ERIOPHYID STUDIES B-18

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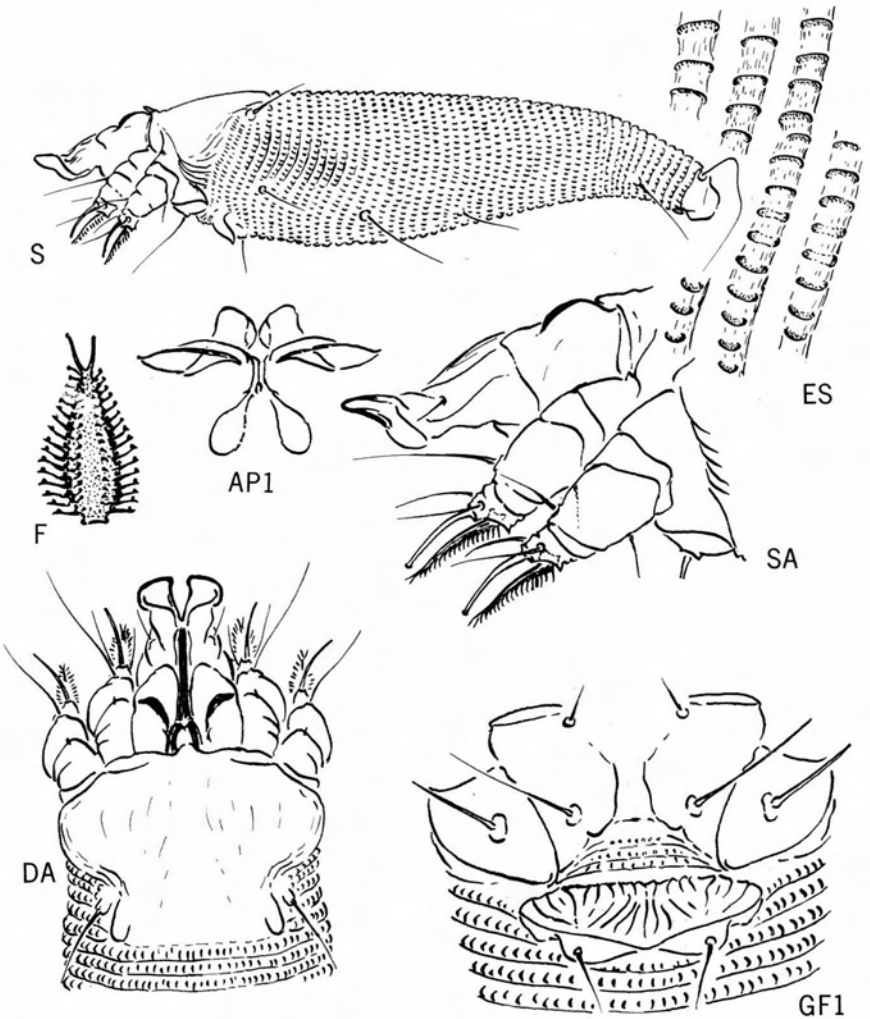

Plate 1 - Cisaberoptus kenyae, new species

ISSUED - Apr. 22, 1966

B-18

Aberoptinae, new subfamily

Body somewhat fusiform, tapering caudally, tending to be flattened. Rostrum either normal or apically spatulate and divergent; chelicerae of moderate length, gently curved down; oral stylet short form. Shield broad, with at most a slight projection over chelicera base; dorsal tubercles on rear margin. Legs shortened, strengthened: foreleg with all usual setae and the foretibia spatulate distally, or the tibia shortened, lacking the seta; hindleg with strong thick, shortened segments, partly fused; empodium (featherclaw) enlarged, with many rays. Coxae with all usual setae. Female genitalia transverse, narrow longitudinally, set close to coxae; internal apodeme long form.

This subfamily now contains two species of uncertain relationship except that they belong to the Eriophyidae in the strict sense. One species is Aberoptus samoae K. (Bul. Cal. Dept. Agr. 40(3):97, 1951). The other is as described here as a species of Cisaberoptus. Both feed on mango leaves. Heretofore I have believed that the principal damage an Eriophyid did to plants was biochemical in nature because the mouthparts are so small as to be unable to cause any appreciable mechanical damage. But the species placed in this subfamily are equipped to cause mechanical damage: Aberoptus samoae, with its spatulate foretibiae (I am not precisely informed as to just what this mite actually does), and Cisaberoptus kenyae, n.sp., which Dr. F. C. Mathez writes burrows under the upper leaf surface. The rostrum of kenyae certainly indicates its potentialities.

Cisaberoptus, new genus

Body elongate, somewhat fusiform, more or less compressed dorsoventrally. Rostrum projecting forward, curved down a little, about as long as shield, stout, basally with stout hump on each side ahead of anterior shield margin; apically the rostrum segments fused, strengthened, spatulate, divergent. Chelicerae normal, not reaching beyond basal approximation of divergent rostral apices. Oral stylet short form. Shield with short bilobed anterior projection over chelicera base; dorsal tubercles lateral, projecting back not far ahead of rear margin, directing dorsal setae divergently backward; a lobe on inner side of each dorsal tubercle. Legs short, strong and stout, joints more or less fused and indistinguishable; all usual setae present except foretibial. Empodia (featherclaws) long and stout, many rays. Coxae with usual three pair of setae, anterior coxae separated. Thanosomal rings similar dorsoventrally, a slight lateral ridge behind lateral shield lobes. All usual abdominal setae present. Female genitalia narrow longitudinally, transverse laterally, close behind coxae; internal apodeme long type.

The genotype, which in most respects resembles Aberoptus samoae, differs by having the rostrum developed for mining into the leaf, rather than the foretibiae, and the forelegs in this case are similar to the second legs.

Genotype: Cisaberoptus kenyae, new species

Cisaberoptus kenyae, new species

Plate 1

Female 190μ-210μ long, including rostrum, 52μ wide, 45μ thick; flattened-fusiform; color probably light yellowish-white. Rostrum 36μ long, thicker apical portions slightly amber colored; antapical seta 5μ long. Shield 32μ long, 38μ wide; short bilobed projection over chelicera base. No shield design. Lateral lobes somewhat projecting. Dorsal tubercles 36μ apart; dorsal setae 17μ long. Foreleg 25μ long, femoral seta present; femur and patella fused; tibiotarsus 5μ long; claw 10.5μ long; featherclaw about 17-rayed. Hindleg similar to foreleg, 21μ long, tibiotarsus 4μ long, claw 12μ long. Coxae broad, divergent, unornamented, the anterior coxae not connate centrally. First setiferous coxal tubercles farther apart than second and set ahead near coxal apex; second setiferous tubercles slightly ahead of line across third tubercles. Thanosome with about 52 rings; microtubercles mostly elongate but rounder dorsally in mid section, fading to telosome. Lateral seta 9μ long, on about third ring behind shield; first ventral seta 35μ long, on ring 22; second ventral 24μ long, on ring 33. Telosome of 6 rings, microtubercles faint dorsally. Telosomal seta 13μ long. Accessory seta absent. Female genitalia 15μ long, 28μ wide; coverflap with 14-16 curved ribs; seta 4μ long.

Type locality: Kikambala, Kenya

Collected: March 10, 1966, by Dr. F. C. Mathez

Host: Mangifera indica L. (Anacardiaceae) mango

Relation to host: the mites mine into the leaf and are found under the upper cuticle.

