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55	ENTOMOLOGIE	3

ACARI DOMUM MELIPONINARUM BRASILIENSIUM HABITANTES

IV. NEW ASTIGMATIC MITES FROM THE NEST OF THE BEE *PARTAMONA* sp. (MELIPONIDAE)

BY

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(With 24 textfigures)

INTRODUCTION

In a previous paper we have described a new family of mites (*Partamonacoptidae*) represented by two new genera and two new species, collected in the nests of bees of the genera *Partamona* and *Trigona* (Meliponidae) from Brasil (Fain & Rosa, 1982).

New investigations in nests of *Partamona* sp. have revealed the presence of other Astigmatic mites strongly different from the former and representing two new genera and four new species. These genera are aberrant by several characters, specially the very unusual structure of the tarsi, and they do not correspond to any known genus. We erect therefore a new family for them.

The holotypes of the new species are deposited in the Institut royal des Sciences naturelles de Belgique (IRSNB).

FAMILY MELIPONOCOPTIDAE FAM. NOV.

D e f i n i t i o n : Small mites with body in short oval. Cuticle smooth, with or without sejugal furrow. Dorsum with a propodosomal plate and with or without an hysteronotal plate.

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Venter: Epimeres I either thin and fused in a short sternum (genus *Meliponoecius*) or very short and thick and fused in a large and long sternum which is fused behind to the epimeres II (genus *Meliponocoptes*). Epimeres III-IV short, free. Genital organs situated between coxae III or IV. Anus ventro-terminal. Genital suckers long and narrow. Male without adanal or tarsal suckers. Copulatory papilla in female situated postero-dorsally. *Legs* short except in genus *Congovidia*. Tarsi I-II with two thick or very thick apico-lateral spines; a short sucker without claw is either present or absent. Tarsi III - IV longer than wide ending in a sucker without a claw or without suckers. Gnathosoma well developed. Chelicerae with the two chelae dentate. *Chaetotaxy*: Dorsal setae thin, either short or long except the *v i* which may be either spinous or foliate. Setae *v e* absent. Setae *h* either present or absent. Tibiae I and II with only one seta. Tarsi I with 3 solenidia.

Type genus: *Meliponocoptes* g.n.

Remarks: This family is well distinct from the Partamonacoptidae described recently (Fain & Rosa) by the very different structure of the legs, the absence of setae *v e*, the presence of only one seta on tibiae I-II and in the male the absence of adanal and tarsal suckers.

Recently Fain and Camerik (1977) have described the life cycle of a new species *Congovidia brasiliensis*, discovered in the nest of a wasp *Trypoxylon* (*Trypargilum*) *aestivale*, in Brasil. The adults of that species present a structure of the tarsi I-II similar as in our species; moreover the setae *v e* are absent and the tibiae I-II bear only one seta as in our species. We think therefore that the genus *Congovidia* Fain & Elsen, 1971 belongs also to the family Meliponocoptidae.

Key to the family *Meliponocoptidae*
(Females)

1. Tarsi III and IV with 3 apical spines and 3 simple thin setae. Basal part of epimeres I normal, not expanded . . . . . .genus *Congovidia* FAIN & ELSEN, 1971.
   Tarsi III and IV with only 3 simple thin setae . . . . . 2.
2. Epimeres I expanded and fused at their base forming a strong sclerite. Tarsi I-IV with a sucker . . . . . genus *Meliponocoptes* g.n.
   Epimeres I normal not expanded. Tarsi I-IV without suckers . . . . . genus *Meliponoecius* g.n.

Genus Meliponocoptes g. n.

Definition: With the characters given for the family. In both sexes the epimeres I are very thick and short and are fused in a long

sternum which is fused with epimeres II. Legs I-II short and thick in the female, narrow and much longer in the male. Setae *v i* spinous in female, very broadly foliate in the male.

Type species: *Meliponocoptes nidicolus* sp.n.

1. Meliponocoptes nidicolus sp. n.

Female: (figs. 1-6): Holotype 220 μ long (idiosoma) and 192 μ maximum wide. In two paratypes: 218 × 185 μ and 225 × 190 μ. *Dorsum:* propodonotal plate wider than long and bearing the setae *v i, sc i* and *sc e*. Hysteronotum with a large triangular pitted shield bearing the *d 2, d 3* and *d 4* setae. Copulatory papilla small, situated in the posterior part of dorsum.

