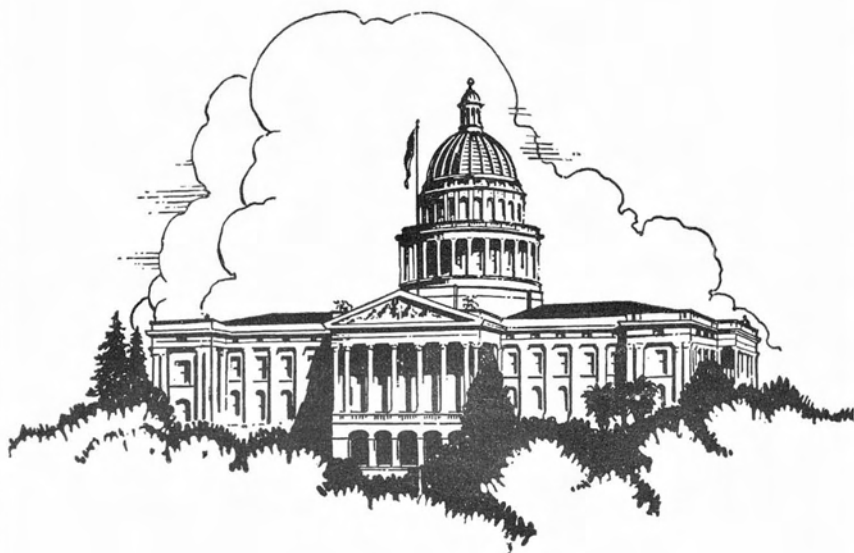


BULLETIN
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ERIOPHYID STUDIES VI

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Eriophyid Studies V was issued in the Bul. Cal. Dept. Agr., Vol. 28, No. 5, p. 328, July 7, 1939. The present installment adds ten additional new species to the series.

Eriophyes prunandersoni Keifer, new species

Plate LXXXII

Female 230-250 μ long, 50 μ thick, wormlike, light yellow. Rostrum 23.5 μ long, curved down. Shield 33 μ long, 38 μ wide, median line broken, admedians distinct, submedians divergent, sides with granular lines; dorsal tubercles 16 μ apart, a little ahead of rear margin, dorsal setae 16 μ long, projecting dorso-anteriorly. Forelegs 32 μ long, tibia 7.5 μ long, tarsus 8.5 μ long, claw 9 μ long, tapering, slightly knobbed, featherclaw 4 rayed. Hindlegs 30 μ long, tibia 5.5 μ long, tarsus 8 μ long, claw 9.5 μ long. Sternal line simple, coxae coarsely granular. Abdomen with 70-75 rings, some ventrad increase in ring number; microtubercles pointed. Lateral seta 25 μ long, on about ring 7; first ventral 35.5 μ long, on about ring 22; second ventral 10.5 μ long, on about ring 41; third ventral 21.5 μ long, on about ring 5 from rear; accessory seta present. Female genitalia 20.5 μ wide, 10.5 μ long, coverflap with 8-10 ridges, seta 12 μ long.

Male not studied.

Type locality; Coleville Quarantine Station, Mono County, California. **Collected;** June 13, 1939, by E. A. Breech. **Host;** *Prunus andersoni* Gray. **Relation to host;** the mites cause an erineum in a baggy deformation on what appears to be the upper surface. **Type slide;** so designated, of mites with the above data. **Paratype slides;** three in number as above. This mite occurs on only part of the shrubs in this location but is said to cause general leaf curling on the infested plants.

Eriophyes breechii Keifer, new species

Plate LXXXIII

Female 190-200 μ long, 50-55 μ thick, wormlike, light yellow. Rostrum 31 μ long, curved down. Shield 35 μ long, 50 μ wide, median line incomplete, admedians prominent, submedians absent, sides with lines of granules; dorsal tubercles 15.5 μ apart, a little ahead of rear margin; dorsal setae 22.5 μ long, projecting dorso-anteriorly. Forelegs 35 μ long, tibia 7.5 μ long, tarsus 9 μ long, claw 8 μ long, tapering, slightly knobbed, featherclaw 4 rayed. Hindlegs 29 μ long, tibia 5.5 μ long, tarsus 7.5 μ long, claw 9.5 μ long. Sternal line simple. Abdomen with 50-55 rings, some ventrad increase in ring number; each microtubercle bearing a prominent spine. Lateral seta 23 μ long, on about ring 7; first ventral 32 μ long, on about ring 18; second ventral 11 μ long, on about ring 30; third ventral 29 μ long, on about ring 5 from rear, accessory seta present. Female genitalia 14.5 μ wide, 14.5 μ long, coverflap with 10 ridges, seta 14.5 μ long.

Male not studied.

Type locality; Coleville Quarantine Station, Mono County, California. **Collected;** June 13, 1939 by E. A. Breech. **Host;** *Prunus andersoni* Gray. **Relation to host;** the mites are found under the fruit buttons. **Type slide;** so designated, of mites with the above data. **Paratype slides;** three in number as above. I take pleasure

* For "u" read μ .

in naming this mite for the collector. The species is similar to *pruandersoni*, but differs in the body spinules, shield pattern, and coverflap pattern. Together these species are allied to the genotype, *Eriophyes vitis* (Land.); also *E. piri* (Pgst.), *E. savagei* K., *E. heteromeles* K., and others. All these have forward directed shield setae.

