

908
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Hookworm

As stated above, the hookworm program began in the southern part of the United States in 1910 under the Rockefeller Sanitary Commission. The International Health Commission was organized in 1913 to extend control work to other countries and, in 1914, a program was organized in British Guiana which marked the beginning of operations in the Caribbean area. A Brazilian project was added in 1916, and aid to Colombia followed. In 1916 also control work was begun in Ceylon and rapidly extended to Australia, India, Fiji, Borneo, Siam, Mauritius, and the Seychelles Islands. Spain and Egypt were given assistance later in developing control programs.

The hookworm work was regarded as a favorable wedge for the opening of health work in a country. It served as a means of making a preliminary survey of health conditions, demonstrating sanitation procedures for the cure of a specific disease and the general improvement of health, and developing a generalized health organization. In the United States after 1915 there was a steady growth of favorable public sentiment and state and local support of public health activities. By 1921, the hookworm program had developed a working method by which federal, state, and local authorities might share in an effective and cooperative public health program, and contributions from the International Health Board to hookworm work as such ceased. By July 1, 1929, the commitments of the Division for hookworm control in other countries had for the most part been met. A demonstration in Colombia was continued for two years more, and a combined investigation and control program set up to attack the ankylostomiasis problem in Egypt was continued with International Health Division support through June 30, 1940.

Concurrently with the control program, a certain number of field and laboratory investigations were supported by the International Health Board. In
* For information re establishment, work and dissolution of this
hookworm Commission see
908 I H B - Program - Policy documents - corresp
1909-1915

1915, an Uncinariasis Commission under the chairmanship of Dr. S. T. Darling was sent to the Orient to study the extent of infection. Experiments which this Commission performed demonstrated the greater efficiency of oil of chenopodium for treatment as compared with older methods, and contributed much to the knowledge of dosage. In 1921 was begun a study of hookworm eggs and larvae. It was stated in the minutes of a meeting held October 26, 1920 that this investigation sprang "from the practical field work in hookworm control. The information sought is needed by the Board's field staff and health officials to make a more definite adjustment of means to ends in the control of the disease." Through the 1920's work was done with the support of the International Health Board in the laboratory and in the field, with the result that more effective treatment and preventive measures were possible at greatly reduced cost.

Only one project is now operative in the field of hookworm studies. This is in support of the work of Dr. W. W. Cort at the Johns Hopkins School of Hygiene and Public Health. Dr. Cort's work has had aid from the International Health Board and International Health Division almost continuously since 1921. From 1921 to 1926 he was in Trinidad, Puerto Rico, Central America, and China studying the distribution of hookworm infection in population groups and the human habits and environmental factors influencing hookworm dissemination. From this work it became evident that further information was needed regarding the host-parasite relations in hookworm infection. A series of laboratory studies was undertaken at the Johns Hopkins School of Hygiene and Public Health on the host-parasite relations of the dog hookworm Ancylostoma caninum. The most significant result has been the demonstration that repeated small doses of infective hookworm larvae will produce in dogs an almost complete immunity to very heavy infections. A study of the mechanism of the immunity showed that serum antibodies are produced which act directly on the worms both in vivo and in vitro, and that

this immunity is related to diet. In animals placed on a deficient diet, there is some interference with the production of immunity. There is also evidence that other factors which weaken the host will interfere with immunity production.

International Health Division aid to the studies of dog hookworm terminated in 1939. In 1941, a grant was made to enable Dr. Cort to apply his observations of dog hookworm to a study of the human disease with the objective of discovering whether the mechanism of immunity is similar. Funds are available to the end of 1942, and it is probable that support will be continued if warranted by the results of the first year's work. No other separate projects in the field of hookworm investigation are envisaged, but hookworm control will doubtless be included as a part of certain general rural health projects, like those being organized by Dr. Hackett in some of the South American countries.