

THREE NEW GENERA AND SEVEN NEW SPECIES
OF CHEYLETIDS (ACARINA: CHEYLETIDAE)¹

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The cheyletids discussed here are all free living predators from plants, although specimens of one species were also collected in a house where they were associated with a psocid infestation. The plant-predators generally catch their prey by ambush and those I have seen, except for one species, do not run any distance with speed, but go in short spurts. The exception, *Bak deleoni* Yunker, lives in the pores of the sporophores of *Coriolus nigromarginatus* and travels in and out of the pores with a continuous rapid movement.

The number of setae on the leg segments and on the ventral surface of the body is the same for most species in the family and this is given below for the females; only exceptions to these numbers are noted in the descriptions:

Leg segments (the number after a + sign indicates a solenidion)

Coxae: 2,1,2,2

Trochanters: 1,1,2,1

Femora: 2,2,2,1

Genua: 2+1,2,2,2

Tibiae: 5+1, 4+1, 4, 2

Tarsi: 9+1, 7+1,7,7

Ventral body surface

Pairs I-VI; pair V is usually located slightly anterior of the anterior end of the genital opening and VI is lateral of the genital covers.

Genital covers: 2 setae per cover, the bases of the 2 setae almost touching each other.

Anal semicircle: 3 pairs of setae.

In the following descriptions body length includes the rostrum and all measurements are in microns. All drawings are of females.

Cheyletia cordovensis, n. sp.

(Figures 1-3)

Cheyletia cordovensis resembles *C. wellsii* Baker, but differs most noticeably from that species in having the dorsal shields finely striate and the entire dorsum and lateral areas covered with somewhat sparsely distributed small, oval disks; the size and proportions of the leg segments also differ. The male is unknown.

FEMALE: Body length 306; sides of body and dorsal surface with numerous small (1-2 microns in length), oval slightly thickened areas or disks, most of these disks distant from each other much more than their own lengths; dorsal shields finely striate, interscutal areas coarsely striate;

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shape and arrangement of dorsal setae as shown in figure 1, dorsolateral seta 1 is 27 long. Rostrum and palpus with setae and markings as shown in figure 2; rostrum 89 long, palptibial claw with 8 teeth, outer comblike seta with about 18 teeth, inner comblike seta with about 25 teeth. Tarsus I 56 long, solenidion 22 long; tibia I 22 long (with only 4 tactile setae), solenidion 8 long; genu I 20 long, solenidion about 3.5 long; tarsus II 49 long, solenidion about 4.5 long; tibia II 19 long, genu II 19 long. Ventral setae I 14 apart, setae of genito-anal area normally arranged, posteriormost anal seta serrate, 15 long.

Holotype: Female, Cordoba, Vera., February 4, 1957 (D. De Leon), on *Phoebe psychotrioides*.

Cheyletia scutellata, n. sp.

(Figures 4-6)

Cheyletia scutellata resembles *C. wellsii* Baker in the markings of the dorsal shields and in the shapes of the dorsolateral setae, but it differs from that species most noticeably in having no staghornlike setae, a much smaller hysterosomal shield and with only one pair of setae on it, and tarsus I and tibia I shorter. The male is unknown.