Eriophyes waltheri Keifer, new species

Plate LXXXIV

Female 150-220 u long, 30-45 u thick, white, wormlike. Rostrum 16.5 u long, projecting ventroanteriorly. Shield 24 u long, 32 u wide, median line present to rear, admedians strong, other lines indistinct, lateral band of granules; dorsal tubercles 20 u apart, on rear margin; dorsal setae 24 u long, projecting caudad. Forelegs 20.5 u long, tibia 3 u long, seta missing, tarsus 5.5 u long, claw 6 u long, slightly knobbed, featherclaw 3 rayed. Hindlegs 20.5 u long, tibia 3 u long, tarsus 5 u long, claw 7.5 u long. Sternal line simple. Abdomen with 60-65 rings, the microtubercles somewhat elongate and acuminate. Lateral seta 20 u long, on about ring 6; first ventral 38 u long, on about ring 17; second ventral 35 u long, on about ring 35; third ventral 16 u long, on about ring 6 from rear; accessory seta present, minute, caudal lobes with dorsal hump. Female genitalia 18 u wide, 13 u long, coverflap smooth, seta 6 u long.

Male not studied.

Type locality; San Francisco, California. **Collected;** June 13, 1939 by Eric Walther. **Host;** *Nothofagus menziesii*. **Relation to host;** the mites cause a severe terminal stunting and branching, producing a heavy cluster of large, aborted buds. **Type slide;** so designated, of mites with the above data. **Paratype slides;** four in number, as above. I take pleasure in naming this mite for the collector. The species is correlated with *Eriophyes mackiei* K. on *Quercus*. This gives us a slight glimpse of the New Zealand Eriophyids as the plant was imported from those islands. Note the absence of the foretibial seta.

Eriophyes langei Keifer, new species

Plate LXXXV

Female 210 u long, 50-55 u thick, yellow to light amber, thick, wormlike. Rostrum 26 u long, curved down. Shield 27 u long, 36 u wide, median and admedian lines distinct, one distinct submedian outcurved posteriorly; dorsal tubercles 23.5 u apart, on rear margin; dorsal setae 35 u long, projecting caudad. Forelegs 30 u long, tibia 6 u long, tarsus 7.5 u long, claw 8.5 u long, tapering slightly knobbed, featherclaw 5 rayed. Hindlegs 26.5 u long, tibia 5.5 u long, tarsus 7 u long, claw 9.5 u long. Sternal line simple. Abdomen with 60-65 rings, some ventrad increase in ring number especially toward the rear; microtubercles bearing a short spine. Lateral seta 20.5 u long, on about ring 10; first ventral 51 u long, on about ring 24; second ventral 17 u long, on about ring 40; third ventral 18 u long, on about ring 5 from rear; accessory seta present. Female genitalia 23.5 u wide, 10.5 u long, coverflap with 12-14 ridges, seta 15 u long.

Male not studied.

Type locality; Half Moon Bay, San Mateo County, California. **Collected;** May 15, 1939, and June 13, 1939, by W. H. Lange. **Host;** *Eriophyllum staechadifolium* Lag. **Relation to host:** The mites are found in the leaf axils, on young side-shoots, or in the hairs on the leaf underside. **Type slide;** so designated, of mites collected June 13. **Paratype slides;** four in number, with either of the above dates. I take pleasure in naming this mite for the collector who has sent me a number of species. The posterior section of *langei* should be noted since it shows the beginnings of the *Paraphytoptus* development.

Eriophyes verilicis Keifer, new species

Plate LXXXVI

Female 180-190 u long, 40-50 u thick, light yellow, wormlike. Rostrum 38.5 u long. Shield 27.5 u long, 40 u wide, design almost obsolete, very blunt anteriorly, sides somewhat granular; dorsal tubercles and setae missing. Forelegs 29 u long, tibia 7.5 u long, tarsus 6.5 u long, claw 5 u long, featherclaw 5 rayed. Hindlegs 26 u long, tibia 6 u long, tarsus 6.5 u long, claw 7 u long. Sternal line short and forked. Abdomen with 50-55 rings, some ventrad reduction in ring number, rings entirely microtuberculate. Lateral seta 25 u long, on about ring 5; first ventral 27 u long, on about ring 16; second ventral 10.5 u long, on about ring 27; third ventral 21 u long, on about ring 5 from rear, accessory seta absent. Female genitalia pushed up against the coxae and projecting, 23 u wide, 11 u long, coverflap with about 16 irregular ridges, seta 10.5 u long.

Male not studied.

