THE GENUS BREVIPALPUS IN MEXICO, PART I
(ACARINA: TENUIPALPIDAE)

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Mites of the genus Brevipalpus feed on plants and several of them are important economically.

All of the Brevipalpus described in Part I of this paper belong to the species group with 6 pairs of dorsolateral hysterosomals, 2 setae on the last segment of the palpus, and tarsus II of the female with 1 sensory rod. Except for the first species, hypti, all have the anterior medioventral metapodosomals much shorter than the posterior pair and in the first 6 species the rostrum extends beyond the distal end of femur I; in the others the rostrum does not extend beyond the distal end of femur I. Except as noted, the tarsal claws have distinct hooks. These characters will not be repeated in the individual descriptions.

All measurements are in microns and body length includes the rostrum. The drawings of the nymphs are of the deutonymphal stage unless otherwise stated.

Brevipalpus hypti, n. sp.
(Figures 1A and 1B)

Brevipalpus hypti resembles B. salviae McG. (1949) in having long plumose dorsolateral setae, but differs from that species in having the dorsocentrales shorter and the areolae of the dorsum much smaller.

FEMALE: Body reddish, dorsal setae white; body length 284, width 157. Markings of dorsum and shapes of dorsal setae as shown in figure 1A; venter smooth medially except for ventral plate with distinct areolae (in some specimens areolae longer than wide, in others small and round) and genital plate with areolae wider than long.

MALE: Resembles female, but rostrum extends barely beyond distal end of femur I, the 4 pairs of posterior dorsolateral hysterosomals are proportionally longer, and tarsus II has 2 sensory rods.

NYMPH: Shapes of dorsal setae as shown in figure 1B.

Holotype: Female, Ixtlan del Rio, Nayarit, March 24, 1957, (D. De Leon) from Hyptia albida. Paratypes: 5 females, 2 males, other data as for holotype; 4 females, 1 nymph, Guadalajara, Jalisco, March 22, 1957, from same host species.

Brevipalpus quercicolus, n. sp.
(Figures 2A and 2B)

The female of Brevipalpus quercicolus is distinguished from other members of this subgroup by its having the dorsum very finely reticulate. The male is not known.

FEMALE: Length 253, width 135; reticulations of the dorsum and shapes of dorsal setae as shown in figure 2A. Venter smooth medially except for

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genital plate which bears faint polygonal reticulations. Tarsal claws without hooks.

**Nymph:** Shapes of dorsal setae as shown in figure 2B. Tarsal claws with hooks.

**Holotype:** Female, near km post 134, route 71, Mex., March 10, 1957, (D. De Leon) from Quercus sp. Paratypes: 2 females, 2 nymphs, other data as for holotype.

*Brevipalpus pseudoleptoides*, n. sp.
(Figures 3A and 3B)

*Brevipalpus pseudoleptoides* is distinguished from other members of this subgroup by its elongate body.

**Female:** Length 271-318, width 126 to 139; markings of dorsum and shapes of dorsal setae as shown in figure 3A; rostrum extends to distal end of genu I. Venter practically smooth except for genital plate with areolae much wider than long.

**Male:** Resembles female, but tarsus II with 2 sensory rods.

**Nymph:** Shapes of dorsal setae as shown in figure 3B.

**Holotype:** Female, near km post 631, route 190, Oaxaca, January 31, 1957, (D. De Leon) from Dodonea viscosa. Paratypes: 6 females, 1 male, 1 nymph, Etla, Oax., February 1, 1957, from Dodonea viscosa.

*Brevipalpus serratus*, n. sp.
(Figures 4A and 4B)

*Brevipalpus serratus* is distinguished from other members of this subgroup by its having strongly serrate dorsal setae and the areolae of the disk of the hysterosoma transversely coalesced. The male is not known.

**Female:** Length 349, width 177. Markings of dorsum and shapes of dorsal setae as shown in figure 4A. Ventral plate smooth medially with small rounded areolae at sides, genital plate with transverse striae.

**Nymph:** Shapes of dorsal setae as shown in figure 4B.

**Holotype:** Female, Tuxtlá Gutierrez, Chiapas, January 21, 1957, (D. De Leon) from an unknown tree. Paratypes: 3 nymphs, other data as for holotype.