Type material: a type slide with the above data
10 paratype slides
mites in liquid from which the type were taken

Phyllocoptruta sakimurae, new species

Plate 2

This is the third species placed in the genus. It differs from the other two most notably by the heavy dimpling on the cephalothoracic shield. These small pits entirely obscure the shield pattern. Phyllocoptruta oleivora (Ashm) has a shield pattern and tibiae equal to the patella in length. P. musae K. has very long tibiae and a shield pattern. The new species is intermediate in regard to tibial length. I am naming the species after its collector, Dr. K. Sakimura of the Pineapple Institute, who has also sent me other mites.

Female 145µ-160µ long, 56µ wide, 48µ thick; fusiform; color probably light yellowish-white. Rostrum 20µ long, projecting down; antapical seta 7µ long, strong. Shield 48µ long, 56µ wide, with broad anterior lobe over rostrum, with some depth in lateral view and showing transverse grooves across front. Shield design obscured by numerous small pits covering almost entire surface. Shield with moderately produced lobes laterally; some longitudinal lines above coxae. Dorsal tubercles 25µ-30µ apart, not far ahead of rear shield margin; dorsal setae 9µ long, projecting up and somewhat divergent anteriorly. Foreleg 34µ long; tibia 9µ long, with 5µ seta from 2/3; tarsus 6µ long; claw 5µ long, with slight knob; featherclaw irregular, 3 to 5-rayed, the 4-rayed empodia usually on the second legs. Hindleg 32µ long, tibia 8µ long, tarsus 6.5µ long, claw 4.5µ long. Coxae ornamented with curved lines; anterior coxae apparently separate; first setiferous coxal tubercles farther apart than second and slightly ahead of anterior coxal approximation; second tubercles a little ahead of line across third tubercles. Thanosome with about 26 tergites and 49 sternites; broad dorsal furrow fading to rear, flanked by a ridge on each side extending back from dorsal tubercles; a lateral ridge above meeting of tergites and sternites extending back from lateral lobes of shield. Microtubercles on edge of sternites small and bead-like; on tergites the microtubercles present on lateral ridge but fading dorsally. Lateral seta 12µ long, on sternite 10 behind shield; first ventral seta 18µ long, on sternite 21; second ventral 16µ long, on sternite 34. Telosome with 5 rings, the seta 22µ long. Accessory seta 2µ long. Female genitalia 22µ wide, 15µ long; coverflap basally with outlined transverse area with numerous short longitudinal dashes; apically with about 14 weak longitudinal ribs; seta 10µ long.

Type locality: Wahiawa, Oahu, Hawaii

Collected: March 7, 1966, by Dr. K. Sakimura

Host: Ananas sativus Schult. (Bromeliaceae) pineapple

Relation to host: the mites live in the grooves on the shell

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

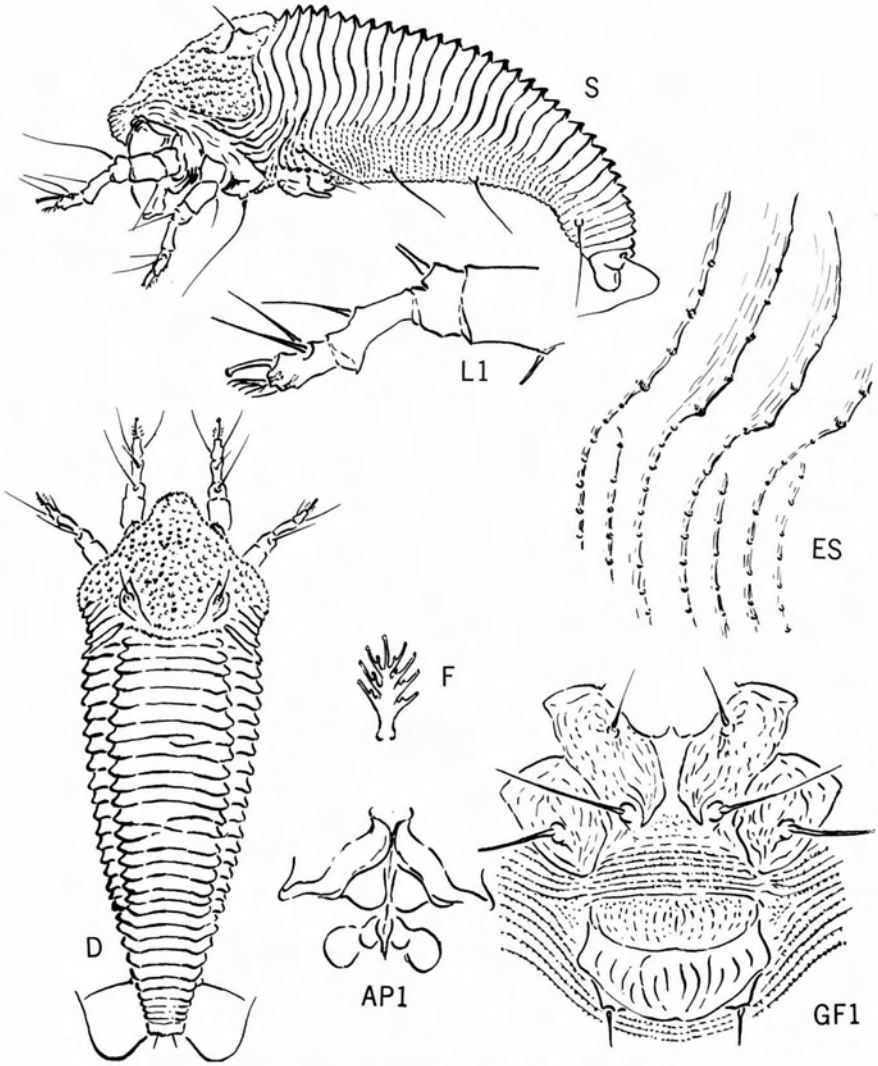

Plate 2 - Phyllocoptruta sakimurae, new species

Brionesa, new genus

Body curved-fusiform. Rostrum with short oral stylet and simple antapical seta. Shield with short, acute lobe over rostrum; shield centrally raised and projecting keel-like a short distance over first tergite. Dorsal tubercles set well ahead of rear shield margin (nearly at 1/2). Legs with all usual setae; featherclaw divided 1/2 to 3/4. Coxae broad; first setiferous coxal tubercle missing. Abdomen with shallow middorsal furrow running back about 2/3 on thanosome, flanked on each side by a longitudinal row of knobs, one on each tergite, forming a ridge. A slight lateral ridge on thanosome. All usual abdominal setae present. Rear of thanosome and telosome strongly curved down. Female genitalia close to coxae, the internal anterior apodeme of moderate length.

The middorsal thanosomal furrow, plus dorsal tubercles situated well ahead of rear shield margin, are characters in general similar to Phyllocoptruta. But the divided featherclaws, plus lack of first coxal setiferous tubercle, differentiate the genus. This genus belongs to the Eriophyidae in the restricted sense. The genus is named for Magdalena L. Briones, who has a keen interest in Eriophyids and has sent me many Philippine mites

Genotype - Brionesa pipturella, new species

Brionesa pipturella, new species

Plate 3

Female 125µ-150µ long, 35µ-45µ thick. Rostrum 21µ long, curved down; antapical seta 7µ long. Shield 39µ long, 37µ wide; design obscure, in dorsal view the raised areas outlined showing a line on each side from rostrum base running diagonally back on outer side of dorsal tubercles to rear margin. Side of shield with ocellate spot above forecoxae; bands of granules above coxae and partial rings ahead of rear margin. Forelegs 24µ long; tibia 5µ long, with 7µ seta from about 1/2; tarsus 5µ long; claw 6µ long, slender; featherclaw variably divided, 6 rays on a side. Hindleg 20µ long, tibia 4µ long, tarsus 4.5µ long, claw 5.5µ long. Coxae ornamented with numerous granulations and short dashes; anterior coxae with evident sternal line along broad connation, anteriorly the coxae fading into suboral plate. Second setiferous coxal tubercles ahead of line across third tubercles. Thanosomal tergites lacking microtubercles, the middorsal furrow running back 19 of the 29 tergites; about 34 sternites lined with elongate microtubercles extending forward from bead-like settings on rear margins. Lateral seta 10µ-12µ long, on about sternite 3; first ventral seta 38µ long, on sternite 12; second ventral seta 9µ-11µ long, on sternite 21. Telosome of about 6 rings, dorsally with suppressed microtubercles or these absent, ventrally the structures elongate. Accessory seta absent. Female genitalia close to coxae 20µ wide, 14µ long, the coverflap basally with a pair of diverging trapezoidal areas, and having 10-12 longitudinal ribs. Telosomal seta 10µ-12µ long.

