

ERIOPHYID STUDIES B-16

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California Department of Agriculture

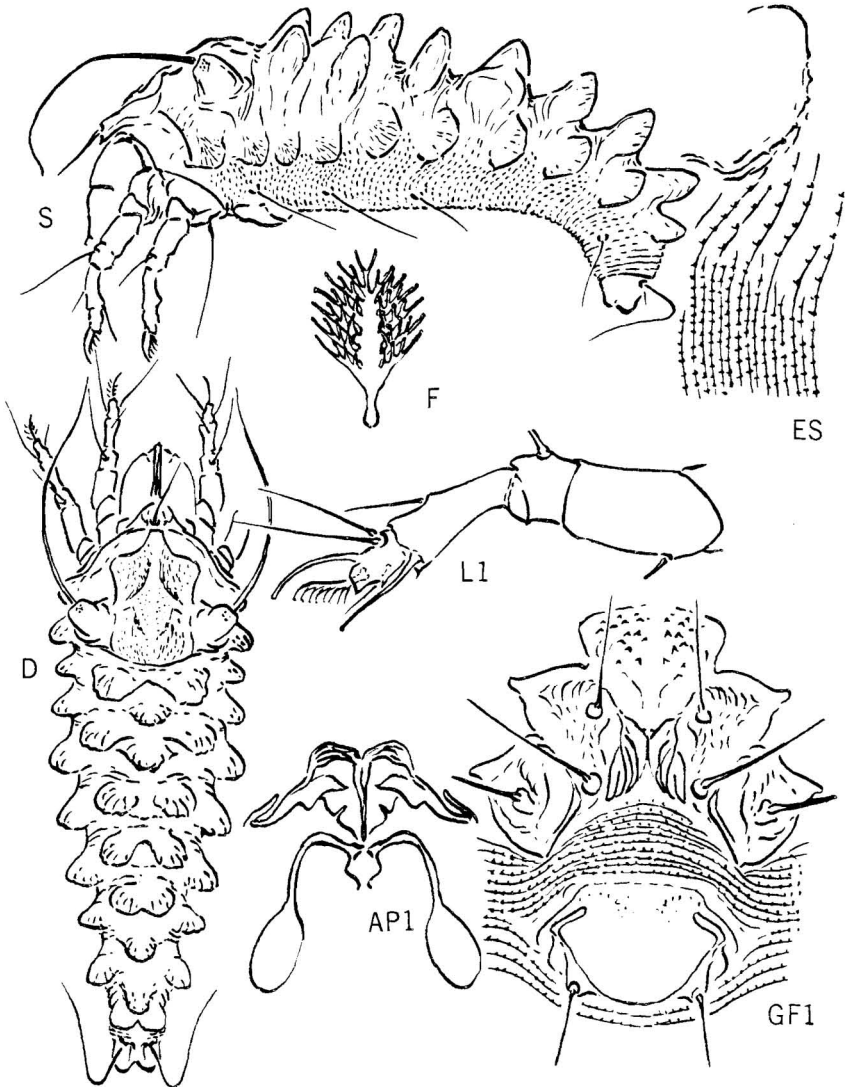


Plate 1 - *Phantacrus lobatus*, new species

Phantacrus, new genus

General body shape fusiform, modified by large dorsal and lateral abdominal lobes. Rostrum large, oral stylet short form. Shield with short broad anterior lobe over rostrum base, the lobe bearing a central seta projecting forward. Shield with lateral lobe over rear coxa. Dorsal tubercles large, set near rear shield margin, directing setae anteriorly. Legs with all standard setae plus lateral tibial spur; featherclaw simple. Coxae with three pair of setiferous tubercles. Abdomen divided laterally into tergites and sternites, dorsally with large regularly placed projecting lobes from first tergite to last lobe over third ventral seta; two median lobes apparently on second and third tergites; paired dorsal lobes on first five tergites, followed by two simple lobes; eight lateral lobes. Sternites with all standard setae. Female genitalia moderate distance behind coxae, the internal apodeme extending forward and spermathecae long-stalked.

This genus falls in with Phytoptid genera having median frontal shield seta and long-stalked spermathecae. These genera are: Trisetacus, Setopus, and Nalepella. Phantacrus is nearest Nalepella, from which it differs by fantastic back lobes. The name is a modification of the words phantasia plus acarus.

Genotype: Phantacrus lobatus, new species

Phantacrus lobatus, new species

Plate 1

Female 235_u-260_u long, 85_u wide, 80_u thick; body generally fusiform; color in life undetermined. Rostrum 52_u long, curved down; antapical seta 10_u long. Shield 66_u long, 70_u wide, seta on short anterior lobe 23_u long. Shield centrally with fine irrorations and quadrangular raised areas. Dorsal tubercles 44_u apart; dorsal setae 108_u long, curving forward, down, and recurved slightly apically. Forelegs 60_u long; tibia 17_u long, with 8_u seta at 2/3, the spur 14_u long; tarsus 8_u long; claw 13_u long, curved down; featherclaw 7-rayed. Hindleg 56_u long, tibia 16_u long, tarsus 8_u long, claw 14_u long. Coxae ornamented with sinuate lines and a heavily lined area inside second tubercles; anterior coxae narrowly connate with short sternal line between; first setiferous coxal tubercles a little farther apart than second and ahead of anterior coxal approximation; second tubercles a little ahead of transverse line across third tubercles. Abdomen with about 8 lobed tergites. Sternites very narrow and finely microtuberculate on margins, there being about 84 sternites from lateral seta to third ventral seta. Lateral seta 65_u long, above genital seta; first ventral seta 35_u long, on sternite 22 behind lateral; second ventral 62_u long, on 44th sternite behind lateral; third ventral seta 28_u long, on ring 6 from rear. Accessory seta 7_u long. Female genitalia 30_u wide, 24_u long; coverflap unornamented; seta 30_u long.

Type locality: Corvallis, Oregon

Collected: July 5, 1965, by William P. Nagel

Host: Pseudotsuga menziesii (Mirb.) (Pinaceae) Douglas fir

Relation to host: the mites are presumably needle vagrants

Type material: a type slide with the above data
four paratype slides

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Nalepella halourga, new species

Plate 2

The new species is of a deep purplish-red color. In common with *Nalepella tsugifoliae* K. it has spines on the rear margin of the foretibiae. It differs from this latter species by having more definite lines on the shield, fewer rear tibial spines, no spinules on the suboral plate, and by the 10-rayed featherclaw.

Female 185_μ-305_μ long, about 80_μ thick; robust; a deep purplish-red species. Rostrum large, 70_μ long, curved down; antapical seta 18_μ long. Shield 66_μ long, 90_μ wide; median line faint but present, especially anteriorly; admedian lines visible anteriorly; central rear of shield with fine dashes; submedian lines indicated ahead of dorsal tubercles; sides of shield with faint network of lines. Median anterior shield seta 40_μ long; dorsal tubercles 64_μ apart; dorsal setae 108_μ long. Foreleg 63_μ long; tibia 20_μ long, spines on apical rear, seta 18_μ long, at 2/3, lateral apical spur 15_μ long; tarsus 10_μ long; claw 14_μ long; featherclaw 10-rayed. Hindlegs 60_μ long, tibia 16_μ long, tarsus 10_μ long, claw 16_μ long. Anterior coxae with spinules on inner angle and on anterior diagonal area, these coxae not connate; suboral plate lacking spinules; rear coxae lacking spinules. First setiferous coxal tubercles slightly ahead of anterior coxal approximation, farther apart than second; second tubercles a little ahead of line across third setiferous coxal tubercles. Abdomen with about 43 narrow tergites to ring bearing third ventral seta and about 70 sternites to same ring; all parts of abdominal rings bearing fine microtubercles on rear margins, bead-like or laterally pointed on tergites. Lateral seta 40_μ long, on sternite 9 behind shield; first ventral seta 50_μ long, on sternite 26; second ventral 40_μ long, on sternite 42; third ventral 40_μ long, on ring 6 ahead of rear. Accessory seta 12_μ long. Female genitalia 28_μ wide, 32_μ long; coverflap with faint lines; seta 50_μ long.

