

New ascid mites of the genera *Rhinoseius* Baker and Yunker, 1964, and *Lasioseius* Berlese, 1923 (Acari: Gamasida: Ascidae) associated with hummingbirds or hummingbird-pollinated flowers in southwestern Colombia†

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Ascid mites (Ascidae) from various southwestern Colombian localities and altitudes were collected from the nasal cavities of hummingbirds and/or from angiosperm flowers visited by three birds. Twelve species, belonging to the genera *Rhinoseius* Baker and Yunker, 1964, *Proctolaelaps* Berlese, 1923 and *Lasioseius* Berlese, 1916, have been identified, and among them three are new: *Rhinoseius caucaensis*, *R. haplophaedia* and *Lasioseius peterfuldi*. The female of *Rhinoseius panamensis* Fain, Hyland and Aitken, 1977 is described for the first time.

KEYWORDS: Ascidae, Gamasida, taxonomy, *Rhinoseius caucaensis* sp. nov., *R. haplophaedia* sp. nov., *R. panamensis*, *Lasioseius peterfuldi* sp. nov., Columbia.

Introduction

The present paper deals with ascid mites from southwestern Colombia collected either in the nasal cavities of hummingbirds or in the flowers visited by these birds. Our collection includes 12 species of mites belonging to the genera *Rhinoseius*, *Proctolaelaps* and *Lasioseius* (see Table 1). Among these taxa the following were already recorded for Colombia: *Rhinoseius adsimilis*, *R. analis*, *R. androdon*, *R. antioquiensis*, *R. colombiensis*, *R. eutoxeres*, *R. ornatus*, and *R. waidei* all described by Fain and Hyland, 1980, and *R. heliconiae* Baker and Yunker, 1964. Six species have been found for the first time in this country: *Rhinoseius chiriquensis* Baker and Yunker, 1964, *R. fairchildi* Baker and Yunker, 1964, *R. mathewsoni* Hyland, Fain and Moorhouse, 1978, *R. panamensis* Fain, Hyland and Aitken, 1977, *R. tiptoni* Baker and Yunker, 1964, *Proctolaelaps belemensis* Fain, Hyland and Aitken, 1977. Three species are new: *Rhinoseius caucaensis*, *R. haplophaedia* and *Lasioseius peterfuldi*. Moreover, we describe the hitherto unknown female of *Rhinoseius panamensis* Fain, Hyland and Aitken, 1977 (see Table 1).

Ascid mites of the genera *Rhinoseius*, *Proctolaelaps*, and *Lasioseius* inhabit hummingbird-pollinated flowers and use hummingbirds for dispersion. Mites of the genus *Rhinoseius* primarily feed on nectar and pollen, and have been collected exclusively from hummingbirds and/or from hummingbird-pollinated flowers (Baker

† Information No. 3 on the results of the expedition Colombo-Alemana to southwestern Colombia. Information No. 2 see *Journal für Ornithologie*, 1990, 131, 335-337.

Table 1. A list of the ascid mites associated with hummingbirds and hummingbird-pollinated flowers in South America together with their hosts and localities. The three new taxa described in the text are not listed.

Taxon	Host	Location						
		Previously reported	This study	F ⁶	M ⁷	D ⁸	P ⁹	L ¹⁰
<i>Rhinoseius androdon</i>	<i>Androdon aequatorialis</i> ¹	Colombia	–					
	<i>Androdon aequatorialis</i> ¹	–	Anchicayá	5	2	–	–	–
	<i>Amazilia rosenbergi</i> ¹	–	Bajo Calima	–	2	–	–	–
	<i>Phaethornis yaruqui</i> ¹	–	Bajo Calima	2	1	2	–	–
	<i>Thalurania colombica</i> ¹	–	Bajo Calima	1	–	–	–	–
	<i>Cavendishia</i> sp.	–	La Planada	1	5	1	1	–
<i>Rhinoseius antioquiensis</i>	<i>Phaethornis guy</i> ¹	Colombia	–					
	<i>Androdon aequatorialis</i> ¹	Colombia	–					
	<i>Chalybura urochrysa</i> ¹	Colombia	–					
	unidentified trochilids	Colombia	–					
	<i>Aglaiocercus coelestis</i> ¹	–	La Planada	1	–	–	–	–
	<i>Cavendishia</i> sp. ²	–	La Planada	–	1	–	–	–
<i>Rhinoseius chiriquensis</i>	<i>Amazilia edward</i> ¹	Panama	–					
	<i>Amazilia tzacatl</i> ¹	–	Anchicayá	1	–	–	–	–
	<i>Amazilia saucerottet</i> ¹	–	Saladito	1	–	–	–	–
<i>Rhinoseius fairchildi</i>	<i>Phaethornis guy</i> ¹	Panama	–					
	<i>Eutoxeres aquila</i> ¹	–	Anchicayá	–	2	–	–	–
	<i>Heliconia</i> sp. ³	–	Bajo Calima	41	11	4	5	4
<i>Rhinoseius mathewsoni</i>	<i>Amazilia candida</i> ¹	Mexico						
	<i>Amazilia tzacatl</i> ¹	Mexico						
	<i>Phaethornis superciliosus</i> ¹	Mexico						
	<i>Phaethornis yaruqui</i> ¹	–	Bajo Calima	1	–	–	–	–
	<i>Phaethornis yaruqui</i> ¹	–	Estación CONIF	7	–	–	–	–
<i>Rhinoseius ornatus</i>	<i>Phaethornis superciliosus</i> ¹	Colombia						
	<i>Phaethornis syrmathophorus</i> ¹	Colombia						
	<i>Phaethornis guy</i> ¹	Colombia						
	<i>Androdon aequatorialis</i> ¹	Colombia						
	<i>Chlorostilbon mellisugus</i> ¹	–	Saladito	4	–	–	–	–

<i>Rhinoseius panamensis</i>	<i>Campylopterus hemileucurus</i> ¹	Panama							
	<i>Doryfera ludoviciae</i> ¹	-	La Planada	4	3	4	4	-	
	<i>Coeligena wilsoni</i> ¹	-	La Planada	-	1	-	-	-	
<i>Rhinoseius tiptoni</i>	<i>Lampornis castaneiventris</i> ¹	Panama							
	<i>Phaethornis guy</i> ¹	Panama							
	<i>Phaethornis yaruqui</i> ¹	-	Bajo Calima	-	3	-	-	-	
	<i>Agelaiocercus coelestis</i> ¹	-	La Planada	2	-	-	-	-	
	<i>Phaethornis syrmatophorus</i> ¹	-	La Planada	-	1	-	-	-	
	<i>Phaethronis syrmatophorus</i> ¹	-	El Páramo	1	-	-	-	-	
<i>Proctolaelaps belemensis</i>	<i>Threnetes leucerus</i> ¹	Brazil							
	<i>Campylopterus largipennis</i> ¹	Brazil							
	<i>Phaethornis superciliosus</i> ¹	Brazil							
	<i>Phaethornis superciliosus</i> ¹	Panama							
	<i>Glaucis hirsuta</i> ¹	Venezuela							
	<i>Glaucis hirsuta</i> ¹	Trinidad							
	<i>Amizilia rosenbergi</i> ¹	-	Bajo Calima	1	-	-	-	-	
	<i>Phaethornis yaruqui</i> ¹	-	Bajo Calima	1	-	-	-	-	
	<i>Phaethornis longuemareus</i> ¹	-	Bajo Calima	1	-	-	-	-	
	<i>Thalurania furcata</i> ¹	-	Bajo Calima	2	-	-	-	-	
	<i>Androdon aequatorialis</i> ¹	-	Ancicayá	1	-	-	-	-	
	<i>Eutoxeres aquila</i> ¹	-	Ancicayá	9	-	-	-	-	
	<i>Threnetes ruckeri</i> ¹	-	Ancicayá	2	-	-	-	-	
	<i>Heliomaster longirostris</i> ¹	-	Saladito	1	-	-	-	-	
	<i>Threnetes ruckeri</i> ¹	-	Estación CONIF	6	-	-	-	-	
	<i>Doryfera ludoviciae</i> ¹	-	La Planada	1	-	-	-	-	
	<i>Phaethornis syrmatophorus</i> ¹	-	La Planada	1	-	-	-	-	
	<i>Phaethornis yaruqui</i> ¹	-	La Planada	3	-	-	-	-	
	<i>Phaethornis syrmatophorus</i> ¹	-	El Páramo	1	-	-	-	-	
	<i>Cephaelis tomentosa</i> ⁴	-	Ancicayá	3	2	4	6	4	
<i>Pitcairnia</i> sp. ⁵	-	La Planada	1	-	-	-	-		
Zingiberaceae flower	-	La Planada	10	2	-	-	-		

