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ERIOPHYID STUDIES IV

H. H. KEIFER

State Department of Agriculture, Sacramento

Eriophyid Studies III was issued in reprint form December 23, 1938. It duly appeared in the Bulletin, Cal. Dept. Agr., Vol. 28, No. 2, p. 144, March 17, 1939. The present installment lists 15 more Eriophyid species, 14 of which are considered new. This brings the total of figured species to 64, with 53 new, 2 reported as established on this continent for the first time and 9 species already well known.

It has been noticed that the rostrum length given for *Eriophyes tristriatus erineus* Nal., in the first installment, Bul. Cal. Dept. Agr., Vol. 27, No. 2, p. 184, June 22, 1938, is 6.5 microns. This is in error and should be, "17 microns long."

Eriophyes marinalni Keifer, new species

Plate LIII

Female 240-250 microns long, 60 microns thick; form round, wormlike; color red. Rostrum very short, pointing down. Shield 40 microns long, 43 microns wide, smooth, dorsal tubercles 20 microns apart, just within rear margin, dorsal setae 7 microns long. Forelegs 43 microns long, patella 8 microns long, patellar seta 32 microns long, tibia 11 microns long, tarsus 10.5 microns long, claw 6.75 microns long, featherclaw 4 rayed. Hindlegs 38 microns long, patella 7 microns long, patellar seta 8.5 microns long, tibia 8.5 microns long, tarsus 10 microns long, claw 7.5 microns long. Sternal ridge forked. Coxal setae III 31 microns long. Abdomen with tergites and sternites not differentiated except that the former are smooth and the sternites bear sparse but prominent tubercles; tergites 48; sternites 55. Lateral seta a little behind genital seta, 18 microns long, on ring 7. First ventral 9 microns long, on ring 19; second ventral 8 microns long, on ring 33; third ventral 28 microns long, on ring 6 from rear; caudal seta 50 microns long; accessory seta present. Female genitalia 26 microns wide, 14 microns long, coverflap smooth, seta 7 microns long.

Male 200-220 microns long, 55 microns thick; male genitalia 22 microns wide, 15.5 microns long, seta 5 microns long.

Type locality: Stinson Beach, Marin County. **Collected:** August 13, 1938, by the writer. **Host:** *Alnus rubra* Bong., Red Alder. **Relation to host:** Causes pink bead galls in the leaves which open on the underside; the galls are embedded in the leaf and do not project clear on either side. **Type slide:** So designated, with above data. **Paratype slides:** Four slides so designated with above data. This mite is characterized by the smooth shield, short rostrum, and smooth rings except for prominent ventral microtubercles. Note the ventrad increase in ring number as in *E. emarginatae* K. *Eriophyes rhombifoliae* Hassan, leaf gall maker on *Alnus rhombifoliae* Nutt. in Yosemite, has, according to the description, lines on the shield and a completely microtuberculate abdomen. The new species is very similar to *Eriophyes laevis* (Nal.) of Europe which forms bead galls in *Alnus glutinosa* L., but *laevis* lacks ventral microtubercles. There are a number of mite species of this type that are either truly related or indicate that the gall forming habit imposes a certain form on the mites. Perhaps those species of this type with 4-rayed featherclaws are truly related. Some of these are: *Eriophyes leionotus* (Nal.) on *Betula alba*; *E. padi*

(Nal.) on plum, *E. maritima* Kendal on *Prunus maritima* Wang., *E. emarginatae* K. on *Prunus emarginata* Dougl. The mites of this type with 3-rayed featherclaws, as exemplified by the next species, do not seem directly related.

Eriophyes brevitarsus Keifer, new species

Plate LIV

Essig—Ins. Wn. No. Am., p. 47, 1926—as *tristriatus* Nal.

Hassan—U. C. Publ. in Ent. Vol. 4, p. 360, 1928—as *tristriatus* Nal.

Female 210-240 microns long, 45 microns thick, wormlike, reddish. Rostrum 20 microns long, bent down. Shield 31 microns long, 31 microns wide, the disc with three indistinct central lines and indications of others; side with some extension of body tuberculation; dorsal tubercles 20 microns apart on rear shield edge, dorsal setae 20 microns long, projecting caudad. Forelegs 32.5 microns long, patellar seta 26 microns long, tibia 5.5 microns long, tarsus 10 microns long, claw 9 microns long, featherclaw 3 rayed. Hindlegs 29 microns long, patellar seta 11.5 microns long, tibia 4.5 microns long, tarsus 8.75 microns long, claw 10 microns long. Sternal line unforked. Coxal setae III 37 microns long. Abdomen not tapering caudad as much as the average mite; rings rather broad, the microtubercles large and subquadrate; 45 to 48 rings. Lateral seta a little to the rear of the genital seta, 13 microns long, on ring 5. First ventral 13 microns long, on ring 15; second ventral 9 microns long, on ring 27; third ventral 19 microns long, on ring 5 from rear; caudal seta about 60 microns long; accessory seta present. Female genitalia 19 microns wide, 11 microns long, coverflap smooth, seta 6.75 microns long.

Male not seen.

Type locality: Sacramento, California. **Collected:** November 19, 1938, by the writer. **Host:** *Juglans hindsii* Jepson. **Relation to host:** Causes undersurface purse galls on leaves. These galls average about 5 mm in diameter and are at times numerous, but do not seem to injure the trees. **Type slide:** So designated, with above data. **Paratype slides:** Two, so designated, with above data; three bear same data, except the mites were collected from buds, February 6, 1939, by the writer. This mite can not be *Eriophyes tristriatus* (Nal.) because: 1. *tristriatus* forms leaf galls on *Juglans regia* L., whereas *brevitarsus* has never been found on *Juglans regia*; no galls of this type are found on *Juglans regia* in California. 2. *E. brevitarsus* possesses a tarsus hardly twice as long as the tibia, whereaf *tristriatus* is said to have a tarsus almost two and one-half times the tibial length. 3. *E. brevitarsus* has a shield bristle shorter than the shield length, whereas *tristriatus* has the shield or dorsal bristle one and one-half times the shield length. 4. *E. tristriatus* is said to have 70 to 80 rings, whereas *brevitarsus* has less than 50.

E. brevitarsus differs from *erineus* Nalepa (see Eriophyid Studies, Mo. Bul. Cal. Dept. Agr. 27, p. 184, June 22, 1938) by its different host, different deformation caused on host, longer tarsus in comparison to the tibia, fewer body rings, reddish body color, and different female genitalia. The question as to whether *brevitarsus* should be a valid species or a variety of *tristriatus* is left open. The writer inclines to the belief that it should be a valid species because of different structure and different host. Certainly interbreeding would seem to be impossible even if these mites ever occupy the same territory. The female genitalia may throw more light on this question, as there certainly appears to be a specific difference between this structure of *erineus* as compared to *brevitarsus*.

