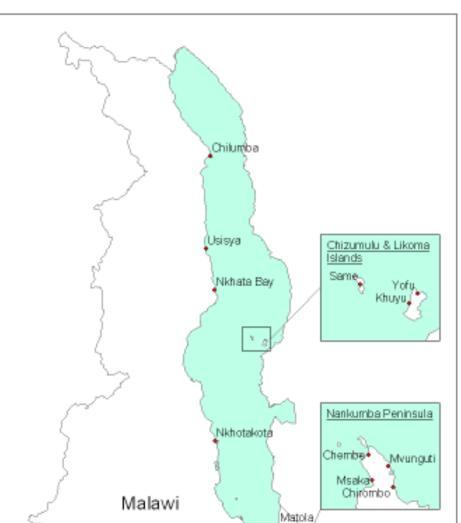
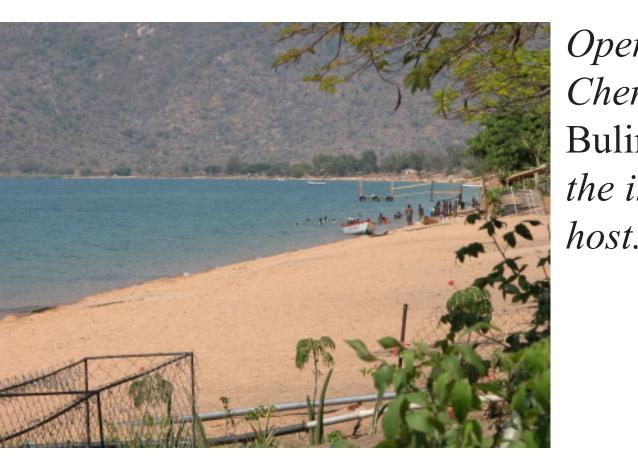
Control of schistosome transmission in Lake Malawi

Madsen¹, H.; Stauffer², J.R. Jr.; Bloch¹, P.; Konings³, A. & McKaye², K.M

Schistosomiasis due to *Schistosoma haematobium* is a major public health problem in lakeshore communities at Lake Malawi

and transmission has increased over recent years. Many tourists are reported to become infected during visits to Lake Malawi and this poses problems to the country's tourism industry.





It has been suggested that the increased transmission is the results of seine-net fishing from the beach resulting in reduced density of several species of cichlid fish that feed on schistosome intermediate host. Re-

cent data on fish population density at Chembe vil-

lage compared to data collected about 25 years ago

Open shoreline at Chembe where Bulinus nyassanus is the intermediate

The project

Obviously, schistosomiasis control in the area should be based on chemotherapy and health education, but some form of transmission control would be desirable. The only viable option for control of the intermediate hosts is to stop beach seine-net fishing with the hope that the populations of snail-feeding cichlids will increase in density and that this will have an impact on the intermediate host populations.

Biodiversity concerns

The fish fauna of Lake Malawi is really unique with many endemic species and the same could be said about the snail fauna. Hence chemical and biological (unless based on native species) measures of snail control should be ruled out as an option.





Transmission can take place directly in the lake or in inland habitats such as rivers or ponds close to the shore. There are two possibilities for transmis-

sion in the lake i.e. either by cercariae produced within the lake or by those transported into the lake by affluent streams or rivers.

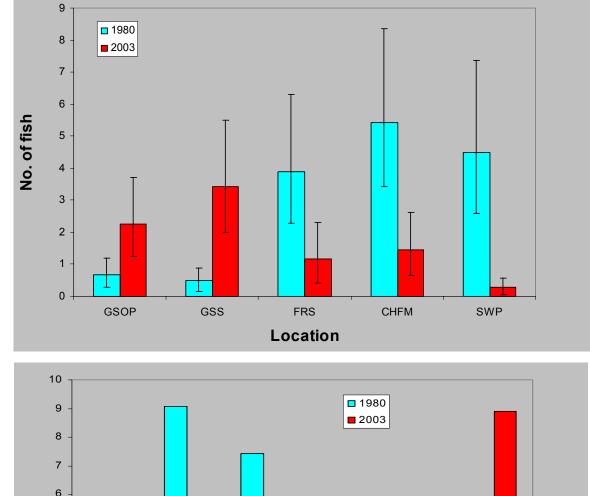




'Stream' at Msaka isolated from the lake by a c. 10 m wide sand bar. Dense population of Bulinus globosus