Type locality; Sacramento, California. **Collected;** June 21, 23, 24, 1939, by the writer. **Host;** *Ilex aquifolium* L. **Relation to host;** the mites were found under the fruit buttons where they cause a slight injury. **Type slide;** so designated, dated June 24. **Paratype slides;** five in number as above. This species is allied to *Eriophyes malpighianus* (C & M) as delineated in the last installment. Together they are correlated with *Eriophyes gali* (Nal.), the genotype of *Cecidophyes* Nal. There are a number of other species in this group. The principal distinguishing features of this group are found in the genital-coxal region. The genitalia (including those of the male) are projected more than usual from the body surface, and pushed forward closer to the coxae. This gives the anterior apodeme of the female a more vertical position, giving it a peculiarly shortened appearance in ventral view. It also causes a slight spreading of the coxae and especially a shortening of the forecoxae and their contact along the sternal line. The female apodeme is likely the most definite character in this case, though the lack of dorsal setae seems to be an important correlation. With this situation on which to work it may be eventually possible to resurrect *Cecidophyes*. With so many diverse species now thrown into *Eriophyes*, it is highly desirable to look for means of rearranging them.

With this type of genital-coxal structure in mind, attention is directed to the next two species which go into *Phyllocoptes* on conventional structure. There is, by the genital structures, a curious liaison between these, *Cecidophyes* as a group, and *Gammaphytop투스*. Of all of these, *Gammaphytop투스* is the only one possessing dorsal setae, an evidently significant feature. A similar liaison exists between the conventionally diverse *Phytoptus*, *Sierraphytoptus* and *Mackiella*. These things will eventually have to be explained to completely rationalize Eriophyid classification.

Phyllocoptes querciphagus Keifer, new species

Plate LXXXVII

Female 125-145 u long, 50-55 u wide, 45 u thick, thick spindleform, whitish. Rostrum 22 u long, projecting down. Shield 42.5 u long, 44 u wide, the design an open network; dorsal tubercles and dorsal setae missing. Forelegs 27.5 u long, tibia 6.5 u long, tarsus 6.5 u long, claw 9 u long, featherclaw 7 rayed. Hindlegs 27.5 u long, tibia 6 u long, tarsus 6.5 u long, claw 10 u long. Sternal line very short, anterior coxae extended over on suboral plate. Abdomen with both tergites and sternites prominently microtuberculate; 35 tergites; sternites about 45. Lateral seta 18 u long, on about sternite 6; first ventral 23 u long, on about sternite 15; second ventral 12 u long, on about sternite 25; third ventral 20 u long, on about sternite 5 from rear; accessory seta missing. Female genitalia pushed up against

coxae, projecting, 21 u wide, 14 u long, coverflap with about 10 broken irregular ridges, seta 14.5 u long.

Male not seen.

Type locality; Intercepted at Washington, D. C., from Berlin, Germany. **Collected;** Feb. 1, 1939, by Wood under U. S. Bur. Ent. & Plant Quar. No. 39-1542. **Host;** *Quercus* sp. **Relation to host;** the mites were found in the buds. **Type slide;** so designated, the property of the Bureau. **Paratype slides;** three in number, two retained here in Sacramento. No *Phyllocoptes* heretofore described from *Quercus* lacks dorsal setae.

Phyllocoptes lamimani Keifer, new species

Plate LXXXVIII

Female 155-165 u long, 40-45 u thick, cylindrical, curved, tapering, white. Rostrum 38 u long, projecting down. Shield 52 u long, 38 u wide, smooth; dorsal tubercles and setae missing. Forelegs 29 u long, tibia 6.5 u long, tarsus 7 u long, claw 8.5 u long, slightly knobbed, featherclaw 5 rayed. Hindlegs 25 u long, tibia 5 u long, tarsus 6 u long, claw 9 u long. Sternal line divided posteriorly. Abdomen with tergites smooth, sternites microtuberculate; about 13-15 tergites; sternites about 57. Lateral seta 17 u long on about sternite 6; first ventral 28 u long, on about sternite 17; second ventral 11 u long, on about sternite 32; third ventral 21 u long, on about sternite 7 from rear; accessory seta absent. Female genitalia somewhat crowded up against coxae; 20.5 u wide, 12 u long, coverflap with 12-14 irregular ridges, seta 8.5 u long.

Male not studied.

Type locality; Paradise, Butte County, California. **Collected;** May 16, 1939, and June 7, 1939, the latter by the writer. **Host;** *Corylus avellana* L. **Relation to host;** the mites are found on the undersides of the leaves almost entirely along the veins. They cause no apparent damage. **Type slide;** so designated, of mites taken June 16. **Paratype slides;** four slides, of mites taken on either date. These mites were also taken on Filbert at Palermo, Butte County, June 7, by the writer. This mite was called to my attention by Dr. J. F. Lamiman for whom I have named it. No mite heretofore listed on Filbert lacks dorsal setae. This species also has the genital coxal region as in *Eriophyes verilicis*, etc. In addition to this species, *Phytoptus avellanae* Nal., and *Oxypleurites depressus* Nal., were also taken at Paradise and will be reported upon later.

