Spider Mites from Northwestern and North Central Mexico (Acarina: Tetranychidae)

D. M. TUTTLE, E. W. BAKER,
and M. ABBATIELLO

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY • NUMBER 171

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ABSTRACT

Tuttle, D. M., E. W. Baker, and M. Abbatiello. Spider Mites from Northwestern and North Central Mexico (Acarina: Tetranychidae). *Smithsonian Contributions to Zoology,* number 171, 18 pages, 28 figures, 1974.—Eighteen genera of spider mites were collected by the authors during July and August in 1970. Two of these are proposed and described as new, *Crotonella* and *Atetranychus.* A total of sixty-nine species are reported, including thirteen new species. Descriptions and figures of new species are as follows: *Mcgregorella lantanae, Paraplonobia (Langella) mexicana, Petrobia (Petrobia) waltheria, Crotonella mazatlana, Mononychellus wainsteini, M. waltheria, M. tephrosiae, M. hyptis, Eoteranychus abutilon, E. brickiella, Atetranychus estebaneae, Oligonychus, (Homonychus) constegia,* and *Tetranychus (Tetranychus) flechtmanni.*

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Spider Mites from Northwestern and North Central Mexico (Acarina: Tetranychidae)

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Introduction

This survey was undertaken by the authors to determine the distribution of the spider mites of the southwestern United States into Mexico and to check for potential pest species. Tuttle and Baker (1964; 1968) and Baker and Tuttle (1972) have published on the spider mites of Arizona and the southwestern United States, and this survey is a continuation of these studies. As expected, most of the mites collected proved to be known species, mostly from the Southwest. Two new genera and thirteen new species were found.

The collections were made by D. M. Tuttle, M. Abbatiello, and E. W. Baker unless otherwise stated; collections were made in the states of Sonora, Sinaloa, Nayarit, Jalisco, Zacatecas, Coahuila, and Chihuahua. Unless otherwise stated, all collections were made in 1970.

We gratefully acknowledge the plant determinations made for us by Dr. Charles T. Mason, Jr., and Mrs. Caryl L. Sagar, Department of Botany, University of Arizona.

The systematic arrangements are those of Tuttle and Baker (1968).

D. M. Tuttle, University of Arizona, Yuma, Arizona. E. W. Baker, U.S. Department of Agriculture, Beltsville, Maryland. M. Abbatiello, State University of New York at Farmingdale, New York.

Genus *Pseudobryobia* McGregor

Pseudobryobia McGregor, 1950:366.—Baker and Tuttle, 1972:2.

Pseudobryobia canescens Baker and Tuttle

Pseudobryobia canescens Baker and Tuttle, 1972:2.

A female and nymph were collected on *Atriplex canescens* (Pursh) Nuttall, 80 miles south of Ciudad Juarez, 8 August.

Pseudobryobia curiosa (Summers)

Bryobia curiosa Summers, 1953:290.

A female and three nymphs were taken on *Zaluzania triloba* (Orton) Persoon, Zacatecas, 2 August.

Pseudobryobia drummondi (Ewing)

Petrobia drummondi Ewing, 1926:143.
Bryobia drummondi.—Pritchard and Baker, 1955:18.
Pseudobryobia drummondi.—McGregor 1950:368.—Baker and Tuttle, 1972:2.

Pseudobryobia drummondi was collected from the following host plants: *Larrea tridentata* (De Candolle) Coville, Hermosillo, 17 July, Torreon, 5 August, Rancho Grande, 5 August, and 10 miles east of Torreon, 5 August; *Prosopis juliflora*

(Swartz) De Candolle, 10 miles east of Torreon, 5 August; and *Acacia greggii* Gray, 10 miles east of Torreon, 5 August.

Pseudobryobia ephedrae (Tuttle and Baker)

Bryobia ephedrae Tuttle and Baker, 1968:7.

This species was collected on *Ephedra trifurca* Torrey, 10 miles south of Chihuahua, 7 August.

Pseudobryobia species

A single specimen was found, a molting nymph on *Baileya pleniradiata* Harvey and Gray, 10 miles south of Chihuahua, 7 August. The nymphal setae are short, broadly spatulate, and strongly spinate. The developing nymph possesses setae similar to those of *P. drummondi* (Ewing).

Genus *Hystrichonychus* McGregor

Hystrichonychus McGregor, 1950:272.—Tuttle and Baker, 1968:20.

Hystrichonychus gracilipes (Banks)

Tetranychus gracilipes Banks, 1900:72.
Hystrichonychus gracilipes.—McGregor 1950:39.—Tuttle and Baker, 1968:27.

Many specimens were collected from *Sphaeralcea orcuttii* Rose, Hermosillo, 17 July; *S. angustifolia* (Cavara) David Don, Zacatecas, 2 August and Rancho Grande, 4 August; *Helianthus annuus* Linnaeus, 160 miles north of Torreon, 6 August; and *Parthenium incanum* Humboldt, Bonpland, and Kunth, 6 August.

Histrichonychus sidae Pritchard and Baker

Histrichonychus sidae Pritchard and Baker, 1955:40.—Tuttle and Baker, 1964:8.

Collections of this species were taken from *Dalea* species, Fresnillo, 3 August; *Sida diffusa* Humboldt, Bonpland, and Kunth, Chihuahua, 8 August; and *Sida* species, Guadalajara, 31 July.

Hystrichonychus spinosus Tuttle and Baker

Hystrichonychus spinosus Tuttle and Baker, 1968:21.—Baker and Tuttle, 1972:3.

This mite was collected on *Brickellia veronicaefolia* (Humboldt, Bonpland, and Kunth) Gray, Zacatecas, 2 August.

Genus *Monoceronychus* McGregor

Monoceronychus McGregor, 1945:100.—Tuttle and Baker, 1968:3.

Monoceronychus californicus McGregor

Monoceronychus californicus McGregor, 1945:100.—Tuttle and Baker, 1968:41.

A collection of *M. californicus* was collected from *Monanthochloe littoralis* Engelmann, Los Mochis, 24 July.

Genus *Mcgregorella* Baker and Tuttle

Mcgregorella Baker and Tuttle, 1972:5.

Mcgregorella incana Baker and Tuttle

Mcgregorella incana Baker and Tuttle, 1972:6.

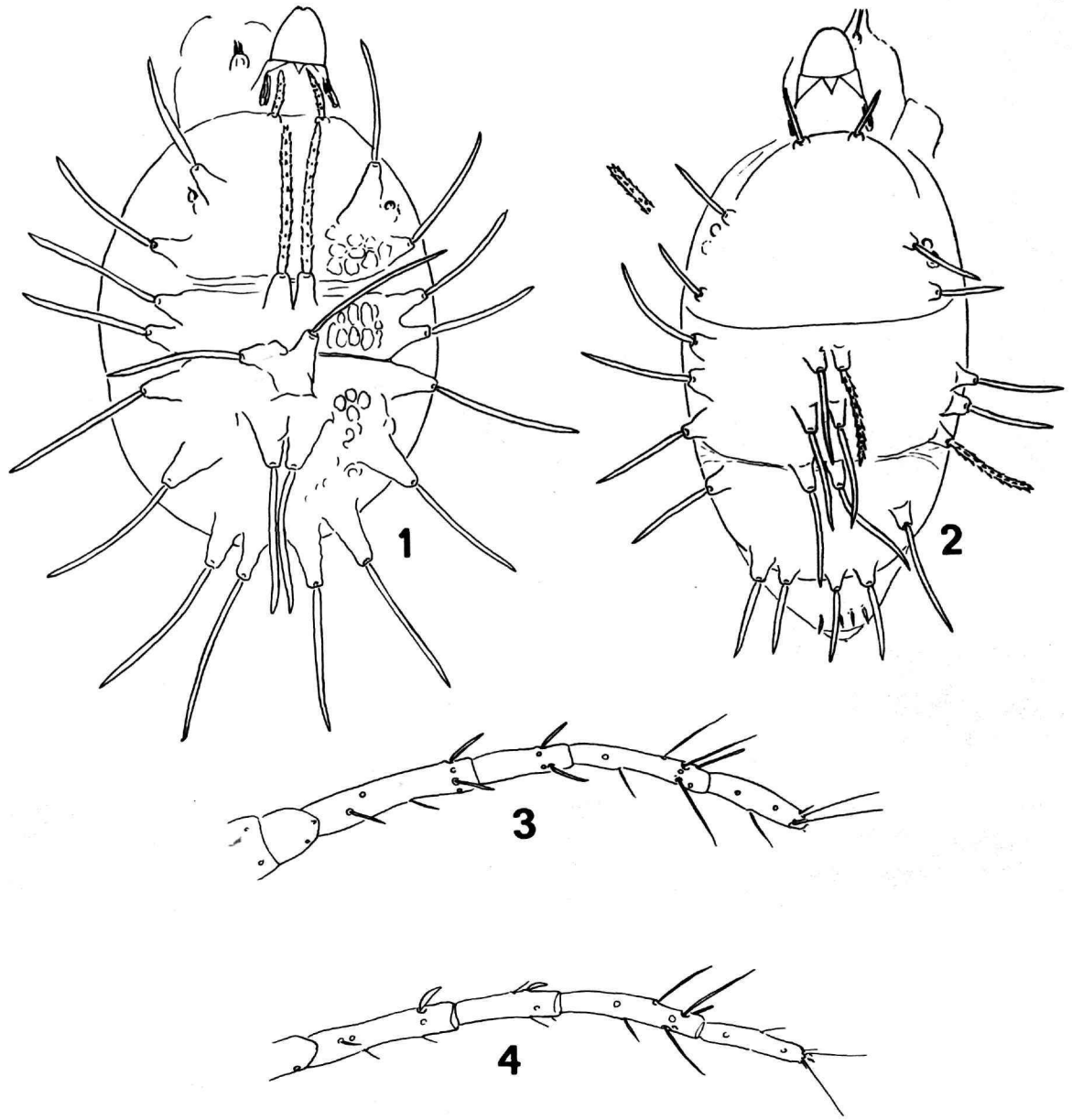
Records of this species from Mexico include: *Aloysia wrightii* (Gray) Heller, Chihuahua, 8 August; *Coldenia canescens* De Candolle, Chihuahua, 8 August; and *Sida diffusa* Humboldt, Bonpland, and Kunth, Chihuahua, 8 August.

