Appraising Fly Control Programs

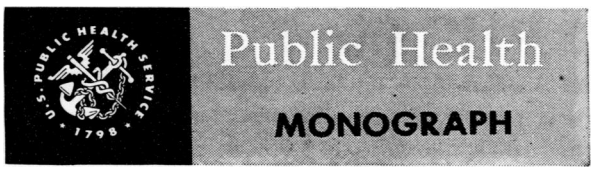
Since 1946, the effective use of chlorinated hydrocarbon insecticides in the control of the housefly, *Musca domestica*, and of various species of blowflies (*Phaenicia sericata*, *Phaenicia pallescens*, *Phormia regina*) has led to the establishment of community fly control programs throughout the United States. Experience has shown that successful fly abatement requires a composite approach which includes the development of adequate levels of environmental sanitation, chemical control, community education, and biological evaluation.

The evaluative phase is the subject of this monograph, which discusses the techniques per se and as each is applied in field operations. Most of the data illustrating the advantages and disadvantages of the methods relate to community fly control programs sponsored by the Communicable Disease Center in cooperation with State and local health departments during the period 1948–53.

The evaluation of a community fly control program serves to guide the selection and frequency of the measures employed and to assay their effectiveness. The latter function requires a routine, periodic assessment in contrast to the flexible, variable techniques necessary for guiding the control operations.

The three methods used most commonly to determine adult fly densities are the grill, reconnaissance, and fly-trap techniques. Either the Scudder grill or a reconnaissance type of survey based on the grill provides the most acceptable means of obtaining repeatable, reliable indexes to fly abundance.

For effective surveillance of a municipality, the city should be divided into areas of socioeconomic levels, such as business, high-class residential, and so on, and the sampling coverage should be related to the magnitude of the fly problem within the zone concerned. Evaluation units of 10 to 20 blocks each are established for grill surveys, 1 to 2 blocks in each unit being inspected weekly. Three types of station blocks are designated: fixed block (block with highest fly potential within the evaluative unit); random block (any block within the evaluative unit except the fixed station block); and problem block (block with extremely high fly potential,



No. 33

The accompanying summary covers the principal findings presented in Public Health Monograph No. 33, published concurrently with this issue of Public Health Reports. The author is with the Communicable Disease Center, Public Health Service, Savannah, Ga.

Readers wishing the data in full may purchase copies of the monograph from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. A limited number of free copies are available to official agencies and others directly concerned on specific request to the Public Inquiries Branch of the Public Health Service. Copies will be found also in the libraries of professional schools and of the major universities and in selected public libraries.

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Schoof, H. E.: Survey and appraisal methods for community fly control programs. Public Health Monograph No. 33. (Public Health Service Publication No. 443.) 18 pages. Illustrated. U. S. Government Printing Office, Washington, D. C., 1955.

resulting from the presence of a dairy, abattoir, dump, and so on).

Survey data show that prevalence trends for fixed station and random station blocks are similar. However, random station blocks are much slower in responding to any sharp increase in fly prevalence. Because the fixed station block is a more sensitive indicator of the fluctuations in fly densities, it is preferred for operational programs.

Fly traps are less reliable than grill surveys in depicting quantitative trends but give a broader index to the qualitative aspects of the the fly population.

The appraisal phase of a community fly control program must be considered as an integral part of the whole operation. Effective utilization of appraisal methods contributes to more efficiency and economy and, in turn, supports the health of the community.

PHS films

Organized Mosquito Control

16 mm. Film, color, sound, 17 minutes, 1955.

Audience: Public health workers and others interested in mosquito control.

Available: Loan—Public Health Service, Communicable Disease Center, 50 7th St. NE, Atlanta 23, Ga.

The solving of mosquito problems on an organized basis is depicted in this film.

Sampling as a first step to determine species present, relative abundance, and types of breeding places are portrayed, as well as dipping for larvae to determine major problem areas, and the spraying of breeding places. Breeding sites are surveyed as determinants of flight ranges.

Three common methods of mosquito abatement are outlined—permanent control through water management, larviciding, and killing adults on the wing or in resting places. In addition, five major types of problem areas—fresh water swamps and depressions, salt marshes, lakes and farm ponds, irrigated fields and pastures, and urban areas—are illustrated. The hydraulic dredge at work, larviciding, and hand and power spraying are shown also.

An efficient manager, adequate funds, capable employees, suitable equipment, and up-to-date records are pointed out as contributing to the success of an organized mosquito control program.

Mosquito Stages of Plasmodium falciparum

16 mm. Film, black and white, sound, 10 minutes. 1954.

Audience: Medical, public health and parasitology students, sanitarians and laboratory technicians, and others interested in the study of living malaria parasites.

Available: Loan—Public Health Service, Communicable Disease Center, 50 7th St. NE, Atlanta 23, Ga.

The appearance and behavior of living malaria parasites within the mosquito host are shown in this film. It depicts the female *Anopheles quadrimaculatus* obtaining a blood meal and the action of the mosquito mouth parts within tissues.

Gametocytes, gamete formation, and fertilization are observed, along with the development of the ookinete, oocyst, and sporozoites. Transfer of sporozoites to the salivary glands and their inoculation into the tissues of the host when the infected mosquito feeds are likewise viewed.

This is a companion film to M 138a "Erythocytic Stages of *Plasmodium vivax*."

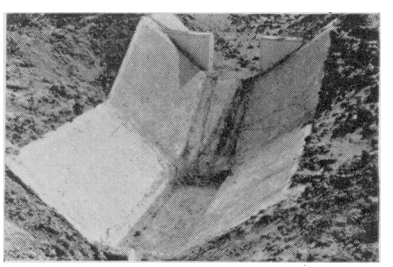
Mosquito Prevention in Irrigated Areas

16 mm. Film, black and white, 7 minutes. 1955.

Audience: Public health workers interested in mosquito prevention in irrigated areas.

Available: Loan—Public Health Service, Communicable Disease Center, 50 7th St., NE, Atlanta 23, Ga. Purchase—United World Films, Inc., 1445 Park Avenue, New York 29, N. Y.

That it is possible to achieve irrigation without the problem of mosquitoes is demonstrated in this film. It emphasizes that the one cardinal rule for controlling mosquitoes in irrigated areas is to avoid standing water by careful design and maintenance of the irrigation system, by accurate preleveling of fields, and by providing adequate runoff drainage.



A cement water-drainage canal.

The life cycle of the mosquito is shown, and 13 typical locations of stagnant pools or sluggish water where mosquitoes might mature in irrigated areas are illustrated.