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A REDESCRIPTION OF *FORCELLINIA FAINI* DELFINADO-BAKER AND BAKER, 1989 (ACARI: ACARIDAE)

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ABSTRACT. A redescription of *Forcellinia faini* D-B & B., collected on the ant *Liometopum occidentale* var. *luctuosum* is made, and some notes on the biology are given.
KEY WORDS: Taxonomy, Acaridae, *Forcellinia*, redescription, Ant, Formicidae. Mexico.

RESUMEN Se redescribe *Forcellinia faini* D-B & B., colectada en la hormiga *Liometopum occidentale* var. *luctuosum* y se dan algunas notas sobre la biología.
PALABRAS CLAVE: Taxonomía, Acaridae, redescripción, *Forcellinia*, hormiga, Formicidae, México.

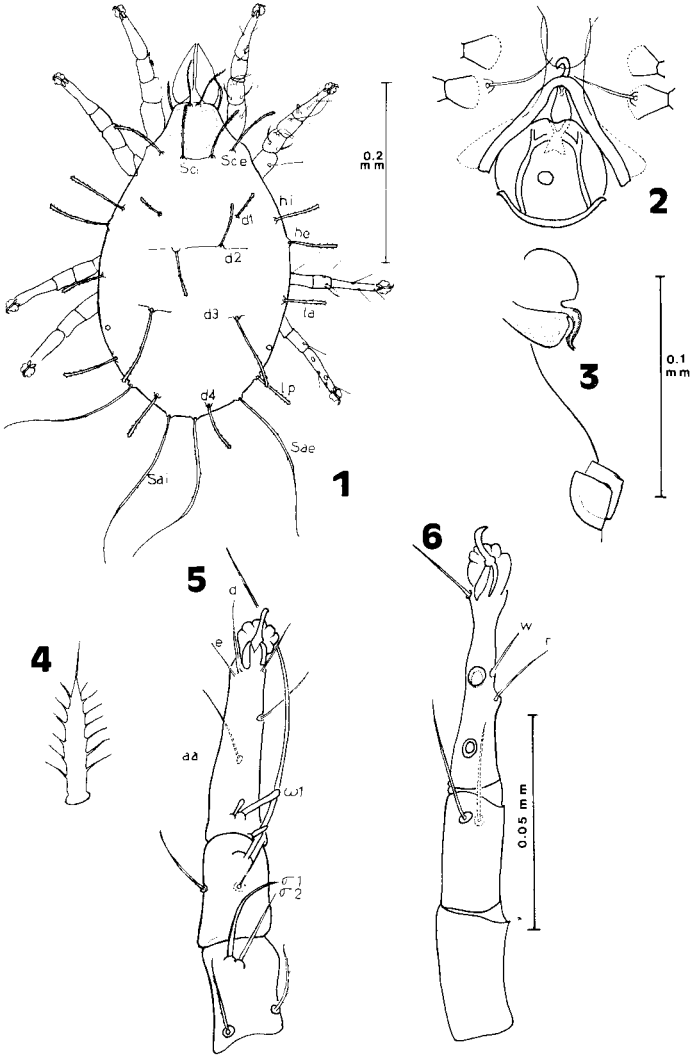
Oudemans (1924) created the genus *Forcellinia* for *Tyroglyphus wasmanni* and Oudemans (1927) erected the new family Forcelliniidae for this genus. Fain (1987) indicates that the genus *Forcellinia* contains 15 apparently valid species. Among them 3 are represented by both adults and hypopi (*F. wasmanni* (Moniez), *F. fuliginos* (Moniez) and *F. galleriella* Wommerley), 3 only by adults (*F. diamesa* Zachvatkin, *F. breviseta* Volgin and Dzhumaev, and *F. turkmenica* Volgin and Dzhumaev) and 9 only by hypopi. It is possible that some of the latter actually belong to other genera (*Tyrophagus, Mycetoglyphus*, etc.). Almost all these species were found in nests of ants or their hypopi fixed to the ants. Fain (1987) gave the general characters of the hypopi of the *Forcellinia*-type as follows: Dorsum strongly convex; anterior and lateral margins not specially thin or wide and resembling more the *Sancassania* or *Rhizoglyphus* types than the *Cosmoglyphus* or *Garsaultia*-types; sternum as long as epimera II. Coxae I and II not extending behind the posterior limits of sternum or epimera II. Coxae III and IV separate in the midline. Setae *cx* I and *cx* III are simple conoids; setae *gp* are bilobate conoids. Suctorial plate well developed with the lateral conoids situated far in front of the posterial suckers. Tarsi I-IV with 9-9-8-8 or 7-7-8-8 setae. A saucerlike seta is present on tarsus I and is not always present on tarsus II.

