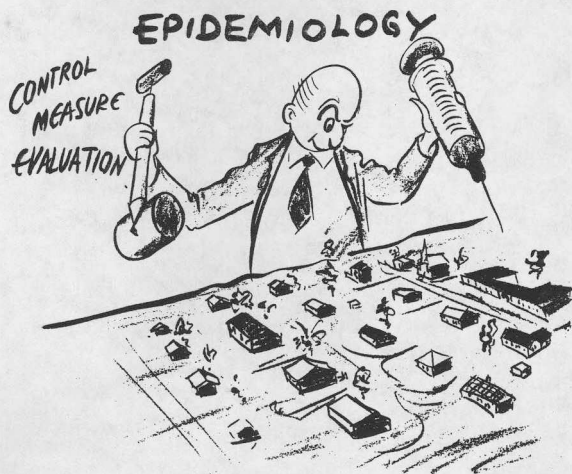


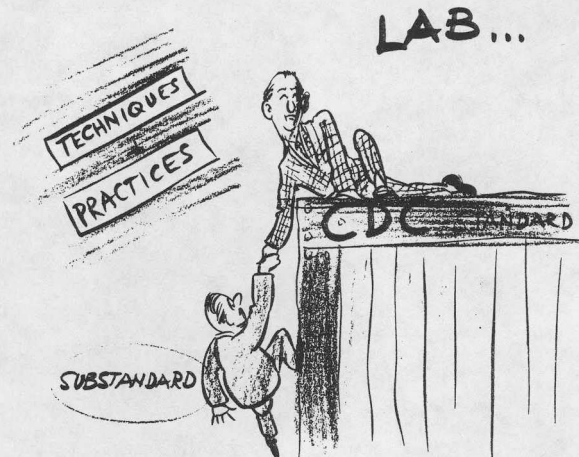
The Communicable Disease Center is a field station of the States Relations Division in the Bureau of States Services of the U. S. Public Health Service. Chart I shows the lines of authority of the Officer in Charge, and the interrelationships of the Headquarters and Field Organizations in the various states. These now number 15 - Alabama, Arkansas, California, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

The functional objectives of the various elements in the Headquarters Organization are indicated in Chart II. The members of the CDC Executive Office are concerned with the formulation and transmission of over-all policy to the divisions and the field organization, and in the administrative direction of the Communicable Disease Center Program. The divisional functions may be summarized as follows:



**EPIDEMIOLOGY:** This division maintains statistics of reported morbidity and mortality related to diseases of operational or investigational concern to the Communicable Disease Center, and periodically analyzes and interprets them for use in planning and evaluating programs. It assists in field investigations by measuring effectiveness of control measures on human populations in terms of specific morbidity and mortality experience; assists states in

analyzing and advising with regard to epidemic phenomena; and supplies statistical planning and interpretive assistance to divisional and other programs.



**LABORATORY:** Laboratory activities of the Communicable Disease Center are not intended to duplicate those of the National Institute of Health. The principal objective is to support field investigations and to make available to state health laboratories services not now included in the NIH program. The CDC Laboratory provides diagnostic facilities - bacteriologic, serologic, parasitologic, virologic, and rickettsial - necessary for the prosecution of epidemiologic field activities; maintains mobile laboratory units to assist in gathering epidemiological data; provides instructors and other teaching facilities for laboratory training courses; reviews and evaluates technical procedures in diagnostic laboratories; provides consultation for correction of substandard techniques and administrative practices; develops standardized laboratory techniques for survey purposes so that data collected at different times and places may have a greater degree of comparability than at present; provides state and local health laboratories with series of protozoal, helminthic, bacterial, entomologic, and other specimens to assist in training technicians, as a reference museum, and for circulation to local clinical laboratories.

**ENGINEERING:** The Engineering Division provides facilities for large-scale field operations in the control of rodent- and insect-borne diseases. It assists federal and state agencies in control of certain endemic insect- or rodent-borne diseases by providing demonstration programs or specialized personnel to supervise such operations, where justification is based on high disease rates and assurance of local participation in control programs. The Division also provides facilities for controlled large-scale field-testing of new or improved disease-control materials and equipment; and assists other federal agencies and states in making surveys and recommendations regarding impoundment design, construction, and maintenance for the purpose of minimizing malaria hazards.