Mcgregorella lantanae, new species

FIGURES 1–4

This species differs from *M. incana* Baker and Tuttle in having lightly spinate dorsal body setae and a different pattern of leg setae. The dorsal body setae are much longer than those of *M. trifida* Baker and Tuttle.

FEMALE.—Rostrum short; stylophore somewhat elongate and slightly edentate anteriorly; peritreme anastomosing distally. Dorsal body surface with light reticulate pattern; propodosoma and hysterosoma separated by transverse striae; eyes appear to be single; anterior to second pair of DC setae another series of transverse striae. All dorsal body setae, except short anterior propodosomal setae, long, strong, lightly serrate, and set on strong elon-



FIGURES 1–4.—*Mcgregorella lantanae*, new species: 1, dorsum of female; 2, dorsum of male; 3, leg I of male; 4, leg I of female.

gate tubercles as figured. Most leg setae short; tibial setae longer than others; dorsal femoral and genual setae short, stout, and serrate; tarsus III with distal set of duplex setae, short and subequal in length, the solenidion distal; tarsus IV similar but duplex setae longer. Setal formula as follows:

1. 2-1-6-4-7+1-3 posterior to duplex
2. 2-1-5-4-6-3 posterior to duplex
3. 1-1-2-3-5-4 posterior to duplex
4. 1-1-2-3-5-4 posterior to duplex

Length of body 383μ; including rostrum 478μ.

MALE.—Similar to female but body setae rela-

tively shorter; anterior propodosomal setae relatively longer; body divided by transverse suture anterior to first pair of DC setae and posterior to third pair. Eyes double. Duplex setae on tarsi I–IV. Length of body 319μ; including rostrum 415μ.

HOLOTYPE.—Female, USNM 3537, ex *Lantana velutina* Martens and Galeottit, Mazatlan, 26 July.

PARATYPES.—Six females and one male with the above data.

Genus *Paraplonobia* Wainstein

Aplonobia (*Paraplonobia*) Wainstein, 1960:140.
Paraplonobia.—Tuttle and Baker, 1968:48.

Subgenus *Paraplonobia* (*Paraplonobia*) Wainstein

Aplonobia (*Paraplonobia*) Wainstein, 1960:140.
Paraplonobia (*Paraplonobia*).—Tuttle and Baker, 1968:50.

Paraplonobia (*Paraplonobia*) *hilaria* Tuttle and Baker

Paraplonobia (*Paraplonobia*) *hilaria* Tuttle and Baker, 1968: 53.

Specimens of this species were taken on *Hilaria mutica* (Buckley) Bentham, Torreon, 5 August.

Paraplonobia (*Paraplonobia*) *tridens* Tuttle and Baker

Paraplonobia (*Paraplonobia*) *tridens* Tuttle and Baker, 1968: 50.

This species was collected from *Hilaria mutica* (Buckley) Bentham, Torreon, 5 August; and *Tridens puchellus* (Humboldt, Bonpland, and Kunth) Hitchcock, 8 miles south of Ciudad Juarez, 8 August.

Paraplonobia (*Paraplonobia*) species

A single larva was found on *Prosopis juliflora* (Swartz) De Candolle, Hermosillo, 18 July. The long leg setation is distinctive compared to other species.

Subgenus *Paraplonobia* (*Langella*) Wainstein

Paraplonobia (*Langella*) Wainstein, 1961:607.—Tuttle and Baker, 1968:54.

Paraplonobia (*Langella*) *artemisia* Baker and Tuttle

Paraplonobia (*Langella*) *artemisia* Baker and Tuttle, 1972:10.

This mite was taken from *Artemisia ludoviciana* Nuttall, Chihuahua, 8 August; and *Flourensia cernua* De Candolle, Chihuahua, 8 August.

Paraplonobia (*Langella*) *euphorbiae* Tuttle and Baker

Paraplonobia (*Langella*) *euphorbiae* Tuttle and Baker, 1964: 11; 1968:56.

Mites of this species were collected from *Acacia greggii* Gray, 10 miles east of Torreon, 5 August; *Scleropogon brevifolius* Philippi, Chihuahua, 5 August; and *Tidestromia lanuginosa* (Nuttall) Standley, Cuencame, 4 August, and Torreon, 5 August.

Paraplonobia (*Langella*) *mexicana*, new species

FIGURE 5

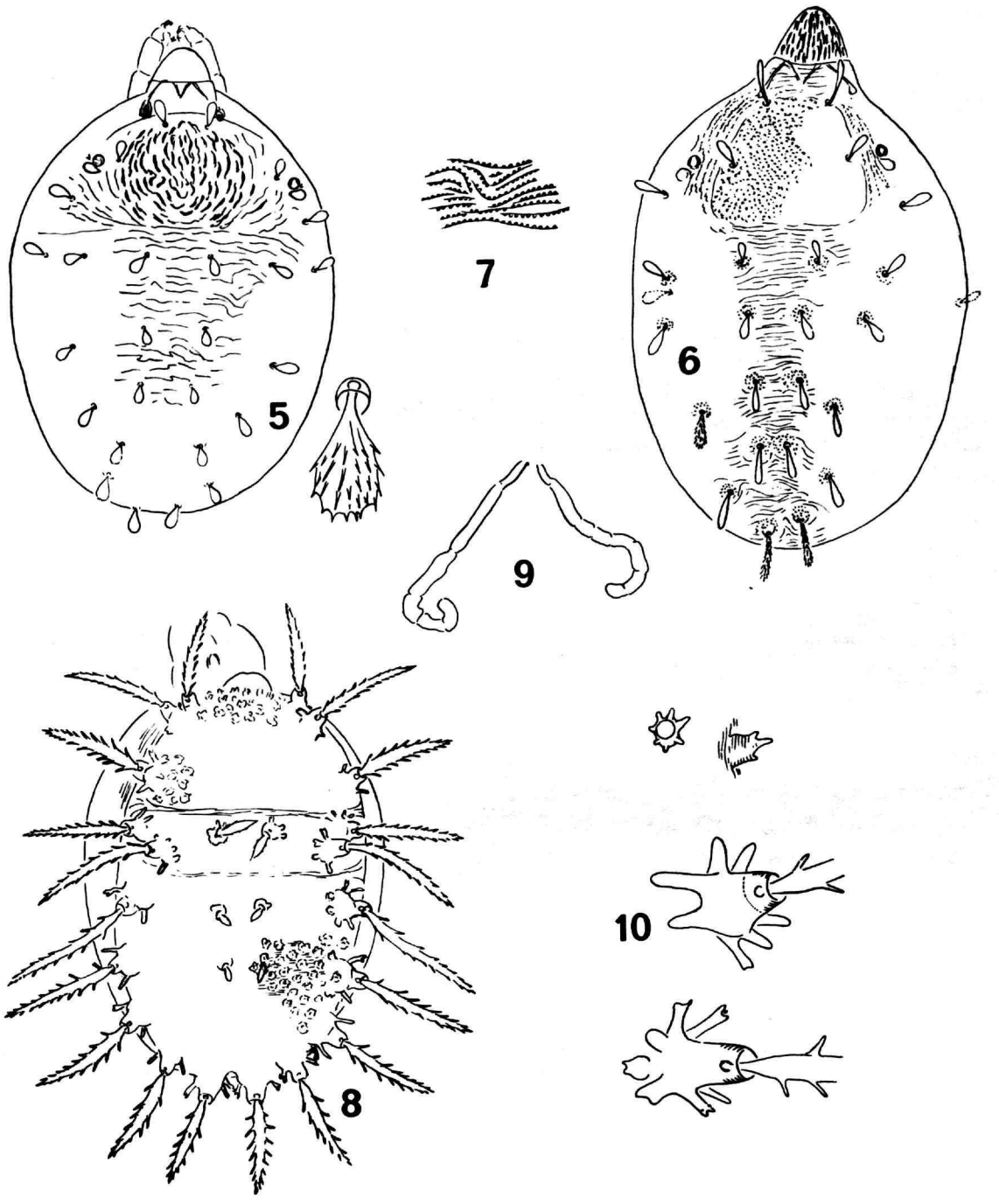
This species appears to be closely related to *P.* (*L.*) *boutelouae* Tuttle and Baker, differing only in the setal count of all legs, in having somewhat larger dorsal body setae, and in having the propodosomal shield striae shorter and much more strongly tuberculate.

