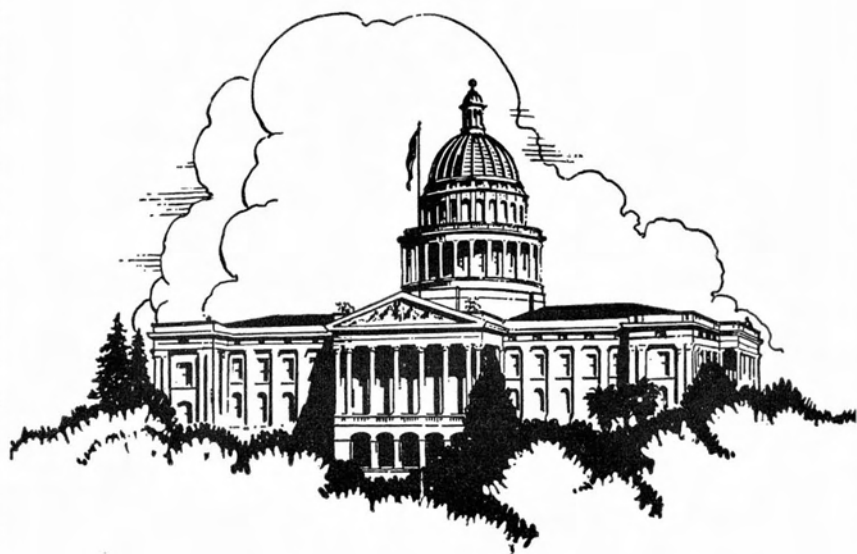


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ERIOPHYID STUDIES VII

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The last installment of this series, Eriophyid Studies VI, appeared in the Bul. Cal. Dept. Agr. Vol. 28, No. 6, p. 416, August 10, 1939. The present article contains 22 more descriptions, 21 of them new species.

Eriophyes caryae Keifer, new species

Plate XCII

Female 190-245 μ long, 45-50 μ thick, wormlike, reddish. Rostrum 20.5 μ long, somewhat curved down. Shield 23.5 μ long, 26 μ wide, almost entirely smooth except toward rear where the median and admedian lines are indicated; dorsal tubercles 17.5 μ apart, on rear margin; dorsal setae 20.5 μ long, projecting backward. Forelegs 25 μ long, tibia 3 μ long, tarsus 7.5 μ long, claw 6.5 μ long, somewhat curved, featherclaw 3 rayed. Hindlegs 23.5 μ long, tibia 3 μ long, tarsus 7.5 μ long, claw 6.5 μ long. Sternal line prominent, unforked. Abdomen with approximately 65 rings, there is some ventral ring reduction, the microtuberculation is very obscure except immediately behind the front and on the ventral rear. Lateral seta 8 μ long, on about ring 5; first ventral 10 μ long, on about ring 20; second ventral 8 μ long, on about ring 37; third ventral 14 μ long, on about ring 5 from rear; accessory seta present. Female genitalia 16 μ wide, 9.5 μ long, coverflap smooth, seta 4 μ long, situated on pointed tubercles.

Male not seen.

Type locality: Brownwood, Texas. **Collected:** July 20, 1939, by C. B. Nickels, Associate Entomologist, U. S. Bureau of Entomology. **Host:** *Carya pecan* E. & G., Pecan. **Relation to host:** The mites cause a leaf-edge roll on the upper surface of the pecan leaves. This roll is full of spongy tissue in which the mites live. **Type slide:** so designated, with the above data, the property of the U. S. Bureau and bearing number 39-7822. **Paratype slides:** five in number as above. Damage similar to what this mite does on pecan leaves has long been known on various *Carya* species, and is figured by Felt in N. Y. State Mus. Bul. No. 200, Pl. 15, August 1, 1917, as on Hickory. *Eriophyes caryae* differs from other described mites on Juglandaceous trees principally by the nearly smooth condition of the body rings. These Juglandaceous mites are now appearing as a distinct group.

Eriophyes feijoa Keifer, new species

Plate XCIII

Female 150-175 μ long, 35 μ thick, wormlike, light yellow to amber. Rostrum 20 μ long, curved down. Shield 22.5 μ long, 26 μ wide, median present toward rear, admedians complete, approximate anteriorly, submedians short, sides broadly granulate; dorsal tubercles 16 μ apart, on rear margin, dorsal setae 33 μ long, projecting caudad. Forelegs 22.5 μ long, tibia 5.5 μ long, tarsus 5.5 μ long, claw 7 μ long, slightly knobbed, featherclaw 5 rayed. Hindlegs 20.5 μ long, tibia 4 μ long, tarsus 4.6 μ long, claw 9 μ long. Sternal line apparently forked. Abdomen with about 60 rings, completely microtuberculate; some ventrad reduction in the ring number. Lateral seta 16 μ long, on about ring 7; first ventral 42 μ long, on about ring 19; second ventral minute, on about ring 34; third ventral 14.5 μ long, on about ring 5 from rear; accessory seta present. Female genitalia 18 μ wide, 11 μ long, coverflap with 12-14 ridges, seta 8 μ long.

Male not studied.

Type locality: Sacramento, California. **Collected:** August 2, 5, 7, 15, and 16, 1939, by the writer. **Host:** *Feijoa sellowiana*. **Relation**

to host: The mites are free living in the undersurface pile on the terminal leaves; also in buds. **Type slide:** So designated, of mites collected August 7. **Paratype slides:** As above, seven in number, with all of the above dates. The female genitalia are a little projected suggesting the *Cecidophyes* type. The apodeme is also shortened. The approximation of the admedian shield lines, the minute second ventral seta, and the shortened female genital apodeme characterize this mite.

Eriophyes stinsonis Keifer, new species

Plate XCIV

Female up to 240 μ long, 50 μ thick, wormlike, light yellow. Rostrum 29 μ long, curved down. Shield 30 μ long, 40 μ wide, median, admedian and one submedian line distinct; sides with granules; dorsal tubercles 29 μ apart, on rear margin; dorsal setae 35 μ long, projecting caudad. Forelegs 30 μ long, tibia 7 μ long, tarsus 8 μ long, claw 8 μ long, slightly knobbed, featherclaw 4 rayed. Hindlegs 27 μ long, tibia 5.5 μ long, tarsus 7.5 μ long, claw 8 μ long. Sternal line simple. Abdomen with about 75 rings, the microtubercles spiniferous; considerable ventrad reduction. Lateral seta 23.5 μ long, on about ring 10; first ventral 40 μ long, on about ring 24; second ventral 11.5 μ long, on about ring 42; third ventral 22.5 μ long, on about ring 8 from rear; accessory seta present. Female genitalia 25 μ wide, 14.5 long, coverflap with 10-12 ridges, seta 9 μ long.

Male not studied.

Type locality: Stinson Beach, Marin Co., California. **Collected:** July 3, 1939, by the writer. **Host:** *Cotyledon caespitosa* Haw. **Relation to host:** The mites are found at the bases of the leaves. **Type slide:** so designated, as above. **Paratype slides:** two in number as above. This species somewhat suggests the *artemisiae* group of *Eriophyes*. The spinules on the legs, which are more prominent than usual, and the irregular pointing of the body spinules are likely the two most characteristic features.

Eriophyes mori Keifer, new species

Plate XCV

Female 170-180 μ long, 35 μ thick, wormlike, whitish. Rostrum 26 μ long, curved down. Shield 26 μ long, 32 μ wide, pattern obscure, sides granular; dorsal tubercles 18 μ apart, on rear margin; dorsal setae 9 μ long, projecting caudad. Forelegs 24.5 μ long, tibia 4.5 μ long, tarsus 5.5 μ long, claw 6 μ long, knobbed, featherclaw 5 rayed. Hindlegs 24 μ long, tibia 4 μ long, tarsus 5.5 μ long, claw 7 μ long. Anterior coxae touching between coxal setae II. Abdomen with about 65 rings, entirely microtuberculate, the tubercles slightly pointed becoming more so caudally, the last few rings with fine striations; caudal lobes humped. Lateral seta 11 μ long, on about ring 6; first ventral 29 μ long, on about ring 15; second ventral 11.5 μ long, on about ring 33; third ventral 22 μ long, on about ring 5 from rear; accessory seta present, minute. Female genitalia 20 μ wide, 11 μ long, coverflap with about 10 ridges, seta 7.5 μ long.

Male not studied.

Type locality: Sacramento, California. **Collected:** August 14 and 16, 1939 by the writer. **Host:** *Morus*, sp., Mulberry. **Relation to host:** The mites are found at the petiole bases and in the buds. **Type slide:** so designated, of mites collected August 16. **Paratype slides:** three in number, of mites collected on either date. The short dorsal setae, the shield pattern, and the structure of the sternal area characterize this mite.

Platyphytoptus cupressi Keifer, new species

Plate XCVI

Female 145-160 μ long, 50-55 μ wide, 40-45 μ thick; flat wedge-shaped, amber color. Rostrum 29 μ long, large, curved down. Shield 42 μ long, 47 μ wide,

lines on anterior lobe, central part almost smooth, lateral lobes; dorsal tubercles 17.5 μ apart, ahead of rear margin; dorsal setae 4 μ long, projecting upward. Forelegs 30 μ long, tibia 7 μ long, tarsus 6 μ long, claw 6.5 μ long, tapering, featherclaw 6 rayed. Hindlegs 28 μ long, tibia 6 μ long, tarsus 5 μ long, claw 7 μ long. Sternal line short. Abdomen above with a central obscure narrowing ridge and with tergites bearing conspicuous pointed microtubercles except laterally; sternites finely microtuberculate; sternites and tergites 60-65. Lateral seta 18 μ long, on about sternite 10; first ventral 23 μ long, on about sternite 25; second ventral 26 μ long, on about sternite 43; third ventral 18 μ long, on about sternite 4 from rear; accessory seta present, minute. Female genitalia with two or three anterior rows of granules, 30 μ wide, 18 μ long, coverflap with 14-16 ridges, seta 12 μ long. Male not studied.

Type locality: Sacramento, California. **Collected:** August 24, 28 and 29, 1939, by the writer. **Host:** *Cupressus sempervirens* L., Italian Cypress. **Relation to host:** The mites are found on the tips of the twigs and squeezed into the crevices between the leaf-scales. **Type slide:** So designated, of mites taken August 29. **Paratype slides:** five in number of mites taken on any of the above dates. This species differs from the two species already assigned to this genus principally by its more shortened form. However, it is not unharmonious in this generic assignment. The prominent pointed dorsal tubercles are a characteristic.

