

FIELD TRAINING For Public Health Engineers

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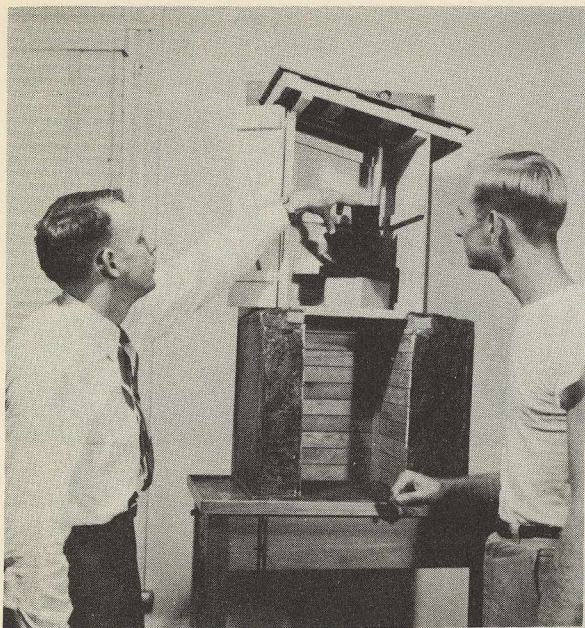
It was Disraeli who said, "The Health of the people is really the foundation upon which their happiness and all their powers as a state depend." That this truth is becoming evident to a growing number of people is evidenced by the rapid growth and expansion of health facilities at all levels.

A recent publication of the U. S. Public Health Service required 16 pages to list available positions in State governments in the field of environmental sanitation alone. If the openings at the local level and those at the Federal level were included, obviously the list would be greatly expanded. Today the supply of trained personnel to fill these positions is grossly inadequate. If this is not to be true in the foreseeable future, training practices will have to be materially revised and improved.

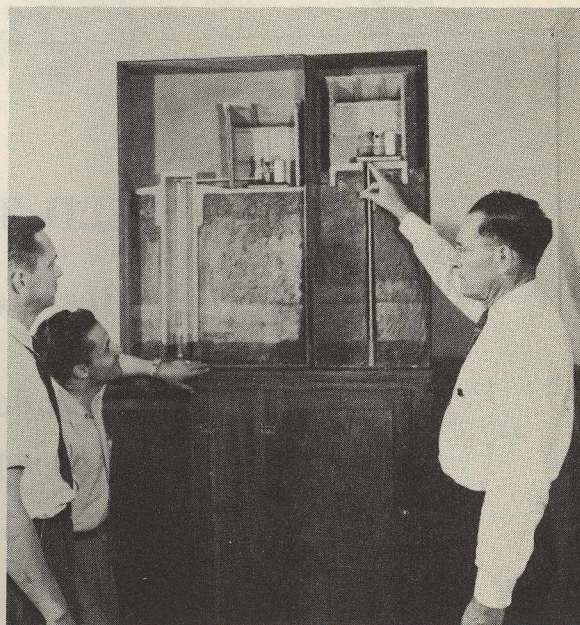
Public health engineering today is very different from the sanitary engineering of only a few years ago. Water and sewage treatment were then the major, and frequently the only, concern of the sanitary engineer. Today the public health engineer

has become a member of an integrated team whose broad concern is the health — the prevention of sickness — of the whole community. He is expected to be an authority not only in water and sewage treatment, but also in that broader field commonly spoken of as environmental sanitation, including garbage and refuse disposal, school sanitation, insect and rodent control, housing sanitation, plumbing control, swimming pool sanitation, industrial hygiene, and food and milk sanitation. He must know the common communicable diseases and their relationship to the environment, the effect of fluorides on the teeth of children, and many other matters affecting health quite beyond the ken of his sanitary engineer predecessors. All of this indicates the breadth and scope of the training which the public health engineer must have if he is to measure up to his responsibilities and opportunities. This leads to questions of the extent and kind of training needed, and where and how it can best be given.

