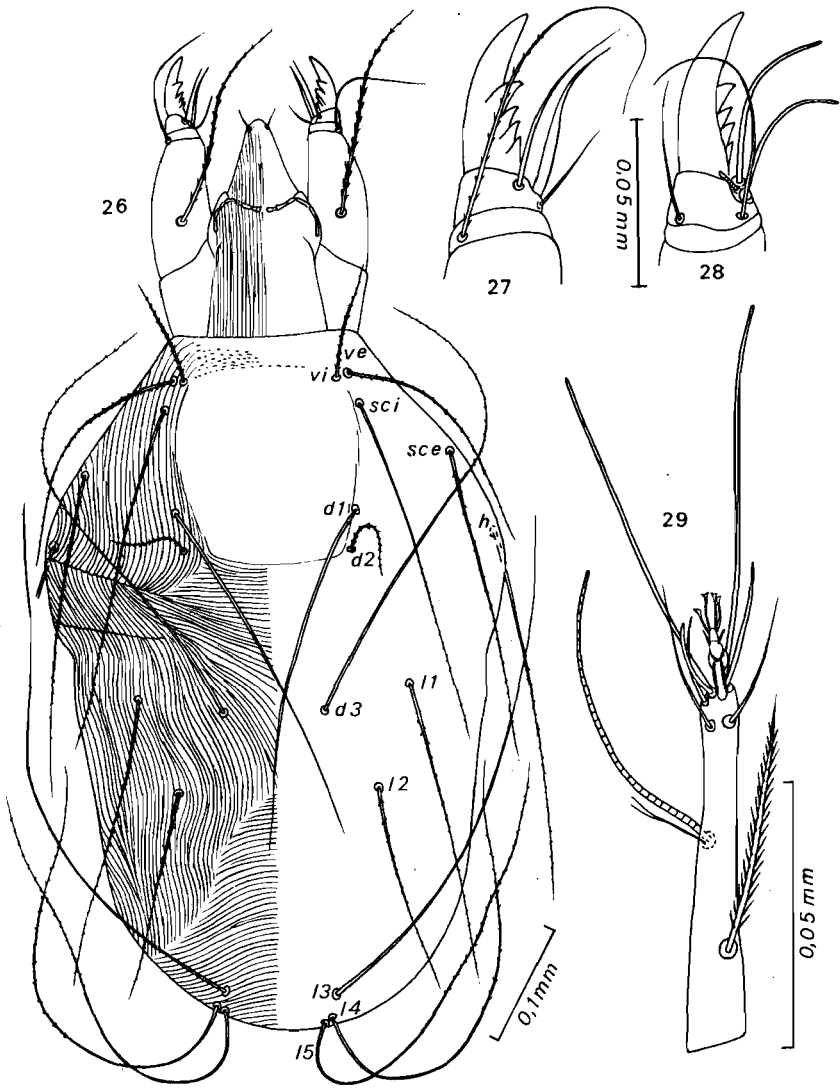


Fig. 26-29. — *Metacheletoides gisagarensis* sp. n. - Female, holotype:  
26. dorsally; - 27-28. extremity of palps (dorsally and ventrally);  
29. tarsus I ventrally.

Genus **CHELETOIDES** Oudemans, 1904

**Cheletoides chirunduensis** spec. nov.

This species is represented by a female and a nymph. It is distinguished from *Ch. uncinatus* Oud., so far the only species known in the genus, in both female and nymph by the situation of the tooth on the apical spine of the palptibia. In *Ch. uncinatus* this tooth is situated more close to the apex of the spine than to the base (fig. 33-34), while in *Ch. chirunduensis* the tooth is basal in situated approximately at the junction of the basal third and the apical two thirds of the spine.

Female (fig. 30-32): Idiosoma 525  $\mu$  long and 240  $\mu$  wide. Cuticle finely striated. Dorsum: Propodonal shield narrow, rectangular strongly attenuated posteriorly, completely striated with indistinct punctuation in its median area. All dorsal setae are shortly barbed. Setae *vi*, *ve*, *sci*, *sc e*, *d 1*, *d 2*, *d 3*, 45  $\mu$ , 130  $\mu$ , 300  $\mu$ , 50  $\mu$ , 200  $\mu$ , 30  $\mu$  and 340  $\mu$  long respectively. *Venter*: coxae III-IV small. Vulva ventral, widely open in the holotype. Legs narrow, all with a pair of claws and a rayed pulvillum. Claws of leg I 12  $\mu$  long, of legs II-IV 14-15  $\mu$  long. Tarsus I 74  $\mu$  long with a solenidion 42  $\mu$  long, the latter with a short guard seta. Gnathosoma longer than wide, palps relatively long. The spine of the palptibia is 39  $\mu$  long and bears one basal tooth. Palptarsus without a comb but with a thick seta bearing some indistinct denticulations on its inner surface. Peritreme in an inverted U, with 2  $\times$  5 segments.