*Brevipalpus lagascae*, n. sp.
(Figures 5A and 5B)

The female of *Brevipalpus lagascae* resembles *B. crotoni*, n. sp., but the rostrum extends farther forward, both setae of the palptarsus are of about the same length, and the dorsal setae of the body are oval.

**Female:** Body bright red, length 342, width 174. Markings of dorsum and shapes of dorsal setae as shown in figure 5A. Venter smooth medially except for ventral and genital plates which have areolae wider than long.

**Male:** Resembles female, but dorsal setae somewhat longer proportionally and tarsus II has 2 sensory rods.

**Nymph:** Shapes of dorsal setae as shown in figure 5B.

**Holotype:** Female, Arenal, Jalisco, March 24, 1957, (D. De Leon) from Lagascea angustifolia. Paratypes: 6 females, 2 males, 1 nymph, other data as for holotype.
Brevipalpus crotoni, n. sp.
(Figures 6A, 6B, and 6C)

Brevipalpus crotoni resembles B. essigi Baker (1949), but differs most notably in having one of the setae of the terminal segment of the palpus much shorter than the other and the male with 2 sensory rods on tarsi I and II.

FEMALE: Length 275, width 156; markings of dorsum and shapes of dorsal setae as shown in figure 6A. Venter smooth medially except for ventral plate with areolae wider than long and the genital plate with areolae about as wide as long.

MALE: Resembles female, but tarsi I and II each with 2 sensory rods.

NYMPH: Shapes of dorsal setae as shown in figure 6B.

Holotype: Female, Ciudad Victoria, Tam., June 12, 1957, (D. De Leon) from Croton clivato-glandulosus. Paratypes: 3 females, 1 male, and 1 nymph, other data as for holotype.

Brevipalpus tuberellus, n. sp.
(Figures 7A and 7B)

Brevipalpus tuberellus belongs to the floridianus-fleschneri subgroup, but differs from these 2 species in having the dorsum tuberculate mediolaterally.

FEMALE: Length 317 to 344, width 190 to 204. Markings of dorsum and shapes of dorsal setae as shown in figure 7A. Venter covered medially with small, rounded areolae except for a smooth area between and just posterior of anterior medioventrals and for genital plate with areolae wider than long.

MALE: Resembles female, but tubercles of dorsum reduced, dorsocentral hysterosomals setiform, and tarsi II with 2 sensory rods.

NYMPH: Shapes of dorsal setae as shown in figure 7B. The lengths of the humeral and first 3 dorsolateral hysterosomals vary somewhat between individuals.

Holotype: Female, near Antiguo Morelos, Tam., December 20, 1956, (D. De Leon) from Phoebe tampicensis. Paratypes: 3 females, 2 males, 3 nymphs, other data as for holotype. Specimens which vary somewhat from the types, but probably belong here were collected near Matias Romero, Oax., from Phoebe mexicana; at Santa Maria del Oro, Nay., from an unknown lauraceous tree, and at San Blas, Nay., from Nectandra tabascensis.

Brevipalpus formosus, n. sp.
(Figure 8)

The female of B. formosus resembles tuberellus closely in dorsal markings, but is smaller and the acta of the second palpal segment is palmate. The male and nymph are unknown.

FEMALE: Body dark red; legs, rostrum, and hysterosomal setae white; length of body 271, width 172. Dorsum with low tubercles mediolateral and at sides of body; disk of propodosoma smooth except for scattered small sunken areas or pits; disk of hysterosoma with transverse ridges
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Posteriad. Venter with rounded areolae medially except for ventral plate which is closely more or less transversely striate and genital plate which has areolae somewhat longer than wide. Dorsal surface of legs with small circular raised areas.

Holotype: Female, Aticama, Nay., April 8, 1957, (D. De Leon) from Licaria sp. Paratypes: 4 females, other data as for holotype.

*Brevipalpus chucumayi*, n. sp.

(Figures 9A and 9B)

The female of *Brevipalpus chucumayi* may be distinguished by its short rostrum, plumose dorsolaterals, and finely areolate dorsum. The male is not known.