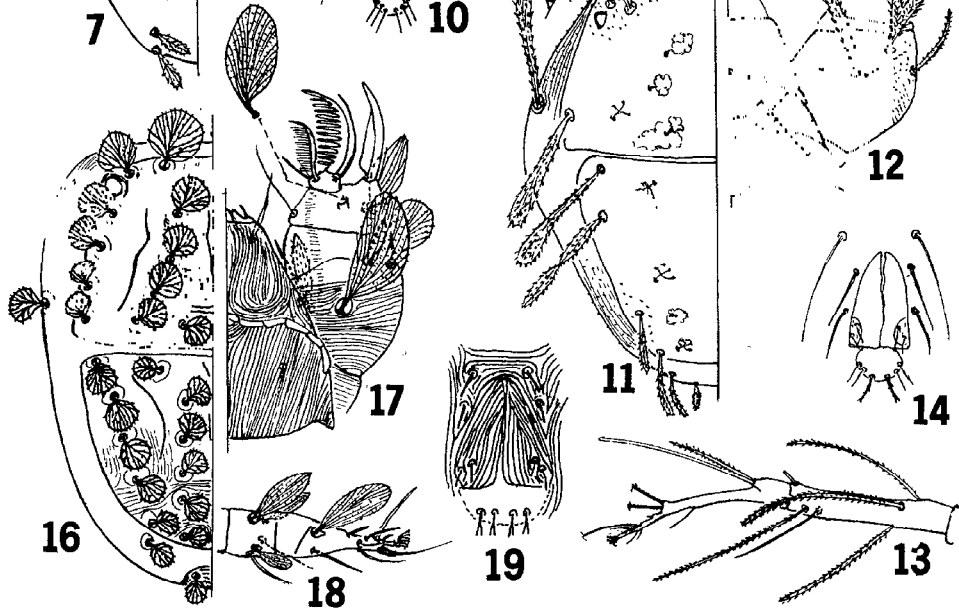
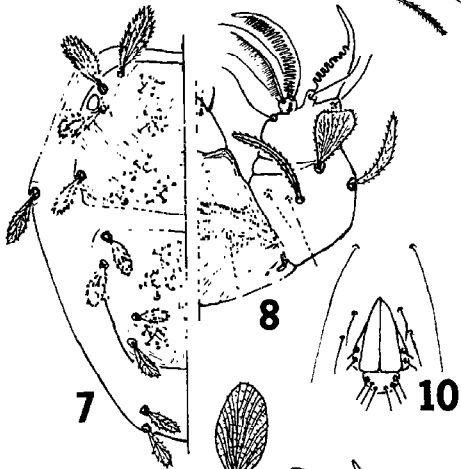
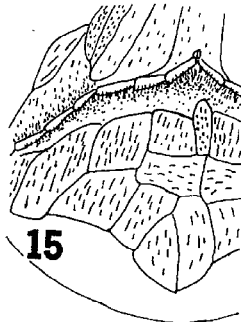
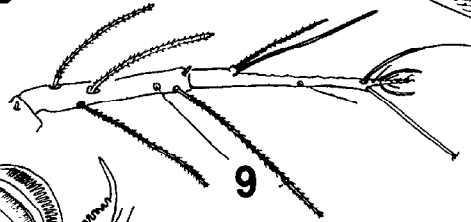
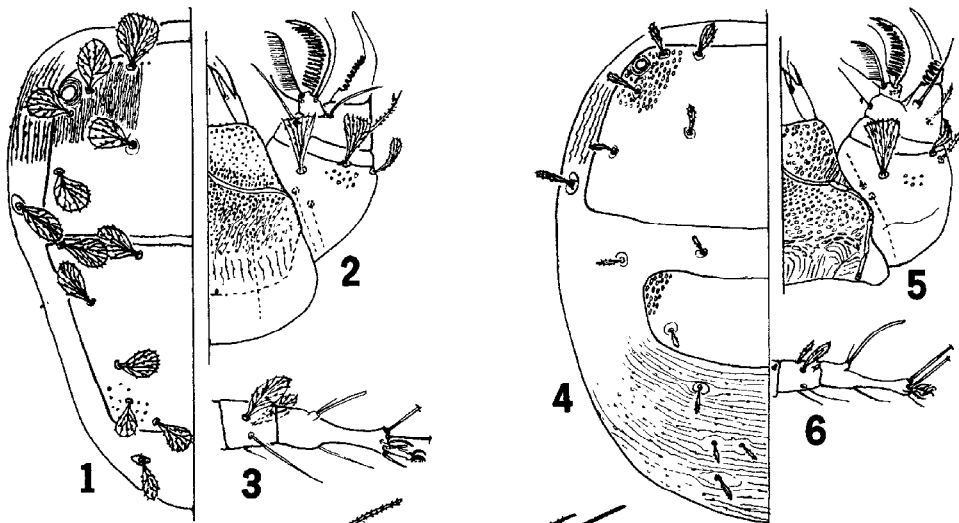
FEMALE: Body length 303-380. Dorsum with 2 shields both fully covered with small (3-5 in 10 microns), oval areolae; shape and number of dorsal setae as shown in figure 4, dorsal setae 15-22 long, the humeral the longest. Rostrum and palp with setae and markings as shown in figure 5; rostrum 96 long. Palptibial claw with 5-6 teeth, outer comblike seta with about 16 teeth, inner comblike seta with about 20 teeth, dorsal seta of palp-femur 27 long. Tarsus I 54-59 long, with only 4 tactile setae, solenidion 39 long; tibia I 25 long, solenidion about 4 long; genu I 27 long, solenidion about 2 long. The setae of genito-anal area smooth, normal in number and arrangement.

