

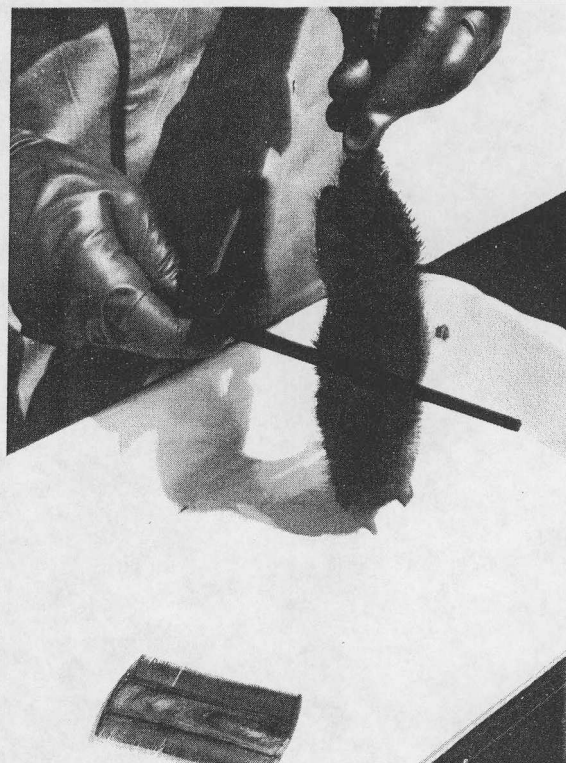
## TYPHUS INVESTIGATIONS

### Thomasville, Georgia

The Typhus Investigation Project completed its first year of work in September, 1946. Headquarters for this study were established in Thomasville, Georgia, in September 1945, with sub-headquarters in Quitman, Cairo, and Bainbridge. Training of personnel, acquisition of equipment, and collection of field data got under way in October 1945. Methods of collecting data were fairly well standardized by April 1946, and more suitable space was acquired for headquarters. The organization was crystallized into its present form in July 1946.

The principal purpose of the study is to provide a scientific measure of the effects of certain county-wide typhus control operations (particularly DDT dusting) upon the prevalence of human and rat murine typhus fever, and also upon rat ectoparasite abundance. Four counties in South Georgia make up the principal study area. While these counties have not yielded the highest typhus incidence in the United States, they seemed to be best suited to such a study since they had not undertaken any type of community typhus or rat control program for several years prior to the beginning of the present project. A special DDT dusting program was set up for Brooks and Thomas Counties, and a rat-poisoning campaign was planned for Decatur County. After a preliminary period of trapping, these control operations were started respectively in April, May, and June 1946. Operations in Grady County, the control county, were limited to human incidence, rat prevalence, and rat ectoparasite abundance studies, which are parallel to studies in the other counties.

By the end of November 1946 a review of the data revealed a significant reduction of human incidence in Brooks and Thomas Counties (dusted with DDT), as well as in Decatur County which had experienced a county-wide poisoning campaign in May and June 1946. However, in