Platyphytoptus libocedri Keifer, new species

Plate XCVII

Female 180-190 μ long, 50-55 μ wide, 40 μ thick, wedge-shaped, amber. Rostrum 29 μ long, projecting downward. Shield 42 μ long, 42 μ wide, smooth except slight lines on anterior lobe; dorsal tubercles 18 μ apart, ahead of rear margin; dorsal setae 6.5 μ long, pointing centrad. Forelegs 29 μ long, tibia 7 μ long, tarsus 7 μ long, claw 7 μ long, tapering, featherclaw 6 rayed. Hindlegs 27 μ long, tibia 5.5 μ long, tarsus 6 μ long, claw 8 μ long. Anterior coxae touching. Abdomen entirely microtuberculate except on part of the side, dorsum somewhat ridged longitudinally. Tergites about 65; sternites 70-75. Lateral seta 20 μ long, on about sternite 8; first ventral about 40 μ long, on about sternite 24; second ventral 22 μ long, on about sternite 45; third ventral 17.5 μ long, on about sternite 6 from rear; accessory seta present. Female genitalia 24 μ wide, 15 μ long, coverflap with diagonal ridges, seta 12.5 μ long. Male not studied.

Type locality: Paradise, Butte Co., California. **Collected:** August 30, 1939, by the writer. **Host:** *Libocedrus decurrens* Torr., Incense Cedar. **Relation to host:** The mites are vagrants on the twig tips. **Type slide:** So designated, with the above data. **Paratype slides:** three in number as above. This species is similar to *cupressi* in habit and general appearance, but differs in the shield shape, dorsal microtubercles, position of the foretibial seta, and the genital structure.

"*Platyphytoptus*" *taxodii* Keifer, new species

Plate XCVIII

Female 180-210 μ long, 75-80 μ thick, thick spindleform, orange yellow in color usually covered by white wax. Rostrum 41 μ long, projecting down. Shield 60 μ long, 70 μ wide, almost smooth; dorsal tubercles 25 μ apart, ahead of rear margin; dorsal setae 11.5 μ long, projecting cephalocentrad. Forelegs 49 μ long, tibia 14.5 μ long, tarsus 10 μ long, claw 13.5 μ long, slender, tapering, featherclaw apparently 10 rayed. Hindlegs 44 μ long, tibia 11.5 μ long, tarsus 8.5 μ long, claw 13 μ long. Anterior coxae with a short groove between them. Abdomen with a subdorsal longitudinal shallow groove and another in the sublateral position; tergites smooth, sternites microtuberculate; tergites and sternites about 90. Lateral seta 50 μ long, on about sternite 16; first ventral about 55 μ long, on about sternite 33; second ventral 46 μ long, on about sternite 56; third ventral 37 μ long, on about sternite 7 from rear; accessory seta present. Female genitalia 35 μ wide, 23 μ long, coverflap with fine lines, seta 17 μ long. Male not studied.

Type locality: Berkeley, California. **Collected:** July 25 and August 20, 1939, by the writer. **Host:** *Taxodium distichum* Rich., Bald Cypress. **Relation to host:** The mites are vagrants on the

needles and leave characteristic white cast skins as short streaks on the foliage. **Type slide:** So designated, of mites taken on July 25. **Paratype slides:** Five in number, as above and of either date. This mite is not harmonious in any of the described genera but lacks definitive characters. It might as readily go in *Phyllocoptes*, as in the genus assigned, but the longitudinal furrows as illustrated do not fit. It is here associated with the two Cupressaceous mites as described above.

Phyllocoptes adalius Keifer, new species

Plate XCIX

Female 150-180 μ long, 55-60 μ thick, spindleform, yellowish to light amber. Rostrum 28 μ long, projecting down. Shield 45 μ long, 47 μ wide, with a network of lines, the anterior lobe pointed; dorsal tubercles 17 μ apart, ahead of rear margin; dorsal setae 18 μ long, projecting dorsocentrad or cephalocentrad. Forelegs 35 μ long, tibia 9 μ long, tarsus 8 μ long, claw 8 μ long, tapering, featherclaw 6 rayed. Hindlegs 32 μ long, tibia 6.5 μ long, tarsus 7.5 μ long, claw 10.5 μ long. Sternal line hardly forked. Abdomen entirely covered with spinuliferous microtubercles; tergites 55-60; sternites 65-70. Lateral seta 32 μ long, on about sternite 9; first ventral 41 μ long, on about sternite 21; second ventral 26 μ long, on about sternite 40; third ventral 26 μ long, on about sternite 5 from rear; accessory seta present. Female genitalia 24 μ wide, 12 μ long, coverflap with 6-8 ridges, seta 26 μ long.

Male not studied.

Type locality: Berkeley, California. **Collected:** July 25, 1939, by the writer. **Host:** *Rosa* sp., cultivated Rose. **Relation to host:** The mites are undersurface vagrants and may cause no damage. **Type slide:** So designated, as above. **Paratype slides:** three in number, as above. No *Phyllocoptes* has heretofore been described from Rose. The shield with its setae and the spinulate body characterize this mite. This species has also been taken on Cecil Bruner rose in San Francisco, August 19, 1939.

Phyllocoptes cotyledonis Keifer, new species

Plate C

Female 170-190 μ long, 50-60 μ thick, rather wedge-shaped, yellowish. Rostrum 33 μ long, projecting down. Shield 42 μ long, 49 μ wide, design a network; dorsal tubercles 26 μ apart, on rear margin; dorsal setae 16 μ long, projecting backward. Forelegs 38-39 μ long, tibia 8.5 μ long, tarsus 8.5 μ long, claw 8.5 μ long, slightly knobbed, featherclaw 5 rayed. Hindlegs 35 μ long, tibia 7.5 μ long, tarsus 8 μ long, claw 8.5 μ long. Sternal line simple. Abdomen entirely microtuberculate, with a low, slight furrow along each side of tergum; tergites about 60; sternites about 75. Lateral seta 22 μ long, on about sternite 14; first ventral 42 μ long, on about sternite 30; second ventral 23 μ long, on about sternite 47; third ventral 36 μ long, on about sternite 6 from rear; accessory seta present. Female genitalia 24.5 μ wide, 14.5 μ long, coverflap with 8 or 10 short ridges, seta 26 μ long.

Male not studied.

Type locality: Stinson Beach, Marin Co., California. **Collected:** July 3, 1939, by the writer. **Host:** *Cotyledon caespitosa* Haw. **Relation to host:** The mites occur down in the rosette of leaflets, but somewhat above *Eriophyes stinsonis*, which is at the very base. **Type slide:** So designated, with the above data. **Paratype slides:** Three in number as above. This species in some ways suggests *Epitrimerus* but does not have convincing longitudinal dorsal furrows.

Phyllocoptes symphoricarpi Keifer, new species

Plate 101

Female 200-240 μ long, 70-80 μ wide, 60-65 μ thick; rather thick spindleform, light yellowish-white to amber. Rostrum 50 μ long, projecting down. Shield

55.5 μ long, 63 μ wide, median and admedian lines as usual, submedian lines forming a network; dorsal tubercles 40 μ apart, on rear margin; dorsal setae 46.5 μ long, projecting caudad. Forelegs 41 μ long, tibia 10.5 μ long, tarsus 8.5 μ long, claw 10 μ long, small-knobbed, featherclaw 7 rayed. Hindlegs 38 μ long, tibia 7 μ long, tarsus 7.5 μ long, claw 11 μ long. Sternal line slightly forked. Abdomen with sternites microtuberculate, the tergites with spinules laterally and either smooth middorsally or faintly microtuberculate; tergites about 42, sternites 60-65. Lateral seta 35 μ long, on about sternite 9; first ventral 60 μ long, on about sternite 23; second ventral 45 μ long, on about sternite 42; third ventral 33 μ long, on about sternite 5 from rear; accessory seta present. Female genitalia 26 μ wide, 22 μ long, coverflap with about 6 short ridges, seta 26 μ long.

Male not studied.

Type locality: Aukum, El Dorado Co., California. **Collected:** June 4, 1939, by the writer. **Host:** *Symphoricarpos albus* L., Snow Berry. **Relation to host:** The mites are vagrants on the undersides of the leaves, causing white exuvia streaks due to waxy immature forms. **Type slide:** So designated, with the above data. **Paratype slides:** As above, three in number. This mite is characterized by the two points on the anterior lobe of the shield, the shield pattern, the spinules on the sides of the tergites.

Phyllocoptes tamalpais Keifer, new species

Plate 102

Female up to 210 μ long, 50 μ thick, elongate spindleform, light amber to amber. Rostrum 32 μ long, projecting down. Shield 50 μ long, 53 μ wide, anterior lobe arched, design obsolete; dorsal tubercles 35 μ apart, on rear margin; dorsal setae 65 μ long, projecting caudad. Forelegs 40 μ long, tibia 11 μ long, tarsus 8.75 μ long, claw 8.75 μ long, somewhat knobbed, featherclaw 4 rayed. Hindlegs 35 μ long, tibia 7 μ long, tarsus 8.75 μ long, claw 9 μ long. Sternal line simple. Abdomen with tergites showing faint elongate microtubercles, sternites strongly microtuberculate; tergites about 20; sternites 60-65. Lateral seta 12 μ long, on about sternite 6; first ventral 25 μ long, on about sternite 19; second ventral 14.5 μ long, on about sternite 34; third ventral 25 μ long, on about sternite 4 from rear; accessory seta present, short. Female genitalia 26 μ wide, 15 μ long, coverflap with 6 or 8 very faint ridges, seta 14.5 μ long.

Male not studied.

Type locality: Mt. Tamalpais, Marin Co., California, southwest side at about mid-elevation. **Collected:** July 3, 1939, by the writer. **Host:** *Corylus rostrata* var. *californica* A. California Hazel. **Relation to host:** The mites are vagrants on both leaf surfaces, favoring the underside. **Type slide:** so designated, of mites with the above data. **Paratype slides:** four in number as above. This species is characterized by the long dorsal setae, and is evidently correlated with *Phyllocoptes comatus* Nal. From this species it is separated by the shield pattern, number of tergites, length of dorsal setae and scoring of the female coverflap. It is not related to *Phyllocoptes lamimani* K. on European filbert, in spite of the general similarity.

Phyllocoptes magnolivora Keifer, new species

Plate 103

Female 190-225 μ long, 50 μ thick, elongate spindleform, amber color. Rostrum 35 μ long, curved down. Shield 44 μ long, 51 μ wide, admedian present on frontal lobe, otherwise shield entirely granular; dorsal tubercles 35 μ apart, on rear margin; dorsal setae 24 μ long, projecting caudad. Forelegs 40 μ long, tibia 10.5 μ long, tarsus 8.5 μ long, claw 8 μ long, tapering, featherclaw 6 rayed. Hindlegs 38 μ long, tibia 9.5 μ long, tarsus 8.5 μ long, claw 8 μ long. Sternal line not forked, coxae granular. Abdomen entirely microtuberculate, the dorsal tubercles elongate; tergites 27-31; sternites about 75. Lateral seta 53 μ long, on about sternite 8; first ventral 72 μ long, on about sternite 23; second ventral 29 μ long, on about sternite 46; third ventral 29 μ long, on about sternite 5 from rear; accessory seta present. Female genitalia 25 μ wide, 16 μ long, coverflap with 14-16 ridges, seta 30 μ long.