¹ Trochilid host; ² Ericaceae; ³ Heliconiaceae; ⁴ Rubiaceae; ⁵ Bromeliaceae; ⁶ female; ⁷ male; ⁸ deutonymph; ⁹ protonymph; ¹⁰ larva.

and Yunker, 1964; Colwell and Naeem, 1979; Fain and Hyland, 1980, Fain *et al.*, 1977; Hunter, 1972; Hyland *et al.*, 1978). Members of the genera *Proctolaelaps* and *Lasioseius* are known not only from hummingbird flowers (e.g. Fain *et al.*, 1977; Naeem *et al.*, 1985) but also from other ornitho- or entomophilic plants (e.g. Ryke, 1964; Lindquist and Evans, 1965) or from organic debris (e.g. Karg, 1980; Karg and Rodriguez, 1985).

Materials and methods

The mites were collected from six different places in southwestern Colombia (Fig. 1).

1. Bajo Calima, Depto. Valle del Cauca, Colombia (04°08'N/77°04'W), pluvial lowland forest, 50 m above sea level.
2. Anchicayá, Valle del Cauca, Colombia (03°46'N/77°10'W), pluvial lowland forest, 20 m above sea level.
3. Saladito, Depto. Valle del Cauca, Colombia (03°30'N/76°38'W), near San Antonio, Andean forest, 1800 m above sea level.
4. Estación CONIF (forestry station), Depto. Nariño, Colombia (01°49'N/76°46'W), secondary forest, 20 m above sea level.
5. La Planada, Depto. Nariño, Colombia (00°54'N/77°16'W), Andean forest, 1800 m above sea level.
6. El Páramo (name of a forest reserve), Depto. Nariño, Colombia (00°54'N/77°47'W), 1000 m above sea level.

Hoyer's medium was used for mounting specimens. The terminology for idiosomatic chaetotaxy follows Lindquist and Evans (1965) and for leg chaetotaxy that of Evans (1963).

HOLOTYPEs of the new species are deposited in the Alexander Koenig Zoological Research Institute and Zoological Museum, Bonn, FRG (ZFMK).

PARATYPEs: ZFMK, and in the collection of Institut Royal des Sciences Naturelles de Belgique, Brussels (IRSNB).

Taxonomy

Genus *Rhinoseius* Baker and Yunker, 1964

Fain *et al.* (1977) divided the genus *Rhinoseius* into two groups (see Fain *et al.*, 1977; Fain and Hyland, 1980): (1) 'tiptoni' group (type species: *R. tiptoni* Baker and Yunker, 1964) (2) 'wetmorei' group (type species: *Tropicoseius wetmorei* Baker and Yunker, 1964). *Tropicoseius* Baker and Yunker, 1964 was placed in synonymy with *Rhinoseius* by Lindquist and Evans (1965). The two new species described herein belong to the 'tiptoni' group.

Rhinoseius caucaensis sp. nov.

(Figs 2–13)

Female

HOLOTYPE. ZFMK No. 1-88-4/1. *Dorsum*. Shield 558 μ m long, 300 μ m wide, with two deep lateral incisions, bearing few transversal striation on its posterolateral regions (Fig. 2); 29 pairs of setae, 16 on anterior and 13 on posterior portion; setae of R-rows on lateral membrane. Setae J5 replaced by bundles of microspicules. Setae Z5 68 μ m, S5