Fig. 1. — *Meliponocoptes nidicolus* sp. n.: Female, ventrally.

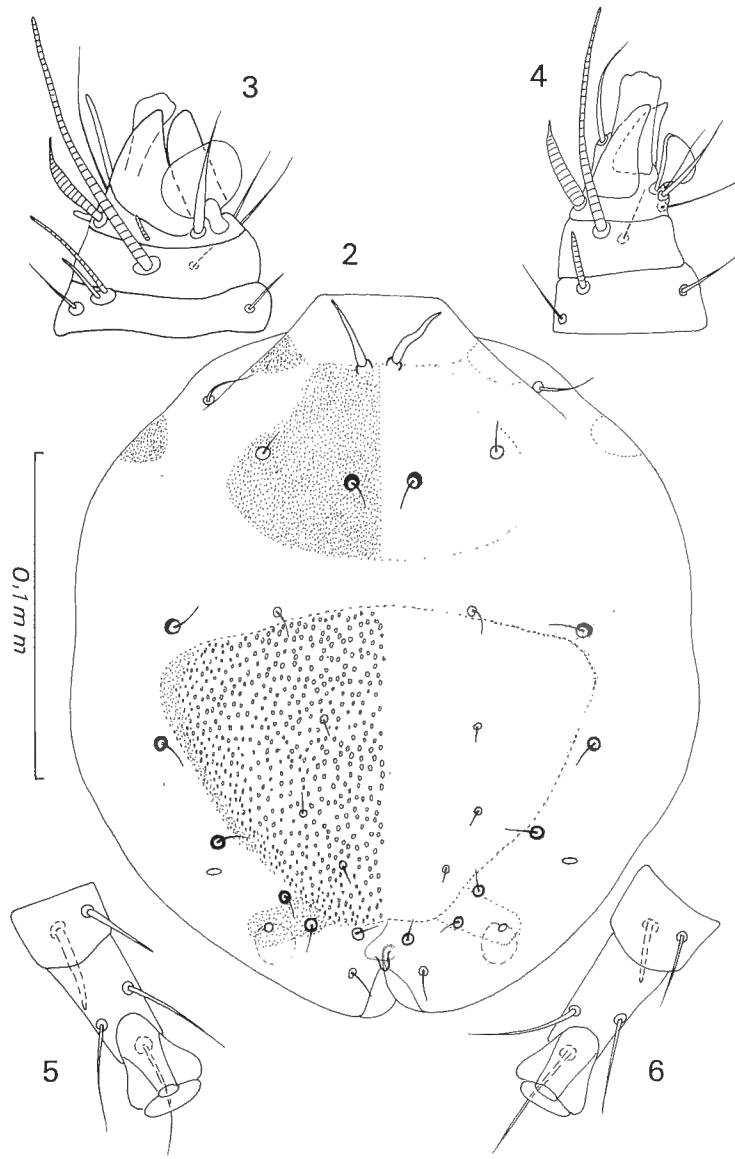

Fig. 2-6. — *Meliponocoptes nidicolus* sp. n. : Female, dorsally (2). Apical articles of leg I (3), leg II (4), leg III (5), leg IV (6).

V e n t e r : Epimeres I thick, fused, forming a strong sclerite slightly wider than long and with an anterior border excavated. This sclerite is prolonging posteriorly into a long sternum. Epimers III-IV almost fused. Vulva situated between coxae IV or slightly more anterior; epigynium small. Anus ventro-terminal. *Legs* : legs I-II short and thick; the leg I thicker than leg II, with all the segments wider than long. Legs III-IV narrower and longer than anterior ones. All tarsi with a short sucker but without a claw. Tarsi I-II very short bearing two very strong latero-apical spines and a ventra-apical seta modified into a fan-like chitinous membrane. *Gnathosoma* relatively small. Palps narrow. Chelicerae with two toothed chelae. *Chaetotaxy* : Setae *v i* thick, spinous. Other dorsal setae very short and thin. Are present the *sc* i, *sc e*, *sc x*, *d 1* to *d 5*, *l 1* to *l 5*, *a 3*. Ventrally : *cx I*, *cx III*, *sh*, *ga*, *gm*, *gp*, *a 1* and *a 2*. *Chaetotaxy of legs* : Tarsi I-II with 7 setae, of which 4 thin, 2 very strong spines and one ventro-apical membranous. Tarsi III-IV with 3 thin setae. Tibiae 1 -1 -1 -1. Genua 2 -2 -1 -0. Femora 1 -1 -0 -1. Trochanters 1 -1 -1 -0. *Solenidiotaxy* : Tarsus I with 3 solenidia and 1 famulus; tarsi II with 1 solenidion. Tibiae 1 -1 -1 -1. Genua 2 -1 -1 -0. *Male and immatures* : unknown.