Phyllocoptes rhamnivagrans Keifer, new species

Plate LXXXIX

Female 180-190 u long, 50 u thick, elongate spindleform, light yellow to light amber. Rostrum 25 u long, projecting down. Shield 37 u long, 37 u wide, the lines forming an open network; dorsal tubercles 25 u apart, on rear margin; dorsal setae 35 u long, projecting caudad. Forelegs 30 u long, tibia 7.5 u long, tarsus 7 u long, claw 7 u long, slender, knobbed, featherclaw 4 rayed. Hindlegs 27.5 u long, tibia 6 u long, tarsus 6 u long, claw 7 u long. Sternal line simple. Abdomen cylindrical-tapering, the sternites strongly microtuberculate, the tergites weakly so; tergites about 35; sternites about 65. Lateral seta 17 u long, on about sternite 7; first ventral 40 u long, on about sternite 20; second ventral 14.5 u long, on about sternite 40, third ventral 20 u long, on about sternite 5 from rear; accessory seta present. Female genitalia 18 u wide, 11.5 u long, coverflap with 8-10 ridges, seta 21 u long.

Male not studied.

Type locality; Aukum, El Dorado County, California. **Collected;** June 4, 1939, by the writer. **Host;** *Rhamnus californicus* Esch. **Relation to host;** the mites are vagrants on the undersurface of hairy leaves. **Type slide;** so designated, with the above data. **Paratype slides;** three in number as above. The long slender form

and evenly rounded abdomen separate this from *Phyllocoptes rhamnicola* K.

Rhyncaphytoptus ulmivagrans Keifer, new species

Plate XC

Female about 170 u long, 70 u wide, 60 u thick, thick spindleform, light amber in color. Rostrum 64.5 u long, projecting down, basal seta not apparent, subapical seta prominent; apical setae projecting caudad. Shield 43.5 u long, 65 u wide, overlying rostrum base a little, median line indistinct, admedian and submedian lines forming an open network; dorsal tubercles 47 u apart, slightly ahead of rear margin; dorsal setae 11 u long, directed anteriorly. Forelegs 52.5 u long, tibia 14 u long, tarsus 10.5 u long, claw 9.5 u long, knobbed, featherclaw 5 rayed. Hindlegs 48 u long, tibia 12 u long, tarsus 10.5 u long, claw 9.5 u long. Sternal line short. Abdomen with tergites bearing small spines laterally, otherwise without microtuberculation, though with irregular edges, the last 8 or 10 sternites somewhat distinct from those anterior; sternites microtuberculate; tergites about 30; sternites about 83-88. Lateral seta 19 u long, on about sternite 22; first ventral 60 u long, on about sternite 46; second ventral 17 u long, on about sternite 58; third ventral 36 u long, on about sternite 6 from rear; accessory seta present, short. Female genitalia 36 u wide, 21 u long, coverflap smooth, seta 14 u long.

Male not studied.

Type locality; Sacramento, California. **Collected;** June 26 to 29, 1939, by the writer. **Host;** *Ulmus*, probably *campestris* L. **Relation to host;** the mites are vagrants on the undersides of the leaves and cause no apparent damage. **Type slide;** so designated, dated June 29. **Paratype slides;** five in number, of mites collected on any of the above dates. This mite is related to *Rhyncaphytoptus ficifoliae* K. more closely than others heretofore referred to that genus. The dorsal tubercles, spinules on the sides of the tergites, and the anterior genital apodeme are similar to *ficifoliae*. This mite does not answer the description of *Phyllocoptes longirostris* Nal., a probably congeneric European species.

Epitrimerus zizyphagus Keifer, new species

Plate XCI

Female 145-160 u long, 45-50 u wide, 40 u thick, wedge-shaped, yellow. Rostrum 25 u long, projecting down. Shield 41 u long, 38.5 u wide, the design an open network with side granulations; dorsal tubercles 29 u apart, on rear margin; dorsal setae 21.5 u long, projecting caudad. Forelegs 31 u long, tibia 8 u long, tarsus 6.5 u long, claw 6 u long, knobbed, featherclaw 4 rayed. Hindlegs 29 u long, tibia 7.5 u long, tarsus 7 u long, claw 6.5 u long. Sternal line simple. Abdomen with tergites almost entirely smooth, possibly a waxy band down each tergal ridge; sternites microtuberculate; about 36 tergites; sternites about 60. Lateral seta 17.5 u long, on about sternite 9; first ventral 47 u long, on about sternite 22; second ventral 12 u long, on about sternite 38; third ventral 24 u long, on about sternite 8 from rear; accessory seta present, small. Female genitalia 21 u wide, 14 u long, coverflap with about 8 ridges, seta 13.5 u long.

Male not studied.

Type locality; Oroville, California. **Collected;** June 7, 1939, by the writer. **Host;** *Zizyphus sativa* Gaertn., Jujube. **Relation to host;** the mites are vagrants on the green stems and sometimes on the leaves. **Type slides;** so designated, as above. **Paratype slides;** three in number, as above. No *Epitrimerus* has heretofore been named from the Rhamnaceae.