FEMALE.—Rostrum short and broad; stylophore broadly rounded anteriorly; peritremes anastomosing distally. Dorsal body setae, except for the first pair of propodosomals, broadly rounded, small and serrate; first pair of propodosomals more elongate. Propodosomal shield with longitudinal design of somewhat wrinkled, short striae with obvious tubercles or lobes. Striae of hysterosoma transverse, widely separated, wrinkled, and without tubercles or lobes. Legs typical for genus, leg I longer than others. The leg setal count is as follows:

1. 2–1–6–5–11+1–12+1
2. 2–1–5–4–7–6+2
3. 1–1–2–4–7–9+1
4. 1–1–3–5–8–9+1

In contrast, the setal counts of the legs of *P. boutelouae* Tuttle and Baker are:

1. 2–1–4–3–8+1–12+2
2. 2–1–4–3–7–6
3. 1–1–3–2–8–10
4. 1–1–3–2–8–8+15



FIGURES 5–10.—*Paraplonobia* (*Langella*) *mexicana*, new species: 5, dorsum of female. *Petrobia* (*Petrobia*) *waltheria*, new species: 6, dorsum of female; 7, hystersomal striae and lobes. *Crotonella mazatlana*, new species: 8, dorsum of female; 9, peritreme; 10, tubercle and base of seta DC_e.

The outer coxal setae of legs I and II of *P. boutelouae* are much stouter than those of the new species. Length of body 472μ; including rostrum 542μ.

MALE.—Not known.

HOLOTYPE.—Female, USNM 3538, ex *Prosopis pubescens* Bentham, Los Mochis, 24 July.

PARATYPE.—Female with the same data.

Paraplonobia (Langella) prosopsis (Tuttle and Baker)

Aplonobia prosopis Tuttle and Baker, 1964:13.
Paraplonobia (Langella) prosopis.—Tuttle and Baker, 1968: 56.

Specimens were taken from the following plant hosts in Mexico: *Cercidium microphylum* (Torrey) Rose and Johnson, Alamos, 21 July; and *Prosopis juliflora* (Swartz) De Candolle, Ciudad Obregon, 22 July, 2 miles south of Zacatecas, 2 August, 10 miles south of Chihuahua, 7 August, and 80 miles south of Ciudad Juarez, 8 August.

Paraplonobia (Langella) species

A single nymph was collected on *Acacia vernicosa* Standley, Fresnillo, 3 August. The dorsal striation pattern is distinctive in forming starlike crenulated lobes.

Genus *Georgiobia* Wainstein

Georgiobia Wainstein. 1960:138.—Tuttle and Baker, 1968: 58.—Baker and Tuttle, 1972:12.

Georgiobia ambrosiae Tuttle and Baker

Georgiobia ambrosiae Tuttle and Baker, 1968:59.

This species was collected from *Ambrosia confertiflora* (De Candolle) Rydberg, Hermosillo, 17 July.

Georgiobia haplopappi Tuttle and Baker

Georgiobia haplopappi Tuttle and Baker, 1968:62.—Baker and Tuttle, 1972:12.

Georgiobia haplopappi was collected from the following host plants in Mexico: *Ambrosia confertiflora* (De Candolle) Rydberg, Hermosillo, 17 July; *Parthenium hysterophorus* Linnaeus, Los Mochis, 24 July; *Ruellia nudiflora* (Engelmann and Gray) Urban, Torreon, 5 August; and *Gaillardia pulchella* Fougeroux, Ciudad Juarez, 9 August.

Genus *Petrobia* Murray

Petrobia Murray, 1877:118.—Wainstein, 1960:133.

Subgenus *Petrobia (Petrobia)* Murray

Petrobia Murray, 1877:118.—Wainstein, 1960:133.—Tuttle and Baker, 1968:71.

Petrobia (Petrobia) waltheria, new species

FIGURES 6, 7

This species is distinctive in having short, broad serrate dorsal body setae. This mite would key out to *P. latens* (Müller) in Pritchard and Baker (1955), but differing in the type of setae.

FEMALE.—Rostrum short and broad; stylophore narrowing anteriorly and rounded; peritremes slightly anastomosing distally. Propodosomal shield pebbled; hysterosoma with irregular transverse striae bearing rounded lobes. Dorsal body setae short, distinctly broadening distally, serrate and about equal in length except for the P_1 and DC_5 setae; humeral setae smaller. Leg I as long as body; II and III shorter; IV longer than II and III but not as long as I. Leg setae short, slender, proximal setae stronger and distinctly serrate. Length of body 300μ; including rostrum 351μ.

MALE.—Not known.

HOLOTYPE.—Female, USNM 3539, ex *Waltheria americana* Linnaeus, Mazatlan, 26 July.

PARATYPE.—Female with the above data.

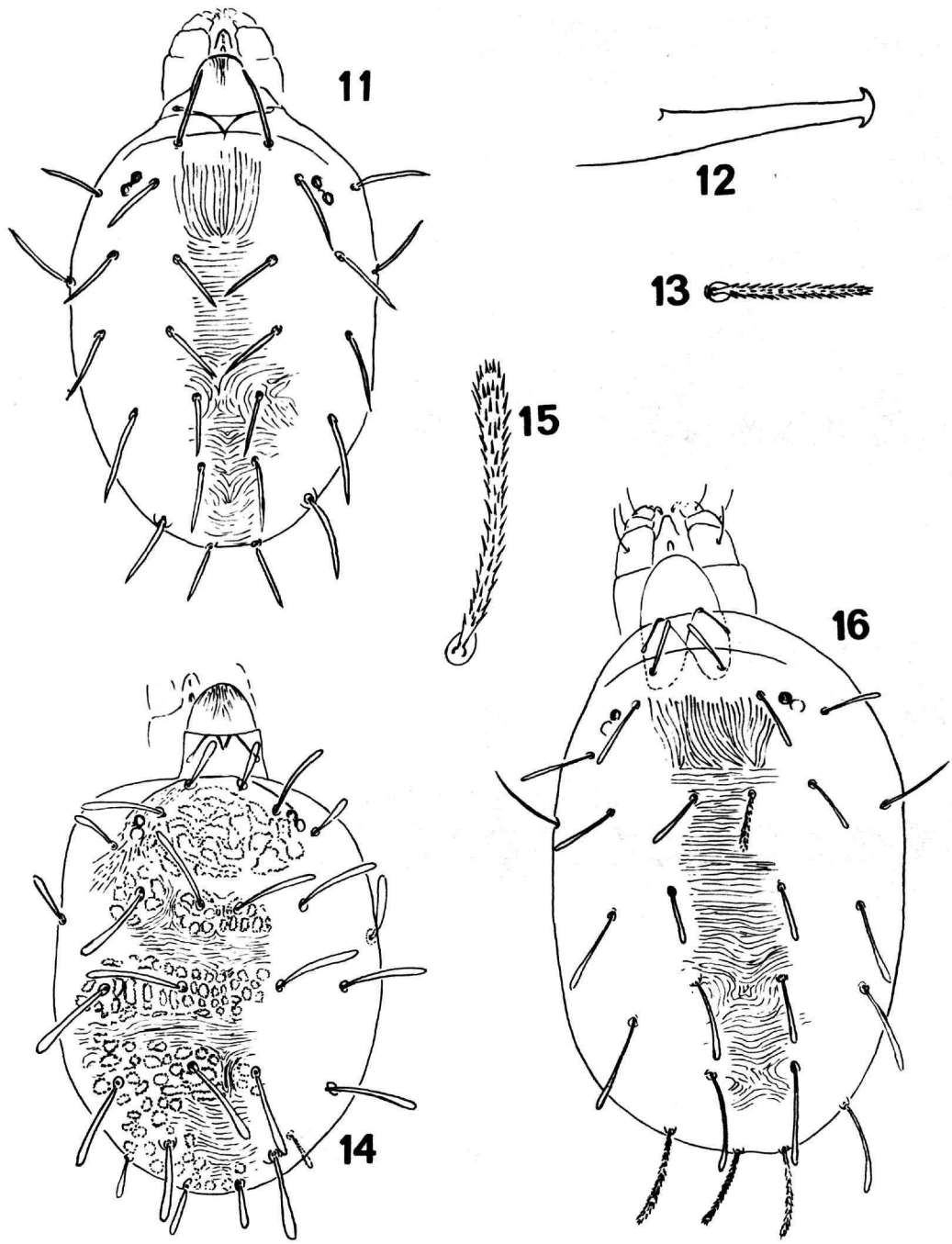
Specimens were also collected in Mazatlan, 26 July on *Cynodon dactylon* (Linnaeus) Persoon and *Sida* species.