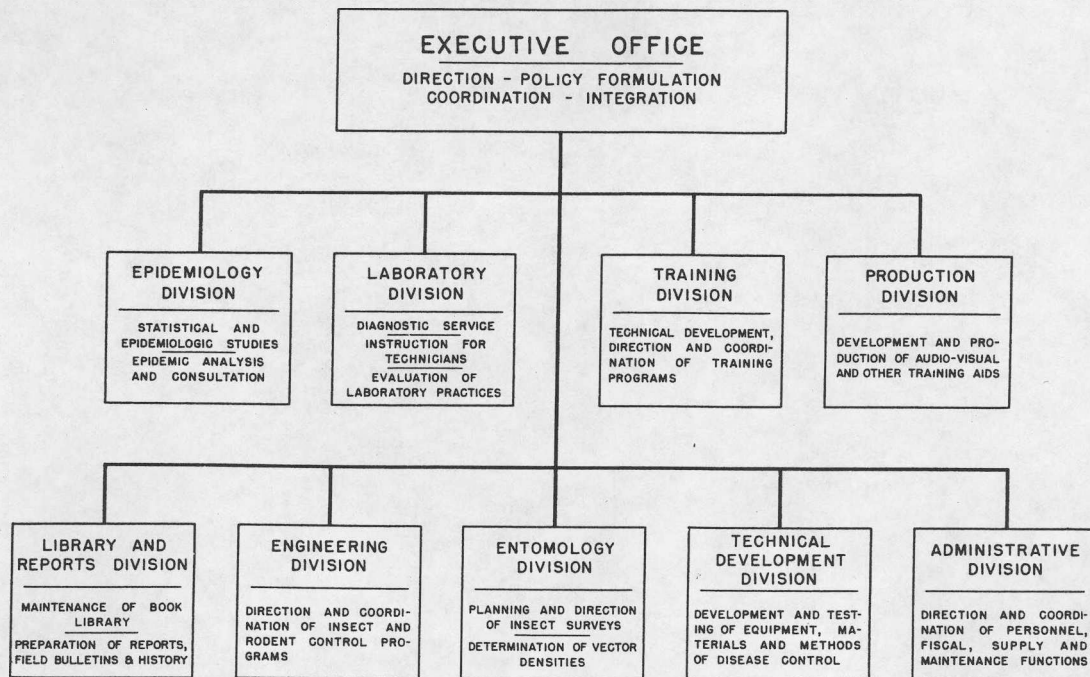
**ENTOMOLOGY:** This Division conducts entomological surveys, upon the findings of which the control program is

based, and appraises the effectiveness of control measures.

**TECHNICAL DEVELOPMENT:** New control methods of insect- and rodent-borne diseases are developed and tested by this Division, including new and improved insecticides and rodenticides. It devises new methods of ratproofing structures occupied or used by humans and evaluates communicable disease control practices in terms of hazard to wild life or to agricultural activities.

**TRAINING:** The training activities of CDC do not propose to infringe upon the prerogatives or fields of endeavor of schools of public health, hygiene, preventive medicine, sanitary engineering, or diagnostic laboratory technique. The Training Division provides in-service training for commissioned officers and civil employees entering the Center in the history, interrelationships, and practices of the various units of

