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INTRODUCTION

SEVERIN has previously reported (1934, 1940)⁴ that 3 species and a biological race of leafhoppers transmit the California aster-yellows virus. In two recent papers DeLong and Severin (1945) and Severin (1945) added 6 species of phlepsid leafhopper as vectors of this virus. The present paper deals with the characters, distribution, and food plants of one additional leafhopper vector, *Gyponana hasta* DeLong; in a companion paper, Severin (1946) discusses the transmission of the virus by this, the first reported leafhopper vector in the subfamily Gyponinae.

CHARACTERS, DISTRIBUTION, AND FOOD PLANTS

For several years *Gyponana hasta*, recently described (DeLong, 1942), has been confused with and identified as *Gyponana angulata* Spangberg, which it resembles very closely in general appearance and in morphologic structures.

Gyponana hasta is one of the few species of this genus with an angled vertex. This species is similar to *G. angulata* in general appearance, and can be distinguished from it only by the shape of the style and aedeagus. Its length is 7.5 to 9 mm.

The vertex is somewhat strongly produced and bluntly angled, and is two thirds as long at the middle as the basal width between the eyes.

In color it is somewhat variable, but usually is dull yellow with a tinge of green. The vertex, pronotum, and scutellum (plate 1, *A* and *B*) are often definitely yellow. There are no dark nor definite color markings.

The female last ventral segment has a posterior margin which is broadly, concavely excavated, with a slight median notch (plate 1, *C*).

The male plates are elongate, blunt at the apex, and with a slight bulge on the outer margin near the middle (plate 1, *D*). The aedeagus (plate 1, *E*) is long and somewhat slender, with a pair of short terminal, lateral processes which extend about one third of the distance to the basal curved part and are closely appressed to the body of the aedeagus. The style is sickle-shaped, with the apical half broadened at the base, then gradually tapered to a sharp-pointed apex (plate 1, *F*).

In comparison with *Gyponana angulata*, the styles are longer and the tapered part is more slender before the apex. The aedeagus is longer, narrower, with shorter lateral processes which are more closely appressed.

¹ Received for publication November 15, 1945.

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⁴ See "Literature Cited" for complete citations, referred to in the text by author and date of publication.

Geographic Range.—The species was originally described from specimens taken in Arizona in the following localities: Hualpai and Patagonia mountains, Sabino Canyon, Williams, Turkey Creek, and Granite Dells. In California, earlier records indicate that specimens were taken at Sacramento, Mint Canyon, Hamilton City, Mt. Shasta, and Freeport; in Texas, at Fort Davis and in Gillespie and Val Verde counties; in Oregon, at Mt. Hood; in Idaho, at Coeur d'Alene; in Washington, at Mt. Rainier; in Utah, at Snyderville; and in Missouri, at Cabool.

Distribution and Food Plants in California.—The localities and food plants of this leafhopper are as follows:

San Luis Obispo County: 1 pair was collected in a pasture at Santa Maria, June 12, 1942, by N. W. Frazier.

San Diego County: 1 nymph (a male after the last molt) was taken in a field of alfalfa, *Medicago sativa*, at Boulevard, June 7, 1942, by N. W. Frazier.

San Bernardino County: On June 5, 1942, at the entrance to Cajon Pass several adults were captured on squaw bush, *Rhus trilobata* by N. W. Frazier.

Imperial County: At Westmoreland, June 7, 1942, 1 pair was caught in an alfalfa field by N. W. Frazier.

Tulare County: On May 8, 1941, at Woodlake 8 adults were captured in an alfalfa field by N. W. Frazier.

Fresno County: Adults were obtained in sweepings of alfalfa fields in the vicinity of Sanger, Selma, and Biola by H. H. P. Severin, and at Palier on April 15, 1942, by N. W. Frazier.

Madera County: At Madera, October 9, 1941, a few adults were taken in an alfalfa field by H. H. P. Severin.

