ERIOPHYID STUDIES C - 13

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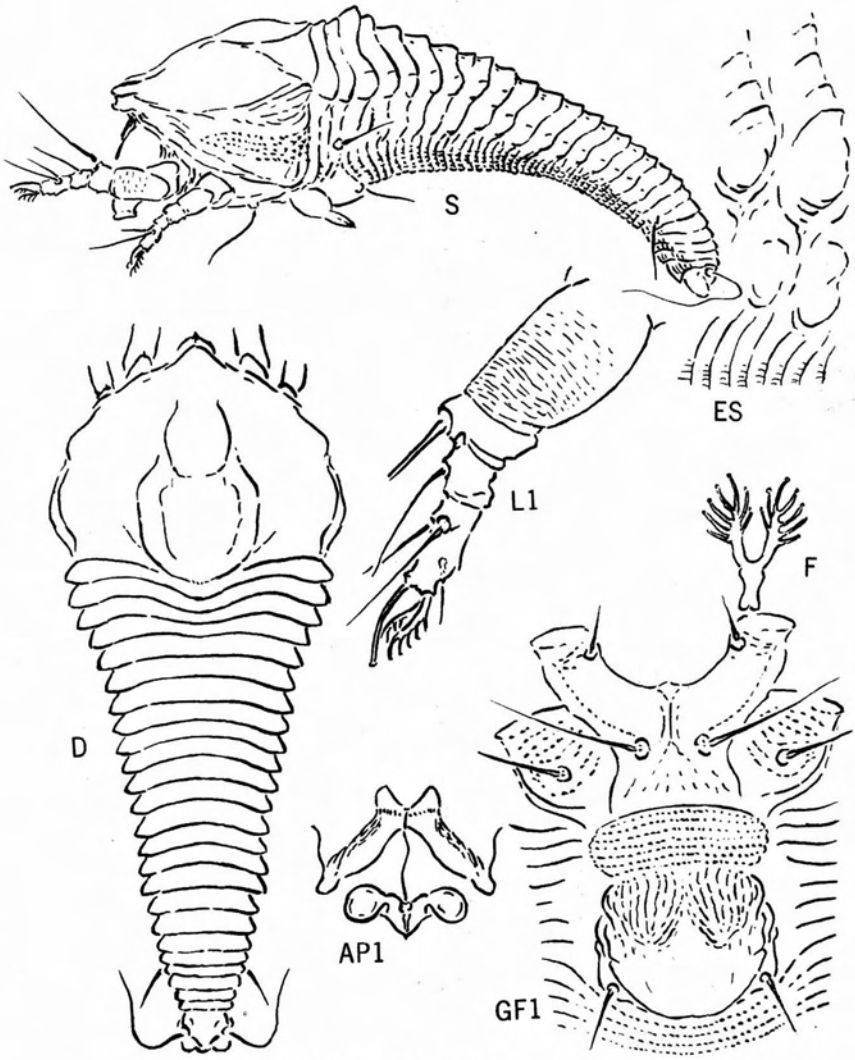

Plate 1 - Schizacea gynerii, new species

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Schizacea, new genus

The combination of divided featherclaws plus lack of dorsal shield setae set this genus and Knorella apart from all other Plyllocoptine genera. The genus Schizacea and the bamboo infesting Knorella gigantochloae K. 1975, have precisely the same setation. They lack dorsal setae, femoral setae, first and second thanosomal setae. The first coxal setae are moved ahead almost to the forecoxal apex. The differences between these two genera are in the tergal structures: Knorella has a central longitudinal dorsal ridge and unevenly projecting tergites laterally; Schizacea has evenly projecting tergites laterally and most of the thanosome consists of a longitudinal furrow or trough. Reference to Knorella: Eriophyid Studies C-10:11-12, USDA, Feb. 20, 1975. Schizo in the genus name refers to the divided featherclaws and acea is a shortening and modification of acarus.

Rostral oral stylet of the short form. Dorsal shield setae and tubercles missing; shield with anterior lobe overhanging rostrum. Forelegs lacking femoral setae and rear patellar seta. Featherclaws divided on all legs. Abdominal thanosome with tergites broader than sternites and projecting evenly laterally; centrally the tergites with broad furrow or trough beginning at about fifth tergite and ending 3 or 4 tergites before telosome. First and second thanosomal ventral setae missing. Female genital apodeme projecting ahead moderate distance.

Genotype as follows:

Schizacea gynerii, new species

Plate 1

Female 138μ-145μ long, 56μ wide (shield), 38μ thick. Fusiform light yellowish-white body. Rostrum 25μ long, projecting down; antapical seta minute. Shield 52μ long by 56μ wide, subsemicircular in anterior outline with short lobe over rostrum, the lobe with declivitous edge. Design on shield obscure the shield but slightly convex; lateral line extending around from anterior lobe and a lateral granular area. Foreleg from trochanter base 30μ long; tibia 4μ long, with 20μ seta from about 1/2; tarsus 8.5μ long; claw 8μ long; featherclaw divided, with about 5 rays projecting from outer sides. Hindleg 25μ long, tibia 3μ long, tarsus 7μ long, claw 8μ long. Sternal line or apodeme between forecoxae thin and divided both anteriorly and posteriorly; general coxal surface with some granules, more on second coxae. First setiferous coxal tubercles pushed ahead almost to apex of coxae; second coxal tubercles at rear angles of forecoxae and almost back to level of third coxae. Abdominal thanosome with about 17 tergites and 40-45 sternites, first 4 or 5 tergites with slight central elevation, followed by long trough. microtubercles absent from tergites, present as fine elongate lines from rear edges of sternites. Lateral seta 25μ long, on about sternite 3 or 4 behind shield. Abdominal telosome beginning with last ventral seta with 6-7 rings; microtubercles weak or absent from telosome dorsum but present and prominent on venter, becoming more elongate to rear. Telosomal seta 23μ long. Accessory seta absent. Female genitalia 18μ long by 19μ wide; outlined area of finely microtuberculate partial rings ahead of female coverflap; coverflap with basal partially divided area of short longitudinal lines. Female genital seta 13μ long.

Male 140μ-145μ long, about size of female.

Type locality: San Alberto, State of Cesar, Colombia

Collected: March 3, 1975 by Ph. Genty

Host: Cynerium sagittatum (Aubl.)(Festucea, Graminae, Glumiflorae) A large grass

Relation to host: The mites rust and spot the leaves

Type material: Five slides with above data, one designated type; Dry leaves with mites from which the slides were made.

Copies of the 'C' Series are obtainable from -

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California Department of Agriculture
1220 N St.
Sacramento, Cal. 95814

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95818

Criotacus sidae, new species

Plate 2

Three definitive generic characters possessed by sidae, a South American species, are: 1. upward directed dorsal setae: 2. broad abdominal rings with no appreciable increase in ring number; 3. microtubercles set on ring ridges and extended ahead as thin lines. This is the second species referable to Criotacus. The genotype is the African brachystegiae K. which differs from sidae in part by lacking a network shield design. Reference for Criotacus brachystegiae: Eriophyid Studies, B-10, Cal. Dept. Agr., Bur. Entomology, page 13, August 12, 1963.

Female 190μ-205μ long, 48μ thick; body elongate-fusiform and cyrtosomatic on slides. Color light orange brown. Rostrum 24μ long, projecting down; antapical seta 4μ long. Shield 41μ long by 46μ wide, subtriangular in dorsal outline. Shield design an open network. Anterior shield lobe short. Median shield line present as slight mark at about 1/5, present as definitive line on rear 1/4. Admedian lines curving back from sides of anterior lobe, close anteriorly, diverging at 1/4, meeting a lateral cross line at 1/4 and converging to and ending at anterior end of median line at 3/4. Lateral cross line extending from front end of median line. Ahead of dorsal tubercle the network more or less faint. A lateral line running along lower margin of shield above coxae. Dorsal tubercles on rear shield margin and directing dorsal setae divergently up; dorsal tubercles 23μ apart; dorsal setae 36μ long. Foreleg from trochanter base 36μ long; tibia 7μ long, with 5μ seta from 1/4; tarsus 8μ long; claw 8μ long, somewhat downcurved; featherclaw 5-rayed. Hindleg 34μ long, tibia 7.5μ long, tarsus 7.5μ long, claw 7.5μ long. Sternal line rather short, obscurely divided at rear. Coxae generally lacking markings. First setiferous coxal tubercles slightly farther apart than second tubercles and slightly to rear of anterior coxal approximation. Third coxal tubercles somewhat behind level of second tubercles. Abdomen with about 21 broad rings, almost entirely equal dorso-ventrally. Microtubercles present as fine points on ring ridges and extended ahead as fine lines; microtubercles weak or absent ventrally. Lateral seta from rear of second ring, 15μ long; first ventral seta 48μ long, appended to rear of ring 7; second ventral seta 8μ long, appended to rear of ring 14. Telosomal seta (third ventral seta) 25μ long; telosome with 4 rings not essentially differentiated from thanosome. Accessory seta 3μ long. Female genitalia 11μ long by 21μ wide; coverflap lacking longitudinal ribs; genital seta 20μ long.

Male 160μ-175μ long.

Type locality: Indaiatuba, State of São Paulo, Brasil

Collected: December 10, 1975 by Sergio Batista Alves.