Female: Body dirty white, length 266, width 165. Markings of dorsum and shapes of dorsal setae as shown in figure 9A. Venter smooth medially anterior of posterior metapodosomal, with small rounded areolae between these setae and anterior part of frame of ventral plate which is wide and with 3 transverse striae; ventral plate with small rounded to somewhat elongate areolae; genital plate with areolae much wider than long; anterior metapodosomals about 20 long, posterior pair about 65 long. Tarsal claws with very small hooks.

Nymph: Shapes of dorsal setae as shown in figure 9B; dorsocentral 2 is missing.

Holotype: Female, Trinidad, Oax., January 26, 1957, (D. De Leon) from Styx argentina. Paratypes: 2 females, 1 nymph, other data as for holotype.

*Brevipalpus albus*, n. sp.

(Figure 10)

*Brevipalpus albus* is allied to *B. ognus* Pritchard and Baker (1952); it differs from that species in having smaller, more rounded areolae, in lacking hooks on the claws, and in other characters. The male and nymph are not known.

Female: Body dirty white; length 262, width 135; markings of dorsum and shapes of dorsal setae as shown in figure 10. Venter smooth medially except for genital plate which has small oval areolae slightly wider than long. Tarsal claws without hooks.

Holotype: Female, Santa Maria del Oro, Nay., March 24, 1957, (D. De Leon) from Quercus aristata. Paratypes: 11 females, other data as for holotype.

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Plate 1

Figures 1A and 1B. *Brevipalpus hypii*, n. sp.
Figures 2A and 2B. *Brevipalpus quercicolus*, n. sp.
Figures 3A and 3B. *Brevipalpus pseudodeptoides*, n. sp.
Figures 4A and 4B. *Brevipalpus serratus*, n. sp.
Figures 5A and 5B. *Brevipalpus lagascaeae*, n. sp.
Figures 6A, 6B, and 6C. *Brevipalpus crotoni*, n. sp.; 6C, palpus.
Figures 7A and 7B. *Brevipalpus tuberolba*, n. sp.
Figure 8. *Brevipalpus formosus*, n. sp., palp of female.
Figures 9A and 9B. *Brevipalpus chucumayi*, n. sp.
Figure 10. *Brevipalpus albus*, n. sp., female.
Brevipalpus oreopanacis, n. sp.
(Figures 11A and 11B)

The female of Brevipalpus oreopanacis resembles that of B. chucumayi, but differs most noticeably from that species by having the rostral shield and the anterior margin of the propodosoma with only a few scattered striae, and the tarsal claws with large hooks.

FEMALE: Body white; length 305, width 182; markings of dorsum and shapes of dorsal setae as shown in figure 11A. Ventor smooth medially except for the wider than long areolae on the area posterior of the posterior pair of metapodosomals, and on the ventral and genital plates.

MALE: Resembles female, but tarsus II with 2 sensory rods.

NYMPH: Shapes of dorsal setae as shown in figure 11B.

Holotype: Female, Santa Maria del Oro, Nay., March 24, 1957, (D. De Leon) from Oreopanax petata. Paratypes: 3 females, 2 males, 1 nymph, other data as for holotype.

Brevipalpus insinuatus, n. sp.
(Figures 12A and 12B)

Brevipalpus insinuatus resembles B. ogmus P. & B. (1952), but differs from that species in having a mediolateral depression on the propodosoma and in having propodosomal 1 broadly oval.

FEMALE: Length 284, width 156; markings of dorsum and shapes of dorsal setae as shown in figure 12A. Areolae of venter broader than wide.

MALE: Resembles female, but areolae appear to be missing in places from the disk of the propodosoma giving it a pitted appearance, and tarsus II with 2 sensory rods.

NYMPH: Shapes of dorsal setae as shown in figure 12B.

Holotype: Female, Tuxtla Gutierrez, Chiapas, January 15, 1957, (D. De Leon) from Quercus sp. Paratypes: 3 females, 1 male, 1 nymph, other data as for holotype. Additional specimens were collected from Quercus laurina near km post 277 east of Morelia, Mich.

Brevipalpus evpristori, n. sp.
(Figures 13A and 13B)

The female of Brevipalpus evpristori resembles B. essigi Baker (1949), but the venter of evpristori is almost completely covered with small rounded areolae. The nymph is also distinctive.