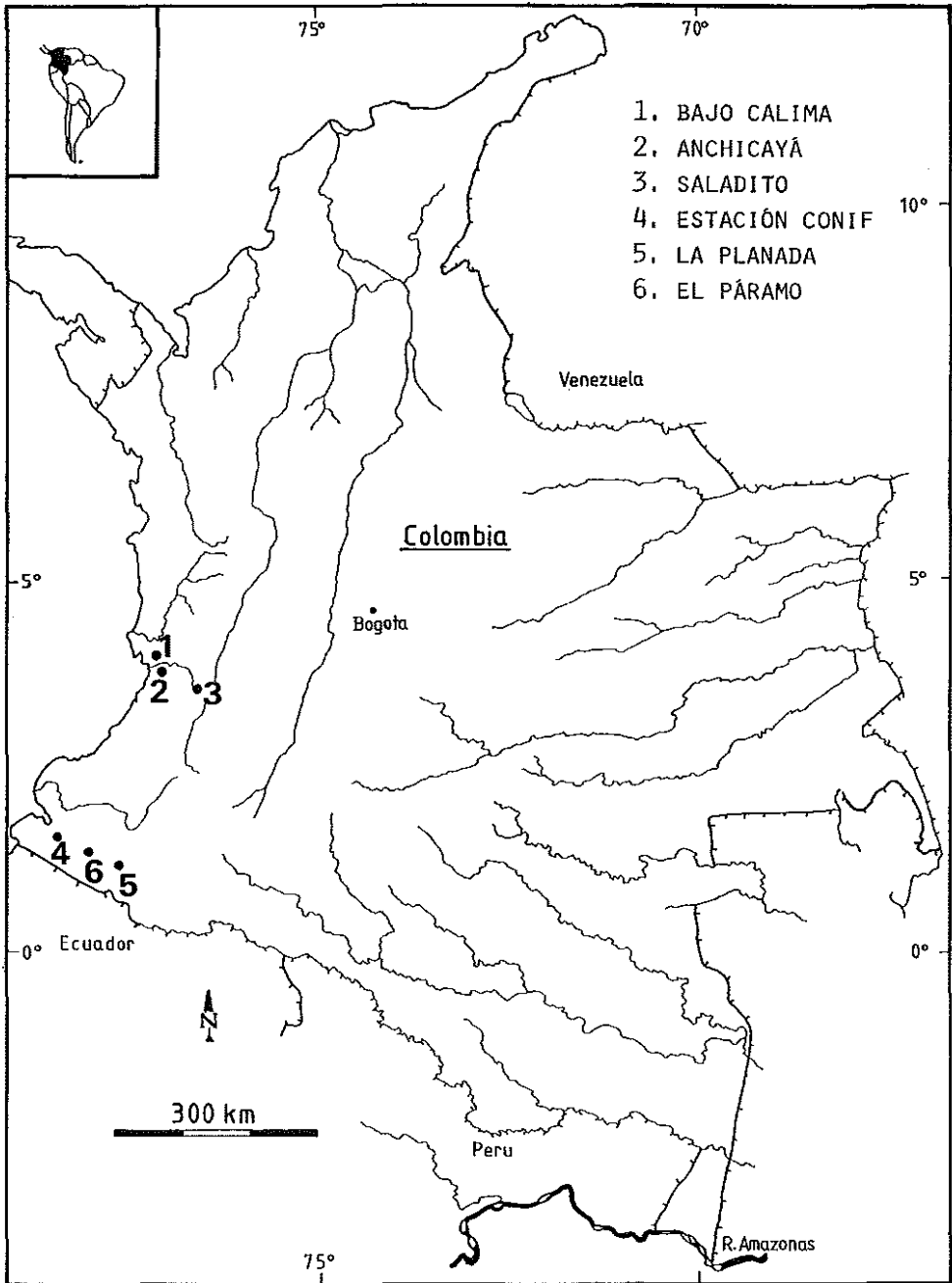
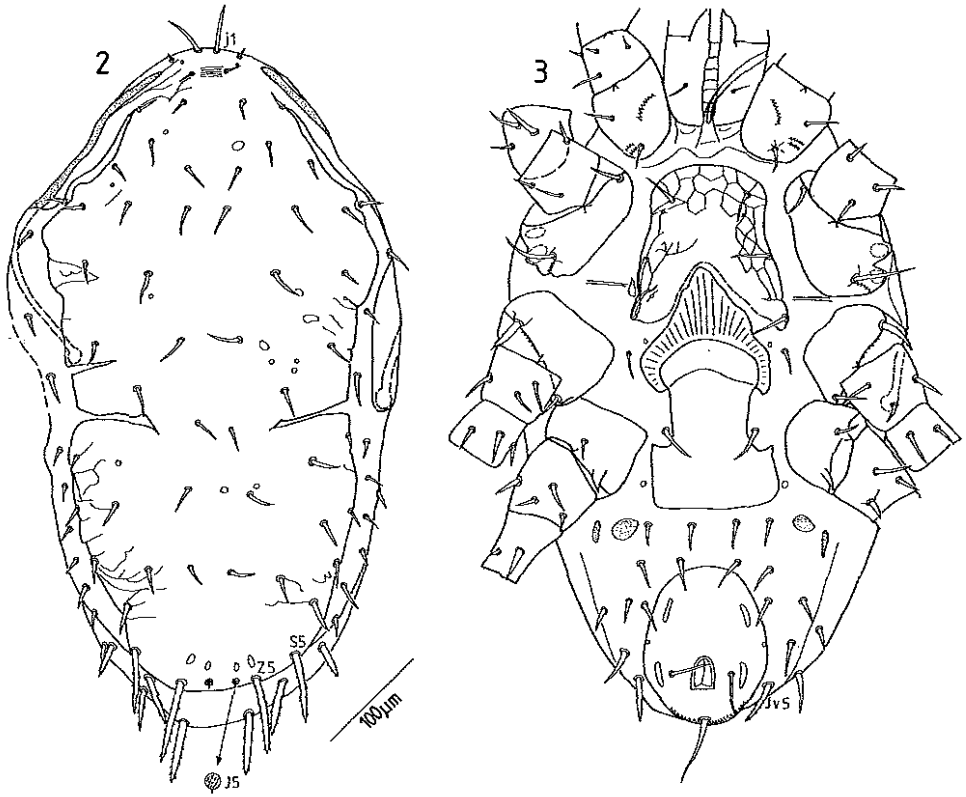


FIG. 1. Locations of study sites in southwestern Colombia.

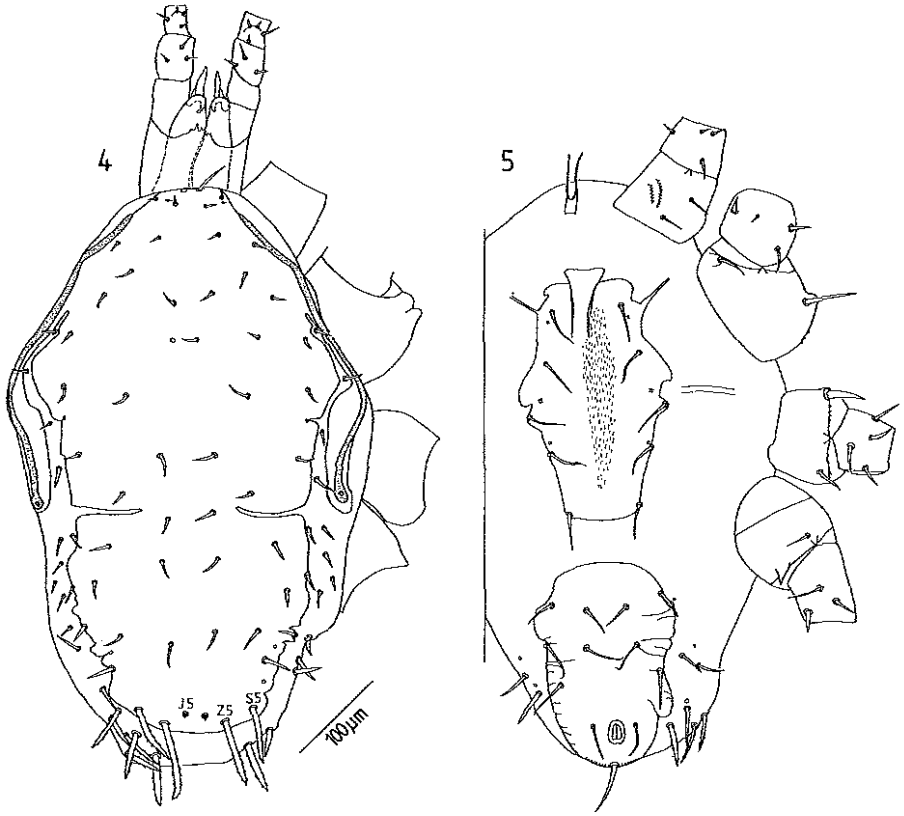


FIGS 1–2. *Rhinoseius caucaensis* sp. nov., Holotype female: (2) dorsum, (3) body venter.

59 μm long, both setae thick, subcylindrical, with short barbs; j1 37 μm and all others shorter than 25 μm , smooth, simple. *Venter*. Sternal shield reticulate anteriorly and laterally, lacking anterior lobes; with 3 pairs of setae and 2 pairs of pores (Fig. 3). Fourth pair of setae and third pair of sternal pores on membrane. Genital shield without striations, abruptly widened behind genital setae. Two pairs of metapodal plates, inner pair larger than outer pair. Anal shield without striations, ovate, 140 μm long, 109 μm wide. Jv5 41 μm long and barbed; Jv4 30 μm , all others shorter, smooth, simple. Peritreme ending near level of anterior margin of coxa I. Inseminating organs not visible. *Gnathosoma*. Anterior margin of tectum truncate, denticulate (Fig. 6). Chelicera 83 μm long, movable digit 30 μm long, tridentate; fixed digit with a single ventral spine-like process (Fig. 8). Deutosternum with 7 transverse rows of denticles (Fig. 7); subcapitulum with 4 pairs of setae. *Legs*. Ventral surface of coxa I with 3 rows of denticles; coxa II with 2 rounded posteriorlateral lobes and a row of 5 small denticles behind these lobes; coxa III with anterior seta thick, barbed (34 \times 6 μm); posteroventral surface of coxa IV with a well-developed triangular process. Legs I–IV shorter than dorsal shield (Figs 9 and 10).

