

ABSTRACT

This thesis is concerned with a sociological-anthropological assessment of an *S. mansoni* control programme in an endemic area in the West Indies (St. Lucia) in which an experiment has been carried out to compare different methods of control - mollusciciding, engineering, and chemotherapy. The theoretical basis of the experiment is a model developed by G. Macdonald in which the *S. mansoni* transmission cycle is sustained by the interaction of the human and biological populations. For the human populations there is a threshold level of exposure (called by Macdonald the 'break-point') below which transmission will discontinue, and above which the host and parasitic populations are in equilibrium. Similarly there is a population density both of worm pairs within the human host, and of the snail intermediate host, below which the transmission will also stop.

The objective of the control programme has been to reduce transmission below this threshold by

- (a) destroying snail populations (mollusciciding),
- (b) killing worm pairs in the host (chemotherapy), and
- (c) reducing human exposure (engineering - the installation of household water to prevent contact with contaminated water-bodies).

Because of rapidly changing socio-economic conditions in St. Lucia disturbing any equilibrium between host and parasite, the model is not relevant. The results of the experiment to date indicate that the technological bias inherent in this model has not enabled the experimenters to control the disease effectively by means of

mollusciciding or chemotherapy. In the attempt to reduce human exposure, however, there has been significant reduction in incidence as a result of the introduction of household water, but only when supplemented by a water-contact study and a health education programme, suggesting that social and cultural systems play a dominant role in the cycle in this area.

It is concluded that

- (a) it is possible to assess, measure and control the exposure of a human population to contaminated water bodies in an *S. mansoni* endemic area,
- (b) it is the daily, weekly and seasonal cycles of human activity that are dominant within the transmission cycle, and can explain variations in the incidence and prevalence of the disease,
- (c) there appears to be upper limits to the intensity of an *S. mansoni* infection, though there is no clear indication that this has lasting effects,
- (d) for a control programme to be ensured of success there should be preliminary sociological-anthropological investigations to discern the social and cultural factors influencing the transmission cycle, and account should be taken of the socio-economic context in which any control programme is taking place.