Type locality: Guinobatan, Albay Provence, Philippines

Collected: April 7, 1963, and sent me by Magdalena L. Briones

Host: Pipturus arborescens (Link.) (Urticaceae) the damos

Relation to host: the mites live among the undersurface hairs on the leaves, and about the galls formed by Aceria pipturi K.

Type material: a type slide with the above data
six paratype slides as above
dry leaves with mummified mites from which the slide specimens were taken.

For the reference to Aceria pipturi K., see this series, B-17, p. 15,

March 1,1966

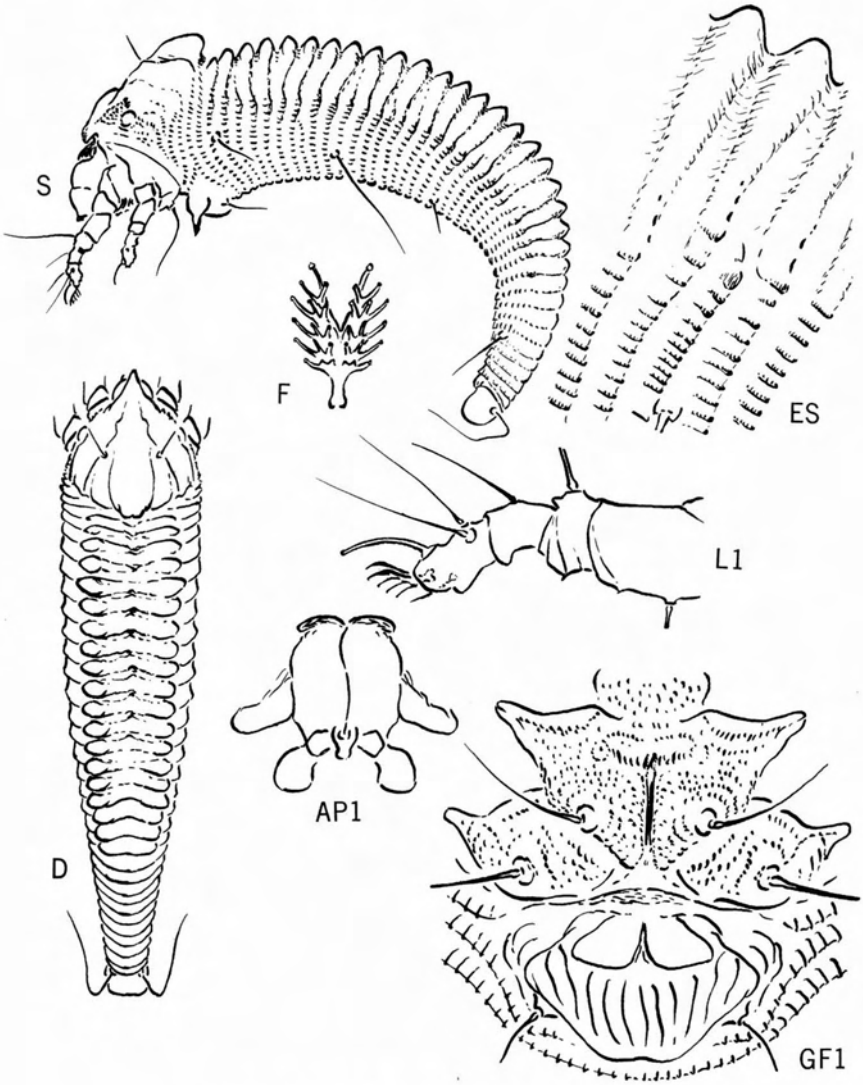

Plate 3 - Brionesa pipturella, new species

Dicrothrix, new genus

The distinctness of this genus is indicated by the large bifurcate antapical rostral setae, the long central stem of the featherclaws, dorsal enlargement or fusion of the anterior abdominal tergites, tergites and sternites of the same number and width, missing second abdominal seta. The generic name is dikro for divided, and thrix for the rostral hair.

Body fusiform in shape, broad cephalothorax and anterior part of abdomen. Rostrum small, with short form oral stylet and with large bifurcate antapical seta on each side. Shield broad with large lobe over rostrum; dorsal tubercles well ahead of rear margin with longitudinal axes. Legs and coxae with all usual segments and setae; featherclaw with long central stem. Abdominal tergites and sternites of same number and width; some anterior tergites just behind shield, broadened laterally, enlarged, or fused; second ventral seta missing. Telosome abruptly bent down. Female genitalia with anterior apodeme extended anteriorly as usual.

Genotype - Dicrothrix anacardii, new species

Dicrothrix anacardii, new species

Plate 4

Female 140µ-150µ long, shield and anterior part of abdomen 52µ across, 35µ thick, slender part of abdomen 30µ wide and 22µ thick. Rostrum 20µ long, projecting down; antapical rostral seta 10µ-12µ long. Shield 52µ long, 52µ wide, surface with patterns of shallow grooves. Anterior lobe curved up on top and recurved below, with grooves around front. Shield with furrow on each side running from central anterior lobe base, diagonally out past dorsal tubercles, and angling back toward center of rear shield margin; central part of shield with longitudinal lines slightly arching out around central disc; upper sides of shield with pattern of radial lines, below lateral edge with curved longitudinal lines above coxae. Dorsal tubercles 26µ apart; dorsal setae 7µ long, projecting up. Foreleg 28µ long; tibia 7µ long, with 2µ seta from inner side at 1/5; tarsus 5µ long; claw 5µ long, knobbed; featherclaw 4-rayed. Hindleg 25µ long, tibia 4µ long, tarsus 4.5µ long, claw 4.5µ long. Coxae without ornamentation, the anterior coxae divergent and with thin sternal line between; first setiferous coxal tubercles much farther apart than second and opposite anterior coxal approximation; second coxal tubercles rather close together and ahead of a line across third tubercles. First 5 or 6 tergites forming a pair of large gibbosities extending from rear shield edge, partially separated from eachother by longitudinal groove that extends 3/4 along abdomen middorsum. Sternites of same number and width as tergites but with elongate lines representing microtubercles which are absent dorsally. Lateral seta 12µ long on about sternite 2; first ventral seta missing; second ventral seta 12µ long, on sternite 14. Thanosome with about 24 tergites-sternites. Telosome with about 5 rings, elongate microtubercles below; seta 15µ long. Female genitalia 20µ wide, 13µ long; coverflap with no discernable ornamentation; seta 10µ long. Accessory seta absent.

