

# “Research on schistosomiasis with student help: Characterising hybrid schistosomes and intermediate host snails in Malawi”



James LaCourse 13th Oct 2023



OLLSCOIL NA  
GAILLIMHE  
UNIVERSITY  
OF GALWAY

Institiúid Uí Riain  
An tIonad Aon Sláinte Amháin

Ryan Institute  
Centre for One Health

The Ryan Institute Centre for One Health Annual Conference 2023

One Health and the Sustainable Development Goals

125  
YEARS  
1898 - 2023

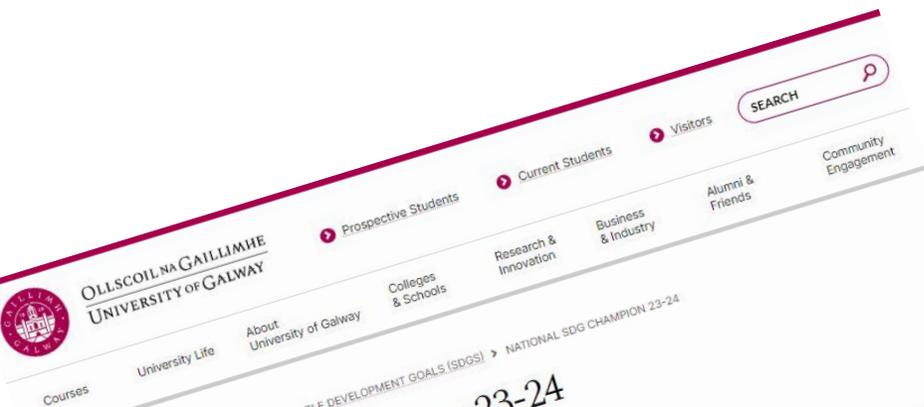
LSTM  
LIVERPOOL SCHOOL  
OF TROPICAL MEDICINE

## ... a quick outline...

- SDGs ... NTDs ... and One Health ...
- HUGS ...
- Our students, and the journey to HUGS ...

Celebrating 125 years of global health impact.

# Champions!



## National SDG Champion 23-24

Overview
About us
Sustainability Strategy and Policy
Learn-Live-Lead Model
The Sustainable Development Goals (SDGs)
University of Galway SDG Trail
National SDG Champion 23-24
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Professor Páid Dochartaigh, Deputy President and Registrar, Dr Strategy Implementation, and Michelle O'Dowd Lohan, Commur Officer, represented University of Galway at the National Sus where the University was awarded SDG Champion status by Climate, Communications and Transport Eamon Ryan, Cr

University of Galway has been designated as a national SDG Champion for 2023-24 by Minister for the Environment, Climate, and Energy Ryan T.D.



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**SDG Week 2023**

SDG week belongs to everyone and is open to all, including student partners. It is part of the wider European Sustainable Development year, will be held from 18th September to 8th October.

As national SDG Champion for Ireland we see this as an opportunity to promote the SDGs, to raise awareness internally among our own students and staff and to demonstrate by example that everyone can contribute to the UN SDGs.

Download our [SDG Week 2023 flyer](#) or click below for a day-by-day event calendar.

**Monday 18 September**



OLLSCOIL NA GAILLIMHE  
UNIVERSITY OF GALWAY

# SDG Week

18-23 September 2023

Celebrating the UN's Sustainable Development Goals across campus.

[www.universityofgalway.ie/sdgweek](http://www.universityofgalway.ie/sdgweek)

## Monday 18 September

- 11.30am:** SDG Poster Presentation by Business & Economics
- 3pm:** Action for the SDGs - ALIVE workshop
- 4pm:** UN Webinar: Implementation of the SDGs in Higher Education
- 5pm:** EcoSprint: Designing a Sustainable Campus for your Future with the IdeasLab

## Tuesday 19 September

- 11am:** Sustainable Food Systems & the SDGs
- 12.30pm:** How Data Science is making an impact on the SDGs
- 1pm:** Land, Housing & the SDGs
- 1pm:** SDGs at First Year Socs Day
- 5.30pm:** ROAMing Citizen Science Workshop
- 7pm:** Students' Union **SDG Quiz Night**

## Wednesday 20 September

- 12pm:** SDGs @ Clubs' Day
- 1pm:** Enter Net Zero with Deloitte: Employer workshop
- 3pm:** Spotlight on the SDGs: Commerce Students as Change Makers
- 5pm:** LIFT Leadership Facilitator Training

## Thursday 21 September

- 9am:** 2-day PEI Summit: Prevention & Early Intervention
- 10am:** Free WEEE Recycling Days
- 11am:** The SDGs & My Volunteer Work Experience
- 11.30am:** Seed Collection & Sowing event



**Full event listing, venues and registration at:**  
[www.universityofgalway.ie/sdgweek](http://www.universityofgalway.ie/sdgweek)

## Friday 22 September

- 11am:** Student-led Environmental Summit
- 2pm:** Speech & Language Therapy & the SDGs: Community & University collaborations

## Saturday 23 September

- 10am:** 'Just 3 x SDG' Pledge
- 11am:** Guided Biodiversity and Heritage Walk of the Campus

# The Sustainable Development Goals (SDGs)

- 17 interlinked global goals
- *"blueprint to achieve a better and more sustainable future for all".*
- Initiated 2015 - United Nations General Assembly
- ... to be achieved by 2030...