FEMALE: Length 346 to 365, width 181 to 190; markings of dorsum and shapes of dorsal setae as shown in figure 13A. Most of venter includ-
ing ventral plate covered with small, rounded areolae, genital plate with reticulations wider than long.

**MALE:** Resembles female, but tarsus II with two sensory rods.

**NYMPH:** Shapes of dorsal setae as shown in figure 13B.

**Holotype:** Female, Jalapa, Ver., March 3, 1957, (D. De Leon) from Baccharis conferta. **Paratypes:** 3 females, 3 males, 5 nymphs, other data as for holotype. Additional specimens were collected from an unknown host, same locality as for holotype and from Fuchsia sp. and Senecio aschen borneanus, June 5, 1957, near km post 258 east of Morelia, Mich.

**Brevipalpus oaxacensis**, n. sp.

(Figures 14A and 14B)

The female of *Brevipalpus oaxacensis* resembles *B. sayedi* Baker (1940) in the reticulations of the dorsum, but the lack of markings on most of the venter of *oaxacensis* is distinctive.

**FEMALE:** Length 266, width 142; markings of dorsum and shapes of dorsal setae as shown in figure 14A. Venter smooth medially except genital plate which has large, polygonal reticulations.

**MALE:** Resembles female, but areolae of propodosoma and metapodosoma smaller and more rounded and tarsus II with 2 sensory rods.

**NYMPH:** Shapes of dorsal setae as shown in figure 14B.

**Holotype:** Female, Oaxaca, Oax., February 1, 1957, (D. De Leon) from Quercus conzatii. **Paratypes:** 12 females, 3 males, 3 nymphs, other data as for holotype.

**Brevipalpus perseae**, n. sp.

(Figures 15A and 15B)

*Brevipalpus perseae* belongs in the floridusus flechnori group, but is distinguished from those species by its much narrower dorsocentrales.

**FEMALE:** Length 288 to 322, width 172 to 244. Dorsum strongly ridged medially, its markings and the shapes of the dorsal setae as shown in figure 15A. Metapodosoma with small rounded areolae except for smooth oval area beteen metapodosomals; ventral plate with small rounded areolae, genital plate with areolae wider than long.

**MALE:** Resembles female, but dorsocentrales setiform and tarsus II with 2 sensory rods.

**NYMPH:** Shapes of dorsal setae as shown in figure 15B.

**Holotype:** Female, Tepic, Nay., March 25, 1961, (D. De Leon) from Persea hintoni. **Paratypes:** 3 females, 3 males, 3 nymphs, other data as for holotype.

**Brevipalpus filifer**, n. sp.

(Figures 16A and 16B)

The female of *Brevipalpus filifer* may be distinguished from other members of the group by its rather long, very slender dorsolateral setae and the very broad anterior part of the frame of the ventral plate.

**FEMALE:** Length 266 to 280, width 159; markings of dorsum and shapes of dorsal setae as shown in figure 16A. Venter smooth medially anterior of posterior metapodosomals, reticulations between these setae and an-
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terior part of frame of ventral plate coarsely reticulate, anterior part of frame of ventral plate very wide, composed of 4 to 5 smooth bands. Ventral and genital plates with areolae wider than long.

MALE: Resembles female, but tarsus II with 2 sensory rods.

PROTONYMPH: Shapes of dorsal setae as shown in figure 16B.

Holotype: Female, near San Cristobal, Chiapas, January 22, 1957, (D. De Leon) from Persia schidiana. Paratypes: 5 females, 1 male, 1 nymph, other data as for holotype.

_Brevipalpus alni_, n. sp.
(Figures 17A and 17B)

_Brevipalpus alni_ resembles _B. delus_ P. & B. (1952), but differs from that species most noticeably by the areolae of the hysterosoma being longer than wide in the mediolateral area. The male is not known.

FEMALE: Length 272, width 165; markings of dorsum and shapes of dorsal setae as shown in figure 17A. Venter of metapodosoma covered with rounded areolae except for smooth, oval area between metapodosomas; ventral plate with rounded areolae, genital plate with areolae wider than long.

