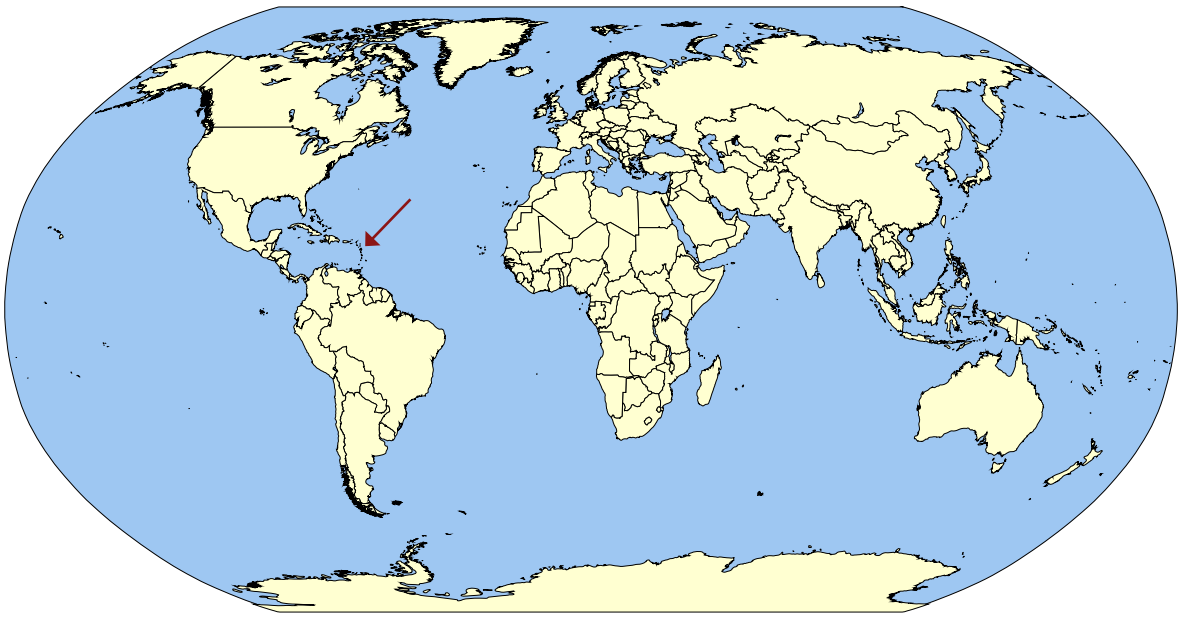
Guadeloupe

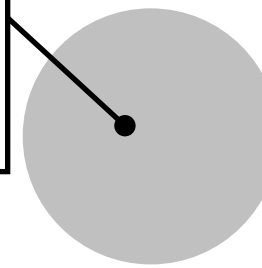


The History of Schistosomiasis in Guadeloupe

Schistosomiasis in the Guadeloupe archipelago may be interrupted, but confirmation of its non-endemic status awaits evaluation and verification by the World Health Organization. Previous cases were known on the islands of Grande-Terre (entire island) and Basse-Terre (coastal areas). Human infection occurred via the human schistosome, *Schistosoma mansoni*, and the transmission cycle was sustained via the obligate intermediate snail host, *Biomphalaria glabrata* [1]. Near-total interruption was achieved following a biological control program initiated in 1978, but transmission is still sustained in small foci in the marshes of Grande-Terre in the black rat species, *Rattus rattus* [2]. Prevalence of *S. mansoni* peaked in the 1960's and 1970's. In 1978, before the control program was carried out, human prevalence was estimated at 25% [2]. By 1985, estimates were as low as 15% [3]. As of 2003, national prevalence was estimated at 1% [4].

Schistosomiasis in Guadeloupe[6]

In Guadeloupe, schistosomiasis is well controlled, but there is not enough data to suggest current infection levels.