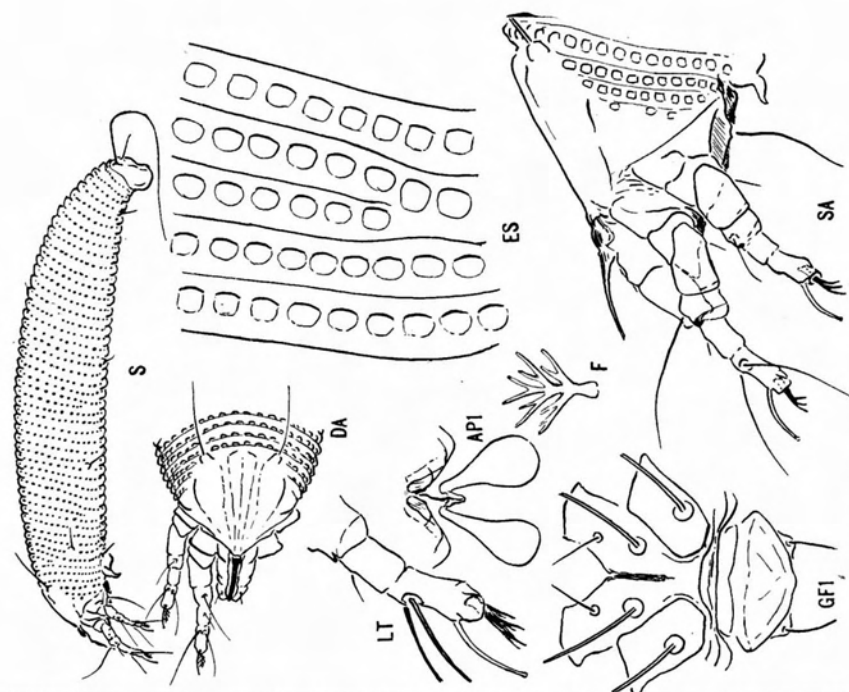


Plate LIV—*Eriophyes brevitarsus*, n. sp.

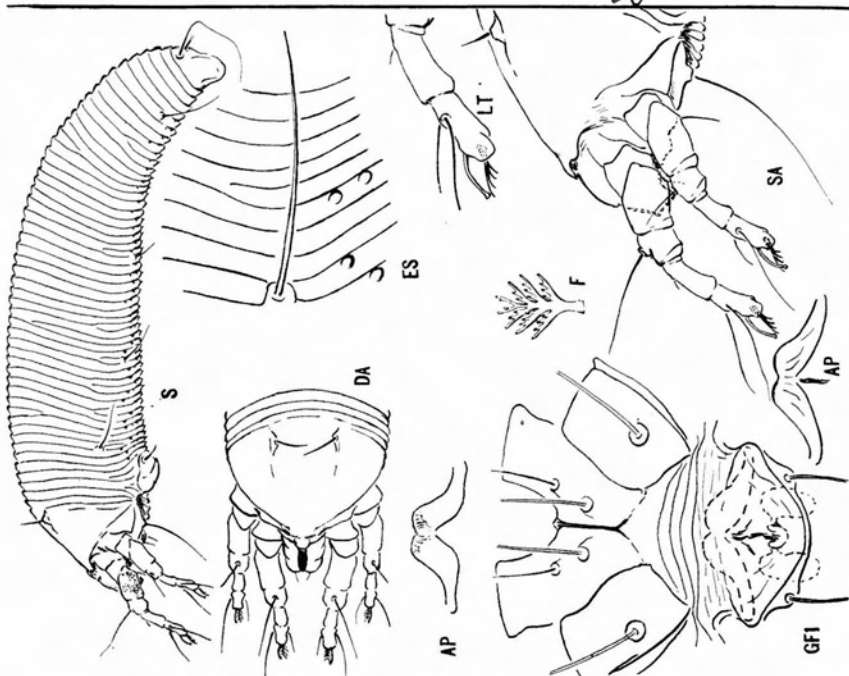


Plate LV—*Eriophyes marincalvi*, n. sp.

Eriophyes heteromeles Keifer, new species

Plate LV

Female 130-150 microns long, 40 microns thick; short worm-like, light yellow. Rostrum 27 microns long, curved down. Shield 27 microns long, 37 microns wide, with 3 central longitudinal lines; laterally with a broad band of tubercles; dorsal tubercles 15.5 microns apart, a little ahead of rear margin; dorsal setae 22 microns long, directed forward. Forelegs 29 microns long, patellar seta 20 microns long, tibia 6.5 microns long, tarsus 8 microns long, claw 6.75 microns long, knobbed, featherclaw 4 rayed. Hindlegs 25 microns long, patellar seta 12 microns long, tibia 5 microns long, tarsus 6.5 microns long, claw 6.75 microns long. Coxal setae III 36 microns long. Abdomen with about 56 to 60 rings, strongly microtuberculate, some ventrad reduction in ring number. Lateral seta a little behind line of genital seta, 12 microns long, on ring 7; first ventral 29 microns long, on ring 18; second ventral 5 microns long, on ring 33; third ventral 14 microns long, on ring 6 from rear; caudal seta 48 microns long; accessory seta present. Female genitalia 22 microns wide, 12 microns long, coverflap with 10-12 ridges, seta 6.5 microns long.

Male not seen.

Type locality: Sacramento, California. **Collected:** January 24 and January 30, 1939, by the writer. **Host:** *Photinia (Heteromeles) arbutifolia* Lindl., Toyon. **Relation to host:** The mites were collected from the terminal buds. No evidence of injury has been noted. **Type slide:** so designated, of mites, collected according to the above data on January 24, 1939. **Paratype slides:** so designated, five in number, bearing either date. The species is characterized by the forward directed shield setae and the shield pattern. *Eriophyes savagei* K., described in the last installment, is somewhat similar. *Eriophyes calycobius* Nal. on *Crataegus* in Europe appears to be similar.

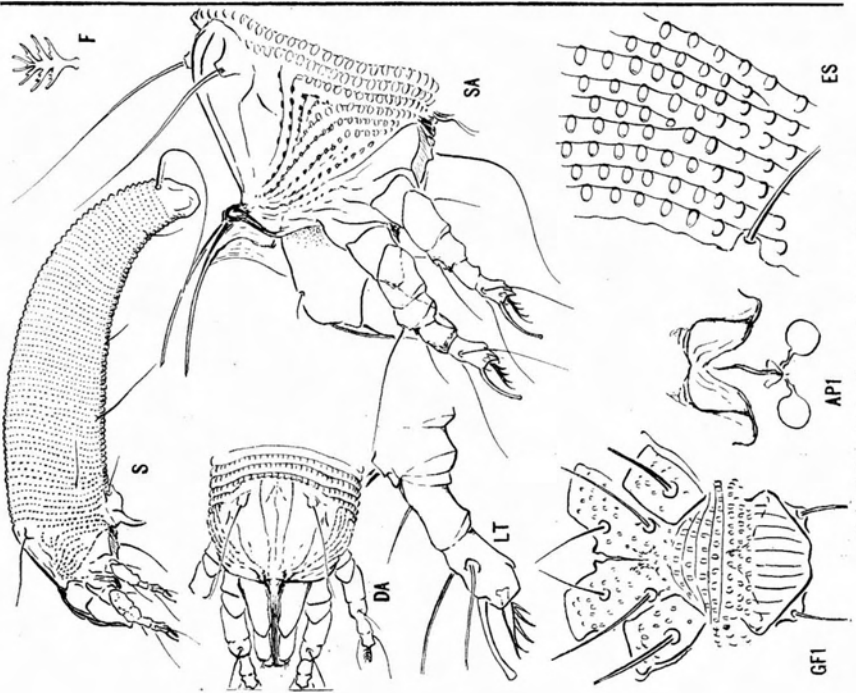
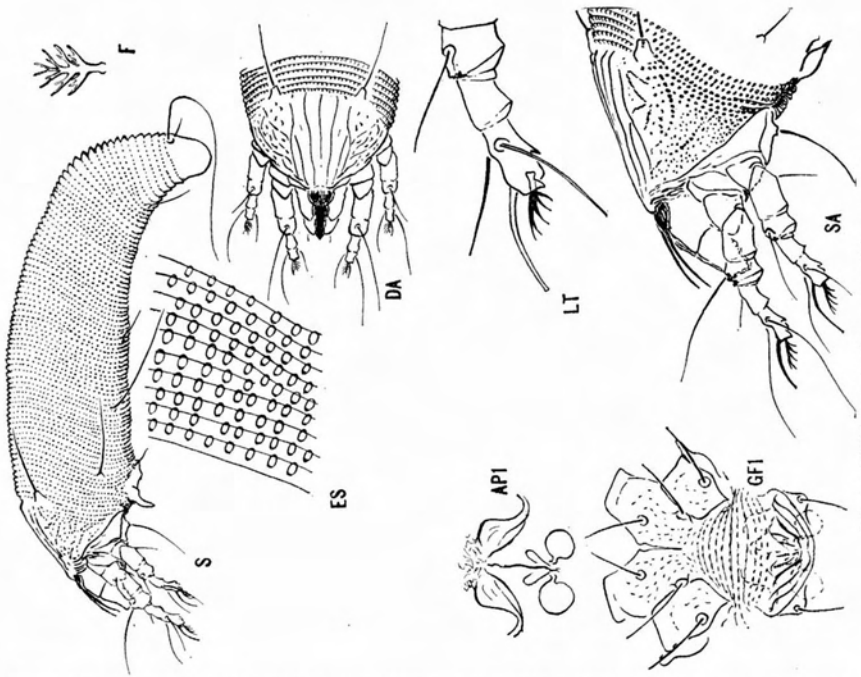
Eriophyes enceliae Keifer, new species