Male

PARATYPE. ZFMK No. 2-88-28/5. *Dorsum*. Shield 533 μm long, 3.7 μm wide, similar to that of female, bearing 28 pairs of setae; 16 pairs on anterior and 12 on posterior

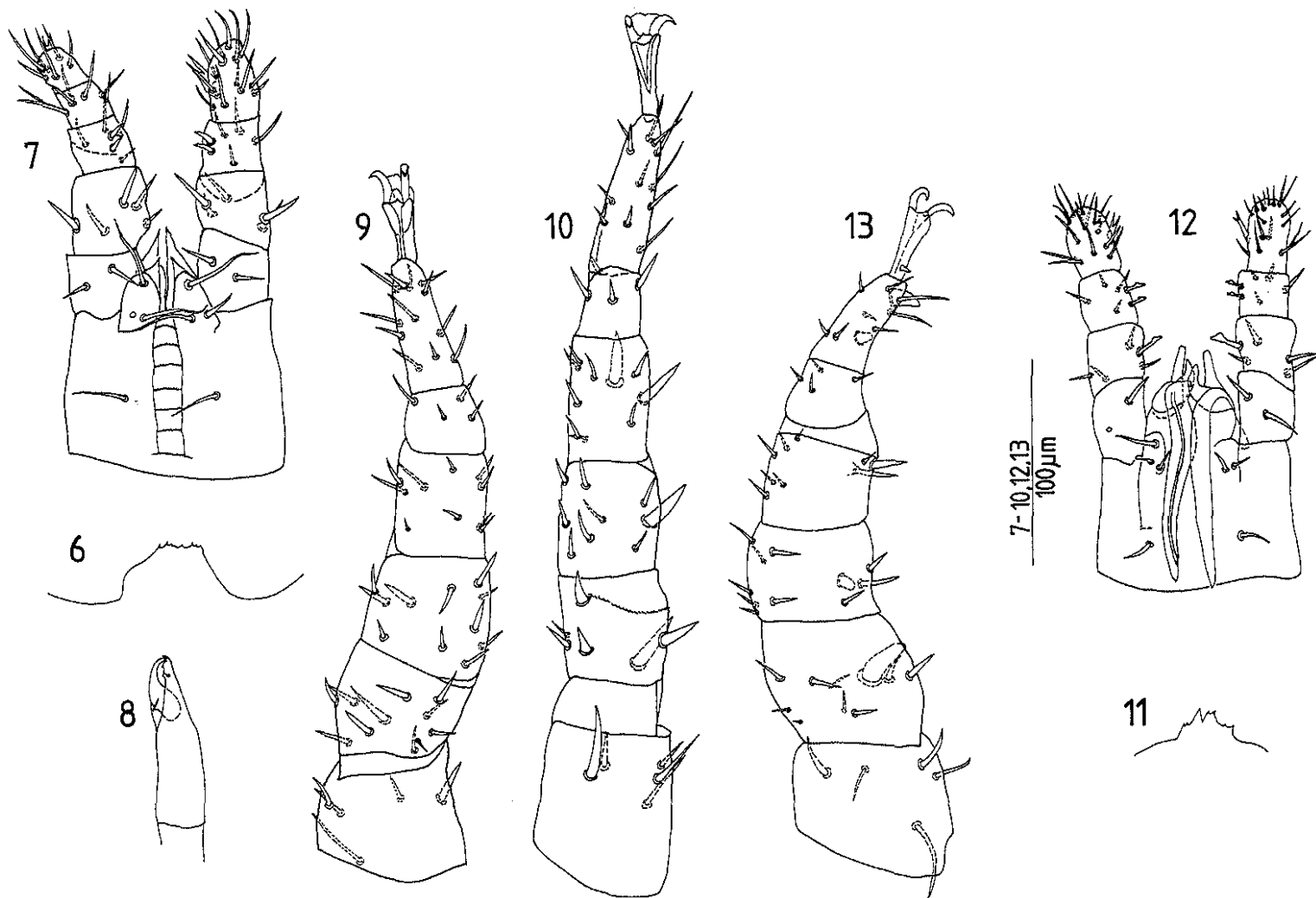


FIGS 4-5. *Rhinoseius caucaensis* sp. nov., Paratype male: (4) body dorsum, (5) body venter.

portion; S1 and setae of R-rows on lateral membrane (Fig. 4). J5 as in female; setae Z5 70 µm, S5 58 µm long and distally barbed; j1 37 µm, all others shorter, smooth, simple. *Venter*. Sternogenital shield with median strip poorly distinct lines; with 5 pairs of setae and 3 pairs of pores. Ventrianal plate with few striations along lateral margins, bearing 5 pairs of ventral setae (i.e. Jv1, Jv2, Jv3, Zv1, Zv2) plus the anal setae (only paratype illustrated in Fig. 5 lacks one Zv). Jv5 barbed; all other opisthogastic setae smooth, simple. Peritremes as in female. *Gnathosoma*. Tectum and subcapitulum similar to those of female (Figs 11 and 12). Cheliceral dentition typical for the genus, Spermatodactyl 94 µm long. *Legs*. Ventral surface of coxa I with several rows of denticles; coxa II as in female, coxa III with a thick seta (37 × 6 µm), posteroventral surface of coxa IV as in female.

Remarks

This new species belongs to the 'tiptoni' group (group A of Fain *et al.*, 1977), characterized as follows: tectum short or moderately elongated, generally flattened or rounded; coxa I with ventral rows of denticles; inseminating apparatus membranous, without a dilated or sclerotized maturation pouch (except in *R. richardsoni*, which possesses a large sclerotized maturation pouch); anterior border of the sternal plate not forming two distinct lobes.



FIGS 6–13. *Rhinoseius caucaensis* sp. nov.: Figs 6–10 Holotype female: (6) tectum, (7) subcapitulum, (8) chelicera, (9) leg II, (10) leg IV. Figs 11–13 Paratype male: (11) tectum, (12) subcapitulum, (13) leg II.

In the 'tiptoni' group, both sexes of four species exhibit a triangular process on the posteroventral surface of coxa IV, namely, *R. richardsoni* Hunter, 1972, *R. androdon* Fain and Hyland, 1980, *R. antioquiensis* Fain and Hyland, 1980 and *R. caucaensis* new species. The female of *R. caucaensis* differs from the three other species by the shape of setae Z5 and S5 which are thick spines, in contrast to the thin and short setae in the others. In the males, these setae are strong in *R. caucaensis* and *R. richardsoni*, but thin and short in the two other species. The male of *R. caucaensis*, however, is clearly distinguished from that of *R. richardsoni* by its normal (thin and short) setae J1 and J2, whereas these setae in *R. richardsoni* are exceptionally thick.

Host and locality

HOLOTYPE female from *Amazilia rosenbergi*, collected 16 March 1988 at Anchicayá.