H a b i t a t : Holotype and 2 paratypes female from nests of *Partamona* sp. (Meliponidae) at Lago Agua Fria, State of Para, on the right side of Trombetas river, 56°51'W,1°25'S, Brasil. Coll. J. M. F. Camargo. 13-15.II. 1979. Holotype in IRSNB.

2. Meliponocoptes scutatus sp. n.

F e m a l e (figs. 7-13) : Holotype 240 μ long, 240 μ wide. In two paratypes : 192 × 155 μ and 200 × 170 μ. Sejugal furrow well developed. *Dorsum* as in *M. nidicolus* but the hysteronotal shield is much larger and covers completely the hysteronotum.

V e n t e r : Epimeres as in *M. nidicolus*. Vulva slightly more anterior than in *M. nidicolus*, but this specimen is less flattened and that can explain this difference. The genital suckers are very lateral. Anus ventral. Copulatory papilla small, terminal. Legs and gnathosoma as in *M. nidicolus*.

C h a e t o t a x y : as in *M. nidicolus* but some setae (those situated dorso-laterally) are longer and all the anals are ventral.

R e m a r k : This species differs from *M. nidicolus* by the much larger size of the hysteronotal plate and the greater length of some dorsal setae.

H a b i t a t : Holotype and 4 paratypes female from nests of *Partamona* sp. at Lago Agua Fria — PA Brasil. Coll. G. M. F. Camargo. 15.II. 1979. Holotype in IRSNB.

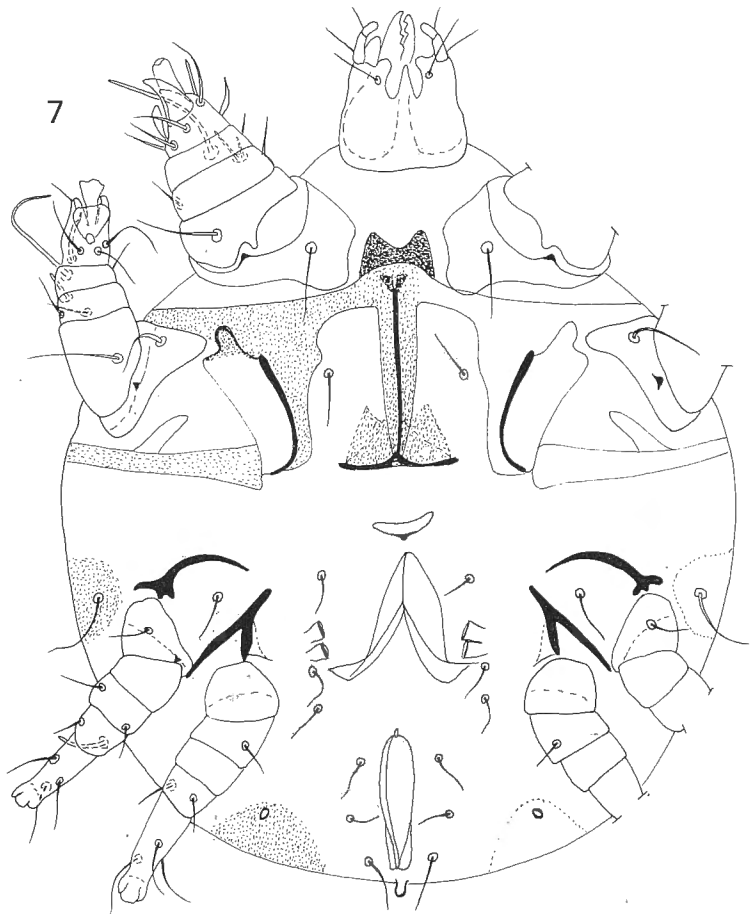

Fig. 7. — *Meliponocoptes scutatus* sp. n. : Female, ventrally.

