

FOUR NEW *TYPHLODROMUS* FROM SOUTHERN
FLORIDA (ACARINA: PHYTOSEIIDAE)

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The typhlodromids described below are of particular interest because the first one has three pairs of median setae instead of the usual two pairs and the remaining three species have all or most all the setae of the dorsal shield pectinate.

In these descriptions all measurements are in microns and are averages unless variation from the average is more than ten percent, in such cases the range is given.

Typhlodromus ecclesiasticus, n. sp.

(Figures 1-4)

FEMALE.—Dorsal shield reticulate, 295 long, 155 wide at about L5 and 170 wide at about L7, with 19 pairs of setae as follows: 10 lateral, three median, and six dorsal. Except for M2 and L10 all setae of the dorsal shield short (13-21 long), smooth, and tapering to a point. M2 and L10 obovate, flattened and with the edges distally serrate; M2 22 long, L10 23-28 long. The extra pair of median setae situated between L6 and D4. Peritremata extending forward to D1. Ventrianal plate constricted at sides with four pairs of preanal setae and a pair of pores, surrounded by four pairs of setae including VL1 which is about 21 long, smooth, and tapering to a point. Sternal plate indistinct, the number of pairs of setae on it not determinable. Fixed digit with three subterminal teeth and one opposite *pilus dentilis*, movable digit with one tooth. Legs relatively short (leg IV from base of coxa to end of claw 226 long) and heavy, without macrosetae.

MALE.—Not known.

Holotype: Female, Coral Gables, Florida, April 18, 1955 (D. De Leon) from *Laguncularia racemosa*; *paratype*: female, west of Perrine, Florida, October 24, 1954, (D. De Leon) from *Tecoma stans*.

Typhlodromus ellipticus, n. sp.

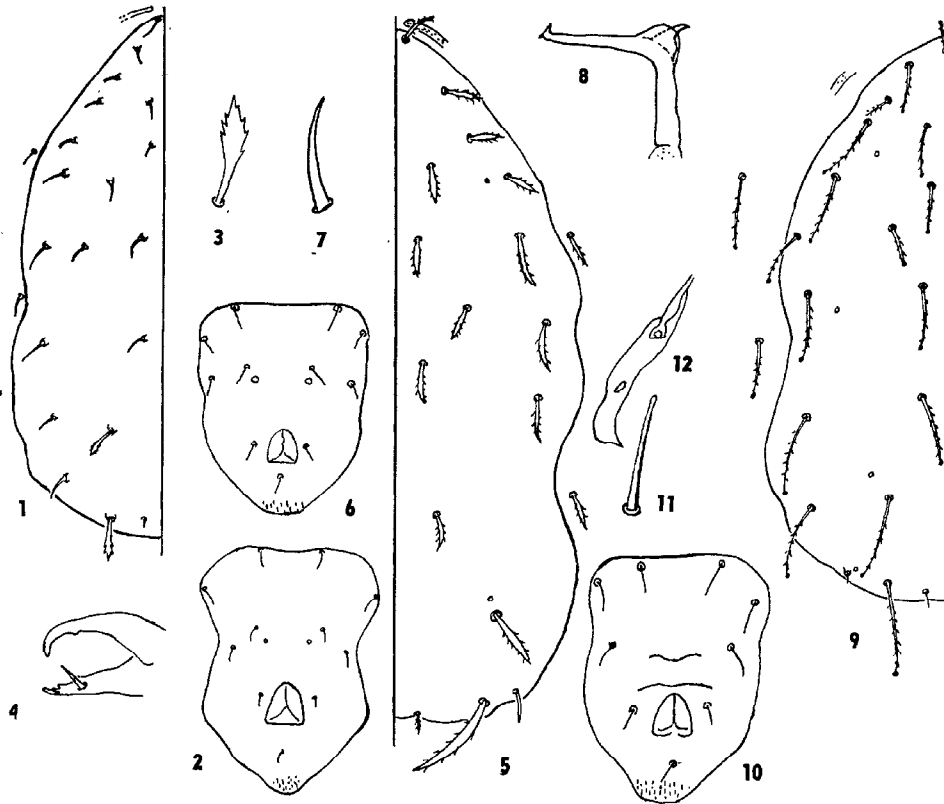
(Figures 5-8)