PARATYPES: one female, one male from *Amazilia rosenbergi*, collected 16 March 1988 at Anchicayá, one male from *Phaethornis yaruqui*, collected 9 March 1988 at Bajo Calima; one male from *Androdon aequatorialis*, collected 21 April 1988 at Bajo Anchicayá; one male from *Ocreatus underwoodii*, collected 28 March 1988 at La Planada. Holotype female, ZFMK; 4 Paratypes (4 males) in ZFMK; 2 Paratypes in IRSNB (1 female, 1 male).

Etymology. We named this mite after the political locality of the Depto. Valle del Cauca, Colombia.

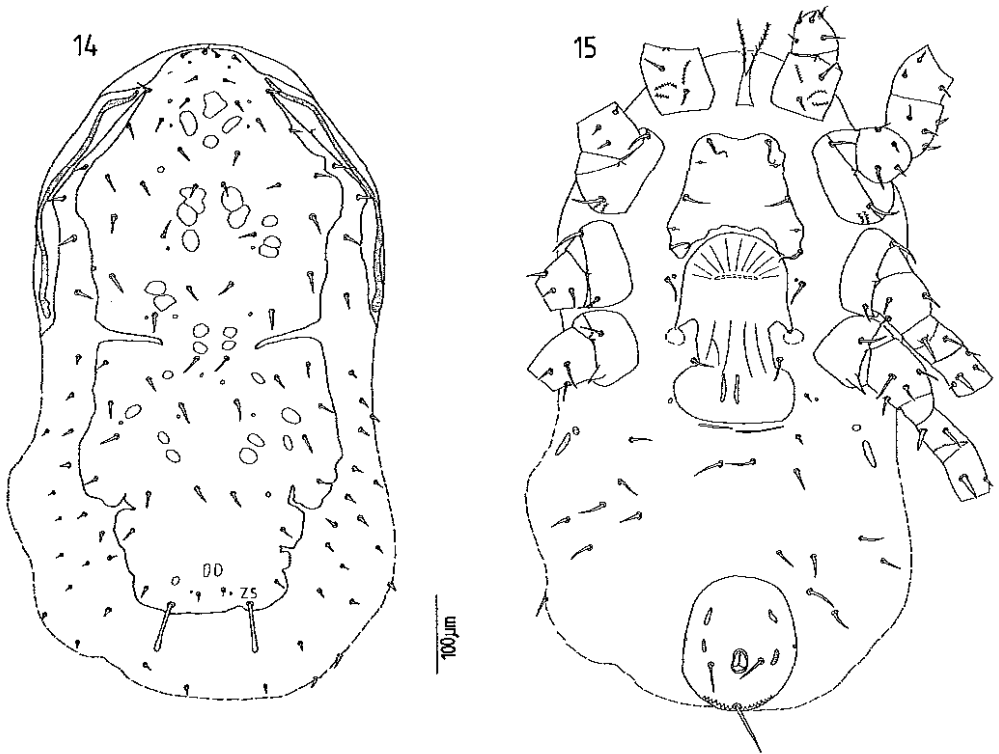
Rhinoseius haplophaedia sp. nov.

(Figs 14–18)

Female

HOLOTYPE, ZFMK No. 6-89-322/2 *Dorsum*. Shield 744 μm long, 350 μm wide; with two deep lateral incisions, without striations; margin of posterior plate is irregular and reduced (Fig. 14); shallow incisions in posterior area of plate at level of setae Z3–Z4. 29 pairs of setae, 16 on anterior and 13 on posterior portion; setae of R-rows on lateral membrane. Setae Z5 65 μm long, smooth, distally thickened; all other setae short, smooth, simple. *Venter*. Sternal shield without ornamentation, lacking anterior lobes; with 3 pairs of setae and 2 pairs of pores. Fourth pair of setae and third pair of sternal pores on membrane. Genital shield with few striations, abruptly widened behind genital setae (Fig. 15). Two pairs of metapodal plates, inner pair much smaller than outer. Anal plate without striations or pattern, broadly ovate, 177 μm long, 143 μm wide. All ventral setae smooth, simple. Peritreme reaching level of seta s1. Inseminating organ not visible. *Gnathosoma*. Anterior margin of tectum very short, rounded, smooth (Fig. 17). Chelicera 140 μm long, movable digit 46 μm long; dentition and pilus dentilis not visible. Deutosternum with 8 transverse rows of denticles; subcapitulum with 4 pairs of setae (Fig. 16). *Legs*. Ventral surfaces of coxae I and II with several rows of denticles, surface of coxae IV with a triangular process.

Remarks. This species is only known from the female. It belongs to the 'tiptoni' group. It exhibits a distinct triangular spur on the posteroventral surface of coxa IV as in *R. caucaensis* sp. nov., *R. richardsoni*, *R. androdon* and *R. antioquiensis*. From these four taxa it differs by the shape of setae Z5, which are clavate, much longer and thicker than S5. In the other species, setae Z5 and S5 are both either very thick and not clavate or



FIGS 14–15. *Rhinoseius haplophaedia* sp. nov., Holotype female: (14) body dorsum, (15) body venter.

very thin and short (see remarks on *R. caucaensis*). Moreover, females of *R. haplophaedia* differ from those of *R. richardsoni* and *R. andron* in having longer peritremes.

Host and locality

HOLOTYPE from the nasal cavity of the hummingbird *Haplophaedia lugens*, collected 4 March 1989 at La Planada.

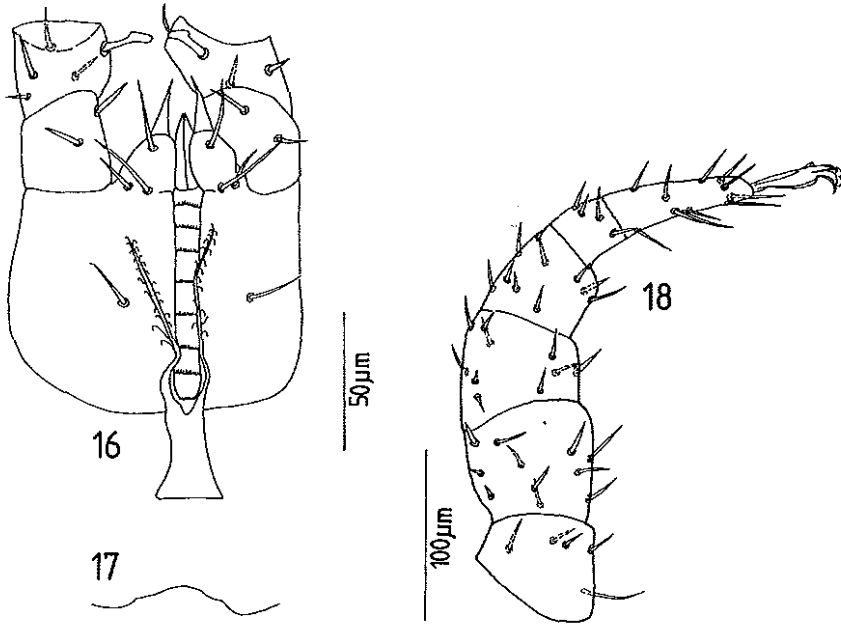
PARATYPE: one female from the same host species and locality, but on 21 March 1988. Holotype female at ZFMK, one Paratype female at IRSNB.

Etymology. We named this taxon after the host hummingbird genus *Haplophaedia*.