Type locality: Rutland, Vermont

Collected: May 28, 1965, by Dr. G. R. Nielsen

Host: *Picea pungens* Engelman (Pinaceae) blue spruce

Relation to host: the mites are needle vagrants

Type material: a type slide, so designated, with the above data
three paratype slides with above data

A species of *Nalepella* which the writer has so far been unable to separate structurally from *tsugifoliae* K. occurs on *Torreya californica* Torr. (Taxaceae), California nutmeg. It has been found near Mineral, Shasta County, and near Manning Creek, Lake County.

Another species of *Nalepella* was collected by G. M. Buxton at Grizzly Meadows, Trinity County, Cal., September 19, 1964, on *Picea breweriana* Wats. (Pinaceae), weeping spruce. Insufficient examples are on hand to allow an adequate description. The host tree occurs at rather inaccessible heights in northwestern California, so the likelihood of obtaining an adequate series in the near future is small.

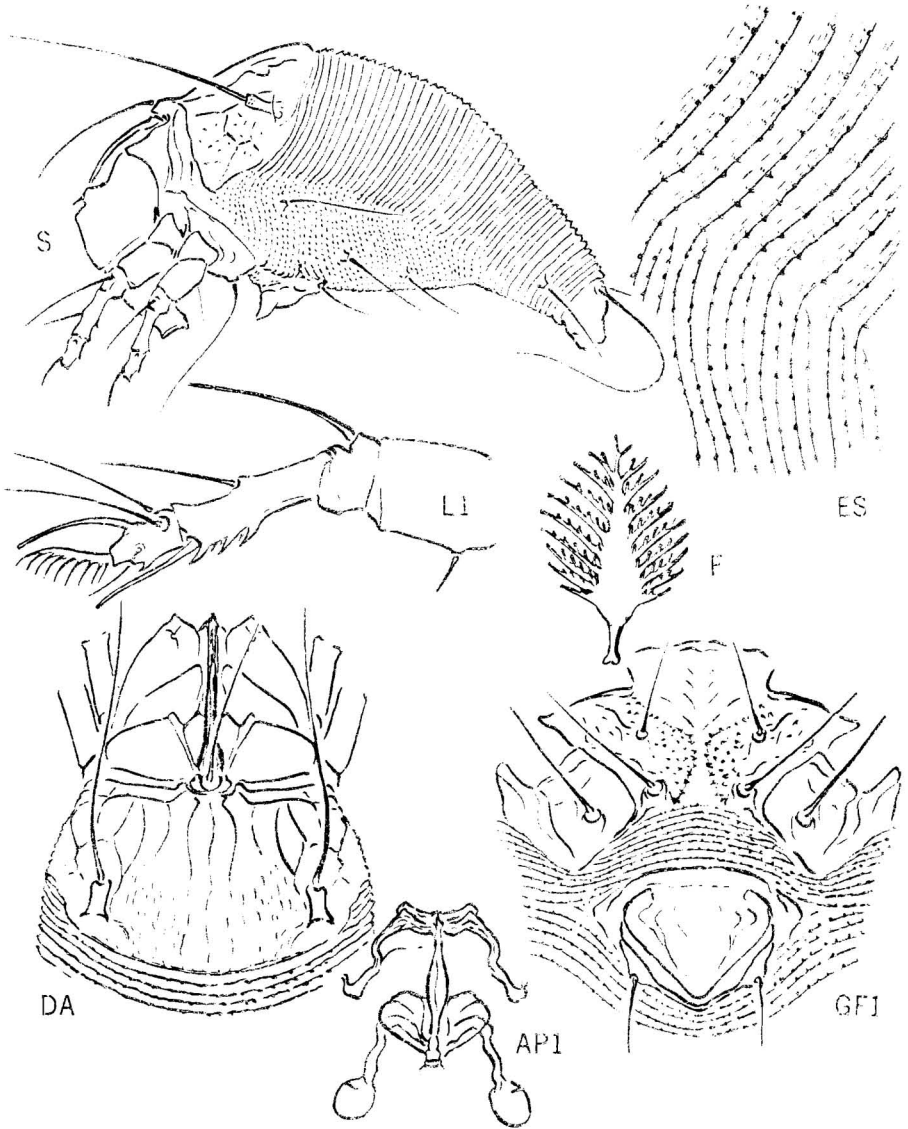


Plate 2 - *Nalepella halourga*, new species

Trisetacus pseudotsugae, new species

Plate 3

This species, with an 8-rayed featherclaw, has microtubercles on the rings produced as spinules. This is similar to pini (Nal.), and to grossmanni K. The new species differs from pini in having one more featherclaw ray, from grossmanni in having a longer median line, and from both in having the admedian line extended anteriorly a short distance from its junction with the submedian just inside the dorsal tubercle. The microtubercles are smaller and a little sparser than on pini.

Female 350_μ-400_μ long, 50_μ-55_μ thick, wormlike, color light yellowish-white. Rostrum 30_μ long, curved down; antapical rostral seta 8_μ long. Shield 33_μ long, 45_μ-50_μ wide, subsemicircular in anterior outline. Median shield line present on rear 1/2 of shield, broken. Admedian line visible from about 1/3, curving diagonally out to receive a diagonal inward line from submedian just inside position of dorsal tubercle, the admedian thence running diagonally centrad to rear shield margin where it curves to meet median at central point. Submedian line curving back around dorsal tubercle, giving off diagonal lines inside dorsal tubercle position, the outer line running across rear of tubercle, the inner line almost meeting admedian; thence the submedian running diagonally centrad to rear shield margin and almost meeting admedian at rear. Dorsal tubercle with curving lines outside and below. Anterior shield seta 13_μ long. Dorsal tubercles 27_μ apart; dorsal setae 75_μ long. Foreleg 35_μ long; tibia 7_μ long, with 9_μ seta at 1/2, and spur 10_μ long; tarsus 8_μ long; claw 11_μ long, somewhat curved; featherclaw 8-rayed. Hindleg 33_μ long, tibia 6_μ long, tarsus 6_μ long, claw 11_μ long. Coxae with no visible ornamentation, the anterior coxae lacking central limits, no sternal line present between. First setiferous coxal tubercles well ahead of second and a little farther apart; second tubercles on a line across third tubercles. Abdomen with about 65 rings back to ring bearing third ventral seta; rings completely microtuberculate, the microtubercles produced into spinules except on rear three or four rings. Subdorsal seta 8_μ long, on ring 9-11. Lateral seta 38_μ long, on about ring 9; first ventral seta 29_μ long, on ring 20; second ventral 25_μ long, on ring 35; third ventral 45_μ long, on ring 5 ahead of rear. Accessory seta 7_μ long. Female genitalia 16_μ long, 22_μ wide; coverflap smooth; genital seta 20_μ long.

Type locality: Corvallis, Oregon

Collected: July 5, 1965, by William P. Nagel

Host: Pseudotsuga menziesii (Mirb.) (Pinaceae) Douglas fir

Relation to host: the mites presumably live around the buds. In this case the attacked trees were nursery seedlings.