Host: Sida sp, (Malvaceae, Malvales) an alkali mallow

Relation to host: The mites are vagrants and rust mites on leaf undersides and on green stems. Also thought to be associated with light spots on leaves.

Type material: Seven slides with above data and with one designated type; also dry leaves from which the slides were made.

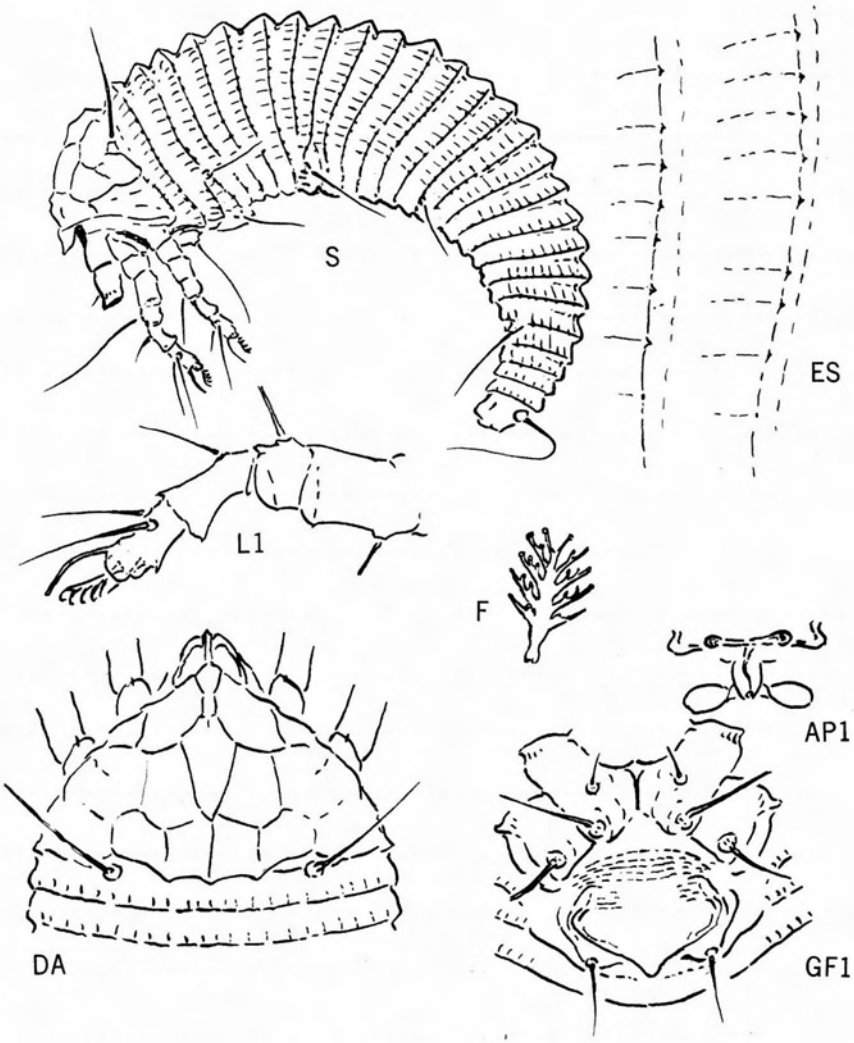

Plate 2 - Criotacus sidae, new species

Phyllocoptruta meliae, new species

Plate 3

These maroon mites have a network shield pattern composed of lines and lines of granules. The species described here has dorsal tubercles with longitudinal axes but the tubercles touch rear margins of shield. The genotype, P. oleivora (Ashm.) has dorsal tubercles set at a distance ahead of the rear margin, but lacks the prominent lateral shield lobes that meliae possesses. Ref. to other species in Phyllocoptruta:Jeppson et al,Mites Injurious to Economic Plants, p. 484, Univ. of Cal. Press 1975.

Female 140μ-170μ long, 63μ wide (shield across lobes), 52μ thick. Color in life dull maroon. Rostrum 30μ long, projecting down;antapical seta 3.5μ long. Shield 45μ long by 63μ wide across lobes. Broad rigid anterior lobe over rostrum. Design a network of lines and lines of granules; median line present on rear 1/5, forked anteriorly and connecting with admedians; admedian lines curving back from near apex of anterior lobe, meeting cross line at 1/4, forking from that and extending back to meeting with median line forks, and curving out to rear margin well inside dorsal tubercles. Submedian lines forming 'cells' above lateral shield lobes, beginning at cross line at 1/4 and branching at 3/5 and just before dorsal tubercle. Lateral shield lobes prominent, rough on outer edge.Dorsal tubercles with longitudinal axes, touching rear shield margins and directing setae up and centrad. Dorsal tubercles 19μ apart and setae 4μ-6μ long. Foreleg from trochanter base 35μ long; tibia 5μ long, with 4μ seta from about 1/5; tarsus 6μ long; claw 7μ long, curved down and knobbed; featherclaw 4-rayed.Hindleg 34μ long; tibia 5μ long, claw 7μ long. Sternal line or apodeme forked anteriorly and ending in an enlargement between second coxal tubercles. Coxae ornamented with fine lines. First setiferous coxal tubercles farther apart than second tubercles and slightly ahead of front level of sternal line forks. Second coxal tubercles almost in line with third tubercles. Abdominal thanosome with about 23 tergites and 63 sternites. Middorsal broad trough beginning at 2 or 3 tergites behind shield and ending 18 to 20 tergites beyond beginning.Abdomen completely microtuberculate,the microtubercles elongate on tergites.All microtubercles touching rear margins. Lateral seta 20μ long, on about sternite 6 behind shield; first ventral seta 55μ long, on sternite 19; second ventral seta 8μ long, on sternite 32. Telosome with about 6 rings; microtubercles, as are the same structures somewhat ahead of telosome, tending to be pointed over sternal margins, more elongate below.Telosomal seta 28μ long. Accessory seta 3μ long.Female genitalia 16μ long by 23μ wide. Transverse lines of granules at base of female coverflap; coverflap with 10-12 longitudinal ribs. Genital seta 8μ long. Male about 132μ long, 48μ wide.

Type locality: Bangkok, Thailand

Collected: July 14, 1976 by L. C. Knorr and sent under #T443

Host: Melia sp. (Melioideae, Meliaceae, Geraniales)

Relation to host: The mites live on both sides of the leaves in heavy infestation, the damage tending to follow veins and discoloration and necrosis follow veins.

Type material: Five slides with the above data; one designated type. Dry leaves with mites from which the slides were made.

Designations on Plates -

API	- Internal female genital structures		
CS	- Lateral view of caudal section	GF1	- Female genitalia and coxae
D	- Dorsal diagram of mite	L1	- Left anterior leg
DA	- Dorsal view of anterior section	L2	- Left second leg
ES	- Lateral epidermal structures	S	- Side diagram of mite
F	- Empodium or featherclaw	SA	- Anterior side view of mite

Telosome - caudal abdominal section beginning with third ventral seta
Thanosome - abdomen from rear shield margin to telosome

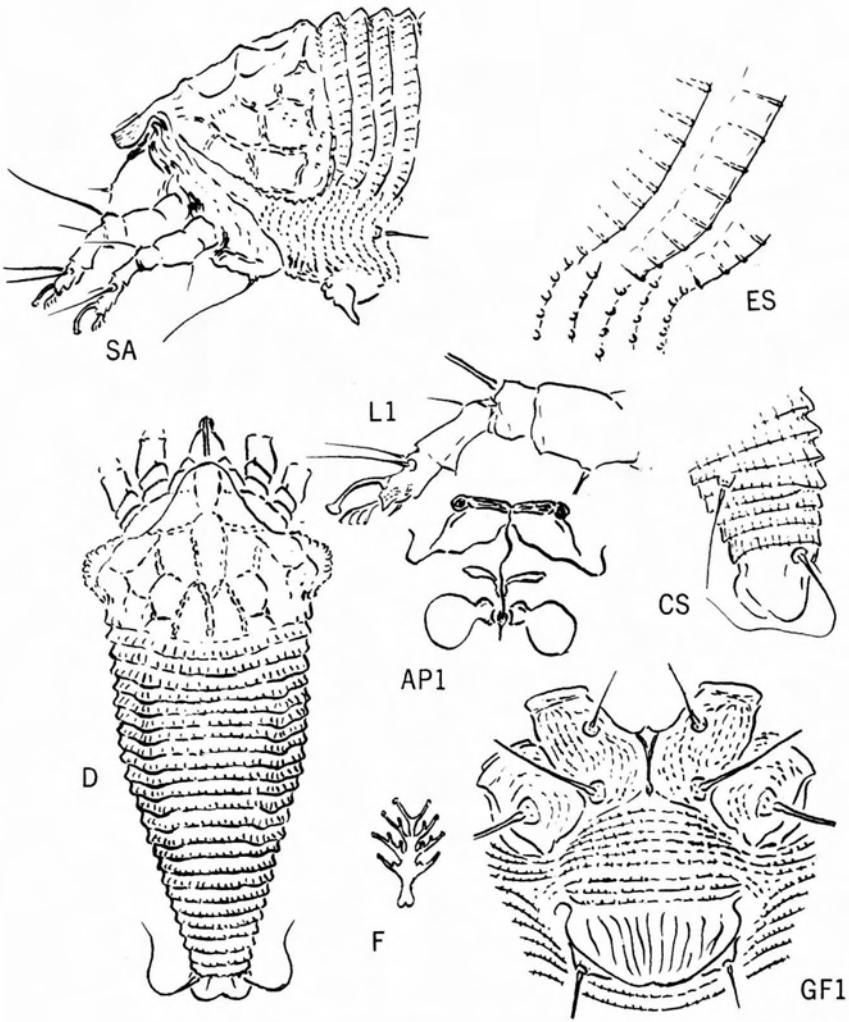

Plate 3 - Phyllocoptruta meliae, new species

Aculops eugeniae, new species

Plate 4

Another Florida gall making species in the genus Aculops with which it is possible to compare eugeniae is Aculops alachuae K. 1966. Both species have 4-rayed featherclaws but alachuae which infests a species of Rhus has more granules on the sides of the shield, granules on the coxae, the microtubercles on the abdomen are stronger, and the ribs on the female genital coverflap are stronger. Both species are of the type in this large genus that have rust mite structures but are now gall makers. This suggests that they were previously free-living rust mites. Reference to alachuae: Eriophyid Studies B-21:13-14, Cal. Dept. Agr.Bur.Ent. Nov. 23, 1966.