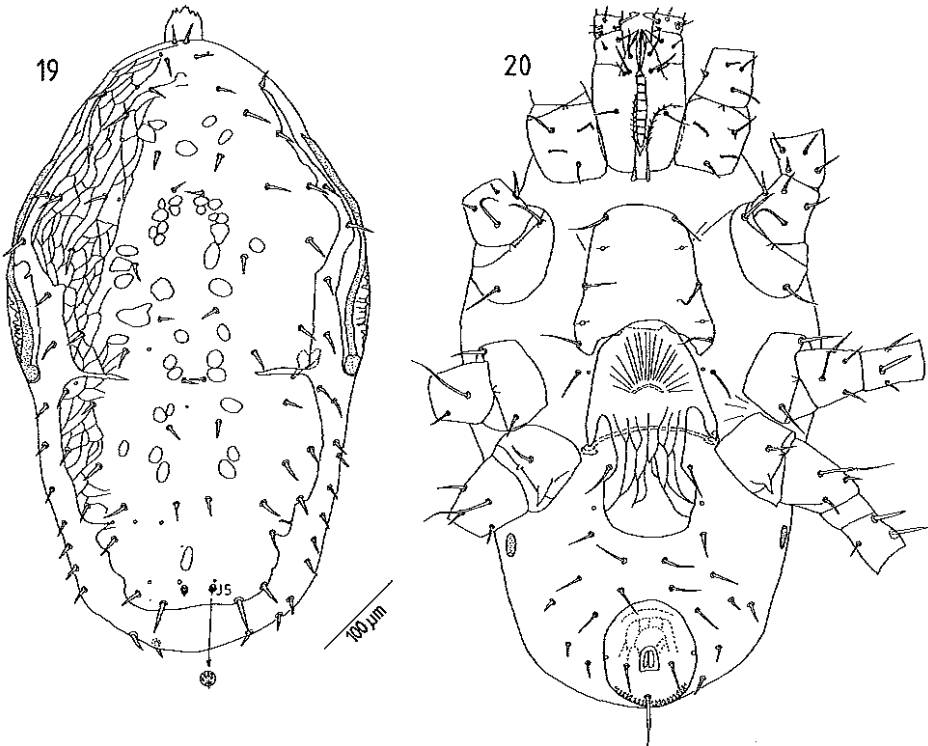
***Rhinoseius panamensis* Fain, Hyland and Aitken, 1977**

(Figs 19–25)

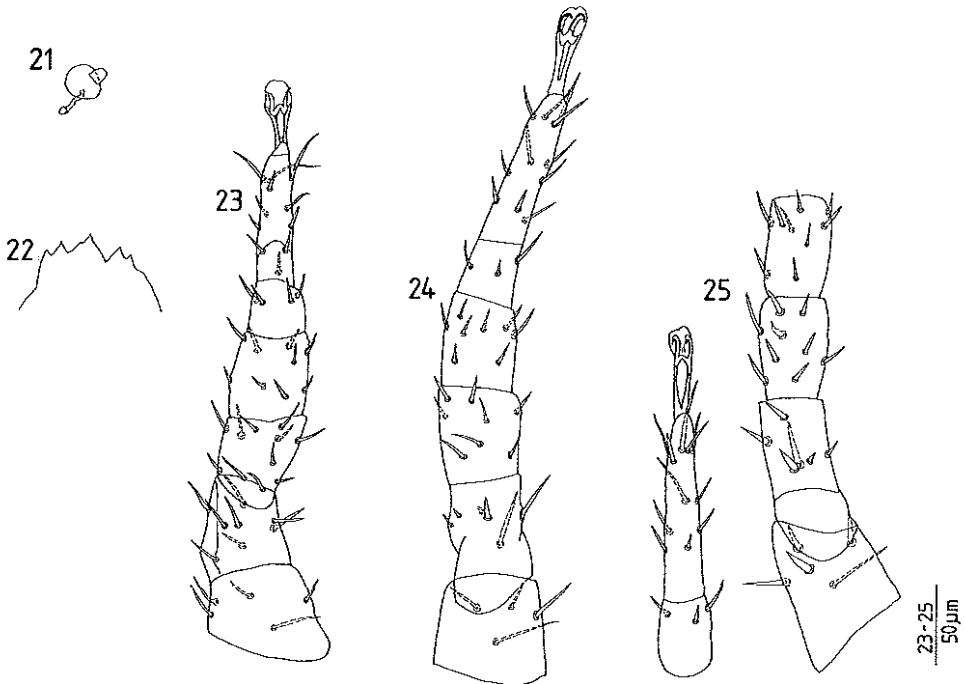
Female. ZFMK No. 6-89-311/6. **Dorsum.** Shield 590 µm long, 322 µm wide, with lateral incisions and lateral reticulations; margins of posterior dorsal shield irregular, reduced (Fig. 19). 28 pairs of setae, 15 on anterior and 13 on posterior portion (only specimen illustrated in Fig. 19 has S1 off shield on one side); setae of R-rows on lateral membrane. Setae z1, J4 and Z4 absent, Z5 27 µm long, all other setae shorter; all setae smooth, simple. J5 replaced by bundles of microspinules. **Venter.** Sternal plate without



FIGS 16-18. *Rhinoseius haplophaedia* sp. nov., Holotype female: (16) subcapitulum, (17) tectum, (18) leg II.



FIGS 19-20. *Rhinoseius panamensis* Fain, Hyland and Aitken, 1977, female: (19) body dorsum, (20) body venter.



Figs 21–25. *Rhinoseius panamensis* Fain, Hyland and Aitken, 1977, female: (21) spermatheca, (22) tectum, (23) leg II, (24) leg III, (25) leg IV.

ornamentation and lacking anterior lobes, posteriorly widened; with 3 pairs of setae and 2 pairs of pores (Fig. 20). Fourth pair of setae and third pair of sternal pores on membrane. Genital plate with longitudinal striations, widened behind genital setae. One pair of metapodal plates. Anal plate subcircular, with interrupted punctate line patterns, 110 μm long, 98 μm wide. Jv1–Jv3 31–25 μm long, Jv4 and Jv5 17 μm long. All opisthogastric setae smooth, simple. Peritreme short, reaching level of setae s2. Adductor canal short and thick, maturation pouch globular, spermiduct very short (Fig. 21). *Gnathosoma*. Tectum short, anterior margin denticulate (Fig. 22). Chelicerae 88 μm long, movable digit 31 μm long; dentition and pilus dentilis not visible. Deutosternum with 8 transverse rows of denticles. Subcapitulum with 4 pairs of setae (Fig. 20). Tritosternum normal. *Legs*. Ventral surface of coxa I with several rows of denticles, surface of coxa IV with a triangular process. Trochanter II–IV with one set of elongated setae (av) (Figs 20, 23–25).

Additional male characters. Setae J5 are represented by a bundle of spinules, one spinule longer than all others. The same structure is observed in the Holotype of this species.

Remarks. *Rhinoseius panamensis* is characterized in both sexes by the short peritremes and presence of a triangular process on coxa IV. The female is similar to those of *R. androdon* and *R. richardsoni*. It is distinguished from that of *R. androdon* by having a shorter and more rounded anal plate, by the reticulate ornamentation of dorsal plate, and by setae J5 replaced by a bundle of microspinules. The female of *R. panamensis*

differs from that of *R. richardsoni* by the less narrowed shape of the sternal plate anteriorly, by the more ornamented dorsal shield, and by the thicker anal setae.

