Key literature on *Schistosoma* and host-parasite systems

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This document can be found at https://github.com/darwinanddavis/

Overview

Key literature and areas of research in *Schistosoma* and host-parasite systems.

Notes

Models with schisto

Aim: To account for time lag in population cycles based on things like resources and size structure

- Charles King
- Mark EJ Woolhouse (1991, 1992)
- David Rollinson

Habitat and resources

Southgate VR (1997) Schistosomiasis in the Senegal River Basin: Before and after the construction of the dams at Diama, Senegal and Manantali, Mali and future pros- pects. J Helminthol 71(2):125–132.

From Sokolow et al 2015 PNAS

Host population

Rumi and Hamann 1992 - size structure dynamics of Biomphalaria

Loreau 1987 - Size structure in natural Biomphalaria population

Ituarte 1989 - Growth dynamics of B glabrata in the field

Cerc stuff

Cerc host choice

Snail-host-finding by Miracidia and Cercariae: Chemical Host Cues

Langeloh (2018) Relative importance of chemical attractiveness to parasites for susceptibility to trematode infection

Seppala (2015) Quality attracts parasites: host condition-dependent chemo-orientation of trematode larvae

Sukhdeo (2004) Trematode behaviours and the perceptual worlds of parasites

Human health stats

Steinmann P, Keiser J, Bos R, Tanner M, Utzinger J (2006) Schistosomiasis and water resources development: Systematic review, meta-analysis, and estimates of people at risk. Lancet Infect Dis 6(7):411–425

> From Sokolow et al 2015 PNAS
> Schistosomiasis infects an estimated 220–240 million people globally, and 790 million are at risk for infection, more than 90% of whom are in Sub-Saharan Africa (14).

WHO (2015) Preventive Chemotherapy and Transmission Control (PCT) databank
World Health Assembly (2012) Elimination of Schistosomiasis in WHA65/2012/REC/1 Sixty-Fifth World Health Assembly: Resolutions and Decisions Annexes (WHO, Geneva)

Cheever AW, Macedonia JG, Mosimann JE, Cheever EA (1994) Kinetics of egg pro- duction and egg excretion by Schistosoma mansoni and S. japonicum in mice infected with a single pair of worms. Am J Trop Med Hyg 50(3):281–295

> From Sokolow et al 2015 PNAS
> Each infected snail sheds thousands of cer- cariae, which seek and penetrate human skin. After entering the skin, the parasites migrate to the blood vessels of the intestines (S. mansoni) or urinary bladder (S. hematobium), where female worms lay 350–2,200 eggs per day (15)

Jobin WR, Negrón-Aponte H, Michelson EH (1976) Schistosomiasis in the Gorgol Valley of Mauritania. Am J Trop Med Hyg 25(4):587–594

> From Sokolow et al 2015 PNAS
>
> Death from liver failure or bladder cancer can be preceded by chronic anemia, cognitive im- pairment in children, growth stunting, infertility, and a higher risk of contracting HIV in women (17, 18).

Whole genome sequencing and morphological analysis of the human-infecting schistosome emerging in Europe reveals a complex admixture between Schistosoma haematobium and Schistosoma bovis parasites.

Hotez PJ, Fenwick A, Kjetland EF (2009) Africa's 32 cents solution for HIV/AIDS. PLoS Negl Trop Dis 3(5):e430

> Notes

WHO (2015) Preventive Chemotherapy and Transmission Control (PCT) databank.

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WHO (2011) Schistosomiasis: Progress Report 2001-2011 and Strategic Plan 2012-2020 (WHO, Geneva.

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Bockarie MJ, Kelly-Hope LA, Rebollo M, Molyneux DH (2013) Preventive chemother- apy as a strategy for elimination of neglected tropical parasitic diseases: Endgame challenges. Philos Trans R Soc Lond B Biol Sci 368(1623):20120144.

> Notes

Gray DJ, et al. (2010) Schistosomiasis elimination: Lessons from the past guide the future. Lancet Infect Dis 10(10):733–736

> Notes

Fenwick A, Savioli L (2011) Schistosomiasis elimination. Lancet Infect Dis 11(5):346, author reply 346–347

> Notes

Zhang Z, Jiang Q (2011) Schistosomiasis elimination. Lancet Infect Dis 11(5):345, au- thor reply 346–347

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World Health Assembly (2012) Elimination of Schistosomiasis in WHA65/2012/REC/1 Sixty-Fifth World Health Assembly: Resolutions and Decisions Annexes (WHO, Geneva).

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Starvation

Nelson et al. 2016 Effects of abnormal temperature and starvation on the internal defense system of the schistosome-transmitting snail Biomphalaria glabrata

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Andre´ Gergs and Tjalling Jager 2014 Body size-mediated starvation resistance in an insect predator

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Molluscicide

Sokolow et al 2018 To Reduce the Global Burden of Human Schistosomiasis, Use 'Old Fashioned' Snail Control

Contains table of papers looking at schisto control programs and strategies

Immunity

Cressler et al 2014 Disentangling the interaction among host resources, the immune system and pathogens

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Predation

Sokolow et al 2015 Reduced transmission of human schistosomiasis after restoration of a native river prawn that preys on the snail intermediate host

> 'Reinfection after treatment is a problem that plagues efforts to control parasites with complex transmission pathways, such as schistosomiasis, which affects at least 220 million people worldwide and requires an obligate snail intermediate host.'

Detritus and algae

K. R. Reddy & W. F. DeBusk. 1991. Decomposition of water hyacinth detritus in eutrophic lake water. Hydrobiologib 211: 101-109.

Detritus production rates

K. K. Moorhead, K. R. Reddy & D. A. Graetz 1988 Water hyacinth productivity and detritus accumulation. Hydrobiologia 157: 179-185.

Detritus production rates