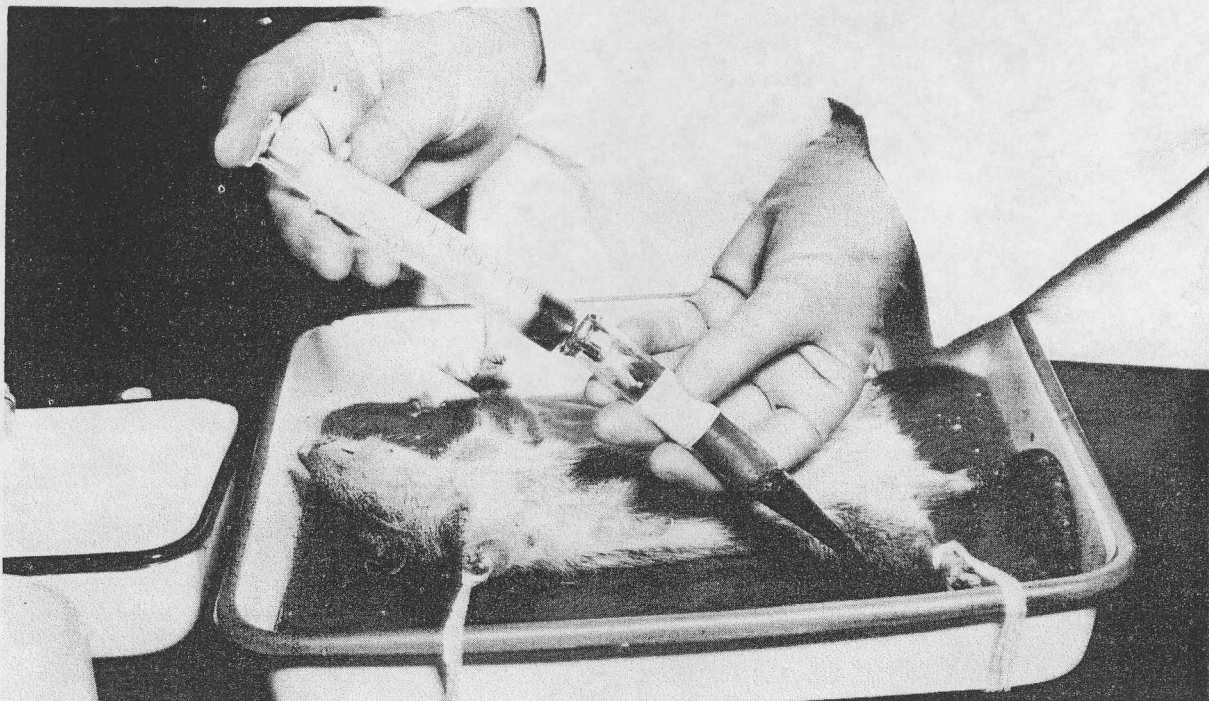


Combing ectoparasites from rat for rat ectoparasite abundance studies.

addition to the poisoning campaign mentioned, a residual spray program was also carried on in Decatur County during the 1946 season. This may have influenced the favorable downward trend of human typhus cases in this county. This subject is being investigated further.

Human typhus incidence in Grady County remained unchanged in 1946 as compared with 1945. These trends continued through December 1946. Station trapping, instituted in April 1946 as a means of obtaining representative samples of rats from each county, is yielding data describing seasonal and geographic distribution of the prevalence of typhus complement-fixing antibodies in rats and the abundance of various rat ectoparasites.

Serological comparisons of the blood



Representative samples of rats trapped in each county are bled for serological comparisons of blood.

of rats trapped during the period April through June with those trapped July through December 1946 show an encouraging decrease in typhus prevalence among rats in Brooks and Thomas Counties, while both Grady and Decatur Counties showed an increase. Since young rats are usually more easily poisoned than old rats, this may account for a part of the increase in the percentage of rats with typhus complement-fixing antibodies in Decatur County. Also an occasional animal is found, other than domestic rats, yielding a positive typhus complement-fixation test. The supplemental survey is being pursued further. Rat ectoparasite studies indicate a satisfactory reduction in *Xenopsylla cheopis* abundance on a county-wide basis in Brooks and Thomas Counties, as contrasted with Grady and Decatur Counties.

The expected autumnal rise of *Leptopsylla segnis* seems to have been somewhat subdued in the two DDT treated counties. Other rat ectoparasites which are normally present in significant numbers in this area do not

seem to be materially affected by the county-wide DDT dusting operations.

Supplemental studies have been instituted in Cook County in an attempt to develop materials and methods of producing more efficient control of rat mites and lice. A colony of about 100 *R. rattus* has been installed on the project so that effects of DDT on rats may be closely observed for further studies.

A colony of 100 *R. rattus* has been installed to permit close observance of the effects of DDT on rats in future studies.