Female 145μ-155μ long by 38μ thick; body shape fusiform; color light yellowish-white. Rostrum 20μ long, projecting down; antapical seta 4μ long. Shield 30μ long, by 39μ wide, subtriangular in dorsal view with sides convex to some extent; anterior lobe short over rostrum, not pointed. Shield design of lines: Median line broken and irregular, on rear 1/2 of shield. Admedian lines complete from sides of narrow anterior lobe, subparallel, somewhat curving out on rear 1/2 and ending at rear margin either curved in or out. First submedian line short, projecting diagonally outward for short distance from admedian at about 1/5 and ending at about 1/2. Second submedian line from side of admedian just behind anterior shield lobe, running diagonally outward to about 1/3 then strongly curving inward nearly to admedian at 3/5 and recurving outward and ending just on outer side of dorsal tubercle. A transverse line at rear shield margin curves across just in front of dorsal tubercle and meets second submedian line. Laterally the shield with 2 longitudinal lines above coxae; about 3 partial rings below dorsal tubercles. Dorsal tubercles 24μ apart, on rear margin, directing 23μ long dorsal setae divergently to rear. Foreleg from trochanter base 29μ long; tibia 8μ long, with 5μ seta from 1/4; tarsus 6μ long; claw 7μ long; featherclaw 4-rayed. Hindleg 25μ long, tibia 5μ long, tarsus 6μ long, claw 7μ long. Sternal line or apodeme between forecoxae strong, ending between second coxal tubercles. First setiferous coxal tubercles farther apart than second tubercles and behind anterior end of sternal line. Second coxal tubercles somewhat ahead of level of third coxal tubercles. Few granules or short dashes on coxae. Abdominal thanosome with about 36 tergites and 53 sternites. Thanosome completely microtuberculate except rear dorsum where microtubercules fade. Microtubercles touching rear ring margins but not pointed. Lateral seta 18μ long, on sternite 6 behind shield. First ventral seta 45μ long, on sternite 18; second ventral seta 11μ long, on sternite 36. Abdominal telosome with about 6 rings. Microtubercles on telosome absent dorsally but faintly present on last two rings; microtubercles stronger laterally and ventrally. Telosomal seta 16μ-17μ long. Accessory seta 2-μ4μ long. Female genitalia 12μ long by 20μ wide; female genital coverflap with about 8 rather weak longitudinal ribs; seta 16μ long. Male about 125μ long.

Type locality: Miami, Florida

Collected: June 3, 1976 by J. Debaby and sent by H. A. Denmark under Florida #E897.

Host: Eugenia uniflora L. (Myrtaceae, Myrtiflorae)

Relation to host: the mites make numerous upper surface bead galls, often deforming the leaves.

Type material: four slides with the above data, one designated type; dry leaves from which the slides were made.

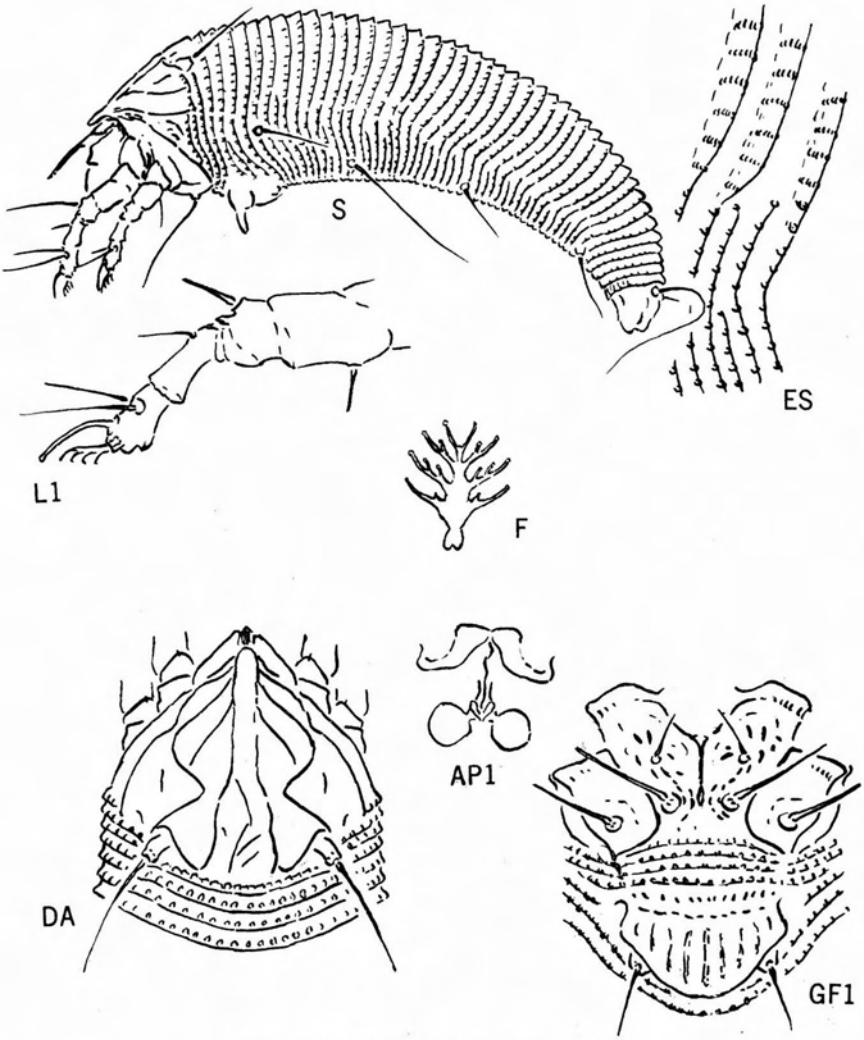

Plate 4 - Aculops eugeniae, new species

Aculops verbenae, new species

Plate 5

The only other known species in Aculops with a 4-rayed featherclaw and a shield with an anterior declivitous front margin is lycopersici Massee 1939. Aculops lycopersici differs from verbenae by having the admedian shield lines farther apart anteriorly and having diagonal lines between upper and lower longitudinal lines which form about 5 'cells' on each side. Aculops lycopersici has tergites almost entirely lacking microtubercles, whereas verbenae has strong microtubercles on tergites. Reference for lycopersici: Ann.Mag.Nat.Hist.Series II, Vol. 3, page 617 June 1939.

Female from frontal shield margin 160μ-172μ long, 48μ thick; fusiform body; probably yellowish in life. Rostrum 19μ long, projecting down; antapical seta 4μ long. Shield 32μ long by 35μ wide, subsemicircular in dorsal view with short declivitous anterior lobe over rostrum, the declivity extending laterally to over first coxa. Median shield line broken, on rear 3/4, granular-like enlargements on part of the segments. Admedian shield lines complete, sinuate, gradually diverging, with central part lined with granular enlargements; larger short lines extending diagonally inward at about 4/5 and enlarged; admedian lines ending either extending diagonally inward or outward. Submedian line from side of anterior lobe extending back toward dorsal tubercle, sinuate, some thickenings centrally, ending curving outward in front of dorsal tubercle. Transverse line running along rear shield margin, curving around ahead of dorsal tubercle, curving abruptly forward from position lateral to dorsal tubercle. Only 1 or 2 partial rings below dorsal tubercle. Dorsal tubercles on rear margin, 23μ apart and directing 11μ long dorsal setae slightly divergently to rear. Sternal line or apodeme moderately long, not clearly forked to rear. First setiferous coxal tubercles about opposite anterior end of sternal line and directly ahead of second tubercles; second setiferous coxal tubercles well ahead of level of third tubercles. Abdominal thanosome with about 29 tergites and 47 sternites. Microtubercles strong and pointed over sternal margin below, tending to be coarse; above touching margins of tergites. Tergal microtubercles tending to become fainter or smaller on some specimens. Lateral seta 10μ long, on sternite 5 behind shield; first ventral seta 12μ long, on sternite 18; second ventral seta 8μ long, on sternite 32. Abdominal telosome with 6-7 rings; telosomal microtubercles pointed over ring margins, expecially above. Telosomal seta 7μ long. Accessory seta 5μ long. Female genitalia 12μ long by 23μ wide; coverflap with basal short longitudinal dashes and about 8 rather weak longitudinal ribs. Genital seta 8μ long. Male 130μ-145μ long.