CHART II  
COMMUNICABLE DISEASE CENTER  
CHART SHOWING STRUCTURE AND FUNCTIONS  
OF HEADQUARTERS ORGANIZATION



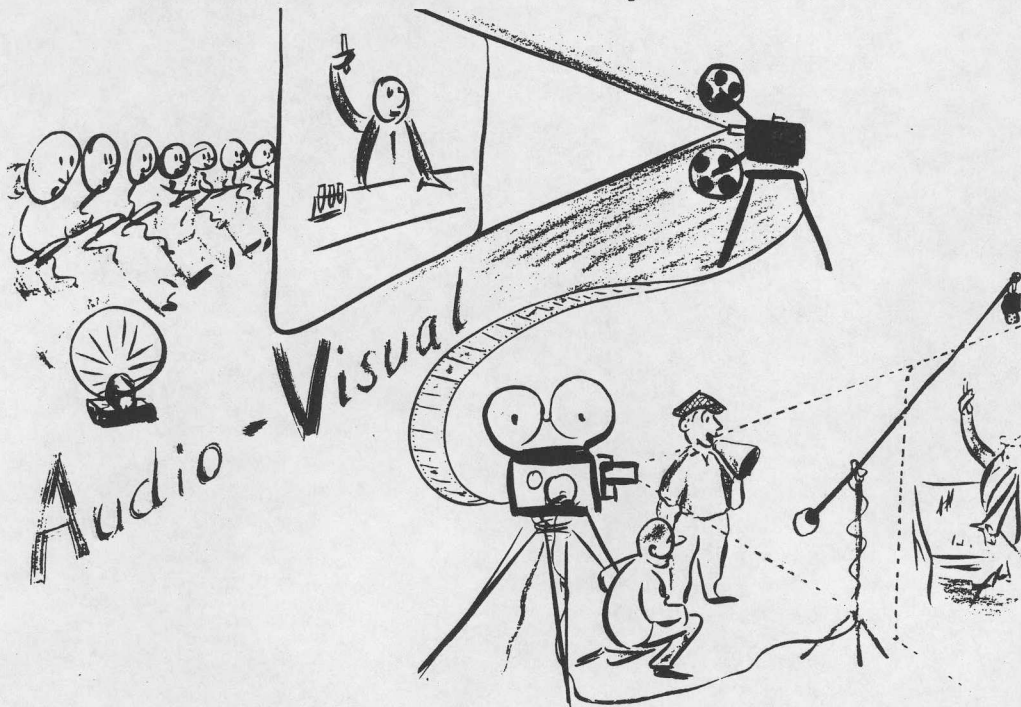




the Communicable Disease Center, the U. S. Public Health Service, and other public health organizations; provides training for the employees of state and local health departments and of federal agencies concerned with the prevention of disease, in effective control practices for insect- and rodent-borne disease, and in the laboratory diagnosis of communicable diseases; provides training facilities for orientation and specialized training of sub-professional state and local public health workers not eligible to attend professional schools of public health; provides public health internship training for inexperienced graduates of schools and departments of hygiene and public health; and maintains a motion-picture and film-strip library for the use of institutions, instructors, and students in the field of communicable disease control.

**PRODUCTION:** The production and distribution of audio-visual and other teaching aids will be restricted to the development of these materials for the assistance of professional and technical schools and individuals engaged in instruction and research concerning communicable disease. It is not planned to engage in lay health educational activities. The Production Division develops and produces motion pictures and film strips, illustrating, describing, and documenting investigations and control procedures pertaining to communicable diseases; it analyzes and assists in the utilization of these and other teaching aids with the object of improving training materials.

**LIBRARY AND REPORTS:** This Division maintains a reading library for investigators, instructors, and students of communicable disease research and control; prepares quarterly field bulletins, annual reports, manuals, and a running history of the MCWA-CDC development, and other program information materials; and provides non-technical editorial assistance in the preparation of manuscripts to be submitted for publication.



**ADMINISTRATIVE:** The Administrative Division establishes and administers personnel policies and procedures for both headquarters and field organizations; insures maintenance of Civil Service position standards; recruits personnel; advises on selection of candidates; determines qualifications; prepares consolidated budget; controls allotted funds; certifies and maintains accounting records of expenditures; audits payrolls, miscellaneous vouchers, and travel vouchers; purchases supplies, equipment, and materials; maintains records of CDC property; provides warehousing and distribution facilities; repairs and maintains automotive and other equipment; prepares maps, charts, and other drafted materials; reproduces manual letters, field memoranda, etc., and distributes all such materials to the headquarters and field organizations; it also prepares and processes machine records based on administrative, operational, investigational, and vital statistics data.

