biosensors, product polishing and quality control.

Finally, we have doubts about the grouping of certain topics and (more importantly) the physical robustness of the volumes. This is unquestionably a work of reference which will have to endure the rigours of usage in both library and laboratory. Two of the books contain over 1,100 pages in bindings likely to surrender to heavy patronage. Division into eight volumes might have inflated production costs but would have guaranteed a prolonged physical life — surely something to be expected from a work costing nearly £700. It would also have permitted a more rational allocation of material, avoiding the uneasy juxtapositions of topics in Vols 2 and 4, and consolidating individual volumes as entities in their own right.

For all that, Murray Moo-Young and his colleagues have brought off a notable success in producing this work and our limited criticism does not diminish this overall view. *Comprehensive Biotechnology* will be an essential purchase for all departments and institutions, academic or industrial, that claim an interest in any aspect of the ill-defined field popularly known as biotechnology. □

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Controlling disease in the valleys

G. Webbe

Schistosomiasis: The St Lucia Project. By Peter Jordan. *Cambridge University Press: 1985. Pp. 442. £35, $49.50.*

THE aim of the St Lucia schistosomiasis project was to compare the effects of control of the snail intermediate host, chemotherapy (that is, drug treatment) and improving water supplies in reducing transmission of *Schistosoma mansoni*, and thus the incidence, prevalence and intensity of the infection. The project ran from 1966 to 1981. It was based upon an epidemiological model which predicted the relative importance of the three approaches to control, and the experimental programmes were therefore designed for maximum impact in separate valleys which had similar epidemiological characteristics. These programmes are described in Part I of Peter Jordan's book.

In one valley, area-wide molluscicide was directed against snail colonies, detailed research into the dynamics of transmission having been undertaken as a basis for an appropriate snail control strategy. In a second valley, the contamination with schistosome ova was reduced by chemotherapy; treatment was offered to anyone found to be infected at any of the four annual surveys. Water supplies were provided in part of a third valley to reduce exposure to infection in rivers and streams. Piped water was introduced to individual houses in five valleys, together with communal laundries with shower units, and simple pools for recreational purposes.

After four years the effects on transmission of *S. mansoni* through snail control and the improvement of water supplies had been assessed, and chemotherapy was offered to people found to be infected. At this time, too, the area-wide strategy of snail control was changed to one of focal control. Over the next four years different consolidation strategies after therapy were tried out in each of the valleys. Further control schemes (through the provision of latrines or chemotherapy) were also initiated to compare the effect on transmission of reduced contamination with *S. mansoni* ova.

Comparison of the control strategies, based on parasitological findings, showed that the chemotherapy programme resulted in the cheapest, quickest and greatest fall in incidence, prevalence and contamination potential (cost $1.00 per person per year). In the snail control schemes, where area-wide molluscicide and focal control were applied, the overall declines in incidence and prevalence were similar, with intensity being reduced more with area-wide control (cost $3.24 and $2.87 per person per year, respectively). There was substantial reduction in all indices of infection in the water supplies programme (cost $2.99 per person per year). The results of additional chemotherapy were disappointing, however, while the effect of the provision of latrines remained inconclusive because of sporadic water supplies. In the maintenance phase, after chemotherapy in all areas, the best results came from focal snail control or the provision of individual household water supplies and communal laundries and showers.

The overall results of the St Lucia project confirmed the predicted relationship between morbidity and intensity of infection, and it seems that, for rapid disease prevention, chemotherapy will now be the main component of schistosomiasis control. The effectiveness of any drug delivery system must, however, determine the level of residual infection after treatment in a particular area. Moreover, in global terms, the transmission of schistosomiasis is characterized by its variability. While patterns of human contact with water, as well as human–parasite–disease relationships, are similar around the world, the transmission patterns differ greatly according to the ecology of the species of snail concerned. Thus, while it highlighted the relative cost-effectiveness of different control approaches over a limited period, the St Lucia project does not provide a basic protocol which can be applied in all situations. Further, more information is required about different chemotherapy regimens and even about the effects of treatment on acquired immunity, before formulating treatment policy. With such a limited number of effective compounds available, the problem of drug resistance must also be considered when developing long-term maintenance strategies requiring periodic re-treatment campaigns.

Part II of the book contains details of several related studies that were carried out in St Lucia. Among these, the accounts of epidemiological research on human exposure, morbidity and the longevity of adult worms, and of the immunological work, are of special interest.

The book is well illustrated and the data are very clearly presented. Altogether it is an important contribution to the literature on schistosomiasis; it strongly reflects the multidisciplinary nature of the St Lucia project, and it contains a unique wealth of information for parasitologists and all who are concerned with control of this disease. □

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