Type material: a type slide, so designated, with the above data;
six paratype slides
mites in liquid

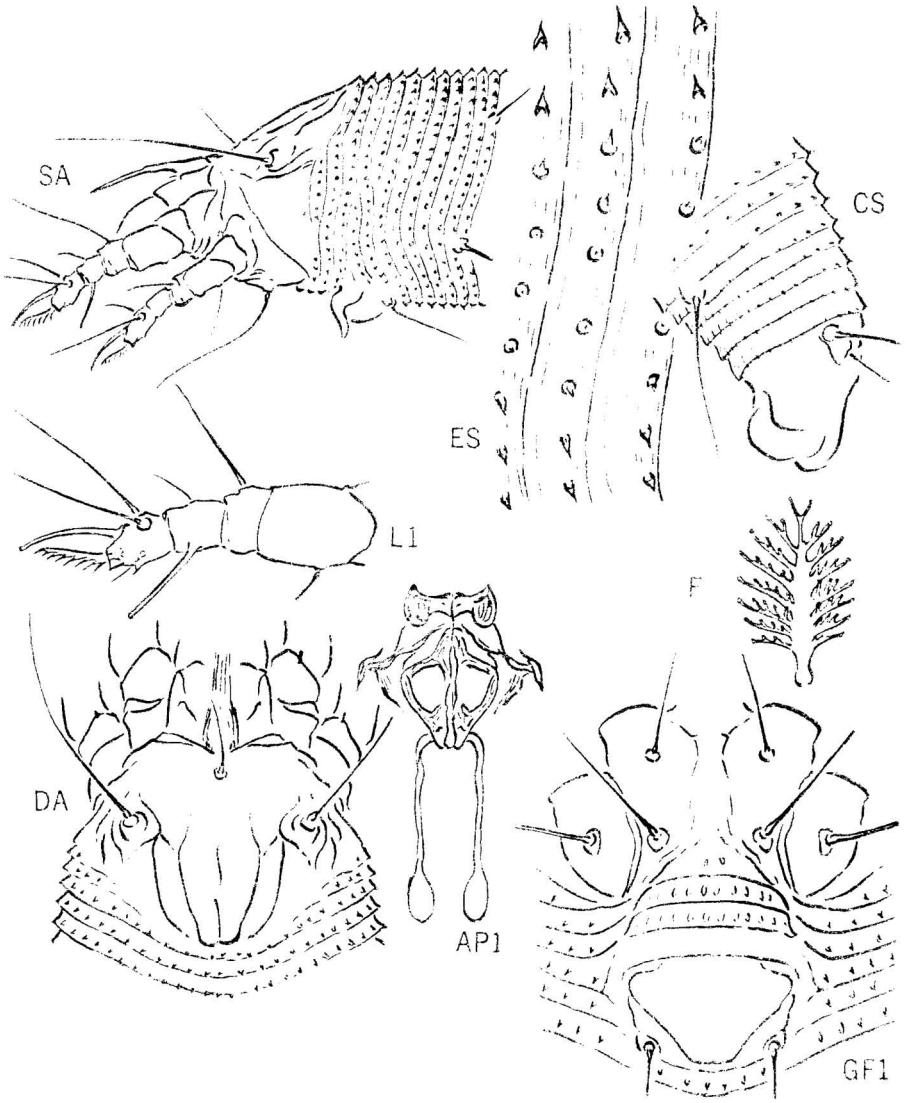


Plate 3 - *Insectacus pseudotrupae*, new species

Retracrus, new genus

General body shape fusiform, widest across center of shield. Rostrum of moderate size, chelicerae evenly bent down; short form oral stylet. Shield broad and long; short broad anterior lobe over rostrum; lateral projecting lobe just outside anterior setiferous tubercles; two pair of shield setae from projecting and terminally bulbous tubercles, the anterior tubercles on front margin laterad of anterior lobe; posterior tubercles situated well ahead of rear shield margin but directing setae to rear. legs with all segments, possessing femoral seta but lacking patellar seta; lateral foretibial spur present; featherclaw simple. Abdomen divided laterally into tergites and sternites; no subdorsal seta present; weak dorsal longitudinal ridge anteriorly; dorsum fused beyond ventral third seta. First ventral abdominal seta missing. Female genitalia a moderate distance behind coxae; internal apodeme extending forward moderate distance; spermathecae unclear, probably short-stalked.

This genus belongs to the Phytoptidae and is allied to the group with four shield setae but lacking subdorsal abdominal setae. It is unusual in having the dorsal setae pointing to rear. One other Phytoptid so far seen by the writer has this feature. The name is *retro*, referring to the rear-pointing dorsal setae, plus *acrus* as a contraction of *acarus*.

Genotype: *Retracrus johnstoni*, new species

Retracrus johnstoni, new species

Plate 4

Female 170_u-185_u long, 70_u-80_u wide, about 60_u thick, broadest across center of shield. Color in life clear water-white, the body protected by copious wax, arranged longitudinally on abdomen; white wax pencils from shield tubercles, the anterior pencils resembling antennae. Rostrum 36_u long, curved down; antapical seta 12_u long. Shield 75_u wide, 80_u long, subquadrate; no design of lines; lobes below dorsal tubercle ahead of tergites are pointed. Anterior lateral lobe rounded. Anterior setiferous tubercles 45_u apart, the seta 20_u long; dorsal tubercles 40_u apart; dorsal setae 14_u long. Forelegs 35_u long; tibia 9_u long, with 25_u seta at 2/3; tibial spur 9_u long; tarsus 6_u long; claw 7_u long, slightly bent, knobbed; featherclaw 6-rayed. Hindleg 33_u long, tibia 8_u long, tarsus 6_u long, claw 7_u long. Coxae unornamented, the anterior coxae approximate but with no median sternal line; first setiferous coxal tubercles farther apart than second and opposite anterior coxal approximation; second and third coxal tubercles about in a line across coxae. Abdomen with about 13 tergites ahead of rear fused area, their edges somewhat irregular and projecting somewhat laterally; about 42 sternites from lateral seta to third ventral seta. Anteriorly the sternites unclear laterally. Sternal micro-tubercles becoming stronger caudad, especially on venter after second ventral seta. Lateral seta above genital seta and 26_u long; first ventral seta missing; second ventral 15_u long, 13 sternites ahead of third ventral; third ventral seta 25_u long, on ring 4 from rear. Accessory seta absent. Female genitalia 20_u long, 25_u wide; coverilap without ribs; a ventral basal longitudinal line; genital seta 18_u long.

Type locality: the palms bearing these mites originated at Tuxtla or at Chiapas, Mexico, about 150 miles north of the Guatemalan border, and were intercepted in quarantine at San Antonio Texas

Dates intercepted: from June 22 to July 14, 1965, by D. Johnston, USDA

Host: *Chamaedorea* sp. (Palmae) name of variety - "Chiapas"

Relation to host: the mites form colonies on the underside of the leaves and their feeding activities produce characteristic black spots, visible on both surfaces.

Type material: a type slide
eight paratype slides
dry leaves with black spots and mite debris