The next year will see the virtual liquidation of the program for the operation of which MCWA was activated. Comparable activities on a smaller scale will be continued in Puerto Rico and possibly a few continental locations at the request of War and Navy Departments.

Of the various field programs carried on by the Communicable Disease Center, those noted below have particular interest. Complete details regarding the work cannot be given in all instances as certain of the investigational projects are incomplete, and results of others are still to be published.

**WAR MALARIA CONTROL PROGRAM:** Mosquito control work is being carried on in the vicinity of Veterans Administration hospitals, as that organization has no special provision for such service. Many of the patients brought together in these hospitals are suffering from malaria and other diseases acquired



in the tropics, making it imperative that complete mosquito control be effected in areas adjacent to these hospitals. This project is now known as the Military Areas Malaria Control Program. It consists almost entirely of larviciding, which is being carried on currently in 27 different zones.

**EXTENDED MALARIA CONTROL PROGRAM:** DDT residual spraying of houses in malarious areas will probably be maintained through 1948 to reduce the likelihood of liberating foreign strains of malaria from returning veterans. It should be continued longer as the most promising approach to the goal of malaria eradication in the United States. This work is being carried on in 274 counties in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia, and Texas (Fig. 1).

Allocations of funds to states for extended malaria control are based on a formula in which a standard budgetary item for the support of the state CDC activities headquarters organization is supplemented by amounts corresponding to each state's relative share of the reported malaria mortality experienced during recent years. Federal monetary participation in this program is now



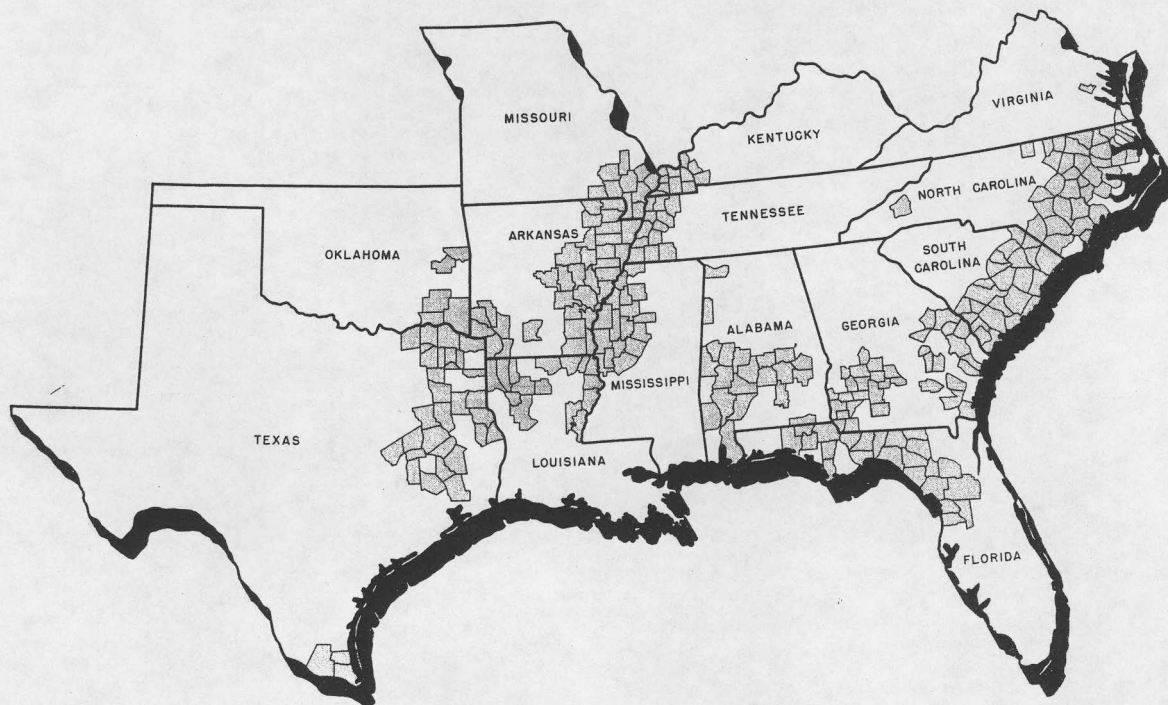
roughly 75 to 80 percent of the total, but is diminishing each month. It is hoped that by the beginning of the 1948 fiscal year local sponsorship of costs will be increased to 50 percent or more, with federal assistance restricted to supplying technical personnel, equipment, and materials.

