

fly control program for the summer of 1951. Fly-borne disease is present in some areas but to what extent is not known.

#### RODENT CONTROL

At present the problem of rats in the States of Region IX is limited to certain areas in the five States. They are a problem on the eastern prairie with localized infestations in the Great Salt Lake Valley and in northern Idaho. There is some indication that rats are limited to certain areas and do not seem as firmly established as elsewhere in the United States. In some towns they are localized at several foci and do not invade all parts of the towns despite readily available food supplies and harborage. There is some evidence that minimal control measures such as general sanitation and intensive eradication measures in their foci will entirely rid some areas of rats.

The entire subject of rodent distribution, history of infestation, and recommended control practices in Region IX will be the subject of a later paper.

#### PLAGUE

Sylvatic plague is present in all the States of the Region. The proximity of these infected wild rodents to colonies of domestic rodents is one of the major justifications for rodent control in the cities

in this area. If domestic rats should become infected, the danger of human cases would be intensified. No economically feasible control methods for wild rodents are known, but removing their most intimate contact with man should supply reasonable protection as well as suppress populations of the destructive, disease-carrying Norway rat.

#### OTHER ARTHROPOD PROBLEMS

Ticks, particularly *Dermacentor andersoni*, are widely distributed in the mountainous areas. This tick transmits Rocky Mountain spotted fever and Colorado tick fever. Tick infestations are commonly encountered during May through July and constitute a menace to fishermen and vacationers. *Ornithodoros* or soft-shelled ticks occasionally have been implicated in tick-borne relapsing fever, particularly at the higher elevations.

Certain species of the family, Ceratopogonidae, or biting gnats, are locally important. They have seriously interfered with comfort in several areas in Utah and Idaho and at Rifle, Colo., where the Government maintains a pilot plant for producing oil from oil shale.

Tularemia is widespread and can be contracted by handling wild rabbits and other susceptible wild rodents, by the bite of deer flies and ticks, and by drinking water contaminated by the excretions of certain animals.

## CDC Training Program in Environmental Sanitation

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The trained environmental sanitarian of 1951 emerges with the combined qualities of sincere personality, enthusiasm, ability in public and personal relations, carefully directed experience in a good local health unit, and academic attainment in the arts and sciences. He can effectively secure permanent improvements in environmental health.

For the inexperienced individual, equipped with satisfactory personal attributes and academic

background, the Sanitation Field Training Program bridges the gap between "textbook" and "applied" sanitation. It facilitates the transition from school to initial employment by accelerating the acquisition of practical experience in a prepared area under particularly qualified supervisors who can devote full time to this effort. For example, a working familiarity with the techniques of accurately testing pasteurization plant instruments may be acquired only through actual supervised practice. This applies equally to residual spraying, use of concrete, public speaking, interview-

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ing in community sanitation surveys; in fact, to virtually all of the tangible and intangible elements of sanitary science.

At present only a few of the applicants for sanitation field training meet the specifications for the 1951 model sanitarian. Until very recently no specialized undergraduate university course in this field was offered, and only in the past few years has attention been given to the raising of qualifications of sanitarians. Today the requirements vary widely by States. As a result, field training for the majority of sanitation personnel must include some material to help close gaps in the basic science background and to provide some insight into the organization, administration, and socio-economic aspects of public health. The attempt is made indirectly; in the study of major items of public health, the student sees examples which develop his appreciation of the importance and responsibility of the sanitarian, which stimulate enthusiasm, and which indicate the ethics of public employment.

Another type of training applicant who may fall into either of the preceding groups is the sanitarian with years of public health experience. He may desire training in the form of a refresher course, or to expand his activities from specialized to generalized sanitation, to change from one specialty to another, to qualify for a more advanced position, or for a variety of other reasons. This applicant may require little more than the recent information on a given sanitation specialty, but frequently he profits from a complete review of the field.

To meet the several needs in environmental sanitation training, a variety of courses has been established. An 8-week course of intensive field practice is offered to the qualified graduate in sanitary science. A 12-week course of classroom study and laboratory and field practice is available to those requiring fundamental background material. Concentrated short courses, generally not exceeding 2 weeks, are scheduled in many of the several fields of sanitation, principally for the specialized individual.