Holotype: Female, San Blas, Nay., April 6, 1957 (D. De Leon), on a cultivated tree called agualama. *Paratypes*: 1 female, Coral Gables, Florida, March 7, 1956, on *Swietenia mahagoni*; 1 female, Key Largo, Fla., January 1959, on *Guettarda scabra*; 1 female, Tuxtla Gutierrez, Chiapas, January 1957, on *Xylosma elliptica*. Other specimens were taken on *Pithecellobium* sp., San Blas, Nay., March, 1957, and on *Erythrina herbacea*, Everglades N. P., Fla., February, 1959.

EXPLANATION OF PLATE

Plate 1

- Figures 1-3. *Cheyletia cordovensii*, n. sp. 1, dorsum; 2, rostrum and palpus; 3, tibia and tarsus I.
 Figures 4-6. *Cheyletia scutellata*, n. sp. 4, dorsum; 5, rostrum and palpus; 6, tibia and tarsus I.
 Figures 7-10. *Mexeches cunliffei*, n. sp. 7, dorsum; 8, rostrum and palpus; 9, tibia and tarsus I; 10, genito-anal setae.
 Figures 11-14. *Mexeches intermedius*, n. sp. 11, dorsum; 12, rostrum and palpus; 13, tibia and tarsus I; 14, genito-anal setae.
 Figure 15. *Mexeches aztecorum*, n. sp. Design of part of rostrum.
 Figures 16-19. *Chiapachelys edentata* n. sp. 16, dorsum; 17, rostrum and palpus; 18, tibia and tarsus I; 19, genito-anal setae.



Cheyletia wellsi Baker

Although *C. wellsi* is common in Florida and in Mexico and in other parts of the world, the male does not seem to have been previously described. The length of the male, including rostrum, is about 290; the dorsal shields lack staghornlike setae, the anterior shield bears 3 pairs of dorsolateral setae and 2 pairs of dorsosubmedian setae, the posterior shield bears 3 pairs of dorsolateral setae and 1 pair of dorsosubmedian setae, all setae similar in size and shape to the female's. The shape of the palpfemur is similar in both sexes; the palptibial claw has 6-7 teeth, the palptarsus has 2 distinctly comblike setae and 2 sicklelike setae. The legs are similar in shape to the female's; tarsus I 71 long, solenidion 56 long, slender and tapering; tibia I 23 long; solenidion about 4.9 long; solenidion of tarsus II 17 long, of tarsus III 10 long, of tarsus IV 17 long.

Mexecheles, n. gen.

Mites allied to *Cheyletia*, but with tarsus, tibia, and genu of leg I elongated, tarsus I with distal end attenuated and the claws much smaller than those of the other legs; tibia I with 5 setae (exclusive of a solenidion). The males with only 1 distinctly comblike seta (the seta that would, in the female, be the inner comblike seta is considerably shorter and more slender than the inner sicklelike seta and is weakly serrate or with very fine teeth), and 2 large sicklelike setae. Some of the dorsal body setae are long and straplike.

Type of genus: *Mexecheles cunliffei*, n. sp. *Cheyletia virginiensis* Baker 1949 belongs in this genus and *C. flabellifera* (Michael) and *C. pyriformis* (Banks) probably belong here.

Mexecheles cunliffei, n. sp.

