SEVEN NEW TYPHLODROMUS FROM MEXICO WITH
COLLECTION NOTES ON THREE OTHER SPECIES
(ACARINA: PHYTOSEIIDAE)

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The species treated below belong to the group of typhlodromids with four pairs of anterior lateral setae. Chant (1957a) placed this group in *Amblyseius* Berlese which he considered a subgenus of *Typhlodromus* Scheuten. He discussed the reasons for this action in a later paper (Chant, 1957b). As he also shows in his study of the immature stages of some phytoseiids (Chant, 1958), the typhlodromids with the above character appear, on the basis of setal development, to be more closely related to the species in the genera *Amblyseius* Berlese and *Amblyseiopsis* Garman than they do to the typhlodromids with more than four pairs of anterior lateral setae. But the placing of typhlodromids with four pairs of anterior lateral setae with the amblyseids brings together mites of very different facies. To distinguish this group from the amblyseids it is proposed that it be removed from *Amblyseius* Berlese and be given subgeneric rank, the subgenus being named and characterized as follows:

*Typhlodromopsis*, n. subgen. Phytoseiids resembling *Typhlodromus* sensu estricto in general facies, but with four pairs of anterior lateral setae; the lateral setae all more or less of the same lengths, none of them (or M2) long and whip-like; M2 and ultimate lateral seta usually strongly pectinate; dorsal setae 2 to 5, especially D4 and D5, about as long as or at least not very much shorter than most of the laterals. Ventral shield with not more than three pairs of preanal setae. Legs without long, whip-like setae. Typical species of subgenus: *Typhlodromus cucumeris* Oudemans.

In the following descriptions all measurements are in microns and are averages unless variations from average is more than ten per cent, in that case the range is given. In the use of metapodal shield and metatarsus for what, in previous papers, I called the parapodal shield and the basitarsus, I have followed Evans (1957). I have used the names proposed by Garman (1948) for the setae of the dorsal shield.

*Typhlodromus (Typhlodromopsis) finlandicus* (Oud.) (1915)

*T. finlandicus* is common and widely distributed in Mexico. It was collected on 26 occasions and from about as many different plants. Representative collections are listed below:

Mante, S.L.P., December, from *Sabal palmetto*.
Veracruz, Ver., December and January, from *Achras zapota*, coconut, and others.
Tuxtla Gutierrez, Chiapas, January, from avocado, mahogany, and others.
San Cristobal de las Casas, Chiapas, January, from peach.
Guadalajara, Jal., March, from pomegranate, *Bougainvillea*, and ash.
Puerta Vallarta, Jal., May, from *Bursera* sp.
Tepic, Nay., March, from Verbesina sp. and others.
San Blas, Nay., March, from an unknown host.

Typhlodromus (Typhlodromopsis) mesembrinus Dean (1957)

_T. mesembrinus_ was collected chiefly in the area around Tuxtla Gutierrez, Ch. in January from a large variety of plants including mango, avocado, Annona sp., and Diospyros ehenaster. It was also taken from pear in December near Montemorelos, N. L., from coffee at Tamazunchale, S.L.P., and from Malvaviscus sp. in January at Veracruz.

Typhlodromus (Typhlodromopsis) peregrinus Muma (1955)

_T. peregrinus_ appears to be limited to the east coast of Mexico and to the section round Tuxtla Gutierrez, Ch. A list of representative collections follows:

Tamazunchale, S.L.P., December, from Asclepias curassavica.
Veracruz, Ver., December and January, from Selerocarpus sp., Cupania macrophylla, Gliricidia sepium, and a half dozen other plants.
Cordoba, Ver., February, from Bursera simaruba and Erythrina sp.
Julapa, Ver., March, from Inga sp.
Coatzcoalcos, Ver., January, from Waltheria brevipes and Rhynchospora mexicana.
Tuxtla Gutierrez, Ch., January, from Aechras zapota, Tecomia stans, and six other species of plants.

The specimens of _T. peregrinus_ collected in Mexico have for the most part longer setae on the dorsal shield than do the Florida specimens, the laterals especially being noticeably longer. The Mexican specimens were first thought to be distinct, but the spermatophore bearer of the male is so similar to that of the male _peregrinus_ from Florida it is unlikely they are separate species.