NYMPH: Shapes of dorsal setae as shown in figure 17B.

Holotype: Female, near San Cristobal, Ch., January 22, 1957, (D. De Leon) from Alnus arguta. Paratypes: 1 female, 2 nymphs, other data as for holotype.

_Brevipalpus striatus_, n. sp.
(Figures 18A and 18B)

The female of _Brevipalpus striatus_ is distinguished by the striate mediolateral area of the propodosoma and the hysterosoma and the deep mediolateral groove of the later. The male is unknown.

FEMALE: Length 290, width 153; markings of dorsum and shapes of dorsal setae as shown in figure 18A. Venter smooth mediadly anterior of posterior metapodosomas, area between these setae and frame of ventral plate with areolae wider than long; ventral and genital plates with areolae wider than long.

NYMPH: Shapes of dorsal setae as shown in figure 18B.

Holotype: Female, Trinidad, Ch., January 26, 1957, (D. De Leon) from “mata gusano”, a large tree. Paratype: 1 female, other data as for holotype.

_Brevipalpus levis_, n. sp.
(Figures 19A and 19B)

_Brevipalpus levis_ resembles _B. xyatus_ P. & B. (1958), but is distinguished from this species by having a nearly smooth dorsum with shallow pits on the disk of the propodosoma and oval dorsolaterals.

FEMALE: Dark reddish brown; length 290, width 154. Markings of dorsum and shapes of dorsal setae as shown in figure 19A. Venter smooth mediadly anterior of posterior metapodosomas, area between these setae and frame of ventral plate with areolae wider than long; ventral plate with mostly rounded areolae, the others wider than long; genital plate with areolae wider than long.
PROTONYMPh: The shapes of dorsal setae as shown in figure 19B.

Holotype: Female, Vera cruz, Ver., December 25, 1956, (D. De Leon) from Cordia glabra. Paratypes: 3 females, 2 nymphs, other data as for holotype. Additional specimens were collected in the same locality February 19, 1957, from an unknown tree.

Brevipalpus rugosus, n. sp.
(Figure 20)

Brevipalpus rugosus is distinguished by the rugose surface of the mediolateral area of the propodosoma and the rather long, narrow-elliptic dorsolateral setae. The nymph is unknown.

FEMALE: Length 289 to 308, width 163 to 172; markings of dorsum and shapes of dorsal setae as shown in figure 20. Venter smooth medially anterior of posterior metapodosomals, area between these setae and frame of ventral plate with both rounded and wider than long areolae; ventral plate with areolae much wider than long; genital plate with both rounded and wider than long areolae.

MALE: Resembles female, but dorsum not as rugose and tarsus II with 2 sensory rods.

Holotype: Female, Ouchtei, Oax., February 1, 1957, (D. De Leon) from Quercus magnoliaefolia. Paratypes: 7 females, 1 male, other data as for holotype.

Brevipalpus mori, n. sp.
(Figures 21A and 21B)

Brevipalpus mori is distinguished by the pits on the disk and the nearly smooth mediolateral area of the propodosoma. The male is not known.

FEMALE: Length 282, width 154; marking of dorsum and shapes of dorsal setae as shown in figure 21A. Venter medially with rounded areolae from about half way between anterior and posterior medioventrals to frame of ventral plate; ventral and genital plates with areolae wider than long.

NYMPH: Shapes of dorsal setae as shown in figure 21B.

Holotype: Female, Trinidad, Oax., January 26, 1957, (D. De Leon) from Morus alba. Paratypes: 4 females, 1 nymph, other data as for holotype.

Brevipalpus variolatus, n. sp.
(Figure 22)

The female of Brevipalpus variolatus is distinguished by its small size, by the somewhat raised disk of the propodosoma with numerous small pits and the serrate propodosomals. The male and nymph are unknown.

Plate 3

Figures 18A and 18B. Brevipalpus striatus, n. sp.
Figures 19A and 19B. Brevipalpus levis, n. sp.
Figure 20. Brevipalpus rugosus, n. sp., female.
Figures 21A and 21B. Brevipalpus mori, n. sp.
Figure 22. Brevipalpus variolatus, n. sp., female.
Figures 23A and 23B. Brevipalpus testudinalis, n. sp.
Figures 24A and 24B. Brevipalpus religiosae, n. sp.
FEMALE: Length 259, width 186; markings of dorsum and shapes of dorsal setae as shown in figure 22. Venter smooth medially anterior of posterior metapodosomals, between these seta and anterior frame of ventral plate areolae wider than long; ventral and genital plates with areolae wider than long.