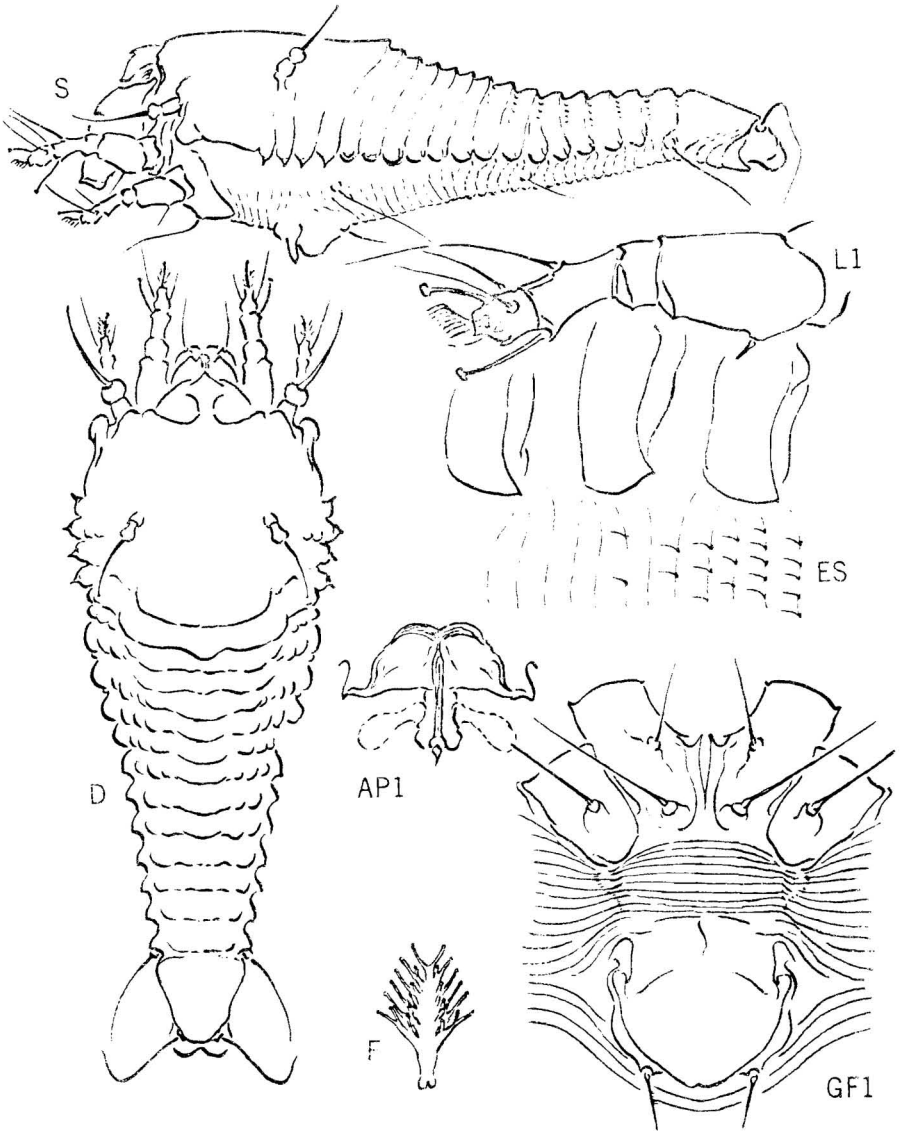


Plate 4 - *Retracrus johnstoni*, new species

Phyllocoptes nageli, new species

Plate 5

Nageli is characterized by the 6-rayed featherclaw, small anterior lobe over rostrum, short dorsal setae, first setiferous coxal tubercles ahead of anterior coxal approximation, small pointed microtubercles on ring margins. Two other members of this genus have been described by me from Conifers: *arceuthi* and *cedri*. From the former the new species differs by having solid shield lines and a smaller lobe over rostrum. From the latter it differs by having one more featherclaw ray, and in details in the shield pattern. But the two are definitely related.

Female 150 μ -200 μ long, about 55 μ thick; fusiform; color probably

Female 150 μ -200 μ long, about 55 μ thick; fusiform; color probably light yellowish-white. Rostrum 35 μ long, curved down; antapical rostral seta 13 μ long. Shield 48 μ long, 30 μ wide; anterior lobe over rostrum small. Median line complete except possibly on anterior lobe, intersected at 1/4, 1/2, and 3/4 by cross lines, the latter running diagonally backward on both sides of line. Admedian line subparallel to median, complete from sides of anterior lobe to rear margin, sinuate, the lines to median branching off the admedian; at 1/3 a lateral line from admedian out to first submedian. First submedian from side of anterior lobe farther out than admedian, forking at 1/3 to admedian and to second submedian, then turning abruptly in toward admedian at 1/2, curving out from same place and back to rear margin just inside dorsal tubercles. Second submedian line from farther to side than first and running back to a line curving in from side at 1/3. A curved lateral line from shield margin runs back and ends in lines of granules below dorsal tubercles; sides of shield granular. Dorsal tubercles 21 μ apart; dorsal setae 5 μ long, directed up. Forelegs 40 μ long; tibia 10 μ long, with 16 μ seta at 1/3; tarsus 8 μ long; claw 7.5 μ long, curved down; featherclaw 6-rayed. Hindleg 34 μ long, tibia 7 μ long, tarsus 6 μ long, claw 8 μ long. Coxae ornamented with curved lines of fine granules; anterior coxae narrowly connate centrally, a short sternal line between; first setiferous coxal tubercles farther apart than second and well ahead of anterior coxal approximation; second tubercles a little ahead of line across third tubercles. Rings on abdomen narrow, approximately the same number dorsoventrally; completely microtuberculate, the microtubercles small, pointed, on ring margins except tending to be drawn a little ahead laterally. About 62 rings from shield to ring bearing third ventral seta. Lateral seta 55 μ long, on ring 8 behind shield; first ventral seta 60 μ long, on ring 23; second ventral 45 μ long, on ring 41; third ventral 40 μ long, on ring 6 ahead of rear. Accessory seta 5 μ long. Female genitalia 25 μ wide, 18 μ long; coverflap with base granular and 8 or 9 irregular short ribs; seta 20 μ long.

Type locality: Corvallis, Oregon

Collected: July 5, by William P. Nagel

Host: *Pseudotsuga menziesii* (Mirb.) (Pinaceae) Douglas fir

Relation to host: the mites are presumably needle vagrants

Type material: a type slide, so designated, with the above data
five paratype slides
mites in liquid

I am pleased to name this mite for the collector who has sent me these interesting Eriophyids from Douglas fir.

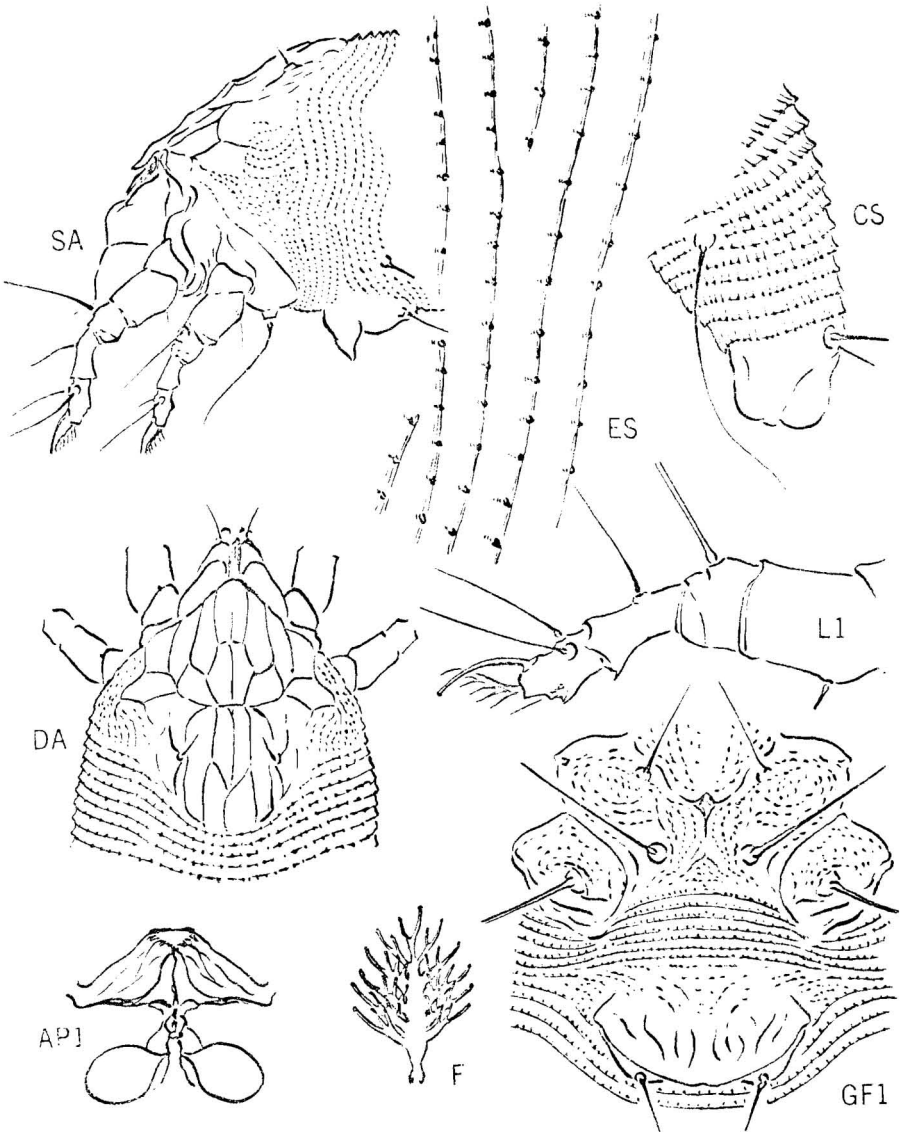


Plate 5 . *Phyllocoptes nageli*, new species

Abacarus sporoboli, new species

Plate 6

The closest species to sporoboli so far described by the writer is affer from African coffee. Sporoboli differs by having coarser granules on the shield and by lacking side branches on the admedian lines, as well as the 6-rayed featherclaws. This species is described from only one good specimen, although there are five other mites in the series, part of which are males.