Figures 1-3. *Typhlodromus (Typhlodromopsis) planetarius*, n. sp. ♀, dorsal shield, metapodal shields, and ventrianal shield.
Figures 4-6. *Typhlodromus (Typhlodromopsis) quercicus*, n. sp. ♀, dorsal shield, metapodal shields, and ventrianal shield.
Figures 7-10. *Typhlodromus (Typhlodromopsis) fordycei*, n. sp. ♀, spermatophore; ♀, dorsal shield, metapodal shields, and ventrianal shield.
Figures 14-17. *Typhlodromus (Typhlodromopsis) cucumeroides*, n. sp. ♀, spermatophore; ♀, dorsal shield, metapodal shields, and ventrianal shield.
Figures 18-21. *Typhlodromus (Typhlodromopsis) sabali*, n. sp. ♀, spermatophore; ♀, dorsal shield, metapodal shields, and ventrianal shield.
Figures 22-25. *Typhlodromus (Typhlodromopsis) coniferus*, n. sp. ♀, spermatophore; ♀, dorsal shield, metapodal shields, and ventrianal shield.
Typhlodromus (Typhlodromopsis) planetarius, n. sp.
(Figures 1-3)

*T. planetarius* appears to be most closely related to *T. peregrinus* Muma but differs from that species by having much larger lateral setae, L1 to L4 being about as long as or longer than the distances between their bases and L7 and L8 being about equal in length and longer than M2.

**Female:** Dorsal shield 282 long, 182 wide, rather coarsely imbricate, and with 17 pairs of setae of the following lengths: L1 29, L2 27, L3 32, L4 37, L5 19, L6 26, L7 25, L8 29, L9 49-56 (sparsely and minutely pectinate); M1 20, M2 22; D1 28, D2 20, D3 18, D4 18, D5 20, D6 9; VL1 31; S1 31, S2 18. Peritreme extending forward about to anterior margin of coxa 11. Sternal shield indistinct; genital shield 74-85 wide; ventral shield 90 long, 49-58 wide (at anterior widening) with three pairs of preanal setae and a pair of half-round pores and bordered by four pairs of interseptal setae including VL1; two pairs of metapodal shields. Digits of chelicerae apparently without teeth (but digits poorly oriented). Leg IV with macrosetae of the following lengths: genu 23, tibia 20, metatarsus 38; other legs without macrosetae.

**Male:** Not known.

**Holotype:** Female, Tepic, Nay., March 25, 1957 (D. De Leon), from *Inga spuri a*. **Paratypes:** One female, same data as for holotype; two females, Santa María del Oro, Nay., March 24, from *Clethra* sp.

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Typhlodromus (Typhlodromopsis) quercicolus, n. sp.
(Figures 4-6)

*T. quercicolus* resembles *T. masseae* Nesbitt 1951 as described by him, but differs from it most noticeably by its smaller size, by L5 being nearly as long as L6, and by D4 and D5 being appreciably longer than D2 and D3.

**Female:** Dorsal shield nearly smooth, except at anierolateral margins and area between D5 and M2 where it is weakly and coarsely imbricate, 355 long, 210 wide with 17 pairs of setae of the following lengths: L1 45-54, L2 29-36, L3 37-47, L4 47-63, L5 42-82, L6 47-54, L7 42-49, L8 36-45, L9 72-83; M1 7-13, M2 63; D1 22-29, D2 14-18, D3 11-15, D4 20-28, D5 27-38, D6 16. M2 and L9 minutely and sparsely pectinate. Sternal shield with three pairs of setae; genital shield 74-88 wide; ventral shield 115 long, 96 wide with three pairs of preanal setae and a pair of pores and bordered by four pairs of interseptal setae including VL1 which is 59 long; two pairs of metapodal shields, the primary one 27 long and 7 wide; fixed digit with a sub-terminal tooth and with five small teeth in the middle third and the pilus dentilis; movable digit not observable. Legs with setae rather long and slender with macrosetae not much longer than the others, a macroseta on genua I-IV and on tibia IV and metatarsus IV; macrosetae of leg IV of the following lengths: genu 42, tibia 55, metatarsus 68.

