# A KENYAN COMMUNITY FIGHTS SCHISTOSOMIASIS

By GERALD TOOMEY

Heels are dug into the red Kenyan soil. Hands are gripped firmly around supporting ropes, now as taut as piano wires. In the heat of the equatorial sun, 25 village men strain and sweat under the load of a 750-kg concrete well tile that is precariously perched on the edge of a deep hole.

"Wacha. Pole! Pole! (Release. Slowly! Slowly!)" a Ministry of Health worker yells in Kiswahili, as he forcefully guides the tile into place. After a few tense moments, the massive concrete cylinder slides down the well to its final resting place with an undramatic thud.

Another blow has been struck against schistosomiasis, a water-borne parasitic disease difficult not only to pronounce but, more disturbingly, to control. About 70 percent of the residents of this Kenyan community, called Thiba, are afflicted with it. In Kenya, recent estimates indicate that nearly 2 million people — over 10 percent of the population — are infected.

The afternoon's work has been one small step in the installation of a public well. The well, in turn, is just one component of a three-year IDRC-supported research project designed to determine the effectiveness of community participation in halting the transmission of schistosomiasis.

Thiba, which is actually a cluster of three villages, is a rice-growing Kikuyu community of 2000 people, located about 100 km northeast of Nairobi. It is part of the 40-village Mwea-Tebere Irrigation Scheme run by the Kenyan government.

In the 1950s, the colonial government set up internment camps in this area to house captured Mau Mau freedom fighters who were then forced to grow rice. After independence in 1963, the government resettled many landless peasants there and took over the irrigation scheme. Today, former Mau Mau freedom fighters and their children still work the rice fields, side by side with other resettled people.

But the introduction of irrigation canals provided a perfect breeding ground for the freshwater snails that spread schistosomiasis. Infection rates shot up. In the case of intestinal schistosomiasis, the highest infection rate in the Mwea Irrigation Scheme is among children in the 5–19 age group.

"It's a hot area," explains Melanie Katsivo, a medical sociologist with the Kenya Medical Research Institute and leader of the research project. "Children like to swim, especially in the heat of the day when the snails release their cercariae (infective worm organisms)."

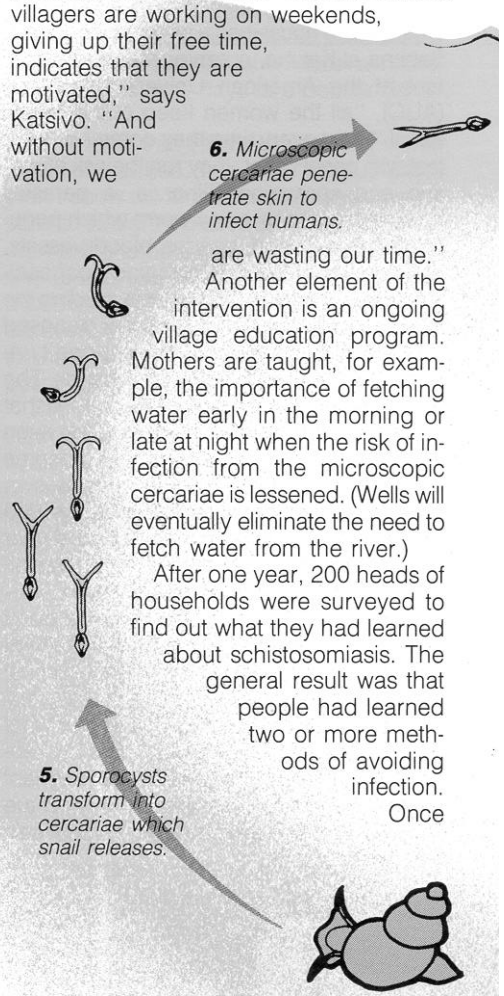
The community's main source of drinking water is a stream connected with the rice irrigation system. Infected villagers often defecate along the shores and thus infect the water and the snails it harbours. Simple contact with the water is enough to transmit the disease and therefore even daily crossing of the stream by barefoot children on their way to school is a serious health hazard.

Controlling schistosomiasis in Africa by killing the intermediate host snails with chemical molluscicides has proven to be too costly for most governments. The use of mass drug treatment programs to cure infected people is also expensive, and, by itself, not very effective in the long run because it is so easy for people to become reinfected.

Katsivo's project, conducted in cooperation with the villagers and various government bodies, takes a different approach to breaking the cycle of infection. The research team has attempted to involve the community in improving village sanitation as well as in health education. "The purpose of the intervention — the bath houses, wells, bridge over the stream, and so on — is to remove people from their old water sources, and therefore cut down the risk of infection and reinfection," explains Katsivo.

The first stage of the project was to collect baseline data on the two communities in the study, namely Thiba, the experimental village, and Mahigaini, the "control" village. (Mahigaini is close to Thiba and of similar size and social makeup.) The baseline data included information such as the numbers and ages of the men, women, and children in the communities, and rates of infection.

The second stage of the research, the intervention, is the heart of the project and is nearing completion. So far, it has been enormously successful. Despite their low incomes, the villagers raised enough money among themselves to fund the construction work. In the case of the wells, the Ministry of Works constructed the tiles, while the villagers paid for the materials and provided the labour for installation. "The fact that the villagers are working on weekends, giving up their free time, indicates that they are motivated," says Katsivo. "And without motivation, we are wasting our time."




Another element of the intervention is an ongoing village education program. Mothers are taught, for example, the importance of fetching water early in the morning or late at night when the risk of infection from the microscopic cercariae is lessened. (Wells will eventually eliminate the need to fetch water from the river.)

After one year, 200 heads of households were surveyed to find out what they had learned about schistosomiasis. The general result was that people had learned two or more methods of avoiding infection. Once the community construction projects are completed, the research team will arrange for everyone in both the experimental and control villages to be given drug therapy to bring the infection rates to zero. By comparing the subsequent reinfection rate in Thiba to that in Mahigaini (where the only intervention was the drug therapy), Katsivo and her team will be able to determine just how effective their work with the community has been.

If the two villages show a difference, attempts will be made to convince the government to adopt the strategy of long-term prevention rather than short-term cure.

So far, it appears that those families who are taking precautionary measures and using the new sanitary facilities have been successful in avoiding infection. And among rice field workers, the infection rate has dropped. In Thiba, and in other Kenyan villages, there is indeed cause for optimism. □

Photo: Gerry Toomey/IDRC

*Pulling together to fight waterborne diseases: Villagers at Thiba install a community well.*