**IMPOUNDED WATER STUDIES:** As a continuing element in the national malaria prevention program, areas in which water is to be impounded by the U. S. Engineer Department are surveyed by Communicable Disease Center engineers and entomologists, in association with state health department representatives. The purpose of such surveys is to determine (1) the extent of probable malaria hazard contingent upon uncontrolled impoundment, and (2) how this risk, if any, may be minimized by proper design, construction, and maintenance of the impoundment basins. The Communicable Disease Center is reimbursed for these services by the U. S. Engineer Department. Similar cooperative service is being rendered to other federal agencies

concerned in the impoundment of water in potentially malarious areas.

A notable contribution to the literature of sanitary science and practice is a compendious volume, now in press, entitled "Malaria Control on Impounded Water," which represents the joint effort of members of the Health and Safety Department, Tennessee Valley Authority, and the Communicable Disease Center, U. S. Public Health Service.

**AEDES AEGYPTI CONTROL PROGRAM:** These mosquito control activities, a combination of DDT treatment and general sanitation, originally undertaken at the request of the Navy, are being continued in 16 coastal areas of Alabama, Florida, South Carolina, and Texas as a protection against the reintroduction of dengue fever and yellow fever into this country. Local health departments furnished 57 percent of the costs during the first quarter of the 1947 fiscal year. All new projects are required to obtain at least 50 percent of their support from local sources.



**TYPHUS CONTROL PROGRAM:** Grants-in-aid on a formula basis (standard budgetary item for the state CDC activities headquarters organization plus amounts corresponding to each state's relative share of the recent typhus morbidity reported in the nine states where the bulk of the nation's murine typhus occurs) were made to Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Texas, with special projects being supported in Arkansas and Virginia. Typhus control operations, including ratproofing of buildings, rat poisoning, and residual dusting of rat runs, burrows, and harborages with 10-percent DDT dust (see Fig. 2) were carried on in 130 counties of the 11 states. Typhus control activities are supported locally to the extent of nearly 70 percent of their cost.

**MUSCOGEE COUNTY INSECT CONTROL PROGRAM:** This project offered free DDT

residual spraying treatment in every one of the 23,959 dwellings or business establishments in Muscogee County, Georgia, and was accepted in over 95 percent of these units. Its purposes were: (1) to serve as an incentive to promote individual improvement of environmental sanitation of homes, yards, and business places; (2) to benefit the communities by reducing the number of disease-bearing insects and insect pests; and (3) to determine how successfully DDT spraying and dusting operations on a county- and community-wide basis could suppress mosquitoes, flies, fleas, bed-bugs, and cockroaches. From all accounts, the project has been highly successful. About 40 percent of the cost is being borne by the Communicable Disease Center.