# Impact of Neglected Tropical Diseases (NTDs)

- ... *However...*
- NTDs historically ranked very low ... almost absent from global health policy agenda...
- gained recognition in 2015 ...
- with the Sustainable Development Goals ...
- SDG3 can be achieved only if NTD goals are met ...
- ...interventions to tackle NTDs are widely cross-sectoral...
- increasing NTD global prioritization can catalyze progress to achieve all SDGs.

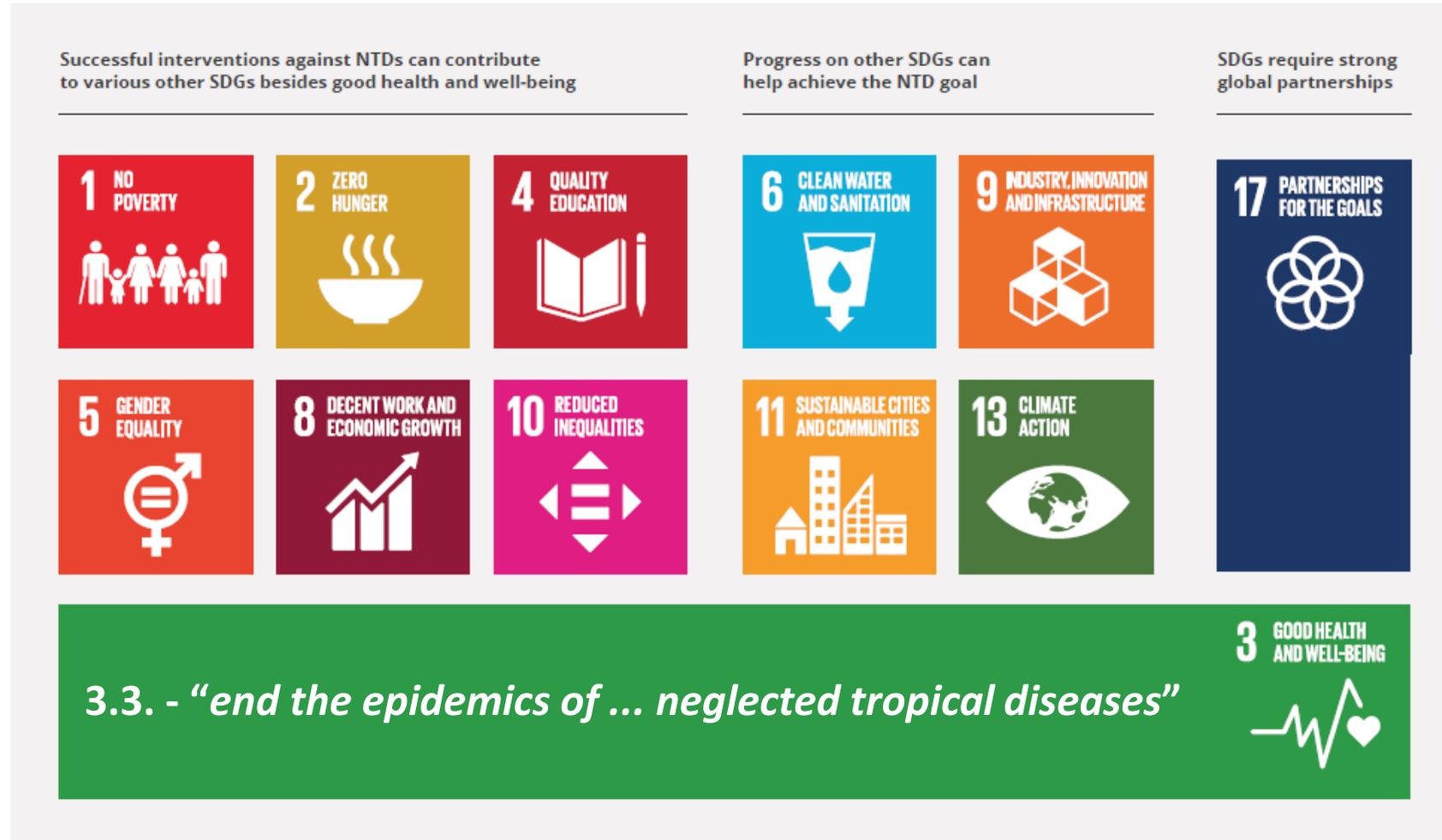


Fig. 2. Interactions among interventions against NTDs and the SDGs

# LSTM ... a focus on Neglected Tropical Diseases (NTDs)

**Centre for Neglected Tropical Diseases**

*Working towards the control and elimination of the neglected tropical diseases with translational research from discovery to delivery*