Female probably 155_μ-170_μ long, 48_μ wide, 40_μ thick; fusiform; color in life probably yellowish-white. Rostrum 22_μ long, projecting down; antapical seta 10_μ long. Shield 51_μ long, 45_μ wide. Anterior shield lobe overhanging rostrum, appearing tridenticulate apically in dorsal view. Median shield line from anterior lobe base, running back to just within rear shield margin. Admedian lines complete, subparallel, from sides of apex of anterior lobe, diverging slightly on each side of median line and at rear of shield recurring to meet at end of median in center. Short transverse marks between median and admedian lines just behind middle of shield. General shield surface covered with coarse granulations. Shield with coarse lateral lines extending back from anterior lobe base toward dorsal tubercles, with fine granulations between these lines and coxae. Dorsal tubercles 37_μ apart, appearing as if projecting from body ring; dorsal setae 13_μ long. Forelegs 30_μ long; tibia 6_μ long, with 5_μ seta from about 1/2; tarsus 7_μ long; claw 8_μ long; featherclaw 6-rayed. Hindleg 25_μ long, tibia 4_μ long, tarsus 6_μ long, claw 8_μ long. Coxae ornamented with short curved lines and dashes; anterior coxae moderately broadly connate ventrally, the sternal line of moderate length. First setiferous coxal tubercles farther apart than second and well ahead of anterior coxal approximation; second setiferous coxal tubercles a little ahead of line across third tubercles. Abdomen probably with wax-bearing ridges, the central ridge extending back about 26-28 tergites, there being about 36 tergites to ring bearing third ventral seta. Tergites with microtubercles tending to be elongate on ridges, projecting over margins as edge roughenings. About 57 sternites to ring with third ventral seta, the microtubercles as beads on ring margins. Lateral seta 36_μ long, on sternite 8; first ventral 42_μ long, on sternite 22; second ventral seta 14_μ long, on sternite 41; third ventral 29_μ long, on ring 5 from rear. Accessory seta 5_μ long. Female genitalia 21_μ wide, 12_μ long; coverflap with 13-14 longitudinal ribs; seta 26_μ long.

Type locality: some point in Sanborn County, South Dakota

Collected: August 3, 1964 by H. C. S. and sent me by Prof. L. D. White

Host: Sporobolus airoides (Torr.) (Graminae-Agrostidae) dropseed

Relation to host: the mites are probably leaf vagrants

Type material: type slide, so designated, with the above data
four paratype slides, with the above data
(all slides bear one mite each)

Designations on plates -

- AP1 - Internal female genital structures
- CS - Side view caudal section of mite
- D - Dorsal view of mite
- ES - Side skin structures
- F - Featherclaw (empodium)
- GF1 - Female genitalia and coxae
- L1 - First left leg
- L2 - Second left leg
- S - Side view of mite
- SA - Side view of anterior section of mite

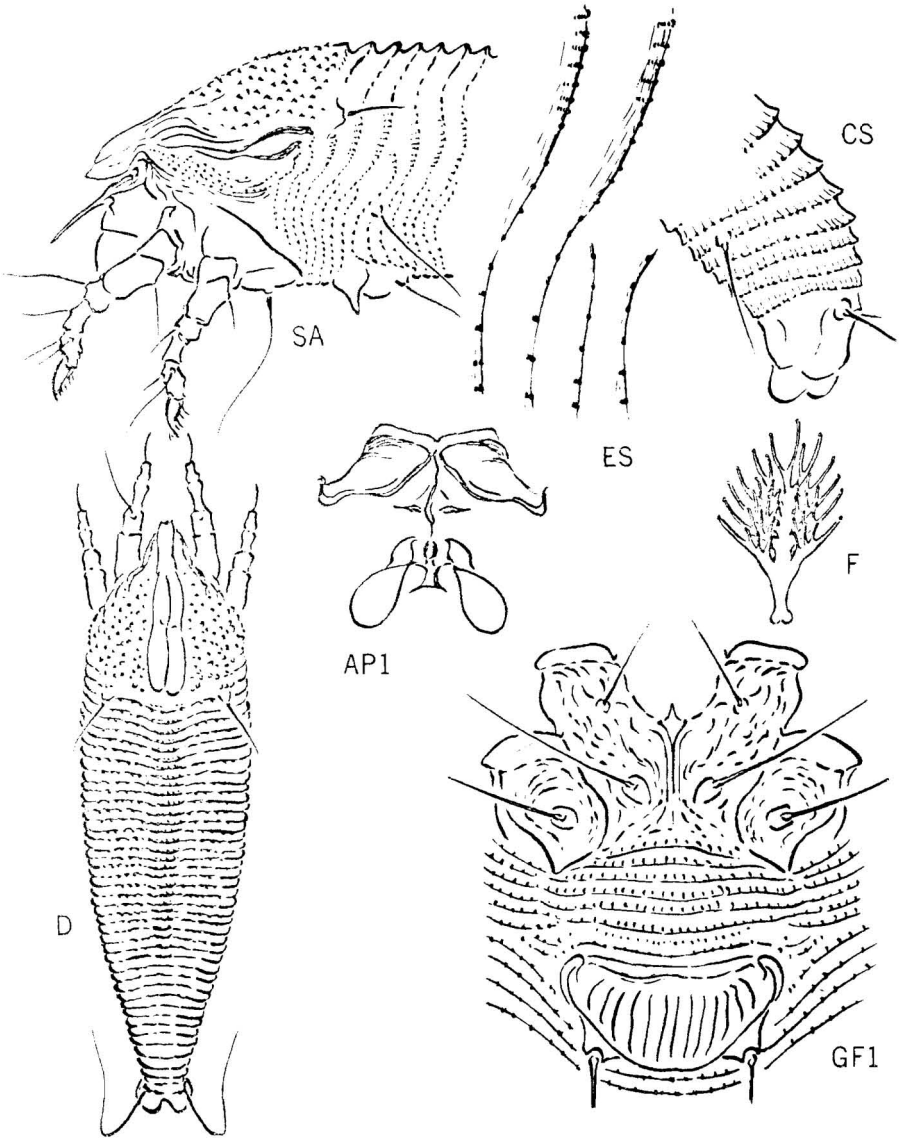


Plate 6 - *Abacarus sporoboli*, new species

Aceria macrodonis, new species

Plate 7

This species differs from *pallida* by the rounded microtubercles, as opposed to the spinulate ones on *pallida*. Other differences are the narrower shield, granular coxae, ribs on the female genital coverflap, and more irregular featherclaws. From what the writer supposes to be *eucricotes* the new species differs by the more granular coxae and the ribs on the genital coverflap.

Female 160_μ-195_μ long, 35_μ-40_μ thick; body elongate-wormlike; color light yellowish-white. Rostrum 16_μ long, somewhat curved down; antapical rostral seta 6_μ long. Shield 28_μ long, 27_μ wide, more semicircular in outline anteriorly. Shield design consisting of rear parts of admedian lines subparallel, outwardly convex, surrounded side and rear by granules. Sides of shield with longitudinal streak of granules from above front coxae to partial rings below dorsal tubercles. Dorsal tubercles 20_μ apart; dorsal setae 26_μ long, diverging to rear. Forelegs 28_μ long; tibia 6_μ long, with 6_μ long seta at 1/3; tarsus 7_μ long; claw 7_μ long, curved, with small terminal knob; featherclaw irregular, 5 to 7-rayed. Hindlegs 27_μ long, tibia 5_μ long, tarsus 6_μ long, claw 7_μ long. Coxae with lines of rather coarse granules; anterior coxae broadly connate centrally; first setiferous coxal tubercles well ahead of second tubercles, slightly farther apart, slightly ahead of anterior coxal approximation. Second tubercles well ahead of line across third setiferous tubercles. Abdomen with about 70 rings. Microtubercles beadlike, rounded apically, set ahead of ring margin; microtubercles reduced on rings past third ventral seta to small beads on ring margins. Lateral seta 31_μ long, on about ring 11; first ventral seta 61-70_μ long, on about ring 24; second ventral seta 50_μ-58_μ long, on about ring 41; third ventral 23_μ long, on ring 5-6 from rear. Accessory seta 4_μ long. Female genitalia 13_μ wide, 9_μ long; coverflap with 6-8 irregular longitudinal ribs; seta 12_μ long.