**MALARIA FIELD STUDIES:** At Manning, South Carolina, near the Santee-Cooper Impoundment, a Communicable Disease

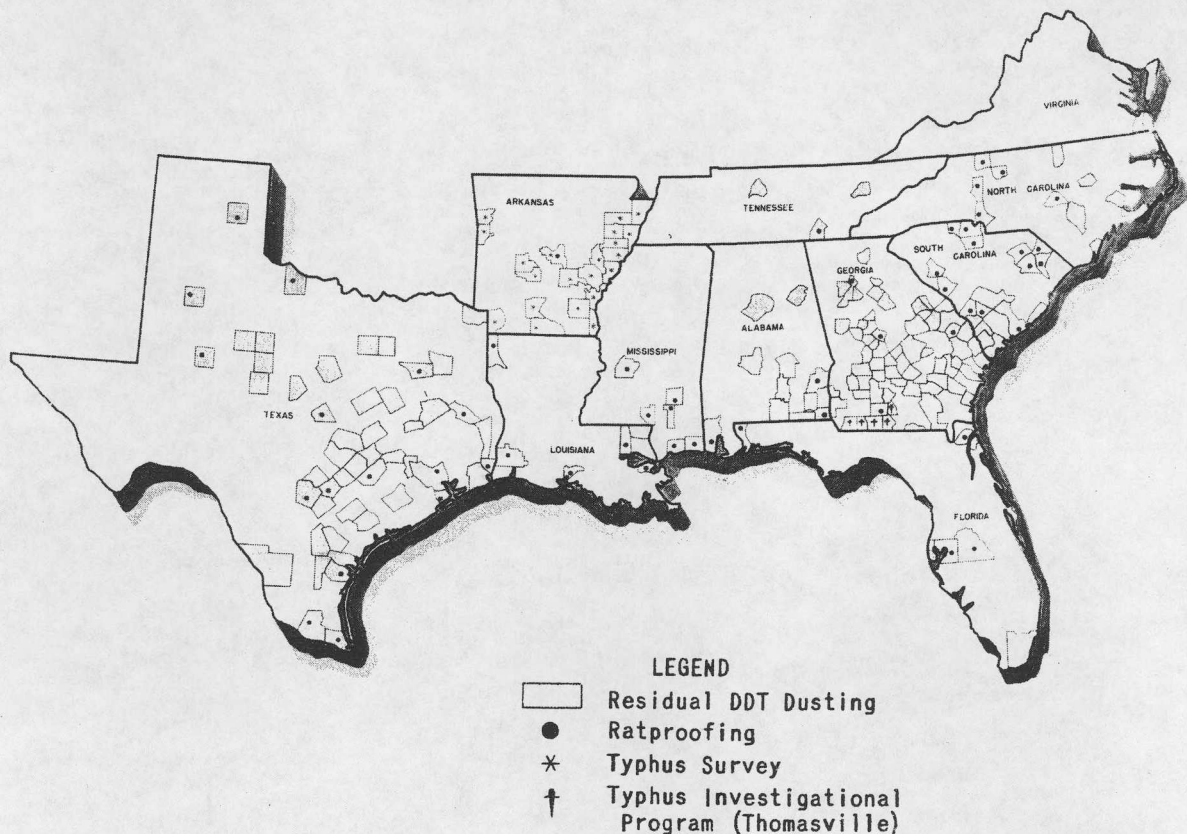


Fig. 2. Extended Typhus Control Operations—Fiscal Year 1946



Center study is being carried on primarily to determine the effect on malaria prevalence of DDT residual spraying of houses and latrines as practiced by MCWA and CDC. During the last two years the Santee-Cooper area has been the only one in the country with notable prevalence of malaria, and even here it has declined markedly. Clinical and parasitologic surveys for malaria are made in the area at frequent intervals and the densities of local anopheline populations are determined regularly. Thus, in addition to the fulfillment of its primary objective, this program provides valuable opportunity to maintain a watch on this most recent outpost of endemic malaria in the country, with the view of obtaining early indications of any potential upswing in malaria prevalence in time to prevent an epidemic spread of the disease.

At the Emory University Field Station in Baker County, Georgia, another field study is under way, sponsored jointly by Emory University and the Communicable Disease Center. This area is topographically different from the Manning station, being representative of the limestone section in southwest Georgia, notorious for its high malaria endemicity until recent years. Regular observations are being continued upon local malaria prevalence, anopheline densities and ecology, and associated ground-water changes. The Communicable Disease Center is especially interested in the investigation of over-wintering habits of anophelines and in the malaria case-finding activities. This area also is considered a lookout station where painstaking surveillance may pay huge dividends in guarding against the return of malaria.

**TYPHUS FIELD STUDIES:** This project, with headquarters in Thomasville, Georgia, is being carried on in four counties of south Georgia where murine typhus has been prevalent (Figs. 3 & 4). Its primary mission is to determine the effect on the incidence of human typhus of dusting rat runs and harborage with

DDT. Comparison of results obtained is being made with other typhus control methods. Field observations are being made on multi-purpose insecticides which have shown promise of reducing numbers of rat mites and lice as well as fleas.

