ERIOPHYID STUDIES B-20

by H. H. KEIFER

Bureau of Entomology

California Department of Agriculture

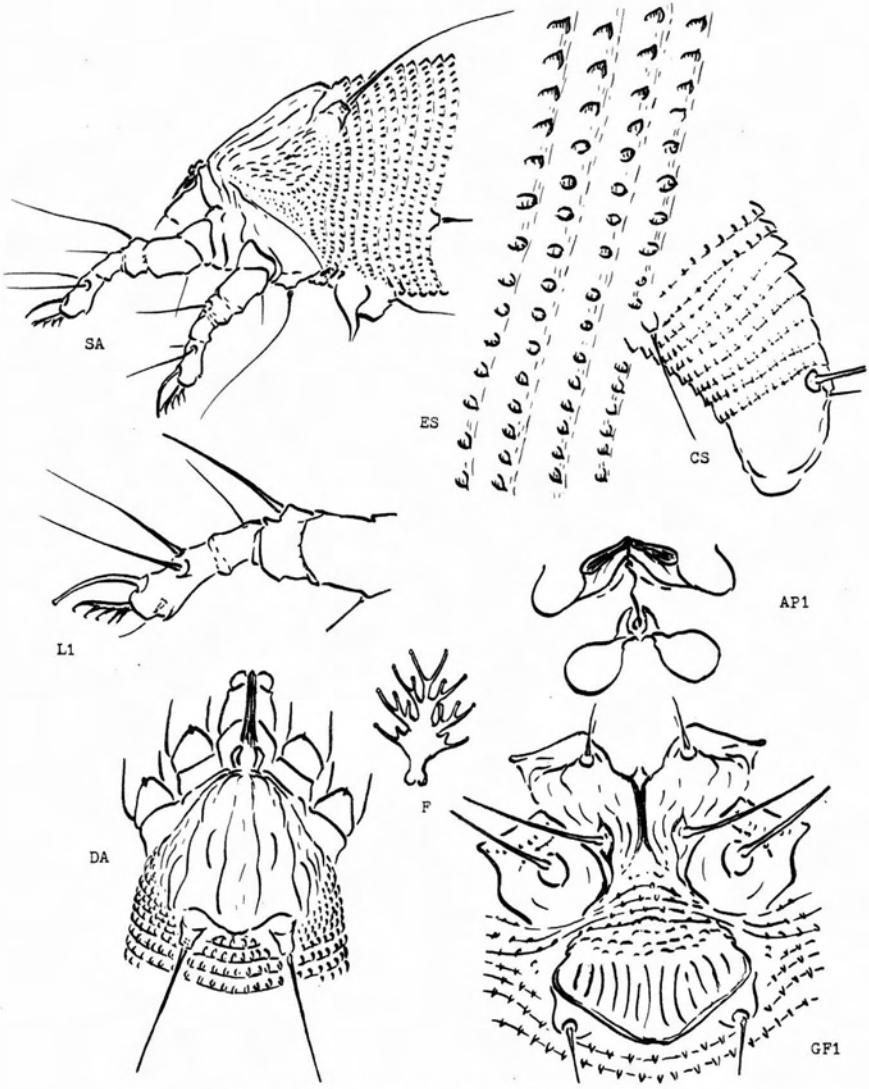


Plate 1 - Aceria esculenti, new species

ISSUED - Sept. 21, 1966

Aceria esculenti, new species

Plate 1

In company with Aceria hibisci (Nal.) 1908, this species has 4-rayed feather-claws. However, esculenti has a curved cross line on the rear of the shield not depicted for hibisci by Nalepa. Aceria hibisci forms small erineum pockets on leaves of Hibiscus rosa-sinensis L., and examples of mites from this host from American Samoa show specimens with the admedian lines angled outward more definitely than Nalepa shows them. The microtubercles on these mites from rosa-sinensis are elongated and unpointed, whereas the microtubercles on the new species are quite pointed.

Female 175µ-140µ long, 50µ-55µ thick; wormlike in shape; color probably light yellowish-white. Rostrum 21µ long, curved down; antapical rostral seta 3µ long. Shield 30µ long, 37µ wide. Median shield line rather obscure, broken. Admedian lines complete, gently sinuate, gradually diverging, faint anteriorly, ending just ahead of rear margin before a curved cross line that is convex in front of each dorsal tubercle and dips back to rear shield margin centrally. First submedian line present as short dash on central disc of shield; second submedian running back from anterior part of shield, irregular and broken, more or less forking ahead of rear margin just below dorsal tubercle. Side of shield with dashes and lines of granules above coxae; some partial rings below dorsal tubercle. Dorsal tubercles 23µ apart; dorsal setae 42µ long. Foreleg 31µ long; tibia 7µ long, with 6µ seta from 1/3; tarsus 9µ long; claw 9µ long; feather-claw 4-rayed. Hindleg 26µ long, tibia 4µ long, tarsus 7µ long, claw 11µ long. Coxae with slight lines and a few granules; first setiferous coxal tubercles farther apart than second, set near anterior end of coxae and ahead of anterior coxal approximation; second tubercles somewhat ahead of line across third tubercles. Abdominal thanosome with about 62 rings, completely microtuberculate. Microtubercles short-elliptical and pointed, those behind shield dorsally elongate and not pointed, changing into pointed forms on about rings 8-10. Microtubercles dorsally several rings ahead of telosome becoming more sparce. Lateral seta 25µ long, on ring 8; first ventral seta 52µ long, on ring 20; second ventral 5µ long, on ring 36. Telosome with 7 rings, the microtubercles bead-like, pointed, short anterior dashes; seta 21µ long. Accessory seta 5µ long. Female genitalia 21µ across, 15µ long; anteriorly with some small cross dashes, the coverflap with about 14 longitudinal ribs; seta 8µ long.

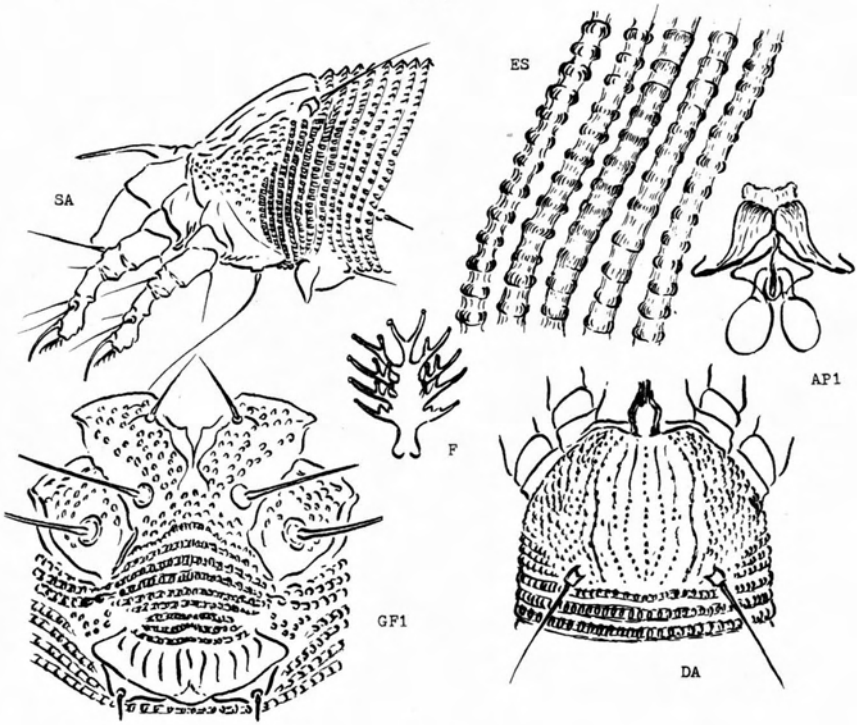
Type locality: Rural University of Brazil, 47 kilometers from Rio Sao Paulo, State of Rio de Janeiro, Brazil

Collected: May 27, 1966 by Dr. A. L. Peracchi

Host: Hibiscus esculentus L. (Malvaceae) okra

Relation to host: the mites form irregular erineum pockets, causing mishapen leaves.

Type material: a small jar of plant parts, with mites, in syrup, bears the above data
one slide made from this jar of mites is designated the type
there are three paratype slides



Aceria shepherdiae, new species

Plate 2

A rather distinct species with granular design on shield, and genitalia that are noticeably wider than long. This mite forms leaf blisters on its host.