Overview of Guadeloupe [7]

- Population in 2015: 405,500
- Official Languages: French
- Capital: Basse-Terre
- French overseas department
- Percentage of Population with Access to Improved Drinking Water in 2012: no data
- Percentage of Population with Access to Improved Sanitation in 2011: no data

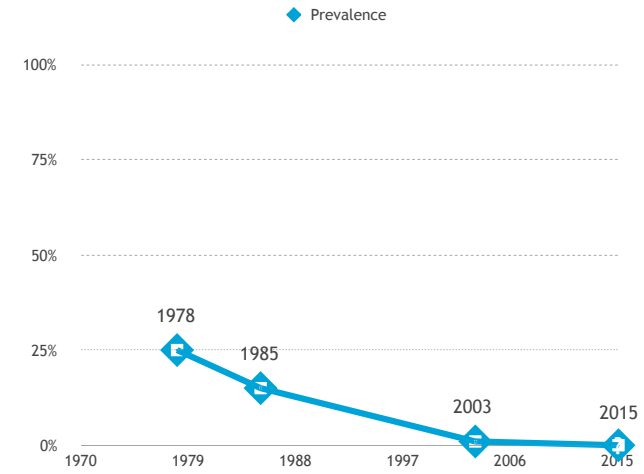
Stanford University

Content by Susanne Sokolow. Layout and Design by Chloe Rickards. 2015.

UPSTREAM ALLIANCE

Implementing Biological Control

When control began, eliminating schistosomiasis through biological control methods was a regional strategy – neighboring island nations, most notably Martinique, were simultaneously taking advantage of the potential for competitor snails that do not harbor infection to rapidly displace *B. glabrata* in their natural environments [2]. Prior to control, active transmission occurred in streams and manmade canals on Basse-Terre and in mangrove swamps on Grande Terre Island. Urban transmission sites were controlled quickly, by 1975, through engineering measures [5]. On Guadeloupe, two strategies of biological control were tested: (1) the intentional introduction of the castrating trematode *Ribeiroia guadeloupensis* in 1978 that infects *B. glabrata* more efficiently than schistosome trematodes, and (2) the introduction of the competitor snail species Pomacea glauca in 1976, *M. cornuarietis* in 1987, and *M. tuberculata* in 1985 [2]. The first strategy was implemented in one pond, and resulted in the near total disappearance of *B. glabrata* snails. The use of *B. glabrata* snail exclusion via dispaclement by the introduction of competitor snails was applied in the whole hydrographic system of Basse-Terre, where *M. tuberculata* snails have colonized and now dominates the system. *B. glabrata* populations exist in very low density and do not pose as a threat for schistosomiasis transmission resurgence [2]. The use of this snail was not as successful on Grande-Terre Island, where it co-exists with *B. glabrata* and transmission still occurs in the black rat.



Disease Prevalence in Guadeloupe

Disease prevalence in Guadeloupe has decreased of the past few decades, but the current prevalence level is unknown. Guadeloupe is a good example where more robust data is needed, since there are conflicting reports, some reporting that human transmission is considered interrupted [2], and others claiming that infection risk remains present across the islands [1].

References

1. IAMAT. IAMAT Guadeloupe Schistosomiasis. at <https://www.iamat.org/country/guadeloupe/risk/schistosomiasis>
2. Pointier, J. P. & Jourdane, J. Biological control of the snail hosts of schistosomiasis in areas of low transmission: The example of the Caribbean area. *Acta Trop.* **77**, 53-60 (2000).
3. Utroska, J.A., Chen, M.G., Dixon, H., Yoon, S., Helling-Borda, M., Hogerzeil, H.V., Mott, K. E. *An Estimate of Global Needs for Praziquantel within Schistosomiasis Control Programmes. whqlibdoc. who.int* at <http://whqlibdoc.who.int/HQ/1989/WHO_SCHISTO_89.102_Rev1.pdf>
4. Rollinson, D. *et al.* Time to set the agenda for schistosomiasis elimination. *Acta Trop.* **128**, 423-440 (2013).
5. Pointier, J. P. & Théron, A. Ecology and control of the snail intermediate hosts of trematodes in an heterogenous environment: the Biomphalaria glabrata model in the insular focus of. *Res. Rev. Parasitol.* **55**, 121-133 (1995).
6. WHO. PCT Databank for Schistosomiasis. at <http://www.who.int/neglected_diseases/preventive_chemotherapy/sch/en/>
7. World Atlas. (2015). Guadeloupe. at <http://www.worldatlas.com/webimage/countrys/namerica/caribb/gp.htm#page>

Stanford University

Content by Susanne Sokolow. Layout and Design by Chloe Rickards. 2015.

UPSTREAM ALLIANCE