

INSECTS OF WESTERN NORTH AMERICA

A MANUAL AND TEXTBOOK FOR STUDENTS IN COLLEGES AND
UNIVERSITIES AND A HANDBOOK FOR COUNTY, STATE
AND FEDERAL ENTOMOLOGISTS AND AGRI-
CULTURISTS AS WELL AS FOR FOR-
ESTERS, FARMERS, GARDENERS,
TRAVELERS, AND LOVERS
OF NATURE

By

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the mildew as well and is more efficient also against the leafhopper. Calcium cyanide dust has also proven very effective in the control of this pest.

The oblique leafhopper, *Erythroneura obliqua* (Say), is 3 mm. long, yellowish with reddish lines and markings. Four varieties are founded upon different color patterns. This species is general throughout the country on grape and is probably as a rule confused with the grape leafhopper. It occurs on plum in Colorado and on grape in California.

FULGORIDÆ.¹ Lanternflies, Fulgorids, Delphacids.

The members of this large, interesting family are a heterogeneous lot but all are characterized by being rather small, having the tarsi 3-jointed, beak plainly arising from the head, the antennæ inserted on the side of the cheek beneath the eyes. There are usually two ocelli, rather long, slender legs, two pairs of wings or wingless. The elytra are long or quite short and the venation variable. The vertex of the head in many species is greatly prolonged like a snout or horn and gives them a queer and often grotesque appearance. The family is of little or no economic importance. Nearly all feed on native plants, many of them being confined to arid regions.

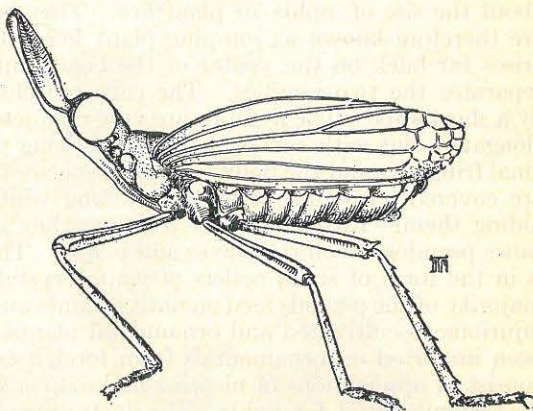


FIG. 117.—The pallid scolops, *Scolops pallidus* Uhler.
(After Woodworth.)

The species of *Scolops* are interesting because of the long frontal prolongation. They occur in dry grasses, weeds, and shrubbery. They are common and abundant in the arid southwest but several species like *Scolops sulcipes* (Say) and *S. angustatus* Uhler occur throughout the country. The pallid scolops, *S. pallidus* Uhler (Fig. 117), is a yellowish and gray species 6 mm. long, common in Southern California. *S. hesperius* Uhler is various shades of brown and occurs in Colorado, Idaho, Nevada, California, and Texas. *S. abnormis* Ball is 8 mm. long, brown and gray, with large process and is common in California.

The very interesting *Orgerius rhyparus* Stål is nearly circular, flat, wingless, with pointed head, and is 4 mm. long. It assumes an upright position in walking on the long, slender legs and jumps long distances when disturbed. It occurs singly in the dry grass in late summer and fall in Oregon, California, and Mexico. Ball and Hartzell list five varieties.

The cult fulgorid, *Cixius cultus* Ball, is a black and brown species 5 to 6 mm. long with grayish wings. It often swarms in great numbers in low native growths. The

¹ W. L. Distant, *Biol. Centr. Am. Homoptera*, 1, 1883, p. 21.

E. P. Van Duzee, "Synopses." *Proc. Acad. Nat. Sci. Philad.*, 59, 1907, p. 467. "Cat. Hemiptera." *Univ. Cal. Pub. Tech. Bul. Ent.*, 2, 1917, p. 716.

Z. P. Metcalf, "Wing Venation of Fulgoridæ." *Ann. Ent. Soc. Am.*, 6, 1913, p. 341.

D. L. Crawford, "Mon. Delphacidæ of No. & So. Am." *Proc. U. S. Nat. Mus.*, 46, 1914, p. 557.

E. D. Ball and A. Hartzell, "Rev. Desert Leafhoppers of the Orgerini." *Ann. Ent. Soc. Am.*, 15, 1922, p. 137.

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writer has taken great numbers on lippia in the Sacramento Valley, California, but it is also abundant elsewhere in the central part of the State and is reported from Colorado and Kansas.