Genus *Neotrichobia* Tuttle and Baker

Neotrichobia Tuttle and Baker, 1968:73.—Baker and Tuttle, 1972:14.

Neotrichobia arizonensis Tuttle and Baker

Neotrichobia arizonensis Tuttle and Baker, 1968:74.—Baker and Tuttle, 1972:14.



FIGURES 11–16.—*Mononychellus wainsteini*, new species: 11, dorsum of female; 12, aedeagus; 13, dorsal seta. *Mononychellus waltheria*, new species: 14, dorsum of female; 15, dorsal seta. *Mononychellus tephrosiae*, new species: 16, dorsum of female.

This species was collected in Mexico on *Allionia incarnata* Linnaeus, Hermosillo, 18 July, 10 miles south of Chihuahua, 7 August; *Boerhaavia* species, Torreon, 4 August; *Palafoxia linearis* (Cavara) Lagasca, 8 miles east of Torreon, 5 August; and *Scleropogon brevifolius* Philippi, Chihuahua, 8 August.

Genus *Crotonella*, new genus

The dorsal striae form spicules; the dorsal setae are marginal except for DC_{1-3}; the empodia are split distally; and the duplex setae are distal, and approximate on tarsus I.

TYPE-SPECIES.—*Crotonella mazatlana*, new species.

Crotonella mazatlana, new species

FIGURES 8–10

FEMALE.—Rostrum short and broad; stylophore slightly edentate anteriorly; peritremes slightly hooked distally. Dorsum of body covered with spicules formed by the striae; dorsum divided into three units by transverse striae between propodosoma and hysterosoma, and posterior to DC_1 and humeral setae. Venter of body with normal striae; ventral body setae long, slender, and simple. Dorsal body setae, other than DC_{1-3}, marginal and on prominent tubercles which basally possess finger-like projections except for propodosomal setal bases which have blunt processes. Setae broad at base and tapering distally, with strong blunt serrations basally.

Leg I setal pattern as follows: tarsus with 2 setae proximal to duplex setae; tibia with 3 slender setae; genu with 3 strong and 1 slender setae; femur with 2 strong and 2 slender setae; trochanter with 1 slender seta; and coxa with 2 slender setae. Leg II pattern as follows: tarsus with 1 slender seta proximal to duplex setae; tibia with 2 strong and 2 slender setae; genu with 2 strong and 2 slender setae; femur with 1 strong and 2 slender setae; trochanter with 1 long slender seta; and coxa with 2 long slender setae.

Length of body 287μ; including rostrum 238μ.

HOLOTYPE.—Female, USNM 3540, ex *Croton* species, Mazatlan, 26 July.

PARATYPE.—Female, broken, with the above data.

Genus *Allonychus* Pritchard and Baker

Allonychus Pritchard and Baker, 1955:137.

Allonychus littoralis (McGregor)

Allonychus littoralis.—Baker and Pritchard, 1963:313.

This species was taken from *Quercus reticulatus* Humbold and Bonpland, Zapotlanejo, 30 July. A male and a female were found. The ventral hairs of empodium I of the male form a clawlike structure; the ventral hairs of empodia II–IV of the male and I–IV of the female are free. The aedeagus appears to be slender and sigmoid.

Genus *Mononychellus* Wainstein

Mononychus Wainstein, 1960:198 [preoccupied].
Mononychellus Wainstein, 1971:589.

Mononychellus wainsteini, new species

FIGURES 11–13

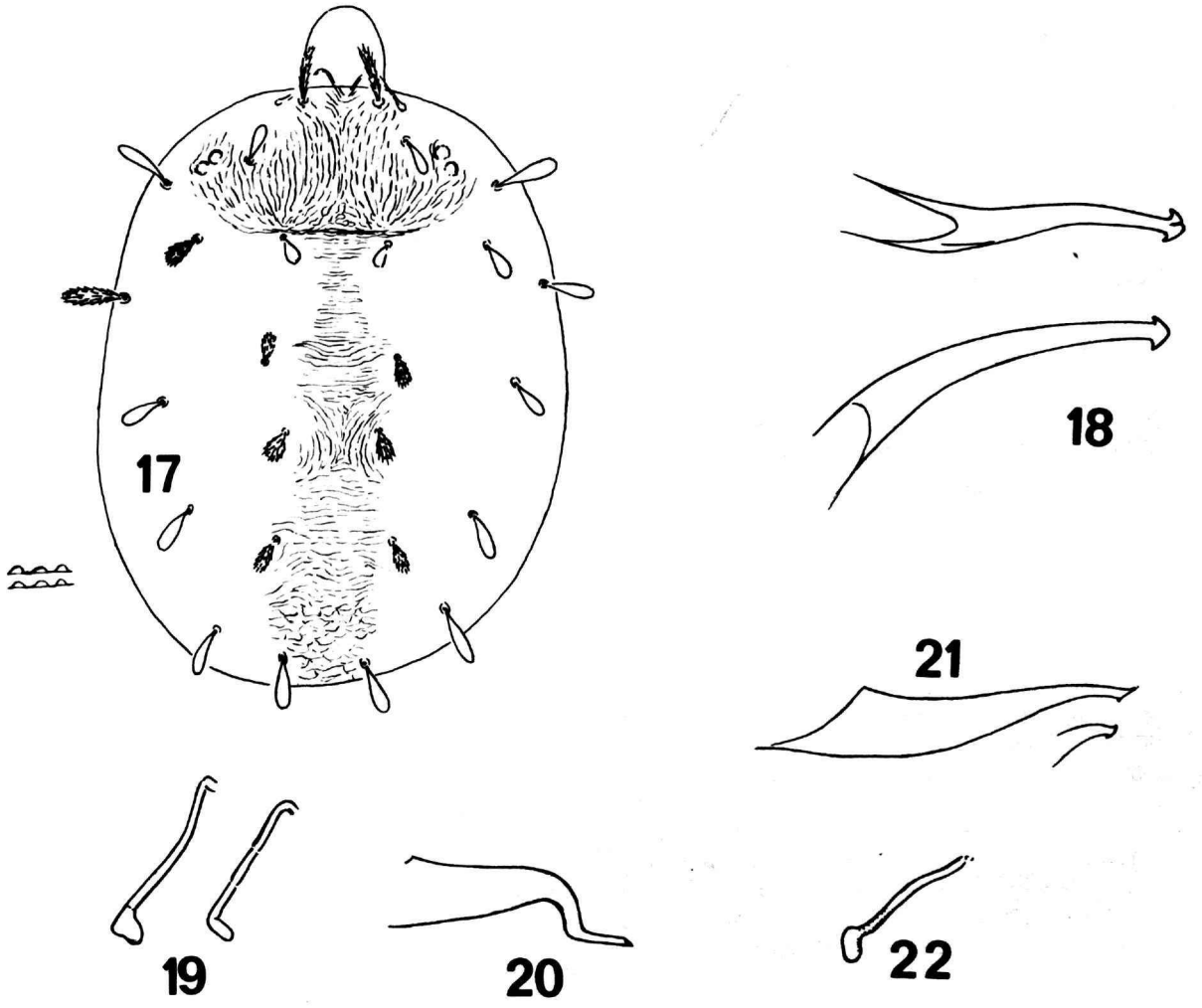
This species is distinctive in that the dorsal body setae reach to or about to the bases of the setae of the next row; the seta are subequal in length. The head of the aedeagus is rounded and equally hooked.

