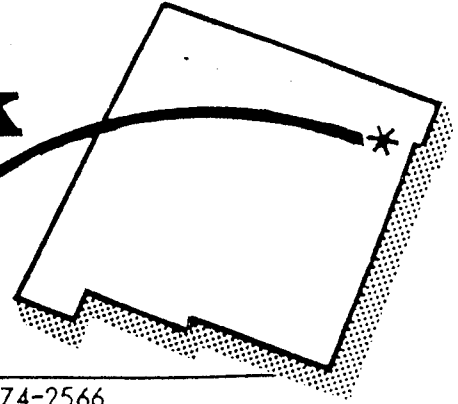


Clayton Livestock Research Center

PROGRESS REPORT



Route 1 Box 109

Clayton, New Mexico 88415

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Progress Report 5 (October, 1978)

THE DISTRIBUTION OF THE RANGE CATERPILLAR EGG PARASITE, *ANASTATUS SEMIFLAVIDUS*, IN UNION COUNTY

The range caterpillar, *Hemileuca oliviae* Cockerell (Lepidoptera: Saturniidae), is a serious pest of grasslands in Union County New Mexico. To develop better control, current research emphasizes the impact of natural enemies on pest populations. This is the first of two reports describing this year's studies on parasitism of caterpillar eggs.

New Mexico State University's Department of Entomology and Plant Pathology and Cooperative Extension Service established an innovative program in Spring, 1978. Every square mile (township section) in Union County was surveyed for range caterpillar eggs. One or two egg masses from each location were reared in the laboratory. About 470 egg masses, representing nearly 12% of the total county area, were observed. Although emerged parasites were identified, percent parasitism was not recorded because the sample sizes were too small for statistical tests.

The tiny eupelmid wasp, *Anastatus semiflavus* Gahan, was the only egg parasite. Both sexes were collected, and only one parasite emerged per host egg. The enclosed areas in Fig. 1 show the parasite distribution based on the sample location data. Parasitism occurring in such small samples indicates a relatively high parasite population. Parasites also exist outside the enclosed areas of Fig. 1, but at much lower densities.

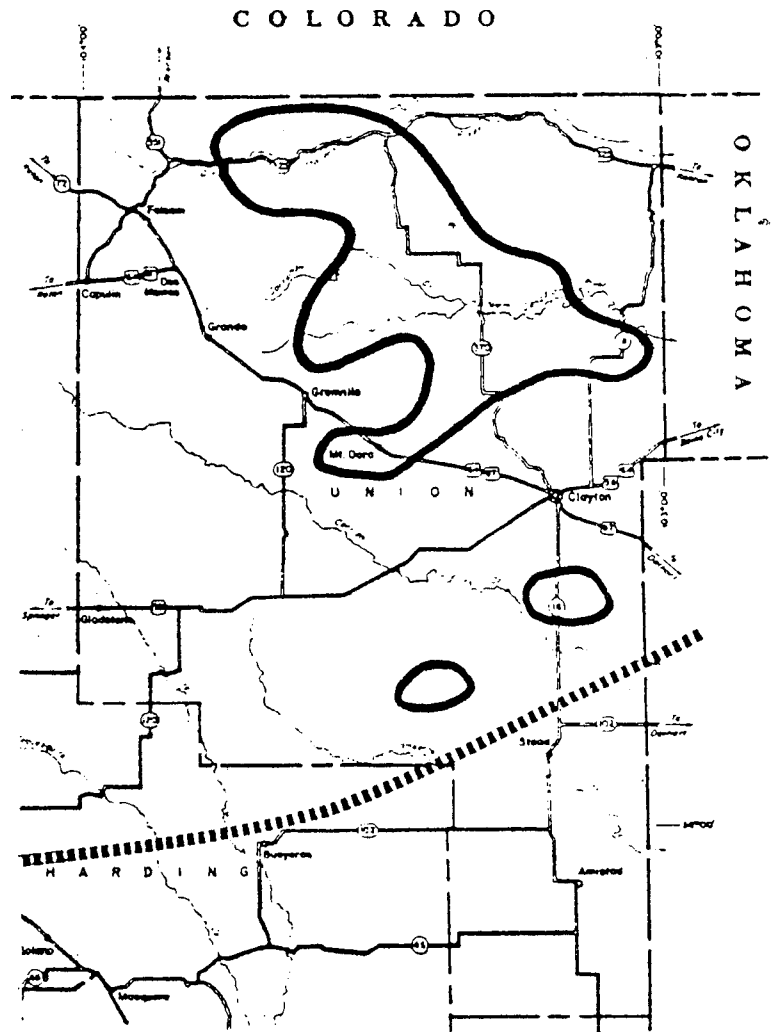


Fig. 1. Distribution of the egg parasite, *Anastatus semiflavus*, in Union County New Mexico, based on 1978 range caterpillar egg mass survey (enclosed areas). Range caterpillars are generally found above the broken line.

Though widely distributed, parasites were more common in the north-central part of the county. Perhaps there are alternate hosts in the juniper-oak woodlands of that region. Parasites were rare from areas west and south west of Clayton, even when the egg mass densities were high.

These data indicate egg parasitism populations are varied throughout the distribution of the range caterpillar. In a few localized areas, parasites may be an important mortality factor. The next report considers the control value of the parasite in such places.
-James D. Hansen, Research Associate
Department of Entomology and Plant Pathology

The Clayton Livestock Research Center serves as field headquarters for the range caterpillar project of New Mexico State University. Dr. James D. Hansen has an office and laboratory at the Center. We are pleased to make these facilities available for this important project of the Department of Entomology and Plant Pathology. The New Mexico Department of Agriculture is in charge of the spraying program for control of this range pest.

The impressive facilities at the Clayton Livestock Research Center were dedicated on October 10, 1978. This Center is probably the best such research station in the United States. We are very pleased to have the Center supervised by Dr. Glen P. Lofgreen, who has an excellent international reputation in animal nutrition, particularly the use of net energy in formulating beef cattle rations and the nutrition, health and management of recently-shipped calves.

Visitors viewed and were given explanations of use of the office-laboratory building, solar heating of water for the residence, solar heating of the residence, wind driven generator to be constructed for furnishing part of the electricity for the residence, shop and feed storage building, feedlot office and cattle working facilities, research cattle and pens, and the feed mill which is under construction. The center-pivot irrigation system which provides water for 120 acres of wheat pasture is located north of the highway.

Comments relating to the importance of this new research station were presented by State Senator John L. Morrow, Capulin; Philip Bidegain, First Vice President, New Mexico Cattle Growers Association; Alton Bryant, District Ranger, Kiowa National Grasslands, Cibola National Forest; Gerald W. Thomas, President, NMSU; and L. S. Pope, Dean and Director, College of Agriculture and Home Economics, NMSU.

Thanks are due to the people of the Clayton area for their support and contributions to the success of the Open House and Dedication. Special thanks are due the Chamber of Commerce, Cowbelles, Farmers and Stockmens Bank, Federal Land Bank, First National Bank, Great Plains Chemical, Hi-Pro Feeds, Southwestern Electric Cooperative, Worley Mills and Foster Zimmerman. We look forward to successful field days at which research results will be reported.



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