3. Meliponocoptes orphanus sp. n.

This species is known only from male specimens. Its attribution to the genus *Meliponocoptes* is provisional. It presents the same structure of the tarsi and of the epimeres I as in this genus however the legs are much longer and narrower than in the females of the two known species in that genus. Moreover the dorsal structure and the shape of setae *vi* are quite different from those of the female specimens. We prefer therefore maintain it in this genus but in a distinct species until new specimens of these mites are discovered.

M a l e (figs. 14-20) : Holotype 198 μ long (idiosoma) and 146 μ maximum wide. In a paratype 210 $\times$ 165 μ. *Dorsum* : Cuticle smooth and flat except in some places which present surelevated structures. There is one

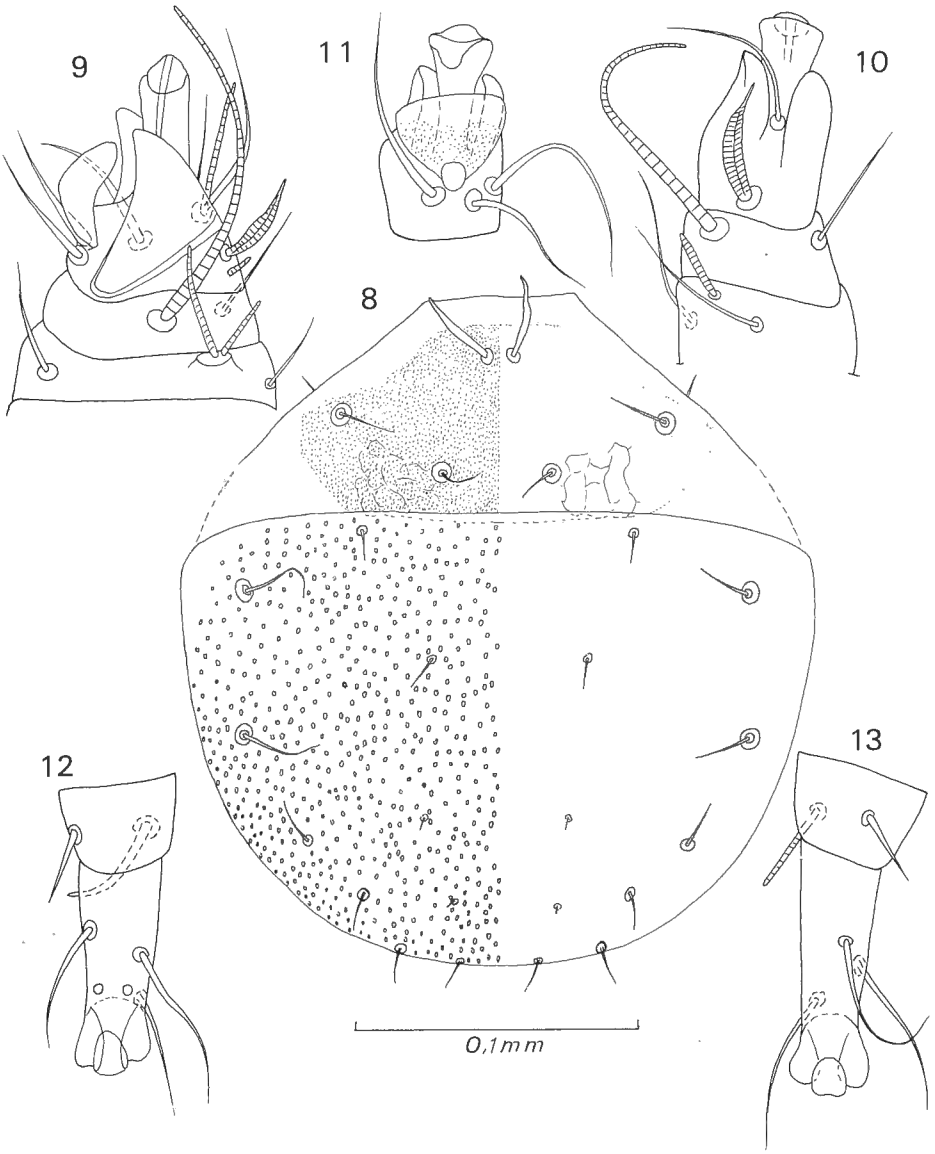

Fig. 8-13. — *Meliponocoptes scutatus* sp. n. : Female, dorsally (8).
Apical articles of leg I (9), leg II dorsaly (10), leg II ventrally (11), leg III (12), leg IV (13).