Male not studied.

Type locality: San Jose, California. **Collected:** August 25, 1939, by the writer. **Host:** *Magnolia grandiflora* L. **Relation to host:** The mites live in the hair on the underside of the younger leaves, and also in the bud hairs. **Type of slide:** So designated, with the above data. **Paratype slides:** Three in number as above. This mite is unusual in possessing an almost entirely granular shield.

Phyllocoptes arbuti Keifer, new species

Plate 104

Female 180-205 μ long, 60 μ thick, light purplish, covered with thin flocculent wax. Rostrum 35 μ long, projecting down. Shield 48 μ long, 55 μ wide, pattern a network; dorsal tubercles and setae missing. Legs with unusually large femoral setae. Forelegs 30 μ long, tibia 7.5 μ long, tarsus 8.5 μ long, claw 6.5 μ long, slightly knobbed, featherclaw 5 rayed. Hindlegs 28 μ long, tibia 5.5 μ long, tarsus 7.5 μ long, claw 8.5 μ long. Anterior coxae barely touching. Abdomen entirely microtuberculate, more heavily so beneath; sternites about 60 in number, the tergites somewhat less numerous at about 50. Lateral seta 26 μ long, on about sternite 6; first ventral 55 μ long, on about sternite 16; second ventral 30 μ long, on about sternite 30; third ventral 25 μ long, on about sternite 6 from rear; accessory seta absent. Female genitalia projecting and close to coxae; 29 μ wide, 17.5 μ long, coverflap with 12-16 ridges, interrupted centrally, seta 12 μ long. Male not studied.

Type locality: Berkeley, California. **Collected:** July 25 and August 20, 1939, by the writer. **Host:** *Arbutus unido* L., Strawberry Tree. **Relation to host:** The mites occur on the underside of the leaves, and due to the waxy covering leave white exuvia streaks. **Type slide:** so designated, dated August 20. **Paratype slides:** five in number as above with either date. This is another mite of the group lacking dorsal setae and with the genitalia projecting.

"*Phyllocopttruta*" *concava* Keifer, new species

Plate 105

Female 120-140 μ long, 46 μ wide, 35 μ thick, yellow, flattened, spindleform. Rostrum 27 μ long, projecting down. Shield 38 μ long, 43 μ wide, design an open network; dorsal tubercles 23.5 μ apart, on rear margin; dorsal setae about 75-85 μ long, projecting backward. Forelegs 31 μ long, tibia 6 μ long, tarsus 7.5 μ long, claw 5.75 μ long, knobbed, featherclaw 2 rayed. Hindlegs 29 μ long, tibia 5 μ long, tarsus 7.5 μ long, claw 6.5 μ long. Sternal line simple. Abdomen with tergites very obscurely microtuberculate, the third tergite higher, the back longitudinally concave with lateral ridge; sternites with elongate microtubercles; tergites about 27; sternites 60-65. Lateral seta 12.5 μ long, on about sternite 8; first ventral 50 μ long, on about sternite 22; second ventral 12 μ long, on about sternite 38; third ventral 17.5 μ long, on about sternite 4 from rear; accessory seta present. Female genitalia 21 μ wide, 11.5 μ long, coverflap with 6-8 ridges, seta 14.5 μ long. Male not studied.

Type locality: Sacramento, California. **Collected:** June 27, 29, 30, and July 20 by the writer. **Host:** *Ulmus (campestris* L.?) **Relation to host:** The mites are vagrants, principally on the upper surface of the leaves. **Type slide:** So designated, of the mites taken June 30. **Paratype slides:** five in number, dated June 27, June 30, and July 20. The tergal structure of this mite is similar to *Phyllocopttruta* but it is obviously not truly related. The extra long dorsal setae and the two-rayed featherclaw suggest an affinity to *Phyllocoptes mastigophorus* Nal. also on Elm.

Epitrimerus sierribis Keifer, new species

Plate 106

Female 150 μ long, 55 μ wide, 45-50 μ thick, spindleform, amber color. Rostrum 28 μ long, projecting down, antapical seta moderately long. Shield 48 μ long, 47 μ wide, anterior lobe with 2 or 3 spines, design an open network, the central

part quite obscure, lateral edge spinulate; dorsal tubercles 13.5μ apart, a little ahead of rear margin; dorsal setae 15μ long, projecting caudocentral. Forelegs 30.5μ long, tibia 6.5μ long, tarsus 6.5μ long, claw 7μ long, slightly knobbed, featherclaw 5 rayed. Hindlegs 29μ long, tibia 5μ long, tarsus 6.5μ long, claw 8.5μ long. Sternal line simple. Abdomen entirely microtuberculate, the microtubercles spined, especially above and toward rear; tergites 45-48; sternites about 65. Lateral seta 12.5μ long, on about sternite 10; first ventral 40μ long, on about sternite 27; second ventral 14.5μ long, on about sternite 44; third ventral 18.5μ long, on about sternite 5 from rear; accessory seta present, prominent. Female genitalia bowl shape, 23.5μ wide, 14.5μ long, coverflap with 10-12 ridges, seta 20.5μ long.

Male not studied.

Type locality: Just above Baxters, Placer Co., California. **Collected:** July 14, 1939, by the writer. **Host:** *Ribes nevadense* Kell. **Relation to host:** The mites are vagrants on the undersides of the leaves where a little browning occurs; also in petiole bases. **Type slide:** so designated, as above. **Paratype slides:** Three in number, as above. The species is characterized by the three pronged anterior shield lobe, and the spinulate abdomen.

Calepitrimerus acalyptus Keifer, new species

Plate 107

Female about 150μ long, $40-45 \mu$ wide, $35-40 \mu$ thick, dull amber, elongate, wedge-shaped, three dorsal longitudinal wax bands. Rostrum 26μ long, projecting down. Shield 38μ long, 38μ wide, admedian and submedian lines present as curved lines, sides granular; dorsal tubercles 23μ apart, on rear margin; dorsal setae 18.5μ long, projecting caudad. Forelegs 30.5μ long, tibia 8μ long, tarsus 7μ long, claw 8μ long, tapering, featherclaw 6 rayed. Hindlegs 28μ long, tibia 6.5μ long, tarsus 6.5μ long, claw 8μ long. Sternal line simple. Abdomen with central ridge ending on about tergite 26, the three ridges thickened for wax production; tergites otherwise smooth, sternites microtuberculate, tergites about 40; sternites about 60. Lateral seta 20.5μ long, on about sternite 8; first ventral 36μ long, on about sternite 20; second ventral 20.5μ long, on about sternite 38; third ventral 22μ long, on about sternite 6 from rear; accessory seta present. Female genitalia 19.5μ wide, 12.5μ long, coverflap with 10 to 12 ridges, seta 24μ long.

Male not studied.

Type locality: Just above Baxters, Placer Co., California. **Collected:** July 14, 1939, by the writer. **Host:** *Ceanothus cordulatus* Kell. **Relation to host:** The mites are vagrants on the upperside of the leaves; also found on stems. **Type slide:** so designated, as above. **Paratype slides:** three in number, as above. This species differs from the four species already placed in the genus by the shield pattern and direction of shield setae.

"*Calepitrimerus*" *hederae*, Keifer, new species

Plate 108

Female $160-180 \mu$ long, 65μ wide, $55-60 \mu$ thick, wedge-shaped, amber in color. Rostrum 35μ long, antapical setae long, projecting down. Shield 73μ long, 65μ wide, with admedian ridges, the surface generally granular and raised caudad especially laterally, obliterating a few tergites on its rear margin; dorsal tubercles 17.5μ apart, well ahead of rear margin; dorsal setae 5.5μ long, projecting dorso-centrad. Forelegs 32μ long, tibia 8μ long, tarsus 6.5μ long, claw 5.5μ long, with large knob, featherclaw divided, apparently 3-rayed. Hindlegs 30μ long, tibia 5.5μ long, tarsus 6.5μ long, claw 5μ long. Sternal line short, coxae granular. Abdomen dorsally concave with central ridge ending about tergite 22, lateral ridges extending almost full length, tergites almost or entirely smooth except on ridges, sternites microtuberculate; tergites about 35; sternites about 60-65. Lateral seta 11.5μ long, on about sternite 2; first ventral 40μ long, on about sternite 19; second ventral 17μ long, on about sternite 40; third ventral 23μ long, on about sternite 5-6 from rear; accessory seta present, minute. Female genitalia granular anteriorly, 26μ wide, 16μ long, coverflap with about 12 ridges, seta 8.5μ long.

Male not studied.

Type locality: San Francisco. **Collected:** August 19, 1939, by the writer. **Host:** *Hedera helix* L. **Relation to host:** The mites are

undersurface vagrants. **Type slide:** So designated, as above. **Paratype slides:** five in number, as above. This species is obviously peculiar, both in the humps on the anterior dorsum, and the divided featherclaw. It may eventually have to be removed from *Calepitrimerus*.

Rhyncaphytoptus acilius Keifer, new species

Plate 109

Female 165-175 μ long, 50-55 μ thick, elongate spindleform, yellowish to amber. Rostrum 62 μ long, projecting down. Shield 35 μ long, 42 μ wide, admedian lines present, also diagonal lines laterally; dorsal tubercles 26 μ apart, a little ahead of rear margin, short fingerlike; dorsal setae 50 μ long, projecting anteriorly. Forelegs 47 μ long, tibia 12.5 μ long, tarsus 9 μ long, claw 8 μ long, curved, tapering, slightly knobbed, featherclaw 9 rayed. Hindlegs 42 μ long, tibia 10.5 μ long, tarsus 9 μ long, claw 8.5 μ long. Anterior coxae contiguous. Abdomen with tergites large and with elongate microtubercles; tergites about 20; sternites 75-80. Lateral seta 20.5 μ long, on about sternite 10; first ventral 67 μ long, on about sternite 28; second ventral 44 μ long, on about sternite 44; third ventral 26 μ long, on about sternite 6 from rear; accessory seta present. Female genitalia with some anterior granulation, 23.5 μ wide, 12 μ long, coverflap smooth, seta 15 μ long. Male not studied.

Type locality: Sacramento, California. **Collected:** August 8 and 29, 1939, by the writer. **Host:** *Salix lasiolepis* Benth. **Relation to host:** The mites are vagrants on the underside of hairy leaves. **Type slide:** So designated, dated August 8. **Paratype slides:** Five in number, with either date. The broad back plates with elongate tubercles characterize this mite.