Plate LVI

Female about 130-140 microns long, 38 microns thick, wormlike, light yellow. Rostrum 17 microns long, bent down. Shield 24 microns long, 30 microns wide, lined centrally (somewhat variable), and granulate laterally; dorsal tubercles 22 microns apart, on rear margin; dorsal setae 20 microns long, projecting to rear. Forelegs 27 microns long, patellar seta 22 microns long, tibia 6.5 microns long, tarsus 6.75 microns long, claw 8.5 microns long, slender, featherclaw 4 rayed. Hindlegs 25 microns long, patellar seta 12 microns long, tibia 4.5 microns long, tarsus 6.75 microns long, claw 8.75 microns long. Coxal seta III 40 microns long. Abdomen with about 70 rings, some reduction in ring number toward the venter, the dorsal rear a little elevated and roughened. Lateral seta a little ahead of genital seta, 30 microns long, on about ring 10; first ventral seta 40 microns long, on about ring 24; second ventral 13 microns long, on about ring 39; third ventral 17 microns long, 6 rings from rear; caudal seta 55-60 microns long; accessory seta present. Female genitalia 17 microns wide, 11 microns long, coverflap with about 8 diagonal ridges, seta 9 microns long.

Male 110-120 microns long, 35 microns wide. Male genitalia 17 microns wide, 11 microns long, seta 11 microns long.

Type locality: Santa Paula, California. **Collected:** October 31, 1938, by Dr. K. E. Maxwell. **Host:** *Encelia californica* Nutt., a sunflower type Composite. **Relation to host:** The mites are found in the surface hairs and around the buds but do no apparent damage. **Type slide:** So designated and with the above data. **Paratype slides:** So designated and three in number. This mite is characterized by the diagonal striations on the female genital coverflap.



Paraphytoptus mcgregori Keifer, new species

Plate LVII

Female about 120 microns long, 35 microns thick, wormlike, light yellow. Rostrum 17 microns long, projecting antero-ventrad. Shield 26 microns long, 30 microns wide; with central lines and lateral granulation; dorsal tubercles 18.5 microns apart, on rear margin; dorsal setae 15 microns long, projecting to rear. Forelegs 23 microns long, patellar seta 22 microns long, tibia 4.5 microns long, tarsus 6.75 microns long, claw 7 microns long, slightly knobbed, featherclaw 5 rayed. Hindlegs 22 microns long, patellar seta 12 microns long, tibia 4.5 microns long, tarsus 5.5 microns long, claw 8 microns long. Anterior coxae touching; coxal setae 34 microns long. Abdomen with sternites doubled for almost the entire length; tergites 37, sternites about 68. Lateral seta 13 microns long, on about sternite 9; first ventral 35 microns long, on about sternite 25; second ventral 5 microns long, on about sternite 40; third ventral 11 microns long, on about sternite 5 from rear; caudal seta 53 microns long; accessory seta present. Female genitalia 17.5 microns wide, 11 microns long, coverflap with about 12 ridges, seta 11 microns long.

Male not studied.

Type locality: Santa Paula, California. **Collected:** October 31, 1938, by Dr. K. E. Maxwell. **Host:** *Encelia californica* Nutt., a sunflower type Composite. **Relation to Host:** The mites are found in the surface hairs and around the buds but do no apparent damage. **Type slide:** So designated and with the above data. **Paratype slides:** So designated and three in number. I also have mites of this species collected at Highgrove, California, on *Encelia* sp., January 11, 1939, by E. A. McGregor. I take pleasure in naming this mite for Mr. McGregor, who first called attention to these *Encelia* mites. This species of *Paraphytoptus* is of taxonomic interest in possessing a doubling of the sternites for almost the entire abdominal length.

Rhyncaphytoptus strigatus Keifer, new species

Plate LVIII

Female 150-210 microns long, 60-70 microns thick, spindleform, varying in robustness, light yellow. Rostrum 53 microns long. Shield 37 microns long, 51 microns wide, the design of an anterior and lateral network with central lines; dorsal tubercles 20 microns apart, ahead of rear margin, dorsal setae 6.5 microns long, projecting dorsocephalad. Forelegs 40 microns long, patella 6.75 microns long, patellar seta 22 microns long, tibia 11 microns long, tarsus 9 microns long, claw 8.75 microns long, knobbed, featherclaw 7 rayed. Hindlegs 39 microns long, patella 6.75 microns long, patellar seta 13 microns long, tibia 9 microns long, tarsus 9 microns long, claw 8.5 microns long. Sternal ridge forked; coxal setae III 47 microns long. Abdomen entirely microtuberculate, the tergites with larger, sparser tubercles; each microtubercle extended into a short spine; tergites 61-63, sternites 77-80. Lateral seta 11 microns long, on ring 9. First ventral 37 microns long, on ring 24; second ventral 13 microns long, on ring 41; third ventral 20 microns long, on ring 6 from rear; caudal seta 43 microns long; accessory seta absent. Female genitalia 36 microns wide, 20 microns long, coverflap with about 10 ridges, seta 9 microns long.

Male not studied.

Type locality: Davis, California. **Collected:** September 10 and September 24, 1938, by the writer. **Host:** *Acer negundo californicum* Sarg. **Relation to host:** The mite is a vagrant on the underside of the leaves and apparently causes no damage. **Type slide:** So designated, with above data and latter date. **Paratype slides:** Five, so designated. This species is the first one of this group studied that has striations on the female genital coverflap. I am indebted to Dr. S. F. Bailey for showing me these mites.

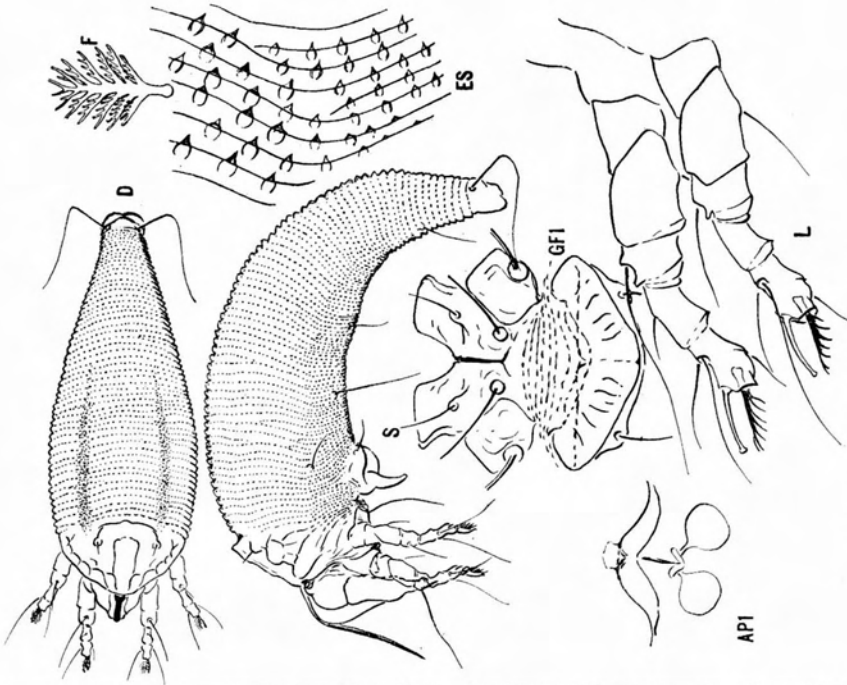


Plate LVIII—*Ichmaphytopus strigatus*, n. sp.