Type locality: San Felix, State of Bolivar, Venezuela

Collected: December 14, 1965, by Dr. L. C. Knorr (#8334)

Host: Anacardium occidentale Lam. (Anacardiaceae) cashew

Relation to host: the mites contribute to leaf rusting

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

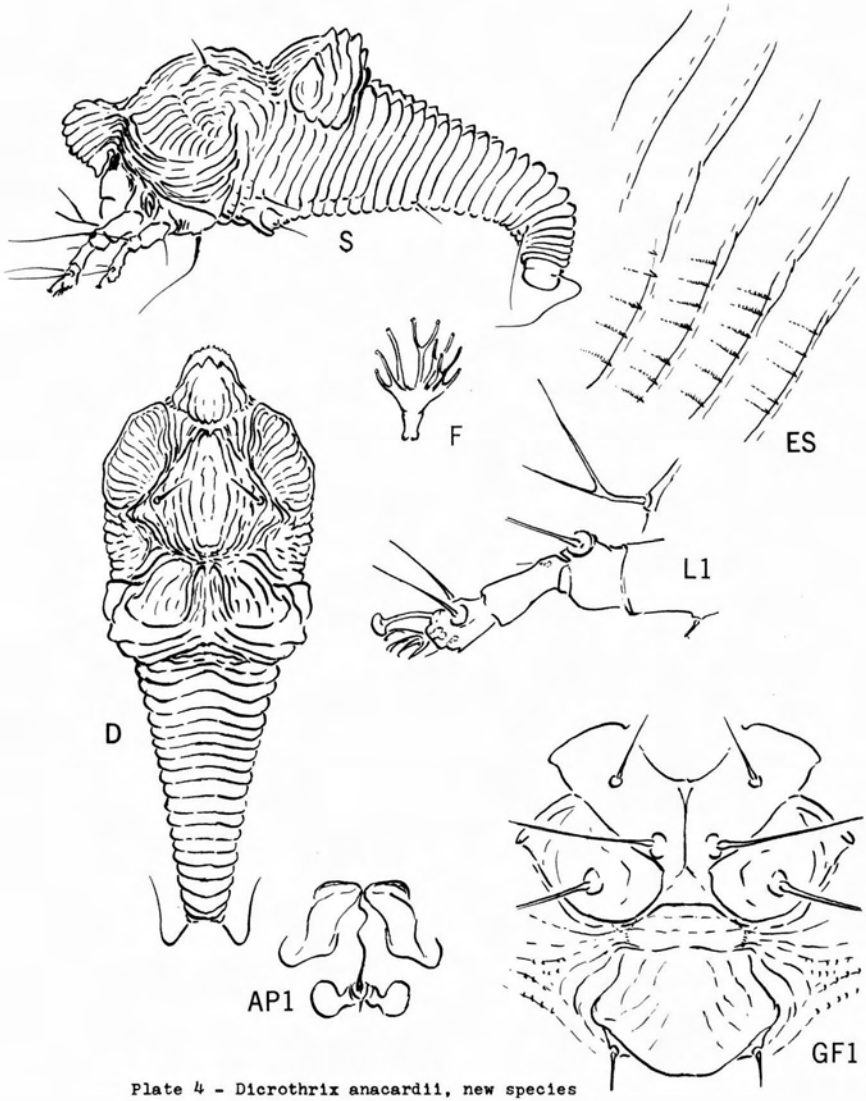

Plate 4 - Dicrothrix anacardii, new species

Dicrothrix secundus, new species

Plate 5

This type of mite occurs in company with Dicrothrix anacardii and has the same unusual features. The principal question is whether or not this is indeed a distinct species, or another form of a complex species. Secundus differs from anacardii by having a less prominent anterior shield lobe, rows of coarse granules around side of shield and other differences in shield pattern, only a moderately enlarged anterior tergal area on the abdomen behind which is a middorsal longitudinal ridge; a curved line across base of genital coverflap.

Female 175µ long, 52µ wide, 40µ thick; fusiform in shape. Rostrum 30µ long, projecting down; antapical seta 16µ long. Shield 55µ long, 53µ wide; short anterior lobe over rostrum with furrows visible both laterally and from dorsal view; curved lines frame area above base of anterior lobe. Shield with involved patterns of sinuate lines, mostly longitudinal sides of shield with rows of coarse granules above coxae. Dorsal tubercles 23µ apart; dorsal setae 3.5µ long. Foreleg 31µ long; tibia 7µ long with 2µ seta from 1/5; tarsus 5µ long; claw 4.5µ long, knobbed; featherclaw 4-rayed, with long central stem. Hindleg 27µ long, tibia 7µ long, tarsus 4.5µ long, Claw 5µ long. Coxae unornamented, the anterior coxae with long slender sternal line between; first setiferous coxal tubercles farther apart than second and slightly behind anterior coxal approximation; second tubercles ahead of line across third coxal tubercles. Thanosome behind shield with first 3-4 tergites united above into slightly raised portion with radial lines; tergites and sternites equal, about 23, the sternites with fine elongate microtubercles, reaching ring edges as small points. Thanosome behind united area tapering, the tergites forming a middorsal ridge. Lateral seta 12µ long, on about second sternite; first ventral seta missing; second ventral seta 8µ long, on sternite 14. Telosome with 4 rings, abruptly bent down; seta 12µ long. Accessory seta absent. Female genitalia 14µ wide, 12µ long; coverflap unmarked except for curved cross line from lateral base; seta 3.5µ long.

Type locality: San Felix, State of Bolivar, Venezuela

Collected: December 14, 1965, by Dr. L. C. Knorr (#8334)