Home > Centre for Neglected Tropical Disease

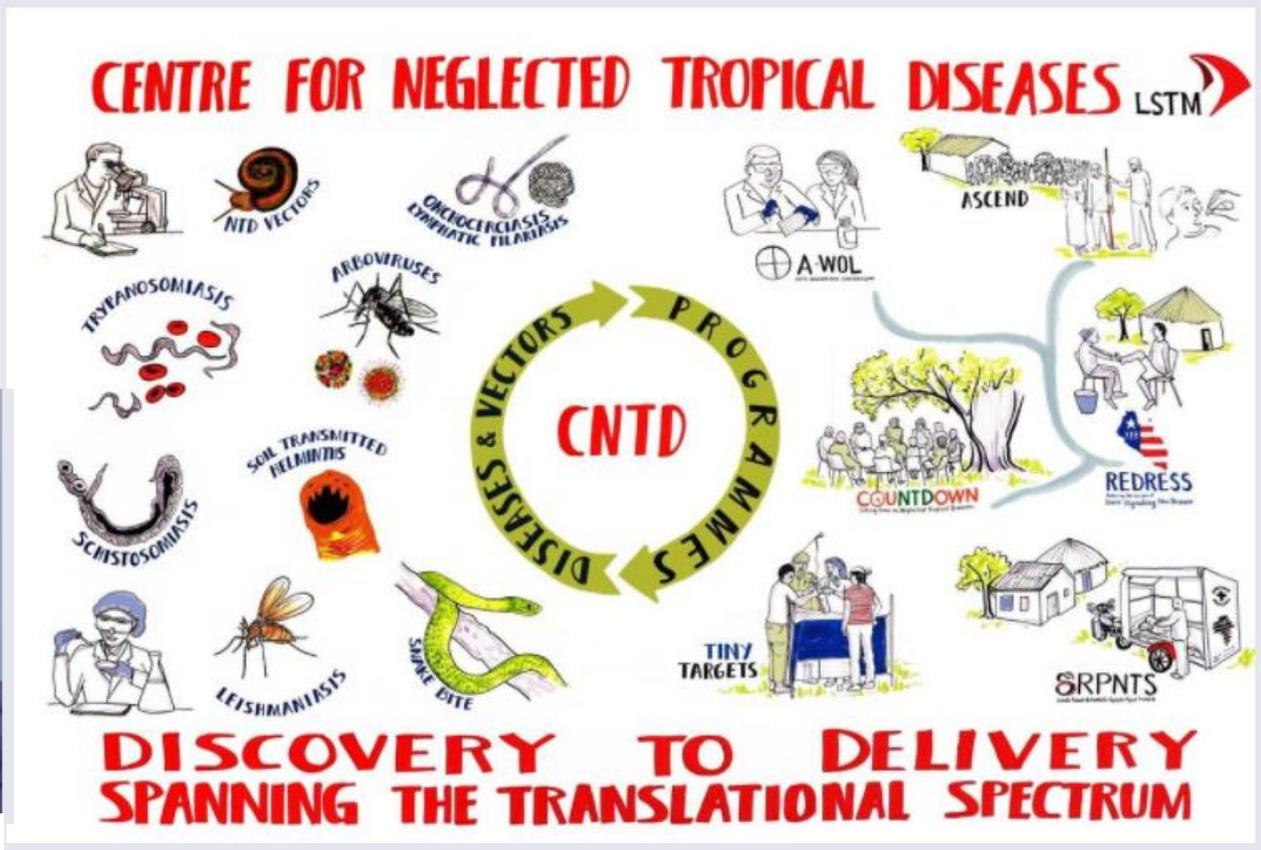
The Centre for Neglected Tropical Diseases (CNTD) brings together a large and diverse group of initiatives focused on the challenges posed by a range of neglected tropical diseases (NTDs).

As a multidisciplinary centre, CNTD has extensive expertise across all NTDs, which builds on the strengths of all our NTD research: from drug and diagnostics discovery and development to delivery, evaluation and deployment into health systems to span the translational research spectrum. We work to identify critical bottlenecks in the field of NTDs through research and implementation activities, whilst evaluating alternative strategies to overcome the existing barriers and to improve strategies for their control and elimination. The diversity of our research and programmatic activities contribute directly to the goals of WHO's 2021-2030 Roadmap and the UN Sustainable Development Goals.

CNTD builds on the Liverpool School of Tropical Medicine's over 120 years' experience in NTDs to provide policy makers with scientific evidence and programmatic support to inform policies and guidelines and to measure the impact of our research outputs



Professor David Molyneux CMG



<https://www.lstmed.ac.uk/research/neglected-tropical-diseases>



- Research
- Study
- Careers
- Search
- Menu

Home > Research > Neglected Tropical Diseases

## Neglected Tropical Diseases

LSTM is working to identify critical bottlenecks in the field of Neglected Tropical Diseases (NTDs) through its research and implementation activities, whilst evaluating alternative strategies to overcome the existing barriers and to improve strategies for their control and elimination.

In response, LSTM focuses on a multidisciplinary approach to NTDs, building on the particular strengths of its academic departments. This draws together a broad range of existing NTD expertise and creates new areas for collaborative programmes across LSTM.