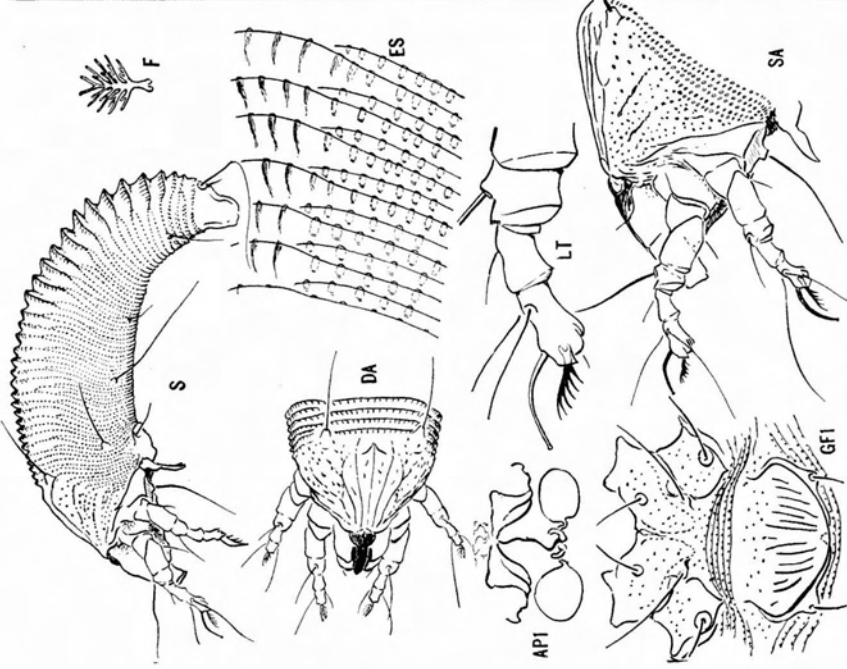


Plate LVII—*Paraphytopus mcgregori*, n. sp.

Rhyncaphytoptus salicifoliae Keifer, new species

Plate LIX

Female 200-220 microns long, 60 microns thick, wormlike, color yellow to light amber. Rostrum as usual. Shield 64 microns long, 45 microns wide, an anterior lobe overhanging the rostrum, the design of broken longitudinal lines; dorsal tubercles 22 microns apart, a little ahead of rear margin, dorsal setae 30 microns long. Forelegs 45 microns long, patella 8.5 microns long, patellar seta 30 microns long, tibia 11 microns long, tarsus 8.5 microns long, claw 8.75 microns long, tapering, strongly downcurved, featherclaw 9 rayed. Hindlegs 40 microns long, patella 7 microns long, patellar seta 17 microns long, tibia 10 microns long, tarsus 9 microns long, claw 9 microns long. Sternal ridge short, prominent, unforked; coxal setae III 40 microns long. Abdomen with tergites smooth, the sternites microtuberculate, tergites 38-40, sternites 68-70. Lateral seta slightly behind genital seta, 29 microns long, on ring 9; first ventral 60 microns long, on ring 24; second ventral 45 microns long, on ring 37; third ventral 33 microns long, on ring 7 from rear; caudal seta 90 microns long; accessory seta present. Female genitalia 27 microns wide, 14 microns long; coverflap smooth, seta 18 microns long.

Male 190 microns long, 50 microns thick, male genitalia 26 microns wide, 13 microns long, seta 14 microns long.

Type locality: Near the highway just below Emigrant Gap, Placer County, California, about 5,000 ft. elevation. **Collected:** September 20, 1938, by the writer. **Host:** *Salix sitchensis angustifolia* Bebb. **Relation to host:** Vagrants on the underside of leaves. **Type slide:** So designated, with above data. **Paratype slides:** Three, so designated, also bear this data. The distinctive features in this case are the smooth tergites and the 9-rayed featherclaw.

Rhyncaphytoptus spinifera Keifer, new species

Plate LX

Female 160-170 microns long, 40 microns thick, light yellow, wormlike. Rostrum 40 microns long, moderately curved. Shield 26 microns long, 37.5 microns wide, projecting out over rostrum base, the design of longitudinal lines; dorsal tubercles 22 microns apart, just within rear margin, dorsal setae 28 microns long, projecting forward. Forelegs 34 microns long, patella 6.75 microns long, patellar seta 27 microns long, tibia 8.5 microns long, tarsus 8.5 microns long, claw 8.5 microns long, featherclaw 7 rayed. Hindlegs 31 microns long, patella 6.75 microns long, patellar seta 11 microns long, tibia 7 microns long, tarsus 8 microns long, claw 8 microns long. Anterior coxae touching; coxal setae III 37 microns long. Abdomen with tergites bearing spinules instead of microtubercles; tergites 37, sternites 89. Lateral seta above genital seta, 13 microns long, on ring 18; first ventral 40 microns long, on ring 36; second ventral 13 microns long, on ring 54; third ventral 17 microns long, on ring 10 from rear; caudal seta 85 microns long; accessory seta present. Female genitalia 24.5 microns wide, 13 microns long, coverflap smooth, seta 25 microns long.

Male 150-160 microns long, 38 microns thick. Male genitalia 22 microns wide, 13 microns long, seta 24 microns long.

Type locality: Fred's Place, along American River above River-ton, in El Dorado County, Calif., altitude about 3,000 ft. **Collected:** August 24, 1938, by the writer. **Host:** *Quercus kelloggii* Newb., Kellogg Black Oak. **Relation to host:** These mites are vagrants on the leaf undersurface and cause no noticeable damage. **Type slide:** So designated, with above data. **Paratype slides:** Three, so designated, with this data. The spinules are the principal feature of this species.

Rhyncaphytoptus platani Keifer, new species

Plate LXI

Female up to 220 microns long, 52-53 microns thick, body wormlike, color yellow, chelicerae black. Rostrum large, projecting down. Shield 18 microns long, 50-52 microns wide, short, declivitous, design netlike; dorsal tubercles 22.5 microns apart, just ahead of rear margin, dorsal setae 32 microns long, projecting anteriorly. Forelegs 40 microns long, patella 6.75 microns long, patellar seta 27 microns long, tibia 6.75 microns long, tarsus 11 microns long, claw 13.5

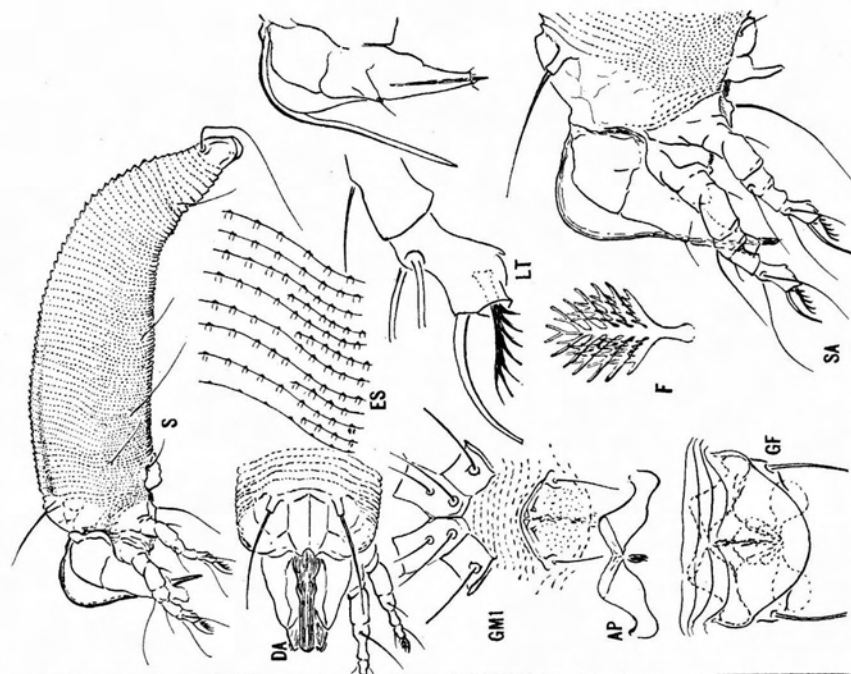


Plate LXI.—*Rhyncaphyptus platani*, n. sp.