Also, the assigned hypopi of the *Forcellinia*-type have been observed only in the following species: *T. formicetorum; Mycetoglyphus fungivorus* and *Forcellinia* (syn. *Dorylacarus* Mahunka 1979)(After Fain 1987).

Forcellinia faini Delfinado Baker and Baker
(Figs. 1-11)

Forcellinia faini Delfinado Baker and Baker, 1989. *Amer. Bee. Jour.* 129(2): 127-128.

REDESCRIPTION: Dorsal setae on small tubercles, setae d3 longer. Female cuticle between setae d3 and d4 furrowed. Tarsus IV of the male with two tarsal suckers near the base of the segment. The palposoma of the hypopus is twice as long as broad. Suctorial plate as long as broad. Foliate setae not on the tarsi.



Figs. 1-6 . Male. 1. Dorsal view. 2. Genital opening. 3. Edeago and anal suckers. 4. Supracoxal seta. 5. Tarsus, tibia genu I. 6. Tarsus, tibia, genu IV.

MALE (Figs. 1-6) (All measurements in microns (μ)): Length of idiosoma 350, width 185. Shape oval. Color opal white.

Dorsum. With a quadrangulate propodosomal shield with posterior margin concave. Shield quitinization difficult to see in some specimens. No eyes, 12 pairs of clavate setae, distal third pectinate, (the following nomenclature is based on Hughes (1979)). Dorsal setae on small tubercles. *Vi* 40, *Ve.* 37, *Sci* 60, *Sce* 74, *d*1 40, *d*2 50, *d*3 111, *d*4 72, *hi* 62, *he* 65, *la* 49, *lp* 60. Sacral setae differ from dorsals; these are long, slender tapering whip-like. Chelicerae with three teeth on each digit. Palpi two segmented.

Venter: Epimera of the leg I jointed medially to form a short sternum, epimera of the other legs free lightly sclerotized. The venter of the body bears fewer and simpler setae. Coxae I, III and IV each with a seta, coxae II without seta. Genital opening between coxae IV, with three pairs of genitals surrounding the genital opening. Aedeagus sigmoid, 19 long as figured 3. Anal opening with one pair of pre-anal and 3 pairs of post-anal setae: *pa*1 40, *pa*2 71, *pa*3 100. With paired suckers at each side of anal slit. Lateral. supracoxal seta branched as in Fig. 4.

Legs. Short and stout. Tarsi with short caruncle and long claw, tarsus terminates in a single claw with two sclerites. Tarsus I, solenidion omega I long, stout and slightly expanded distally, *aa* is distal omega, omega3 and *d*. Genua I sigma longer than sigma 2. Tarsus IV shorter than combined length of genua and tibia, setae *d* and *e* sucker-like, near to the base of the segment, and seta *e* arises at about the same level of *w* near to the midway along the tarsus.

FEMALE (Figs. 7-9): Length of idiosoma 431, width 254.

Dorsum. The arrangement of the dorsal setae of the idiosoma is the same as that the male, but the setae are usually more sparsely pectinate. The cuticle between setae *d*3 and *d*4 furrowed.