## What are Neglected Tropical Diseases?



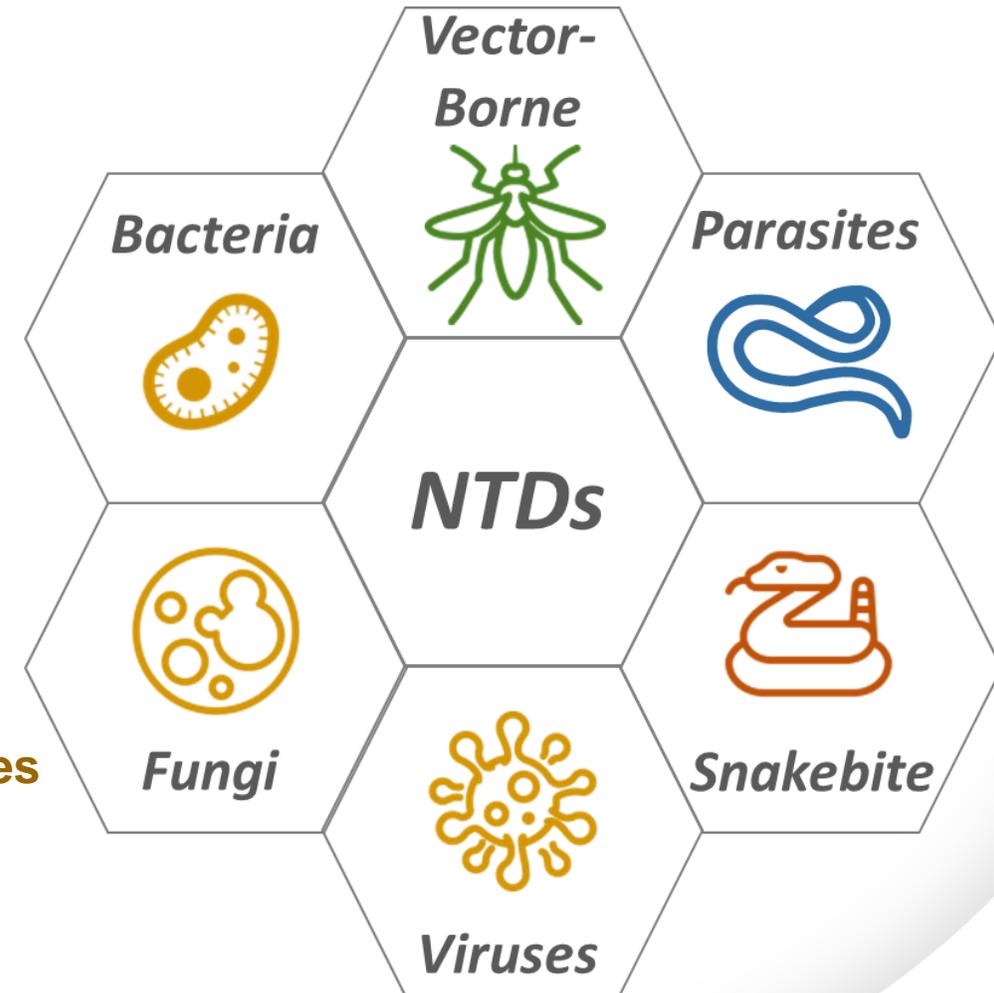
Over one billion people from the world's most disadvantaged and poorest communities suffer from at least one neglected tropical disease (NTD) which can significantly impact upon their physical and mental health. NTDs are markers, agents and drivers of poverty.

Neglected tropical diseases (NTDs) are a diverse group of 20 communicable diseases that prevail in tropical and subtropical conditions in 149 countries. They are identified as "neglected" because they persist exclusively in the poorest and the most marginalized populations living without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock.

NTDs stigmatize, disable and inhibit individuals from being able to care for themselves or their families - all of which promote poverty on a global scale. Individuals living in remote areas with limited access to effective health care are most vulnerable to NTDs and their consequences, such as malnutrition, anaemia, serious or permanent disability, illness and death. Effective elimination and control of NTDs can be achieved when several public health approaches are combined. Interventions are therefore guided by local epidemiology and availability of appropriate detection, prevention and control measures that can be delivered locally. Implementation of appropriate measures with high coverage will lead to achieving the **WHO NTD 2020-2030 Roadmap** #

# Neglected Tropical Diseases (NTDs)

1. **Buruli ulcer**
2. **Chagas disease**
3. **Dengue and Chikungunya**
4. **Dracunculiasis (guinea-worm disease)**
5. **Echinococcosis – Hydatid Disease**
6. **Foodborne trematodiasis**
7. **Human African trypanosomiasis (sleeping sickness)**
8. **Leishmaniasis**
9. **Leprosy (Hansen's disease)**
10. **Lymphatic filariasis**
11. **Mycetoma, chromoblastomycosis and other deep mycoses**
12. **Onchocerciasis (river blindness)**
13. **Rabies**
14. **Scabies and other ectoparasites**
15. **Schistosomiasis**
16. **Soil-Transmitted Helminthiasis (STHs)**
17. **Snakebite envenoming**
18. **Taeniasis/Cysticercosis**
19. **Trachoma**
20. **Yaws (Endemic treponematoses)**



# Hybridisation in UroGenital Schistosomiasis (HUGS)

- Prof. J.R. Stothard (Liverpool) & Prof. J. Musaya (Malawi)