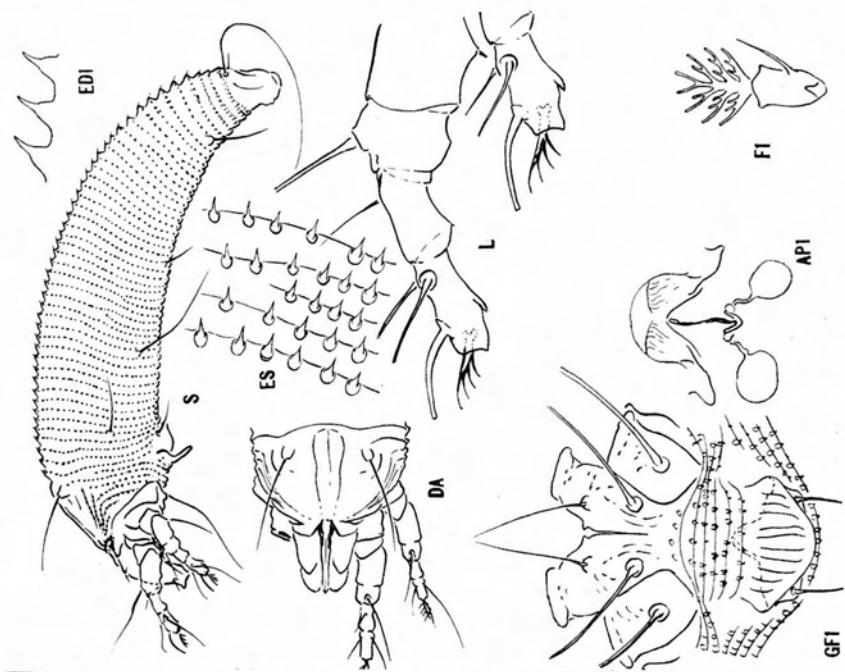


Plate LXXXIII, *Eriophyes breechlii* K., n. sp.

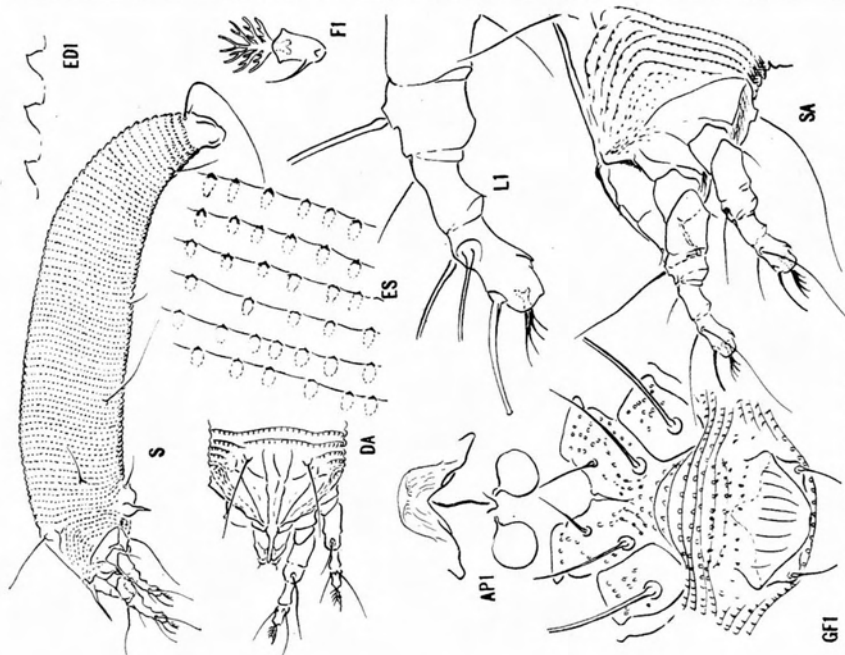
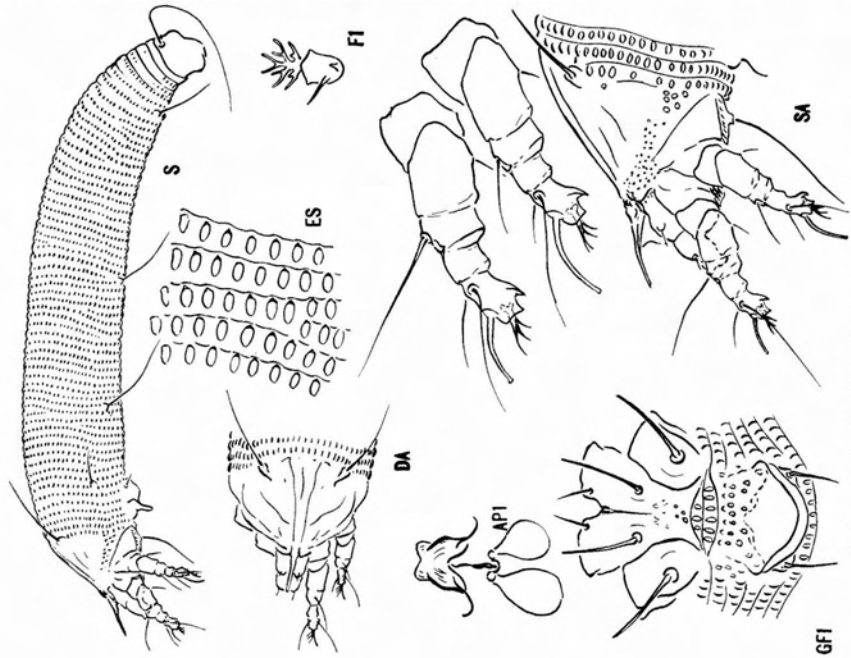
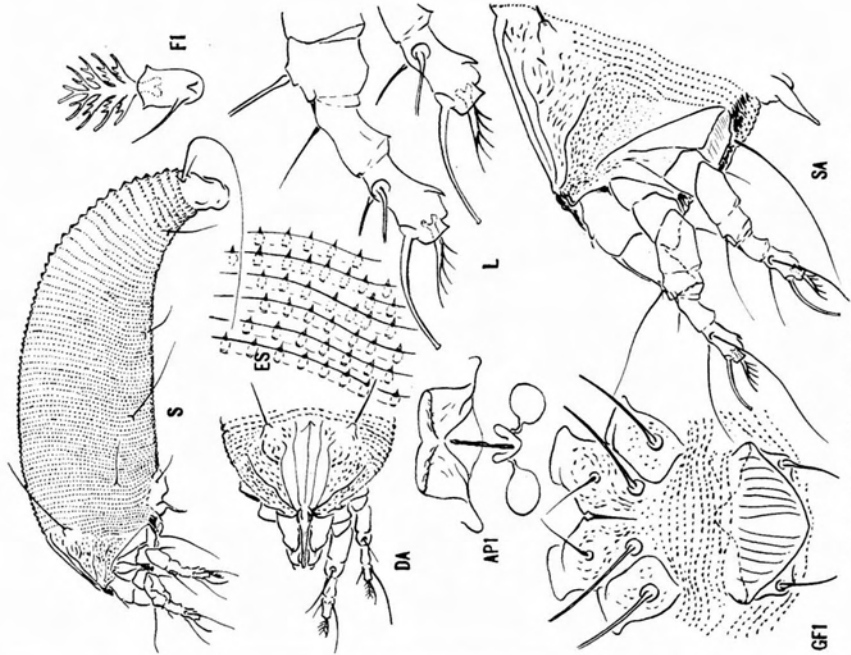