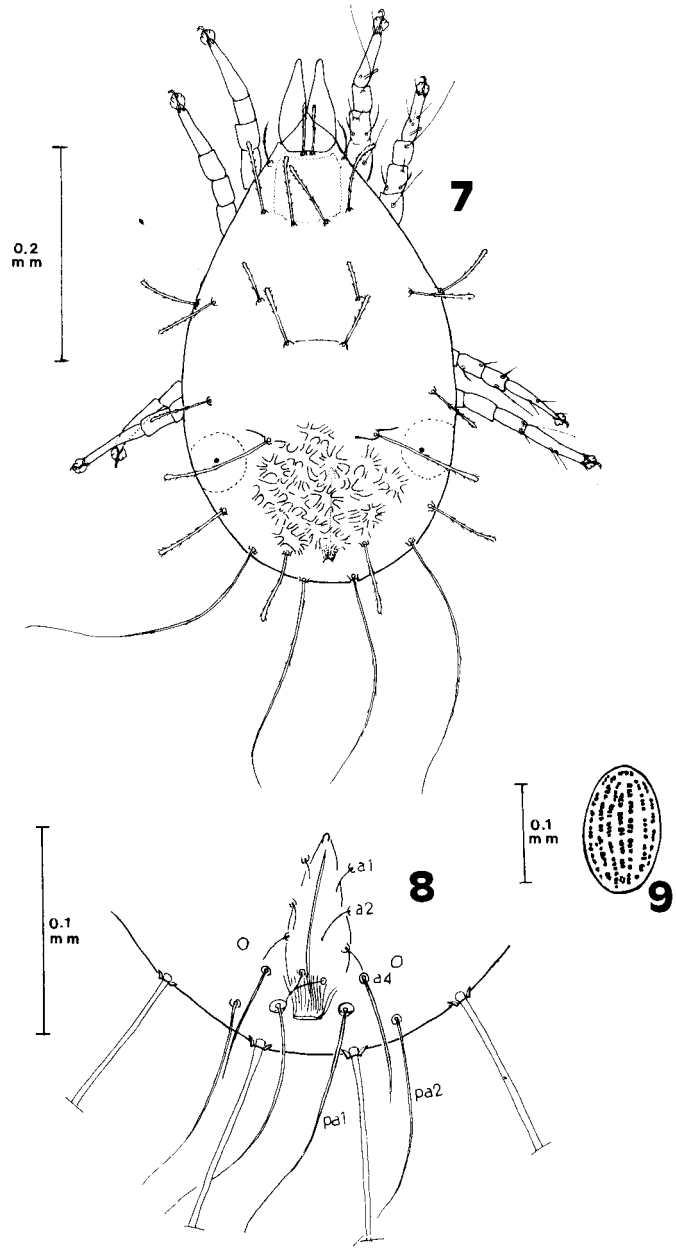
Venter. Genital opening between coxae III and IV. Epimera as in male. Length of anal opening 64, with five surrounding pair of setae: *a*1 18, *a*2 20, *a*3 24, *a*4 107, *a*5 33. Two pairs of long whip-like, lightly pectinate postanal setae.

Legs. Tarsi I-IV 48-48-50-60 long respectively; tibia I-IV 24-20-24-30; genua I-IV 28-24-12-36.

TRITONYMPH: Length of idiosoma 279, width 162. The arrangement of the dorsal setae of the idiosoma is the same except without furrows on the cuticle between coxae III and IV.