- **HUGs - a novel collaboration ...**

*... schistosomes of ...*

*... humans... and,*

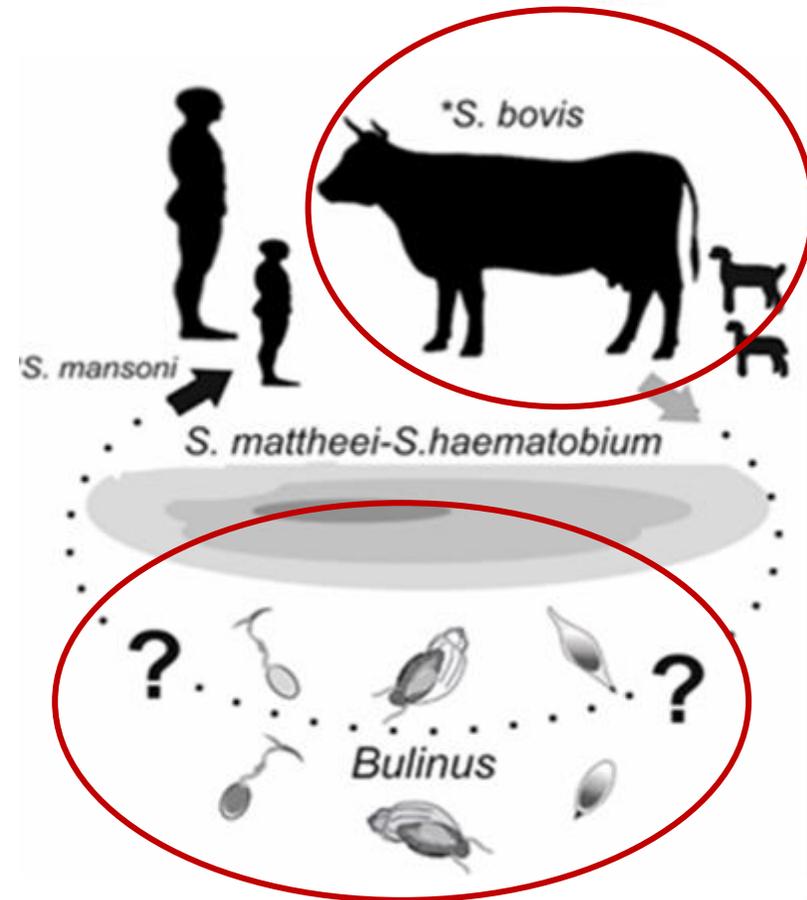
*... livestock... and,*

*... snail intermediate hosts...*

*... hybrid schistosomes...*



- ... will develop local capacity for **One Health** disease surveillance in Malawi



125  