Type locality: Yuyuza, south of Tamazulapan, Oaxaca, Mexico

Collected: July 9, 1974 by D. M Tuttle

Host: Verbena sp. (Verbenaceae, Tubiflorae)

Relation to host: The mites presumably are leaf vagrants or rust mites

Type material: Four slides with the above data, one designated type; mites in liquid in vial.

In all cases where paratypes are indicated one paratype will go to the Agricultural Research Center (West), Beltsville, Maryland

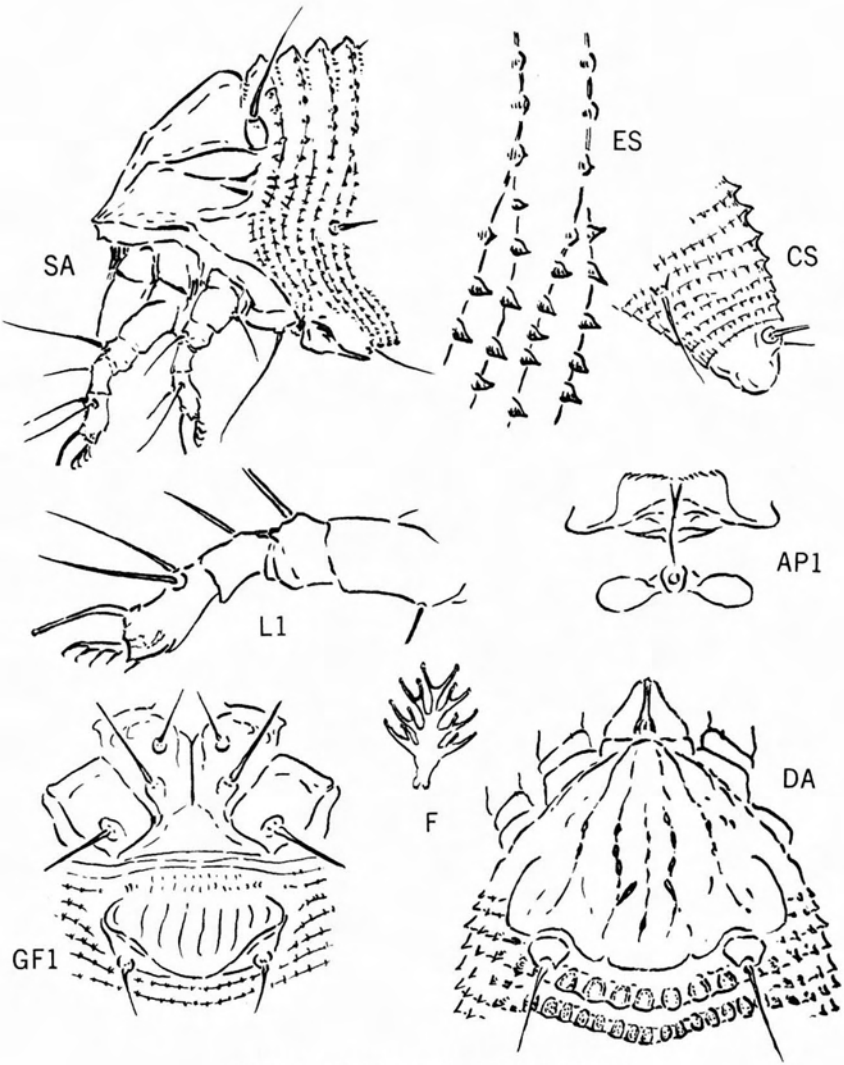

Plate 5 - Aculops verbenae, new species

Aculops caesalpiniae, new species

Plate 6

There is a series of Aculops spp. that inhabits leguminaceous plants in the western hemisphere, especially trees and shrubs, the members of which mite genus tend to be similar to eachother. The average number of featherclaw rays in Aculops is 4. All leguminaceous infestors have so far proved to have more rays than that, averaging about 6. With the new species here described the number having 8-rayed featherclaws increases to four. Another tendency this series displays is moderately widely separated admedian shield lines. The new species, caesalpiniae, has weaker microtuberculation than other species so far discovered. Perhaps the nearest known species to caesalpiniae is the North American tephrosiae (K.). Ref.- Eriophyid Studies B-6, Cal.Dept.Agr.Bur. Entomology, p. 17, March 1962.

Length of female from frontal shield lobe to terminal lobes 140μ-150μ, 52μ thick,a moderately robust rust mite probably light yellowish white in color in life. Shield 28μ-30μ long by 38μ wide,subsemicircular in anterior outline,with small anterior lobe over rostrum base. Shield pattern of almost obscure lines, part discontinuous.Median line present on rear 3/4, ending just before rear shield margin in a faint dart-shaped mark.Admedian shield lines complete, moderately widespread, sinuate, ending at rear margin. First submedian line from front margin just lateral to admedian, thence diverging toward lateral line,receiving a lateral line from admedian at about 1/3 and a second at 2/3, ending well ahead of dorsal tubercle. Lateral line of dashes, outward of submedian and ending at first partial ring below dorsal tubercle. Some 'cells' along lateral shield margin and 2 or 3 partial rings below dorsal tubercle. Dorsal tubercles 19μ apart,on rear margin, directing 16μ dorsal setae directly to rear. Foreleg from trochanter base about 26μ long;tibia 7μ long with 7μ seta from about 1/4; tarsus 5.5μ long; claw 8.5μ long, strongly downcurved; featherclaw 8-rayed. Hindleg about 24μ long, tibia 5.5μ long, tarsus 5.5μ long, claw 9μ long. Coxae with lines of small microtubercles; first coxal setiferous tubercle slightly farther apart than second tubercles, the tubercles about on the level of anterior forecoxal approximation. Second setiferous coxal tubercles a little ahead of level of third tubercles. abdominal thanosome with 36 to 38 tergites, the microtubercles varying from nearly absent dorsally to somewhat elongate and projecting over margins, especially to rear, and being slightly pointed. Sternites about 49 in number, with small microtubercles on margins. Lateral seta 24μ long, on sternite 6 behind rear shield margin;first ventral seta 30μ long, on sternite 17; second ventral 9μ long, on sternite 32. Abdominal telosome with 6 rings. Microtubercles elongate. Telosomal seta 32μ long. Accessory seta 3μ long. Female genitalia 12μ wide by 19μ long,coverflap with 11-13 longitudinal ribs. Genital seta 18μ long.

Male 130μ-144μ long. Part of males with more pointed microtubercles than those displayed on females.

Type locality: Piracicaba, S. P., Brasil

Collected: October 4, 1976 by C. H. W. Flechtmann of the University of São Paulo

Host: Caesalpinia ferrea Mart. (Leguminosae, Caesalpinioideae) known locally in Portuguese as 'pau ferro'.

Relation to host: The mites are underside leaf rust mites

Type material: Five slides with the above data and one designated as the type slide.
Dry leaves from which the slides were made and which bear dry mite mummies.

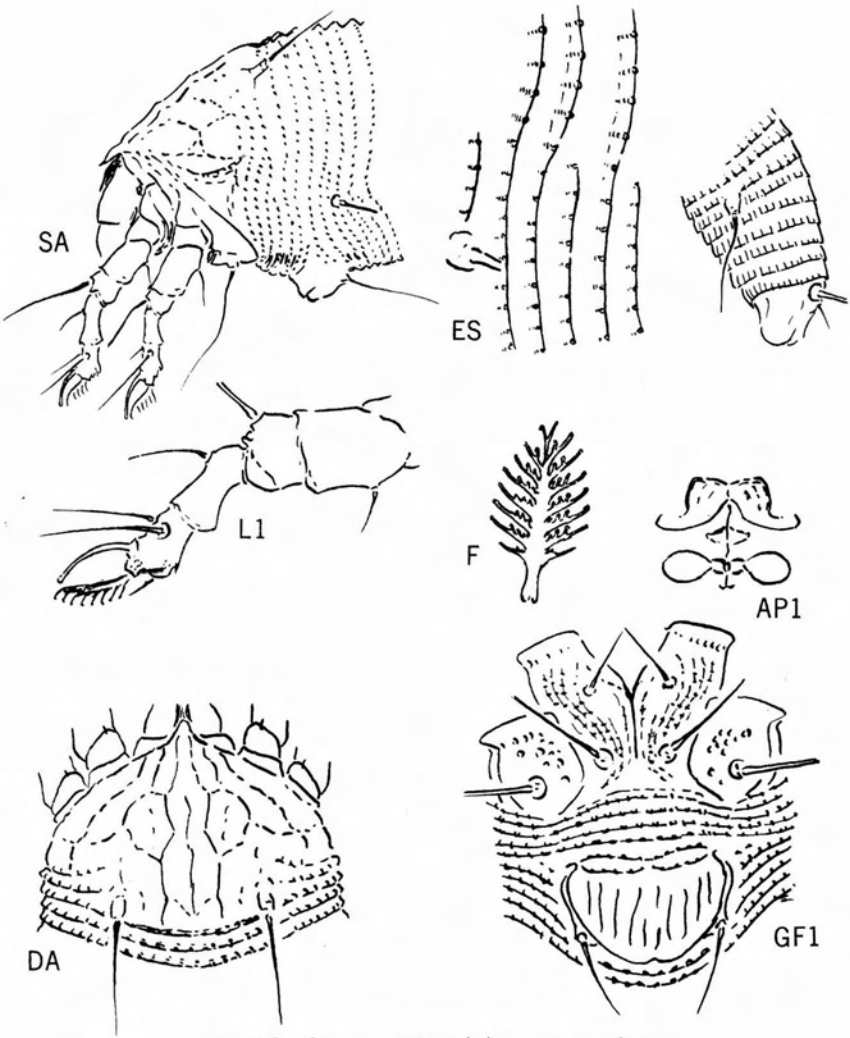

Plate 6 - Aculops caesalpiniae, new species

Aculops caricae, new species

Plate 7

While there is considerable variation in the position of the first coxal seta in the species referable to the genus Aculops, the present new one displays the most extremely advanced location that has so far come to hand.The first seta in this case is on the anterior end of the forecoxa. One other species, Aculops rhodensis (K.), originally found on willow in Rhode Island, has the first seta positioned nearly as far ahead, but not quite as advanced. Reference for rhodensis - Bul.Cal. Dept.Agr. Vol. XLVI(3):247, Sept. 1957 (Eriophyid Studies XXV).