clearly shows that the distribution by depth has changed for some species and generally density has declined. Trematocranus placodon, on of the most important

predators of gastropods in Lake Malawi



Distribution of T. placodon by various locations and depths at Chembe village sampled in 1980 and 2003. Fish density is given as no. per 1000 m^2



Cleopatra Melanoides spp. Bellamya spp. Bulinus 10 mm forskalii

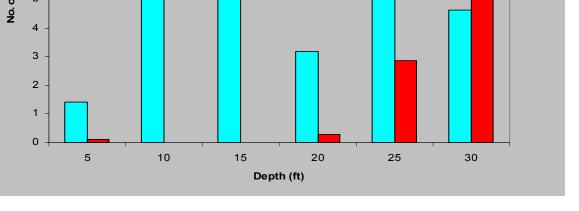


There are two possibilities for transmission in the lake i.e. either by cercariae produced within the lake or by those transported into the lake by affluent streams or rivers. Transmission by parasites produced within the lake occurs in two habitats i.e. (1) along sandy beaches with human water contact and here Bulinus nyassanus, which is endemic to Lake Malawi, is the intermediate host and (2) along relatively protected shorelines such as harbours or calm bays, where *B. globosus* is primarily responsible as intermediate host. Transmission along open sandy beaches seems to be a relatively new development, but this is important as most

tourist resorts are found at such shorelines.

Protected bay (Same *Bay*) where Bulinus globosus is the host.

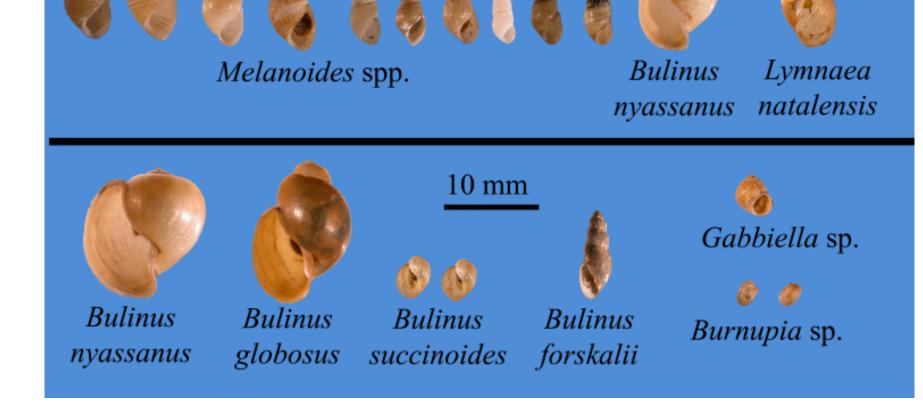




The problem



Beach seine-net fishing at Msaka with nets that are too fine meshed. This form for fishing is illegal.

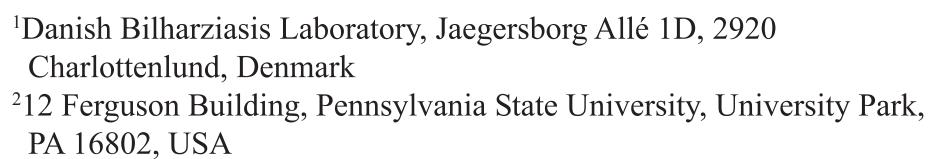


We hope to demonstrate that it is possible to persuade people to stop beach seine-net fishing and that this reduce incidence of schistosome infections. Obviously, it will take a lot of work with the community to convince people that this should be done.

The intermediate host







³Cichlid Press, P.O. Box 13608, El Paso, TX 79913, USA