Female 150µ-225µ long, 45µ thick;wormlike;color light yellowish white. Rostrum 23µ long, curved down; antapical seta 6µ long. Shield 22µ-23µ long, 33µ wide; design principally of granules or variation of granules and short dashes: median line complete, of granules; admedians complete, anteriorly as lines, diverging gradually, turning to granules and recurving at rear; first submedian line principally of granules, subparallel to admedian; second submedian lines heavier, framing center of shield, curving outward anteriorly, sinuate, recurving to rear margin just inside dorsal tubercles; shield laterally of dashes and granules, some partial rings below dorsal tubercles. Dorsal tubercles 20µ apart; dorsal setae 24µ long, diverging.Forelegs 26µ long; tibia 6µ long, with 6.5µ seta at 1/4; tarsus 6.5µ long; claw 7µ long, tapering, downcurved; featherclaw 5-rayed. Hindleg 24µ long, tibia 4.5µ long, tarsus 6µ long, claw 8.5µ long. Coxae heavily ornamented with prominent granules; anterior coxae rather narrowly connate centrally; first setiferous coxal tubercles ahead of second tubercles and almost ahead of anterior coxal approximation; second coxal tubercles ahead of cross line through third tubercles. Abdomen with about 75-80 rings, completely microtuberculate, the microtubercles unproduced,elongate, and appearing bound in vertical chains. Lateral seta 21µ long, on about ring 8; first ventral seta 40µ long, on about ring 21;second ventral 10µ long, on about ring 42; third ventral 23µ long, on about ring 5 from rear. Accessory seta 8µ long. Female genitalia 19µ wide,10µ long; coverflap appearing wide and short, with about 10 longitudinal ribs and basally with transverse rows of granules; seta 16µ long.

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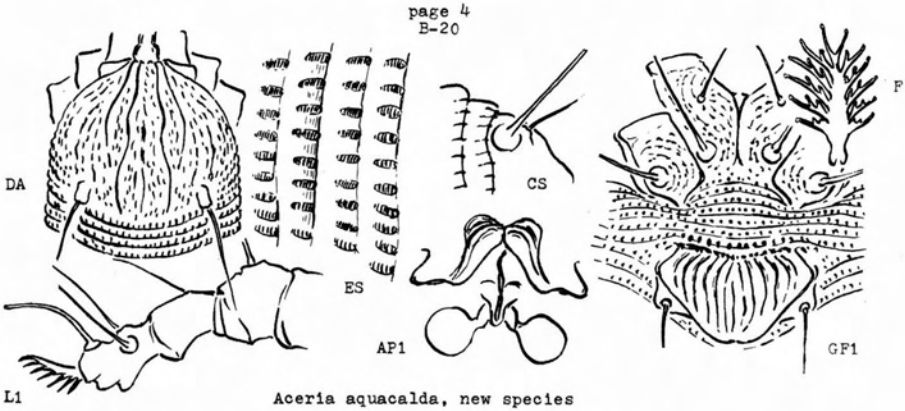

Aceria aquacalda, new species

Plate 3

In the Univ. Cal. Publ. Ent. 4:378, 1928, A. S. Hassan named Eriophyes minutus n. sp. from Arizona and stated it caused small erinea on the undersides of leaves of Cercocarpus sp. No precise locality was given. The only time I have found erinea on mountain mahogany (Cercocarpus) was six miles above Wheeler Hot Springs, Ventura County, Cal., Sept 19, 1955. Upon cooking out the mites in this erinea two kinds of Aceria sp. appeared. One of these is more robust than the other. The second is a slender species. The two can be fairly readily separated under low power magnification, although there is some mixture on the slides. As Hassan's species seems closer to the more slender mite I am describing the more robust one first.

The more robust species is characterized by a 6-rayed featherclaw, by rather uniformly elongate elliptical microtubercles,and by a shield completely covered by granulations. In these granulations the median line is usually obscured and doubled at times; the admedians are complete and beside them on the front half of the shield the first submedian line is discernable.

Female 145µ-190µ long,35µ-40µ thick; wormlike in shape; color probably light yellowish-white. Rostrum 26µ long, curved down; antapical seta 5µ long. Shield 25µ long, 30µ wide, a bsemicircular in anterior outline. Median shield line usually obscure among granules and short dashes, being represented often by longitudinal lines, often doubled. Admedian lines complete, sinuate, gradually diverging to rear. First submedian line from anterior edge of shield, subparallel to admedian and fading into granules and dashes in front of dorsal tubercle. Shield between first submedian and coxae uniformly granular except for partial rings below dorsal tubercle. Dorsal tubercles 19µ apart; dorsal setae 14µ long. Foreleg 27µ long; tibia 6µ long, with 6µ seta from about 1/3; tarsus 7µ long;claw 8µ long; featherclaw usually 6-rayed, irregular at times. Hindleg 24µ long, tibia 4µ long, tarsus 5.5µ long, claw 8.5µ long. Coxae heavily ornamented with lines of granules; anterior coxae broadly connate centrally with strong sternal line; first setiferous coxal tubercles a little farther apart than second, slightly behind anterior coxal approximation; second tubercles ahead of line through third tubercles.Abdominal thanosome with about 60 rings, completely microtuberculate. Microtubercles elongate-elliptical, more so dorsally, becoming pointed dorsally and some laterally toward rear in front of telosome. Lateral seta 17µ long, on ring 8; first ventral seta 36µ long, on ring 20; second ventral 7µ long, on ring 36. Telosome of 6 rings, the microtubercles thinner than those on thanosome,pointed dorsally and some laterally. Telosomal seta 14µ long. Accessory seta 7µ long. Female genitalia 15µ long and 21µ across; coverflap with a transverse row of granulations basally and about 14-16 longitudinal ribs. Genital seta 11µ long.

Type locality: about six miles up the mountain road above Wheeler Hot Springs
Ventura County, California

Collected: September 19, 1955, by the writer

Host: Cercocarpus betuloides Nutt. (Rosaceae) mountain mahogany

Relation to host: the mites inhabit undersurface erineum patches on the leaves
The erineum is light yellowish.

Type material: there are two envelopes of dry leaves with erinea from which the slides were made, that bear the above data
a type slide is designated
there are three paratype slides

Aceria petila, new species

Plate 4

Hassan's minutus is characterized as light pink and with a 130µ long female. Petila is at least 160µ long and probably not pink. Both have about the same number of body rings and a 5-rayed featherclaw. Until mites are available for study from Arizona Cercocarpus no further facts of a definite nature will be known about minutus.

This small species differs from aquacalda by being hardly 2/3 as thick, by having one less ray in the featherclaw, and by having a different shield pattern. I cannot connect these two forms in the same species concept.

Female 165µ-180µ long, 26µ thick; elongate wormlike; color in life probably light yellowish-white. Rostrum 15µ long, curved down; antapical seta 3.5µ long. Shield 18µ long, 24µ wide, subsemicircular in anterior outline. Shield design of granules and lines of granules: median granular line faint anteriorly but extending to rear margin; admedian lines in two parts, the first part from chelicera base, slightly sinuate, subparallel to median and extending back to area just ahead of rear margin where they curve centrally, ending against median; second part of admedians beginning at 3/4-4/5, forming a central figure between dorsal tubercles with convex sides and including the rear of the first part. First submedian line from chelicera base just lateral to admedian, running back to 3/4 and ending against anterior end of rear admedian part; second and third submedians from lateral line beyond first and curving back about half way on shield. A fourth submedian from lateral line, curving back and inward past and in front of dorsal tubercle, ending against rear part of admedian. Short, outwardly extending lines from admedian just inside dorsal tubercle. Sides of shield extensively granular, some granules running onto outer side of coxae, partial rings below dorsal tubercles. Dorsal tubercles 16µ apart; dorsal setae 22µ long. Foreleg 20µ long; tibia 4.5µ long, with 3.5µ seta at 1/3; tarsus 5µ long; claw 6.5µ long; featherclaw 5-rayed. Hindleg 18µ long, tibia 4µ long, tarsus 4µ long, claw 7µ long. Coxae somewhat attenuate, heavily ornamented on underside with prominent granules; first setiferous coxal tubercles slightly farther apart than second and some distance behind the anterior coxal approximation; sternal line rather thin; second setiferous coxal tubercles a little ahead of line across third tubercles. Abdominal thanosome with about 76 rings, completely microtuberculate, the microtubercles elliptical-rounded above, becoming rounder laterally, increasing again in size ventrally. Lateral seta 17µ long, on ring 8 behind shield; first ventral seta 25µ long, on ring 24; second ventral 6µ long, on ring 47. Telosome with about 4-5 rings the microtubercles sparser, smaller, with anterior lines, tending to be slightly pointed. (Dorsum of a few thanosomal rings similar just ahead of telosome.) Telosomal seta 9µ long. Accessory seta 2.5µ long. Female genitalia 16µ across, 12µ long, situated a little farther behind coxae than usual; coverflap with two cross lines of granules, the flap with about 12 longitudinal ribs; seta 6µ long.

Type locality: Six miles up the mountain road above Wheeler Hot Springs, Ventura County, Cal.