Female 175μ-200μ long, about 65μ thick, a rather robust species, brownish in color.Rostrum 22μ long, projecting down; antapical rostral seta 8.5μ long.Shield subtriangular in anterior outline with sides bulging to some extent. Shield design a variable network with coarse central lines and more or less prominent sublateral lines. Median line present on rear 1/2, connected with admedians by transverse lines at 1/2 and 3/4. Admedian lines extending back from side of acute anterior shield point to 1/4, at which position meeting a transverse line from first submedian line then extending back to cross line at 1/2, from there arching outward and back to cross line at 3/4 and arching back to rear shield margin. First submedian line forming more or less distinct 'cells' with transverse line at 1/4 and 1/2,the area in front of dorsal tubercle with obscure dashes.Laterally the shield with two longitudinal lines, the upper from the transverse line at 1/4 and the lower from side of anterior lobe, between which lines there are about 3 or 4 cells formed by cross lines. A granular band above coxae. Three or 4 partial rings below dorsal tubercles. Dorsal tubercles 28μ apart, on rear margin and directing setae divergently to rear, the setae 9μ-12μ long. Foreleg 31μ long from trochanter base; tibia 8.5μ long, with 5.5μ seta from 1/4; tarsus 6.5μ long; claw 7μ long, downcurved; featherclaw with 7 rays but variable. Hindleg 29μ long, tibia 6μ long, tarsus 6μ long, claw 7.5μ long.Coxae with short sternal line, bifurcate fore and at rear; coxal surface with lines of fine granules. First setiferous coxal tubercle situated at inner anterior margin of forecoxa, farther apart than second tubercles; second setiferous coxal tubercles almost in line with third tubercles.Abdominal thanosome with about 36 tergites and 58 sternites. Completely microtuberculate thanosome, the dorsal microtubercles somewhat elongate and touching tergal margins; sternal microtubercles resting on margins. Lateral seta 25μ long, on sternite 7 behind shield; first ventral seta 48μ long, on sternite 22; second ventral seta 42μ long, on sternite 39.Abdominal telosome with 6 rings, the microtubercles elongate, fine, and projecting as fine points over ring margins.Telosomal seta 18μ long. Accessory seta 3.5μ long. Female genitalia 16μ long by 21μ wide; coverflap with 10 to 12 longitudinal ribs. Genital seta 18μ long.

Male 160μ-170μ long, generally smaller than female.

Type locality: Bangkhen, Thailand

Collected: October 6, 1976 by L. C. Knorr and sent under # T491a

Host: Carica papayi L. (Caricaceae, Parietales) papaya

Relation to host: The mites are rust mites, mostly on the upper surface of the leaves.

Type material: Five slides with the above data and one designated type. Dry leaves from which the slides were made.

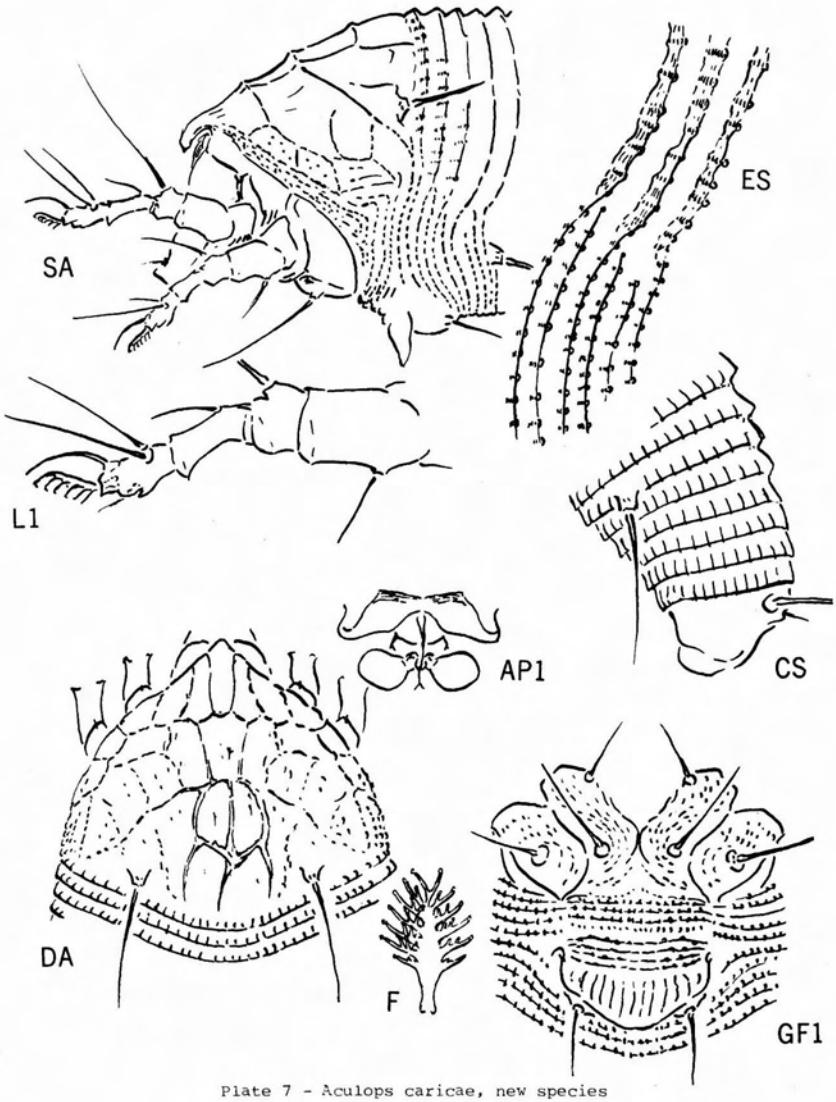

Plate 7 - Aculops caricae, new species

Acalitus malpighiae, new species

Plate 8

The characters distinguishing malpighiae are: 4-rayed featherclaw; fused forecoxae;forefemora lacking spine;weak shield design of longitudinal lines; female genital coverflap granulate and lacking ribs. Perhaps the closest Acalitus spp. to the new one is the gossypii (Banks) and Acalitus sphaeralceae K. complex, but these species have more and stronger shield lines. Reference to sphaeralceae: Eriophyid Studies B-14, Cal.Dept.Agr.Bur.Ent. p. 3, May 17, 1965.

Female 120μ-160μ long, 37μ thick; body wormlike in shape, light yellowish-white in color. Rostrum 14μ long, bent down;antapical seta very small.Shield 20μ long by 29μ wide; subsemicircular in anterior outline. Design of longitudinal lines, but weak. Median line present on rear 1/5 and broken. Admedian lines visible on rear 2/3, broken, curving outward and back on rear 1/2. Sparse granulations in area ahead of dorsal tubercle. Shield laterally with longitudinal line curving with shield outline, broken; granular area above coxae; 3 partial rings below dorsal tubercle.Foreleg from trochanter base 20μ long; forefemora lacking spine; tibia 3μ long, tarsus 5μ long;claw 5.5μ long; featherclaw 4-rayed.Hindleg 20μ long, tibia 2.5μ long, tarsus 5μ long, claw 8.5μ long. Forecoxae fused across midline. First setiferous coxal tubercle moved to near anterior end of forecoxa; all 3 coxal tubercles nearly in an anteriorly diverging line. Coxae generally granular. Abdominal thanosome with about 53 rings;microtubercles small, rounded,rather crowded. Lateral seta 16μ long, on ring 7 behind shield; first ventral seta 43μ long, on ring 20; second ventral seta 23μ long, on ring 35. Abdominal telosome with 6 rings;microtubercles rather close-set, finely extended forward from rear ring margins.Telosomal seta 13μ long,stiff. Accessory seta absent. Female genitalia 12μ long by 18μ wide; basal 2/3 of coverflap granulate. Genital seta 6μ long.

Male 150μ long.

Type locality: Coastal swamp in St. Thomas Parish, Jamaica

Collected: Nov. 24, 1974 by J. L. Vivaldi, and sent by Dr. G. E. Eichwort of Cornell University

Host: Malpaghia glabra L. (Malpighiaceae, Geraniales)

Relation to host: The mites make peculiar spiculate erineum on the underside of the leaves

Type material: Four slides with the above data and one designated type. Dry leaves with erineum and mites from which the slides were made.