Fortunately our professional schools and colleges are alert to changing needs and



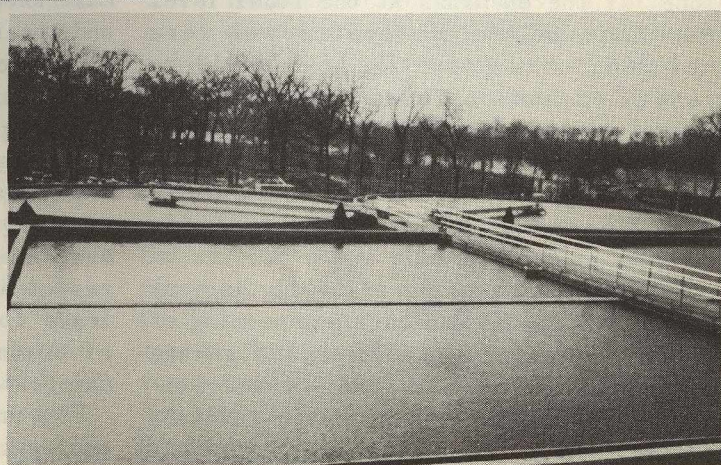
Model of rural sewage-disposal system.



Well and pump models for rural water supply.



Interior (above) and exterior (right) of water plant.



are attempting to prepare their graduates for today's problems. However, because of the wide demand for engineers in public health work and the opportunities in this field, many whose studies qualified them as specialists in water treatment or wastes disposal — or even bacteriology or chemistry — now find themselves in public health engineering with a limited knowledge of, or at best only a theoretical familiarity with, the broad aspects of environmental sanitation.

As is true for the physician and the nurse, excellent academic preparation is not enough. The public health engineer must have a period of field training comparable to the internship of the physician and the hospital training period of the nurse before he is fully prepared to assume a responsible place in a modern health department.

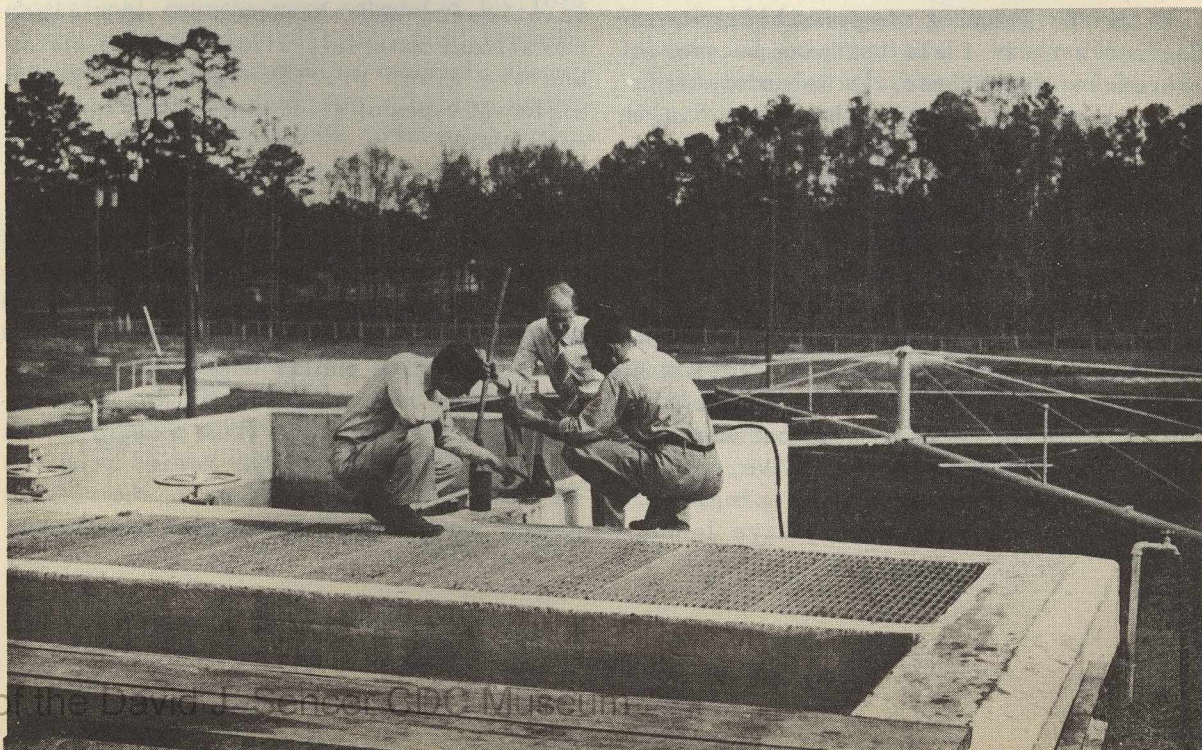
What field training does a public health engineer need to prepare him for the problems and responsibilities of today? Obviously it should be broad enough to acquaint him with the problems over the wide field of environmental sanitation and should include sufficient practice under competent supervision so he may develop judgment of standards and procedures.

