

REPORT OF THE PAN AMERICAN COMMITTEE ON SANITARY ENGINEERING*

The Sanitary Engineering Committee was created at the XI Pan American Sanitary Conference in Rio de Janeiro in 1942. It is composed of representatives of the departments of health and the departments of public works of Latin America, with representation from the sanitary engineering profession in North America. Staff engineers of the Pan American Sanitary Bureau serve in its deliberations as *ex-officio* members.

In the intervening time since its creation, the Committee has set forth a series of future objectives, which have been published in the Bulletin of the Pan American Sanitary Bureau. The objectives were those which appeared to be of most pressing wartime significance, and were not intended to cover then, nor do they now cover, the entire field of sanitary engineering needs or prospective needs in the Latin American countries. Later in this report more comprehensive objectives will be briefly outlined as guides for future sanitary engineering activity and as indications to the health officers of the major problems which the Committee feels will confront them in the course of the next five to ten years.

It has become obvious even within the short time of operation of the Sanitary Engineering Committee that a great deal of work lies ahead in this particular discipline, which will require expanded professional forces, expanded budgetary allotments and increased numbers of sanitary works for the servicing of populations demanding and requiring such facilities.

While these objectives are still in the making, the Committee desires to point out that sanitary engineering activities have moved rapidly forward in the countries under consideration. A brief summary of these activities, with some reference to their ultimate significance, is presented below.

Recent Sanitary Engineering Activities.—Requests for sanitary engineering services and advice from the Pan American Sanitary Bureau have rocketed during the past biennium and the Bureau has had to augment its engineering personnel considerably. From two sanitary engineers, the number has already been increased to eight, with the further addition of an entomologist. Of these, six engineers and the entomologist are now operating from bases in Central America and two engineers are stationed in Lima, Peru. In spite of this expansion, the range and extent of engineering facilities which can be made available to the Pan American republics are still limited and activities have been concentrated mostly in the Central Caribbean area and the Pacific coast of South America.

One of the most recent and major undertakings of the engineering staff has been the extensive sanitary survey work performed in connec-

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tion with the Pan American highway project in Central America. Complete sanitary surveys have already been received from Sabinas Hidalgo in Mexico; Sola, Ayutla, Jutiapa, and Escuintla in Guatemala, and David and Santiago in Panama. The engineering part of these surveys embraces sanitary evaluations of the water supplies, means of sewage disposal, milk supplies and milk handling methods, places handling other food supplies such as abattoirs, public markets, ice cream plants, bakeries, bottling plants, and also eating and drinking establishments, malaria foci and methods for their control, disease-carrying mosquitoes and fly nuisances, and housing standards. These surveys have already set a standard for similar projects along other sections of the Pan American Highway.

Malaria control activities and accompanying entomological studies have proceeded along a variety of fronts. Besides the malaria surveys made in the Republics of Panama, Mexico, and Guatemala, extensive studies have been made in the littoral areas surrounding Guayaquil, Ecuador, and also the Rimac, Chancay, and Cañete valleys of Peru. In the latter republic the Bureau has maintained particularly close relations with the Anti-Malaria and Rural Sanitation Service. At the moment considerable assistance is being given in the organization and development of this malaria service. Through the services of the Bureau engineers, the interchange of information between the various republics on malaria control methods, techniques, and allied subjects has been greatly facilitated. In face of the existing scarcity of larvicides in Peru, the Bureau conducted a series of laboratory tests and field trials which resulted in the selection of copper arsenite as a substitute for Paris green. It has played an integral part in the design and construction of the copper arsenite factory for Peru which is now in full production and is supplying all of the dust larvicide requirements for that country.

Other material shortages which vitally affect the public health have been alleviated to the extent of securing such items as liquid chlorine. On various occasions the cities of San Jose, Costa Rica, and Lima, Peru, have called on the Bureau for assistance. The projected manufacture of liquid chlorine in Peru has been aided by the Bureau Engineers' estimates and assistance in obtaining high-priority equipment and materials. This additional source of chlorine is expected to increase immeasurably the safety of many municipal and private water supplies along the Pacific coast, insuring a constant source of chlorine, and also to lighten the burden of the critical shipping situation.