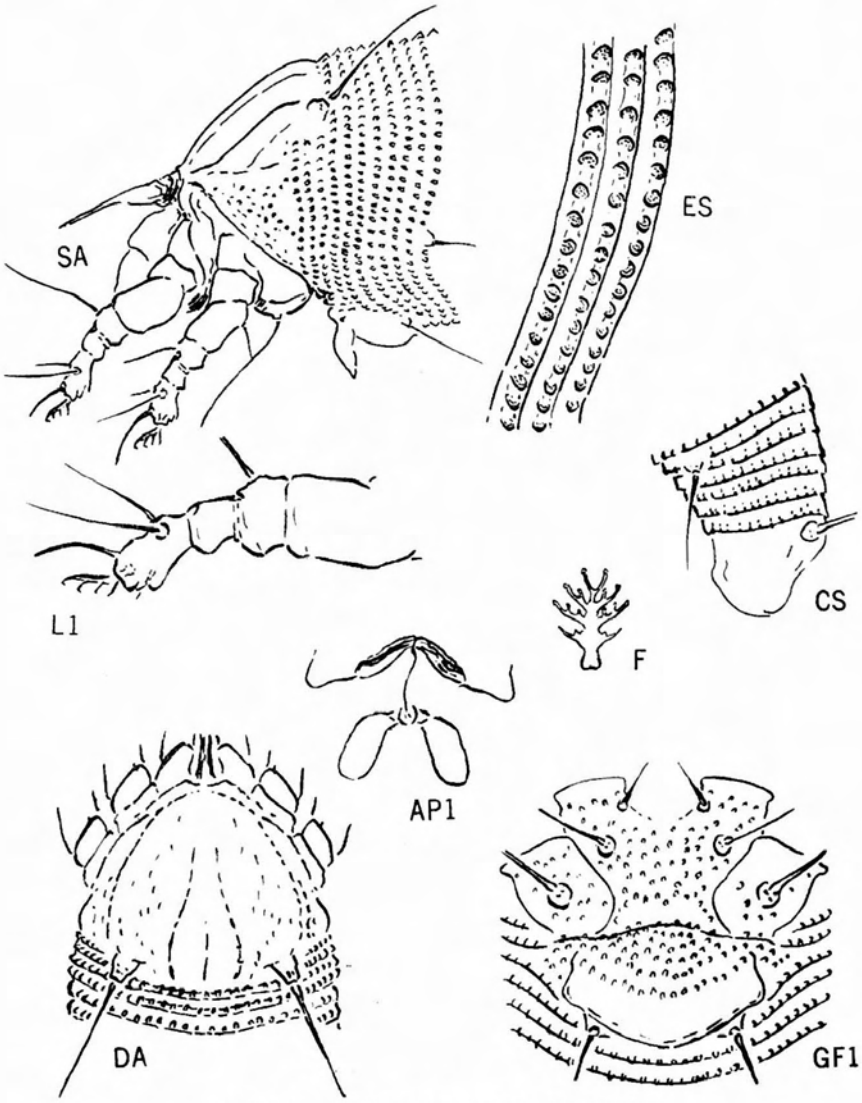

Plate 8 - Acalitus malpighiae, new species

Phytoptus paraspiraeae, new species

Plate 9

The original view was that the eriophyid making galls in flowers of native spiraea in the California mountains was the same as the spiraea flower gall former in Europe. However, further study of the mite occurring in California discloses some notable differences between this western hemisphere population and the European Phytoptus spiraeae Nal. The California species has 6-rayed featherclaws whereas Nalepa states that spiraeae has 5-rayed featherclaws. Nalepa's figure of the cephalothoracic shield indicates solid lines in the design, whereas paraspiraeae has very broken lines. Nalepa further states that the abdomen of spiraeae has 75 rings, whereas paraspiraeae has about 62 rings. A reference for Phytoptus spiraea Nal. is: Denk.Akad.Wiss.Wien 1895, Vol. LXII, p. 11, Plate 3, fig. 7,8.

Female length 155μ-175μ, thickness 36μ. A wormlike species light yellowish white in color. Rostrum 22μ long, bent down. Shield 31μ long by 32μ wide. subsemicircular in anterior outline. Shield design of broken lines which completely cover the surface. Median line represented by 2 subparallel lines. Admedian lines complete and gradually diverging to rear, but recurving at end. Area in front of dorsal tubercle and over onto side of shield continuing the broken line pattern. Two or 3 partial rings below dorsal tubercle. Dorsal tubercles not far ahead of rear margin, axes longitudinal, 12μ apart, directing dorsal setae up and usually inward or ahead Foreleg from trochanter base 28μ long; tibia 6μ long, with 6μ seta from about 1/3; tarsus 7μ long; claw 8μ long, downcurved; featherclaw 6-rayed. Hindleg 27μ long, tibia 5μ long, tarsus 5.5μ long, claw 8μ long. Forecoxae with moderately strong sternal line between, not forked at rear. Coxal surfaces with sparse microtubercles. First setiferous coxal tubercles slightly farther apart than second tubercles, and about on level of anterior coxal approximation. Second tubercles a little ahead of level of third tubercles. Abdominal thanosome with about 56 rings, some increase in ring number toward dorsum. Microtubercles rounded and resting on rear ring margins. Lateral seta 21μ long, on ring 7 behind shield; first ventral seta 31μ long, on ring 19; second ventral seta 21μ long, on ring 34. Abdominal telosome with 6 rings, the microtubercles mostly rounded as on thanosome. Telosomal seta 20μ long. Accessory seta 6μ long. Female genitalia 21μ wide by 14μ long, with about 10 longitudinal ribs. Genital seta 25μ long.

Male 130μ long.

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

Collected: August 25, by Tokuwo Kono and H. H. Keifer

Host: Spiraea densiflora Nuttall (Rosaceae)

Relation to host: The mites make pear-shaped galls in the flower heads, the gall interior having longitudinal aborted flower parts

Type material: Five slides with the above data and with one designated as type.
Also an envelope with dry flowers and numerous galls.

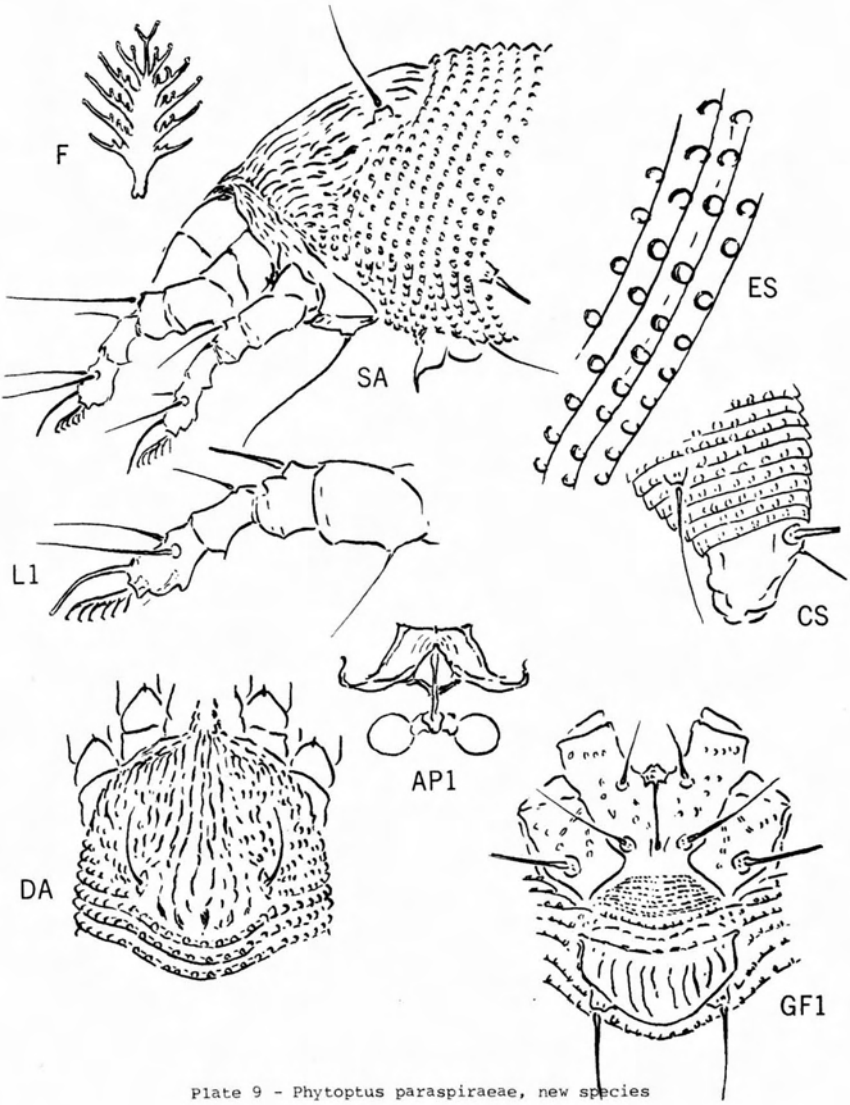

Plate 9 - Phytoptus paraspiraeae, new species

Phytoptus manilkarae, new species

Plate 10

Of the few species in Phytoptus that have 5-rayed featherclaws, the present new species differs by having no longitudinal ribs on the female genital coverflap.