Plate LXXXII, *Eriophyes prunandersoni* K., n. sp.



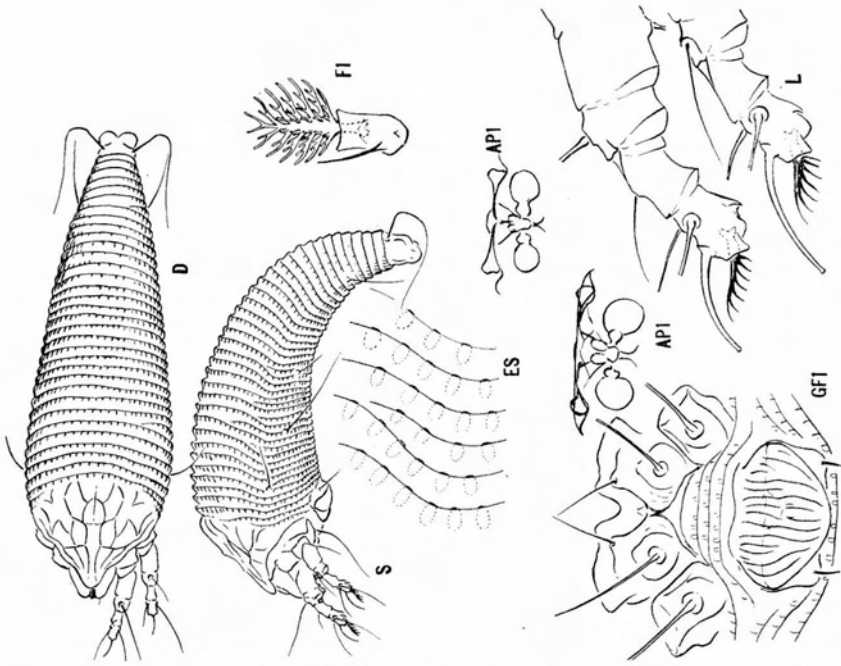


Plate LXXXVII, *Phyllocoptes querciphagus* K., n. sp.