FEMALE.—Rostrum short and strong; stylophore rounded anteriorly; peritreme ending in simple bulb. Dorsal body setae reaching about to or to the bases of setae of next row; setae subequal in length, strong, serrate, parallel sided, and tapering to point distally. Striae with broad lobes, longitudinal between DC_3 and V-like posterior to DC_4. Ventral body setae normal and slender. Length of body 363μ, including rostrum 447μ.

MALE.—Dorsal body setae similar to those of female, but shorter. Aedeagus typical for genus but head with equal angulations dorsally and ventrally. Specimen broken and not measurable.

HOLOTYPE.—Female, USNM 3541, ex *Eysenhardtia* species, Zapotlenejo, 30 July.

PARATYPES.—One male and seven females with the above data.



FIGURES 17–22.—*Mononychellus hyptis*, new species: 17, dorsum of female; 18, two lateral views of aedeagus. *Eotetranychus abutilon*, new species: 19, peritreme; 20, aedeagus. *Eotetranychus brickellia*, new species: 21, aedeagus; 22, peritreme of male.

This species is similar to *Mononychellus siccus* (Pritchard and Baker), which was collected from a leguminous shrub at Phoenix, Arizona. It differs in that the setae are shorter and much stouter, and that the head of the aedeagus of *M. siccus* appears to be rounded or knoblike.

Mononychellus waltheria, new species

FIGURES 14, 15

This mite was first believed to be *Mononychellus planki* (McGregor) (McGregor, 1950:300; Pritchard and Baker, 1955:148). However, the dorsal body setae of the female broaden distally, whereas in *M. planki* these setae narrow distally, and the mite is well out of the known range of *M. planki*. It is here described as new.

FEMALE.—In general, very closely allied to *M. planki* in having the stylophore rounded anteriorly, the peritreme knobbed distally, and in having a similar reticulate dorsal striation pattern. The dorsal body setae of *M. planki* are slender and nar-

rowing distally; those of the new species are obviously broadened distally, although about equal length to those of *M. planki*. Length of body 319μ; including rostrum 408μ.

HOLOTYPE.—Female, USNM 3542, ex *Waltheria americana* Linnaeus, Mazatlan, 26 July.

PARATYPES.—Ten females with the above data.

One female was also taken on bean leaf, La Calera, Nicaragua, 12 January 1960 by F. A. Estrada.

Mononychellus tephrosiae, new species

FIGURES 16

This species is close to *M. tanajoa* (Bondar) (Bondar, 1938:441; Flechtmann and Baker, 1970: 160), differing in that the dorsocentral hysterosomal setae are at least more than one-half as long as the distance to the bases of the setae of the next row.

FEMALE.—Rostrum short and broad; stylophore broadly rounded anteriorly; peritreme ending in a simple bulb. Dorsal striation pattern as figured, being longitudinal between DC_3 setae. All dorsal body setae long, expanded distally, and reaching half the distance or more to the bases of the setae of the next row; all setae of about equal length. Length of body 319μ; including rostrum 402μ.

HOLOTYPE.—Female, USNM 3543, ex *Tephrosia talpa* Sereno Watson, Tequila, 26 July.

PARATYPES.—Nine females with the above data.

Other specimens studied are from *Olneya tesota* Gray, Hermosillo, 17 July, and from *Solanum rostratum* Dunal, Guadalajara, 31 July.

Mononychellus hyptis, new species

FIGURES 17, 18

This species has the short setae of *M. caribbeanae* (McGregor), but these dorsal body setae are much stronger, and the males are present. Climatically, the mite is found on the dry west coast of Mexico.

FEMALE.—Stylophore rounded anteriorly; peritremes with simple knob distally. Propodosomal setae 1 and 3 longer than 2, all three pairs obviously widened distally. Propodosomal striae longitudinal, broadly lobed, and in an irregular pattern. Hysterosomal setae D_1–D_4 small, broadening distally; marginals longer and becoming progressively longer posteriorly and also broadening distally. Striae of hysterosoma irregular, longitudinal between setae D_3, and with broad lobes. Venter with striae and setae typical for genus. Length of body 415μ; including rostrum 478μ.

MALE.—Setae typical for males of the genus, being long and more slender than in females, but with same length pattern. Aedeagus typical for males of genus, being hooked almost equally distally and with slight indentation if seen properly. Length of body 338μ; including rostrum 415μ.

HOLOTYPE.—Female, USNM 3544, ex *Hyptis* species, Zapotlanejo, 30 July.

PARATYPES.—Two males and six females with the above data.

Genus *Eotetranychus* Oudemans

Eotetranychus Oudemans, 1931:224.—Pritchard and Baker, 1955:138.—Tuttle and Baker, 1968:85.

Eotetranychus abutilon, new species

FIGURES 19, 20

This mite keys out to *Eotetranychus perplexus* (McGregor) in the key to the females in Pritchard and Baker (1955). The aedeagus of the males differ considerably.

MALE.—Sensillum of palpus small, about as long as broad. Peritremes slightly hooked distally. Tarsus I with clawlike empodium; other empodia with free hairs. Setal count of legs as follows:

1. 2-1-8-5-8+3-4+4 (proximal to duplexes)
2. 2-1-7-5-8-1+1
3. 1-1-5-4-5-1+1
4. 1-1-4-4-6-5+1

Aedeagus sharp sigmoid, curving ventrally. Length of body 223μ; including rostrum 287μ.

FEMALE.—With characters of *Eotetranychus perplexus* (McGregor). Tibia II with eight setae; tarsus I with four setae proximal to duplex setae. Peritreme slightly hooked. Sensillum of palpal tarsus about 2 times as long as broad. Striae of genital plate and area anterior to plate transverse. Setal count of legs as follows:

1. 2-1-10-5-9+1-4 (proximals)
2. 2-1-7-5-8-1+1 (proximals)
3. 1-1-4-4-6-2+1 (dorsals)
4. 1-1-4-4-6-2+1 (dorsals)

Length of body 306μ; including rostrum 382μ.

HOLOTYPE.—Male, USNM 3545, ex *Abutilon* species, Zapotlanejo, 13 July.

PARATYPES.—Three males and eight females with the above data.

Eotetranychus brickellia, new species

FIGURE 21, 22

This species is similar to *Eotetranychus perplexus* (McGregor) except that the head of the aedeagus is much smaller.

MALE.—Terminal sensillum of palpus minute; peritreme with simple knob distally. Tibia I with 9 tactile setae; tibia II with 8 tactile setae. The aedeagus is strong, bent ventrally distally, and with a small distal head forming a dorsal ventral angulation. Length of body 255μ; including rostrum 319μ.

FEMALE.—Terminal sensillum of palpus strong, about twice as long as broad; peritreme ending in simple knob. Tibia I with 9 tactile setae; tibia II with 8 tactile setae; tarsus I with 4 tactile setae proximal to duplex setae. Striae of genital area transverse. Length of body 287μ; including rostrum 383μ.

HOLOTYPE.—Male, ex *Brickellia veronicaefolia* (Humboldt, Bonpland, and Kunth) Gray, Fresnillo, 3 August.

PARATYPES.—Two males and two females with the above data.

Two males and eight females were also in the above series.

Eotetranychus species

These mites were collected from *Polanisia* species, Mazatlan, 28 July and *Sida* species, Zapotlanejo, 30 July.

The females key out to *E. perplexus* (McGregor), based on the setal count of tibia II and tarsus I. Males were not present, and should be studied for specific determination.

Eotetranychus deflexus (McGregor)

Tetranychus deflexus McGregor
Eotetranychus deflexus.—Pritchard and Baker, 1955:206.