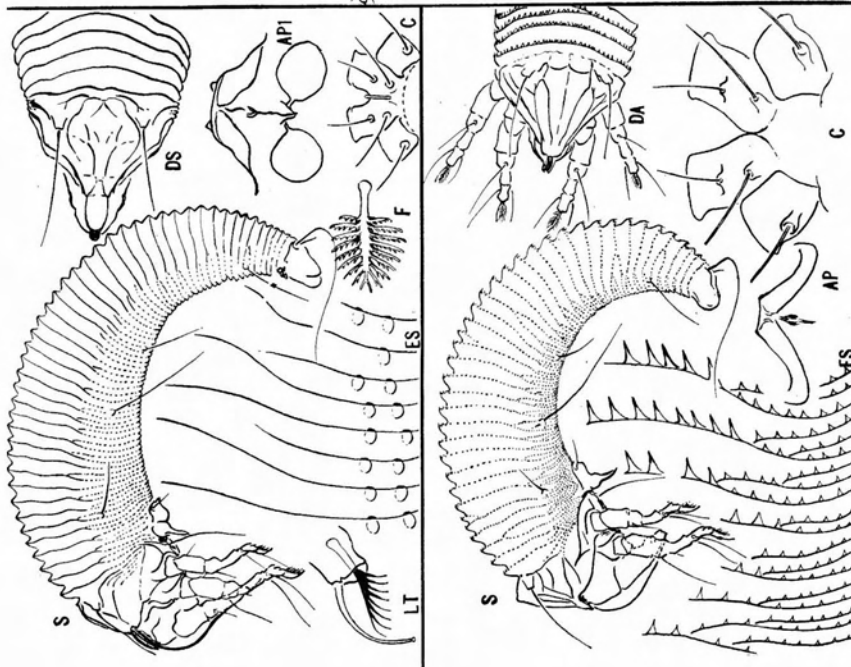


Plate LIX.—*Rhyncaphyptus salicifoliae*, n. sp. (upper)
Plate LX.—*Rhyncaphyptus spinifera*, n. sp. (lower)

microns long, featherclaw 7 rayed. Hindlegs 34 microns long, patella 6.5 microns long, patellar seta 11 microns long, tibia 6.5 microns long, tarsus 11 microns long, claw 13.5 microns long. Forecoxae contiguous; coxal setae III 43 microns long. Abdomen with tergites nearly as strongly microtuberculate as sternites, the microtubercles somewhat pointed; tergites 60-64, sternites 89-93. Lateral seta above genital seta, 32 microns long, on ring 12 to 14; first ventral 51 microns long, on ring 33-36; second ventral 26 microns long, on ring 52-55; third ventral 24 microns long, on ring 5-8 from rear; caudal seta 55-60 microns long, accessory seta present. Female genitalia 24 microns wide, 15 microns long, coverflap smooth, seta 15.5 microns long.

Male 200 microns long, 50 microns thick. Male genitalia 25 microns wide, 20 microns long, seta 22 microns long.

Type locality: Sacramento. **Collected:** July 22 and July 25, 1938, by the writer. **Host:** *Platanus* sp., an ornamental tree commonly planted along the city streets and called variously "Oriental Plane" or "London Plane." It is evidently a hybrid. **Relation to host:** The mite is a vagrant on the undersurface of the leaves and does no noticeable damage. **Type slide:** So designated, with above data and the first date. **Paratype slides:** Four, so designated, with this data. Specimens are also on hand from this same host, the leaves on which they were found being submitted by W. B. Parker from Fresno, July 20, 1938. Attempts to discover this mite on native sycamore have so far been unsuccessful.

Diptilomiopus sacramentae Keifer, new species

Plate LXII

Female 200-220 microns long, 55-65 microns thick, elongate spindleform, body dull pink to dark pink, a wide lateral band of white, flocculent wax on each side and a middorsal band beginning at front lobe of shield, divided for most of abdominal length, the bands ending a few rings before caudal lobes. Rostrum large, attenuate 48 microns long. Shield 49 microns long, 60 microns wide with three central longitudinal lines and a lobe over rostrum base; dorsal tubercles 33 microns apart, just ahead of rear margin and produced fingerlike; dorsal setae 22 microns long, projecting anteriorly. Legs with femoral setae missing. Forelegs 51 microns long, patellar seta 40 microns long; tibia 15 microns long, the seta just within the apex, tarsus 11 microns long, claw 9 microns long, featherclaw 6 rayed, completely bifurcate. Hindlegs 48 microns long, patellar seta 15.5 microns long, tibia 11.5 microns long, tarsus 11 microns long, claw 9 microns long. Sternal ridge prominent, ending just before setae II; coxal setae III 44 microns long. Abdomen with the tergites nearly smooth, the wax generating tubercles very obscure; sternites prominently microtuberculate; tergites about 42; sternites about 62. Lateral seta ahead of genital seta, 25 microns long, on ring 7; first ventral seta 65 microns long, on ring 22; second ventral seta 26 microns long, on ring 37; third ventral seta 40 microns long, on ring 10 from rear; caudal seta 70 microns long, accessory seta absent. Female genitalia 31 microns wide, 20 microns long, coverflap smooth, seta 13 microns long.

Male smaller than female, yellow, entirely covered dorsally with rather long, white, flocculent wax, 165-190 microns long, 50-60 microns thick. Male genitalia 26 microns wide, 17 microns long, seta 11 microns long.

Type locality: Capital Park, Sacramento, California. **Collected:** October 31, November 1, 4 and 7, 1938, by the writer. **Host:** *Alnus rhombifolia* Nutt. **Relation to host:** The mites are vagrants on the undersurface of the leaves and do no damage. **Type slide:** is of mites collected November 7. **Paratype slides:** Five paratype slides dated as above. This species is characterized by the strong supra-rostral lobe and the possession of all setae except the femoral setae. The sexual dimorphism shown in the wax secretion pattern is striking, giving the initial impression that two species are present. The side epidermal detail on the plate is of the male since the wax secretion is heaviest in that sex and the tergite structure a little plainer.