Holotype: Female, Trinidad, Ch., January 18, 1957, (D. De Leon) from Ceiba acuminata. Paratypes: 10 females, other data as for holotype. The tree was without leaves and the mites were in groups of 5 to 10 on the buds in among the coarse hairs.

*Brevipalpus testudinalis*, n. sp.
(Figures 28A and 28B)

The elongate body and the raised margin of the dorsum is distinctive for *B. testudinalis*.

FEMALE: Dirty white; length 282, width 159; markings of dorsum and shapes of dorsal setae as shown in figure 28A. Metapodosoma areolate except for smooth oval area between anterior and posterior metapodosomals, areolae much longer than wide except towards frame of ventral plate where areolae are mostly rounded; ventral plate with narrow areolae directed posteromedially; genital plate with areolae slightly wider than long and somewhat polygonal.

MALE: Resembles female, but tarsi I and II each with 2 sensory rods. Second segment of palp with seta nearly as long as that of female’s.

Protonymph: Shapes of dorsal setae as shown in figure 28B.

Holotype: Female, San Blas, Nay., April 23, 1957, (D. De Leon) from an unknown tree. Paratypes: 9 females, 2 males, 3 nymphs, other data as for holotype.

*Brevipalpus religiosae*, n. sp.
(Figures 24A and 24B)

*Brevipalpus religiosae* is distinguished by its large size, by having the median ridge with broad coalesced areolae and the mediolateral area with large polygonal reticulations.

FEMALE: Length 398, width 220; markings of dorsum and shapes of dorsal setae as shown in figure 24A. Metapodosoma with small rounded areolae between coxal bases and metapodosomals and extending to frame of ventral plate where areolation meets at center. In some specimens areolae cover metapodosoma except for small oval area between the metapodosomals, and in some specimens areolae in clusters. Anterior part of frame of ventral plate composed of 2 to 4 bands; ventral plate with small rounded areolae, genital plate with areolae wider than long.

MALE: Resembles female, but tarsus II with 2 sensory rods.

Nymph: Shapes of dorsal setae as shown in figure 24B.

Holotype: Female, east of Morelia, Mich., near km post 270, route 15, June 5, 1957, (D. De Leon) from Abies religiosa. Paratypes: 2 females, 1 male, 4 nymphs, near Mexico, D. F., March 10, 1957, from same host species. Additional specimens were collected from Pinus sp. near San Cristobal, Chinas.

*Brevipalpus essigi* Baker and *B. russulus* (Boisduval) belong in the species group treated in this paper and are recorded from Mexico by Pritchard and Baker (1958), but were not collected by the writer.
Types of the above new species are in the author’s collection; paratypes will be deposited in the University of Florida Collections, Gainesville.

EXPLANATION OF FIGURES

The drawings are of the dorsal halves of the adult females, indicated by the letter A and of the dorsal halves of the nymphs, indicated by the letter B.

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LITERATURE CITED


Bees of the Eastern United States, Volume I, by Theodore B. Mitchell. 1960. N. C. Agr. Exp. Sta., Tech. Bul. 141, 538 p., illus. Price $10.00. This is the first of two volumes covering the bee fauna of the United States east of the Mississippi River. It treats the families Colletidae, Andrenidae, Halictidae, and Melittidae with 98 new species and subspecies described. The general introduction includes the materials and methods, ecology, morphology, and classification, as well as a key to the eight families recognized. All 437 species described in the text can be determined through the generic keys. The double column format, as well as the organization of the material, make the volume particularly easy to use. All illustrations are line drawings, prepared to show characteristics that are useful in distinguishing species treated in the volume. The book is an outstanding contribution to entomology by its consolidation and updating of information about bees and it will be a boon to specialist and student alike. Dr. Mitchell is to be congratulated on the publication of this first volume and its users will certainly look forward to the early appearance of Volume II.—L. B.