Type locality: along highway in Kit Peak district (south of Tucson) Ariz.

Collected: December 4, 1962, by the writer

Host: *Lycium macrodon* Gray (Solanaceae) box thorn

Relation to host: the mites form leaf blisters

Type material: a type slide, so designated, with the above data
eight paratype slides

dry plant parts with blistered leaves containing dry mites

Reference: *Aceria pallida* K. - Eriophyid Studies 8-12, p.3, June 11, 1964

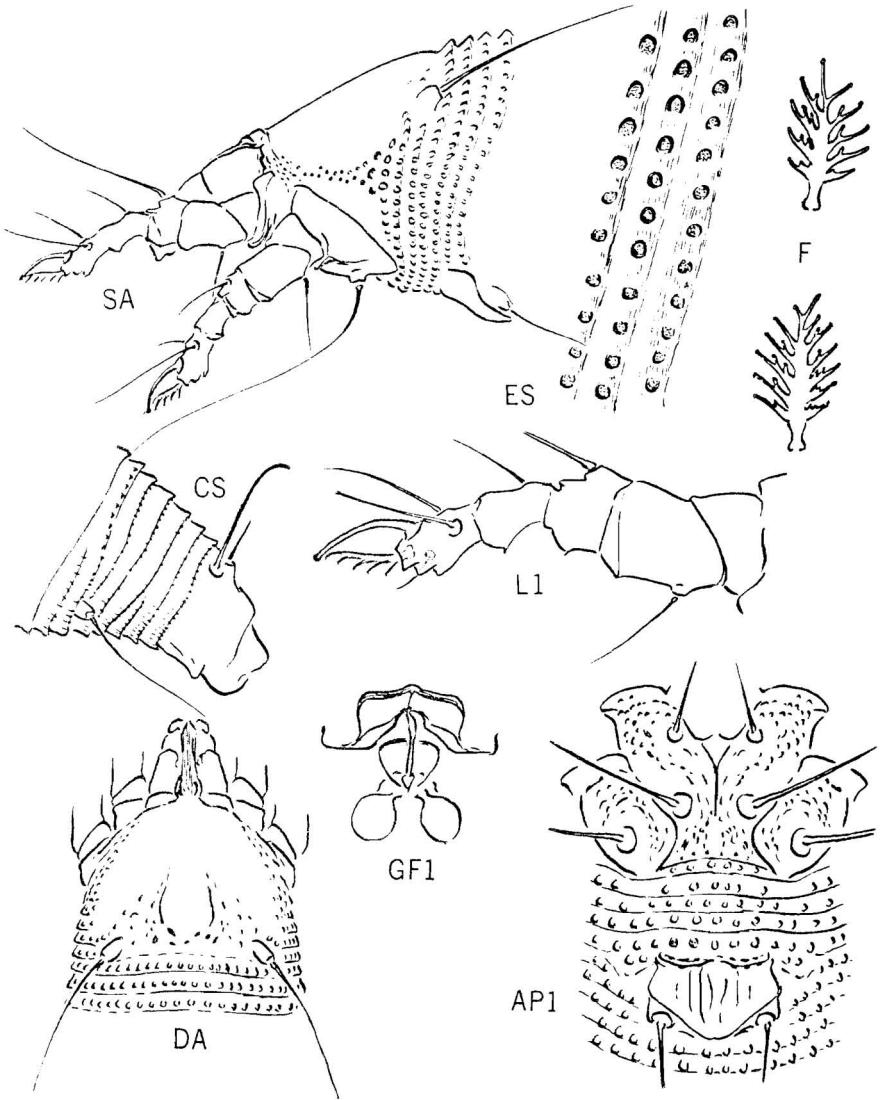


Plate 7 - *Aceria macrodonis*, new species

Aceria trifila, new species

Plate 8

Acerias with 3-rayed featherclaws are appearing on a variety of hosts. Those on the oak-walnut group of trees seem to be related mites, but how to consider three-rayed featherclaw species found on Composites, and on Polygonaceous plants is not clear. The present new species is the second named from Composites in California, the first being *chrysothamni* Wilson, 1959 (Ann. Ent. Soc. Am. 52:142). The new species would differ from *chrysothamni*, according to that description, by lacking the large area of short dashes on the sides of the shield, and by having less definite ribs on the genital coverflap.

Female 210_u-240_u long, about 55_u thick; wormlike; color light yellowish-white. Rostrum 20_u long, projecting diagonally forward and down; antapical seta 4_u long. Shield 20_u long, 34_u wide, semicircular in anterior outline. Median line complete; admedians complete, subparallel to median and gradually diverging to rear. First and second submedians curving back from front of shield, the first ending in short dashes in front of dorsal tubercles, the second distinct only half way back. Sides of shield above coxae with numerous short dashes and partial rings below dorsal tubercles. Dorsal tubercles 23_u apart; dorsal setae 40_u long, diverging. Foreleg 29_u long; tibia 6_u long, with 3_u seta at 1/3; tarsus 8_u long; claw 7_u long; featherclaw 3-rayed. Hindleg 26_u long, tibia 5_u long, tarsus 6.5_u long, claw 8_u long. Coxae with but few curved lines, a strong sternal line between anterior coxae; first setiferous coxal tubercles farther apart than second and slightly back of anterior approximation of coxae; second tubercles well ahead of transverse line across third tubercles. Abdomen with 60-65 rings to position of third ventral seta, the rings completely microtuberculate except for some suppression of these structures on the dorsum of the last 9 or 10 rings. Microtubercles situated ahead of ring margins and more or less pointed. Lateral seta 20_u long, on ring 7 behind shield; first ventral seta 50_u long, on ring 20; second ventral 25_u long, on ring 37; third ventral 29_u long, on ring 7 from rear. Accessory seta 6_u long. Female genitalia situated at angle with body and appearing shortened in ventral view; the coverflap with hardly discernable ribs; width of genitalia 15_u, length 26_u; seta 14_u long.

Type locality: a site just north of Lake Henshaw, San Diego County, Cal.

Collected: January 31, 1960, by J. P. Keifer and the writer

Host: *Artemisia californica* Less. (Compositae) California sagebrush

Relation to host: the mites are found around the growing tips

Type material: a type slide, so designated, with the above data
five paratype slides
dry plant parts with mites from which the slides were made.

The genus *Acalitus* was erected in B-14 of this series, May 17, 1965 to contain Eriophyid-Eriophyine mites lacking the forefemoral seta. Three species were then assigned to the genus: *ledi* K. (genotype), *sphaeralceae* K., and *gossypii* Banks. At the time of the description it was noted that granular coxae of these species were at least partially fused across the middle, but this character was not then emphasized. Since that publication this coxal structure proves to be important in the genus definition since two *Rubus* infestors; *essigi* Hassan, and *orthomera* K. have fused coxae combined with granulations, plus the absence of forefemoral seta. The former species, *essigi*, also has the diagonal genital coverflap lines common to the genotype, *sphaeralceae*, and *gossypii*. Another species, the European *scaber* Malepa, on *Ribes*, should be examined for the above mentioned characters. Careful examination is necessary to determine the presence or absence of the forefemoral seta, but the coxal structure is plain.