(Figures 7-10)

The female *Mexecheles cunliffei* resembles *M. virginiensis* (Baker), but differs most noticeably from that species in lacking tubercles in the interscutal areas and in having somewhat shorter dorsolateral setae, the rostrum striate, and the palpfemur with a squamiform seta. The male has some of the dorsolateral setae long and straplike similar to the dorsolateral setae of the females of other species in this genus.

FEMALE: Body length 572; dorsal shields finely striate, interscutal areas coarsely striate, the striae without lobes or spines; shapes and arrangement of dorsal setae as shown in figure 7, dorsolateral seta 1 is 64 long; anterior shield with 5 pairs of staghornlike setae, posterior shield with 3 pairs of staghornlike setae. Rostrum and palpus with setae and markings as shown in figure 8. Rostrum 144 long; palptibial claw with 8 teeth; outer comblike seta with about 24 teeth, inner comblike seta with about 35 teeth. Tarsus I 148 long, solenidion 115 long; tibia I 127 long, solenidion 10 long; genu I 92 long, solenidion about 5 long; tarsus II 110 long, solenidion 30 long; tibia II 25 long, solenidion about 6 long; genu II 58 long, solenidion about 6 long; anterior setae of coxa III narrow elliptic, spinose. Ventral body setae as follows: I 45 long, 70 apart; II 110 long, 101 apart; III at least 45 long, 98 apart; IV at least 98 long, 65 apart; V 31 long, 42

apart; VI 28 long, 59 apart. Setae of genito-anal unit normally arranged, simple; anal setae 22 long.

MALE: Body length 480; anterior shield with 4 pairs of dorsolateral setae and 2 pairs of dorsosubmedian setae, the first lateral 91 long, about 12 wide, the second lateral 108 long, 12 wide, the first dorsosubmedian seta 45 long, about 10 wide; posterior shield partly obscured by gut contents, but with at least 3 pairs of dorsolateral and 2 pairs of dorsosubmedian setae; both shields finely striate. Palpfemur shaped as for female and with middle dorsal seta columnar, spinose, and reaching about to middle of claw. Inner comblike seta of palptarsus much shorter and thinner than inner sicklelike seta and with minute teeth. Tarsus I (as for female with upper distal surface undulate) 147 long, solenidion 121 long; tibia I 159 long, solenidion 9 long; genu I 96 long, solenidion not observed; tarsus II 139 long, solenidion 52 long; tibia II 31 long, solenidion 7 long; genu II 69 long, solenidion not observed; tarsi III and IV each with a solenidion about 7.5 long.

Holotype: Female, Huajuapán de León, Oaxaca, February 1, 1957 (D. De Leon), on *Ipomoea murucoides*. *Paratype*: 1 male, collected with female. The mite is named for Dr. Frederick Cunliffe, Acarologist.

Mexecheles intermedius, n. sp.

(Figures 11-14)

The female *Mexecheles intermedius* resembles *M. cunliffei*, but differs most noticeably from that species in having a smaller body, shorter leg segments, and much longer setae on the dorsum. The male is unknown.

FEMALE: Body length 398-443, sides of body reddish brown, rest of body dirty white; sides of body and dorsal shields with many fine, rather blunt spinelike thickenings. Setae of dorsum arranged as shown in figure 11; dorsolateral 1 is 74-90 long. Rostrum and palpus with setae and markings as shown in figure 12; rostrum 121 long, palptibial claw with 11-12 teeth, outer comblike seta with about 20 teeth, inner comblike seta with about 28 teeth. Tarsus I 101 long, solenidion 90 long; tibia I 92 long, solenidion 12 long; genu I 62 long; tarsus II 90 long, solenidion 20 long; tibia II 27 long, solenidion about 4 long; genu II 45 long; coxa III with anterior seta spinose. Ventral body setae I-V about 50 long, I-IV nearly reaching to base of seta behind. Arrangement of genito-anal setae normal, posteriormost anal seta 18 long.