The big-beaked Sycamore Mite, *Rhyncaphytoptus platani* K. was taken August 16, 1939, on native Sycamore, *Platanus racemosa* Nutt. The original record of this species was from a street tree of hybrid origin.

Abacoptes Keifer, new genus

Rostrum large, attenuate, situated at right angles to body and with chelicerae and chelicera sheath projecting anteriorly to rostrum for most of its length. All body and leg setae present as usual with no extra setae. Abdomen with tergites on anterior $\frac{2}{3}$ forming a large elliptical nearly horizontal area, the tergites themselves somewhat roughened; posterior part of abdomen conical and projecting down. Female genital coverflap smooth.

Genotype: *Abacoptes platynus* n. sp.

This genus, by reason of the beak structure, falls into the *Diptiomiopus-Rhyncaphytoptus* group. It is distinguished by the structure of the dorsum.

Abacoptes platynus Keifer, new species

Plate 110

Female about 200 μ long, 75-80 μ wide, about 60 μ thick, thick, curved, spindleform, color amber to reddish. Rostrum 61 μ long, projecting down. Shield 38 μ long, 70 μ wide, humped posteriorly, projecting slightly over shield base and with a submedian line; dorsal tubercles 44 μ apart, ahead of rear margin; dorsal setae 8.5 μ long, projecting anteriorly. Forelegs 47 μ long, tibia 11.5 μ long, tarsus 8.5 μ long, claw 9 μ long, knobbed, featherclaw 5 rayed. Hindlegs 44 μ long, tibia 8.5 μ long, tarsus 9 μ long, claw 10 μ long. Sternal line apparently forked. Abdomen lacking microtuberculation except on venter toward rear; tergites 23-25; sternites about 60. Lateral seta 26 μ long, on about sternite 12; first ventral 38 μ long, on about sternite 27; second ventral 19 μ long, on about sternite 36; third ventral 26 μ long, on about sternite 6 from rear; accessory seta present, short. Female genitalia with finely tuberculate rings between it and coxae, 33 μ wide, 25 μ long, coverflap smooth, seta 16 μ long. Male not seen.

Type locality: Sacramento, California. **Collected:** June 20 to 28, July 10 to 20, and August 7, 1939 by the writer. **Hosts:** *Ulmus*

(*campestris* L.?) and *Ulmus pumila* L. **Relation to host:** The mites are vagrants on the undersurface of the leaves. **Type slide:** so designated, of mites taken from the former host July 18. **Paratype slides:** Seven in number, as above, one of specimens from *Ulmus pumila* dated August 7. This mite occurs with *Rhyncaphytoptus ulmivagrans* K. on both species of Elm but is never as abundant. Both species suddenly appear about the middle of June, flourish through July, and vanish by the middle of August. *Abacoptes platynus* is quite distinct by its elliptical flattened back and in older individuals by the red color. The coxae-genitalia figure on Pl. 110 is not typical in that the genitalia are not as closely appressed to the coxae.

Diptilomiopus abronius Keifer, new species

Plate 111

Female 230 μ long, 75 μ thick, spindleform, yellow to purplish. Rostrum 60 μ long, projecting down. Shield 34 μ long, 55 μ wide, design a network, shield not projecting over rostrum base; dorsal tubercles minute, 25 μ apart; dorsal setae missing. Legs with femoral seta missing. Forelegs 43 μ long, tibia 7.5 μ long, tarsus 13.5 μ long, claw 8 μ long, straight, knobbed, featherclaw 6 rayed on a side. Hindlegs with patellar seta missing, 38.5 μ long, tibia 5.5 μ long, tarsus 12 μ long, claw 8 μ long. Sternal line on prominent ridge, seta I missing. Abdomen entirely microtuberculate, a shallow furrow on each side of tergum; tergites about 75; sternites about 88. Lateral seta missing; first ventral 70 μ long, on about sternite 27; second ventral 13.5 μ long, on about sternite 47; third ventral 52 μ long, on about sternite 11 from rear; accessory seta absent. Female genitalia 29 μ wide, 21 μ long, coverflap with a number of short dashes, seta 10.5 μ long.
Male not studied.

Type locality: San Francisco, California. **Collected:** August 20, 1939, by the writer. **Host:** *Rubus vitifolius* C & S, Blackberry. **Relation to host:** The mites are vagrants on the undersurface of the leaves. **Type slide:** So designated, of mites collected as above. **Paratype slides:** Five in number as above. This species is characterized by the absence of the dorsal and first lateral setae, by the missing second patellar seta, and by the nearly equal sternites and tergites.

The big-beaked plum mite, *Diptilomiopus prunorum* K., has been found near Sacramento breeding on wild blackberry, *Rubus vitifolius* C & S, and on wild grape *Vitis californica* Benth. An attempt to distinguish between the mites from each host and mites from plum leaves was without success. In dooryards where this species is exceedingly common on plum and peach leaves, cultivated grape and blackberry have been found uninfested. Wild grape and wild blackberry are not generally infested with this mite even in the Sacramento vicinity.

Oxypleurites depressus Nal.

Plate 112

Malepa—Anz., Ak. Wiss. Wien, Vol. 31, p. 38, 1894

Nalepa—Marcellia, Vol. 25, p. 81, 1929

Masseé—Bul. Ent. Res., Vol. 21, p. 168, July, 1930

Female about 150 μ long, 50-55 μ wide, 30-35 μ thick, flattened, wedge-shaped, amber color. Rostrum 20.5 μ long, projecting down. Shield 46 μ long, 50 μ wide, with indistinct markings, anterior lobe pointed in dorsal view; dorsal tubercles 14.5 μ apart, well ahead of rear margin; dorsal setae 4 μ long, projecting antero-centrad. Forelegs 25 μ long, tibia 5.5 μ long, tarsus 5 μ long, claw 5 μ long, straight, large knob, featherclaw 4 rayed. Hindlegs 23.5 μ long, tibia 4 μ long, tarsus 5 μ long, claw 5 μ long. Sternal line simple. Abdomen with tergites smooth except over lateral lobes, the first tergite higher; 18 tergites; sternites 50-55. Lateral seta 16 μ long, on about sternite 7; first ventral 32 μ long, on about sternite 17; second ventral 10 μ long, on about sternite 31; third ventral 16 μ

long, on about sternite 4 from rear; accessory seta present. Female genitalia 20.5 μ wide, 11.5 μ long, coverflap with about 8 or 9 ridges, seta 9 μ long.
Male not studied.

Locality: Paradise, Butte Co., California. **Collected:** June 7, 1939, by the writer. **Host:** *Corylus avellana* L., Filbert. **Relation to host:** The mites are sparse undersurface vagrants. This species is distinguished by the shield characters and type of claw.

Oxypleurites acidotus Keifer, new species

Plate 113

Female 160-170 μ long, 65 μ wide, 45-50 μ thick, flattened, wedge-shaped, amber color. Rostrum 27 μ long, projecting down. Shield 57 μ long, 65 μ wide, design obscure; dorsal tubercles 34 μ apart, on rear margin; dorsal setae 5 μ long, projecting backward. Forelegs 34 μ long, tibia 8 μ long, tarsus 6 μ long, claw 5.5 μ long, with large knob, featherclaw 4 rayed. Hindlegs 33 μ long, tibia 7 μ long, tarsus 5.5 μ long, claw 5.5 μ long. A short groove between fore coxae. Abdomen with tergites smooth, forming a central ridge; sternites microtuberculate; tergites 22; sternites about 60-65. Lateral seta 18 μ long, on about sternite 8; first ventral 43 μ long, on about sternite 20; second ventral 8 μ long, on about sternite 38; third ventral 13.5 μ long, on about sternite 4 to 5 from rear; accessory seta present, small. Female genitalia 23 μ wide, 16 μ long, coverflap with 10-12 ridges, seta 12 μ long.
Male not studied.

Type locality: San Francisco, California. **Collected:** August 20, 1939, by the writer. **Host:** *Baccharis pilularis* DC. Chaparral Broom. **Relation to host:** The mites are vagrants on the second year leaves, preferring the upper surface. **Type slide:** So designated, as above. **Paratype slides:** Four in number, as above. This species is allied to *Oxypleurites baccharis* K., differing in the lack of striae on the dorsal ridge, in the larger claw knob, and the different female apodeme. There is a slight increase in tergites and sternites on *acidotus* over *baccharis*. The sternites on *baccharis* should have been stated as about 50 and not 37-40.

Host List

Cupressaceae

- Cupressus sempervirens* L., Italian Cypress
Platyphytoptus cupressi n. sp. on twig tips
Libocedrus decurrens Torr., Incense Cedar
Platyphytoptus libocedri n. sp. on twig tips

Taxodiaceae

- Taxodium distichum* Rich., Bald Cypress
"Platyphytoptus" *taxodii* n. sp. on needles

Salicaceae

- Salix lasiolepis* Benth., Pussy Willow
Rhyncaphytoptus acilius n. sp., vagrant on underside of leaves

Juglandaceae

- Carya pecan* E & G, Pecan
Eriophyes caoryae n. sp., leaf edgeroll

Betulaceae

- Corylus avellana* L., Filbert
Oxypleurites depressus Nal., vagrant on leaf underside
Corylus rostrata var. *californica* A., California Hazel
Phyllocoptes tamalpais n. sp., vagrant on both surfaces

Ulmaceae

- Ulmus (campestris* L. ?), Elm
"Phyllocoptus" *concava* n. sp., vagrant on both surfaces
Abacoptes platynus n. sp., underside vagrant
Ulmus pumila L., Chinese Dwarf Elm
Abacoptes platynus n. sp.
Rhyncaphytoptus ulmivagrans K.