Collected: September 19, 1955, by the writer

Host: Cercocarpus betuloides Nutt. (Rosaceae-Cercocarpae) mountain mahogany

Relation to host: the mites are found in undersurface erineum patches on the leaves in company with aquacalda. No conclusion is offered here as to which mite is the inquilin.

Type material: two envelopes with dry erineum-bearing leaves from which the slide preparations were made.
a type slide is designated, and three paratypes

Aceria shepherdiae, n. sp., continued from page 3

Type locality: Slinkard Canyon, Topaz district, Mono County, Cal.

Collected: June 9, 1960, by the writer

Host: Shepherdia argentea Nutt. (Elaeagnaceae) buffalo berry

Relation to host: the mites form noticeable whitish blisters on the undersides of the leaves

Type material: dry leaves with mites and blisters bearing the above data
a type slide so designated
eight paratype slides

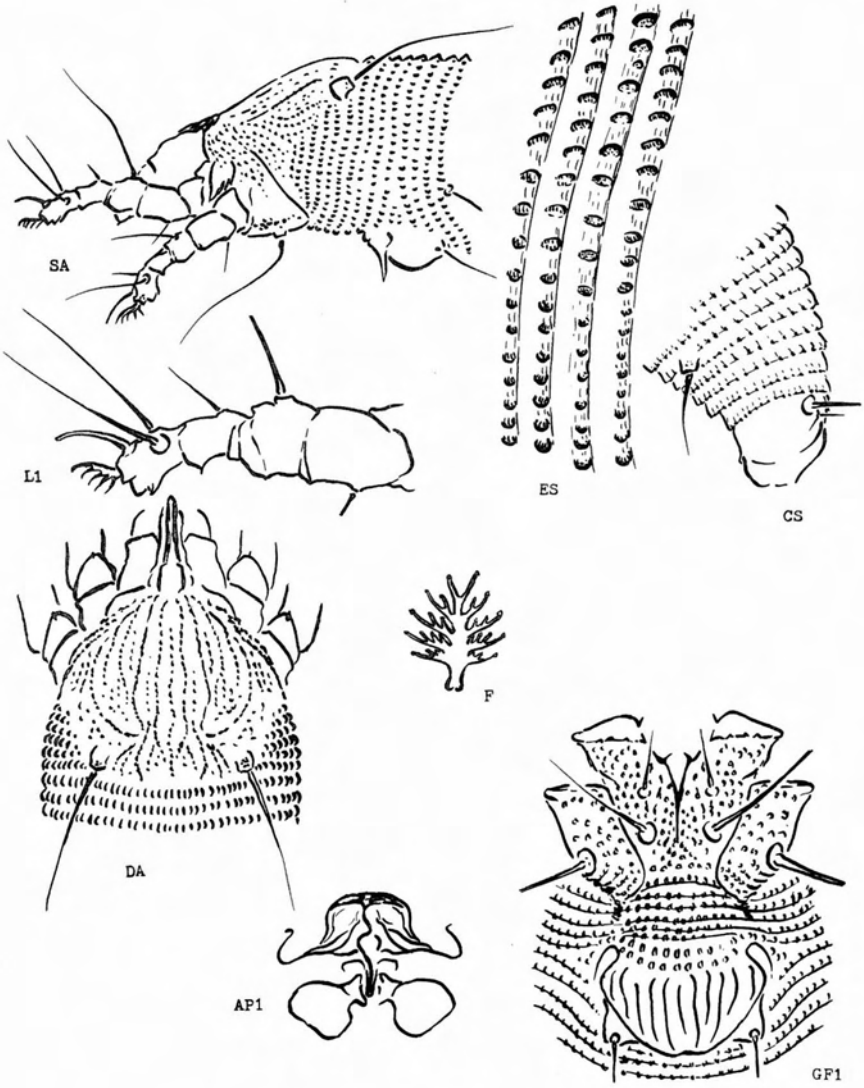

Plate 4 - Aceria petila, new species

Aceria calyptridii, new species

Plate 5

The featherclaws on this mite have practically no branches, which separates this mite from nearly any other the writer had seen before. This is a stocky species with granular shield design, spine-like microtubercles on the rings, and rather prominent accessory setae.

Female 145µ-190µ long, about 50µ thick; robust-wormlike; color in life light yellowish-white. Rostrum 30µ long, curved down; antapical seta 8µ long. Shield 35µ long, 53µ wide, semicircular in anterior outline; a small anterior projection associated with chelicera base. Shield surface somewhat granular, especially to rear; median line not apparent; admedians present as diverging lines of granules between dorsal tubercles. Shield sides with granular lateral line and lines and granules above coxae. Partial spiny rings below dorsal tubercles. Dorsal tubercles 25µ apart; dorsal setae 15µ-20µ long. Foreleg 32µ long; tibia 8µ long with 7µ seta at 1/4; tarsus 6.5µ long; claw 9.5µ long, nearly straight featherclaw 5-rayed, lacking tenant hair tips and with but few basal branches. Hindleg 30µ long, tibia 5µ long, tarsus 6µ long, claw 10µ long. Coxae with lines of granules, the anterior coxae shortly connate and a thin sternal line between; first setiferous coxal tubercles farther apart than second and opposite anterior coxal approximation; second tubercles ahead of line through third tubercles. Abdominal thanosome with about 55 rings which are completely lined with spine-like microtubercles projecting over rear ring margins. Lateral seta 45µ-50µ long, on ring 10 behind shield; first ventral seta 65µ-75µ long, on ring 20; second 15µ long, on ring 35. Telosome with 7 rings, completely microtuberculate, the microtubercles more spine-like dorsally than on thanosome and not noticeably elongate ventrally. Telosomal seta 28µ long. Accessory seta 8µ-10µ long. Female genitalia 27µ wide, 22µ long; coverflap with 12-14 irregular longitudinal ribs, these sometimes curved centrad toward rear margin. Genital seta 22µ long.

Type locality: Telephone Camp Ground, 6800 ft. elev., near Plaskett on the western border of Glenn County, Cal.

Collected: July 16, 1963, by the writer

Host: Calyptridium umbellatum (Torr.) (Portulacaceae) pussy's paws

Relation to host: the mites live tucked in between the leaf petiole bases at the surface of the ground.

Type material: there are 14 slides with the above data
one slide is designated as the type
the other 13 are paratypes

Cosetacus, new genus

Eriophyid budmites with worm-like body and narrow completely microtuberculate rings, the rings approximately equal dorsoventrally. Rostrum of moderate size; oral stylet short form. Cephalothoracic shield subsemicircular in dorsal anterior outline, no projection over rostrum base; dorsal tubercles near rear shield margin, directing setae divergently to rear. Legs with usual setae including femoral, but lacking foretibial seta. Coxae with three pair of setiferous tubercles, not outlined nor particularly produced; anterior coxae approximate centrally but lacking a sternal line and hardly contiguous. Abdomen with lateral, first and second ventral setae and telosomal seta; accessory seta absent. Female genitalia somewhat produced from body, overlapping rear part of second coxae; transversely subelliptical in shape; coverflap with rather faint longitudinal ribs in two transverse ranks. Internal genital apodeme folded back, describing a transverse convex curve in ventral view.

Genotype - Aceria camelliae K., hereafter to be cited as Cosetacus camelliae (K.), see Bul.Cal.Dept.Agr. 34(3):137, 1945

This genus is established to indicate the relationship this mite species bears to Gammaphytoptus K. 1939, and to Cecidophyes Nal. 1889. Camelliae combines possession of dorsal tubercles and setae with the transversely subelliptical and produced female genitalia. Additional definitive characters of these genitalia are the longitudinal coverflap ribs in two transverse ranks, but more particularly the transverse internal apodeme, shortened in ventral view. The genus name is: co for with, set for seta, and acus as short for acarus.

