

ABSTRACT

This thesis is an investigation of a broad range of epidemiological factors involved in the transmission of malaria in Ceylon, with particular reference to the 1967-68 epidemic.

The magnitude of the problem before the control period is shown by an analysis of malaria morbidity and mortality. The different aspects of the eradication programme are discussed showing the reasons for the reverses encountered by it. An attempt has been made to group the administrative districts of Ceylon by their malarialogenic potentials based on the receptivity and vulnerability of the areas. The intensity of the present epidemic in the districts is shown to be in proportion to their malarialogenic potentials.

The vectorial capacity of A. culicifacies, the Ceylon vector of malaria, is calculated. It is shown that the Ceylon A. culicifacies is a more efficient vector of malaria than its Indian counterpart. An analysis of the parasitological data in one vigilance unit is based on the mathematical approach pioneered by Macdonald. This has shown very high reproduction rates at the beginning of the epidemic. The need for strict surveillance and prompt remedial measures is emphasised.

It is suggested that the strategy of the renewed programme should be based on proper evaluation and continued research on the subject with relevance to Ceylon.