Fig. 14. — *Meliponocoptes orphanus* sp. n. : Male, ventrally.

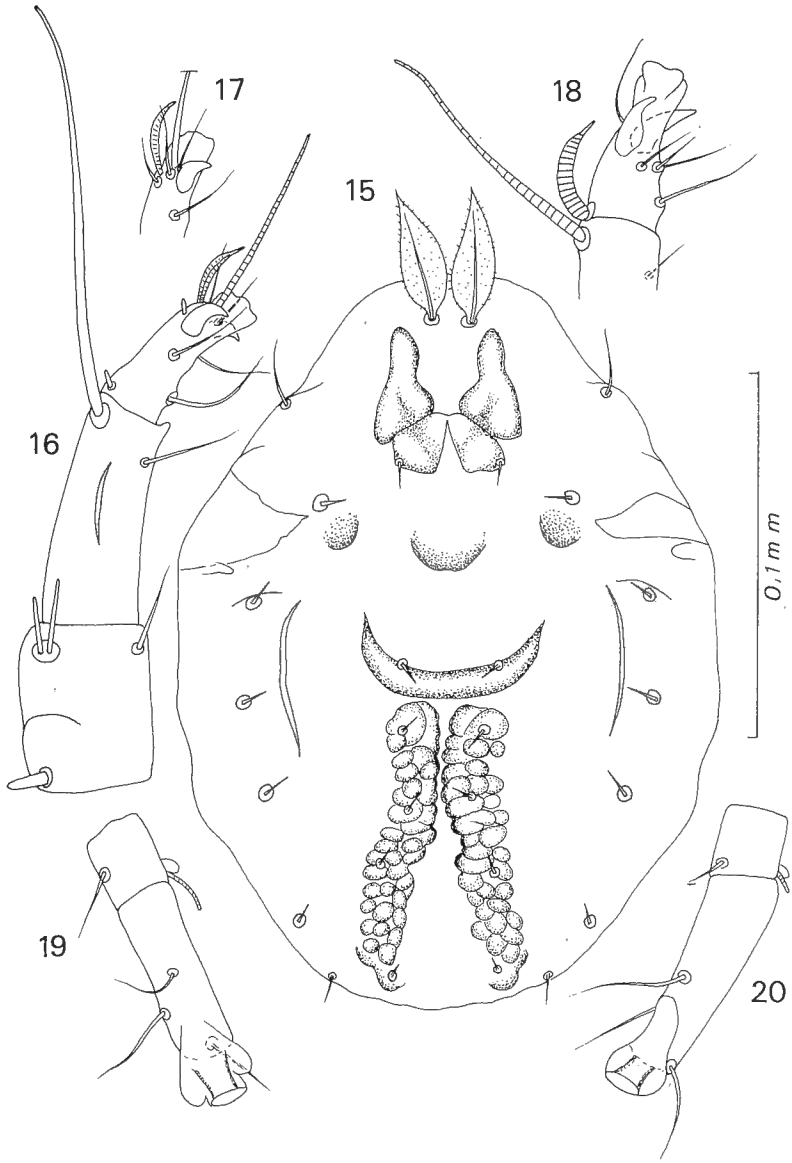

Fig. 15-20. — *Meliponocoptes orphanus* sp. n. : Male, dorsally (15).
Apical articles of leg I dorso-laterally (16), tarsus I ventro-laterally (17), leg II dorsally (18), leg III (19), leg IV (20).