How and where can such field training

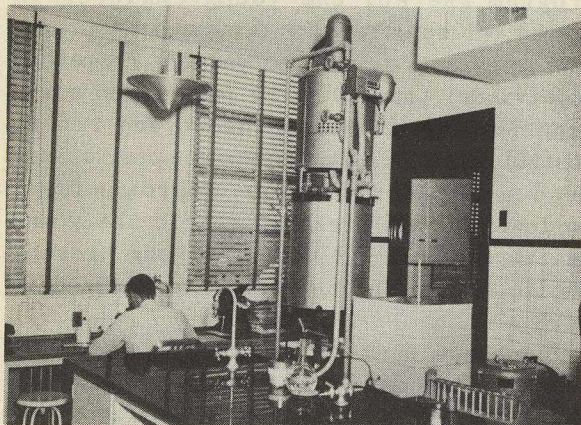
best be given? To be sure, some health departments are able to follow a planned program whereby the young engineer is placed on, say, rural water supply improvements for a given period under a competent supervisor; then by given periods on swimming pool sanitation, insect and rodent control, etc., all under expert supervision. Such a program if even approximately followed should greatly benefit the young health engineer. A number of our present public health engineers were developed in such a manner.

There are many factors, however, which make this procedure difficult today. Very few health departments have the rounded programs which make broad-gage training possible, and fewer have supervisory personnel available in each of the phases of environmental sanitation who are skilled in imparting to the trainee in a minimum of time the important principles and practices involved. Since most health departments today are understaffed, it is necessary to place a new man on that phase of the program needing immediate attention. Unless the young man himself insists on a change, there is a natural tendency to leave him where he has gained a measure of competence. So all too frequently he becomes adept in certain aspects of environ-

Sanitary engineers collecting sewage samples for analysis.



Public health laboratory



mental sanitation without developing that broad acquaintance and judgment which the public health engineer should have.

While State health departments, and some large city-county health departments, can afford the luxury of specialists in water treatment, sewage disposal, etc., in the vast majority of local health departments the public health engineer must cover the whole field of environmental sanitation or supervise the activities of sanitarians in various phases of the field. Thus it is important that the young health engineer today who is to be "on his own" in a health department have the type of field training which will enable him to function effectively without delay.

With the growing responsibilities of engineers their field training becomes of increasing importance. It is understandable, therefore, that with so few health departments prepared or staffed for efficient field training the cooperation of the U. S. Public Health Service should be requested. Since an equal need existed on the Federal level for this same broad yet thorough-going field training, the Public Health Service agreed to join with State and local health agencies in setting up cooperative field-training schools. A suitable locale for such a school was found at Columbus, Ga., where an active, comprehensive city-county health program is carried on under the progressive leader-

ship of Dr. J. A. Thrash. Here E. S. Tisdale, Director of the Training Division, Communicable Disease Center of the Public Health Service, has assembled a staff experienced in the supervision of training as well as in modern field practices.

To date two intensive 12-week field-training courses for public health engineers have been conducted during the summers of 1947 and 1948. The supervised field practice has ranged from water plant operation to sewage works control, stream-pollution studies, garbage and waste-disposal practices, school sanitation, housing sanitation, swimming-pool sanitation, insect and rodent control, laboratory practices, food and milk sanitation, abattoir inspections, ice-plant sanitation, and industrial sanitation.

In addition, the group is briefed on health department organization and functions and the relationship of the public health engineer to housing, city planning, urban redevelopment, rural sanitation, and similar programs. The trainees make an actual community sanitation survey and learn typical city-county health conditions first-hand by inspections of food establishments, dairies, ice plants, fly-breeding areas, etc., as well as by visits with public health nurses and sanitarians as they perform their day-by-day duties. The importance of public health education is stressed and the trainees are given educational material, slide and film lists, and are given practice in running the different types of slide and film projection machines.

Such field-training programs appear to meet a definite need of health departments at all levels for comprehensive authoritative training of young sanitary engineers under proper supervision in a minimum period. The training school appeals to the prospective public health engineer as it enables him to learn by doing under competent supervision, thus preparing him to effectively tackle the varied problems in environmental sanitation when he is placed "on his own" in a health department.