Host: Anacardium occidentale Lam. (Anacardiaceae) cashew

Relation to host: the mites contribute to the rusting of the leaves

Type material; a type slide with the above data
two paratype slides

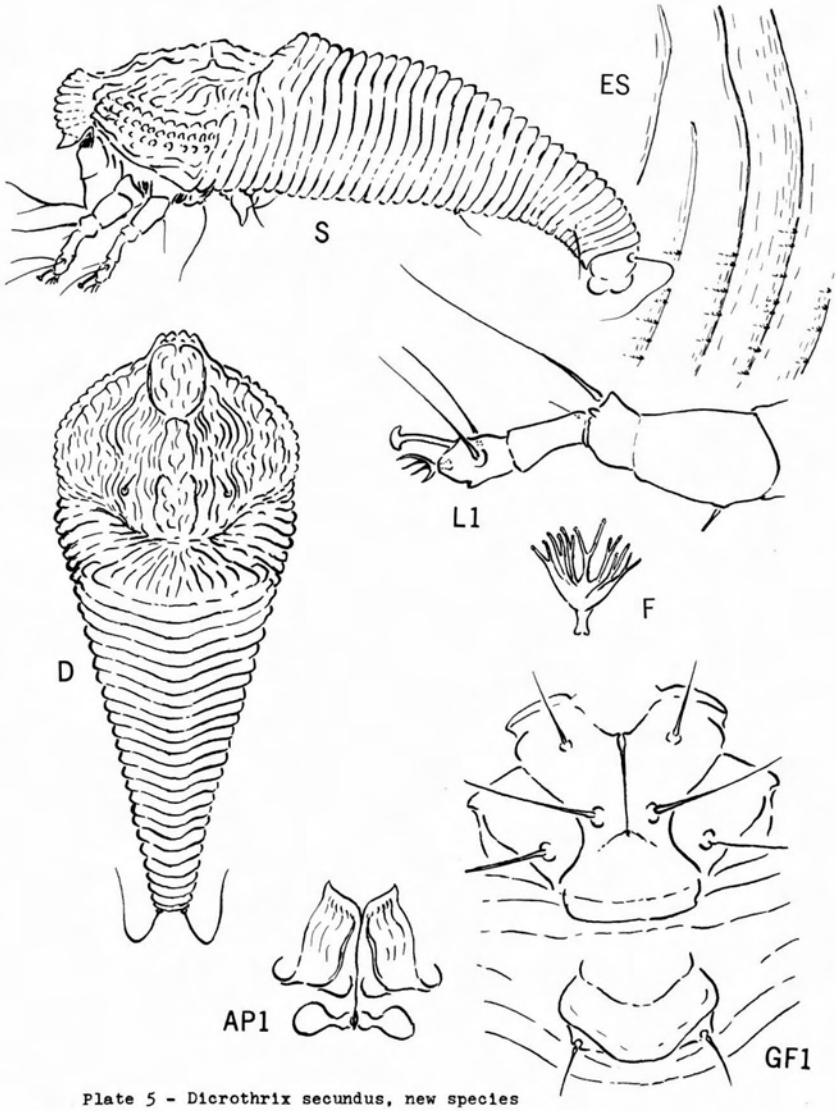

Plate 5 - Dicrothrix secundus, new species

Heterotergum yumensis, new species

Plate 6

The new species most closely resembles olneyae K. of the four species previously described in this genus. (H. olneyae, B-9, Feb. 20, 1963). Yumensis differs from olneyae by having a shield pattern of lines of granules, and by the 7-rayed featherclaw. Olneyae has an 8-rayed featherclaw. Both species live on Leguminaceous trees in the southwestern deserts.

Female 145µ-157µ long, 40µ-46µ thick; elongate-spindleform, curved; color in life apparently light yellowish-white. Shield 34µ long, 37µ wide; a short anterior lobe over rostrum, rounded-acuminate apically; shield design of lines of granules. Median shield line indicated on rear 2/3; admedians nearly complete, sinuate, arching out in center, the rear extension running inside the next arcs, recurving centrad and meeting just ahead of rear margin with slight line toward dorsal tubercles. Submedian shield lines irregular, two distinct, curving back subparallel to admedians. Sides of shield with granular areas and 3-4 partial rings below dorsal tubercle. Dorsal tubercles 23µ apart; dorsal setae 26µ-29µ long. Rostrum 26µ long, somewhat attenuate, projecting down; antapical seta 5µ-8µ long. Foreleg 30µ long; tibia 6µ long, with 7µ seta at 1/2; tarsus 7µ long; claw 9µ long; featherclaw 7-rayed. Hindleg 26µ long, tibia 4µ long, tarsus 7µ long, claw 9µ long. Coxae ornamented with curved lines and some granules ; anterior coxae divergent, with slight sternal line between. First and second setiferous coxal tubercles close, the first slightly farther apart and slightly ahead of anterior coxal approximation; second tubercles well ahead of line across third setiferous coxal tubercles. Thanosome with about 18 broad tergites, preceeded by 4-5 rings behind shield; tergites describing a shallow longitudinal trough midway on abdomen. Abdominal microtubercles heavy, those on sternites round and bead-like, the tergal ones elongate and fading somewhat to rear. Thanosome with about 53 sternites. Lateral seta 22µ long, on sternite 5; first ventral seta 53µ long, on sternite 19; second ventral 12µ long, on sternite 34. Telosome with 5 rings, the seta 27µ long. Accessory seta minute, 3µ long. Female genitalia 19µ wide, 12µ long; coverflap with about 12 longitudinal ribs; seta 27µ long.

Type locality: Yuma, Arizona

Collected: May 20, 1965, By D. M. Tuttle

Host: Acacia greggi Gray (Leguminosae) acacia

Relation to host: the mites are leaf and twig vagrants

Type material: a type slide with the above data
five paratype slides
mites in liquid in the original bottle

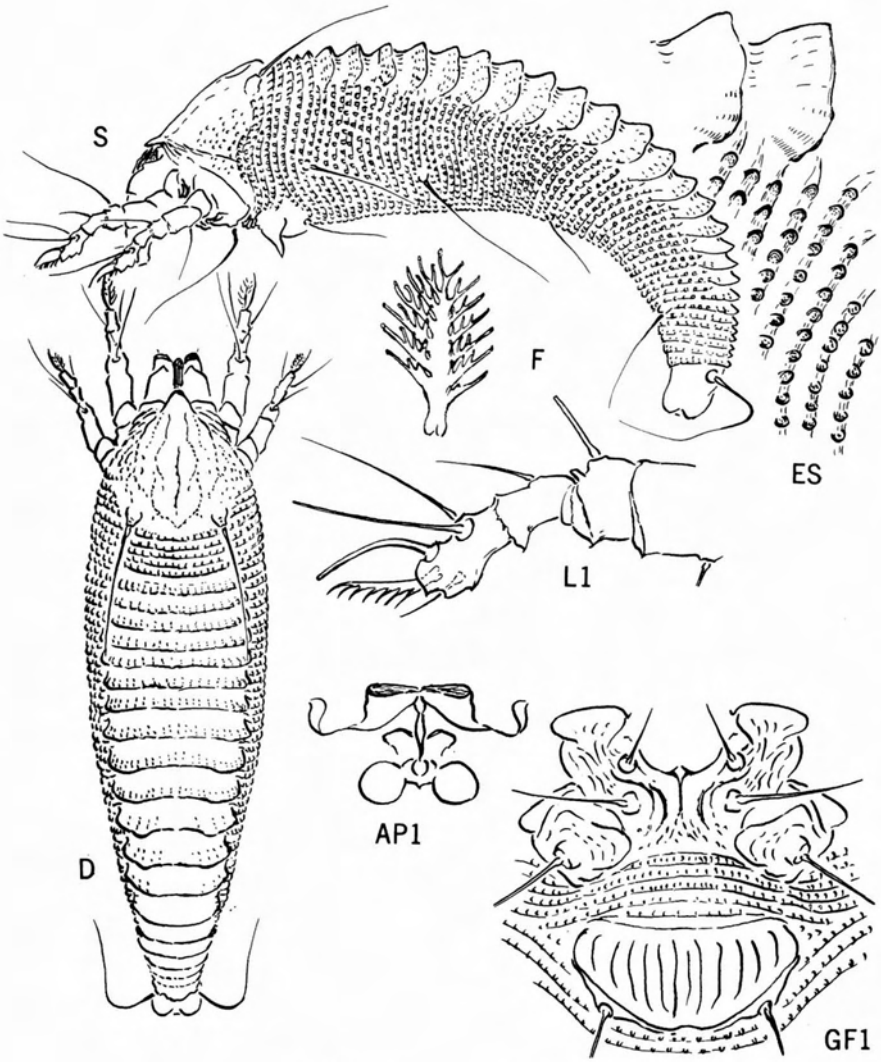

Plate 6 - Heterotergum yumensis, new species

Aculus spinitibius, new species

Plate 7

The definition of this species is based on the presence of a short spine on the front of the foretibia at about 1/4. The foretibial seta arises from the inner side of the tibia by, or slightly before this spine. The mite is elongate-wormlike, unlike typical Aculus species, but there is a short projection over the rostrum base from the cephalothoracic shield.