*Chaetotaxy on body and legs*: as in *Metacheletoides*. The *d 5* are present.

*Nymph*: Very close, in most of characters to the female. Palptibial spine with a 1 tooth, situated in basal fourth of the spine.

*Host and locality*.

On *Numida meleagris*, Chirundu, Southern Rhodesia, 20.II.1964 (Holotype female and 1 paratype nymph) (Coll. F. Zumpt). Holotype MRAC 151525 in Musée of Tervuren.

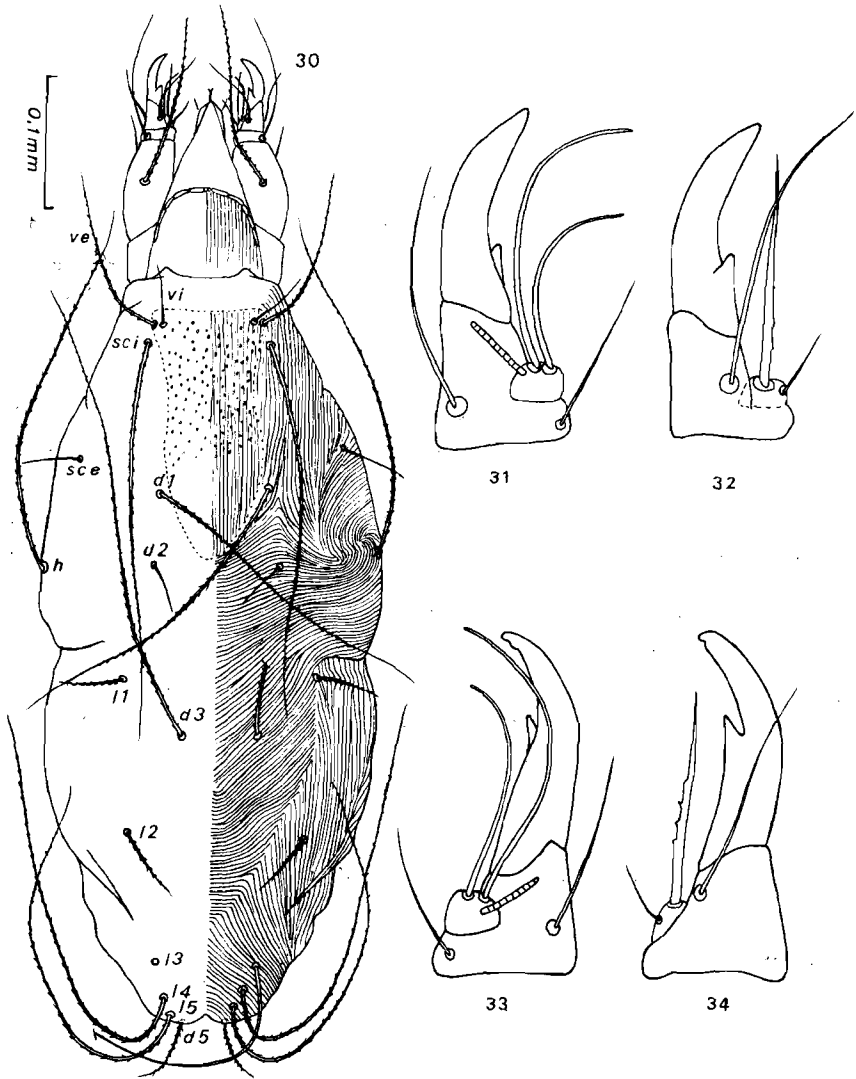


Fig. 30-34. — 30-32. *Cheletoides chirunduensis* sp. n. - Female, holotype: 30. dorsally; - 31-32. extremity of palps (ventrally and dorsally). 33-34. *Cheletoides uncinatus* Oud. - Female, holotype: extremity of palps (ventrally and dorsally).

#### ACKNOWLEDGEMENTS

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