The peritremes of the females are straight distally. There are 8 tactile setae on tibia II. These characters agree with those of *E. deflexus*, which have been found on *Symphoricarpos oreophilus* Gray and *S. palmeri* G. N. Jones in Arizona (Tuttle and Baker, 1968:90). No males were found.

Specimens were collected in Mexico from *Celtis iguanaea* (Jacquin), Sargent, Alamos, 26 July; and *Crescentia alata* Humboldt, Bonpland, and Kunth, Mazatlan, 28 July.

Eotetranychus ecclisis? Pritchard and Baker

Eotetranychus ecclisis Pritchard and Baker, 1955:210.

Only females were found. These key out to *E. ecclisis*, which was described from *Artemisia ludoviciana* subspecies *mexicana* (Willdenow) Keck, Cuernavaca. We have taken it on *Quercus reticulata* Humboldt and Bonpland, Zapotlanejo, 30 July.

Eotetranychus fallugia Tuttle and Baker

Eotetranychus fallugia Tuttle and Baker, 1968:88.

This species was taken on *Cassia wislizeni* Gray, Chihuahua, 7 August.

Eotetranychus fremonti Tuttle and Baker

Eotetranychus fremonti Tuttle and Baker, 1964:26.

Specimens of this species were collected from *Acacia constricta* Bentham, Torreon, 6 August; *Mentzelia involucrata* Watson, 10 miles southwest of Chihuahua, 7 August; *Populus fremontii* Watson, Los Mochis, 24 July; *Populus tremuloides* Michaux, Ciudad Obregon, 22 July; *Prosopis juliflora* (Swartz) De Candolle, 10 miles southwest of Chihuahua, 7 August; and *Ruellia nudiflora* (Engelmann and Gray) Urban, Torreon, 6 August.

Eotetranychus lewisi (McGregor)

Tetranychus lewisi McGregor, 1943:147.
Eotetranychus lewisi.—Tuttle and Baker 1968:91.

Identifications based on males and females rep-

resent material from *Ceiba acuminata* (Watson) Rose, Mazatlan, 26 July; *Ipomoea* species, Guadalajara, 31 July; and *Mimosa laxiflora* Bentham, Hermosillo, 19 July. The following are believed to be *E. lewisi* because of the hosts, distribution, and female morphology (no males were found): *Bebbia juncea* (Bentham) Greene, Hermosillo, 19 July; *Cardiospermum corindum* Linnaeus, Hermosillo, 19 July; *Brickellia californica* (Torrey and Gray) Gray, Los Mochis, 23 July; *Croton sonorae* Torrey, Hermosillo, 19 July; and *Mimosa biuncifero* Bentham, Fresnillo, 3 August.

A series of females was collected in which the peritreme is not strongly hooked or bent as in the typical *E. lewisi*. These are tentatively placed here. Host plant records include: *Abutilon malacum* Watson, Chihuahua, 8 August; *Ambrosia confertifolia* (De Candolle) Rydberg, Tepic, 26 July; *Croton ciliato-glandulosus* Ortega, Guadalajara, 31 July; *Croton* species, Jimenez, 4 August; and *Heterotheca* species, Guadalajara, 31 July.

Eotetranychus malvastris (McGregor)

Tetranychus malvastris McGregor, 1950:290.
Eotetranychus malvastris.—Tuttle and Baker, 1964:20.—Tuttle and Baker, 1968:91.

Males and females were in a series on *Abutilon* species, Hermosillo, 18 July, Topolobampo, 24 July, and Mazatlan, 26 July; *Pluchea odorata* (Linnaeus) Case, Mazatlan, 26 July; and *Sida* species, Mazatlan, 26 July.

Eotetranychus prosopis Tuttle and Baker

Eotetranychus prosopis Tuttle and Baker, 1964:24; 1968:89.

Collections in Mexico included two additional host records: *Acacia vernicosa* Standley, Fresnillo, 3 August; and *Hibiscus palustris* Linnaeus, Ciudad Obregon, 21 July.

Eotetranychus vaughni Baker and Pritchard

Eotetranychus vaughni Baker and Pitchard, 1962:321.

Specimens were taken from *Guazuma ulmifolia* Lamarck, Ciudad Obregon, 21 July.

The figure given by Baker and Pritchard for this species shows the aedeagal head with sharp angulations anteriorly and posteriorly. If seen from a slightly different angle, the anterior portion of the knob is rounded.

Eotetranychus yumensis (McGregor)

Tetranychus yumensis McGregor, 1934:256.
Eotetranychus yumensis.—Tuttle and Baker, 1968:97.

Specimens were collected from the following host plants: *Cassia covesii* Gray, Ciudad Obregon, 22 July; *Jatropha cinerea* (Ortega) Mueller, Jean (of Aargau) Ciudad Obregon, 22 July; *Jatroph cardiophylla* (Torrey) Mueller, Jean (of Aargau), 22 July and Hermosillo, 27 July; *Olneya tesota* Gray, Hermosillo, 19 July; *Pluchea odorata* (Linnaeus) Cassini, Topolobampo, 24 July; *Sarcostemma pannosum* (Decaisne) Schlechter, Topolobampo, 24 July; and *Trichloris crinita* (Lagasca) Perodi, Torreon, 5 August.

Eotetranychus mastichi DeLeon

Eotetranychus mastichi DeLeon, 1957:111.—Tuttle and Baker, 1968:90.

A series was taken on *Berlandiera lyrata* Bentham, Fresnillo, 3 August.

Eotetranychus species

Several females were collected from *Bouteloua curtipendula* (Michaux) Torrey, Rancho Grande, 4 August. These are similar to *E. potentillae* Tuttle and Baker, but differ in having long solenidia on the tarsi. Males should be studied.

Genus *Neotetranychus* Trägårdh

Neotetranychus Trägårdh, 1915:23.—Tuttle and Baker, 1968:104.

Neotetranychus gloriosus Estebanes and Baker

Neotetranychus gloriosus Estebanes and Baker, 1968:73.

This mite was collected by the authors from *Agave tequilana* Weber, Mazatlan, 28 July.

The dorsal spiculate pattern of the striae is not typical, but the ventral body striae do form a basket-weave pattern.

Genus *Schizotetranychus* Trägårdh

Schizotetranychus Trägårdh, 1915:277.—Tuttle and Baker, 1968:92.

Schizotetranychus boutelouae Tuttle and Baker

Schizotetranychus boutelouae Tuttle and Baker, 1968:96.

Collections from Mexico include the following host plants: *Commelina dianthifolia* Delile, 8 miles north of Chihuahua, 8 August; and *Stipa eminens* Cavara, Rancho Grande, 4 August.

Schizotetranychus celtides Tuttle and Baker

Schizotetranychus celtides Tuttle and Baker, 1968:93.

Specimens were found on *Sporobulus flexuosus* (Thurber) Rydberg, Torreon, 5 August; and *Tridens pulchellus* (Humboldt, Bonpland, and Kunth) Hitchcock, Chihuahua, 7 August.

Schizotetranychus elymus McGregor

Schizotetranychus elymus McGregor, 1950:310.—Tuttle and Baker, 1968:104.

A series was taken from *Panicum obtusum* Humboldt, Bonpland, and Kunth, Rancho Grande, 4 August and Fresnillo, 13 August.

Schizotetranychus eremophilus McGregor

Schizotetranychus eremophilus McGregor, 1950:311.—Pritchard and Baker, 1955:251.—Tuttle and Baker, 1964:32.—Tuttle and Baker, 1968:95.

This species was collected from *Cynodon dactylon* (Linnaeus) Persoon, Mazatlan, 26 July and 20 miles south of Torreon, 4 August.

Schizotetranychus montanae Tuttle and Baker

Schizotetranychus montanae Tuttle and Baker, 1968:99.

This species was found on *Pappophorum mucronulatum* Nees, Torreon, 5 August.

Schizotetranychus nugax Pritchard and Baker

Schizotetranychus nugax Pritchard and Baker, 1955:264.—Tuttle and Baker, 1968:95.

One collection of *S. nugax* was made from *Hilaria mutica* (Buckley) Bentham, Torreon, 5 August.

Schizotetranychus species

A series of these mites was found on two grasses in Mexico: *Scleropogon brevifolius* Philippi, Chihuahua, 8 August; and *Setaria macrostachya* Humboldt, Bonpland, and Kunth, Chihuahua, 8 August.

This mite is similar to *S. eremophilus* McGregor in having the same general dorsal setal pattern. However, the Mexican mites have much shorter dorsal body setae, which do not or barely reach the bases of the setae of the next row.