Female 195µ-205µ long, 40µ-45µ thick, elongate-wormlike in shape; color in life probably light yellowish-white. Rostrum 18µ long, projecting down; antapical rostral seta 3µ long. Shield 30µ long, 37µ wide, somewhat acuminate to the short anterior lobe over rostrum. Shield design plain but irregular: median line complete, sinuate, broken, especially at 1/3 and 2/3; admedian lines sinuate, gradually diverging to rear, curving back from anterior lobe and slightly recurved at rear. First submedian shield lines from sides of anterior lobe, strongly diverging from admedians, forked in front of, or lateral of dorsal tubercles. Converging lines below dorsal tubercles to the side form an acute point above 2-3 partial rings; some granular bands above coxae. Dorsal tubercles 22µ apart; dorsal setae 11µ long, diverging to rear. Foreleg 29µ long; tibia 7µ long, with anterior spine at 1/4, the seta 2.5µ long on inner side at about 1/4; tarsus 5µ long; claw 7µ long; feather-claw 4-rayed. Hindleg 28µ long, tibia 6µ long, tarsus 6.5µ long, claw 7.5µ long. Coxae rather short and thick, ornamented with granules and lines; first setiferous coxal tubercles farther apart than second tubercles and slightly ahead of anterior coxal approximation; second setiferous tubercles somewhat ahead of line across third tubercles. Abdomen completely microtuberculate, the microtubercles elongate dorsally, touching rear ring margins, more bead-like ventrally and ahead of margins, the microtubercles rounded off. Thanosome with about 64 rings. Lateral seta 21µ long, on ring 8 behind shield; first ventral seta 52µ long, on ring 25; second ventral 14µ long, on ring 43. Telosome of 4-5 rings, the microtubercles as beads on margins, with elongate streak in front of each; telosomal seta 16µ long. Accessory seta 3µ long. Female genitalia 22µ wide, 17µ long; coverflap with 6-7 longitudinal ribs which tend to converge; genital seta 15µ long.

Type locality: Ludlow, Vermont

Collected: July 12, 1963, by Dr. G. R. Nielsen

Host: Acer saccharinum L. (Aceraceae) silver maple

Relation to host: the mites are found in the green or reddish undersurface erineum on the leaves. This erineum presumably formed by Aceria aceris (Hodgkiss).

Type material: seven slides bear these mites, and an envelope of dry leaves from which the slides were made. Upon preparing specimens for slides at least three different kinds of Eriophyids appear: Aceria aceris (H), deutogynes of Vasates quadripides Shimer, the new species. It is not possible to separate these mites entirely before placing them on a slide, and since there are several specimens on each slide the individual mite must be studied to determine its place. The type slide and six paratypes are designated under these conditions.

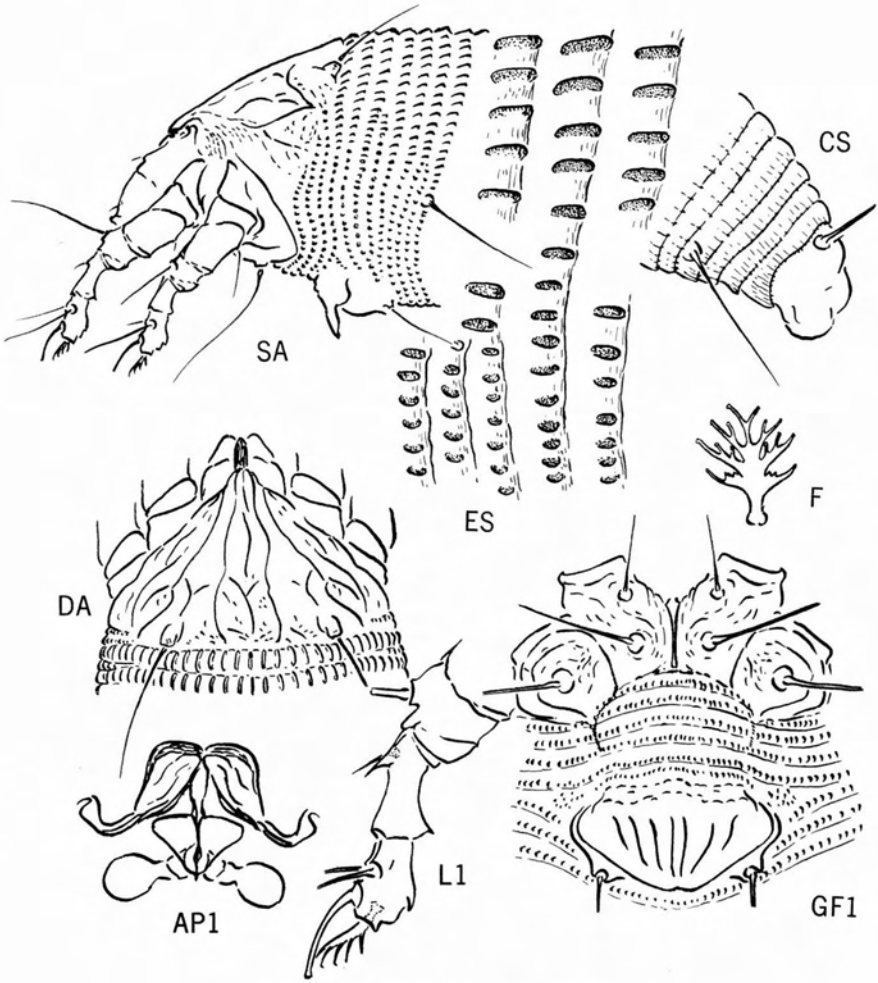

Plate 7 - Aculus spinitibius, new species

Aceria blastofagi, new species

Plate 8

The features of this species are the clear shield pattern, short tibiae without a seta on the foretibia, lack of a forefemoral seta, irregular broad ribs on the genital coverflap. From fagerinea K., the new species differs by the clearer shield pattern, the more slender rays on the featherclaw, and the coverflap ribs. Fagerinea lacks ribs on the coverflap and also lacks the forefemoral seta.

Female 150µ-240µ long, 30µ-50µ thick; wormlike in shape; color light yellowish-white to white. Rostrum 17µ long, curved down;antapical seta unobservable. Shield 27µ long, 27µ wide, slightly acute anteriorly in dorsal view; shield design of clear lines: median line complete but irregular and broken; admedian lines sinuate, close to median on anterior 1/3, arching out and back in shield center, more weakly arched at rear, with line on many specimens at 2/3, directed back toward and fading to dorsal tubercle.Two submedian shield lines arising to side of admedian, running together at about 1/2, the single line ending ahead of dorsal tubercle; a pair of sinuate lines high on side of shield extending from above anterior coxae and ending in a subelliptical figure, open at rear, ahead of and below dorsal tubercles. Sides of shield with granular area above coxae, and with partial rings below dorsal tubercle. Dorsal tubercles 19µ apart; dorsal setae 20µ long, weakly diverging. Foreleg 18µ long, lacking femoral seta; tibia 2µ long, lacking seta; tarsus 4.5µ long; claw 8.5µ long; featherclaw with slender rays, 4-rayed. Hindleg 18µ long, femora with setae, tibia 2µ long, tarsus 4.5µ long, claw 9µ long. Coxae without definite ornamentation, a slight sternal line between forecoxae; first setiferous coxal tubercles farther apart than second and a little ahead of anterior coxal approximation; second coxal tubercles ahead of line across third setiferous coxal tubercles. Abdomen entirely microtuberculate, the microtubercles somewhat acuminate and ahead of rear ring margins. Thanosome with about 60-65 rings. Telosome with 7 rings; microtubercles on ring margins; seta 14µ long. Accessory seta minute. Female genitalia 18µ wide; 10µ long. Female coverflap with 4-6 irregular ribs, sometimes longitudinal, rather broad; genitalia basally with coarse granules. Genital seta 12µ long.

Type locality: Saitama, Japan, the specimens intercepted on their host at San Francisco, Cal. April 7, 1966

Collected: April 7 by R. W. L. Potts and Frink

Host: Fagus sp. (Fagaceae) dwarf beech

Relation to host: the mites form galls in the buds

Type material: a type slide as above bears San Francisco number 039729
five paratype slides with this data
infested buds with mites in liquid.

Aceria fagerinea K. - Ann. Ent. Soc. Am. 52(6):650, Nov. 1959.