Considerable advice on water supplies and their treatment and on sewage disposal has been given in Mexico, Guatemala, Costa Rica, Panama, Ecuador, Peru and Chile and close contact is being maintained with the sanitary engineering officials in both the ministries of public health and public works. Some of the larger cities which have been aided are: San José, Costa Rica; Lima, Peru, and Santiago, Chile. Advice has been given on such subjects as hypochlorination, tile drains

for sewage effluents in small treatment installations, and bio-filtration. It is anticipated that as time goes on an increasingly heavy demand will be placed on the Bureau engineering staff in this field.

Milk sanitation problems, particularly those concerned with pasteurization plants, are also being handled by the Bureau when requested. Large pasteurization plants in Managua, Nicaragua, and Guayaquil, Ecuador, were thoroughly inspected and recommendations for improvements made. As more responsibility for the safety of milk and milk products is placed on the sanitary engineers of the Pan American republics, requests for Bureau aid are expected to become correspondingly more frequent.

Proper rubbish and garbage collection and disposal methods are being especially emphasized at the moment by Bureau engineers both from their implications in bubonic plague control and the curtailment of fly breeding. A trench disposal method for rubbish and garbage which was suggested for and recently installed in Trujillo, Peru, is giving considerable promise of providing a practical and economical solution of this important municipal sanitation problem. Other cities in both Peru and Ecuador are considering adopting similar procedures. Various bubonic plague control campaigns have been helped by the participation of sanitary engineers in market and general urban cleanup drives as well as by improvement in rubbish and garbage disposal. Flamethrowers and cyanogas pumps have been continued in use as valuable aids to the campaign. Epidemiological investigations of bubonic plague are also being made in cooperation with the Bureau medical staff.

Educational engineering work has proceeded along several different lines. The Bureau was extremely fortunate to be host to 17 Latin American sanitary engineers during October and November of 1942 and some of its engineers personally escorted these men on a tour of representative sanitary installations and projects throughout the central and eastern United States. The guests who attended the 1942 meeting of the American Public Health Association in St. Louis and that of State Sanitary Engineers in the same city, and many close professional and personal ties were developed. Lectures on hospital sanitation given by one of the Bureau engineers at the recent meeting of the Inter-American Hospital Association held in Mexico City during last January have extended the scope of sanitary engineering to include this important field. It is planned to repeat these lectures at the next meeting of the Association to be held in Lima, Peru, this year. In Peru, a month's malaria short course designed to help train new personnel in various categories was planned and executed through the assistance of the Bureau engineers. This short course will be repeated in the near future and is now a permanent part of the malaria control program.

At present research is going forward on certain phases of the Onchocerciasis study in Guatemala, and airplane sanitation is being studied in Washington.

Objectives for the Future.—This all too brief review of present activities should not complete the report of the Committee. They represent

primarily a prologue. The Committee considers it necessary to emphasize the fact that the future holds important problems in the sanitary engineering field, of which many are only partly being met and many others still remain to be provided for. The liberty is taken, therefore, of listing certain minimum major objectives for the future to the consideration of which health officers and other responsible Governmental agents must give prompt attention.

(1) Sanitary Engineering Features of the International Transportation of Disease: It is perhaps unnecessary to call attention at this Conference to the implications of the speeding up of all forms of international transport and of the collateral public health problems which arise from these recent technological advances. Sanitary engineering perspective and activity are required on the problems of control of air lines, highways, railroads, waterways, or any other form of transit across international boundaries. Within the framework of many of the conventions on international travel control, sanitary engineering structures and procedures need to be seriously scrutinized and preparation for their most effective application must be made.

(2) International Spread of Disease through Deficiencies of Sanitary Facilities: Aside from the risks attached to the transportation of disease by international carriers, the Committee emphasizes the fact that we must not lose sight of the risks attached to the international traveler in the failure to provide new facilities or to exercise adequate sanitary control over existing facilities, in the fields of public water supply, sewage collection and disposal, insect and rodent control, garbage and waste collection and disposal, private and public housing, industrial hygiene and food and milk preparation and control.

