# Schistosomiasis from the rice fields of north-eastern Rwanda?

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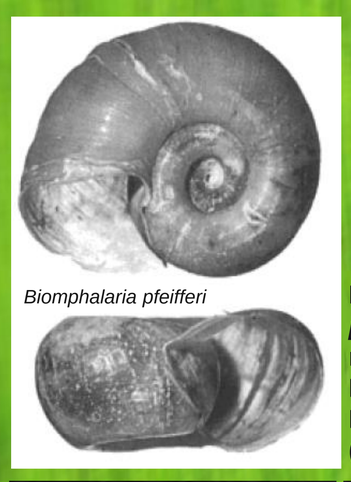
**<u>INTRODUCTION</u>** Rwanda is one of the poorest and most densely settled countries in sub-Saharan Africa (US Department of State 2009). Food insecurity is one of the challenges facing the rural communities. To provide more food to communities, the government of Rwanda has embarked on commercial rice farming, constructing dams, reservoirs and canals to irrigate the rice fields of Rural Sector Support Projects (RSSP). However, increasing crop yield through establishment of irrigation schemes often leads to increase transmission of diseases such as Schistosomiasis (Ofoezie, 2002).

Irrigation schemes modify fresh water environments, favouring the survival and reproduction of fresh water snails (Steinmann *et al*., 2006). Many species of freshwater snails act as intermediate hosts of *Schistosoma,* a parasite posing a public health risk to humans and livestock.



*Biomphalaria pfeifferi*

**Figure 1. *Biomphalaria pfeifferi* recorded in the rice irrigation schemes in Rwempasha Sector. Photo: from Brown (1994)**

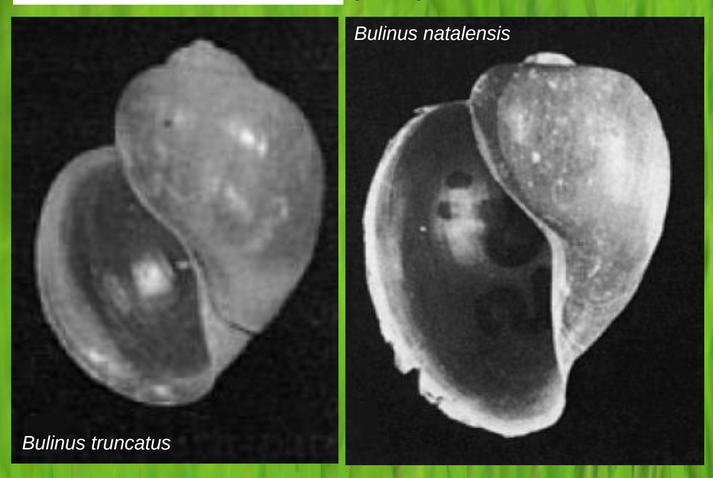



**Figure 2. *Bulinus truncatus* or *Bulinus natalensis* recorded in the rice irrigation schemes in Rwempasha Sector. Photos: from Brown (1994)**

**Figure 3 *Schistosoma mansoni* cercaria. Photo: Centre of Animal Biotechnology, Melbourne**

**<u>METHODS</u> We investigated infection of fresh water snails with *Schistosoma* in recently constructed rice irrigation systems in Rwempasha Sector (Figs. 4, 5). A total of 89 snails were opportunistically collected and identified using (Brown 1994; Figs. 1, 2). Snails were placed in lukewarm water to increase cercariae shedding. *Schistosoma* cercariae (Fig. 3) were identified in *Bulinus truncatus/natalensis* and *Biomphalaria pfeifferi* (Figs. 6). However, we did not identify *Schistosoma* to species level.**