FEMALE.—Body tan, broadly oval; dorsal shield with moderate imbrications, 296 long, 164 wide at L5 with 16 pairs of pectinate, narrow-elliptic setae. In a few specimens D1 and D6 appear to be tapering and smooth, and some of the other setae in some specimens (without consistency between specimens) scarcely elliptic and indistinctly pectinate, this condition apparently caused by a turning up of edges of setae in mounting medium. In the following measurements setal length is given above the line, distance between setal bases below the line; for lateral setae this is the distance to the setal base behind, for the others it is the transverse distance between

bases: L1 $\frac{16}{13}$, L2 $\frac{15}{14}$, L3 $\frac{17}{22}$, L4 $\frac{19}{25}$, L5 $\frac{20}{35}$, L6 $\frac{20}{136}$, L7 $\frac{17}{14}$, L8 41; M1 $\frac{16}{58}$, M2 $\frac{29}{84}$

D1 $\frac{19}{2}$, D2 $\frac{15}{24}$, D3 $\frac{14}{14}$, D4 $\frac{17}{23}$, D5 $\frac{18}{20}$, D6 $\frac{9}{10}$; S1 14, S2 21; VL1 27 (the last

three setae also pectinate); in some specimens S2 on shield on one or both sides; two pairs of pores. Anterior end of peritreme extending to D1, peritremal plate curving behind coxae IV and there somewhat expanded, the inner angle sharply pointed, the outer rounded. Sternal plate indistinct, apparently with two pairs of setae and with caudal margin slightly concave; genital plate 66 wide at posterior end; ventrianal plate 94 long, 70 wide at anterior end with four pairs of preanal setae and a pair of large pores 15 apart. Fixed digit with two teeth distal of *pilus dentilis* and a lateral one about opposite proximal tooth, movable digit with one tooth. Legs relatively short and heavy; basitarsus IV with a coarse seta (appreciably coarser than the other coarse setae of this or the other legs) 17 long, length of tarsus not including pretarsus, 78.



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Explanation of Figures

Typhlodromus ecclesiasticus, n. sp.: Fig. 1, dorsal shield; Fig. 2, ventrianal plate; Fig. 3, seta L10 enlarged; Fig. 4, chelicera.

Typhlodromus ellipticus, n. sp.: Fig. 5, dorsal shield; Fig. 6, ventrianal plate; Fig. 7, macroseta of tarsus IV; Fig. 8, spermatophore.

Typhlodromus jackmickleyi, n. sp.: Fig. 9, dorsal shield; Fig. 10, ventrianal plate; Fig. 11, macroseta of tarsus IV.

Typhlodromus annectens, n. sp.: Fig. 12, caudal end of peritremal plate.

MALE.—Resembles female in chaetotaxy, but S2 always on shield and general curve of margin of shield unbroken at S2; shield 237 long, 144 wide. Spermatophore of shape shown in figure, foot 20 long, shaft 13 long.

Holotype: Female, Coral Gables, Florida, October 23, 1956, (D. De Leon) on *Conocarpus erecta*. *Allotype*: same data as for holotype and on same slide; *paratypes*: two females, one male, Coral Gables, June 3, 1956, from *Achras zapota*; five females, two males, Coral Gables, October 16 and 23, 1956, from *Conocarpus*. Specimens were also collected at Delray Beach, Florida, September 15, 1956, from *Bursera simaruba*; Coral Gables, October 23, 1956, from *Laguncularia racemosa*; a single specimen from mango, Miami, Florida, March 2, 1955, and from coconut Coral Gables, November 2, 1955.

This is a fairly common mite on *Conocarpus* where it was found in association with an undescribed species of *Brevipalpus*.

Typhlodromus jackmicklei, n. sp.

(Figures 9-11)

FEMALE.—Body light tan, broadly oval; dorsal shield practically smooth, very faintly imbricate, 341 long, 208 wide at about L5, with 18 pairs of setae all but L9 and D6 pectinate and all but L2, L9, and D6 with a small knob at tip. S1 and S2 pectinate and with a small knob at tip. The same system is used to record setal lengths and distances between bases as that

used for *T. ellipticus*: L1 $\frac{36}{22}$, L2 $\frac{24}{13}$, L3 $\frac{37}{34}$, L4 $\frac{43}{36}$, L5 $\frac{45}{36}$, L6 $\frac{45}{63}$, L7 $\frac{71}{54}$, L8 $\frac{58}{45}$,
L9 $\frac{5}{14}$, L10 63; M1 $\frac{27}{72}$, M2 $\frac{56}{70}$; D1 $\frac{23}{3}$, D2 $\frac{27}{18}$, D3 $\frac{28}{13}$, D4 $\frac{36}{27}$, D5 $\frac{45}{29}$, D6 $\frac{10}{25}$

S1 34, S2 45; VLI 60 (faintly pectinate); four pairs of pores. Anterior end of peritreme extending about to posterior margin of coxa I, peritremal plate ending in a blunt angle behind coxa IV. Sternal plate with two pairs of setae, posterior margin broadly irregularly V-shaped; ventrianal plate 111 long, 79 wide with three pairs of preanal setae, pores absent; genital plate posteriorly 82 wide. Fixed digit with two teeth near terminal hook, inner margin of movable digit not observable. Legs long and slender; patella, tibia, and tarsus of leg IV each with a large seta slightly expanded at tip, 20, 27 and 45 long respectively; tarsus IV not including pretarsus 143 long.

