

amongst several persons, and such points as the colour and consistency of the stool and the presence and severity of *Ascaris* infection were a useful check in doubtful cases. Such sharing-out was detected in one case, but it probably did not take place to a degree sufficient to vitiate the results.

The results of the third examination correspond well with those of the second, the percentage of infection being again reduced by about one-third, while the average number of eggs per specimen was very greatly reduced.

It would appear that while the effect of one treatment is very good, it is desirable that it should be followed by a second. It is doubtful if, under conditions of mass treatment, a third dose is desirable. It also appears that the Clayton Lane technique can be usefully employed in the field to diagnose the residual infections after treatment has been given. For this purpose the Willis method is quite unsuitable, owing to its inaccuracy in the case of light infections.

APPENDIX F.

HEALTH SURVEY OF WESTERN SAMOA, WITH SPECIAL REFERENCE TO HOOKWORM INFECTION.

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INTRODUCTION.

IN 1923 the Administration of Western Samoa invited the International Health Board of the Rockefeller Foundation to make a health survey of Samoa, with special reference to hookworm disease. The invitation was accepted, and the survey began 24th July, 1924, and ended 18th August, 1924.

Acknowledgments.—We are indebted to His Excellency Major-General G. S. Richardson, C.B., C.M.G., C.B.E., Governor of Western Samoa, for his invitation and for his co-operation in the survey. We thank the Chief Medical Officer, Dr. T. Russell Ritchie, for the courtesies offered us and for the assistance given. Dr. P. A. Buxton, of the London School of Tropical Medicine, placed his laboratory and equipment at our disposal, and Mr. G. H. Hopkins kindly supervised the series of comparative tests during my absence. We thank Dr. Armstrong for permission to use material from a paper of his (our section on transmissible diseases is largely based on this paper). Dr. Hunt was most kind in selecting and treating patients and affording us facilities for worm-counts. Mr. Griffen, the Native Commissioner, was patient with us in his explanations of Native customs. Mr. Bigg-Wither, Resident Commissioner, Savai'i, was most hospitable during our visit with him.

We accompanied His Excellency on a two-weeks malaga, or journey, around the large island of Savai'i. We saw eleven thousand of the twelve thousand inhabitants of the island, four to five thousand of these being lined up for our close inspection. It was an unequalled opportunity to gain a knowledge of actual conditions at first hand.

PART I.—GENERAL SURVEY.

1. *History of Western Samoa.*

The earliest visit paid by Europeans to the Samoas, or Navigators Islands, of which any record has been preserved was by Roggewein, in 1722, in the Dutch "Three Sisters Expedition." The French explorers followed, Bougainville in 1768 and La Perouse in 1787. In 1791 the British vessel "Pandora" visited the Samoas. In 1830 the London Missionary Society established a mission in one of the islands, and followed it up with extensive operations in the Group. The United States exploring expedition, under Lieutenant Charles Wilkes, United States Navy, made the first scientific researches in the islands in 1839. This expedition, consisting of six vessels, was equipped for the particular purpose of surveying and exploring the unfrequented islands of the South Seas. A staff of competent civilian scientists was on board these vessels, which were all navy vessels thoroughly prepared for exact scientific work. The hurried surveys of Samoa made by these men are the basis of our charts.

As early as 1850 England, Germany, and the United States were represented by commercial agents in Samoa. During the next twenty years Englishmen, Germans, and Americans acquired land and entered into intimate relations with the Natives.

From 1870 to 1899 the history of Samoa is the history of selfish nationals in their endeavour each to gain the upper hand and have their country assume the control of Samoa. The nationals of one of these might support one Native faction, and another nation another faction, several times nearly precipitating the naval forces of the mother countries in armed conflict with each other. Several forms of Commission were tried with representatives from each country, or with Commissioners from a neutral country, but all were failures. Finally affairs culminated in 1899, when a combined force of British and American marines were ambushed by the Natives and several of the marines were killed. When this news reached Home a Commission of three men was sent out, representing the three countries involved—England, Germany, and the United States—and in 1900 it was decided that the only solution was a partition of the islands among the three Powers. Great Britain and Germany made a separate agreement by which Great Britain exchanged her interests in Samoa for Choiseul, Ysabel, and the Shortlands, controlled by Germany in the Solomons, and a port in Africa.

Germany continued in Samoa until the outbreak of the Great War in 1914, when a New Zealand expedition proceeded to Samoa, captured and held it for strategic purposes. At the settlement, former German Samoa was given to New Zealand to be governed under a mandate, with the title of "Western Samoa."