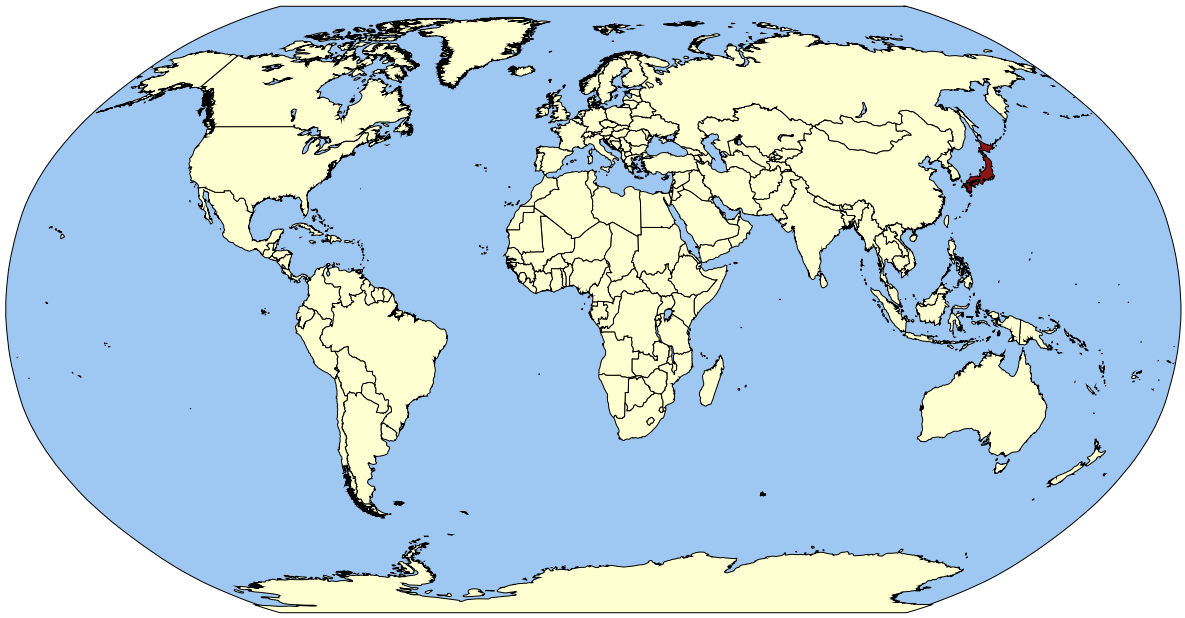
Japan



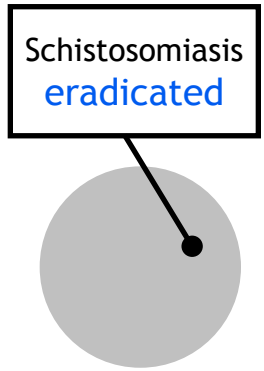
Japan: A Success Story

Japan used an integrated approach from the 1920s to the 1970s to successfully eradicate schistosomiasis. Schistosomiasis was endemic in Japan as far back as the Edo era (1600-1867) [1]. In the early 20th century, Japanese researchers had identified the snail host responsible for its lifecycle [2] and launched a snail control campaign, first using hand "picking," offering adolescents and health volunteers 0.5 yen per 180mL container of snails [1]. After seven years starting in 1917, collecting and destroying 900L of snails per year, this campaign had a negligible effect on the snail population and was abandoned. The focus was redirected towards chemical molluscicides, including caustic lime, calcium cyanamide, and sodium pentachlorophenate, later switching to less toxic and more targeted compounds such as Yurimin and Phebrol [3]. Bayluscide (niclosamide), now the molluscicide of choice for schistosomiasis control, was never used in Japan because snail populations were already severely depressed before it came on the market in the 1960's and 1970's [3].

Schistosomiasis in Japan

Schistosoma japonicum was endemic to Japan. This blood fluke primarily resides in the gut.

The symptoms of acute schistosomiasis are nicknamed "Kayatama fever" after an area in Japan with historically high prevalence



Overview of Japan [5]

- Population in 2014: 127,103,388
- Official Language: Japanese
- Capital: Tokyo
- Parliamentary Government, Constitutional Monarchy
- Percentage of Population with Access to Improved Drinking Water in 2012: 100%
- Percentage of Population with Access to Improved Sanitation in 2012: 100%

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Other Snail Control Methods

In addition to mollusciciding, a special flame thrower was used to burn snails in the fields [3]. Perhaps one of the most effective snail control methods was the engineering modification of agricultural irrigation canals: clearing vegetation and cementing. Construction of cement ditches was incorporated into the 1950 amendment to the National Parasite Prevention Act, and by 1970, 65% of all irrigation ditches were cemented, making them weed-free and poor snail habitat [3].

Schistosomiasis Treatment

Treatment of cases was not the main focus of the Japanese eradication program, but some drugs that were used were quinolones, stibnal, stibophen, and antimonials [3]. It was not until the late 1970's, when schistosomiasis had already been eradicated from much of Japan, that the WHO teamed up with Bayer to test the new drug praziquantel, selecting Japan as one of the test sites. Except for a brief surge in 1942-1944, just after Japan entered World War II and before they surrendered in 1945, there was a steady decline in schistosomiasis from the 1910's until 1996 when schistosomiasis was declared eradicated, and a steep drop in the late 1970's that may have been associated with the introduction of praziquantel [3, 4].

Schistosomiasis Treatment

It is important to recognize that many socio-political, economic, and ecological changes occurred in Japan from the 1920's to the 1970's that may have contributed to disease eradication. There was extensive land clearing and wetland reclamation during the 1950's to 1960's that converted rice agriculture to fruit orchards and urban centers. This reduced snail habitat effectively and dramatically in Japan's largest schistosomiasis transmission area. [3]. In some areas, horses replaced cattle or water buffalo as work animals, since horses were known to be less susceptible to schistosomiasis [3].

Schistosomiasis in Japan declined from the 1910's until 1996 when it was declared eradicated.

References

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