Genus *Anatetranychus* Womersley

Anatetranychus Womersley, 1940:261.—Tuttle and Baker, 1968:107.

Anatetranychus daleae Tuttle and Baker

Anatetranychus daleae Tuttle and Baker, 1968:110.

Specimens were collected from *Dalea emoryi* Gray, Hermosillo, 8 July.

Anatetranychus albiflora Tuttle and Baker

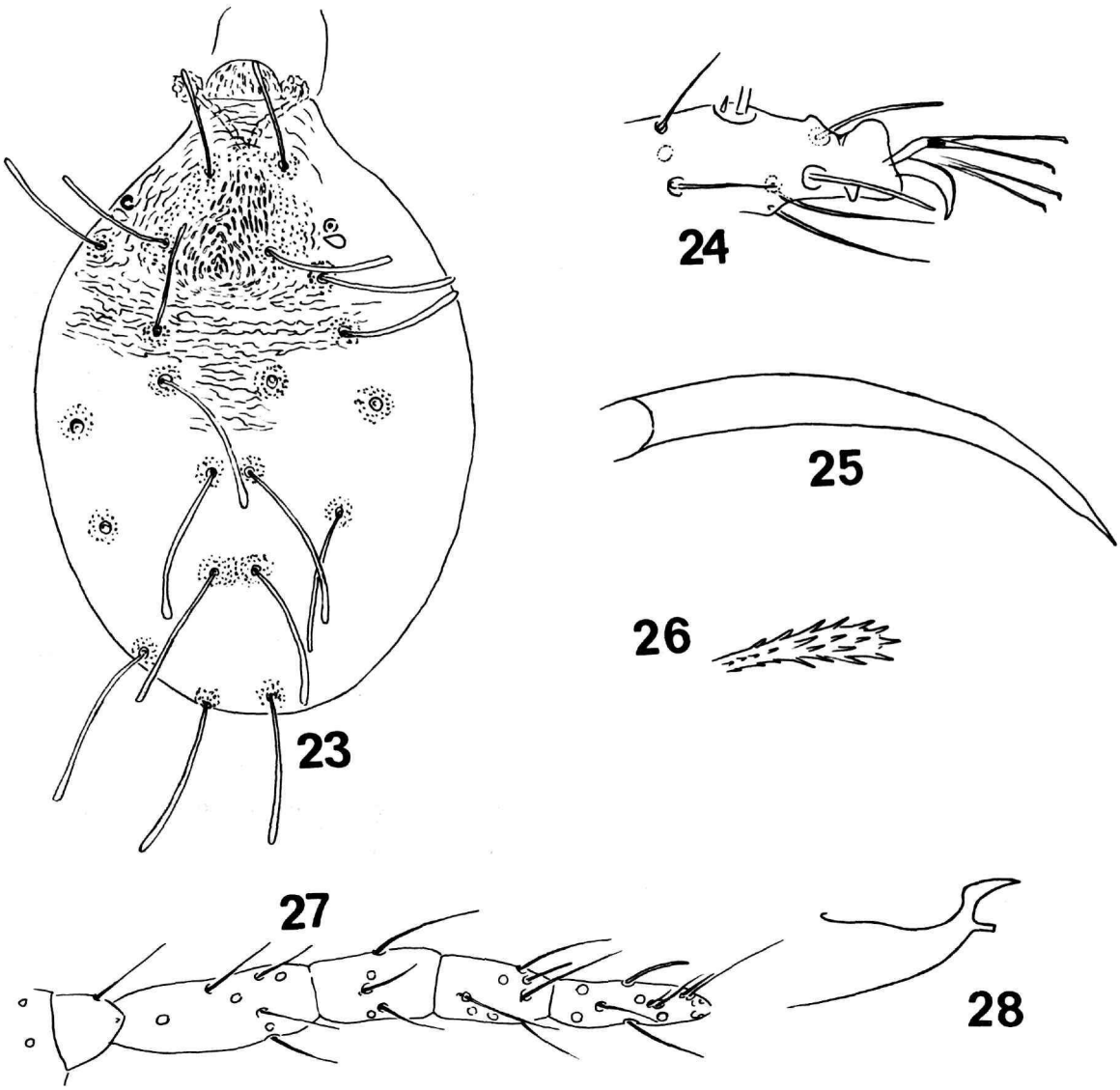
Anatetranychus albiflora Tuttle and Baker, 1968:113.

Collections of this species were taken from *Brickellia* species, Fresnillo, 3 August; *Dalea tuberculata* Lagasca, Fresnillo, 3 August, and Rancho Grande, 3 August; *Dalea* species, Fresnillo, 3 August; and *Ipomoea* species, Fresnillo, 3 August.

Genus *Atetranychus*, new genus

This genus is similar to *Anatetranychus* but differs in having a single set of duplex setae on tarsus I, and in that the dorsal hysterosomal striae and the lateral striae of the propodosoma are very widely separated and irregular. The empodia are clawlike and without ventral hairs. The propodosomal shield is pebbled. The dorsal body setae are long and set on prominent tubercles.

TYPE-SPECIES.—*Atetranychus estebanesae*, new species.



FIGURES 23–28.—*Atetranychus estebanesae*, new species: 23, dorsum of female; 24, tarsus of leg I of female; 25, aedeagus; 26, dorsal seta. *Oligonychus (Homonychus) constegia*, new species: 27, leg I of female. *Tetranychus (Tetranychus) flechtmanni*, new species: 28, aedeagus.

Atetranychus estebanesae, new species

FIGURES 23–26

This species is named for Srta. Maria Luisa Estebanes of the Instituto de Biologia of the Universidad Nacional Autónoma de Mexico.

FEMALE.—Rostrum elongate; stylophore broadly rounded anteriorly; peritreme ending in large anastomosing ball. Dorsal body setae long, slender, serrate, and expanding distally, set on prominent tubercles. Propodosomal shield covered with lobes, in general these lobes form a longitudinal pat-

tern; laterad of the shield striae widely separated and angularly broken. Striae of hystersoma, in general, transverse and similar to those of propodosoma, widely separated and angularly broken. All dorsal setal tubercles surrounded by area of small lobes, those between DC_4 setae contiguous. Ventral striae more or less similar to dorsal striae. Leg setal pattern as follows:

1. 2-1-9-4-13+1-19+duplex
2. 2-1-5-4-9-15+duplex
3. 1-1-5-4-9-14
4. 1-1-5-4-11-14

Length of body 666μ; including rostrum 826μ.

MALE.—In general similar to female in setal patterns. Entire dorsum with pattern of tubercles, those on propodosoma forming longitudinal patterns, those on hysterosoma transverse pattern. Legs I broken off; leg II with single set of duplex setae. Aedeagus long, strong, simply curved, and attenuate distally. Length of body 351μ; including rostrum 382μ.

HOLOTYPE.—Female, USNM 3547, ex *Verbena canescens* Humboldt, Bonpland, and Kunth, Fresnillo, 3 August.

PARATYPES.—A female and a male with the above data.

Genus *Oligonychus* Berlese

Oligonychus Berlese, 1886:24.—Tuttle and Baker, 1968:116.

Subgenus *Oligonychus* (*Oligonychus*) Berlese

Oligonychus (*Oligonychus*).—Wainstein, 1960:203.—Tuttle and Baker, 1968:118.

Oligonychus (*Oligonychus*) *ununguis* (Jacobi)

Tetranychus ununguis Jacobi, 1905:239.
Oligonychus (*Oligonychus*) *ununguis*.—Tuttle and Baker, 1968:118.

The spruce spider mite was collected from *Thuja occidentalis* Linnaeus, Ciudad Obregon, 22 July.

Oligonychus (*Oligonychus*) species

Only females were collected from *Setaria macrostachya* Humboldt, Bonpland, and Kunth, Chihuahua, 8 August. Males are needed for specific identification.

Subgenus *Oligonychus* (*Homonychus*) Wainstein

Oligonychus (*Homonychus*) Wainstein, 1960:216.—Tuttle and Baker, 1968:119.

Oligonychus (*Homonychus*) *conostegia*, new species

FIGURE 27

This species is similar to *O.* (*H.*) *gambelii* Tuttle and Baker (1968:120), differing in that there are four tactile setae and one solenidion proximal to the duplex setae on tarsus I. *O. gambelii* has only two tactiles and one solenidion proximal to the duplex setae.