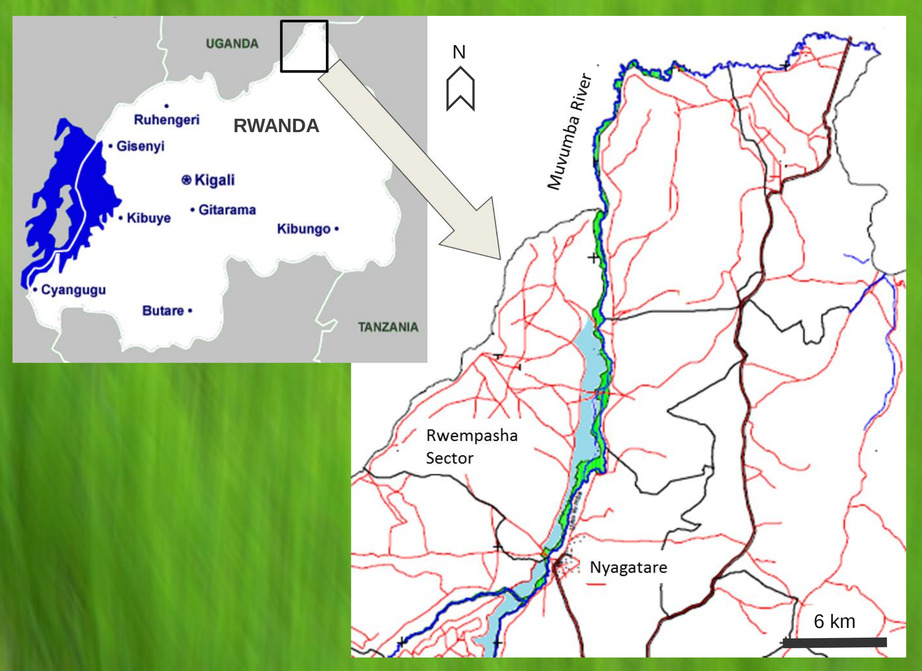



**Figure 4. The Rwempasha Sector with the RSSP rice plantations (blue) along the Muvumba Riverine (green) in North-Eastern Rwanda. Map: Association pour la Conservation de la Nature au Rwanda**

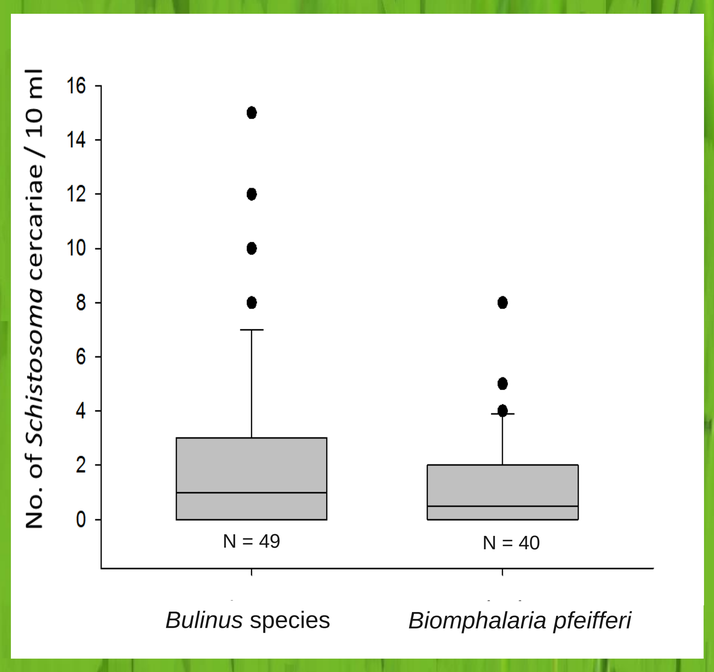



**Figure 6. The degree of infestation with *Schistosoma spec.* cercariae (i.e., median number of cercariae found in 10 ml of water) in two snail species (*Bulinus truncatus/natalensis, Biomphalaria pfeifferi*) obtained from RSSP rice plantations.**

**<u>RESULTS & CONCLUSION</u>**

**Our preliminary study showed, that *Bulinus* (cf. *natalensis or truncatus )* occurs in north-eastern Rwanda. Both species are intermediate hosts of *S. haematobium* parasitizing man (Sudan, W DRC), and of *S. bovis* infecting only bovids (Brown, 1994). It is therefore highly warranted to determine the *Schistosoma* spec. prevailing in the RSSP rice scheme. *Biomphalaria pfeifferi* is compatible with *S. mansoni*, a species parasitizing man all over tropical Africa (Brown, 1994).**

**Further research is urgently needed to investigate the distribution of snails and parasites in the RSSP rice irrigation schemes in north-eastern Rwanda and to assess the potential health risk posed to communities and livestock.This will involve a larger sample size and the sampling of more study locations. Eventually, a health survey targeting the dispensaries and hospitals in the area is imperative.**

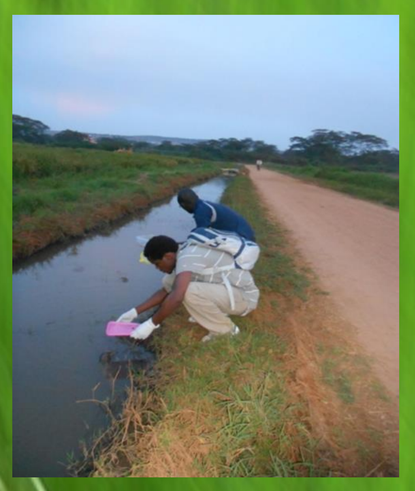


**Figure 5. Sampling in the canals irrigating the RSSP rice plantation.**

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**<u>References</u>**

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