Female length 140μ-190μ; thickness 40μ; a moderately elongate wormlike species, light yellowish white in color. Shield 21μ long by 27μ wide. Shield design of lines: median line very short and situated just ahead of rear margin; admedian shield lines complete, extending almost straight back from anterior shield margin, set close together, curving out somewhat at 2/3 and recurving laterad to median line at rear margin. First submedian line just ahead of dorsal tubercle, present only on rear half of shield, curving out and recurving back to dorsal tubercle. Shield laterally with one or 2 longitudianl lines and some granulations above coxae; about 4 partial rings below dorsal tubercle. Dorsal tubercles situated on rear margin, 9μ apart, directing 13μ long dorsal setae divergently ahead. Foreleg from trochanter base 21μ long; tibia 4μ long, with 5μ seta from about 1/2; tarsus 6μ long; claw 6μ long, downcurved; featherclaw 5-rayed. Hindleg 19μ long, tibia 3μ long, tarsus 5μ long, claw 7μ long. Sternal line between forecoxae strong and extending back to just past level of second setiferous coxal tubercles. First setiferous coxal tubercles about on level of forecoxal approximation, slightly closer than second tubercles; second coxal tubercles somewhat ahead of level of third tubercles. Abdominal thanosome with about 48 rings. Micotubercles elliptical above, rounder ventrally, touching ring margins above, slightly ahead below. Microtubercles rounded off. Lateral seta 17μ long, on ring 6 behind shield; first ventral seta 28μ long, on ring 18; second ventral 3μ long, on ring 29. Telosome with 7 rings; microtubercles moderately well separated, touching ring margins. Telosomal seta 10μ long. Accessory seta 3μ long. Female genitalia 18μ wide, 15μ long. Coverflap with no ribs. Genital seta 4μ long.
Male 130μ long.

Type locality: Pataya, Thailand

Collected: July 20, 1976 by Dr. L. C. Knorr, #T424c

Host: Manilkara hexandra Dubard (Sapotaceae, Ebenales)
Manilkara also equated with Mimusops

Relation to host: Forming conspicuous erineum pockets on underside of leaves, the pockets projecting out of upper surface

Type Material: Four slides with the above data and one designated type; dry leaves with erineum pockets and dead mites within.

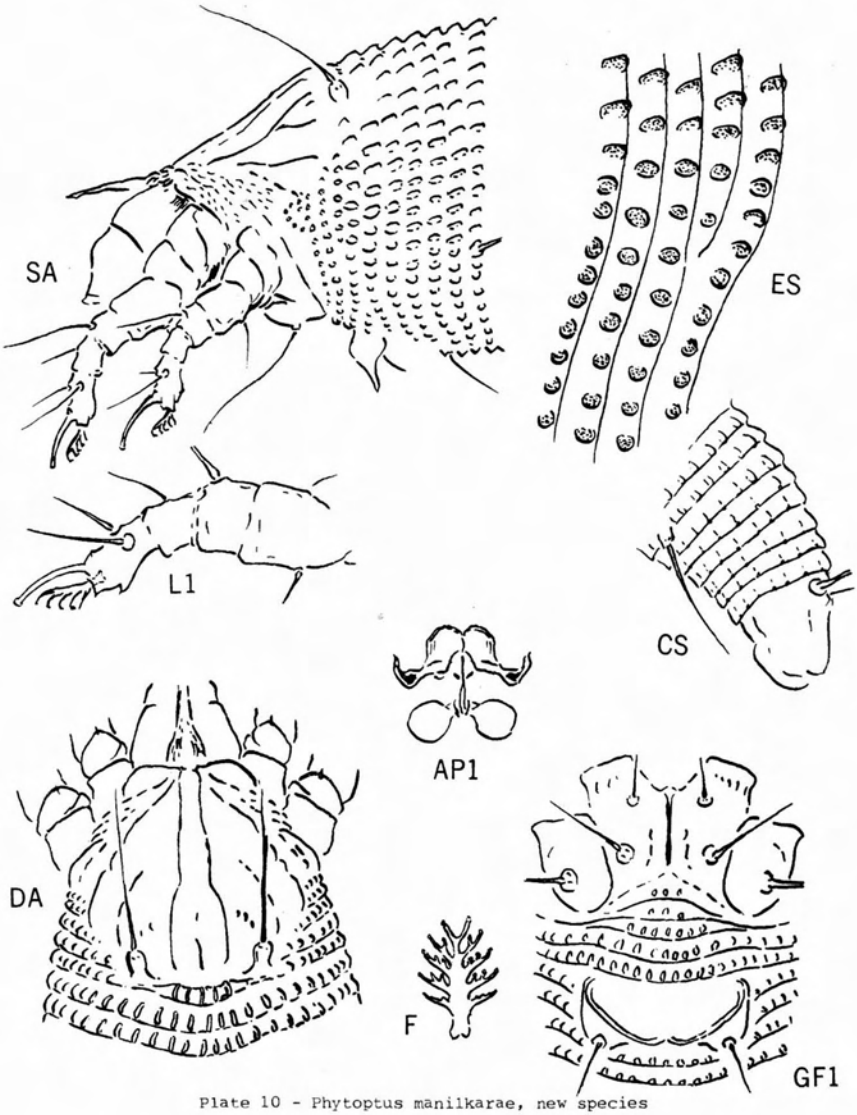

Plate 10 - Phytoptus manilkarae, new species

Eriophyes wagnoni, new species

Plate 11

The new species here named is closest to Eriophyes pallida (K.). It differs from pallida mainly by having weak longitudinal ribs on the female genital coverflap. Other differences are the slightly longer points on the microtubercles and the granulations along the remnants of the admedian lines just before the rear shield margin. Reference for pallida - Eriophyid Studies B-12, p. 3, Bur.Ent.Cal.Dept.Agr. June 11, 1964.

One of the largest females of wagnoni on the slides contains an egg which is closest to the genital orifice, followed by egg shells and by two nymphs. The size of this female would imply maximum age and that she had become unable to extrude any more eggs. The internal nymphs had proceeded to hatch because they were ready.

Female from front of shield to terminal lobes from 190μ to 310μ long, 60μ-80μ thick. Light yellowish wormlike body. Rostrum 25μ long, bent down; antapical rostral seta 8μ long. Shield 32μ long by 40μ wide. Shield almost without lines: median line slightly indicated before rear margin; admedian lines present only just ahead of rear margin and curving centrad and almost meeting at rear shield margin. A few granulations between admedians and dorsal tubercles which may extend laterally ahead of dorsal tubercles. Laterally 3 or 4 partial rings below dorsal tubercles. Dorsal tubercles 20μ apart, on rear shield margin and directing 30μ setae divergently to rear. Foreleg from trochanter base 32μ long; tibia 6μ long, with 6.5μ seta from 1/4; tarsus 7μ long; claw 8μ long, downcurved; featherclaw 5-rayed. Hindleg 27μ long. tibia 5μ long, tarsus 6μ long, claw 8μ long. Coxae with few lines or markings: first setiferous coxal tubercles somewhat ahead of anterior forecoxal approximation and farther apart than second tubercles; second tubercles near rear end of forecoxae and ahead of level of third coxal tubercles. Abdominal thanosome with about 64 rings. Thanosomal rings entirely microtuberculate, the microtubercles pointed and projecting over rear ring margins. Lateral seta 18μ long, on ring 8 behind shield; first ventral seta 56μ long, on ring 22; second ventral 49μ long, on ring 38. Abdominal telosome with 5 to 7 rings; microtubercles mostly fine and pointed over margins, extended anteriorly as fine lines, longer below. Telosomal seta 29μ long. Accessory seta 7.5μ long. Female genitalia 13μ wide by 20μ long; female coverflap with 6 to 8 weak longitudinal ribs. Genital seta 16μ long.

Male 180μ to 210μ long.

Type locality: Vallecito Creek box canyon, northwest of Vallecito, Laguna Mountains, San Diego Co. Cal.

Collected: Nov. 19, 1976 by H. K. Wagnon, for whom I am pleased to name this species.

Host: Lycium cooperi Gray (Solanaceae, Tubiflorae) box thorn

Relation to host: The mites make a large central blister in the small leaves with spout-like opening on the underside.

Type material: Five slides with the above data and from which a type slide is designated. Also dry leaves from which the slides were made.

Specimens are also on hand from this same host, taken in the Phelan district of San Bernardino County in 1954 by R. A. Flock.