Holotype: Female, Tamazunchale, S.L.P., December 21, 1956 (D. De Leon), on *Eriobotrya* sp. *Paratypes*: 1 female, Tuxtla Gutierrez, Chiapas, January 10, 1957, on *Acrocomia mexicana*; 1 female, Cintalpa, Oax., January 28, 1957, on *Vernonia deppeana*; 1 female, San Blas, Nayarit, May 27, 1957, on avocado. Additional specimens were taken in the Tuxtla area on *Pluchea*, *Morus*, and *Quercus*.

Mexecheles aztecorum, n. sp.

(Figure 15)

Mexecheles aztecorum closely resembles *M. intermedius* differing most noticeably from that species in the pattern of the rostrum, longer dorso-laterals, and longer leg segments.

FEMALE: Body length 509, cuticle of sides of body and dorsal shields with many minute, rather blunt, spinelike thickenings. Anterior dorsal shield with 4 pairs of elongate dorsolateral setae and 4 pairs of staghorn-like dorsosubmedian setae; posterior shield with 3 pairs of elongate dorsolateral setae and 3 pairs of staghornlike dorsosubmedian setae; dorsolateral seta 1 of anterior shield 91 long, 2 is 98 long, 3 is 99 long, 4 is 90 long; humeral 94 long; dorsolateral seta 3 of posterior shield 63 long, 4 is 73 long, all about 12 wide. Rostrum 157 long, center part with design as shown in figure 15; palptibial claw with 10-11 teeth, outer comblike seta with 21 teeth, inner comblike seta with about 31 teeth; setae of palpus similar to those of *M. intermedius*. Tarsus I 128 long, solenidion 98 long; tibia I 95 long, solenidion 10 long; genu I 76 long, solenidion about 4.2 long; tarsus II 103 long, solenidion 22 long; tibia II 36 long, solenidion about 4 long; genu II 51 long, solenidion not observed. Ventral body setae I-IV over 50 long, pair I 54 apart; setae of genito-anal unit normally arranged, posteriormost anal seta slightly serrate, the others simple, all about 16 long.

MALE: Body length 362; cuticle of dorsum with small spines as for female; dorsal setae straplike, spinose; lengths of setae of the anterior shield as follows: DSL1 53, DSL2 52, DSL3 25 (bases of 2 and 3 almost touching each other); DL1 63, DL2 70, DL3 72, DL4 ? (broken off in both specimens); humeral 71; posterior shield with setae of the following lengths: DSL1 65, DSL2 21; DL1 25, DL2 21, DL3 21. Palptibial claw with 8-10 teeth; palptarsus with inner comblike seta much shorter and thinner than the inner sicklelike seta and faintly serrate. Tarsi with solenidia of the following lengths: I 90, II 33, III 12, IV 11, all slender, those of I and II tapering slightly to tips, of III and IV with sides practically parallel to near tip.

Holotype: Female, Oaxaca, Oax., February 1, 1957 (D. De Leon), on *Quercus conzattii*. *Paratypes*: 1 female, collected with holotype; 2 males on *Cocos nucifera*, January 26, 1957, Tuxtla Gutierrez, Ch.

Cheletomimus berlesei Oudemans

C. berlesei was collected at Coral Gables, Fla., on *Trema* sp. in 1956, and on a wide variety of plants in 1957 on the east slope of Mexico as far south as Veracruz, Vera., and Tuxtla Gutierrez, Ch., in which latter area it was quite common. On the west slope it was collected at San Blas, Nay. The male has not previously been described. It is 235 long and resembles the female in general appearance, but the hysterosoma has only 1 shield covering most of the dorsal surface and bears 5 pairs of short, elliptic setae. The palptibial claw has 7 teeth, the palptarsus has 2 sicklelike and 2 distinctly comblike setae. Each tarsus bears a slender solenidion 49, 13, 15, and 15 long respectively.

Cheletomimus denmarki Yunker

This mite was collected on *Callicarpa americana* at Coral Gables, Fla., in 1954; at New Orleans, La., on *Pittosporum* sp. and *Ficus* sp. and at Boutte, La., on *Myrica* sp. in 1956.

Chiapacheylus, n. gen.