Moraceae

- Morus* sp., Mulberry
Eriophyes mori n. sp., in buds

Magnoliaceae

- Magnolia grandiflora* L.
Phyllocoptes magnolivora n. sp., in hairs on buds and leaves

Crassulaceae

- Cotyledon caespitosa* Haw.
Eriophyes stinsonis n. sp., at leaf bases
Phyllocoptes cotyledonis n. sp., on leaves

Saxifragaceae

- Ribes nevadense* Kell
Eptitrimerus sterribis n. sp., on undersides of leaves

Platanaceae

- Platanus racemosa* Nutt., Sycamore
Rhyncaphytoptus platani K., vagrant on underside

Rosaceae

- Rubus vitifolius* C & S, Blackberry
Diptilomiopus abronius n. sp., on leaf undersurface
Diptilomiopus prunorum K., on leaf under surface
Rosa sp.
Phyllocoptes adaluis n. sp., vagrant on undersurface

Rhamnaceae

- Ceanothus cordulatus* Kell
Calepitrimerus acalyptus n. sp., vagrant on leaves, principally the upper surface

Vitaceae

- Vitis californicus* Benth, Wild Grape
Diptilomiopus prunorum K., on undersurface

Myrtaceae

- Feijoa sellowiana*, Feijoa
Eriophyes feijoa n. sp., in hairs on young leaves and in buds

Araliaceae

- Hedera helix* L., Ivy
 "Calepitrimerus" *hederae* n. sp., on underside

Ericaceae

- Arbutus unido* L., Strawberry Tree
Phyllocoptes arbuti n. sp., on undersurface

Caprifoliaceae

- Symphoricarpos albus* L., Snowberry
Phyllocoptes symphoricarpi n. sp., on undersurface

Compositae

- Baccharis pilularis* D. C., Chaparral Broom
Oxypleurites acidotus n. sp., on older leaves

Designations of Plates

- AP** Anterior apodeme of the female genitalia
AP1 Internal female genitalia
D Dorsal view of mite
DA Dorsal view of anterior section
ED1 Dorsal skin in side view
ES Side skin
F Featherclaw
Fl Featherclaw and adjacent tarsal structure
GF1 Female genitalia and coxae
L Left legs, whole or in part
L1 Left foreleg
R Rostrum
S Side view of mite
SA Side view of anterior part of mite
V Ventral view of mite

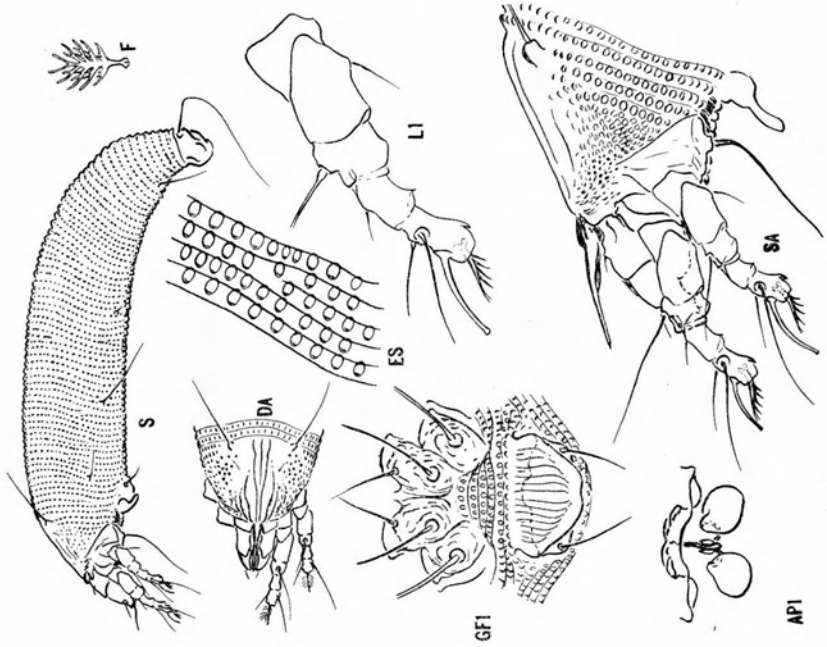


Plate XCIII, *Eriophyes feijoae* K., n. sp.

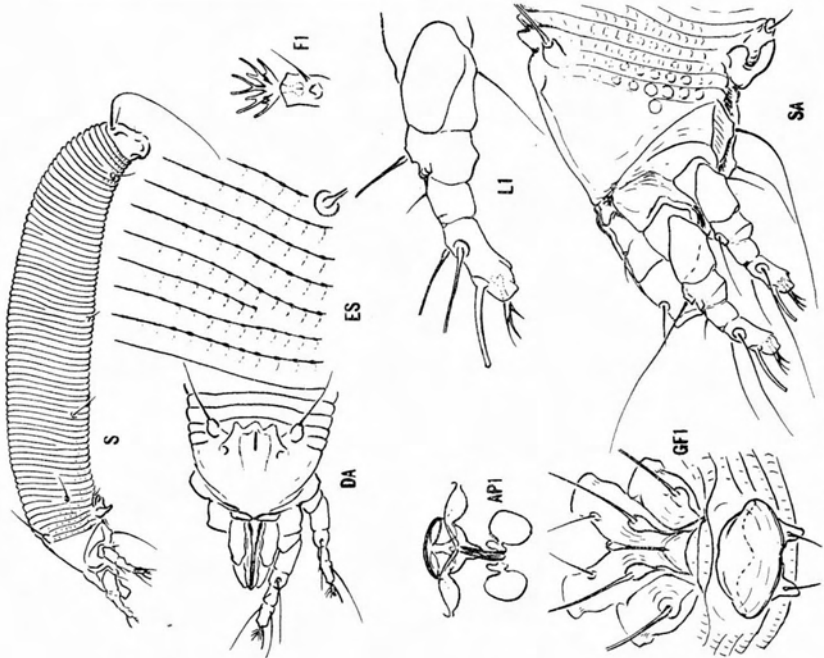


Plate XCII, *Eriophyes caryae* K., n. sp.

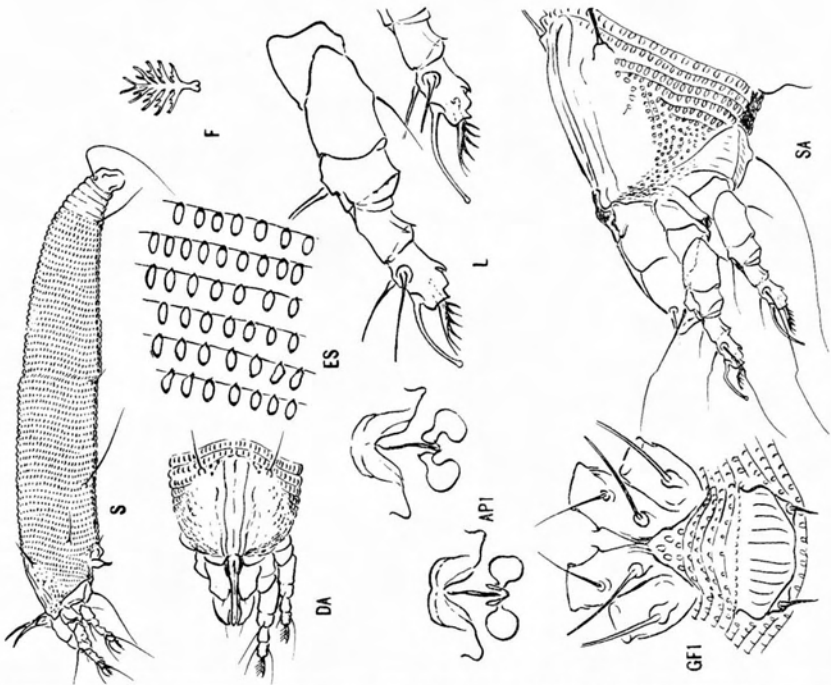


Plate XCV, *Eriophyes mori* K., n. sp.

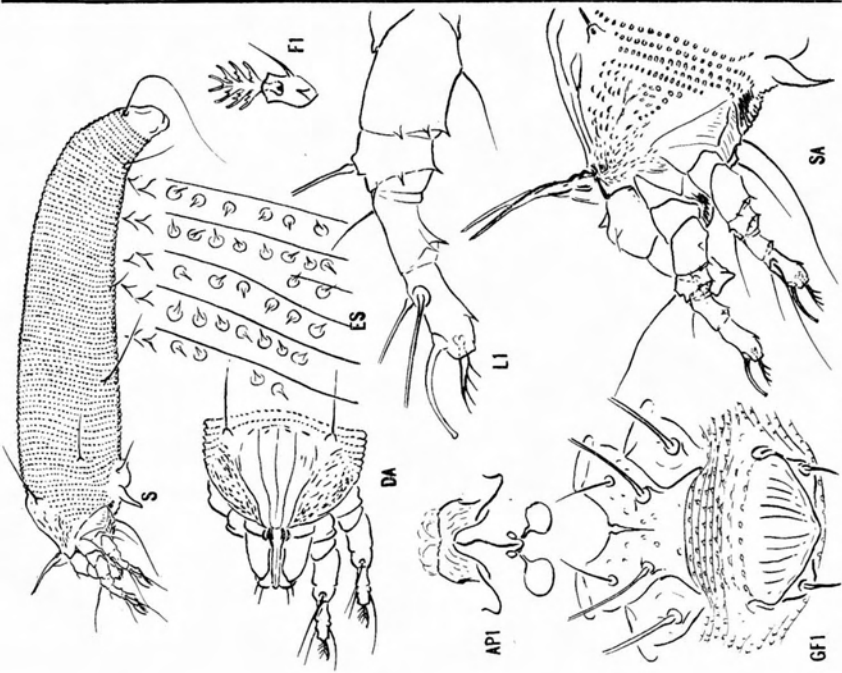


Plate XCIV, *Eriophyes stinsonis* K., n. sp.

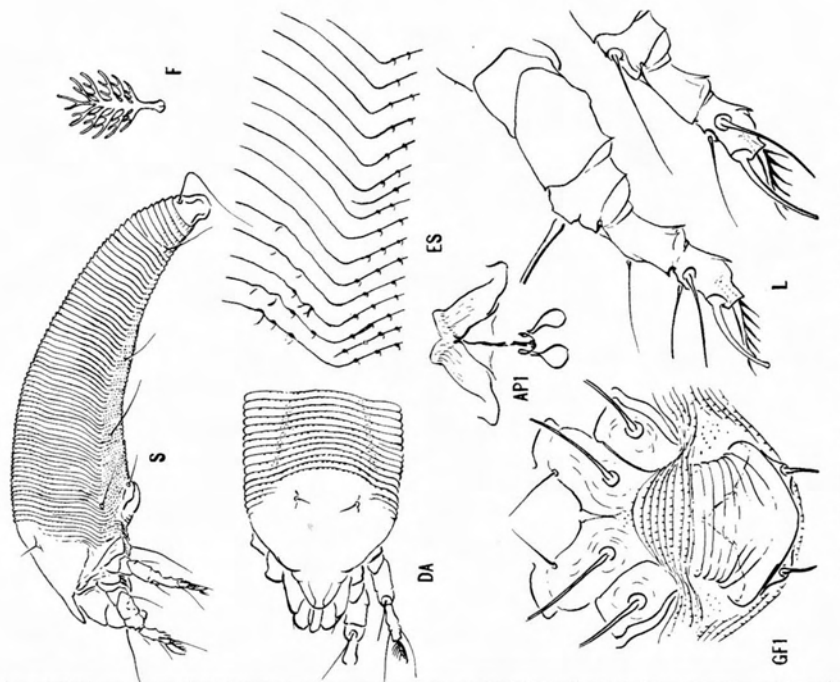


Plate XCVII, *Platyphytoptus libocedri* K., n. sp.

