ACARI DOMUM MELIPONINARUM BRASILIENSIIUM HABITANTES

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   FROM THE NESTS OF BEES IN BRASIL

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The unusual mites that are described herein were collected from bees nests in Brasil. They represent two new genera and two new species: Partamonacoptes brasiliensis g.n., sp.n. and Trigonacoptes camargoi g.n., sp.n. These genera cannot be included in any known family and we erect for them a new family Partamonacoptidae.

FAMILY PARTAMONACOPTIDAE FAM. NOV.

Definition: Body flattened, in short oval or diamond-shaped. Cuticle not striated but thick and sclerotized. A small propodonotal shield is present in adults of Trigonacoptes and in nymphs of Partamonacoptes. A rounded tegmen covers the gnathosoma which is either completely or incompletely ventral in non-compressed specimens. Vulva and penis very posterior, situated between the trochanters IV. Genital suckers large, situated laterally. Male with a pair of adanal suckers and two tarsal suckers situated at the base of the tarsus IV. Posterior legs widely separated from anterior legs and inserted almost laterally. All the tarsi much longer

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than the other segments, they are strongly sclerotized and almost cylindrical. Tarsi ending in a sucker without a claw except in the nymphs and the larvae of *Partamonacoptes* whose the legs I and II bear a short and thick claw. Gnathosoma relatively small, trapezoidal. Chelicerae small with two equal poorly toothed chelae. Some or all dorsal setae are very thick and barbed. The *vi* are very strong, and barbed spines. Tarsi I with 3 solenidia, the *vi* being apical, the *v1* and *v2* are basal and very small.

**Type genus**: *Partamonacoptes* g.n.

**Remarks**: The family *Partamonacoptidae* is the most close to the *Canestriniidae* Berlese, 1884 and the *Heterocoptidae* Fain, 1967. It differs from these families by the shape of the ambulacra, the posterior situation of the genital organs, the shape, narrow and subcylindrical, of the tarsi. For the setal nomenclature used here see Fain, 1963.

**Genus *Partamonacoptes* g. n.**

**Definition**: With the characters given for the family. Body more or less diamondshaped. Dorsal cuticle covered with tubercles. A propodonalternal shield is absent in the adults, it is present but small in the nymphs. Epimeres I fused in a short sternum, other epimeres free. Vulva large, in an inverted Y, very close to the anus; genital suckers very lateral; copulatory papilla small, terminal. Tarsi narrow, bearing a complicate sucker presenting 2 paramedian processes and no claws. In the nymphs and the larvae the anterior legs bear a thick and short claw. Setae of body: All the dorsal setae (except *se e* which are microsetae) are very thick (about 30 μ wide) and long cylindro-conical and barbed spines. Are present the following setae: *vi, ve, si, se e, s cx, h, d 2, d 3, d 4, d 5, l 1, l 2, l 3, l 5, sh, cx 1, cx III, g a, g m, g p*. There are 6 pairs of anal setae. **Leg chaetotaxy** (legs I-IV) : Trochanters 1-1-1-0 (simple setae). Femora 1-1-0-1 (all simple setae). Genua 2-2-1-0 (very strong barbed spines). Tibiae 2-2-1-1- (strong barbed spines). Tarsi 10-10-7 (or 8)-8 (simple setae). **Solenidiotaxy**: Tarsi 3-1-0-0. Tibiae 1-1-1-1. Genua 1-1-1-0.

**Type species**: *Partamonacoptes brasiliensis* spec. nov.

**Partamonacoptes brasiliensis** sp. n.

**Female** (figs. 1-6): Holotype 665 μ long, 600 μ wide (maximum). With characters given for the genus. Length of *vi, d 5* and *l 5* 135 μ, width 30 μ. On ventral surface between legs III and IV there is a pair of paramedian sclerites. There is a short rounded copulatory papilla in termino-median situation. Bursa short.
Male (figs 10-12): Length and width in two paratypes 606 μ long and 600 μ wide and 600 × 585 μ. Dorsum as in female. Epimeres as in female. Penis thick, short, curved. Anus with 2 adanal poorly sclerotized copulatory suckers 18 μ wide. There are 3 pairs of adanal setae. Legs as in the female. There are 2 relatively large copulatory suckers at the base of tarsus IV, very close to the tibia.

Tritonymph (figs. 7-9): Length 590 μ, width 570 μ. Dorsum as in the female. Venter as in female but without a vulva. In front of the gnathosoma there is a thick sclerotized ring in an inverted U. Chaetotaxy of legs as in female but some spines are longer. Anus postero-ventral with
Fig. 2-9. — *Partamonacotes brasiliensis* sp. n.

Holotype female: ventral view (2); apex of tarsus I in ventral (3) and dorsal (4) view; base of tarsus I dorsally (5); apex of tarsus IV ventrally (6).