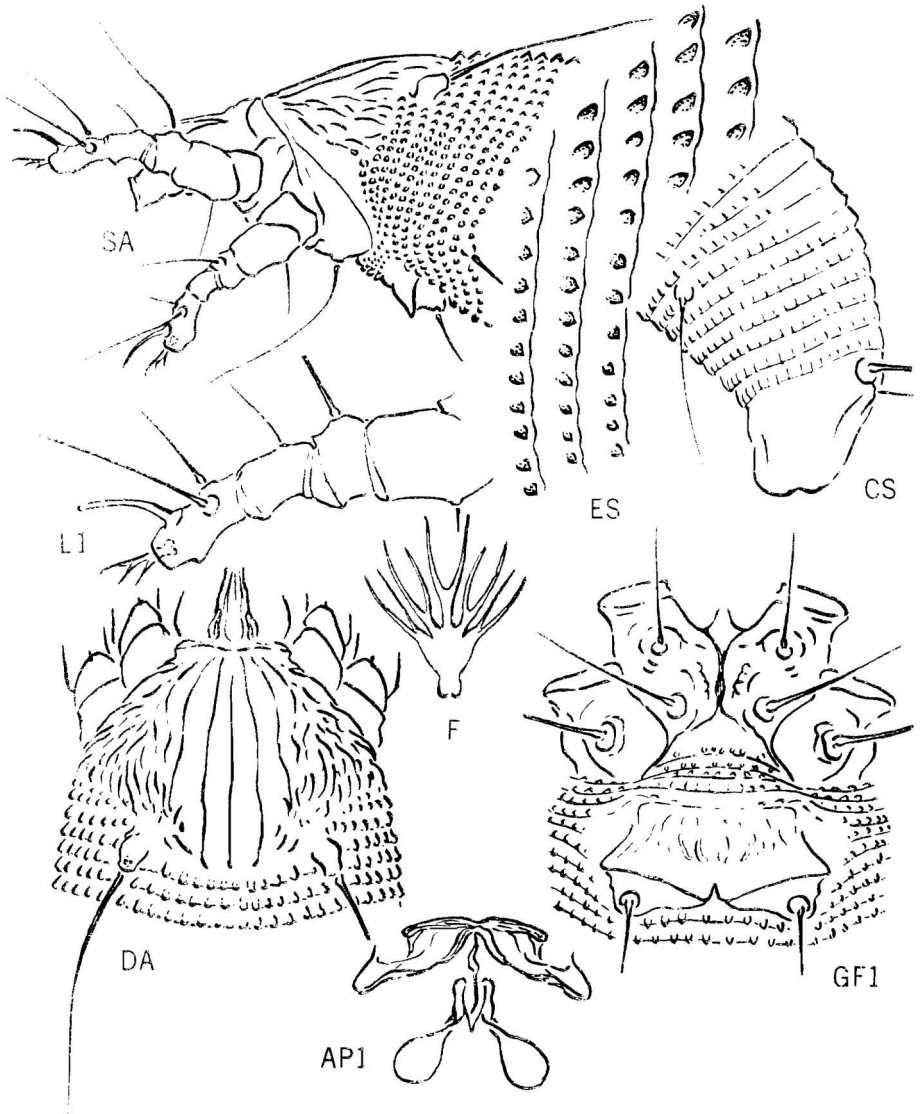


Plate 8 - *Aceria trifila*, new species

Aceria solipini, new species

Plate 9

There are a few other species with 8-rayed featherclaws but this one is not like any of them. Rather, its anteriorly attenuate shield is more like *danthoniae* K., and *cynodonis* Wilson. From the former the new species differs by having 2 more rays in the featherclaw, by lacking a diagonal line across in front of the dorsal tubercles, and by having pointed micro-tubercles. The latter species, *cynodonis*, has a 7-rayed featherclaw but lacks lines centrally on the shield. The new species tends to be narrower laterally.

Female 180_u long, 34_u wide, 38_u thick; wormlike; color light yellowish-white. Rostrum 27_u long, curved down; antapical seta 7_u long. Shield 29_u wide, 36_u long, somewhat attenuate anteriorly with slight lobe over rostrum base. Shield design of simple lines: median line absent; admedian lines from central anterior margin of shield, subparallel, rather close together, gradually diverging but recurved together at rear margin, just before which a branch curves out and back to margin. From anterior end of admedian a lateral line curves out and back about half way to rear margin below dorsal tubercles, ending before a few lateral granulations. Above this line another line begins about 1/3 back and passes diagonally below dorsal tubercles, ending well before rear margin. Dorsal tubercles 16_u apart; dorsal setae 23_u long, diverging to rear. Forelegs 28_u long; tibia 6_u long, with 11_u seta from 1/2; tarsus 6.5_u long; claw 9_u long, strongly curved down; featherclaw 8-rayed. Hindleg 25_u long, tibia 4_u long, tarsus 6_u long, claw 10_u long. Coxae attenuate, unornamented except for lobe around second tubercles; anterior coxae broadly connate but extending well ahead of anterior approximation, a moderately long sternal line between; first setiferous coxal tubercles farther apart than second and opposite anterior coxal approximation; second tubercles but little ahead of line across third tubercles. Abdomen with about 44 rings ahead of ring bearing third ventral seta, the rings rather broad, microtuberculate except for sides in front of lateral seta, the microtubercles generally set ahead of margins, closer dorsally, pointed. Body somewhat peculiarly constricted behind shield, making genitalia assume a declivitous position. Lateral seta 30_u long, on ring 4 behind shield; first ventral seta 48_u long, on ring 13; second ventral 47_u long, on ring 26; third ventral 30_u long, on ring 5 from rear. Accessory seta 4_u long. Female genitalia 18_u wide, 14_u long, at downward angle from anterior base; coverflap with 8 or 9 longitudinal ribs; seta 45_u long; anterior internal apodeme appearing shortened due to angle of genitalia.

Type locality: Lone Pine, Inyo County, California (solipini)

Collected: July 26, 1964, by R. P. Allen and Tokuwu Kono, of the State Bureau of Entomology

Host: *Distichlis spicata* (L.) (Graminae-Festuceae) salt grass

Relation to host: the mites live in the terminal rolled leaves

Type material: a type slide, so designated, with the above data
six paratype slides
dry grass with mites, bearing the above data