Prime requisites for effective field training are qualified training personnel and a suitable, prepared training area. In addition to an academic background and experience in the material to be presented, the training officer must be able to transmit information and skills through field training methods — guidance more than direction,

supervision more than didactic indoctrination. Field training must be his primary interest, and he must constantly alter and improve his methods. There is no blueprint yet available for anything approaching the ultimate in successful field training. The opportunity to learn by example is a basic principle. The training area must provide these examples and *entre'* must be gained to them. It is almost axiomatic that the most suitable areas will be found in conjunction with well staffed and operated local health units. A health officer and his staff who have brought an area to a high level of sanitation normally welcome the establishment of field training, and are indispensable in paving the way in the area for field activities of the training center. With the backing of a respected health department, contacts with industries, organizations, other branches of the local government, and all the individuals important to the training program are made with relative ease. As consultants, the training center personnel may reciprocate by services rendered to the local department in strengthening its sanitation programs, which again may make it a more efficient and effective ally. In addition, the area should provide a variety of representative samples of the types of field problems which are included in the training program. In many counties, health departments carry on such limited programs that they would constitute unsatisfactory training areas. In some geographic areas, adverse climate is encountered, which limits effective field work to only part of the year, a matter to be considered in course scheduling as well as in training area selection.

The 12-week course for sanitarians includes at least an introduction to all the elements usually considered to be within the scope of activity of this category, and additional information to show how sanitation is integrated with the entire public health effort. Field training in individual problems such as rural water supply, rural sewage disposal, garbage collection and disposal, and insect and rodent control are scheduled to precede the broader programs such as milk control, food sanitation, and school sanitation which involve combinations in application of skills of the individual phases. An effective training procedure in any problem has been found to consist of orientation of the trainees immediately before field work through use of visual aids and discussions, then field observation and actual practice followed by review; the review may employ the introductory visual aids, discussion, and



short examination. The most effective visual aids are considered by many training officers to be color slides of the specific field problem to be met. A number of these have been produced for training stations by the CDC and some training officers are developing their own visual presentations. Some of the newer sanitation activities, including housing, accident prevention, and air pollution, are scheduled for consideration in proportion to the extent of their application by local health departments. Basic science in bacteriology, chemistry, and mathematics is included only to the extent that the pertinent phases of these subjects may be obtained. Consideration of administrative procedure, record keeping, public relations, public speaking, legal background, and health organization round out the course. The shorter courses which are presented consist essentially of more detailed and intensive work in individual phases of the 12-week course.

It is obvious that so large a volume of material presented in such a short period must be closely scheduled if it is to be covered most efficiently. One of the major developments in field training has been the preparation of schedules which assure coverage of the subject matter without being unduly inflexible. Some flexibility is required to permit trainees with special interests to concentrate on one subject more than another, and to compensate for field work limited by bad weather. By preparing schedules which permit trainees to carry out field work in small groups, preferably groups of two, the effectiveness of field operations has been found to be materially improved. In

restaurant visits, for example, a trainee group of more than two renders the experience almost valueless.

To insure the best instruction obtainable, elements of the courses in which the station personnel are not essentially qualified are given by consultants. These consultants are secured from a variety of sources such as Training Services Headquarters, CDC, other training centers, State and local health departments, and industrial service organizations. They may participate both in classroom discussion and in field practice.

The successful completion of any field training course does not qualify an individual to undertake independent action in a health department immediately. It simply accelerates his acquisition of experience, and shortens the period of employment during which he must work under close supervision. In addition, during formal field training only accepted methods of procedure are employed, the use of good examples is emphasized, and the opportunity is available to discuss thoroughly each problem. This stimulates the trainee's development in the right direction, and avoids the perpetuation of errors that might result if his total initial experience were obtained in a single local health unit.

The responsibility of the training centers to the trainees and to their sponsoring departments is keenly felt. The recognized shortcomings in training stimulate constant experimentation and revision. The goal of sanitation field training, the provision of complete field experience to to qualified personnel, is still ahead.

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## *CDC Annual Fall Meeting*

Preliminary plans have been completed for the annual meeting of CDC field and headquarters personnel. The meeting will be held in Atlanta, Monday through Wednesday, October 15-17, 1951. It is felt that by scheduling the formal program at the beginning of a regular work week, individuals attending will have the opportunity of staying 1 or 2 days after the meeting to attend to other business. This year plans have not been made to include Specialty Panels as part of the formalized program, since the special interest groups have

time to get together and discuss subjects pertaining solely to their specialties on the afternoon of the last day (Wednesday), or during the following 2 days, if advisable.

The committee on arrangement has planned the accompanying program, which involves the various aspects of communicable disease programs, and which will inform field personnel not only of operational facilities but also of the over-all activities of CDC. State health department personnel who may be interested in the topics to be discussed, and