Host and locality. This taxon was found in the nasal cavities of the trochilid *Doryfera ludoviciae*, collected 3 and 7 March 1989 (3 females, 4 males) at La Planada. An additional male was found at the same locality and collected from the nostrils of *Coeligena wilsoni* (2 March 1989).

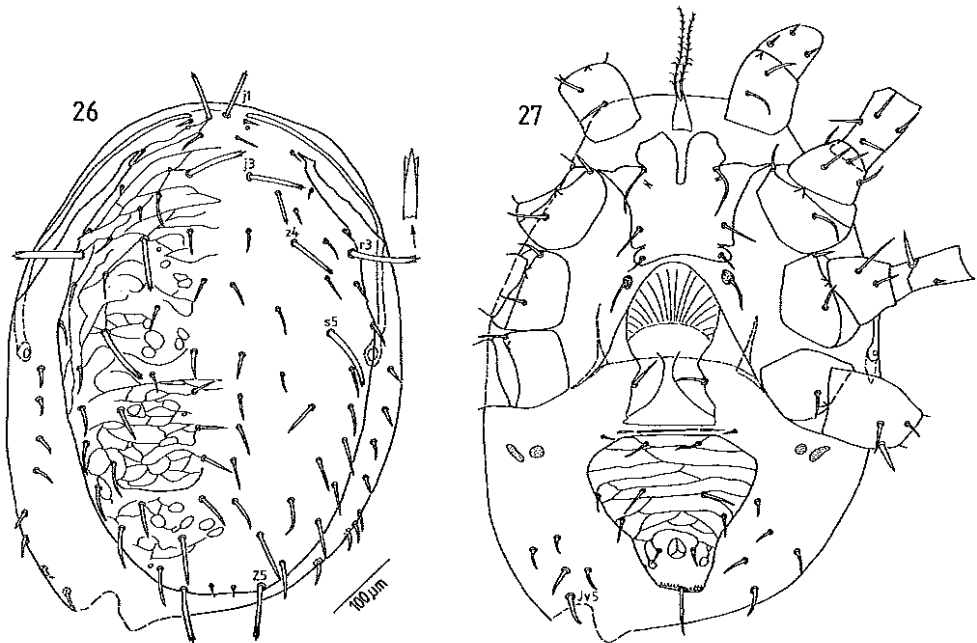
Genus *Lasioseius* Berlese, 1916

Lasioseius peterfuldi sp. nov.

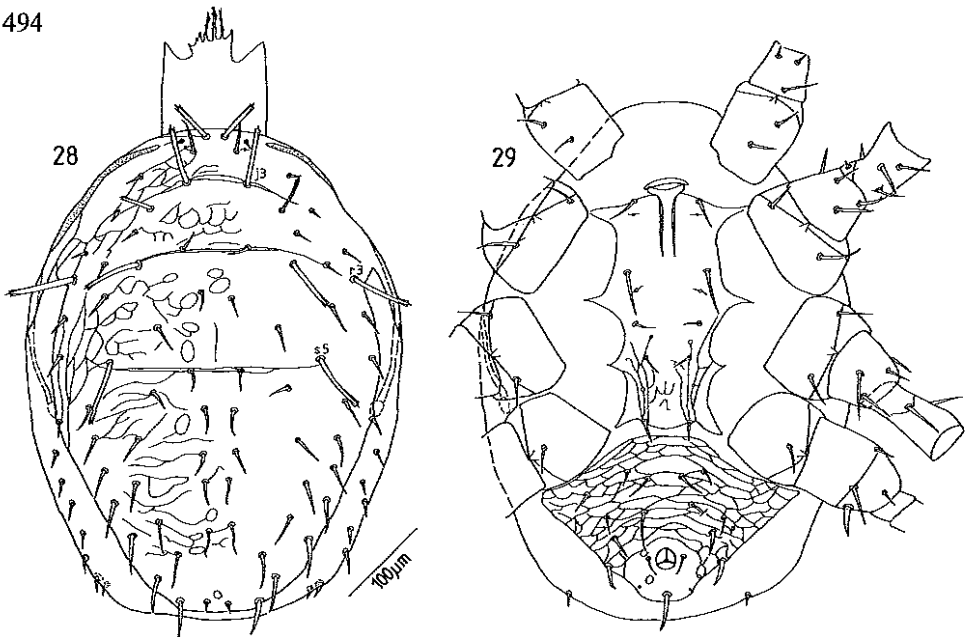
(Figs 26–40)

Female

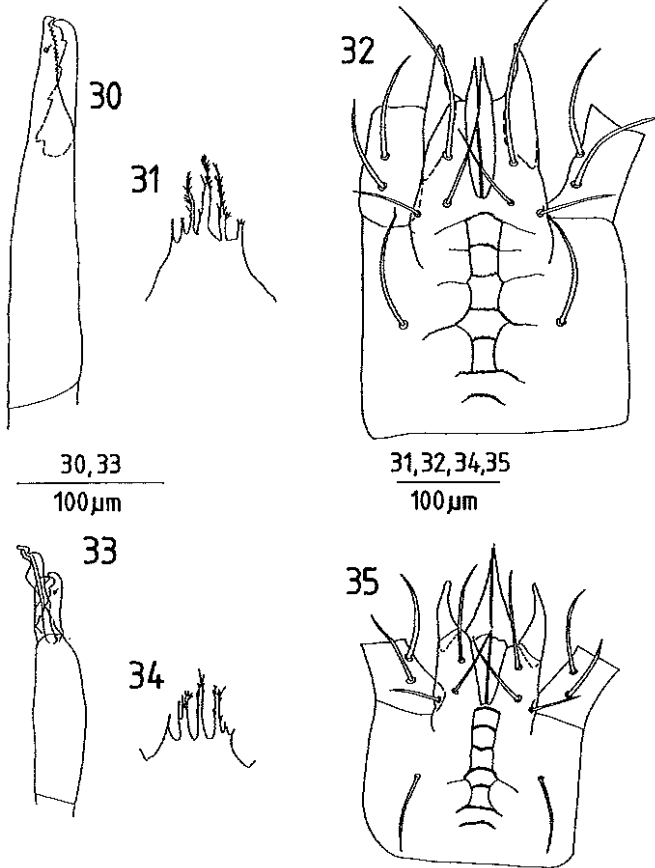
HOLOTYPE. ZFMK No. 6-89-1/9. *Dorsum.* Shield 624 μm long, 440 μm wide; moderately reticulated over most of surface, without punctate areas (Fig. 26). 37 pairs of setae, 22 on anterior and 15 on posterior portion; 9 pairs on lateral membrane; j-J, z-Z, s-S complete; r6, R1–R7 on lateral membrane, UR7 ventral. Setae z1, s1, s2, r2, J5 very short and smooth; j1 (60 μm), j3 (72 μm), z2 (40 μm), z4 (63 μm), s5 (77 μm), r3 (90 μm), Z5 (70 μm) long, thick, tricarinate; Z4 (70 μm) and S4–S5 (58 μm) long, thick and, like all others, smooth and simple. *Venter.* Sternal shield without ornamentation, with 3 pairs of setae and 2 pairs of pores, first pair of setae longest, third pair shortest. Fourth pair of sternal setae and third pair of sternal pores on metasternal plates. Genital shield without ornamentation, widened posteriorly behind genital setae. Two pairs of metapodal plates, inner pair smaller. Ventrianal shield transversely lineate; with 3 pairs