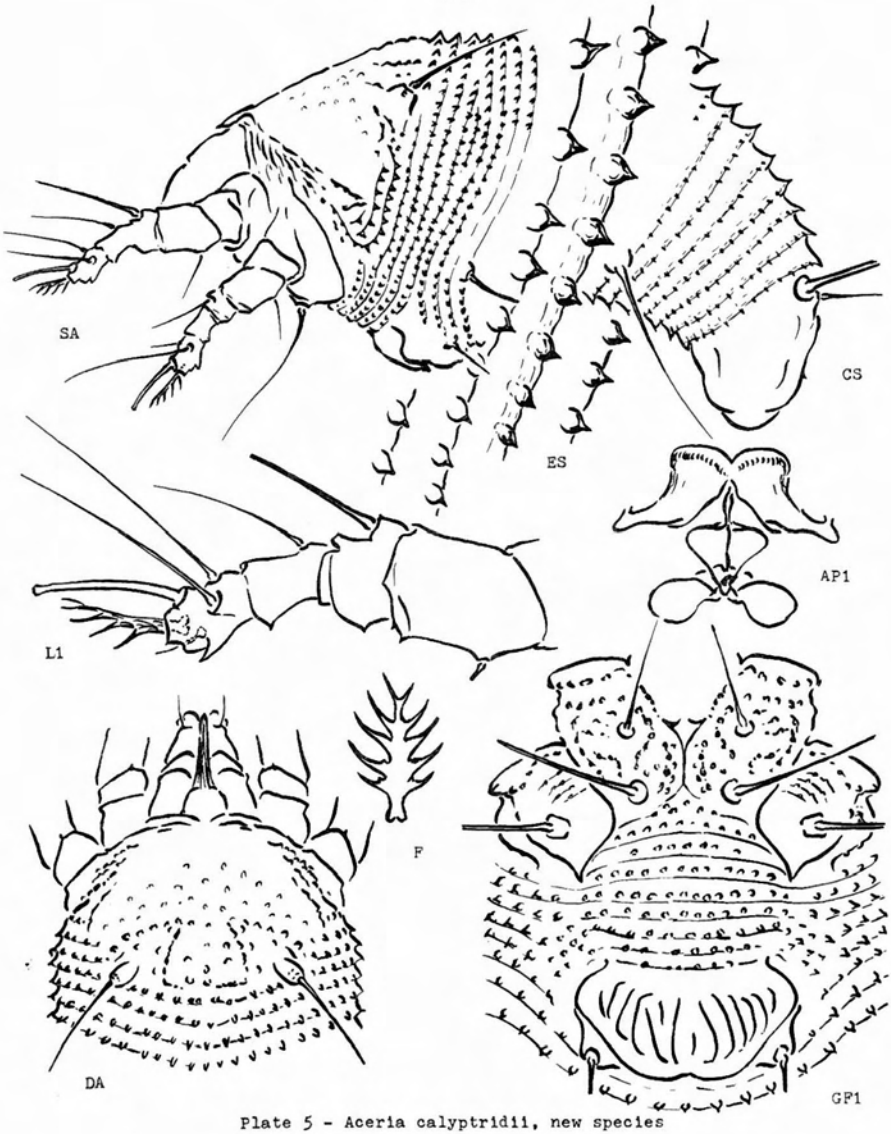

Plate 5 - Aceria calyptridii, new species

Aceria folsomensis, new species

Plate 6

As a 6-rayed featherclaw species this seems to come about as near parthenii K. as it does to any species. (Aceria parthenii K.,ES-XX,Bul. Cal. Dept. Agr. 41:147, 1952) However, the shield pattern of the new species has a less distinct submedian line, the coxae are less heavily granular, and the claws are about twice as long.

Female 175µ-210µ long, 38µ-48µ thick; wormlike in shape; in life colored orange.Rostrum 36µ long, curved down; antapical seta 6µ long. Shield 35µ long and 35µ wide, lobe present over chelicera base probably part of chelicera. Shield design consisting of moderately plain lines centrally and with extensive granular areas laterally. Median line complete, curved and broken; admedian lines subparallel, gradually diverging, sinuate, forking before rear margin and inner arm meeting admedian at rear margin.First submedian line faint,giving off lateral branch into granules at about 1/2 and running to rear margin inside dorsal tubercles. Two or three discernable longitudinal lines of granules laterally in the general side granules and some partial rings below dorsal tubercles. Dorsal tubercles 26µ apart; dorsal setae 23µ long. Foreleg 31µ long; tibia 6µ long, with 8µ seta at 1/3; tarsus 8µ long; claw 14µ long, tapering; featherclaw 6-rayed.Hindleg 28µ long, tibia 5µ long, tarsus 8µ long, claw 14µ long.Coxae with curved lines of granules, the anterior coxae broadly connate with sternal line between; first setiferous coxal tubercles farther apart than second and a little behind anterior coxal approximation; second tubercles a little ahead of line across third setiferous coxal tubercles. Abdominal thanosome with about 51 rings, completely microtuberculate,the microtubercles bead-like on ring margins, dorsally somewhat produced. Lateral seta 31µ long, on ring 8 behind shield; first ventral seta 57µ long, on ring 20; second ventral 21µ long, on ring 36. Telosome with 5 rings, completely microtuberculate, microtubercles more or less elongate, especially ventrally; seta 26µ long. Accessory seta 5µ long. Female genitalia 22µ wide, 15µ long; coverflap with 12-14 longitudinal ribs; seta 50µ long.

Type locality: Highway 50 on south side of Folsom, Cal.

Collected: July 8, 1965 by the writer

Host: Eriogonum latifolium nudum (Dougl.) (Polygonaceae) wild buckwheat

Relation to host: the mites are found among the thick matted hairs on the undersides of the basal leaves at the ground level.

Type material: there are 7 microscope slides,and dry leaves bearing mites
one slide is designated as type
the other six are paratype slides

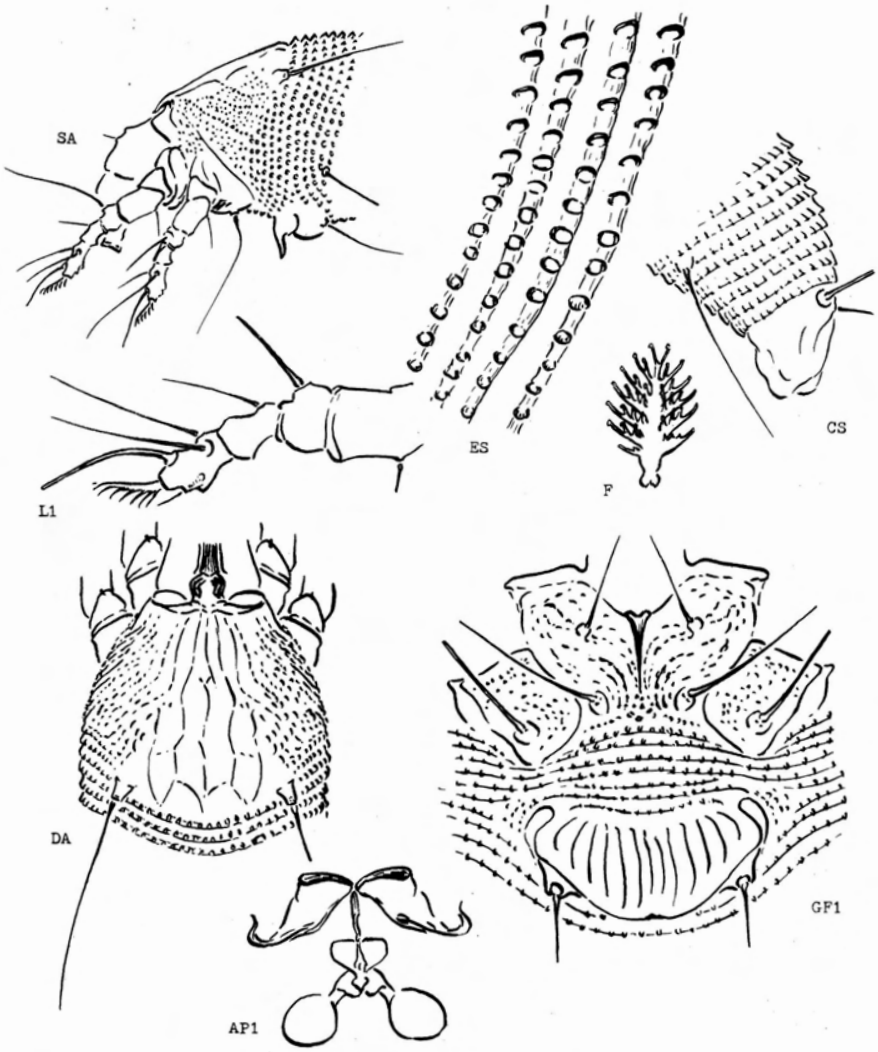

Plate 6 - Aceria folsomensis, new species

Aculus fulleri, new species

Plate 7

Fulleri is close to but differs from mckenziei (K.)(ES-XIV) principally by the shield pattern of the submedian lines. On mckenziei the first submedian runs back subparallel to the admedian and turns outward in front of the dorsal tubercle. The second submedian is complete from the side of the anterior lobe and runs back to the rear shield margin. The foretibia on mckenziei has a 12µ seta that curves down. On fulleri the first submedian shield line is hardly represented in the center of the shield only; the second submedian begins well back of the anterior lobe; the foretibial seta is 9µ long. Both mites live among the upper surface leaf ribs of their hosts.

I am pleased to name this mite for Dr. T. C. Fuller, Botanist for the State Dept. of Agriculture, who has assisted me with many plant identifications.