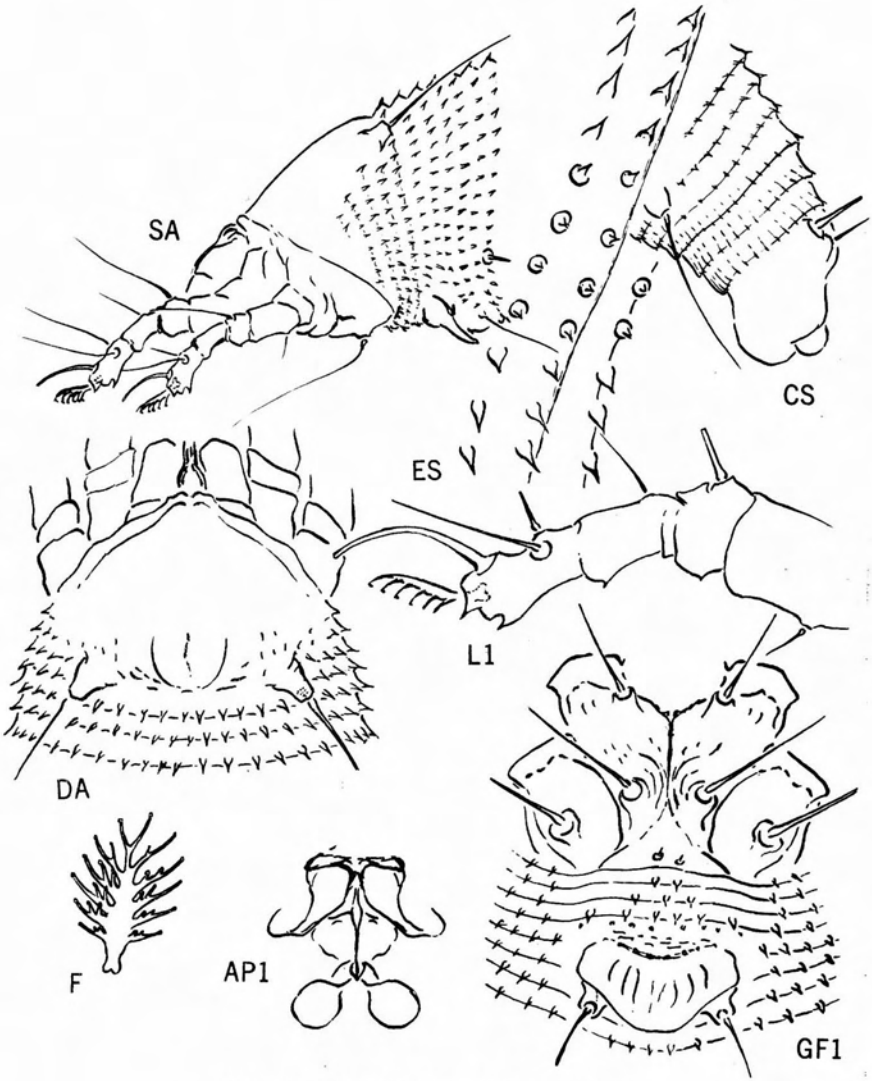

Plate 11 - Eriophyes wagnoni, new species

Cheiracus, new genus

In a generic key to the rhyncaphytoptids (diptilomiopids) the genotype runs to Rhyncaphytoptus, but differs, among other things, by the broad longitudinal trough on the abdominal dorsum. The featherclaw is unique, being apparently undivided but with rays projecting radially anteriorly from a central plate, which also has numerous central rays. This featherclaw can be likened to a hand and the generic name is cheir which means hand, followed by acus as a contraction of acarus.

Rostrum with long form oral stylet. Shield with broad rigid lobe over the rostral base; dorsal tubercles somewhat ahead of rear shield margin and projecting dorsal setae diagonally centrad to rear. Legs with all usual setae, the foretibial seta situated on inner side of tibia. Featherclaw with rays projecting anteriorly radially and with many inner branches. Abdominal thanosome with moderately broad tergites and narrow sternites. Thanosomal dorsum with broad trough beginning about 2 tergites after rear shield margin and ending about 2 or 3 rings before telosome. Abdominal telosome with about 8 to 10 rings. Female gengenital apodeme projecting moderate distance ahead of base of coverflap.
Genotype: Cheiracus sulcatus, new species

Cheiracus sulcatus, new species

Plate 12

Female length from anterior shield lobe 145μ-155μ; width 52μ. Body fusiform; color in life golden to brown. Rostrum 34μ long, projecting down; antapical rostral seta 8μ long. Shield 45μ long by 48μ wide. Design on shield obscure: median line indicated by faint lines or thickenings on rear 1/4. Admedian shield lines apparently indicated as running from sides of anterior lobe, obscure centrally, but indicated between dorsal tubercles as outwardly convex lines, ending between dorsal tubercles. Shield laterally with fine irrorations. Dorsal tubercles somewhat ahead of rear shield margin, basally rather large, directing 5μ setae diagonally centrad to rear. Foreleg from trochanter base approximately 36μ long; tibia 10μ long, with 8μ seta from 1/3 on inner side; tarsus 8μ long; claw 9.5μ long, tapering, downcurved. Featherclaw with about 16 rays around margin, many internal branching rays; featherclaw not divided but displaying no definite central stem, only a pad. Hindleg 33μ long, tibia 10μ long, tarsus 7μ long, claw 9.5μ long. Sternal line or apodeme strong, projecting back past second coxal tubercles and forked, with forks curving laterally and back to rear inner angle of second coxa. Coxae generally with fine irrorations. First setiferous coxal tubercles set about half way back along sternal line and farther apart than second tubercles. Second tubercles at rear central end of forecoxae and well ahead of third tubercles. Abdominal thanosome with 16-18 tergites amd 57 to 60 or more sternites. Thanosome dorsally with broad trough. Tergites lacking microtubercles; sternites with fine beadlike microtubercles lining sternal margins. Lateral seta 17μ long, on about sternite 7-9 behind rear shield margin. First ventral seta 37μ long, on sternite 21; second ventral 33μ long, on sternite 38. Abdominal telesome with about 10 rings; dorsally with fine microtubercles pointed over ring margins, ventrally the microtubercles more prominent and more elongate to rear. Telosomal seta 34μ long. Accessory seta absent. Female genitalia 14μ long by 23μ wide; coverflap basally with pattern of short longitudinal dashes; genital seta 10μ long. Male 140μ-150μ long.

Type locality: Ban Pa Ha, Chiong, Rai Provence, Northern Thailand

Collected: Nov. 14, 1976 by L. C. Knorr and sent under #T519

Host: Oryza sativa L. (Oryzae, Graminae, Glumiflorae) rice

Relation to host: The mites live on blade undersides. Apparently no or little damage results from their activities.

Type material: Two slides with the above data, one designated type envelope with dry blades bearing dry mites.

Reference to Rhyncaphytoptid generic key: Jeppson, L. R. et al, Mites Injurious to Economic Plants, pp. 584-586, Univ. Cal. Press, 1975

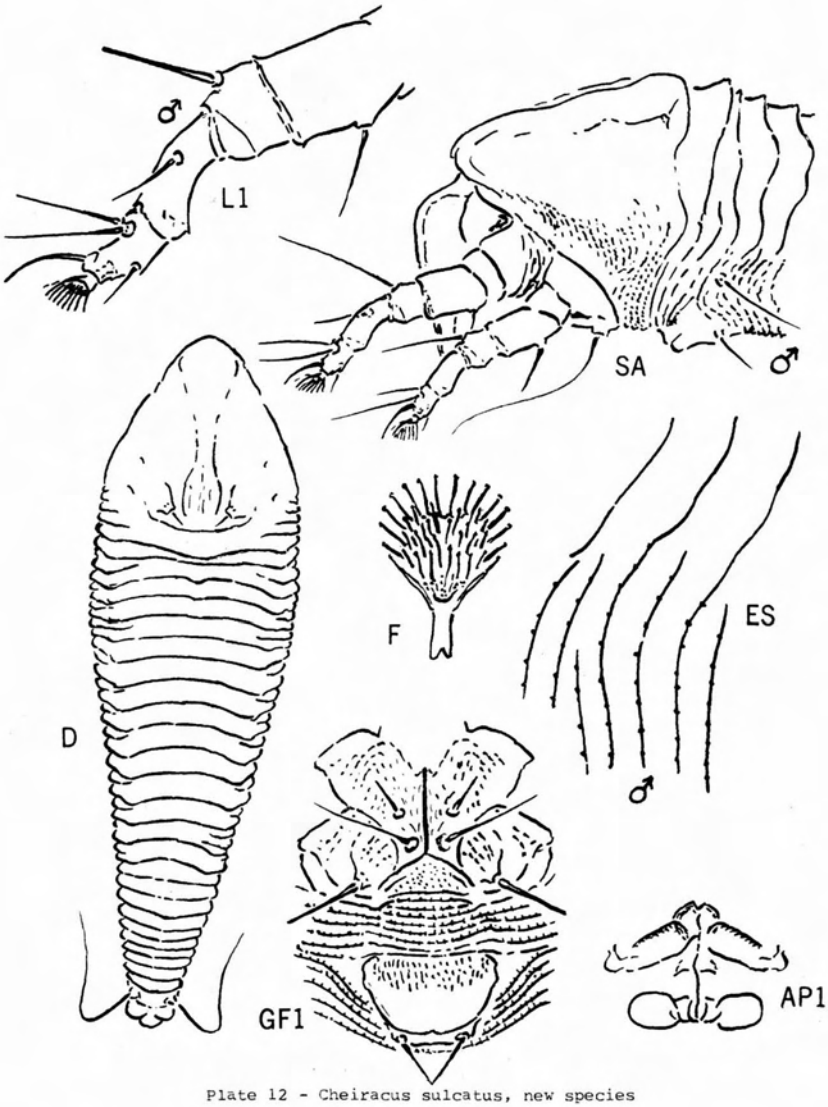

Plate 12 - Cheiracus sulcatus, new species