large median surelevated structure in propodonotum, three small rounded in the anterior part of hysteronotum, one large median and concave in the middle of the hysteronotum and two large paramedian in the posterior half of hysteronotum. *Venter* : Epimeres I very large and thick, wider than long; sternum long fused posteriorly to epimeres and epimerites II. Epimeres III free. Penis long and narrow. Absence of copulatory (adanal and of tarsal) suckers. In the holotype the cuticle bearing the *gm* setae is teared and displaced laterally in front of epimeres III. *Legs* long, specially the tibiae. All tarsi with a short sucker without claw. Tarsi I-II with two thick apico-lateral spines. Gnathosoma with the base widened and hook like laterally. *Chaetotaxy* : Dorsum as in the females of other species of the genus. *Venter* : There are two pairs of genital and two pairs of anal setae. *Legs* : Tarsi I-II with 2 thick apico-lateral spines and 6 thin setae. Tarsi III-IV with 3 thin setae. Tibiae with 1 -1 -1 -1 setae. *Solenidiotaxy* : Tarsus I with a thick spindle-shaped subapical ω *1*; ω *3* is cylindrical and apical.

Habitat: Holotype and 2 paratypes male from nests of *Partamona* sp., Lago Agua Fria, Brasil. Coll. J. M. F. Camargo, 15-II.1979. Holotype in the IRSNB.

Genus Meliponoecius g. n.

Definition: With the characters of the family Meliponocoptidae. It differs from genus *Meliponocoptes* by the following characters : Epimeres I normal, fused in midline in a short sternum; complete absence of suckers on tarsi I-IV; dorsal setae longer, the *v i* is thin and long.

Type species: *Meliponoecius flechtmanni* sp.n.

Meliponoecius flechtmanni sp. n.

This species is named for Dr. C. H. W. FLECHTMANN, the prominent Brasilian Acarologist.

Female (figs. 21-24) : Holotype 285 μ long (idiosoma) and 220 μ wide. In two paratypes : 390 $\times$ 300 μ (crushed) and 315 $\times$ 250 μ. Sejugal furrow weakly developed.

Dorsum: Propodonotal shield large, bearing the *v i* setae. Hysteronotal shield pitted, bearing *d 2* and *d 3*, setae. Copulatory papilla situated at short distance from posterior margin. *Venter* : Epimeres I fused, other epimeres free. Vulva between coxae IV. Genital suckers narrow. Anus termino-ventral. Legs short. Tarsi without suckers; tarsi I-II without a membranous ventro-apical seta. Tarsi III-IV truncate. The apico-lateral

spines of anterior tarsi are striated and present 3 rounded processes. *Chaetotaxy* : As in genus *Meliponocoptes* but the setae are longer. *Legs :* Tarsi I-II with 2 thick spines and 6 simple setae. Tarsi III-IV with 3 simple setae. Tibiae with 1 -1 -1 -1 setae. *Solenidiotaxy* : Tarsi with 3-1-0-0 solenidia. Genua 2 -1 -1 -0.

Male and immatures: unknown.

Habitat: Holotype and 4 paratypes female and 1 tritonymph from nests of *Partamona* sp., Lago Agua Fria, Brasil. (Coll. J. M. F. Camargo, 15.II.1979). Holotype in IRSNB.