The sins of omission, either in North America or in Central and South American countries, in these fields of activity may no longer carry a penalty limited by geographical boundaries. The traveler from Brazil who acquires typhoid fever in Indiana is not comforted by the fact that he was traveling outside of his own country's jurisdiction. Modern science and practice provide policies and the methods whereby international security is practicable of accomplishment in the field of public health, even though the matter may be debated in less tangible fields of activity.

(3) The Preparation of Suggested Minimum Sanitary Engineering Criteria: In the course of time, if the recommendations of the Committee are seriously pursued, suggested criteria for minimum sanitary engineering structures and activities should develop in the various fields already enumerated. It is none too early to begin the international consideration of such criteria, not to agree upon permanent uniformities of practice, but to develop acceptable agreed principles. When these have stood the test of discussion and of application they are useful in extending the spheres of action, both geographically and technologically.

(4) Minimum Specifications for Sanitary Engineering Products and Equipment: In a good many of the countries with which we are concerned, it would be desirable and helpful to develop in the near future standard specifications for materials and equipment in the chemical and mechanical fields, so that installations and expendable materials would be purchased and used upon the basis of accepted modern manufacture and test. This would eliminate the risk, sometimes undergone, of purchasing both materials and equipment which are inferior in quality or unnecessarily expensive in cost.

(5) Exchange of Sanitary Engineering Information: The Committee stresses once more the absolute necessity of improving international exchange of informa-

tion in sanitary engineering activity and international exchange of personnel. One of the greatest safeguards to the continued improvement of sanitary engineering thinking and to the continued stimulation of engineering application lies in the opportunity for joint exchange of ideas.

For many sound reasons the recommendation of the Committee for the immediate development of regional meetings of sanitary engineers both in North and Central and South America has not been put into effect. The Committee reemphasizes the necessity for so doing in the immediate future. Simultaneously with these sessions, the Pan American Sanitary Bureau should be afforded the facilities to extend its sanitary engineering activities both geographically and numerically.

The Committee proposes to continue its activities along the lines set forth in this report. It hopes furthermore to amplify its progress reports to the Pan American Sanitary Conferences and to the Conferences of Directors of Health. A significant milestone was marked by the appointment in Rio de Janeiro for the first time of a Sanitary Engineering Committee. Progress since that time has been significant and the opportunity lies ahead for extending the benefits and advantages of sanitary engineering practice to all parts of the Americas.

Penicilina para uso del publico.—La producción de penicilina llegó a 40,000 millones de unidades en mzo. 1944, gracias a las nuevas técnicas desarrolladas. Esto hace posible que en un futuro no lejano, la penicilina pueda ser distribuida para uso de la población civil. El costo total para el tratamiento de una septicemia no será mayor de unos \$35, según informa el Dr. R. D. Coghill, del Departamento de Agricultura de los Estados Unidos. Actualmente se construyen 21 instalaciones para la producción de penicilina en los Estados Unidos y el Canadá, a un costo de 20 millones de dólares y que producirán en conjunto unos 4 kg de penicilina pura por día.—*Sc. News Let.*, 245, ab. 15, 1944.

Moléstia de Still.—O A. relata com farta documentação laboratorial, radiológica e fotográfica, um caso de Moléstia de Still, ocorrido na sua clinica, em Porto Alegre, Estado do Rio Grande do Sul, Brasil. Trata-se de moléstia incomum, crônica, que acomete as crianças em geral antes da segunda dentição, determinando aumento de volume das articulações, desenvolvimento do baço e dos gânglios, anemia com leucopenia relativa ou taxa normal dos glóbulos brancos e febre com alternativa de apirese, sem lesão articular nem miocárdica. O agente causal seria o *Streptococcus viridans* que desencadearia o mal, agindo numa constituição eletiva, ainda não determinada. O germe não foi encontrado no presente caso, apesar das diversas tentativas de culturas, sendo considerada pelos autores rara a sua verificação, o que tem ocasionado controvérsias sobre a sua especificidade na etiologia da moléstia. O prognóstico é reservado. O tratamento visarà, principalmente, combater a infecção, a anemia e as deformidades.—CESAR SANTOS: *Arg. Dep. Est. Saúde*, 112, Vol. 3, 1942.