

INSECT FOOD HABIT RATIOS IN DEATH VALLEY AND VICINITY.

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In "North American Fauna," No. 7, pp. 235-268, 1893, there appears a "Report on a Small Collection of Insects Made During the Death Valley Expedition," by C. V. Riley, with supplementary papers by Williston, Uhler and Bruner. Some 557 species are listed from such localities as San Bernardino County, Death Valley, Panamint Valley, Panamint Mountains, Argus Mountains, Coso Valley and Owens Valley. As the records of the collection offered tabulation possibilities, the activities of the insects reported, were reduced to certain food habit types, based on the predominating larval habits of the families, and expressed as ratios.

These ratios should be considered only as tentative in view of the fact that the collection upon which they are based is not as complete as it might have been, this being admitted in the report. Nevertheless as all of the important orders of insects were represented, it was thought that the species might possibly constitute a representative sample and so in spite of evident imperfections, the tabulations were made as matter of interest.

According to published accounts, the vegetation of the entire area in which the insects were collected is scant and descriptions of the whole territory abound in such terms as patches or scattered sparse growths of pinon and juniper trees, poorly supplied with grass and water, alkali flats, salt beds, bare mountains, hot springs, cacti, sand, yucca, western juniper, small-nut pines, beds of dry lakes, cones of extinct volcanoes and heaps of pumice. From such statements it can be assumed that the vegetation over the entire area, although sparse, is of the same general type.

In accordance with their family food habits, the 557 species can be grouped as follows:

Number of species.....	557
Phytophagous.....	37 per cent
Saprophagous.....	20 per cent
Harpactophagous.....	25 per cent
Parasitic.....	14 per cent
Pollen feeders, misc. spp.....	4 per cent

Unfortunately there are no food habit ratios from a similar area with which the above figures can be compared to serve as a check. They are unlike the sets of ratios present in areas embodying different types of vegetation as noted in the Proceedings of the Biological Society of Washington, Vol. 38, pp. 1-4, Table I and appear to exhibit a degree of variation similar to those found in areas which have uniform types of vegetation. (Proc. Biol. Soc. Wash. Vol. 38, pp. 1-4, Table II). In view of this, it is assumed that the food habit ratios of Death Valley and vicinity afford additional evidence for the support of the suggestion advanced in previous papers*, that in relatively small areas each with a uniform type of vegetation, the ratios between the various types of food habits, based on the species present, vary in accordance with the type of vegetation, if the numerical ratios between the species and the factors tending to reduce or change their numbers are considered as constant.

* Ohio Jour. Sci. Vol. XXIV, No. 2, pp. 100-106; Ent. News, Vol. XXXV, pp. 362-364; Proc. Biol. Soc. Wash. Vol. 38, pp. 1-4.