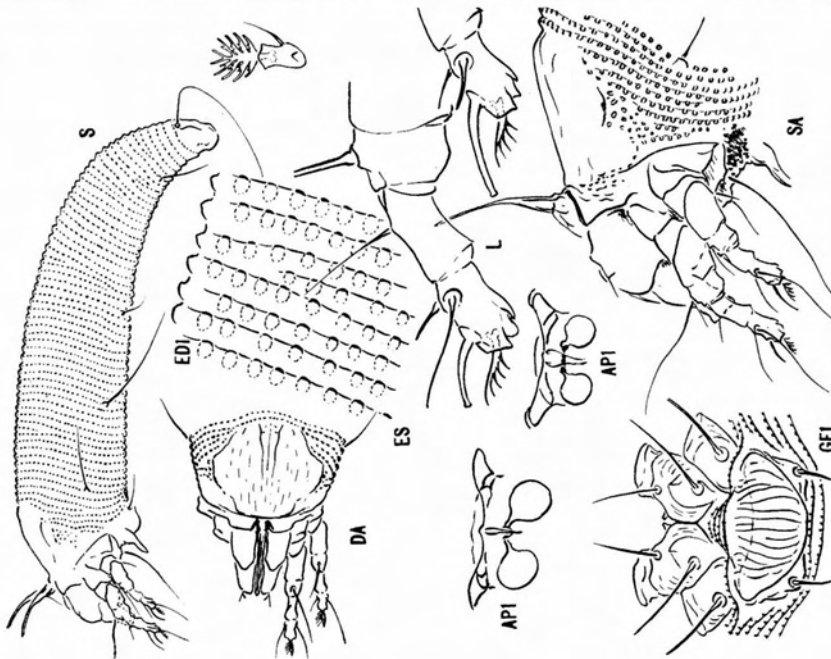


Plate LXXXVI, *Eriophyes verilicis* K., n. sp.

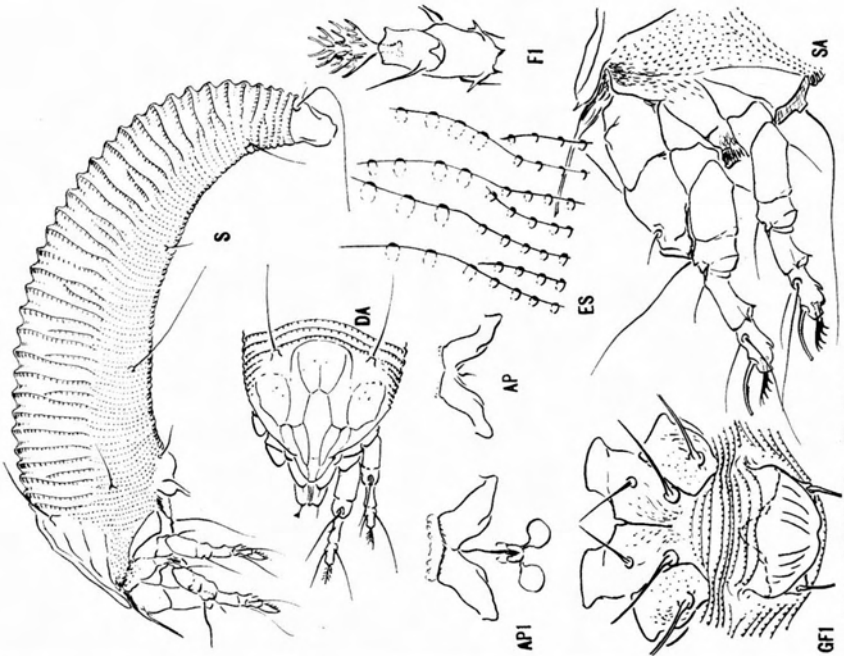


Plate LXXXIX, *Phyllocoptes rhamnivagrans* K., n. sp.

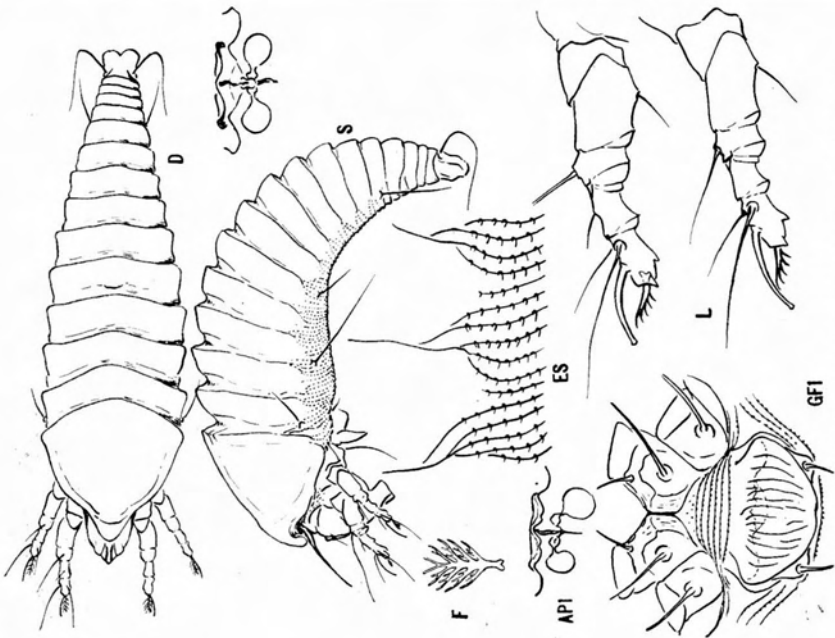


Plate LXXXVIII, *Phyllocoptes lamimani* K., n. sp.