**Male:** Not known.

**Holotype:** Female, Quiroga, Mich., March 11, 1957 (D. De Leon), from *Quercus* sp. **Paratypes:** One female, Chuparcuero, Mich., other data as for holotype, and one female, Ciudad del Maiz, S.L.P., June 11, 1957, from *Quercus* sp.
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Typhlodromus (Typhlodromopsis) fordycei, n. sp.
(Figures 7-10)

*T. fordycei* resembles *T. reticulatus* Oudemans, but differs from Chant's redescription of that species (Chant, 1958) by the ventrianal shield having a pair of pores, by the male having 9 pairs of preanal setae, and in other characters.

**Female:** Dorsal shield 324 long, 188 wide with 17 pairs of setae. All laterals, except L9, 18-27 long, L6 the longest; L9 67 long; M2 36 long; all dorsals, except D6, 14-21 long, D1 and D5 of about the same lengths. Sternal shield with three pairs of setae; genital shield 72 wide; ventrianal shield 110 long, 95 wide with three pairs of preanalals and a pair of pores; four pairs of interscutal setae including VL1 bordering the ventrianal shield: two pairs of metapodial shields, the primary pair about 27 long. Fixed digit with apparently five teeth along middle third, teeth of movable digit not observable. Genital I-IV with macrosetae 21, 15, 25, and 33 long respectively, tibia and metatarsus IV each with a macroseta 19 and 39 long respectively; all macrosetae rather large and expanded at tips.

**Male:** Resembles female; dorsal shield 267 long, 166 wide. Ventrianal shield with three pairs of preanal setae and a pair of pores. Spermatophore bearer more or less evenly curved, about 31 long measured in a straight line from base to tip.

**Holotype:** Female, La Tina, Ver., February 5, 1957 (D. De Leon), from *Pithecolobium lanceolatum*. **Paratypes:** Four females, two males, other data as for holotype; one male, Cordoba, Ver., February 5, 1957, from banana.

The mite is named in honor of Mr. J. B. Fordyce of Apple Valley, Calif.

Typhlodromus (Typhlodromopsis) simplicissimus, n. sp.
(Figures 11-13)

*T. simplicissimus* differs from other mites with nine rather short lateral setae and L7 paired with M2 chiefly in having L2 and L3 distinctly shorter than L1 or L4, by the ventrianal shield having pores almost directly behind and close to the bases of the posterior pair of preanalals, and by the numerous small teeth on the fixed digit.

**Female:** Dorsal shield 317 long, 208 wide with nine lateral, two median, and six dorsal pairs of setae; the lengths of most of these setae follow: L1 30, L2 11-20, L3 18, L4 25-36, L5 17, L6 18-23, L7 14-18, L8 10, L9 56-72; M1 11, M2 28-44; D1 21, D3 11, D5 17. Steranal shield with three pairs of setae; genital shield 77 wide; ventrianal shield 105 long, 74 wide with three pairs of preanal setae and a pair of pores almost directly behind and close to the bases of the posterior pair of preanalals; ventrianal shield bordered by four pairs of interscutal setae including VL1 which is 38 long; two pairs of metapodial shields the primary one 18 long and about 6 wide, the accessory 17 long and about 3 wide. Fixed digit with about 12 very small teeth on the basal two-thirds and three somewhat larger, more rounded, sub apical teeth; movable digit with three teeth. Genital I-IV each with a macroseta 24, 23, 25, and 35-44 long respectively; tibia and metatarsus IV each with a macroseta 18 and 39-44 long respectively, all macrosetae tapering to a fine point.
MALE: Not known.

Holotype: Female, Cordoba, Ver., February 4, 1957 (D. De Leon), from Eugenia jambos. Paratypes: One female, Veracruz, Ver., January 1, 1957, from Cupania macrophyllia; two females, Cordoba, Ver., February 4, 1957, one from Bursera simaruba and one from Miconia glaberrima.