Merced County: On April 28, 1943, at Livingston, 1 male and 2 females were collected on sagewort, or mugwort, *Artemisia vulgaris*, by N. W. Frazier.

Stanislaus County: On July 2, 1942, 6 males and 4 females were obtained in sweepings of alfalfa fields at Newman by N. W. Frazier.

Napa County: At Dry Creek School, February 13, 1943, a pair was caught in general sweepings, but the host plant was not recorded by N. W. Frazier.

Sacramento County: In a locality known as "Sacramento Pocket," on September 12, 1941, 2 adults were taken in a field of Ladino clover, *Trifolium repens* L. var. *latum* McCarthy, by H. H. P. Severin.

Among economic plants, this leafhopper was collected on one occasion in a celery field near Terminus, in the Sacramento Valley.

The collection data indicate that this leafhopper overwinters in the adult stage.

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PLATE

GYPONANA HASTA

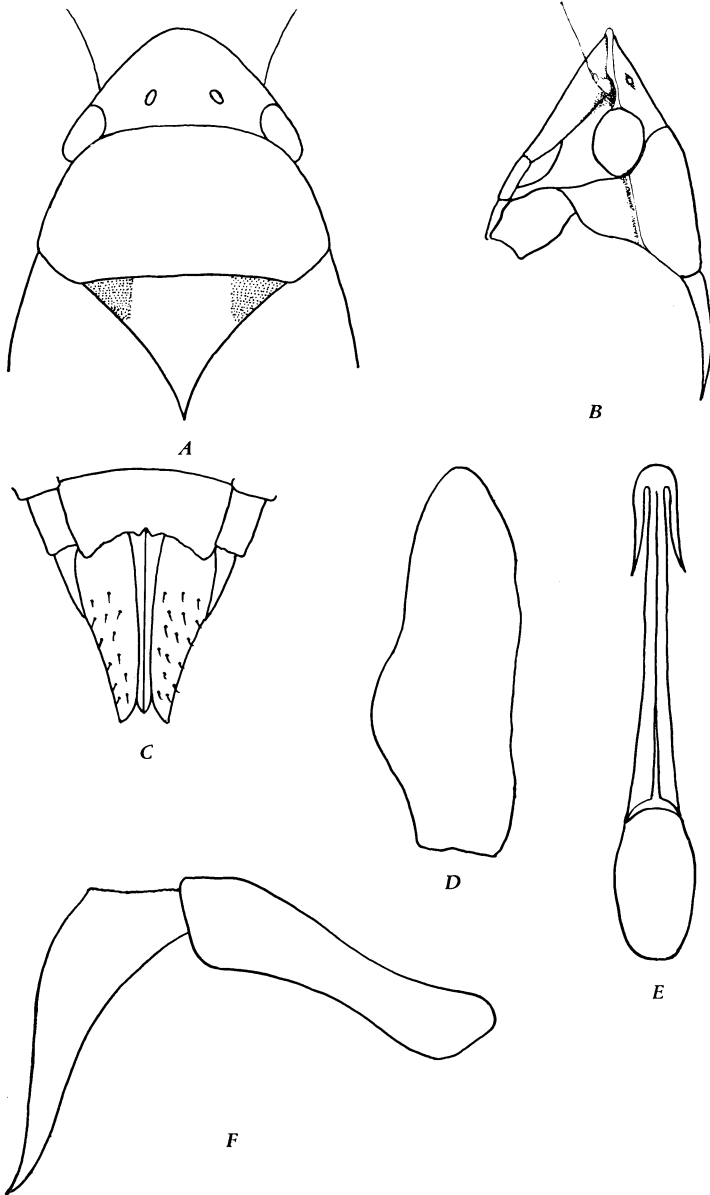


Plate 1.—*Gypsonana hasta* DeLong: *A*, dorsal view of head, pronotum, and scutellum; *B*, lateral view of head, pronotum, and scutellum; *C*, ventral view of female external genital structures; *D*, ventral view of male plate; *E*, ventral view of male aedeagus; *F*, lateral view of male style.