**ANOPHELINE HOST PREFERENCE STUDIES:**

The laboratory procedures concerned with these studies were commenced in 1944 at the Carter Memorial Laboratory in Savannah, Georgia, but have since been transferred to the Virus Laboratory in Montgomery, Alabama. This is an extended investigation of the natural feeding habits of the more abundantly represented species of *Anopheles*.

**DYSENTERY CONTROL PROJECT:** This is a cooperative undertaking of the Communicable Disease Center and the National Institute of Health, with headquarters at Pharr, Texas. The primary objective is to determine whether or not the control of flies by insecticides will reduce significantly the prevalence of diarrheal disease.

**NEUROTROPIC DISEASE -- INSECT CONTROL PROJECT:** The headquarters for this project are in Montgomery, Alabama, adjacent to the CDC Virus Laboratory. The object of this investigation is to determine whether the sudden and relatively complete reduction of certain species of insect populations is attended by measurable interference in the development of incipient epidemics of virus diseases. It is to be emphasized that this is *not* a state-aid operational project. Funds for this project will be spent *only* where there appears to be reasonable hope of obtaining scientific information concerning the significance of insects in the transmission of virus diseases. The late summer and fall months of 1946 were spent in developing and improving rapid fly-control techniques.

**ENCEPHALITIS STUDIES:** The Communicable Disease Center, in recognition of the threat of introduced and extended encephalitic prevalence on the West Coast, is cooperating in a modest way

Fig. 3

**TYPHUS FEVER, ENDEMIC, REPORTED IN THE UNITED STATES,  
BY FIVE YEAR PERIODS, FROM 1916 TO 1945**  
(FROM USPHS "NOTIFIABLE DISEASES")