From a structural standpoint the placing of this species in Aculus extenuates the definition of the genus beyond a really logical limit. But Aculus, having assumed the characteristics of a waste basket genus, seems to have to be treated like this until enough species have come to light to show where new generic lines may be drawn.

Female (fulleri) 190µ-230µ long, 35µ-40µ thick; wormlike in shape; color in life light yellowish-white, the body usually with a thin waxy bloom. Rostrum 25µ long, projecting diagonally down; antapical seta 7µ long. Shield 42µ long, 35µ wide, elongate-triangular in dorsal view; anterior lobe over rostrum somewhat narrow and acute, a thin anterior projection visible in side view. Median shield line present on rear 1/3. Admedian lines complete, gently sinuate, running back from anterior lobe, gradually diverging, ending on rear margin. First submedian line indicated by a short line, subparallel to admedian, in shield center; second submedian beginning at about 1/2 and arching back to rear margin below dorsal tubercle; somewhat granular. Below second submedian a lateral line from side of anterior lobe to partial rings below dorsal tubercle. Shield with bands of granules above coxae. Dorsal tubercles 20µ apart; dorsal setae 32µ long, diverging to rear. Foreleg 32µ long; tibia 7.5µ long, with 9µ seta at 1/2; tarsus 7µ long; claw 9µ long; featherclaw 7-rayed. Hindleg 32µ long, tibia 7µ long, tarsus 7µ long, claw 12µ long, slender. Coxae ornamented with lines of dashes and granules; anterior coxae with strong sternal line at connation; first setiferous coxal tubercles slightly farther apart than second and slightly behind anterior coxal approximation; second tubercles a little ahead of line across third tubercles. Abdominal thanosome with rings almost equal dorsoventrally, a few more ventrally, the rings rather wide. Microtubercles small, bead-like, on sides and dorsum close together on ring ridges and hardly pointed, or rounded; sublaterally and ventrally the microtubercles tending to be ahead of ring margins and more pointed. There are about 44 rings dorsally and 48-50 rings ventrally. Lateral seta 33µ long, on ring 6 behind shield; first ventral seta 42µ long, on ring 17; second ventral 45µ long, on ring 30. Telosome with 5 rings, the microtubercles bead-like and with thin lines extending ahead from these beads on the margins; seta 22µ long. Accessory seta 4µ long. Female genitalia 22µ across, 13µ long; some transverse lines of granules at base, and with about 14 longitudinal ribs on the coverflap; seta 33µ long.

Type locality: Upper Kings Creek area, Lassen National Park, Shasta County, Cal.

Collected: August 18, 1966, by the writer

Host: Stipa californica M.&D. (Graminae) needlegrass (identified by Fuller)

Relation to host: the mites live in the upper surface rib grooves on the leaves

Type material: an envelope of dry grass bearing dead mites
a type slide so designated, with the above data
four paratype slides

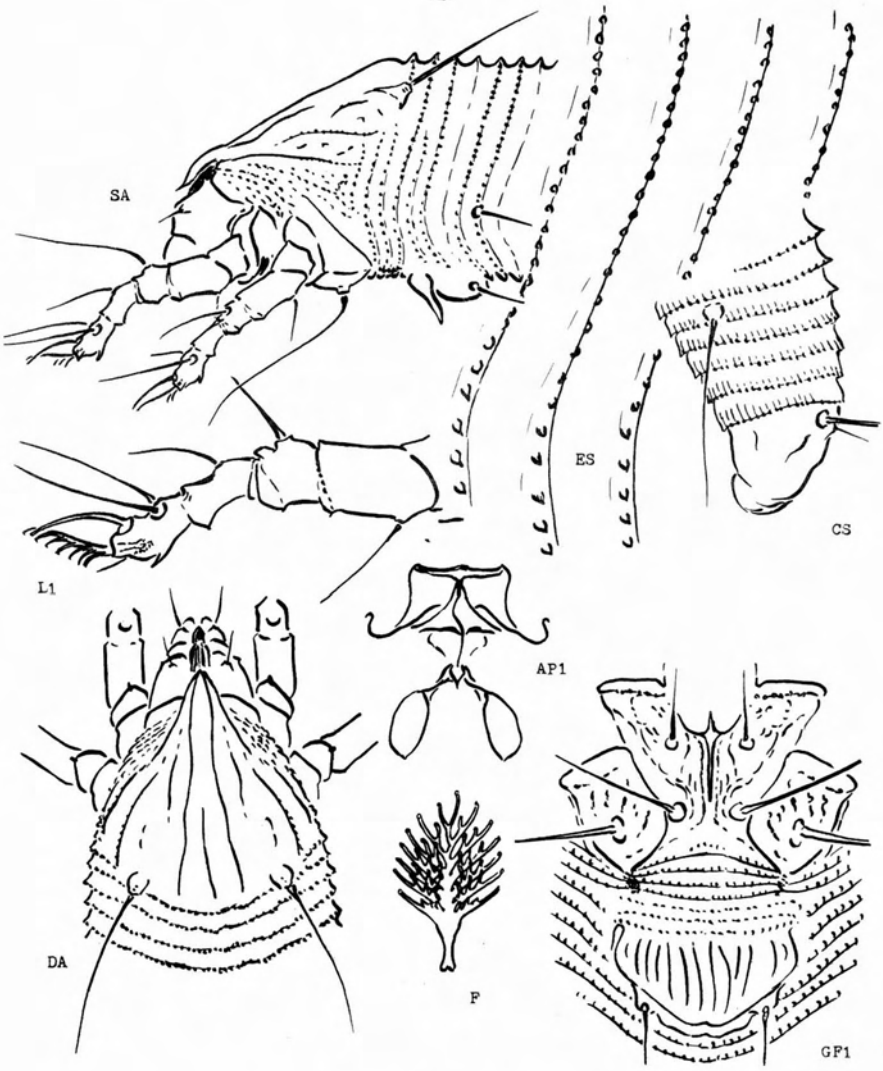

Plate 7 - Aculus fulleri, new species

Aculus vallis, new species

Plate 8

A considerable complex of species of Eriophyids produces bead galls on willow leaves. I believe these to be part of the "Eriophyes tetanothrix Nal." series, about which there are some additional remarks below. So far the only name injected into the bead gall situation in California has been Hassan's laevigatae. The reference: Univ. Cal. Publ. Ent. 4:379, 1928. The name I am proposing here injects another element into this already uncertain corner of taxonomy, but I hope that my characterization of the mite under consideration will be sufficiently clear to allow for its eventual proper placement.

The new species, vallis, differs from laevigatae by having narrower shield lines that, unlike the wider ones on laevigatae, bear coarse granules. The tergites on vallis are more numerous and the tibia is shorter. The collections that I have so far made of these willow bead gall mites show them to be deuterogynous. Deuterogyny has not been mentioned in connection with any form of "tetanothrix" in Europe.

Female (protogyne - vallis) 240µ-260µ long, 50µ-60µ thick; robust-fusiform; color in life probably dull orange-white. Rostrum 30µ long, curved down; antapical seta 7µ long. Shield 35µ long, 43µ wide; anterior lobe over rostrum base short and broad in side view, narrow in lateral view. Shield design a net-work of moderately heavy lines bearing coarse granules, somewhat irregular from specimen to specimen. Median shield line present on anterior 1/4, broken at 1/2, present toward rear. Admedian lines complete, curving back from side-center of anterior lobe, meeting a cross line at 1/4, extending back with outward convexity and meeting a second cross line at 1/2, extending back diagonally outward to fork at about 7/8, the inner arms joining centrally at rear of median, the outer arm continuing to rear shield margin. First submedian extending back from sides of anterior lobe, crossing the transverse line at 1/4 and producing three forks ahead of dorsal tubercle at central transverse line. Shield with two lateral lines on side, a band of small lines and granules above coxae and partial rings below dorsal tubercle. Dorsal tubercles 28µ apart; dorsal setae 38µ long. Foreleg 35µ-38µ long; tibia 8µ long, with 7µ seta from 1/4; tarsus 8µ long; claw 7.5µ long, slender, with slight knob; featherclaw 4-rayed. Hindleg 31µ long, tibia 6µ long, tarsus 6µ long, claw 9µ long. Coxae rather broad, with granular ornamentation; anterior coxae broadly connate centrally with thin sternal line between; first setiferous coxal tubercles farther apart than second and behind anterior coxal approximation; second tubercles somewhat ahead of line across third tubercles. Abdominal thanosome completely microtuberculate, the tergites about 48 in number; about 58 sternites. Microtubercles more bead-like below and pointed, elongate above and produced but less pointed; all on ring margins. Lateral seta 17µ long, on about sternite 8; first ventral seta 42µ long, on sternite 21; second ventral 22µ long, on sternite 40. Telosome with six rings, the microtubercles fine and pointed especially above, elongate below; seta 35µ long. Accessory seta 3µ long. Female genitalia 26µ wide, 20µ long; coverflap with about three basal heavy transverse lines and about 12 longitudinal ribs; seta 32µ long.