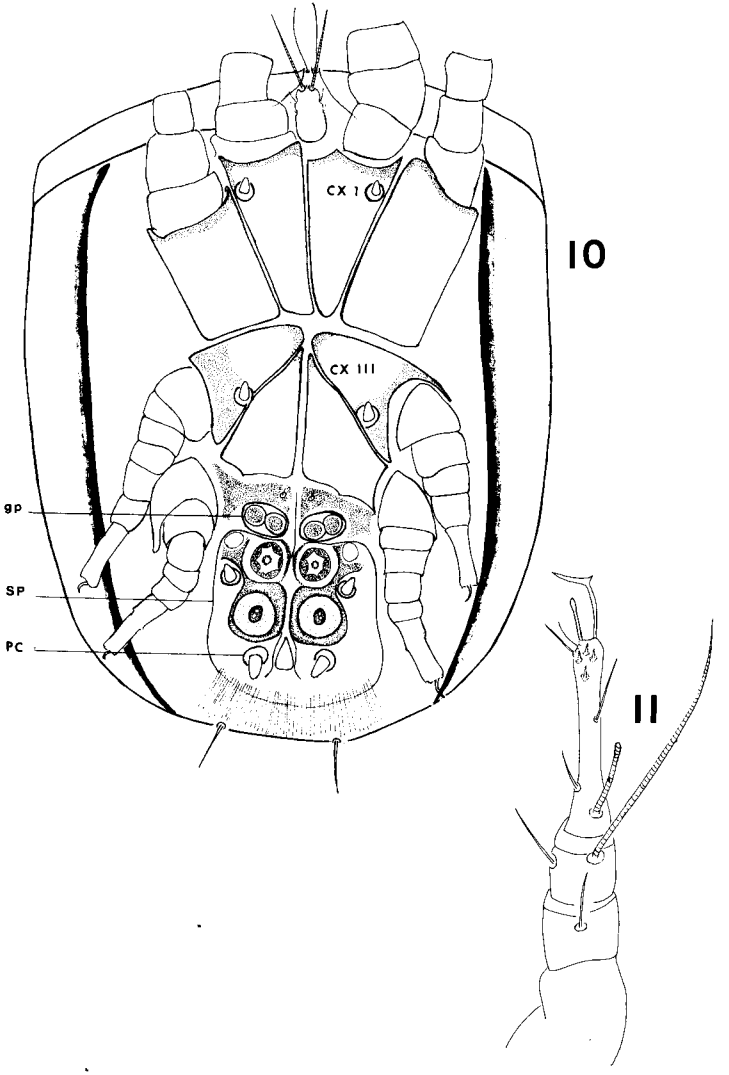
Venter: One pair of anal setae and two pairs of post-anals.

HYPOPUS (Figs. 10-11): Length 172 with palposoma 180. Dorsum strongly convex; body extending slightly over the basal segments of legs I-II and almost completely over the palposoma. All dorsal setae very short. Legs relatively long. Venter: Palposoma twice as long as wide. Sternum long extending to the same level as epimera II. Coxal fields I-II not extending behind these epimera. Coxal fields III-IV separated in the midline. Setae *cx* I, *cx* III and *gp* with a conoids form; also *gp* are bilobate. Lateral conoids of suctorial plate in lateral posterior suckers. Cuticle behind the suctorial plate longitudinally striated. Legs: Tarsi I apically with a strong dorsal saucer like seta, foliate setae lacking.



Figs. 7-9. Female. 7. Dorsal view. 8. Anal opening. 9. Egg .

PROTONYMPH: Length of idiosoma 228, width 150. The arrangement of the dorsal setae of the idiosoma without fourth pair of the dorsal setae (d4). *Venter*: Anal opening with 3 pairs of the anal setae and one pair of postanal. Legs: With six articles, coxae I fused.



Figs. 10-11. Hypopus. 10. Ventral view. Palposoma (p); seta gp (bilobate). Suctorial plate.(sp); posterior conoids (pc). 11. Apical segments of the leg I, dorsal

LARVA: Length of idiosoma 158. Dorsum: Setae on small tubercles, *d*4 absent, one pair of sacral. Venter: With coxal rods (urstigmata) in the region of coxae I, coxae fused on the posterior margin, coxae II with small fissures. Anal opening without setae, with one pair of post-anal.

EGG: Length 110, width 80. Oval, white, finely sculptured.

Material examined. Culture of *Liometopum occidentale* var. *luctuosum*, from Tlalpujahua, Michoacán, 8 May 1983, J. Ramos-Elorduy and N.Galindo coll.

Remarks. This mite produces changes in the ant's behaviour, indicated by nervousness owing to the large number of phoretic hypopi. First, the ant is invaded on the legs, then the antennae; at this moment the ant tries to take away the mites, but the population is so high that masses of mites impede the peculiar tasks of any ant; dozens of mites produce death of the host (Estébanes-González unpublished data). Ramos-Elorduy *et al.* (1988) states: "*Liometopum occidentale* var. *luctuosum* is one the edible Mexican insects; immature stages of the reproductives are locally known as "escamoles" and are regarded as a delicacy and are widely utilized as food."

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