This mite was described as having featherclaws with thick rays. This is a characteristic of deutogynes. Additional preparations of mites from Fagus erinea, taken near Altoona, Pa., disclose both thin and thick rayed featherclawed specimens. The conjecture is therefore offered that the thick rayed mites are actually deutogynes of fagerinea. None of these mites,however,have the strong lines on the shield characteristic of blastofagi.

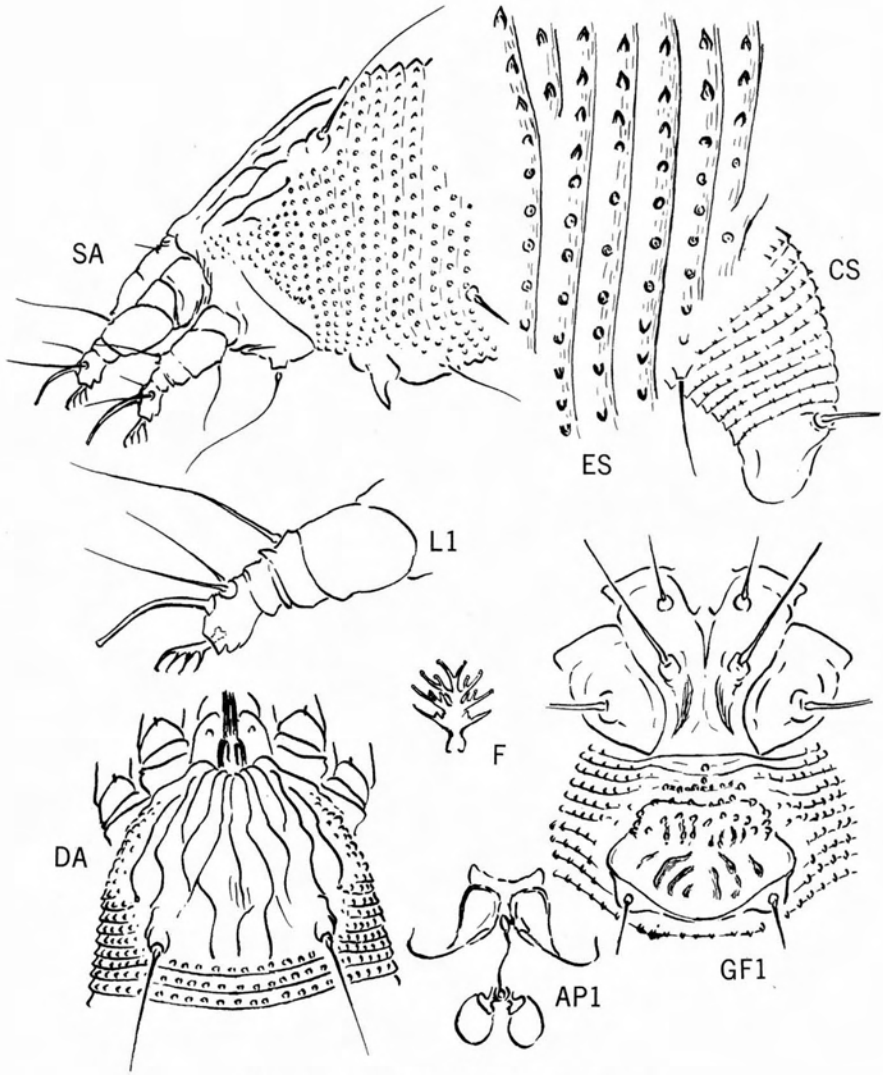

Plate 8 - Aceria blastofagi, new species

Eriophyes helicantyx, new species

Plate 9

This species rolls the edges of the subdivisions of the leaves of bracken fronds. It has a 3-rayed featherclaw in combination with no anterior projection over the rostrum and dorsal tubercles situated ahead of the rear shield margin. No other species has come to my attention with this association of characters. Molliard, in Rev. Gen. Bot. 10:87-101,1898, names a species that he found on the north French coast as Phytoptus pteridis. He states it rolls the edges of bracken fronds. He gives little information as to the actual structures possessed by the mite he saw, but states it was 150µ long, and 40µ thick. The species here named as new goes up to 320µ long, and 55µ thick. It Molliard's species should be examined again and further described. A second species is associated with helicantyx which has 4-rayed featherclaws but it was present in too small numbers to allow a description with the material on hand.

Female 250µ-320µ long, 55µ thick; body wormlike; color in life probably dull yellowish-white. Rostrum 23µ long, projecting forward and a little bent down; antapical seta 5µ long. Shield 35µ long, 50µ wide; subsemicircular in anterior outline, slightly acuminate. Shield design of broken lines made up of short dashes: median line distinguishable on rear 2/3; admedians complete from chelicera base, sinuate, diverging slightly and recurved at rear. First and second submedian lines in part united, the inner running in past the dorsal tubercles and the second ending in front of the tubercle. Two or three longitudinal lines on side of shield and a band of granules above coxae. Dorsal tubercles 22µ apart not far ahead of rear margin; dorsal setae 25µ long and directed up and at times centrad. Foreleg 30µ long; tibia 7µ long with 5µ seta at 1/3; tarsus 7µ long; claw 7µ long, hardly bent; featherclaw 3-rayed Hindleg 28µ long, tibia 5µ long, tarsus 6.5µ long, claw 8µ long. Coxae with a few apical granules, the anterior coxae somewhat separated centrally; first setiferous coxal tubercles slightly farther apart than second and well ahead of anterior coxal approximation; second tubercles ahead of line across third. Thanosome with about 87 rings; microtubercles completely occupying these rings except dorsally toward rear where at times fainter; microtubercles elongate, dorsally and laterally reaching ring margin at which point they have a slight knob; ventrally the microtubercles tending to be ahead of ring margins and pointed. Lateral seta 30µ long, on ring 10; first ventral seta 55µ long, on ring 24; second ventral 50µ long, on ring 47. Telosome with 6 rings, the microtubercles finer and more elongate, suppressed above anteriorly; telosomal seta 20µ long. Accessory seta minute. Female genitalia 19µ long, 22µ wide; coverflap with 11-12 longitudinal ribs; seta 9µ long.

Type locality: Millbury, Mass.

Collected: July 15, 1965, by D. P. Whittier

Host: Pteridium aquilinum lanuginosum (Bong.) (Pteridaceae) bracken

Relation to host: the mites roll the edges of the frond subdivisions

Type material: a type slide with the above data
6 paratype slides
dry fronds with mummified mites from which the slides were made