Type locality: Yolo County, California

Collected: July 1, 1959, by W. Brown

Host: Salix goodingii Ball (Salicaceae) black willow

Relation to host: the mites form bead galls on the leaves, usually with under-surface openings.

Type material: an envelope with dry leaves and mummified mites
Six slides have been made from these dry leaves, on of which is designated as type, the other five as paratypes

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What is "Eriophyes tetanothrix" (Nalepa) 1889?

Nalepa named this mite as Cecidophyes tetanothrix from Salix fragilis L. and stated it made purse-shaped leaf galls. In 1924 he attacked the problem again and, under Eriophyes tetanothrix, he erected a considerable series of varieties attached to about as many species of willows. The only one of these forms I have been able to see is the one on Salix alba L., and the specimens came from Ohrid, Macedonia. Donald Macfarlane of the British Museum kindly sent them. These should be Nalepa's variety salicis albae. The specimens were taken from bead galls similar to those made by the Californian Aculus laevigatae (Hassan). I would place the Ohrid specimens in Aculus, and as distinct specifically from laevigatae and vallis (above).

Some characters of this Ohrid mite are: anterior shield lobe broad but pointed over rostrum: shield design a network of rather slender lines; dorsal tubercles on rear shield margin, with transverse axes, directing the dorsal setae divergently to rear; slightly more sternites than tergites but little lateral differentiation; microtubercles elliptical, not pointed.

continued on page 14

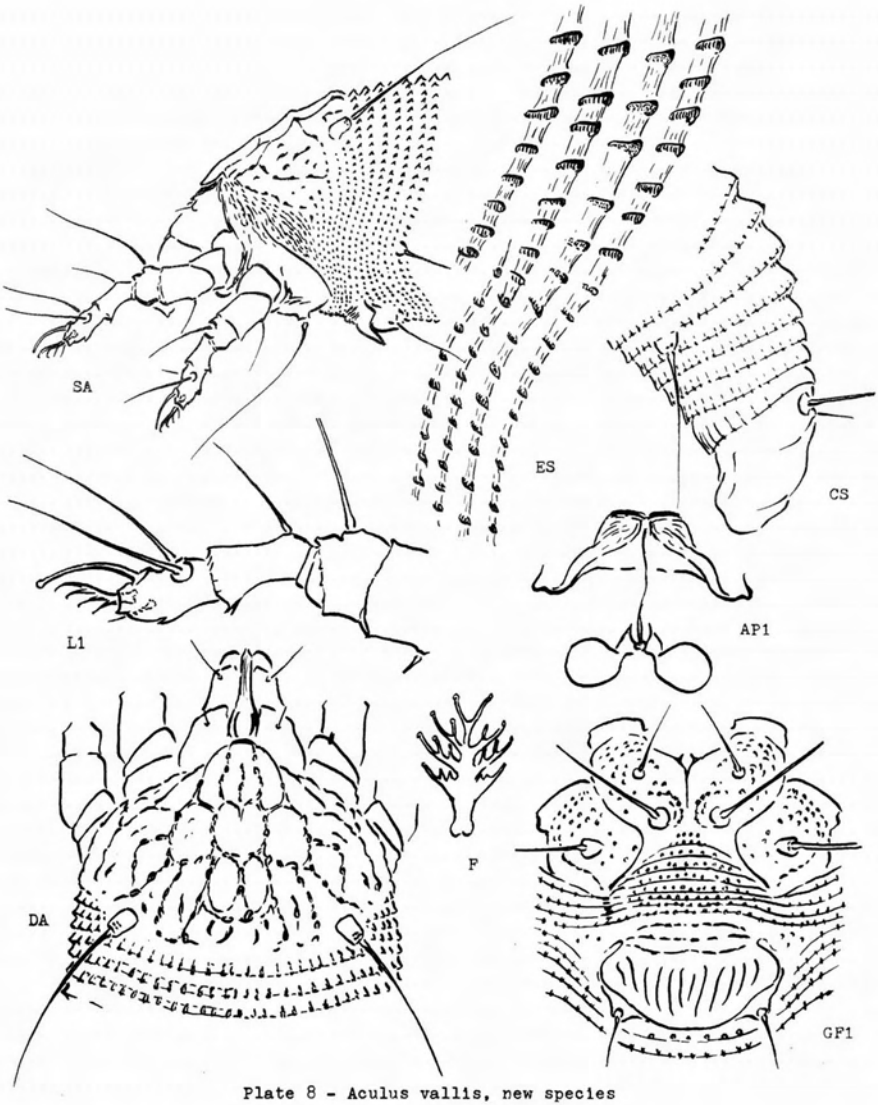

Plate 8 - Aculus vallis, new species

"Eriophyes tetanothrix" continued from page 13

In respect to generic placement Jan Boczek, 1961, uses Aculus as the proper generic assignment. I agree and believe these species to be deuterogynous.

References:

Cecidophyes tetanothrix Nalepa, 1889, Sitz. Akad. Wiss. Wien 89:145
Eriophyes tetanothrix typicus (Nalepa), 1910, Zoologica 61:220
Eriophyes tetanothrix typicus (Nal.) 1924, Marcellia 21:34
Aculus tetanothrix (Nal.) Boczek, 1961, Inst. Ochrony Roslin 3:26 (in Polish)
Aceria tetanothrix (Nal.) Farkas, 1965, Die Tierwelt Mittleeuropas 3:49

Epitrimerus convergens, new species

Plate 9

The centrally raised rear edge of the cepahlothoracic shield, the forward position of the first coxal tubercles, the convergent ribs on the genital coverflap, and the 5-rayed featherclaw, relate this species to the Algerian Epitrimerus phoeniciae K. (B-6, 1962). The new species differs by having a blunter anterior shield lobe margin and finer granules on the female genital coverflap base.

Female 170µ-190µ long, 50µ thick; fusiform; color in life light yellowish-white. Rostrum 38µ long, curved down; antapical seta 10µ long. Shield 3µ long, 53µ wide; subtriangular in anterior outline, the anterior lobe over rostrum broad and blunt, with transverse groove around edge. Shield design obscure: median line not apparent; admedians curving back from anterior lobe margin, branching at anterior 1/3 and centrally blending with central ridge. Central shield ridge extending back between dorsal tubercles, emarginate centrally, slightly overhanging at rear. Dorsal tubercles part of a curved line converging from subdorsal position at before 1/2 and continuing as rear margin of central ridge. Lateral margin of shield with somewhat granular edge above curved lines over coxae. Dorsal tubercles 20µ apart; dorsal setae 7µ long, projecting up. Foreleg 33µ long; tibia 8µ long, with 6µ seta at 2/3; tarsus 7µ long; claw 7.5µ long; featherclaw 5-rayed. Hindleg 29µ long, tibia 6.5µ long, tarsus 6µ long, claw 6µ long. Coxae ornamented with faint lines of granules; anterior coxae divergent and separate, central basal curved lobes end close together; first setiferous coxal tubercles farther apart than second and located toward anterior end of coxae; second tubercles not far ahead of line across third tubercles. Abdominal thanosome with about 44 tergites and 63 sternites. Tergites narrow and describing three ridges: a central longitudinal ridge beginning a few rings behind shield keel and extending back about 35 tergites where it fades; a lateral ridge, curving out from side margin below dorsal tubercles and then running back, fading toward telosome; a sublateral ridge from lateral shield angle, bulging for about 12 tergites and gradually fading to rear. Tergal microtubercles mainly evident on ridges, elongate. Sternal microtubercles bead-like, on ring margins. Lateral seta 17µ long, on about sternite 6; first ventral seta 48µ long, on about sternite 21; second ventral 35µ long, on sternite 38. Telosome with 6 rings, the rings completely set with very fine bead-like microtubercles, with extending anterior lines, especially ventrally; seta 24µ long. Accessory seta 5µ long. Female genitalia 22µ wide, 15µ long; coverflap with a basal pattern of fine granules and short dashes, followed by about 6 converging ribs on each side; seta 30µ long.

Type locality: Twin Bridges, El Dorado County, Cal., about 6000 ft. elev.

Collected: July 30, 1966, by the writer

Host: Juniperus occidentalis Hook (Cupressaceae) western juniper

Relation to host: the mites are vagrant on the small green twigs, preferring those anterior to the growing tips.

Type material: six slides bear the above data
one is designated as type
five are paratypes

In addition to the type slides there are specimens collected August 24, 1964 by Tokuwo Kono at Sonora Pass, Mono County, Cal. This collection alerted me to the existence of the species.