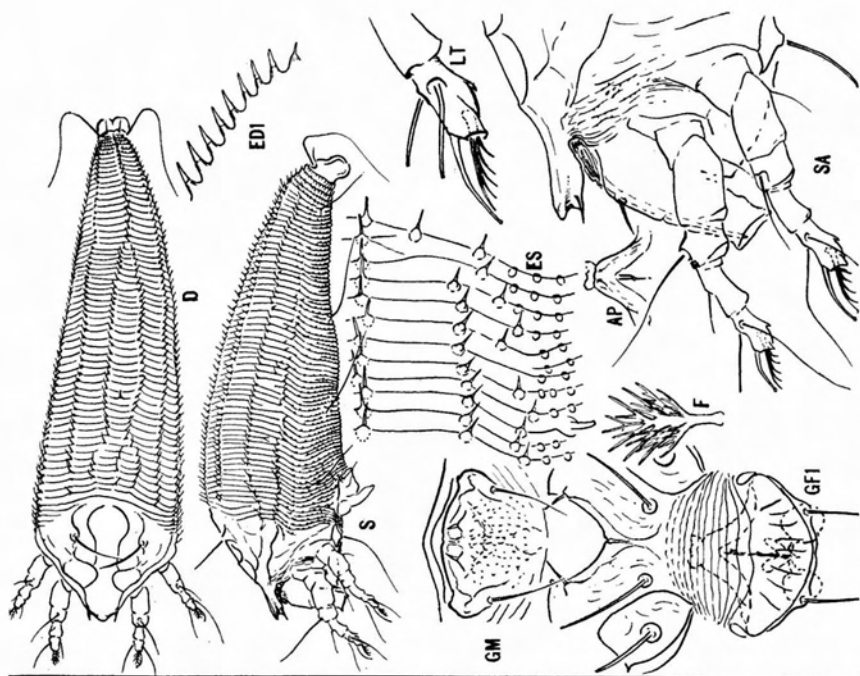


Plate LXIII—*Calliomycterus schlectendali* Nal.

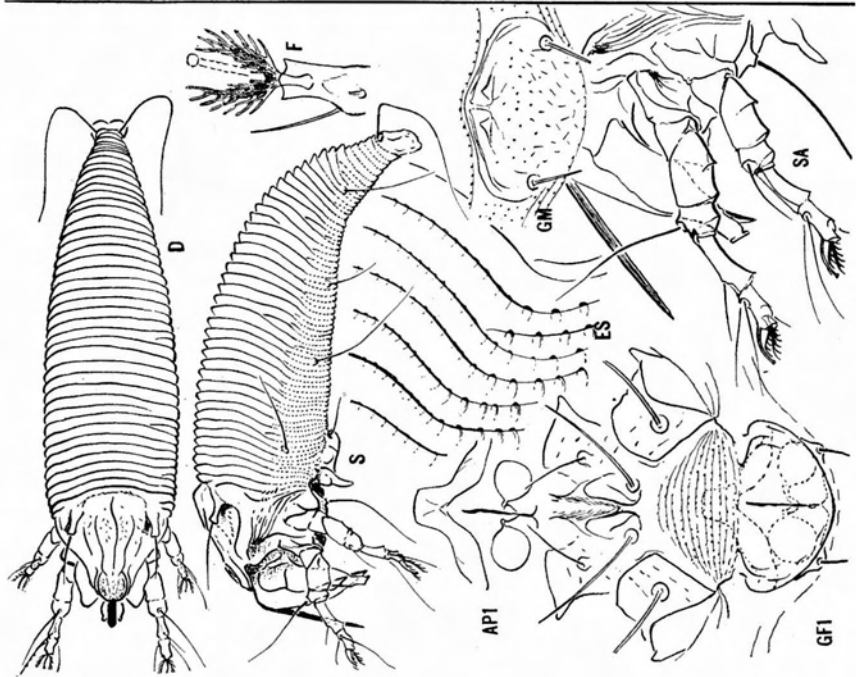


Plate LXII—*Diptilomyctopus sacramentae*, n. sp.

Genus *Callyntrotus* Nalepa 1894

Nalepa—Anz. Akad. Wiss. Wien. Vol. 31, p. 71, 1894.

Nalepa—Das Tierreich, Vol. 4, p. 68, 1898.

Nalepa—Zoologica, Vol. 24, p. 278, 1911.

This genus is characterized by the longitudinal rows of wax-bearing spinules on the tergites. These spinules are difficult to discern. The other characters place the genus in the Phyllocoptinae. We can consider *schlectendali* Nalepa, described with the description of the genus, as the genotype.

Callyntrotus schlectendali Nalepa.

Plate LXIII

Nalepa—Anz. Akad. Wiss. Wien. Vol. 31, p. 71, 1894.

Nalepa—Denkschr. Akad. Wiss. Wien. Vol. 77, p. 140, 1904.

Nalepa—Marcellia, Vol. 25, p. 108, 1929.

Female 170-185 microns long, 55 microns thick, elongate spindleform, yellow to bright pink color with dorsal rows of white wax. Rostrum projecting down. Shield 48 microns long, 45 microns wide, design of curved lines, a short spine on each side on the lower edge of the frontal lobe; dorsal tubercles 23 microns apart, well ahead of rear margin, dorsal setae 14 microns long, projecting dorsocephalad. Forelegs 33 microns long, patella 6.25 microns long, patellar seta 20 microns long; tibia 8.5 microns long, tarsus 7 microns long, claw 7.5 microns long, knobbed, featherclaw 5 rayed. Hindlegs 31 microns long, patella 6 microns long, patellar seta 8.5 microns long, tibia 7 microns long, tarsus 7 microns long, claw 8.5 microns long. Anterior coxae contiguous, coxal setae I situated just behind anterior edge of coxae; coxal setae III 20 microns long. Tergites of abdomen with about six longitudinal rows of spiniferous tubercles, with 58-60 tergites, and 72-74 sternites. Lateral seta above genital seta, 26 microns long, on ring 8; first ventral seta 42 microns long, on ring 24; second ventral seta 35 microns long, on ring 45; third ventral seta 25 microns long, on ring 5 from rear; caudal seta 65 microns long, accessory seta present. Female genitalia 22-25 microns wide, 17-20 microns long, coverflap with about 8 ridges, seta 16 microns long.

Male 160-170 microns long, 50 microns thick. Male genitalia 20 microns wide, 12 microns long, seta 12 microns long.

Localities: Pasadena, California, July 18, 1938, collected by Cyril Gammon; Davis, California, February 6, 1939, collected under the direction of E. H. Fosen. **Host:** *Rosa* sp., cultivated rose. **Relation to host:** The mite is a vagrant on the underside of the leaves and seems to cause some browning and rusting. This is the first record of this European mite in the United States. The mites collected during the summer were bright pink and the white waxy dorsal lines were quite striking. The mites from Davis in February were on the leaves and were light dull yellow. Nalepa gives the host of this mite as *Rosa canina* L.

Genus *Tegonotus* Nalepa 1891

Nalepa—Nova Acta der Ksl. Leop.—Carol. Dtsch. Akad. der Naturf. Vol. 55, p. 392, 1891.

Nalepa—Das Tierreich, Vol. 4, p. 60, 1898.

Nalepa—Zoologica, Vol. 24, p. 273, 1911.

Keifer—Reprint Bul. Cal. Dept. Agr. Vol. 28, No. 2, p. 12, Dec. 23, 1938—*fastigatus* Nal. as genotype.

This genus is characterized by having a high central longitudinal ridge along the abdominal dorsum. Actually the species of *Tegonotus* are very close to the common run of *Oxypleurites*. The two genera are usually separated by the lateral more or less prominent tooth-like pro-

jections of the *Oxypleurites* tergites. Perhaps an equally good means of separation is the flatter shape of the *Oxypleurites* species. *Tegonotus* belongs to the subfamily Phyllocoptinae.