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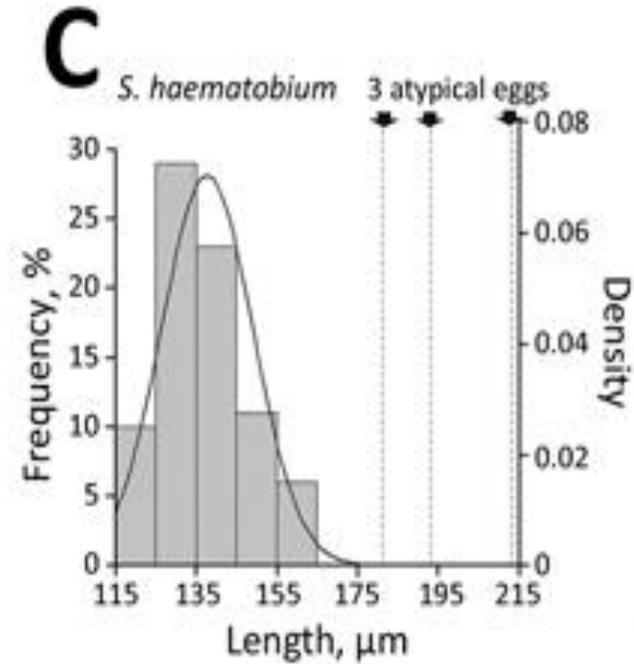
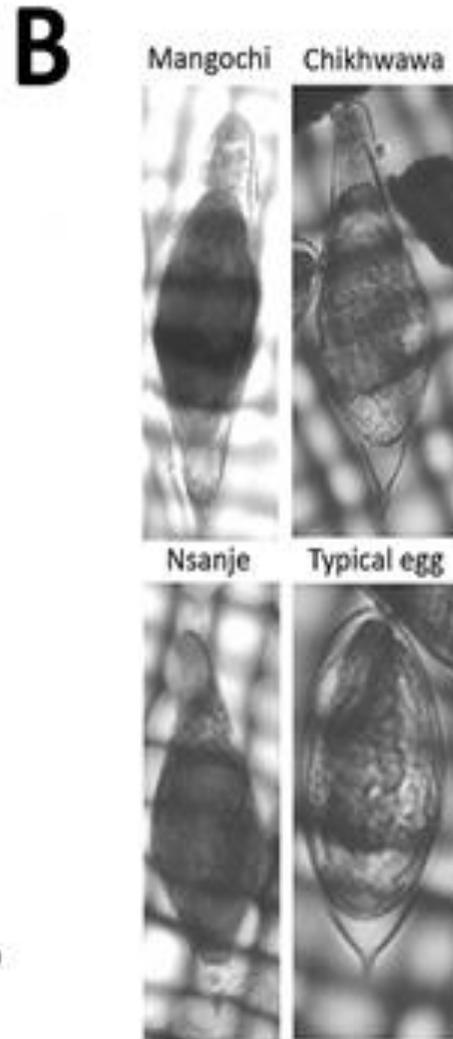
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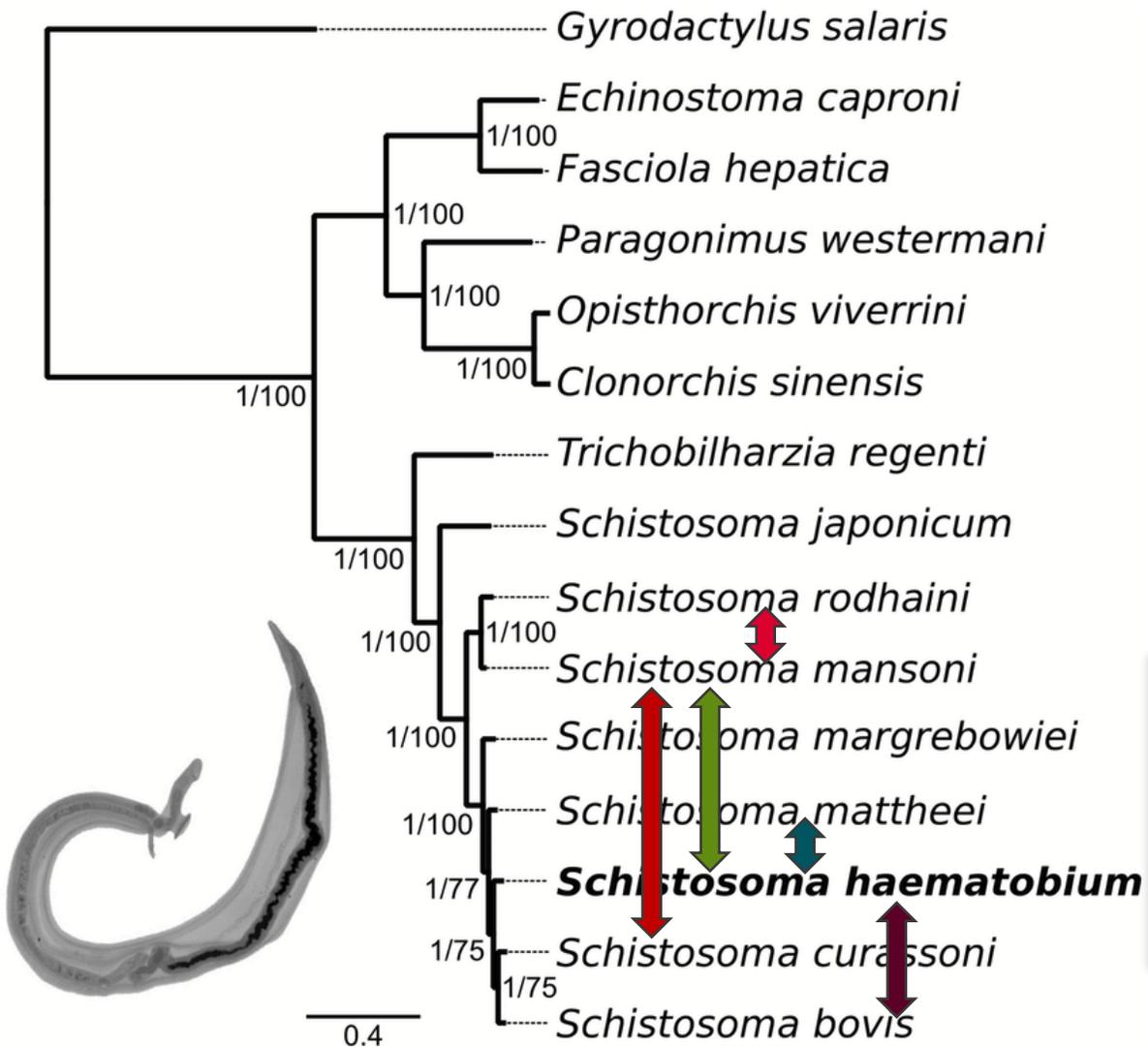
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# ... unusual egg morphology?...