Cheyletid mites with 2 dorsal shields, a pair of eyes, squamiform dorsal setae, palptarsus with 2 comblike and 2 sicklelike setae, palptibial claw without teeth; legs short and thick with large squamiform setae dorsad; tarsus I with rayed pulvillus, but without claws, other tarsi with large claws; solenidia short (less than 12 microns). The male is unknown.

Type of genus: *Chiapacheylus edentata*, n. sp.

Chiapacheylus edentata, n. sp.

(Figures 16-19)

The genus is similar to *Cheletomorpha* in lacking claws on tarsus I, but is very different in general facies, type of legs, and character of dorsal setae.

FEMALE: Body length 246-271; dorsal shields finely striate with setae arranged as in figure 16; dorsosubmedian seta 1 is 25 long; lateral and interscutal striae without lobes or spines. Rostrum 38 long; rostrum and palpus with markings and setae as shown in figure 17; outer ventral seta of palpfemur elliptic and spinose, palptibial claw without teeth, outer comblike seta of palptarsus with 11-12 teeth, inner comblike seta with about 16 teeth. Tarsus I 35 long, solenidion 7-11 long; tibia I 14 long, genu I 14 long, no solenidia observed on these last 2 segments; tarsus II 32 long, solenidion about 3.5 long; tibia II 15 long, genu II 16 long; coxa III with anterior seta squamiform, all coxae striate to a point slightly distal of bases of coxal setae. Ventral body setae of the following lengths: I 17, II at least 42, III 9, IV at least 50, V 9, VI 9; setae of genito-anal unit arranged as in figure 19, there are only 2 pairs of anal setae, both bifurcate, all about 9 long.

Holotype: Female, Tuxtla Gutierrez, Ch., January 18, 1957 (D. De Leon), on *Jaquinia pungens*. *Paratypes*: 1 female, collected with holotype; 2 females, on *Sterculia apetala*, other data as for holotype. Other specimens were collected in the same area January 26 on avocado, *Trichilia hirta*, and *Xylosma elliptica*.

Grallacheles, n. gen.

Cheyletid mites with 2 dorsal shields, a pair of eyes, dorsal setae both straplike and squamiform, palptarsus with 2 comblike and 2 sicklelike setae, palptibial claw with basal teeth, tarsi with claws and pulvilli, genua and tibiae not much longer than wide, femora not over twice as long as wide, all tarsi attenuated and more than 4½ times as long as the respective tibiae. The male is unknown.

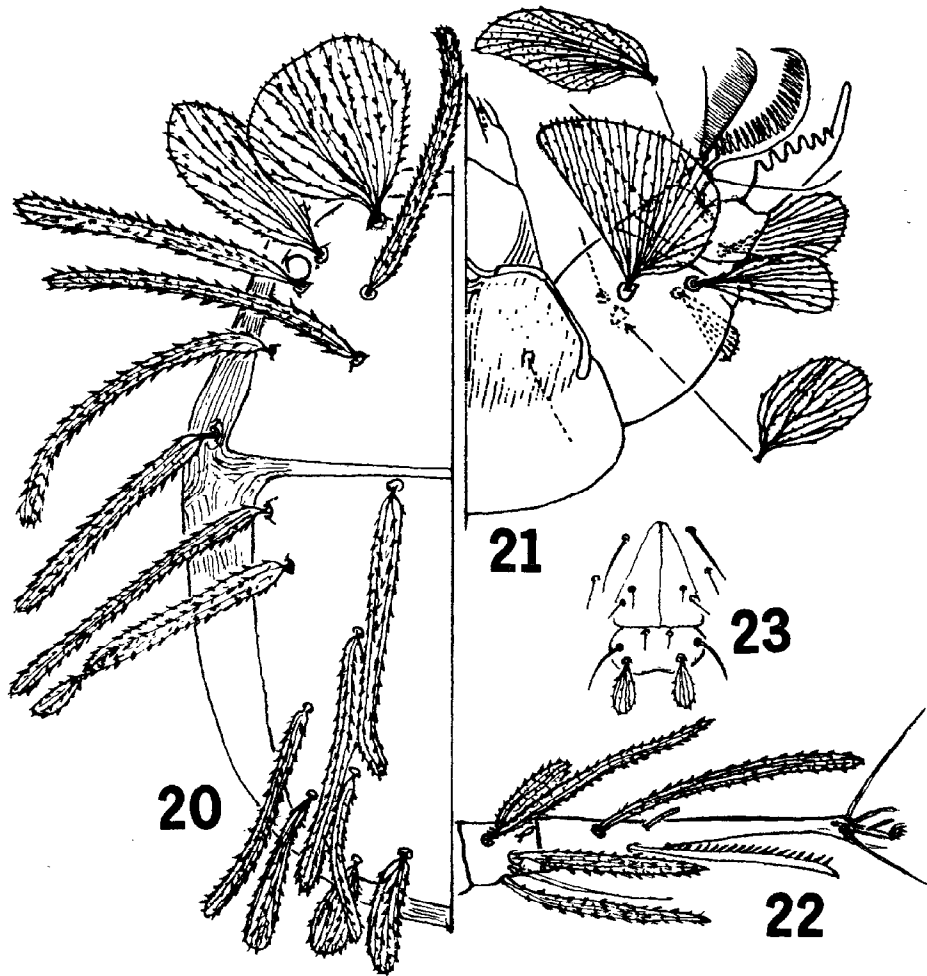
Type of genus: *Grallacheles bakeri*, n. sp.