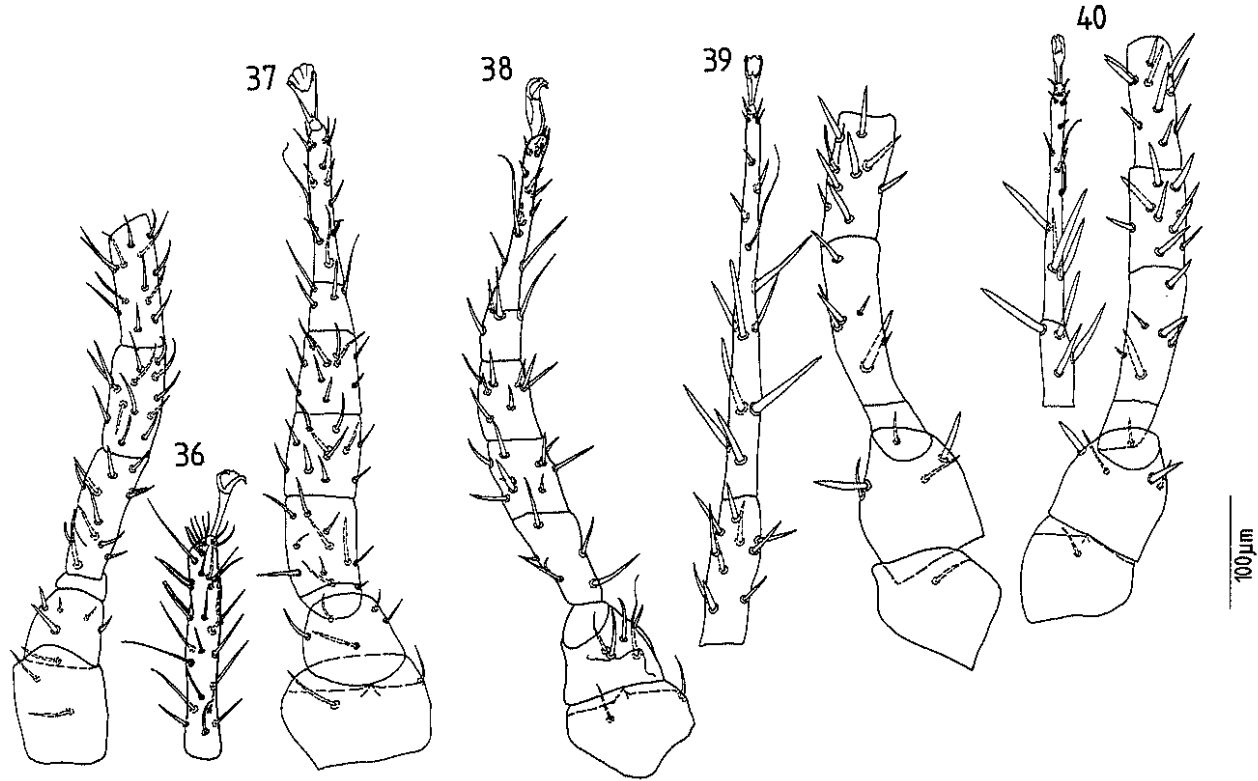
FIGS 26–27. *Lasioseius peterfuldi* sp. nov., Holotype female: (26) body dorsum, (27) body venter.



FIGS 28–29. *Lasioseius peterfuldi* sp. nov., Paratype male: (28) body dorsum, (29) body venter.



FIGS 30–35. *Lasioseius peterfuldi* sp. nov.: Figs 30–32: Holotype female. (30) chelicera, (31) tectum, (32) subcapitulum. Figs 33–35: Paratype male. (33) chelicera, (34) tectum, (35) subcapitulum.



FIGS 36–40. *Lasioseius peterfuldi* sp. nov.: Figs 36–39: Holotype female. (36) leg I, (37) leg II, (38) leg III, (39) leg IV. Fig. 40: Paratype male. (40) leg IV.

of ventral setae (Jv1, Jv2, Jv3) (only Holotype illustrated in Fig. 27 with one additional seta Zv2 on shield) plus anal setae. Para-anal setae shorter than postanal seta and ventral setae; all setae smooth, simple, only Jv5 thick. Inseminating apparatus as in *L. elegans*. *Gnathosoma*. Anterior margin of tectum with 2 or 3 long medial projections, variably toothed and distally subdivided, and 2 shorter lateral projections (Fig. 31). Deutosternum with 7 transverse rows of setae, most anterior pair being longer than others (Fig. 32). Ventral setae of palptrochanter elongated. Movable chela tridentate, fixed chela serrate, with row of 10–12 small teeth and a short pilus dentilis (Fig. 30). *Legs*. Leg I nearly 1.2 times longer, leg IV nearly 1.6 times longer than, and legs II and III as long as dorsal shield. Setation of genua of legs I–II–III–IV, 13–11–9–9, that of tibiae is 13–10–8–10; all leg setae smooth (Figs 36–39). Setae av and pl2 or tarsus II, ad2 or tarsus III and pd1 of tarsus IV elongated and whip-like. Most of setae of tarsus IV elongated and stout.

Male

PARATYPE. ZFMK No. 6-89-1/28. *Dorsum*. Shield 505 μm long, 340 μm wide, moderately recitulated as in female (Fig. 28). 38 pairs of dorsal setae, 23 on anterior and 15 on posterior portion, r6 on shield. j1 (46 μm), j3 (65 μm), z2 (38 μm), z4 (62 μm), s5 (65 μm) and r3 (65 μm) long, tricarinate; j2, Z4, Z5, R3–R5 longer than 35 μm , all other dorsal setae shorter, smooth, simple. *Venter*. Sternogenital shield with few posterolateral striations; with 5 pairs of setae and 3 pairs of pores, second setal pair longest (Fig. 29). Ventrianal shield wide, seticulated, with 6 pairs of ventrianal setae (only Paratype illustrated in Fig. 29 with one additional seta on shield) plus anal setae. Jv5 thick. Peritremes as in female. *Gnathosoma*. Tectum and subcapitulum similar to that of female (Figs 34 and 35). Fixed chela with row of 6 teeth, pilus dentilus normal; movable chela bidentate, with short sperodactyl (Fig. 33). Deutosternum with 7 rows of denticles. *Legs*. Legs (Fig. 40) features as in female; leg II without dimorphic spinelike setae.

Remarks. *Lasioseius peterfuldi* is close to *L. chelaserratus* Naeem, Dobkin and O'Connor, 1985, described from the inflorescences of *Heliconia* flowers and the nasal cavities of *Glaucis hirsuta* from Trinidad. It is distinguished from that species in both sexes mainly by the feature of setae j1, j3, z2, z4, s5, r3 and Z5, which all are tricarinate, longer and stronger than the setae on membrane. Moreover, the ventrianal shield in the male is relatively shorter and wider than in *L. chelaserratus*.

Host and locality

HOLOTYPE female from a Zingiberaceae species (15 March 1989), La Planada.

PARATYPES: 21 female and 5 male from the same host and locality, and 4 females and 2 males from flowering species of Lorantaceae (24 March 1988), La Planada. Holotype and 26 Paratypes (21 females, 5 males) at ZFMK; 6 Paratypes (4 female, 2 males) at IRSNB.

Etymology. We name this taxon after Peter Fuld, the founder of a research funding institution, which supported the work of C. Ohmer.

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