Webster BL, Alharbi MH, Kayuni S, Makaula P, Halstead F, Christiansen R, et al. Schistosome Interactions within the *Schistosoma haematobium* Group, Malawi. *Emerg Infect Dis.* 2019;25(6):1245-1247. <https://doi.org/10.3201/eid2506.190020>

# Scientific questions around molecular identification...



1 April 2003  
**First Report of a Natural Hybrid Between *Schistosoma mansoni* and *S. rodhaini***  
 Authors: A. T. Morgan, Randall J. DeLong  
 Author Affiliations +  
 J. of Parasitology, 89(2):416-418 (2003)  
 ELSEVIER  
 Transactions of the Royal Society of Tropical Medicine and Hygiene  
 Volume 74, Issue 3, 1980, Pages 326-332

Abstract  
 Experimental crosses between *S. mansoni* and *S. rodhaini* were made, but no natural hybrids were observed, yet, until now, no natural hybrids have been reported.

Communication  
**Hybrids between *Schistosoma haematobium* and *S. curassoni***  
 Identification by isoelectric focusing

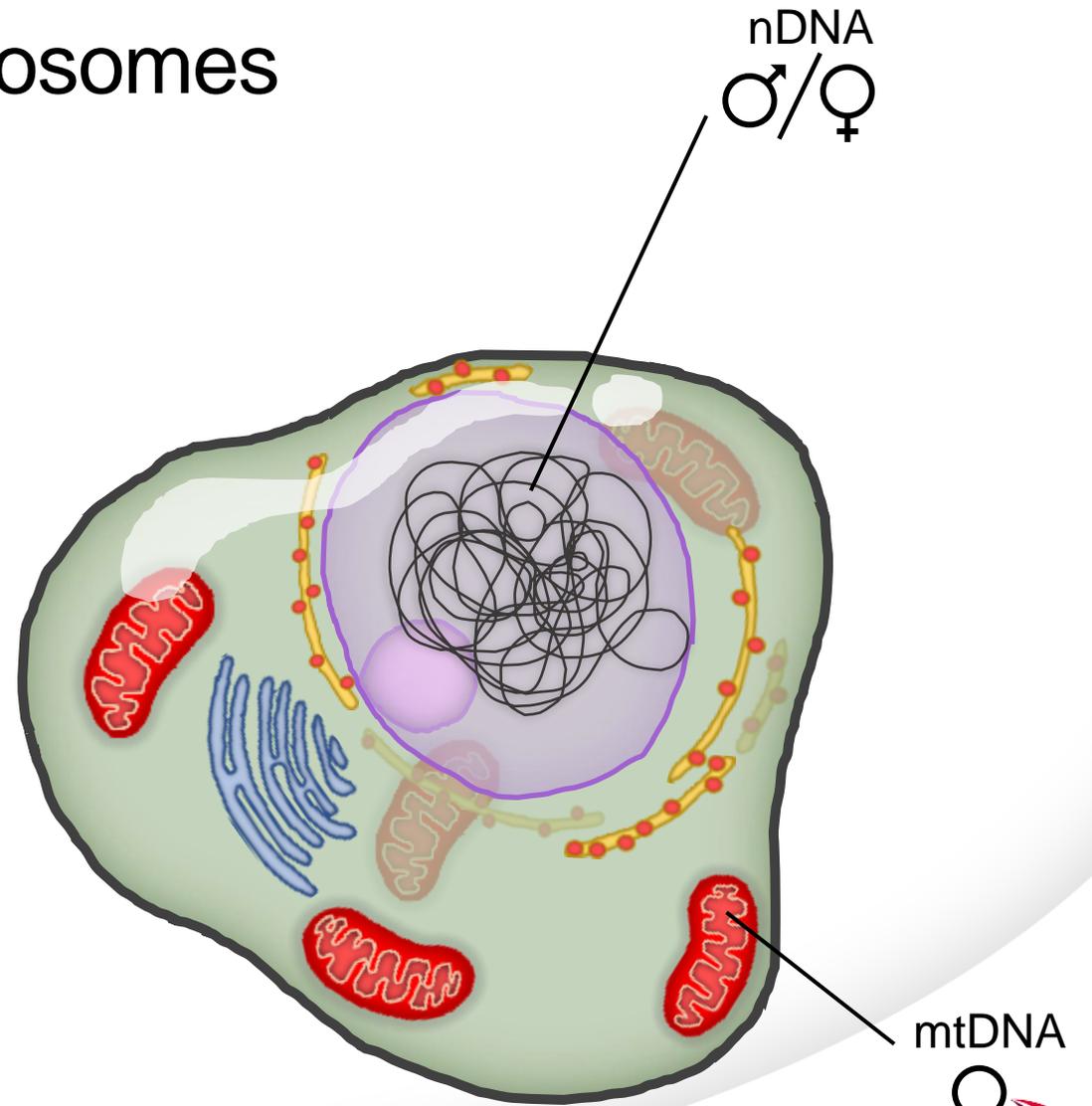
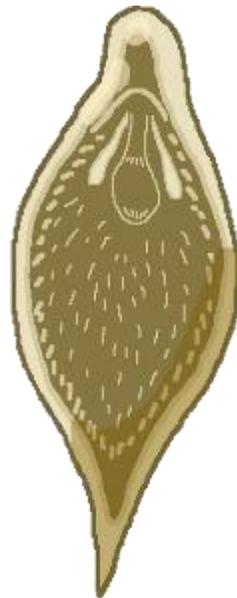
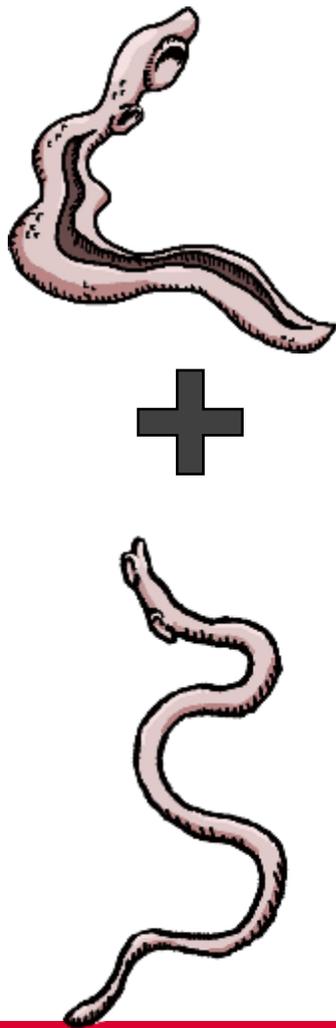
International Journal for Parasitology  
 Volume 43, Issue 8, July 2013, Pages 687-689  
 ELSEVIER

Elsa Léger, Amadou Garba, Bonnie L. Webster, Tom Perrett, David Rollinson, Joanne P. Webster  
 Succinctus  
**Hybridisation between the two major African species of *Schistosoma***