Grallacheles bakeri, n. sp.

(Figures 20-23)

FEMALE: Body length 416-444. Shape and number of dorsal setae as shown in figure 20; both dorsal shields smooth; dorsosubmedian seta 1 is 80 long, 8 is 118 long, all dorsal setae densely spinose. Rostrum and palpus

with markings and setae as shown in figure 21; rostrum 119 long; palptibial claw with 6-9 teeth, outer comblike setae with about 22 teeth, inner comblike seta with about 30 teeth. Tarsus I 105-119 long, solenidion about 11 long, apparently without supporting seta; tibia I 21-26 long, solenidion about 4.5 long, genu I 31 long, solenidion about 3.5 long; tarsus II 101 long, solenidion about 7 long; tibia II 19 long, solenidion about 4.2 long; tarsus III 103 long, tibia III 21 long; tarsus IV 107 long, tibia IV 22 long; anterior seta of coxa III narrow elliptic, spinose; trochanter III with only 1 seta; setae of genito-anal unit arranged as shown in figure 23, the oval seta 32 long.



EXPLANATION OF PLATE

Plate 2

Figures 20-23. *Grallacheles bakeri*, n. sp. 20, dorsum; 21, rostrum and palpus; 22, tibia and tarsus I; 23, genito-anal setae.

NYMPH: Resembles female in general appearance, but dorsosubmedian seta 1 squamiform-split; dorsolaterals 1, 2, and 3 and dorsosubmedian 2

straplike, dorsosubmedian 3 absent; hysterosoma with 3 dorsal shields and 5 pairs of straplike setae. Ventral setae IV-VI absent; each of what appear to be rudimentary genital covers with 2 setae; 1 pair of anal setae, the setae narrowly oblanceolate and serrate. Palpfemur without the inner ventral seta. Legs with coxae IV and trochanters I-IV bare, other coxae with setae as for female; tarsi similar in shape to female's; tibia I and genua I much shorter than for female.

LARVA: Anterior dorsal shield with same number of setae and setae of same shape as for nymph; hysterosoma with 3 shields and 5 pairs of straplike setae. Rostrum without ventral basal pair of setae; palpfemur without setae ventrad. Legs: coxa I with 1 setae, no setae on other coxae or on trochanters; tarsi similar in shape to female's. Only ventral setae I and II present; anal opening bordered by 3 pairs of setae.

Holotype: Female, Coral Gables, Florida, November 30, 1956 (D. De Leon), associated with psocids in floor sweepings from an old house. *Paratypes*: 3 females, 2 nymphs, 1 larva, collected with holotype; 1 female, near Mante, Tamaulipas, on sapote verde, June, 1957. The mite is named for Dr. E. W. Baker, Acarologist, U. S. Department of Agriculture.

Types and paratypes of the new species are in the author's collection.

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