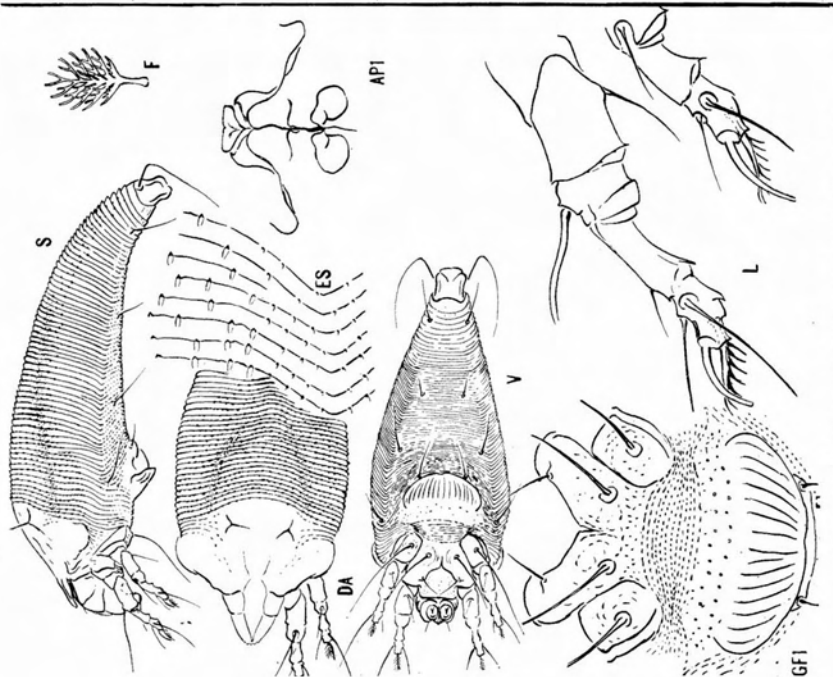


Plate XCVI, *Platyphytoptus cupressi* K., n. sp.

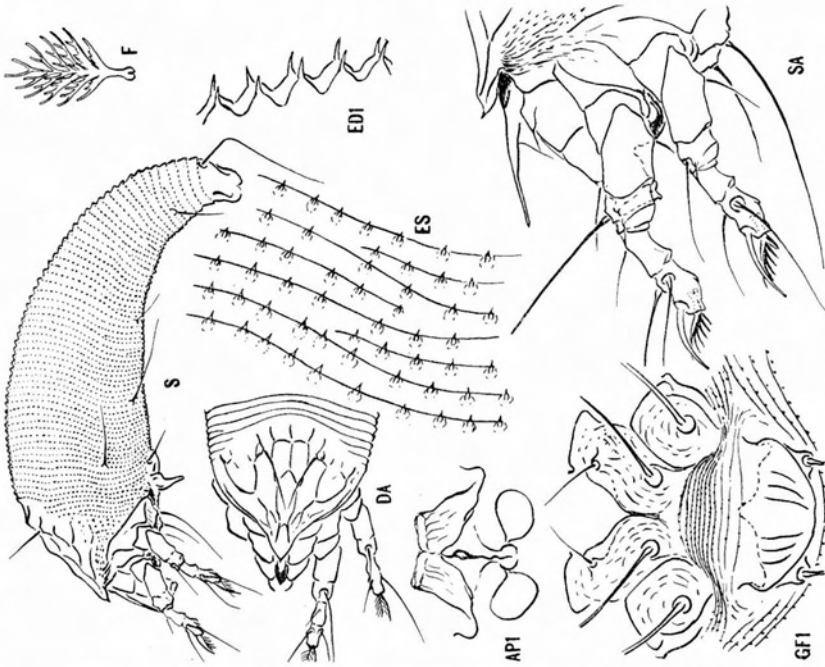


Plate XCIX, *Phyllocoptes adatus* K., n. sp.

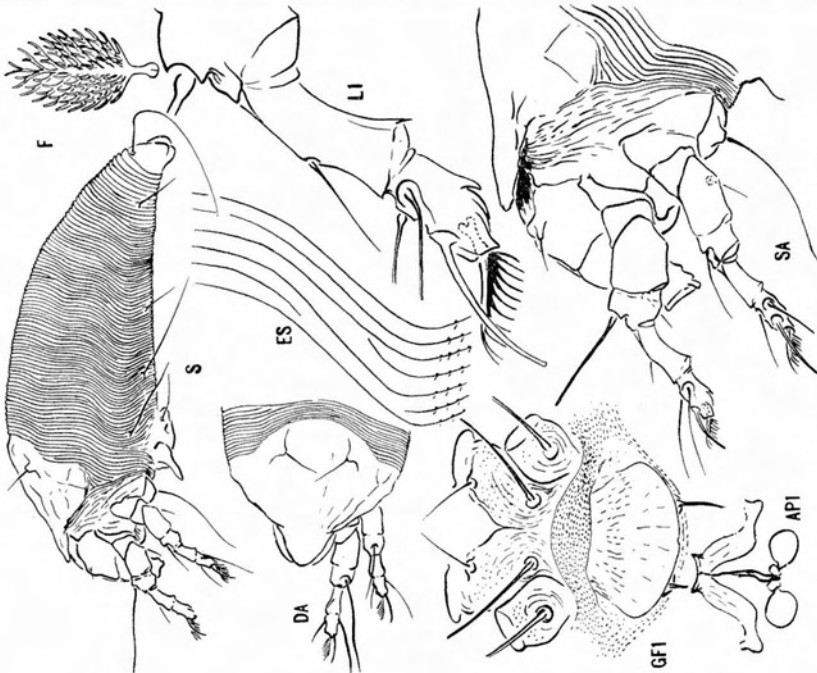


Plate XCVIII, "*Platyphoptus*" *tazodii* K., n. sp.

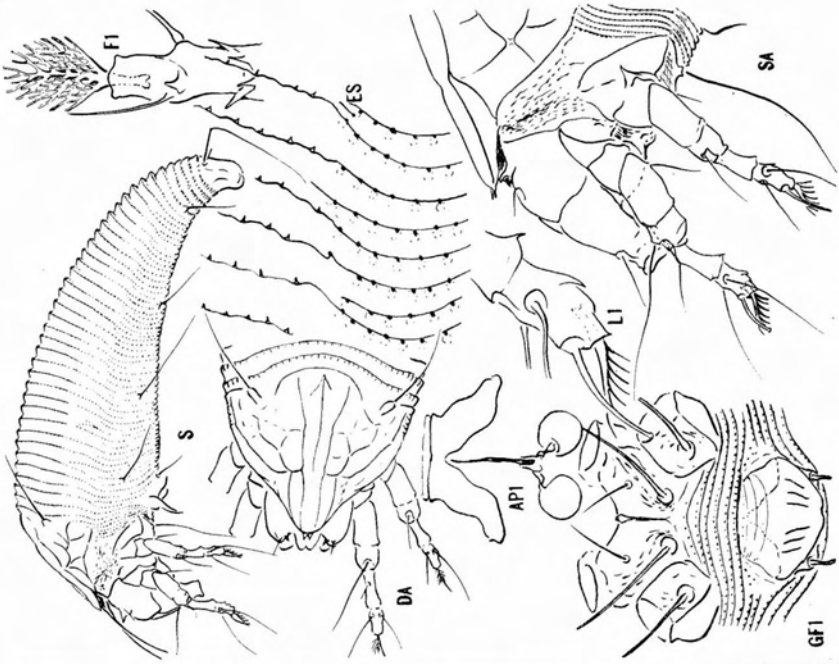


Plate 101, *Phyllocoptes symphoricarpi* K., n. sp.

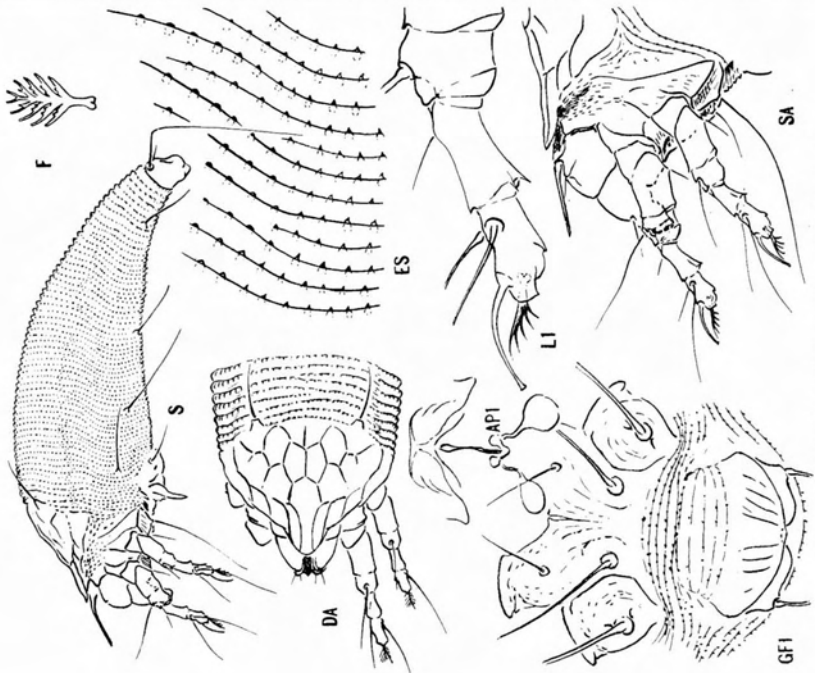


Plate C, *Phyllocoptes cotyledonis* K., n. sp.

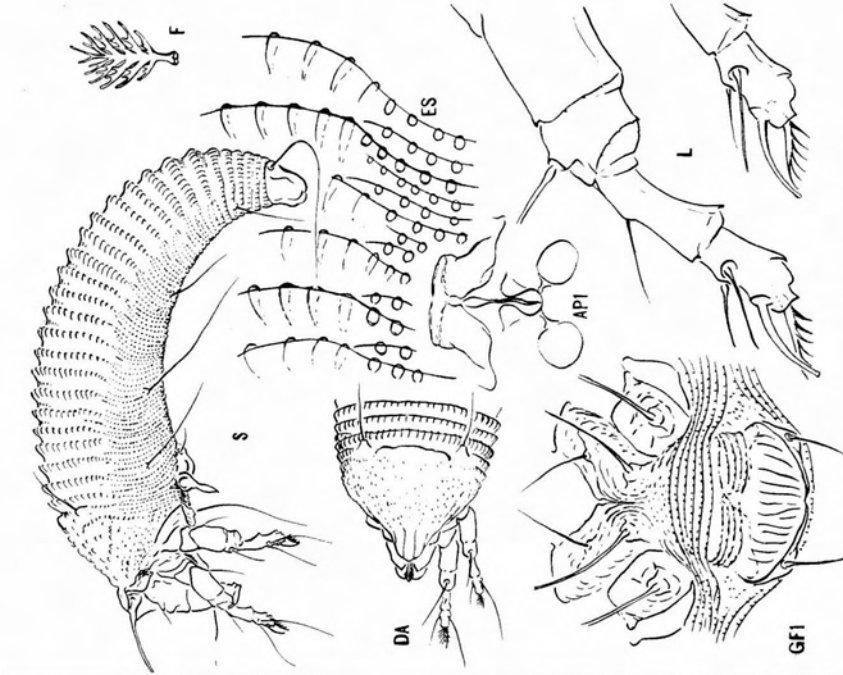


Plate 102, *Phyllocoptes tamalpais* K., n. sp.