Cecidophyinae, new subfamily

Eriophyidae with short oral stylet, usually, but not always, lacking dorsal tubercles and setae on the cephalothoracic shield, and with genitalia somewhat protruding and appressed to the more or less divergent coxae. Legs with femoral and other usual setae. Abdomen with lateral seta, first and second ventrals, and telosomal setae, but lacking accessory setae on the anal lobes. Coxae with first, second and third setiferous coxal tubercles, typically spread apart, the anterior coxae usually touching centrally at one point by inwardly extended lobes. Setiferous coxal tubercles surrounded by subcircular lines indicating raised areas. Female genitalia protruding somewhat, appressed to hind coxae and often overlapping rear parts of coxae. Female genitalia typically subelliptical, the coverflap with numerous longitudinal ribs unevenly arranged in two transverse ranks. Internal anterior genital apodeme folded up, appearing as a transverse line or curve (rather than trapezoidal or acuminate structures seen in ventral view in other Eriophyoids), and usually with enlargements or knobs at lateral ends.

Type genus: Cecidophyes Nalepa 1889, Sitz. Ak. Wis. Wien 98:31

This subfamily recognizes and gathers together a natural structural series

Cecidophyinae - continued on page 17

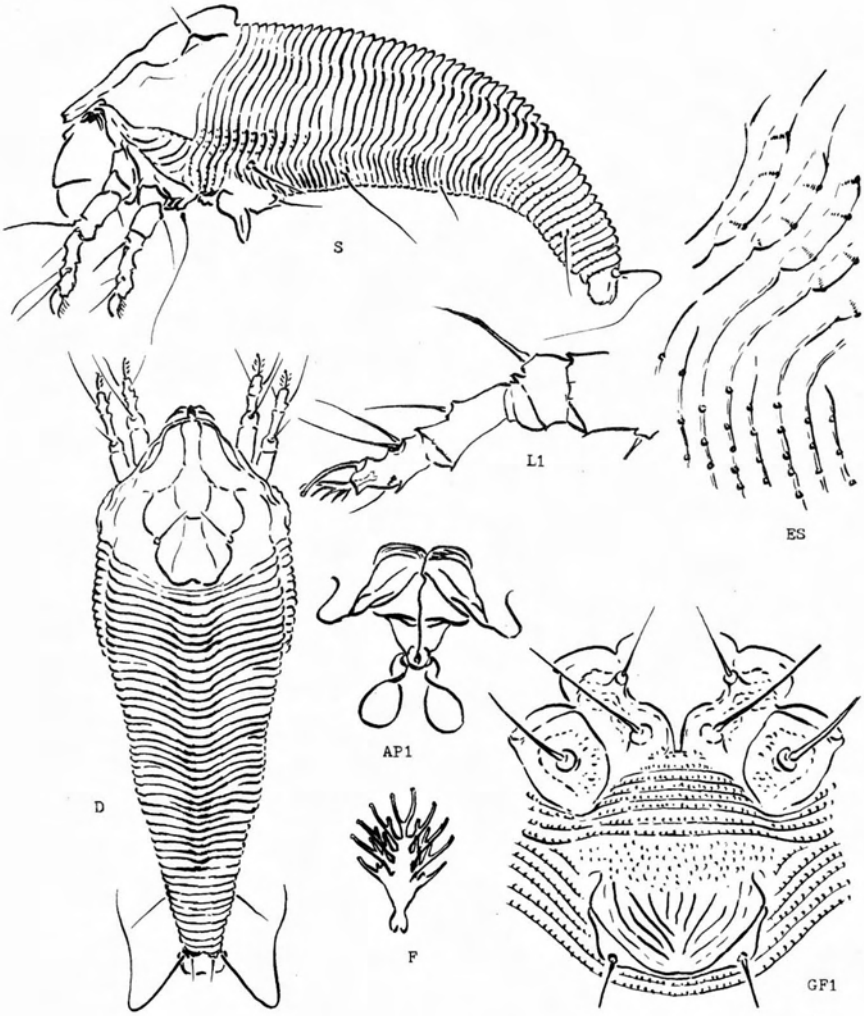

Plate 9 - Epitrimerus convergens, new species

Cecidophyes digephyrus, new species

Plate 10

Digephyrus is the second 6-rayed featherclaw species in Cecidophyes which I have named. The first, caryvagrans, (B-11,p.16) does not have sharply pointed microtubercles. There are also differences in shield pattern as well as the host difference.

Female 140µ-200µ long, about 48µ thick; fusiform in shape; color in life probably dull whitish.Rostrum 28µ long, projecting down; antapical rostral seta 6µ long. Shield 41µ long, 45µ wide;anterior lobe over rostrum broad and blunt. Shield design of solid lines and lines of granules;median line complete, solid; admedian lines complete, sinuate, running back from anterior lobe just beside median, curving out at 1/4 at junction with short crossline, recurving just before 1/2 upon meeting a second crossline and running back to rear margin but farther separated from median than on anterior lobe. Submedian lines also solid, forming parts of a lateral network, the rear shield pattern behind submedians as lines of granules;upper lateral shield line granular, forking ahead of rear margin; rather broad band of granules above coxae. Forelegs 30µ long; femora with long strong setae; tibia 7µ long, with 10µ seta at 1/3; tarsus 8µ long; claw 8.5µ long;featherclaw 6-rayed.Hindleg 27µ long, tibia 6µ long, tarsus 6µ long; claw 8µ long. Coxae divergent with but slight central contact of anterior coxae;second setiferous coxal tubercles a little below a centrad directed diagonal line through first and third tubercles; first coxal tubercle on an anterior projection;second tubercle surrounded by a curved line. Abdominal thanosome with about 55 rings with but slight ventrad increase; rings completely microtuberculate,the microtubercles variably produced,usually somewhat elongate behind shield but becoming more spine-like to rear,tending to be more blunt ahead of telosome.Lateral seta 20µ long, on ring 2 behind shield, directed up and diagonally ahead; first ventral seta 55µ long, on ring 17; second ventral 9µ long, on ring 32. Telosome with 6 rings, completely microtuberculate, the microtubercles projecting dorsally but blunt,elongate ventrally; seta 20µ long. Accessory seta absent. Female genitalia close to coxae, 25µ wide, 18µ long; coverflap with about 16 longitudinal irregular ribs, partially in two ranks; seta 15µ long.

Type locality: Twin Bridges, El Dorado County, Cal. 6500 ft., elev.

Collected: August 25, 1964, by the writer

Host: Quercus vaccinifolia Kell. (Fagaceae) huckleberry oak

Relation to host: the mites are undersurface leaf vagrants

Type material: a type slide with the above data is the designated type
there are five paratype slides

Cecidophyinae, continued from page 15
of certain Eriophyid genera and species.It is based mainly on the female genital structure, particularly the shortened interior apodeme, and upon the relation of the genitalia to the coxae.In this group are budmites, gallmites, and rust mites, making it a parallel category, bionomically, to several other Eriophyoid structural series that occupy the usual Eriophyoid living places on plants. There are taxonomic problems, both structural and nomenclatorial, on the periphery of this group that have caused me to hesitate for many years to take this action. But the concept is too useful to avoid. and the alternative would be to scatter these genera and species throughout the riophyidae,thereby obscuring their obvious close relationship.

The predominant characters of this group are the absence of dorsal tubercles and setae, and the spread coxae and protruding genitalia with the shortened apodeme. The shortened apodeme is an invariable characteristic and it must be accompanied by at least one of the other features tp properly relate a species to the Cecidophyinae. Brachendus K. has a shortened apodeme but lacks other supporting structures. Phaulacus K. lacks the dorsal tubercles but has an extended though somewhat shortened apodeme.

Genera included in the Cecidophyinae are -

A- lacking dorsal tubercles
- Cecidophyes Nalepa 1889 (Genotype gallii Karp.)
- Cecidophyopsis K. 1959 (vermiformis Nal.); Dechela K. 1965 (epelis K.)
- Coptophylla K. 1944 (lamimani K.); Glyptacus K. (lithocarpi K.)
- Johnella K. 1959 (virginiana K.)
- Pseudojohnella K. (ajoensis K.) (syn. ? Achaetocoptes Farkas 1961)

B- possessing dorsal tubercles
- Cosetacus K. 1966 (camelliae K.)
- Gammaphytoptus K. 1939 (camphorae K.)