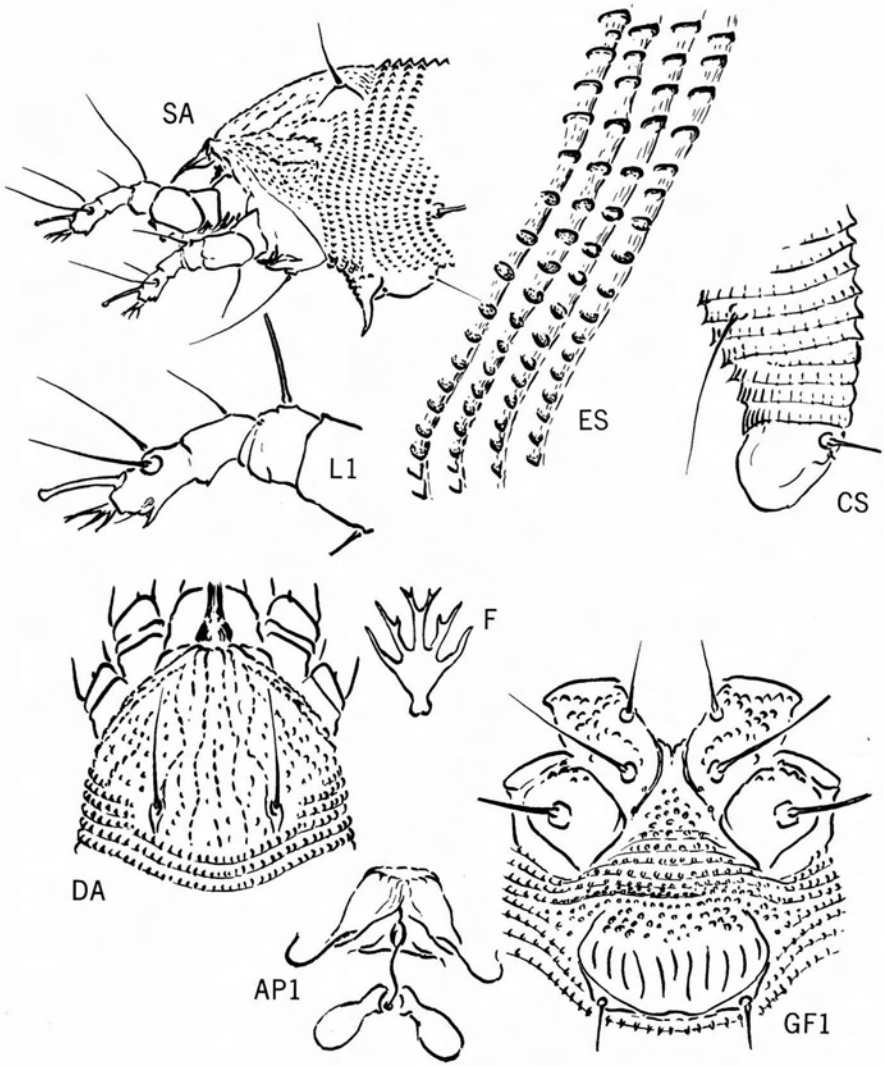

Plate 9 - Eriophyes helicantyx, new species

Setoptus strobacus, new species

Plate 10

The new species, which attacks pine in the eastern United States, differs from the genotype, jonesi (Bul. Cal. Dept. Agr. 27(2): 189, 1938), by having a longer anterior shield seta, a longer tibia with more prominent spines on the rear edge, and by having more prominent and pointed dorsal microtubercles. On jonesi the anterior shield seta is 13µ long, the tibia 12µ long.

Female 200µ-225µ long, 58µ thick, elongate, wormlike in shape; color in life light yellowish-white, at times slightly tinged red anteriorly. Rostrum 55µ long, curved down; antapical seta 12µ long. Shield 55µ long, 48µ wide; transverse anteriorly and broadest, with a slight lobe in front of anterior seta; at rear the shield less broad but truncate. Anterior seta 21µ-25µ long; dorsal tubercles 27µ apart; dorsal setae 72µ long. Foreleg 49µ long; tibia 12µ long, with 9µ seta at 2/3. lateral spur 15µ long, a few spines on rear edge behind apex; tarsus 8.5µ long; claw 14µ long; featherclaw 10-rayed. Hindleg 46µ long, tibia 10µ long, the tibia with ventral spine at apex; tarsus 8µ long, claw 15µ long. Coxae ornamented with short dashes, the anterior coxae with spinules in central area and spinules on suboral plate; slight sternal line between anterior coxae. First setiferous coxal tubercles a little farther apart than second and behind anterior coxal approximation. Second coxal tubercles slightly ahead of line across third tubercles. Thanosome with about 82 rings, completely microtuberculate; microtubercles dorsally somewhat produced and usually acuminate; laterally these structures more beadlike, but becoming pointed ventrally and caudally. Lateral seta 15µ long, on ring 4; first ventral seta 40µ long, on ring 24; second ventral 18µ-20µ long, on ring 42 Telosome of 5 rings, the seta 27µ long. Accessory seta 10µ long. Female genitalia 28µ wide, 24µ long; coverflap unmarked; seta 15µ-20µ long.

Type locality: Flushing, Michigan

Collected: July 30, 1965, by Dr. W. E. Wallner

Host: Pinus strobus L. (Pinaceae) eastern white pine

Relation to host; the mites live in the needle sheaths and stunt or deform the young needles

Type material: a type slide with the above data
seven 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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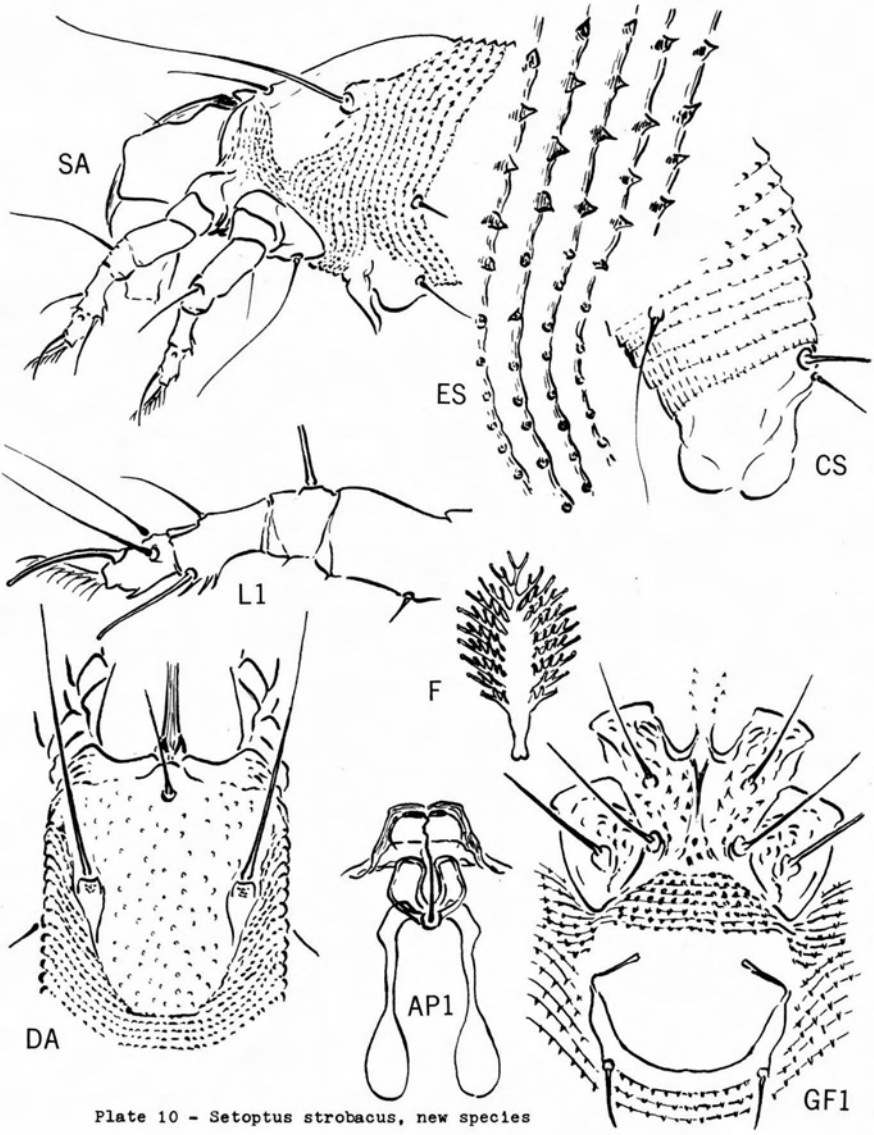

Plate 10 - Setoptus strobacus, new species