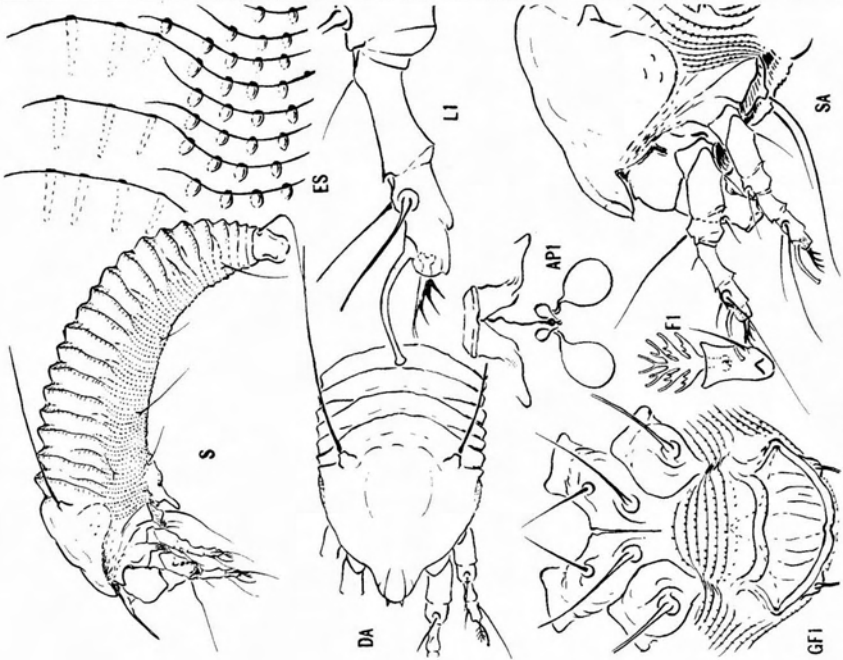


Plate 103, *Phyllocoptes magnificora* K., n. sp.

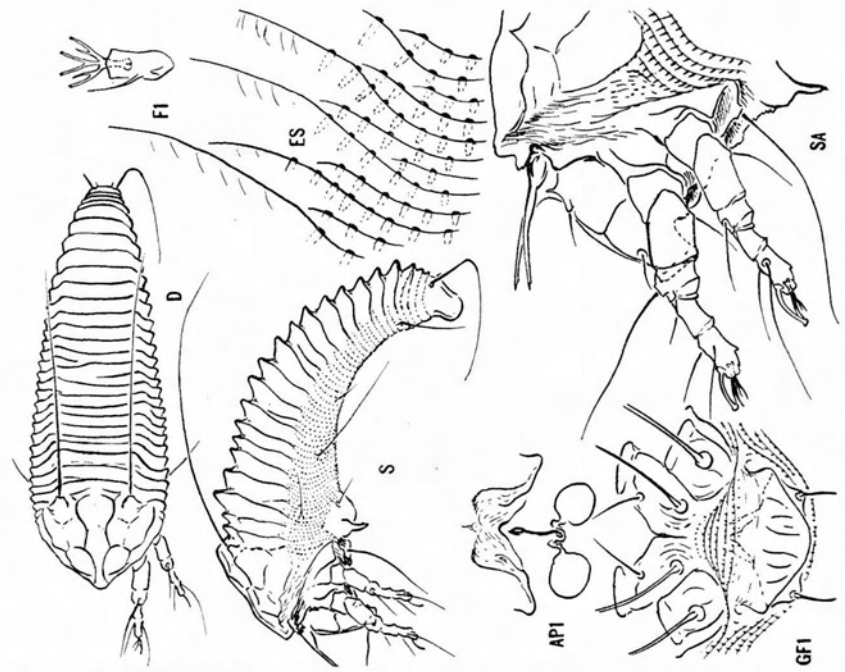


Plate 105, "*Phyllocoptera concava* K., n. sp.

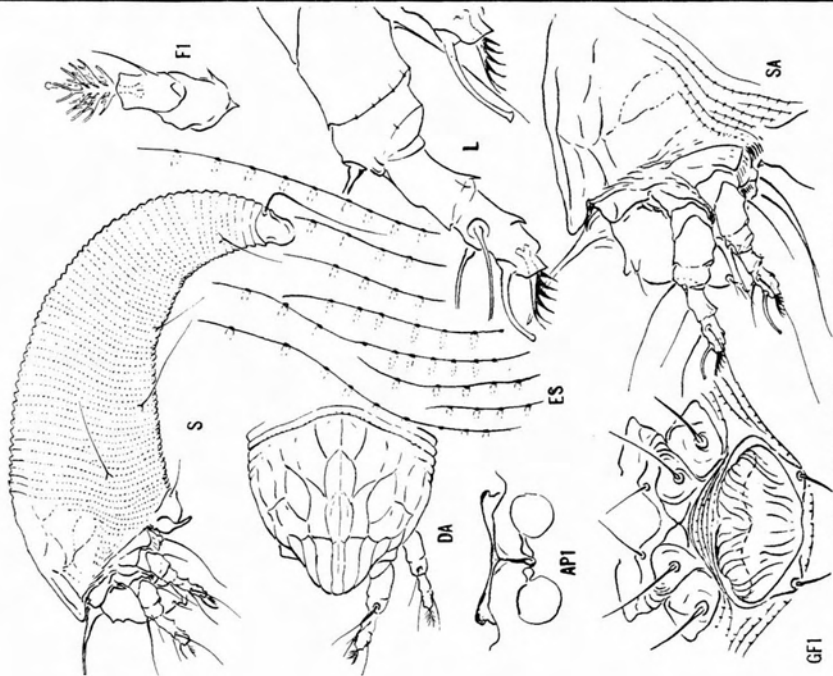


Plate 104, *Phyllocoptera arbuti* K., n. sp.

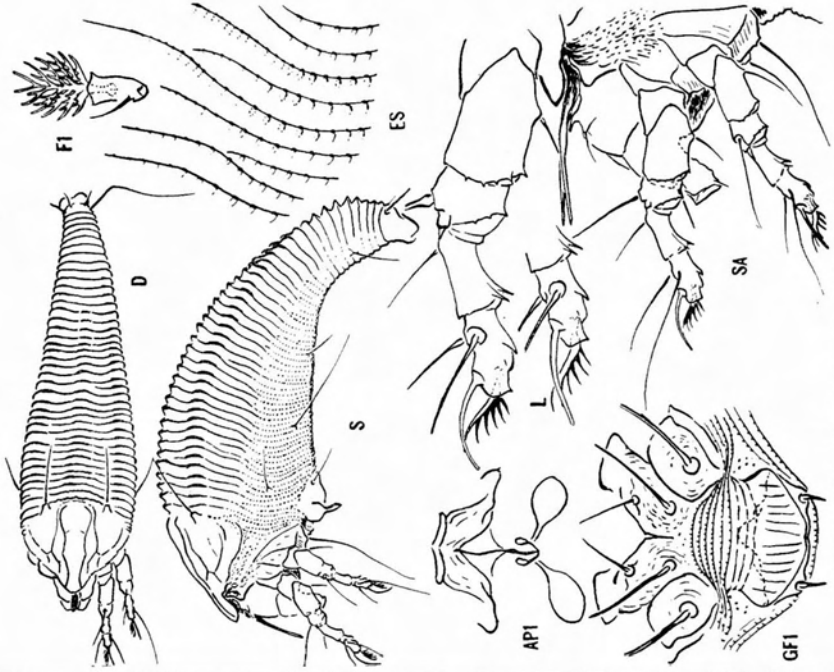


Plate 107. *Colepitrimerus acalyptus* K., n. sp.

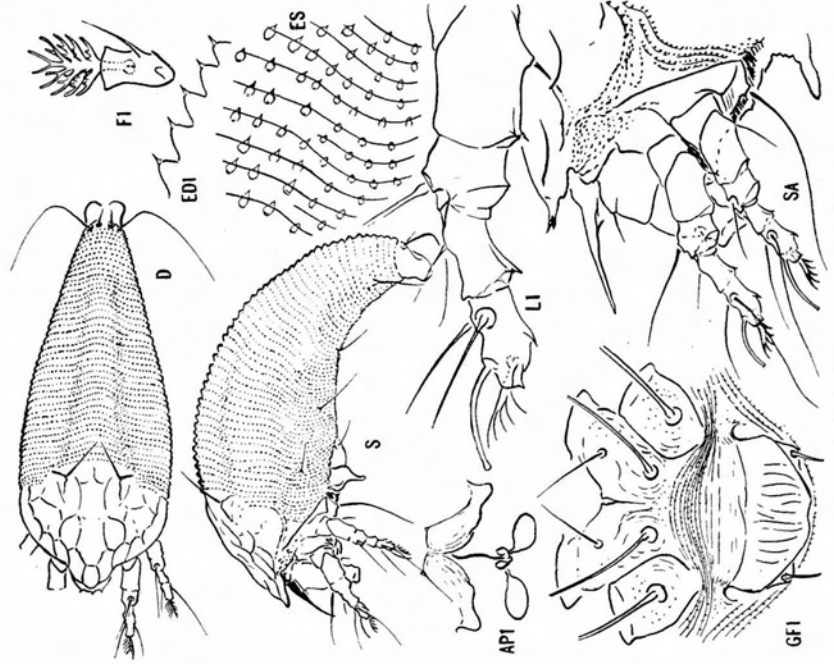


Plate 106. *Epitrimerus sierris* K., n. sp.