FEMALE.—Rostrum short and broad; stylophore broadly rounded; peritreme ending in a simple bulb. Dorsal body striae with strong, rounded lobes; striae longitudinal between DC_3 setae. Dorsal body setae long, strong, serrate, and on small tubercles. All setae of about equal length except for short DC_5 setae. Tarsus I with four tactiles and one solenidion proximal to duplex setae. Setal pattern of legs as follows:

1. 2-1-8-5-7+1-4+1 (proximals)
2. 2-1-6-5-5-3+1
3. 1-1-2-2-5-5+1
4. 1-1-1-2-5-5+1

Length of body 255μ; including rostrum 383μ.

MALE.—Not known.

HOLOTYPE.—Female, USNM 3548, ex *Conostegia xalapensis* (Bonpland) David Don, Tepic, 28 July.

Oligonychus (*Homonychus*) *platani*? (McGregor)

Oligonychus (*Homonychus*) *platani* (McGregor), 1950:349.—Tuttle and Baker, 1968:120.

This mite is similar in many respects to *O.* (*H.*) *platani* (McGregor), but the tactile setae of the duplex setae are longer. Males were not found. This species was collected on *Boerhaavia* species, Torreon, 2 August.

Subgenus *Oligonychus* (*Pritchardinychus*) Wainstein

Oligonychus (*Pritchardinychus*) Wainstein, 1960:217.

Oligonychus (*Pritchardinychus*) species

A series of females was collected from the following plants in Mexico: *Euphorbia albomarginata* Torrey and Gray, 120 miles north of Chihuahua, 8 August; *Hyptis* species, Guadalajara, 31 July; *Pithecolobium dulce* (Roxburgh) Bentham, Topolobampo, 24 July; *Setaria macrostachya* Humboldt, Bonpland, and Kunth, Chihuahua, 8 August; and *Sida* species, Chihuahua, 8 August.

Subgenus *Oligonychus* (*Reckiella*) Tuttle and Baker

Oligonychus (*Reckiella*) Tuttle and Baker, 1968:122.

Oligonychus (*Reckiella*) *mexicanus* (McGregor and Ortega)

Paratetranychus mexicanus McGregor and Ortega, 1953:3.
Paratetranychus indicus Hirst.—Pritchard and Baker, 1955: 354 [misidentification].
Oligonychus mexicanus.—Estebanes and Baker, 1968:95.

Two collections were made by D. M. Tuttle on *Zea mays* var. *saccharata* (Sturtevant) Bailey, Torreon, 26 July and Chapingo, 2 July 1969.

This species was placed in synonymy with *O. indicus* by Pritchard and Baker in 1955. Examination of Indian material in the British museum proved that the two species were different.

Oligonychus (*Reckiella*) species

Without males no specific determinations can be made. A series of females was found on the following plants: *Artemisia bigelovii* Gray, Torreon, 5 August; *Chenopodium album* Linnaeus, Zapotlanejo, 30 July; *Cynodon dactylon* (Linnaeus) Persoon, Mazatlan, 26 July; *Gossypium hirsutum* Linnaeus, 8 miles south of Torreon, 5 August; *Helianthus annuus* Linnaeus, 107 miles south of Torreon, 6 August; *Parthenium incanum* Humboldt, Bonpland, and Kunth, Torreon, 6 August; *Setaria lutescens* (Weigel) Hubbard, Zapotlanejo, 30 July; *Solanum rostratum* Dunal, Guadalajara, 31 July; *Sporobolus flexuosus* (Thurber) Rydberg, Torreon, 5 August; *Verbena carolina* Linnaeus, Guadalajara, 31 July; and *Zea mays* var. *saccharata* (Sturtevant) Bailey, Guadalajara, 31 July.

Genus *Tetranychus* Dufour

Tetranychus Dufour, 1832:276.

Subgenus *Tetranychus* (*Tetranychus*) Dufour

Tetranychus (*Tetranychus*) Dufour, 1836:276.—Wainstein 1960:149.—Tuttle and Baker, 1968:126.

Tetranychus (*Tetranychus*) *cinnabarinus* (Boisduval)

Acarus cinnabarinus Boisduval, 1867:88.
Tetranychus (*Tetranychus*) *cinnabarinus*.—Tuttle and Baker, 1968:129.

Specimens of this mite were taken on *Gossypium hirsutum* Linnaeus, Santa Rosa, Valle del Fuerte, 4 August; *Mangifera indica* Linnaeus, Acoponeta, 28 July; *Morus rubra* Linnaeus, San Miguel, east of Torreon, 5 August; and *Rosa delecta* Rehder, Guadalajara, 31 July.

Tetranychus (*Tetranychus*) *desertorum* Banks

Tetranychus desertorum Banks, 1900:76.—Tuttle and Baker, 1968:126.

Records of this species from material collected in 1970 included the following host plants: *Ambrosia confertiflora* De Candolle, Ciudad Obregon, 22 July; *Buddleia scordioides* Humboldt, Bonpland, and Kunth, Rancho Grande, 4 August; *Cassia crotolariodes* Kunth, Fresnillo, 3 August; *Encelia farinosa* Gray, Hermosillo, 19 July; *Marrubium vulgare* Linnaeus, Zacatecas, 2 August; *Mentzelia pumila* (Nuttall) Torrey and Gray, Hermosillo, 18 July; *Parthenium hysterophorus* Linnaeus, Los Mochis, 24 July; *Ruellia nudiflora* (Engelmann and Gray) Urban, Torreon, 5 August; and *Sphaeralcea angustifolia* (Cavara) David Don, Rancho Grande, 4 August.

Females of what may be this species, but differing in that the proximal duplex setal are not quite on a line with the proximal duplex setae and that tarsus I is not as slender, were collected on *Sida* species, Mazatlan, 26 July.

Tetranychus (Tetranychus) flechtmanni, new species

FIGURE 28

This species is related to *T. (T.) armipenis* Flechtmann and Baker (1970) in having a posteriorly protruding spur on the aedeagus. In *T. armipenis* this spur is pointed distally; in the species here described it is either blunt or slightly indented.

MALE.—Striae of both sexes not lobed, that of *T. (T.) armipenis* ♀ lobed. Empodium I with ventral hairs forming claw; other empodia with ventral hairs free. Sensillum of palpus longer than broad. Knob of aedeagus directed dorsal and with the terminal angulation ending well beyond the level of the bend, as in *T. pacificus* McGregor. Posteriorly, below the knob, is a short projecting blunt or indented spur as figured. Length of body 363μ; including rostrum 446μ.

FEMALE.—Typical for the subgenus *Tetranychus*. Length of body 446μ; including rostrum 574μ.

HOLOTYPE.—Male, USNM 3549, ex *Haplopappus spinulosus* (Pursh) De Candolle, Zacatecas, 5 August.

PARATYPE.—Male with the above data.

This species has been named in honor of Dr. Carlos Flechtmann of the University of São Paulo at Piracicaba, São Paulo, Brazil.

Tetranychus (Tetranychus) gigas Pritchard and Baker

Tetranychus gigas Pritchard and Baker, 1955:405.
Tetranychus (Tetranychus) gigas.—Tuttle and Baker, 1968: 127.

This species was found on *Parthenium incanum* Humboldt, Bonpland, and Kunth, Torreon, 5 August.

Tetranychus (Tetranychus) hydrangeae Pritchard and Baker

Tetranychus hydrangeae Pritchard and Baker, 1955:425.

Specimens were collected on *Ambrosia ambrosioides* Cavara, Ciudad Obregon, 22 July; *Clethra alnifolia* Linnaeus, Hermosillo, 17 July; and *Cucumis melo* Linnaeus, Antunez, 5 May 1968, by Servando Lopez B.

Tetranychus (Tetranychus) merganser Boudreaux

Tetranychus merganser Boudreaux, 1954:181.

This species was taken from *Solanum rostratum* Dunal, Tepic, 25 July.

Tetranychus (Tetranychus) polys Pritchard and Baker

Tetranychus polys Pritchard and Baker, 1955:396.
Tetranychus (Tetranychus) polys.—Tuttle and Baker, 1968: 131.

A series was taken from *Solanum elaeagnifolium* Cavara, Topolobampo, 24 July.

Tetranychus (Tetranychus) urticae Koch

Tetranychus urticae Koch, 1836:10.
Tetranychus (Tetranychus) urticae.—Tuttle and Baker, 1968: 129.

This species appears to be out of its northern range, but the females collected appear to be typical.

Specimens in Mexico were collected on *Acacia greggii* Gray, 10 miles east of Torreon, 5 August; and *Rosa dilecta* Rehder, Guadalajara, 31 July.

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