

AMERICAN LEAF-HOPPERS OF THE SUBFAMILY
TYPHLOCYBINAÆ.

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THIS subfamily comprises the lowest, and also the most beautiful and fragile, of the species included in the family Jassidae of the order Hemiptera. On account of the very small size of most of the species and the difficulty with which they are preserved in suitable condition for study, the group has been much neglected by students of entomology in this country. Mr. Van Duzee, in his Catalogue of the Described Jassoidea of North America, lists thirty-five species in this subfamily, and Berg, in *Hemiptera Argentina*, described three species from South America, while Doctor L. Melichar, in *Cicadinen von Mittel-Europa*, lists seventy-three species. Although the present paper fully doubles the number of species known to occur in the Americas, it is evident that the study of the Typhlocybinae on this side of the Atlantic is only fairly begun.

The attempt is here made to get together the scattered descriptions of American species, to give a fairly complete bibliography of American literature on the group, to straighten out the synonymy among the species, and to describe such new forms as have come to hand, so that others may be helped in working up such material as they possess. No attempt has been made to give a complete bibliography of other than American writings, but in every case all references are given that have come to my notice.

Classification.—It will be noticed that certain genera recognized by late European writers are not recognized in this paper. *Erythria* is united with *Dieraneura*, and *Zygina* and *Zyginella* with *Typhlocyba*, because the characters separating these genera seem to me not to be of generic importance. *Chlorita* and *Kybos* are put under *Empoasca* because *Empoasca* has precedence and covers both of the former, and because the characters separating the genera are not constant. Among the species described in this paper there can be found every possible gradation between the *Chlorita* and *Kybos* type of vertex, and the difference in elytral venation is often found in a single species and even in single individuals.

I took this variety in large numbers from sagebush, *Artemisia tridentata*, August 21, at Cerro Summit, Colorado. It is identical with *igroscuta* except in coloration.

EMPOASCA PALLIDA, new species.

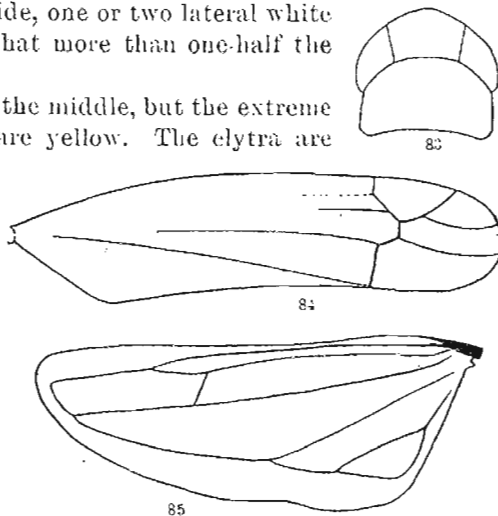
A slender species, color very pale yellow, almost white, 3.75 mm. long. Face but slightly longer than broad, front pale yellow, mottled with gray white, the genæ and the clypeus nearly all white.

Vertex hardly produced, its length equal to one-third the breadth of the head and to three-fifths the length of the pronotum; it is yellowish in color with a median whitish line, and on either side of this an oblique whitish line, broadest at the posterior edge of the vertex; the compound eyes are rather faintly but distinctly greenish in color. The pronotum is whitish, tinged with yellowish, and with the median and, on either side, one or two lateral white spots; the length is somewhat more than one-half the breadth.

The scutellum is white on the middle, but the extreme tip and the basal angles are yellow. The elytra are whitish, subopaque to near the cross veins, beyond the cross veins transparent. Abdomen above and below yellowish white with the last ventral segment and the pygofer greenish. Legs whitish with tips of tarsi fuscous and a faint tinge of green on the tibiae and tarsi. (See Figs. 83, 84, 85.)

Type.—No. 3435, U.S.N.M.

Described from five females and two males from the U. S. National Museum and labeled from "Cotton, N. Car., June, '79."



FIGS. 83, 84 and 85.—VERTEX AND PRONOTUM, ELYTRON, AND WING OF *EMPOASCA PALLIDA*.

EMPOASCA SNOWI, new species.

Colors green and yellow, form slender, length 4 mm.

Face yellow above, green below; on the upper portion there are numerous greenish white spots of irregular shape and a whitish median line, somewhat interrupted above, extending to the clypeus. In one specimen the light markings are rather indistinct. Length of face slightly exceeding the breadth, clypeus one-half the length of the front and but little exceeding the genæ. Vertex yellow anteriorly and greenish posteriorly and with two small green spots, one on either side of the median line and about equally distant from each other and from the compound eyes. Vertex moderately produced and a little less than