Tegonotus negundella Keifer, new species

Plate LXIV

Female 160-170 microns long, 45 microns wide, 40 microns thick, elongate wedge-shape, light amber in color. Rostrum 22 microns long, projecting down. Shield 42 microns long, 41 microns wide; dorsal tubercles 22 microns apart, on rear margin, dorsal setae 5 microns long, projecting caudad. Forelegs 22.5 microns long, patellar seta 20 microns long, tibia 4.5 microns long, tarsus 5.5 microns long, claw 6.5 microns long, knobbed, featherclaw 4 rayed. Hindlegs 22 microns long, patellar seta 7 microns long, tibia 4 microns long, tarsus 5 microns long, claw 8.5 microns long. Coxal setae III 23 microns long. Abdomen with tergites forming a strong ridge, the tergites smooth, transverse bands conforming to the dorsal body structure; tergites 18-19, sternites about 65. Lateral seta above genital seta, 13 microns long, on sternite 7. First ventral 25 microns long, on sternite 22; second ventral 7 microns long, on sternite 38; third ventral 15 microns long, on sternite 5 from rear; caudal seta 28 microns long; accessory seta absent. Female genitalia 18 microns wide, 12 microns long, coverflap with 8 or 9 short ridges, seta 11 microns long.

Male 150 microns long, 45 microns wide, 38 microns thick. Male genitalia 17.5 microns wide, 13 microns long, seta 9 microns long.

Type locality: Davis, California. **Collected:** September 24, 1938, by the writer. **Host:** *Acer negundo californicum* Sarg., Box Elder. **Relation to host:** The mites occur on the underside of the leaves and cause no apparent damage. **Type slide:** Bears the above data. **Paratype slides:** Four bear the above data. There also remain specimens in the vial from which these were taken. Specimens are also on hand from Hecker Pass west of Gilroy, Santa Clara County. These were taken on *Acer macrophyllum* Purch. by D. B. Mackie and W. B. Carter, September 30, 1938. This species is very close to *T. fastigatus* Nal., a species in Europe infesting certain species of *Acer*, but is larger.

Oxypleurites cornifoliae Keifer, new species

Plate LXV

Female 160 microns long, 60 microns wide, 45 microns thick, flattened, elongate wedge-shaped, very light yellow. Rostrum projecting down. Shield 45 microns long, 55 microns wide, almost smooth, anterior lobe over rostrum; dorsal tubercles 22 microns apart, but little ahead of rear margin; dorsal setae 9 microns long, projecting dorsocentrad. Forelegs 31 microns long, patella 6.5 microns long, patellar seta 26 microns long; tibia 8.75 microns long, tarsus 6.5 microns long, claw 6.5 microns long, knobbed, featherclaw 4 rayed. Hindlegs 30 microns long, patella 6 microns long, patellar seta 8 microns long, tibia 7.75 microns long, tarsus 6.75 microns long, claw 7.5 microns long. Sternal line unforked; coxal setae III 40 microns long. Abdomen with about 18 flattened tergites; 55-58 sternites; there is no appreciable ridge down the back of this mite. Lateral seta above and ahead of genital set, 13 microns long, on ring 8. First ventral seta 24 microns long, on ring 20; second ventral seta 10 microns long, on ring 35; third ventral seta 15 microns long, on ring 5 from rear; caudal seta 42 microns long, accessory seta absent. Female genitalia 22 microns wide, 13 microns long, coverflap with about 12 ridges, seta 23 microns long.

Male 140 microns long, 45 microns wide, 35 microns thick. Male genitalia 17.5 microns wide, 12 microns long, seta 22 microns long.

Type locality: Along highway just above Baxter's, Placer County, California; elevation about 4,000 ft. **Collected:** September 20, 1938, by the writer. **Host:** *Cornus*, probably *californicus* C. A., Dogwood. **Relation to host:** The mite is a vagrant on the leaf underside, causing no apparent injury. **Type slide:** So designated, of mites bearing the above data. **Paratype slides:** Three in number as above. This mite differs from the European Dogwood species, *Oxypleurites acutilobis* Nal. by the more posterior position of the dorsal tubercles.

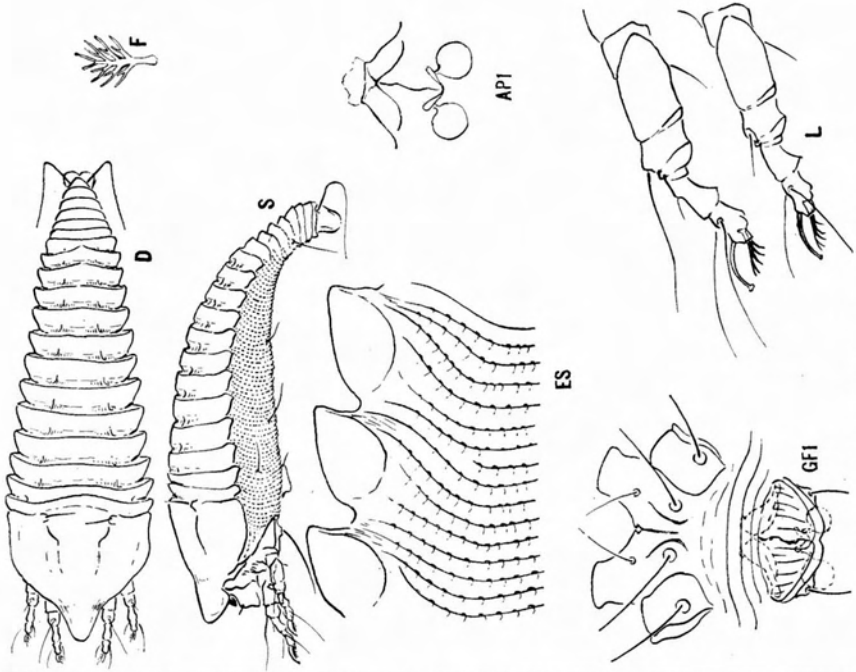


Plate LXV—*Orypleurites cornifoliac*, n. sp.

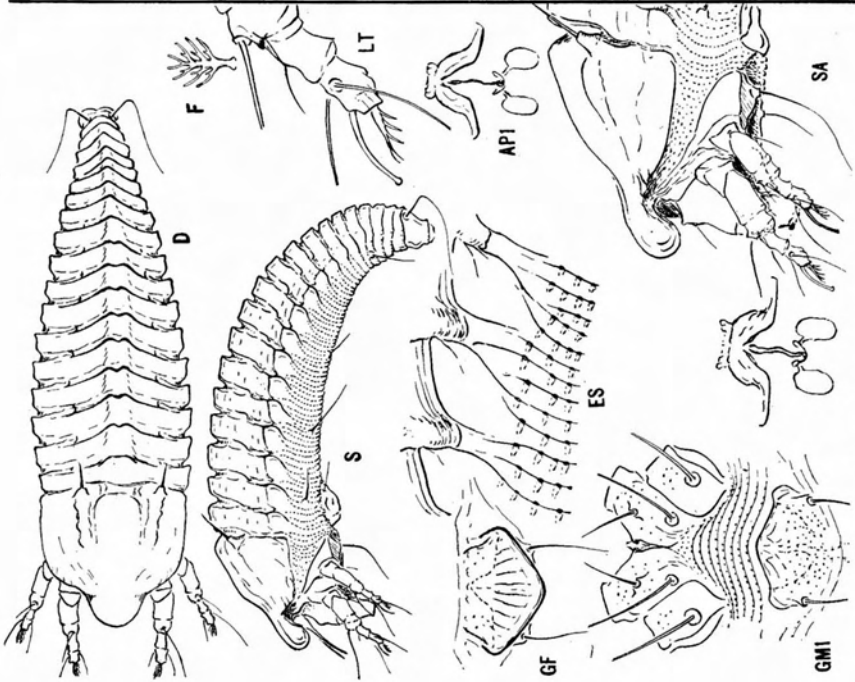


Plate LXIV—*Tegenotus negundella*, n. sp.