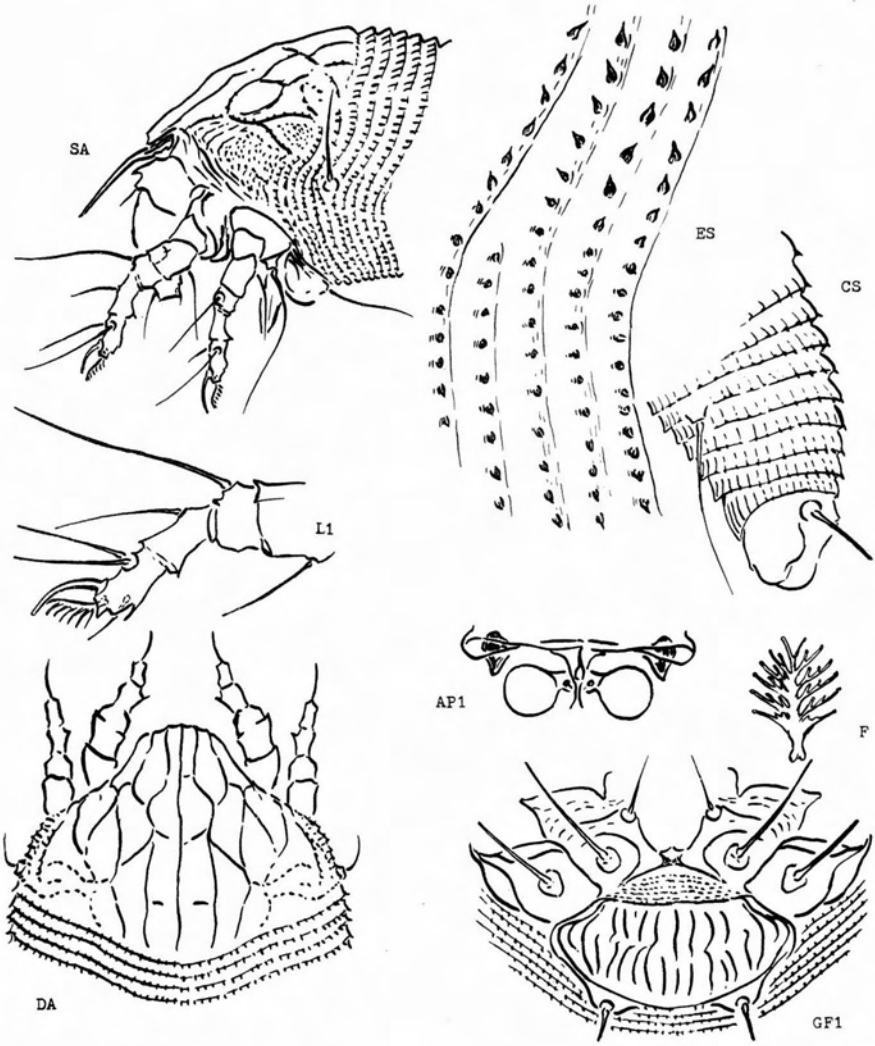

Plate 10 - Cecidophyes digephyrus, new species

Cecidophyes tampae, new species

Plate 11

In company with two other species in the genus, caryvagrans K. and digephyrus K., this species has 6-rayed featherclaws. From the former it differs by having a less strong shield pattern, lacking the 1/4 cross line on the shield, and by having more longitudinal ribs on the genital coverflap. From the latter it differs by having a more pointed lobe over the rostrum and having the microtubercles unpointed.

Female 135µ-190µ long, 35µ-40µ thick; fusiform; color in life probably light yellowish-white. Rostrum 16µ long, projecting down; antapical seta 4µ long. Shield 27µ long, 32µ wide, with a moderately acute short lobe over the rostrum. Median shield line on rear 4/5, irregular, joining diagonal cross lines from admedians ahead of rear margin. Admedian lines complete, faint on anterior lobe, sinuate, outwardly convex ahead of rear margin. Submedian line subparallel to admedian, irregular. Laterally the shield with radiating curved lines from center well above anterior coxa; a granular area above coxae followed by some partial rings. Foreleg 26µ long; tibia 6.5µ long, with 8µ seta from about 1/3; tarsus 7µ long; claw 8µ long; featherclaw 6-rayed. Hindleg 23µ long, tibia 4µ long, tarsus 5µ long, claw 8µ long. Coxae divergent, ornamented with curved lines, especially around tubercles; anterior coxae touching centrally, with a slight sternal line. First setiferous coxal tubercles a little ahead of anterior coxal approximation and farther apart than second; second tubercles partially surrounded by curved lines, ahead of line across third tubercles. Abdominal thanosome with about 47 rings, completely microtuberculate, these microtubercles elongate above and laterally, reaching ring margins, more bead-like ventrally but becoming elongate caudally. Lateral seta 15µ long, on ring 4 behind shield, projecting up in some degree; first ventral seta 46µ long, on ring 16; second ventral 8µ long, on ring 27. Telosome with about 5 rings, the microtubercles bead-like on ring margins, tending to be pointed, preceeded by narrow lines, especially ventrally; seta 17µ long. Accessory seta absent. Female genitalia 20µ wide, 11µ long; coverflap with about 16 longitudinal ribs, irregular, partially in two ranks; seta 11µ long.

Type locality: Tampa, Florida

Collected: July 15, 1966 by C. W. Hale, and sent me by H. A. Denmark

Host: Quercus virginiana Mill. (Fagaceae) live oak

Relation to host: the mites are under surface leaf vagrants

Type material: a small jar with mites in liquid from which the slides were made,
a type slide, so designated, with the above
five paratype slides

Designations on plates -
AP1 - Internal female genital structures
CS - Telosome and anal lobes, side view of caudal section
D - Dorsal view of mite
ES - Side skin structures
F - Featherclaw (empodium)
GF1 - Female genitalia and coxae
L1 - First left leg
S - Side view of mite
SA - Side view of anterior section of mite

Thanosome - that part of the abdomen ahead of the third ventral seta
Telosome - the abdomen from the third ventral seta to anal lobes

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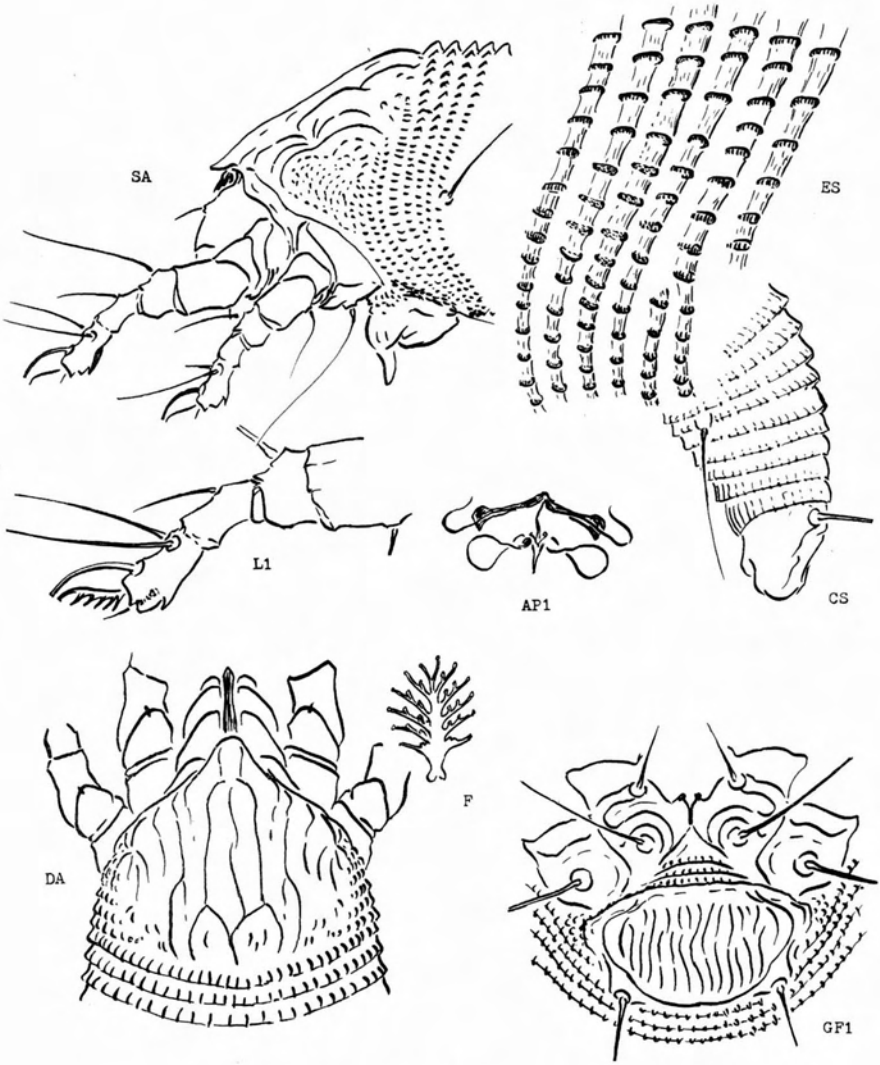

Plate 11 - Cecidophyes tampae, new species