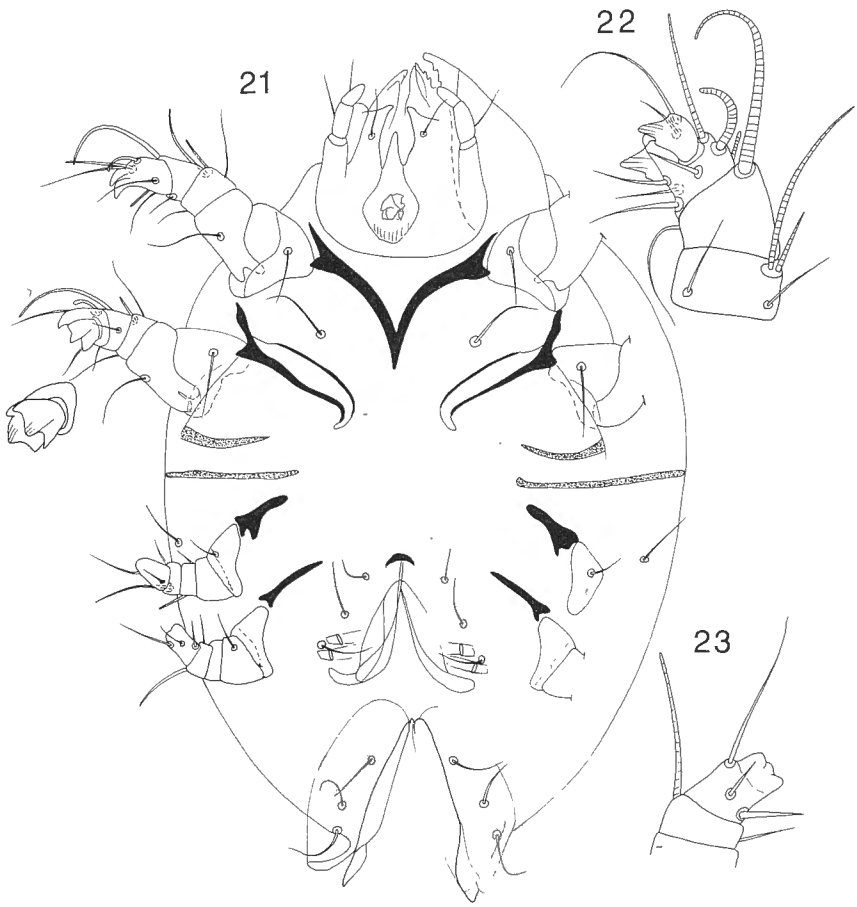

Fig. 21-23. — *Meliponoecius flechtmanni* sp. n. : Female, ventrally (21). Apical articles of legs I (22) and of leg IV (23).

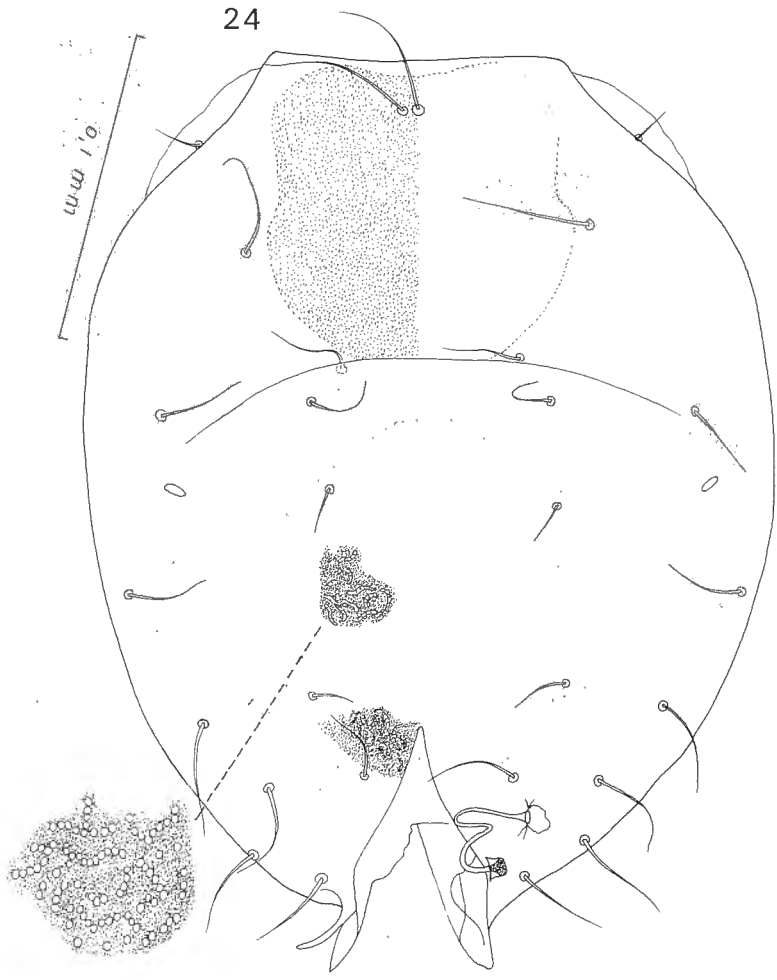

Fig. 24. — *Meliponoecius flechtmanni* sp. n. : Female, dorsally.

SUMMARY

Two new genera of mites, *Meliponocoptes* and *Meliponoecius* (Acari, Astigmata), represented by four new species, *Meliponocoptes nidicolus*, *M. scutatus* and *M. orphanus* and *Meliponoecius flechtmanni*, are described from the nests of Brasilian bees of the genus *Partamona*. A new family, Meliponocoptidae, is created for these genera and for the genus *Congovidia* FAIN and ELSEN, 1971.

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