Typhlodromus (Typhlodromopsis) cucumeroides, n. sp.

(Figures 14-17)

T. cucumeroides resembles T. cucumeris Oudemans, but differs from the description of that species in Nesbitt (l.c.) by its greater size, by the shape of the ventrianal shield, by lacking a macroseta on metatarsus IV, and by other characters.

Female: Dorsal shield rather coarsely and strongly imbricate, 408 long, 200 wide with 17 pairs of setae. The lengths of most of these setae follow: L1, 22, L2 22, L3 22, L4 27, L5 31, L7 28, L8 28, L9 47; M2 38; D1 25, D4 18, D5 18. Sternal shield indistinct; genital shield 86 wide; ventrianal shield 144 long, 116 wide with three pairs of preanal and a pair of elliptic pores. Ventrianal shield bordered by four pairs of intersegmental setae including VL1 which is 38 long; two pairs of metapodal shields, the primary one 29 long, 9 wide. Fixed digit with four teeth between the pilus dentilis and the terminal hook; movable digit with one tooth. Legs without macrosetae.

Male: Resembles female; dorsal shield 360 long, 200 wide. Ventrianal shield with three pairs of preanal setae and a pair of elliptic pores, Spermatophore bearer with foot 21 long, shank 23 long.

Holotype: Female, San Blas, Nay., March 26, 1957 (D. De Leon), from Pectis arenaria. Paratype: One male, same data as for holotype.

Typhlodromus (Typhlodromopsis) sabali, n. sp.

(Figures 18-21)

T. sabali resembles T. reticulatus Oudemans but differs from Oudemans' description of that species (in Nesbit, 1951) chiefly by having a pair of large pores on the ventrianal shield and a macroseta on each of the last three segments of leg IV.

Female: Dorsal shield rather strongly imbricate, 327 long, 195 wide with nine lateral, two median and six dorsal pairs of setae. The lengths of most of these setae follow: L1 24 36, L2 13 19, L3 13 19, L4 22 36, L6 20-33, L9 72-81; M2 46; D1 23, D3 17, D5 20. Sternal shield with three pairs of setae, the posterior pair not set on small posteriorly directed arms; genital shield 73 wide; ventrianal shield 105 long, 95 wide with three pairs of preanal setae and a pair of large pores and bordered by four pairs of intersegmental setae including VL1 which is 45 long; two pairs of metapodal shields. Fixed digit with pilus dentilis and with eight teeth of rather uniform size and evenly spaced between terminal hook and base of digit; movable digit with three small teeth. Genua I-IV each with a macroseta 18, 18, 26, and 44 long respectively; tibia IV and metatarsus IV each with a macroseta 27 and 48-60 long respectively, the macrosetae of leg IV very slightly enlarged at the tips.
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MALE: Resembles female. Dorsal shield 261 long, 185 wide; ventrianal shield with three pairs of preanal setae and a pair of pores. Spermatophore bearer L-shaped, the foot 17 long, the shank 15 long.

Holotype: Male, about six miles northeast of San Blas, Nay., March 28, 1957 (D. De Leon), from Sabal roseti. Paratypes: Three females, same data as for holotype; three females, two males from Casearia spp., other data as for holotype. Other specimens were collected from Tabebuia, Citrus, and Rhizophorus at San Blas.

Typhlodromus (Typhlodromopsis) confertus, n. sp.
(Figures 22-25)

The female of T. confertus closely resembles the female of T. sabali. The imbrications on the dorsal shield of the former are smaller and more pronounced, the ventrianal shield is a little longer in proportion to its width and it differs in several other apparently minor characters, but the ventrianal shield of the male of confertus bears four pairs of preanal setae and the foot of the spermatophore bearer is slightly shorter than the Shank, whereas with sabali the ventrianal shield of the male bears three pairs of preanal setae and the foot of the spermatophore bearer is slightly longer than the Shank.