MALE.—Not known.

Holotype: Female, Coral Gables, Florida, October 16, 1956, (D. De Leon) on *Conocarpus erecta* in association with *T. ellipticus*, n. sp. The mite is named for Dr. Jack Mickley of Hollywood, Florida.

Typhlodromus annectens, n. sp.

(Figure 12)

FEMALE.—Body off white, elongate; dorsal shield mildly imbricate, 260 long, 127 wide with 17 pairs of setae, only D6 smooth, the anterior laterals generally more strongly pectinate than posterior ones. The same system is used to record setal lengths and distances between bases as that used for

T. ellipticus: L1 $\frac{34}{18}$, L2 $\frac{33}{12}$, L3 $\frac{39}{21}$, L4 $\frac{34}{26}$, L5 $\frac{39}{30}$, L6 $\frac{47}{39}$, L7 $\frac{49}{49}$, L8 $\frac{42}{28}$, L9 41;
 M1 $\frac{33}{52}$, M2 $\frac{42}{44}$; D1 $\frac{15}{2}$, D2 $\frac{23}{15}$, D3 $\frac{33}{8}$, D4 $\frac{43}{22}$, D5 $\frac{43}{16}$, D6 $\frac{8}{13}$; S1 30 (pectinate);

VL1 34 (pectinate); three pairs of pores. Anterior end of peritreme extending about to middle of coxa I, peritremal plate curving behind coxae IV, of shape shown in figure. Sternal plate indistinct, apparently with two pairs of setae; caudal end of genital plate 58 wide; ventrianal plate moderately emarginate laterally, 85 long, 54 wide at anterior end with four pairs of preanals and a pair of small pores 12 apart and about in line with posteriormost preanals. Fixed digit with two teeth just behind terminal hook and one lateral of them, movable digit with a small tooth at base of curve. Legs short, rather slender, without distinctive setae; tarsus IV 70 long, excluding pretarsus.

MALE.—Resembles female; dorsal shield 204 long, 118 wide. Spermatophore L-shaped with a lateral projection just proximal of mid-part of foot, tip of foot slightly expanded, and at about an angle of forty-five degrees to it, shaft 14 long, foot about 8.5 long.

NYMPH.—Resembles adult in number of setae, but pectinations less distinct and setae somewhat longer than in adult.

Holotype: Female, Coral Gables, Florida, June 4, 1956, (D. De Leon) from *Trema floridana*; *allotype*: same collection data as for holotype; *paratypes*: three females, one male August 30, 1955, from *Morus rubra*; three females, one male, October 8, 1956, from *Callicarpa americana*, all from Coral Gables, and three females, one male from *Verbesina virginica*, Delray Beach, Florida, September 15, 1956. The specimens from *Verbesina* are somewhat larger than those from the other plants. Other specimens have been taken from *Hamelia patens*, *Eriobotrya japonica*, *Tetrazygia bicolor* at Coral Gables, *Callicarpa americana* at Key Largo, June 7, 1956, and a single specimen from *Cercis canadensis*, Columbus, Georgia, August 29, 1956.

The only other species in this genus known in Florida with many distinctly pectinate setae on the dorsal shield is *T. transvaalensis* (Nesbitt)¹. A differential diagnosis of the Florida species with pectinate setae follows:

16 pairs of dorsal shield setae	<i>ellipticus</i> , n. sp.
17 pairs of dorsal shield setae	<i>annectens</i> , n. sp.
18 pairs of dorsal shield setae;	
2 pairs of sternals	<i>jackmicklei</i> , n. sp.
18 pairs of dorsal shield setae;	
3 prs of sternals	<i>transvaalensis</i> (Nesb.)

Paratypes of the above new species will be deposited in the University of Florida Collections, Gainesville.

¹ Nesbitt, H. H. J. 1951. A taxonomic study of the Phytoseiinae (family Laelaptidae) predaceous upon Tetranychidae of economic importance. Zool. Verhand. No. 12; 1-64, 32 pl.