Oxypleurites marinalni Keifer, new species

Plate LXVI

Female 140-150 microns long, 50 microns wide, 35 microns thick, general form flattened wedge-shaped, color light yellow. Rostrum directed downward. Shield 44 microns long, 46 microns wide, almost entirely smooth; dorsal tubercles 17 microns apart, well ahead of rear margin; dorsal setae 5 microns long, directed cephalo-centrad. Forelegs 27 microns long, patellar seta 18 microns long; tibia 5 microns long, tarsus 6.75 microns long, claw 6.5 microns long, clavate, featherclaw 4 rayed. Hindlegs 25 microns long, patellar seta missing, tibia 4.5 microns long, tarsus 6.75 microns long, claw 6.75 microns long. Anterior coxae contiguous; coxal setae III 27 microns long. Abdomen with the first two tergites somewhat humped, the remainder with a slight central ridge; tergites 16-17, sternites 44-46. Lateral seta behind genital seta, 9 microns long, on ring 5-6. First ventral seta 28 microns long, on ring 14; second ventral seta 14 microns long, on ring 27; third ventral seta 15 microns long, on ring 4 from rear; caudal seta 20 microns long; accessory seta present. Female genitalia 20 microns wide, 12 microns long, coverflap with about 10 ridges, seta 11 microns long.

Male 130-140 microns long, 45 microns wide, 35 microns thick. Male genitalia 17 microns wide, 11 microns long, seta 11 microns long.

Type locality: Stinson Beach, Marin County, California. **Collected:** August 13, 1938, by the writer. **Host:** *Alnus rubra* Bong., Red Alder. **Relation to host:** The mites are innocuous undersurface vagrants and seem to occur most commonly along the leaf veins. **Type slide:** So designated, with above data. **Paratype slides:** As above, three in number. This species is characterized by the hump just back of the shield and the clavate-tipped claws. This hump separates it from *O. trouessarti* (Nal.) of Europe, on *Alnus glutinosa* L. I have not investigated *Oxypleurites platynaspis* Nal. of Europe on *Alnus incana* L.

Oxypleurites baccharis Keifer, new species

Plate LXVII

Female 135-150 microns long, 60 microns wide, 40 microns thick, wedge-shaped, flat, light yellow to light amber color. Rostrum projecting down. Shield 46 microns long, 60 microns wide, subtriangular, with rough side edge and very indistinct design; dorsal tubercles 28 microns apart, on rear margin; dorsal setae 4.5 microns long, projecting backward. Forelegs 29 microns long, patellar seta 22 microns long; tibia 6.75 microns long, tarsus 6.5 microns long, claw 6.5 microns long, knobbed, featherclaw 4 rayed. Hindlegs 28 microns long, patellar seta 4.5 microns long, tibia 6.5 microns long, tarsus 6.5 microns long, claw 6 microns long. Anterior coxae approximate; coxal setae III 26 microns long. Abdomen with a central longitudinal ridge, the tergites somewhat longitudinally striate, especially along the ridge; tergites 18-19; sternites 37-40. Lateral seta ahead of genital seta, 31 microns long, on ring 6. First ventral seta 48 microns long, on ring 18; second ventral seta 17 microns long, on ring 29; third ventral seta 24 microns long, on ring 5 from rear; caudal seta 40 microns long, accessory seta present. Female genitalia 24 microns wide, 15 microns long, coverflap with 10-12 ridges, seta 13 microns long.

Male not seen.

Type locality: Riverside, California. **Collected:** October 11, 1938, by the writer. **Host:** *Baccharis emoryi* Gray, a shrub resembling Chaparral Broom. **Relation to host:** This mite is a vagrant, usually on the upper surface of the leaves, where it produces a slight silvering. **Type slide:** So designated, of mites collected as above. **Paratype slides:** Three in number, as above. The dorsal sculpturing characterizes this mite. No mite of this genus has been listed from the Compositae.

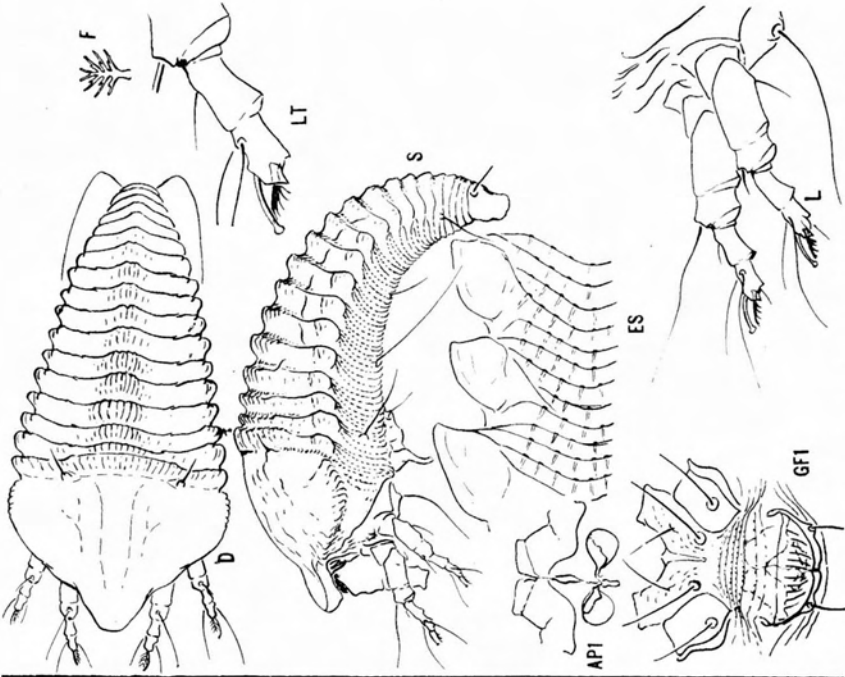


Plate LXVII—*Orypleurites baccharis*, n. sp.



Plate LXXVI—*Orypleurites marinahui*, n. sp.

Host List

- Salicaceae
Salix sitchensis angustifolia Bebb.
Rhyncaphytoptus salicifoliae n. sp., vagrant on leaf undersurface.
- Fagaceae
Quercus kelloggii Newb.
Rhyncaphytoptus spinifera n. sp., vagrant on leaf undersurface.
- Juglandaceae
Juglans hindsii Jepson
Eriophyes brevitarisus n. sp., leaf purse galls.
- Betulaceae
Alnus rubra Bong.
Eriophyes marinalni n. sp., leaf gall maker.
Oxypleurites marinalni n. sp., vagrant on leaf undersurface.
Alnus rhombifolia Nutt.
Diptilomiopus sacramentae n. sp., undersurface vagrant.
- Aceraceae
Acer negundo californicum Sarg.
Rhyncaphytoptus strigatus n. sp., undersurface vagrant.
Tegonotus negundella n. sp., undersurface vagrant.
- Platanaceae
Platanus sp.
Rhyncaphytoptus platani n. sp., vagrant on undersurface.
- Cornaceae
Cornus (probably *californicus* C.A.).
Oxypleurites cornifoliae n. sp., vagrant on undersurface.
- Rosaceae
Rosa sp.
Callyntrotus schlectendali Nal., vagrant, causing rusting.
Photinia arbutifolia Lindl.
Eriophyes heteromeles n. sp., in buds.
- Compositae
Baccharis emoryi Gray.
Oxypleurites baccharis n. sp., vagrant on upper leaf surface.
Encelia californica Nutt.
Eriophyes encelliae n. sp., vagrant in hairs
Paraphytoptus mcgregori n. sp., vagrant in hairs.

Designations on Plates

- AP**—Anterior Apodeme of the female genitalia
API—Interior female genitalia
C—Coxae as seen from below
D—Dorsal view of mite
DA—Dorsal view of anterior section of mite
DS—Dorsal view of shield and adjacent tergites
ES—Detail of side integument
ED1—Detail of dorsal integument, in this case of the rear skin in side view
F—Featherclaw
GF—Female genitalia
GFI—Female genitalia and coxae
GM—Male genitalia
GMI—Male genitalia and coxae
L—Left legs
LT—Tarsus, or tarsus and one or two preceding joints
S—Left side of mite
SA—Left side of anterior part of mite