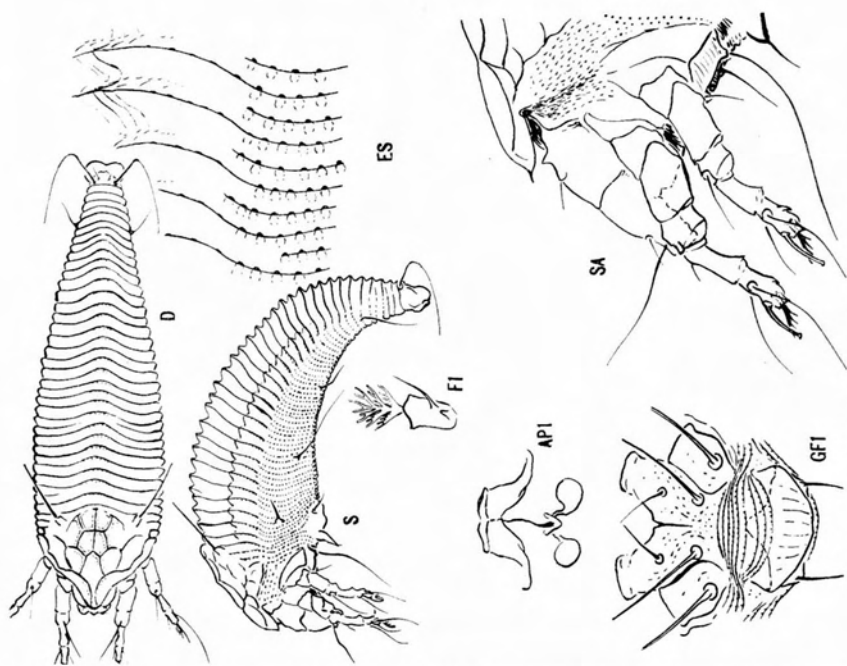


Plate XCI, *Eptrimerus eizyphagus* K., n. sp.

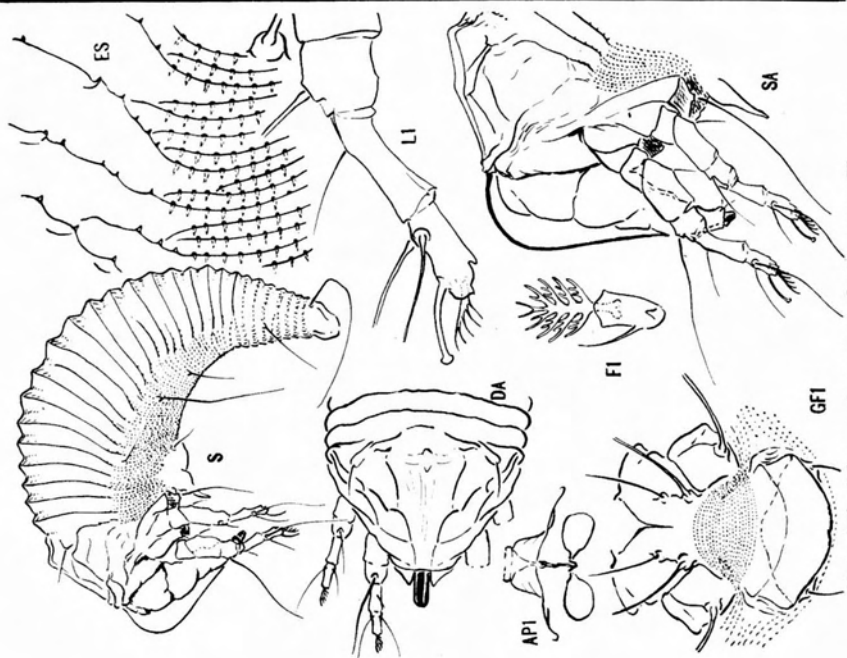


Plate XC, *Rhyacaphytoptus ulmicragrus* K., n. sp.

Host List

Fagaceae

Quercus sp.*Phyllocoptes querciphagus* n. sp., in buds.*Nothofagus menziesii**Eriophyes waltheri* n. sp., terminal cluster of deformed buds.

Betulaceae

Corylus avellana L.*Phyllocoptes lamimani* n. sp., vagrant along underside veins.

Ulmaceae

Ulmus (campestris L. ?)*Rhyncaphytoptus ulmivagrans* n. sp., vagrant on leaf underside.

Aquifoliaceae

Ilex aquifolium L.*Eriophyes verilicis* n. sp., under fruit buttons.

Rhamnaceae

Zizyphus sativa Gaertn.*Eptimerus zizyphagus* n. sp., vagrant on stems and leaves.*Rhamnus californicus* Esch.*Phyllocoptes rhamnivagrans* n. sp., vagrant on leaf underside.

Rosaceae

Prunus andersoni Gray*Eriophyes prunandersoni* n. sp., causing leaf erineum.*Eriophyes brecchii* n. sp., under fruit buttons.

Compositae

Eriophyllum staechadifolium Lag.*Eriophyes langei* n. sp., in buds and on leaf undersides.

Designations on Plates

- AP** Anterior apodeme of the female genitalia.
API Interior female genitalia.
D Dorsal view of mite.
DA Dorsal view of anterior section of mite.
ED1 Dorsal skin showing side view of microtubercles.
ES Detail of side skin.
F Featherclaw.
Fl Featherclaw and part or all of tarsus.
GF1 Female genitalia and coxae from below.
L Left legs, either all or in part.
L1 Left foreleg.
S Side view of mite.
SA Side view of anterior section of mite.