Tritonymph: tegmen (7); gnathosoma ventrally (8); apical half of tarsus I ventrally (9).

3 pairs of setae. Tarsi I-II with the same type of sucker but with in addition a thick claw.

**Protonymph:** Length 500 \( \mu \), width 465 \( \mu \). Same general aspect as tritonymph but without trochanteral setae and solenidion \( \omega 3 \), and with only one pair of genital suckers.
Fig. 10-12. — *Partamonacoptes brasiliensis* sp. n.
Paratype male in ventral view (10); posterior extremity in dorsal view (11); basal part of tarsus IV showing the copulatory suckers (12).
La r v a: Length 420 μ, width 390 μ. Same general aspect as for the protonymph but with 3 pairs of legs. There is only one pair of anal setae and no genital suckers. The dorsal setae are very difficult to observe but the l3, d4 and l5 are probably missing.

L o c a l i t y: In the nest of a bee Partamona sp.n. (Meliponidae), Lago Agua Fria, Brasil, P. A. Coll. J. M. F. Camargo, 15.II.1979 (Holotype female, Paratypes, 7 females, 4 males, 5 tritonymphs, 12 protonymphs and 4 larvae. Holotype à l’Institut royal des Sciences naturelles de Belgique).

Genus Trigonacoptes g. n.

D e f i n i t i o n: With the characters of the family. Dorsal cuticle thick, sclerotized, without tubercles. A small punctate propodonotal shield and a ventral median punctate shield are present in both sexes. Epimeres and genital organs as in Partamonacoptes but copulatory papilla is dorsal, between d3 and d4. In adults and nymphs the tarsi are long and cylindrical, only slightly narrower than the tibiae, ending in a small not modified sucker without a claw. Setae of body: Dorsal setae: vi are not-barbed spines, sc i, sc e, d 5 l 2 and l 3 are thick (4,5-5 μ wide), barbed in their apical half and 35 to 50 μ long. Other dorsal setae (ve, l 1, d 1 to d 4) very small. The l 4 and l 5 are ventro-terminal in female and ventral in male and small. The h and sh setae are ventral. The ga setae are situated in the middle of the venter, they did not follow the genital organs in their migration in the posterior region of the body. Orifice of the « oil-gland » close to setae l 1. Setae of legs (I-IV): Trochanters and femora as in Partamonacoptes. Genua I-II with one thin seta and one spine, genua III with 1 spine. Tibiae I-II with 2 barbed spines, tibiae III-IV with 1 large barbed spine. Tarsi 10-10-7 (or 8)-7 (or 8). Solenidiotaxy: as in Partamonacoptes.

T y p e s p e c i e s: Trigonacoptes camargoi spec. nov.

Trigonacoptes camargoi sp. n.

This species is named for Dr. M. Camargo who collected these mites.

F e m a l e (figs. 13-14): Holotype 204 μ long (idiosoma), 192 μ wide. In a paratype 190 μ long and 175 μ wide. With the characters given for the genus. In our two specimens strongly flattened and partly crushed the gnathosoma is terminal however in a well-preserved male the gnathosoma is almost completely ventral. There are 3 pairs of anal setae.

M a l e (figs. 15-17): Length 189 μ, width 141 μ. Dorsum as in female. Epimeres as in female. Genital organ 22 μ long, attenuated apically. Adanal suckers 9 μ diameter. There are 3 pairs of anal setae. The setae l 4 and l 5
are ventral. Tarsi IV with a pair of suckers situated at the base of the tarsus.

**Tritonymph: 175 μ long, 135 μ wide.** General aspect and dorsal chaetotaxy as in the adults. Tarsal suckers without a claw. Anal area with 5 pairs of setae.

![Tritonymph diagram](image)

**Fig. 13-14. — Trigonacoptes camargoi** sp. n.

Holotype female: hysterogaster (13); bursa copulatrix and base of spermatheca (14).

**Locality:** In the nest of a bee *Trigona (Trigona) chanchamyoensis* Schwarz (Meliponidae), Municipality of Tanari, State of Para, Brasil. (Coll. J. M. F. Camargo, 21.1.1979). Holotype and 3 paratype female, 3 paratypes male, 2 paratypes tritonymph. Holotype à l'Institut royal des Sciences naturelles de Belgique.
Fig. 15. — *Trigonacoptes camargoi* sp. n.
Paratype male in dorsal view.
Fig. 16-17. — *Trigonacoptes camargoi* sp. n.
Paratype male in ventral view (16);
apical part of tarsus IV showing the copulatory suckers (17).
SUMMARY

The authors describe two new genera and species Partamonacoptes brasiliensis g.n., sp.n. and Trigonacoptes camargoi g.n., sp.n. forming a new family Partamonacoptidae of Astigmatic mites, from nests of bees, in Brasil.

REFERENCES

FAIN, A.