The date fulgorid, *Asarcopus palmarum* Horvath, is 4-6 mm. long, reddish-brown in the nymphal stage and very dark brown in the adult stage. The adults are apterous or have only rudimentary wings, but hop freely. This species attacks the crown leaves and bases of the fruit stems of the date palm and exudes quantities of honeydew over the plants. It is a native of Egypt and the old world date growing regions and was first noted in the date orchards of Southern California in 1924 by F. Stickney.

CHERMIDÆ.¹ Jumping Plant Lice or Psyllids.

The members of this small family are easily separated from the other families of this order. The adults appear like miniature cicadas but are about the size of aphid or plant lice. They have the ability to jump and are therefore known as jumping plant lice. Like the aphid the rostrum arises far back on the venter of the head, but the wing venation readily separates the two families. The eggs are elongate and usually attached by a short stipe. The nymphs are very characteristic, being oval or slightly elongated, flat with conspicuously large wing pads, and often with a marginal fringe around the body. In some species the eggs, nymphs, and adults are covered with thin or with very long white, cottony wax, completely hiding them. Like their near relatives they are plant feeders, and often cause pseudogalls on the leaves and plants. The excrement of some species is in the form of small pellets of white crystal-like honeydew. The large majority of the psyllids feed on native plants and but few may be considered injurious to cultivated and ornamental plants. Some of these latter have been imported on ornamentals from foreign countries. Control measures consist of applications of nicotine and soap or miscible oil sprays and nicotine dust as suggested for aphid. The dusts are never effective against nymphs or adults protected with a thin or thick waxy covering.

Only the most interesting western forms are discussed.

The carex psyllid, *Livia caricis* Crawford, is 2.5 mm. long, almost black or from orange to pale brown. It occurs on carex in Colorado and is common throughout the country, also being known in the west in Utah, New Mexico, California, Oregon, and British Columbia.

The knotweed psyllid, *Aphalara calthæ* (Linn.) (*Chermes*), varies from 1.6 to 2.2 mm. in length, and is light reddish brown or dark chocolate brown in color, the wings furnished with brown bands. The nymphs are often covered with white, cottony wax. The hosts are alfalfa, tomato, knotweed, gooseberry, artemisia, calthæ, pine, dock, carex, and weeds. It is reported on larch and spruce in England. The distribution covers most of North America, Europe, and Japan. In the west it is known in Washington, Oregon, California, Nevada, Wyoming, Utah, Colorado, Arizona, and New Mexico. It hibernates in the adult stage in coniferous trees where available.

The dock psyllid, *Aphalara rumicis* Mally, is similar to *A. calthæ* (Linn.), with the wings more colored. It occurs on dock, *Sophia*, and weeds in Oregon, California, Wyoming, and Colorado (U. S.).

¹ The name of this family has previously been known as *Psyllida*. See E. P. Van Duzee, "Cat. Hemiptera," *Univ. Cal. Pub. Tech. Bul. Ent.*, 2, 1917, p. 782. Biblio. D. L. Crawford, "American *Psyllida*," *P. C. Jour. Ent.*, 2, 1910, pp. 228, 347; 3, 1911, pp. 422, 480, 628. *Mon. Psyllidæ of New World*. Bul. 85, U. S. Nat. Mus. 1914. E. A. Schwarz, "*Psyllidæ* of Alaska." *Herriman Alaska Exped. Proc. Wash. Acad. Sci.*, 2, 1900, p. 539. "Notes on Am. *Psyllidæ*." *Proc. Ent. Soc. Wash.*, 6, 1904, p. 234. E. M. Patch, "Homol. Wing Veins of *Aphididæ*, *Psyllidæ*, *Aleyrodidæ* and *Coccidæ*." *Ann. Ent. Soc. Am.*, 2, 1909, p. 101. *Psyllidæ of Maine*. Bul. 187, Maine Agr. Exp. Sta., 1911. "Notes on *Psyllidæ*." *Psyche*, 15, 1912, p. 19. Bul. 202, Maine Agr. Exp. Sta., 1912, p. 215.