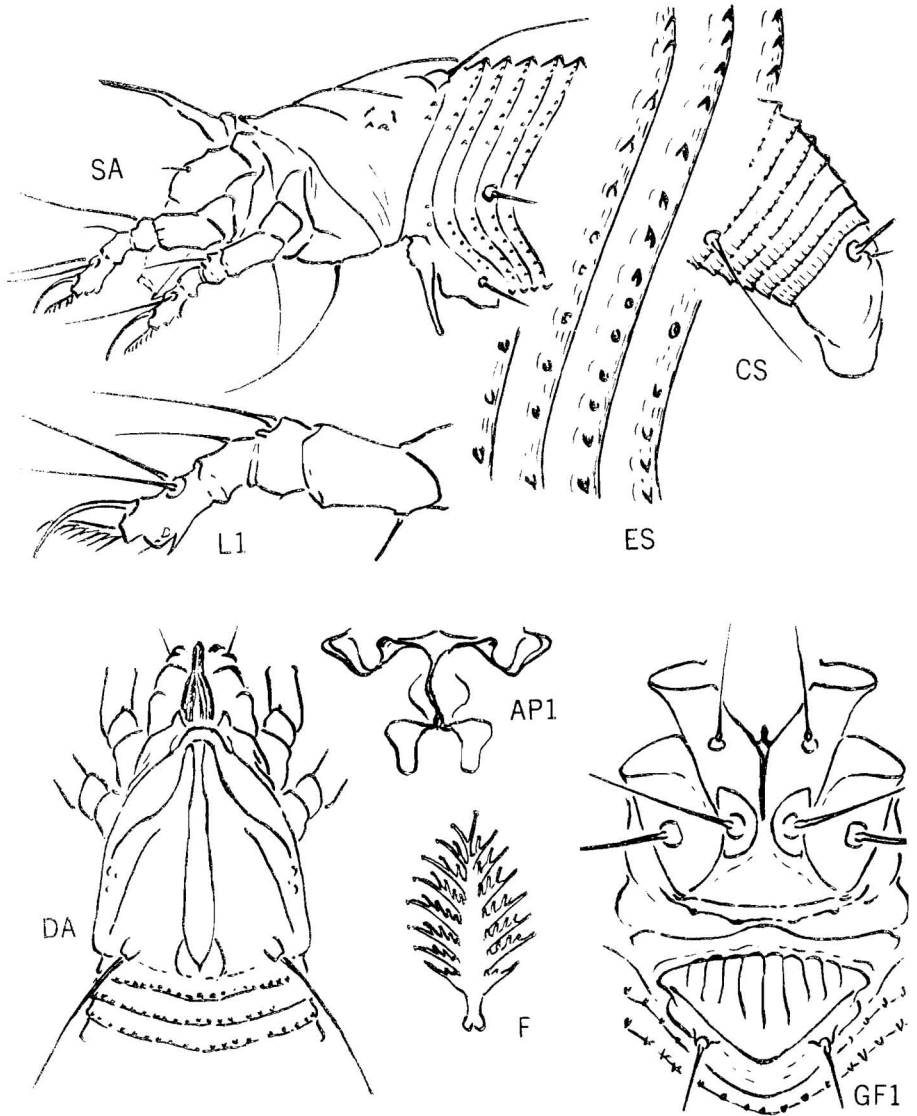


Plate 9 - *Aceria solipini*, new species

Acunda, new genus

Distinctive back structure is a usual generic character, and in this respect the genotype here designated amply qualifies. The back characters in this case are the recurrent swellings following each other from front to rear. But otherwise the genotype is admittedly exceedingly close to the new species proposed just ahead, namely Aceria solipini. The two species have the same host, but are separated by more than 100 miles of distance and a barrier mountain range. So there is probably no mixing of the respective populations. What we have here is evidently an emergent genus.

Body wormlike, somewhat compressed laterally. Rostrum moderately large; chelicerae evenly downcurved, the oral stylet of the short type. Shield rather narrow and attenuate anteriorly, no projection over rostrum; dorsal tubercles on rear margin directing setae to rear. Legs with all standard segments and setae; featherclaw simple. Abdomen with moderately broad rings which are equal dorso-ventrally. Middorsum characterized by six elongate swellings comprised of thickened parts of 5 or 6 rings each, separated by 3 to 5 normal rings, the last swelling ending above third ventral seta. All standard abdominal setae present. Female genitalia moderately close to coxae, somewhat tilted down, the interior apodeme shortened in ventral view.

The genus name is ac as the contraction of acarus, plus unda for wave. The genus is in the Eriophyidae.

Genotype: Acunda plectilis, new species

Acunda plectilis, new species

Plate 10

Female 140_u-170_u long, 30_u wide, 36_u thick; wormlike; light yellowish-white. Rostrum 24_u long, curved down; antapical seta 4_u long. Shield 33_u long, 26_u wide, somewhat narrowed anteriorly. Median shield line absent. Admedian lines from chelicerae base to rear margin, sinuate, gradually diverging to rear 1/4, then recurving together at rear; a short curved line on each side of admedians at rear. A subdorsal line curving back from anterior end of admedian, subparallel for short distance, then curving out laterally and ending above coxa at about 2/3; a short outwardly oblique line above submedian and ahead of dorsal tubercle. Side of shield lacking ornamentation. Dorsal tubercles 16_u-18_u apart; dorsal setae 18_u long, diverging to rear. Forelegs 26_u long; tibia 5_u long, with 8_u seta from about 2/3; tarsus 5.5_u long; claw 8_u long, curved down; featherclaw 8-rayed. Hindleg 23_u long, tibia 4_u long, tarsus 6_u long, claw 8_u-9_u long. Coxae lacking ornamentation except for line around second tubercles; anterior coxae broadly connate with rather long sternal line between; first setiferous coxal tubercles farther apart than second and slightly behind anterior coxal approximation; second tubercles slightly ahead of line across third tubercles. Abdomen with about 44 broad rings to ring bearing third ventral seta, microtubercles bead-like, rather wide-spaced, weak or absent laterally. Lateral seta 22_u long, on ring 4 behind shield; first ventral seta 50_u long, on ring 13; second ventral 45_u long, on ring 26; third ventral 24_u long, on ring 4-5 ahead of rear. Accessory seta 3.5_u long. Female genitalia 17_u wide, 11_u long; coverflap with 6-8 longitudinal ribs; seta 18_u long.

Type locality: Complexion Springs, west of Leesville, Lake County, Cal.

Collected: July 28, 1964, by the writer

Host: Distichlis spicata (L.) (Graminae-Festuceae) salt grass

Relation to host: the mites live in the terminal rolled leaves

Type material: a type slide, so designated, with the above data
six paratype slides
dry grass with mites bearing the above data

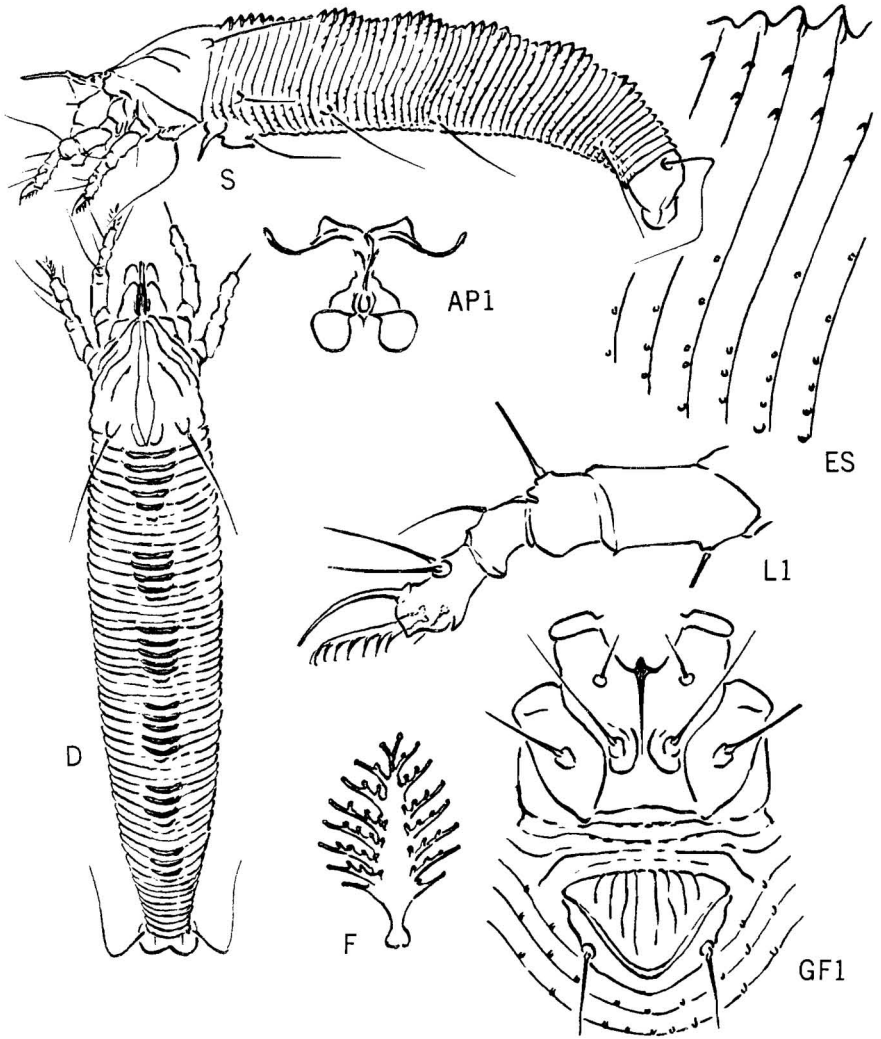


Plate 10 - *Acunda plectilis*, new species