FEMALE: Dorsal shield 328 long, 205 wide with rather small pronounced imbrications and with nine lateral, two median, and six dorsal pairs of setae. The lengths of most of these setae follow: L1 27, L2 20, L3 19, L4 24-36, L6 22-29, L9 78; M2 47; D1 22, D4 18-17, D5 20. Sternal shield with three pairs of setae; genital shield 76 wide; ventrianal shield 110 long, 94 wide with three pairs of preanal setae and a pair of pores and bordered by four pairs of interscutal setae including VL1 which is 46 long; two pairs of metapodal shields, the primary one 22 long and about 6 wide. Fixed digit with eight teeth proximal of the line of crossing of the movable digit and with a large tooth near base of terminal hook; movable digit with two to three teeth. Legs with rather short stout setae; genua I-IV each with a macroseta 19, 18, 18, and 35 long respectively; tibia IV and metatarsus IV each with a macroseta 12-18 and 50-60 long respectively, the tips very slightly enlarged.

MALE: Resembles female; dorsal shield 267 long, 175 wide; ventrianal shield with four pairs of preanal setae and a pair of pores. Spermatophore bearer L-shaped, the foot about 14 long, the shaft about 17 long.

Holotype: Male, Tuxtla Gutierrez, Ch., January 15, 1957 (D. De Leon), from Coccolobis sp. Paratypes: Two females, same data as for holotype; two females, A. M. Terrazac, S.L.P., December 21, 1956, from Hamelia patens; six females, Veracruz, Ver., December and January from Verbesina olivacea, Helicharpus tomentosa, Bupatorium odoratum, and Coccolobis sp. Additional specimens were collected at Cordoba, Ver., February, from orange; at Tuxtla Gutierrez, Ch., January, from Bupatorium hemipteropodum and from many other plants in the above listed places.

Paratypes of the above new species will be deposited in the University of Florida Collections, Gainesville; the holotypes have been retained in the author's collection.
KEY TO SPECIES OF SUBGENUS TYPHLODEROMOPSIS IN MEXICO

1. Ventrianal shield roughly rectangular with anterior margin convex, constricted at sides and usually widest at a point about in line with base of anus ........................................................................................................ 2
   Ventrianal shield roughly pentagonal or triangular with anterior margin nearly straight, not or scarcely constricted at sides and usually widest at a point about in line with second pair of preanalts .......... 5

2. Anterior and posterior preanalts crowded toward each other, bases of anterior pair removed from anterior margin of shield .......... 3
   Anterior and posterior preanalts normally arranged, bases of anterior pair touching or nearly touching anterior margin of shield .... 4

3. L1 to L4 about as long as distances between their bases; macrosetae with tips sharp .................................................. finlandicus (Oud.)
   L1 to L4 much shorter than distances between their bases; macrosetae with tips strongly expanded ................................ mesembrinus Dean

4. L8 minute or nearly so, very much shorter than M2 and usually distinctly shorter than L7; genua I-IV each with a macroseta ..........  peregrinus Muma
   L8 not minute, longer than M2 or L7; genua I-III without macrosetae ............................................................................ planetarius, n. sp.

5. L2 and L3 as long as or longer than distance to seta behind ...................... quercicolus, n. sp.
   L2 and L3 shorter than distance to seta behind .................................................. 6

6. Macrosetae of leg IV strongly expanded at tips; male with spermatophore bearer rather evenly curved .................. fordyceri, n. sp.
   Macrosetae of leg IV sharp or only slightly expanded at tips .......... 7

7. The pair of pores of ventrianal shield behind and close to bases of third (posterior) pair of preanalts ...................... simplicissimus, n. sp.
   The pair of pores of ventrianal shield between or posteromedial of bases of third pair of preanalts ........................................... 8

8. L1 distinctly shorter than distance to L2; pores of ventrianal shield posteromedial of bases of third pair of setae; male with foot of spermatophore bearer distinctly longer than shank; a large species ............................................. cucumeroides, n. sp.
   L1 about as long as or longer than distance to L2; pores of ventrianal shield in line with or very nearly in line with bases of third pair of preanalts; male with foot of spermatophore bearer about as long as shank; smaller species ............................................. 9

9. Ventrianal shield of male with three pairs of preanal setae ..........

   Ventrianal shield of male with four pairs of preanalts .................. confervus, n. sp.
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LITERATURE CITED