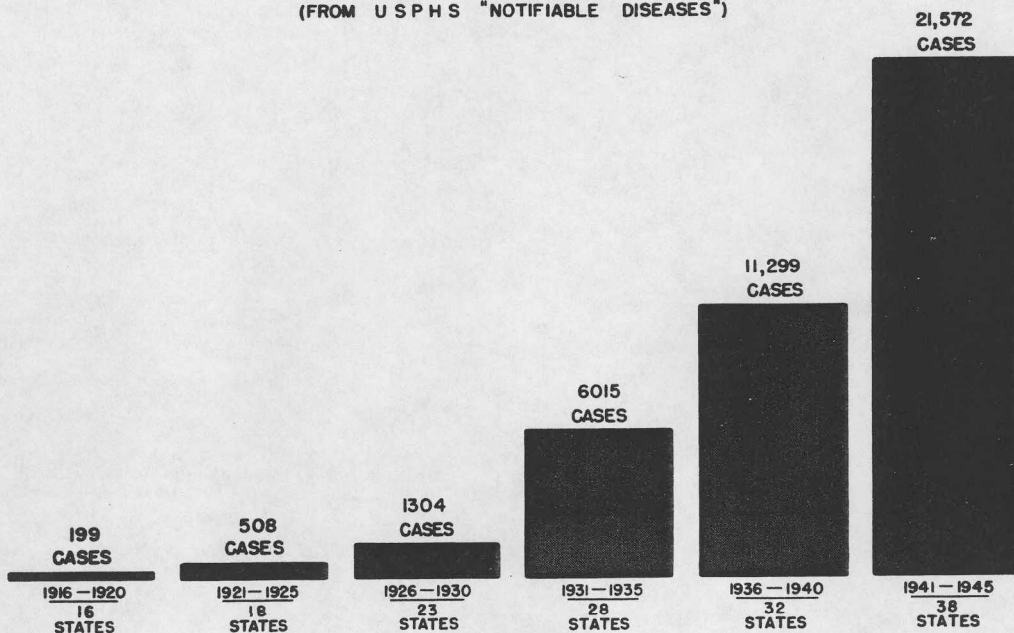
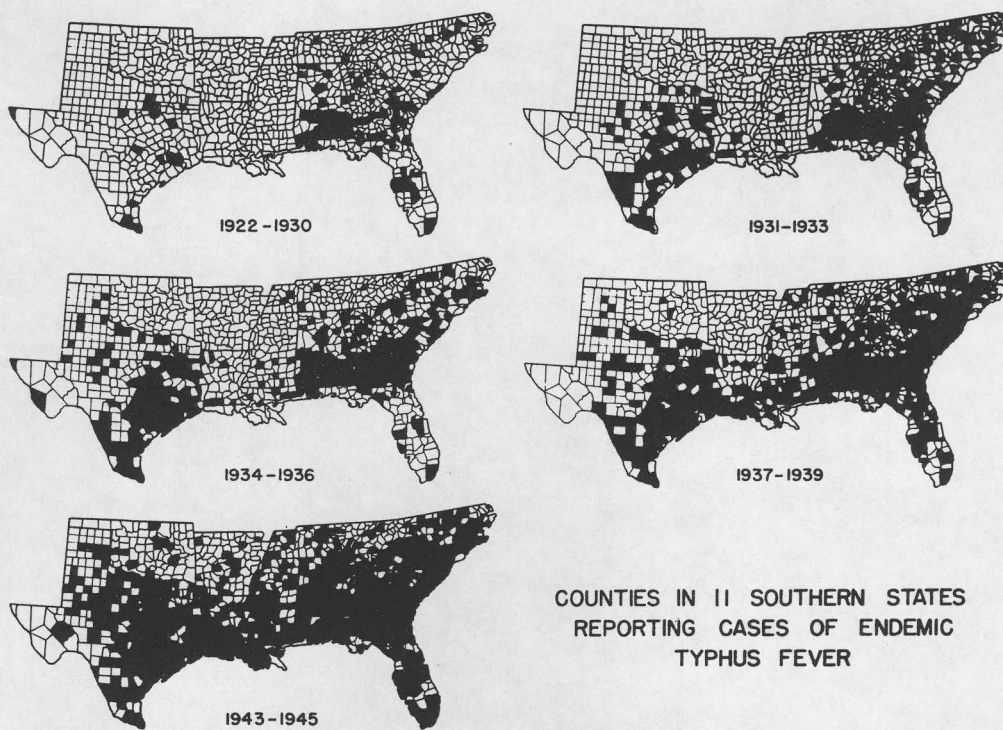


Fig. 4





with the Hooper Foundation of the University of California on studies of possible insect vectors and avian reservoirs of this disease.

Other predominantly intramural activities of the Communicable Disease Center involve entomology to some extent. Thus, considerable portions of the in-service and special training programs are devoted to instruction in distinguishing basic types of insects and in recognizing a limited number of species. The six-weeks course given by the Laboratory Division to federal, state, and local health department laboratory technicians includes instruction in the identification of insects which may be sent to the laboratories from which the students come. The Laboratory Division maintains a large reference museum of insects and, together with the Entomology Division, operates a central insect identification service for the field organizations. Entomologic and other specimens are supplied to state health laboratories as a part of the extension service of the Laboratory Division. Many training films on entomologic subjects have been produced.

A major portion of the work of the Technical Development Division is de-

voted to insecticide investigations. These include studies of various candidate chemicals possessing some activity as larvicides or adulticides against mosquitoes, house-flies, and the ectoparasites of domestic rodents.

In summary, these are some of the functions and activities of the Communicable Disease Center - with special emphasis on those concerned with entomology. Collectively, they represent a purposeful effort on the part of the Federal Government to transmute scientific facts about certain communicable diseases into field-tested control and prevention practices, and by demonstration and training to familiarize the personnel of state and local health departments with easy, economical methods of applying them. In addition, the Communicable Disease Center assists, where requested, in the suppression of health hazards of interstate and extra continental scope. In reaching these objectives, the Communicable Disease Center desires to cooperate to the fullest possible extent, not only with other federal agencies but with state and local health organizations, private physicians and laboratories, universities, and scientific associations.