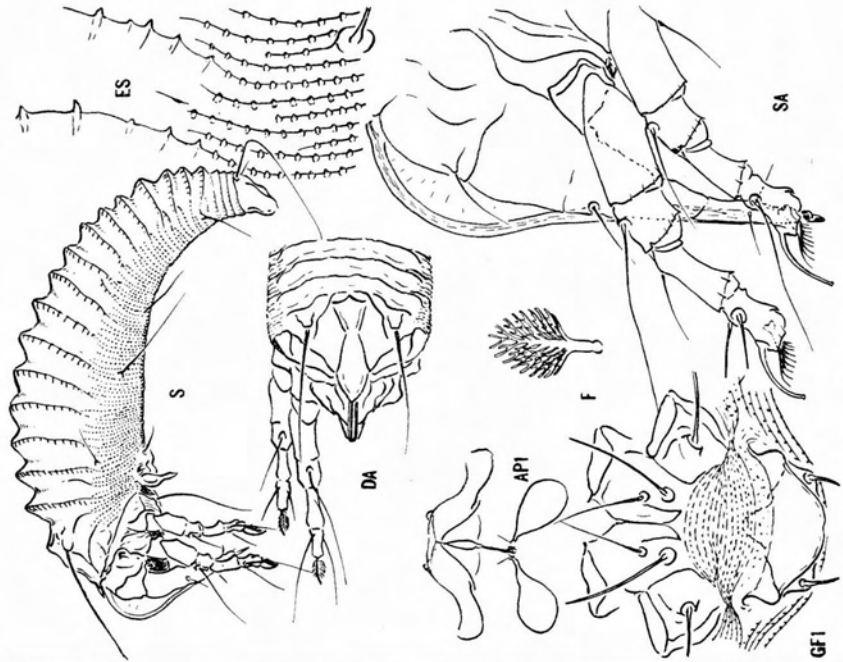


Plate 109, *Rhyncaphytopius acilius* K., n. sp.

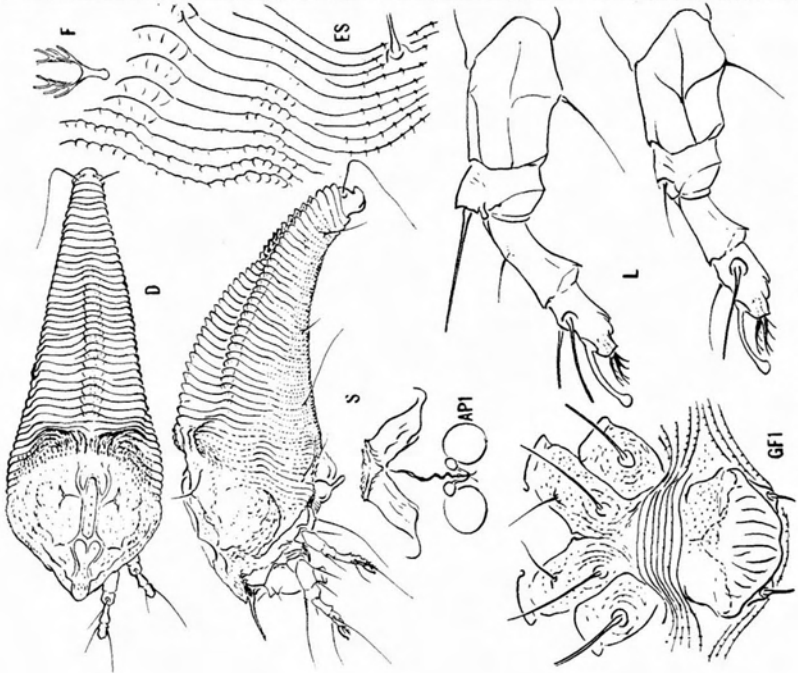


Plate 108, "*Catepitrimerus*" *hederæ* K., n. sp.

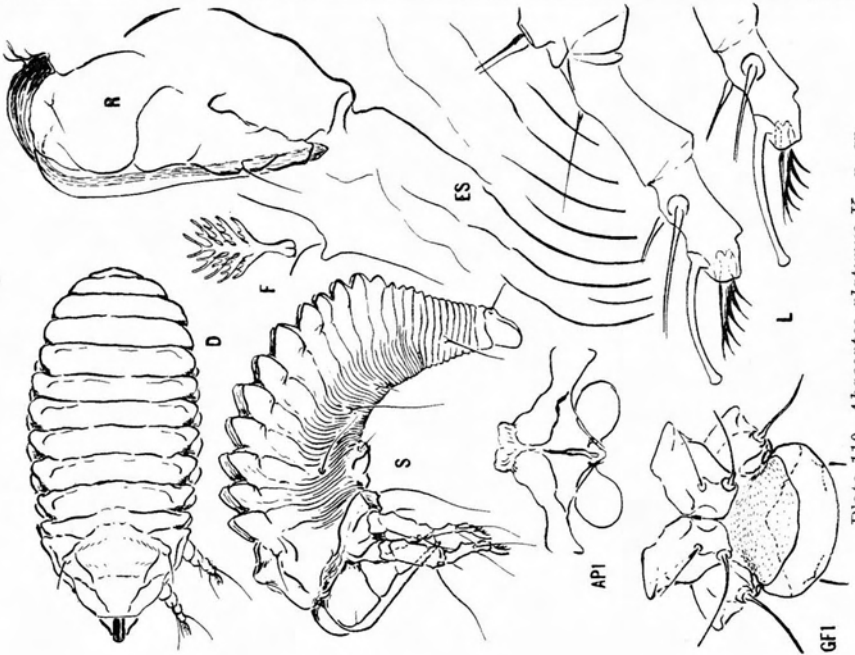


Plate 110, *Abacoptes platynus* K., n. sp.

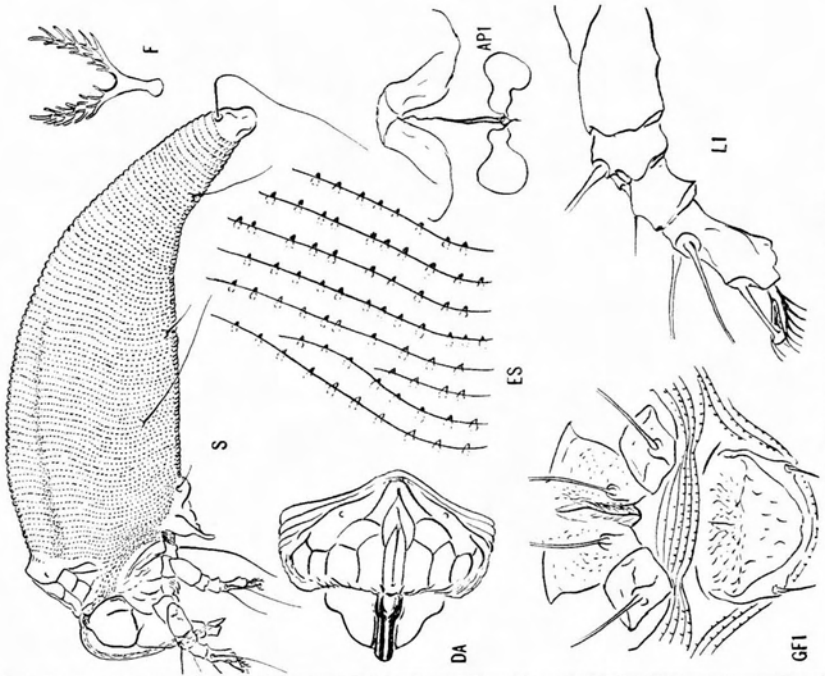


Plate 111, *Diptilomitus abronius* K., n. sp.

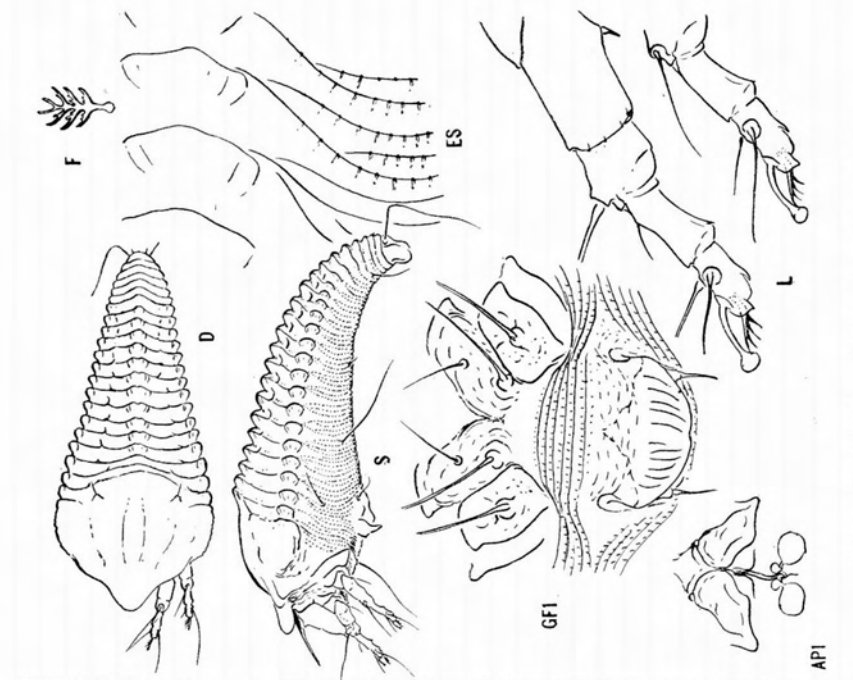


Plate 113, *Orypleurites acidotus* K., n. sp.

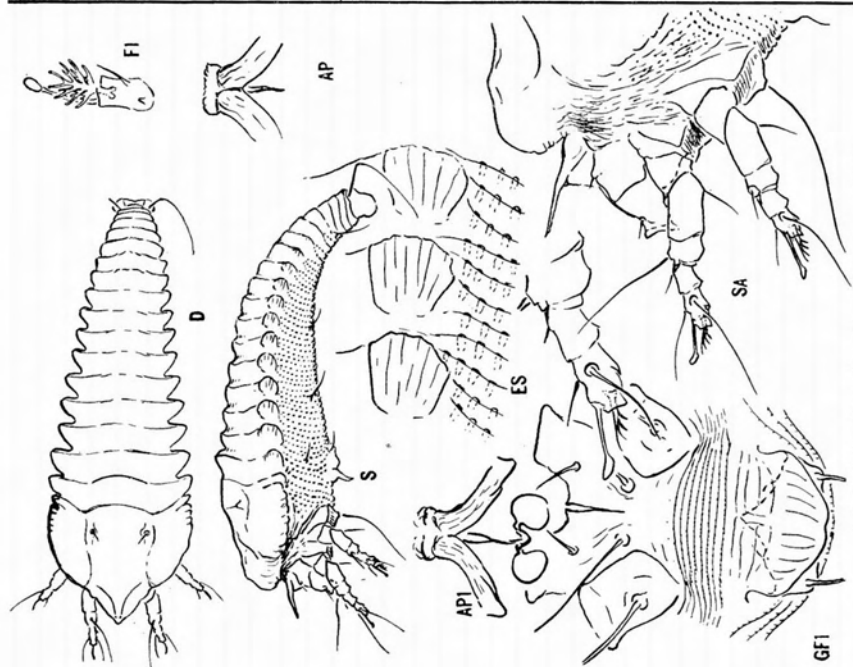


Plate 112, *Orypleurites depressus* NaL.