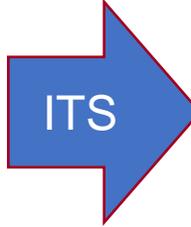
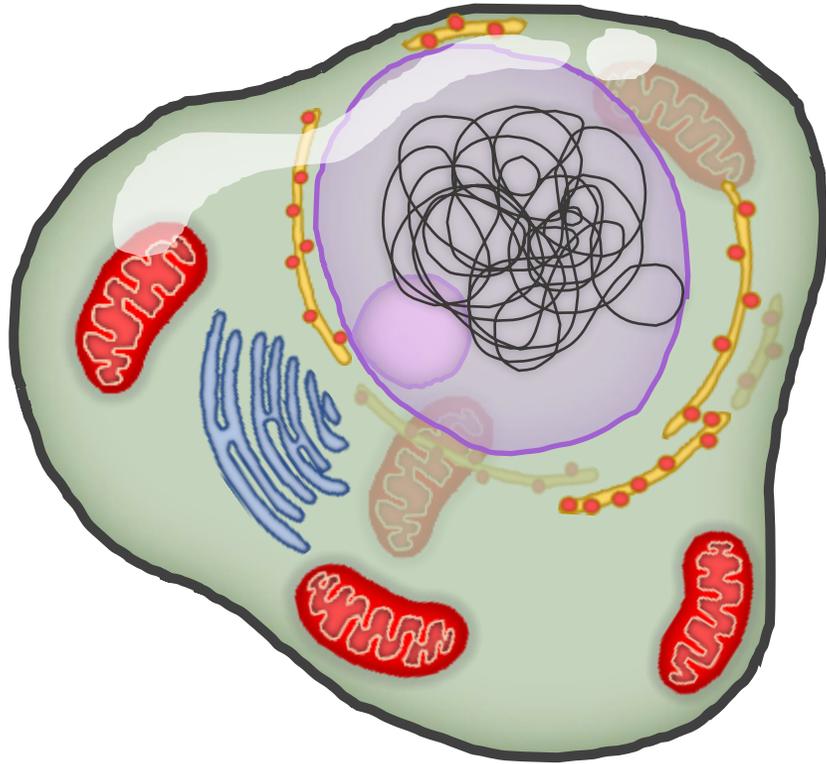
RESEARCH ARTICLE  
**Diverging patterns of introgression from *Schistosoma bovis* across *S. haematobium* African lineages**  
 C. Polman<sup>3</sup>

Olivier Rey<sup>1\*</sup>, Eve Toulza<sup>1</sup>, Cristian Chaparro<sup>1</sup>, Jean-François Allienne<sup>1</sup>, Julien Kincaid-Smith<sup>1,2</sup>, Eglantine Mathieu-Begné<sup>1</sup>, Fiona Allan<sup>3,4</sup>, David Rollinson<sup>3,4</sup>, Bonnie L. Webster<sup>3,4</sup>, Jérôme Boissier<sup>1</sup>

# Hybrid schistosomes



# Hybrid schistosomes



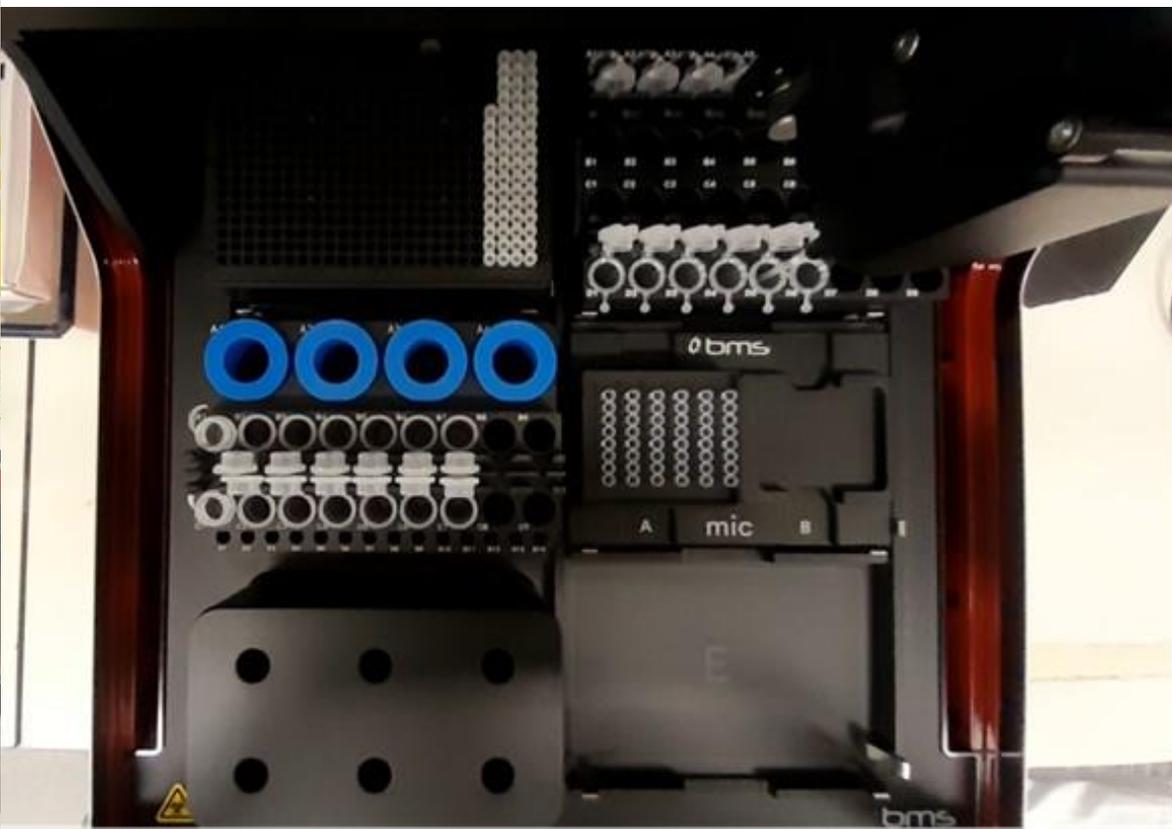
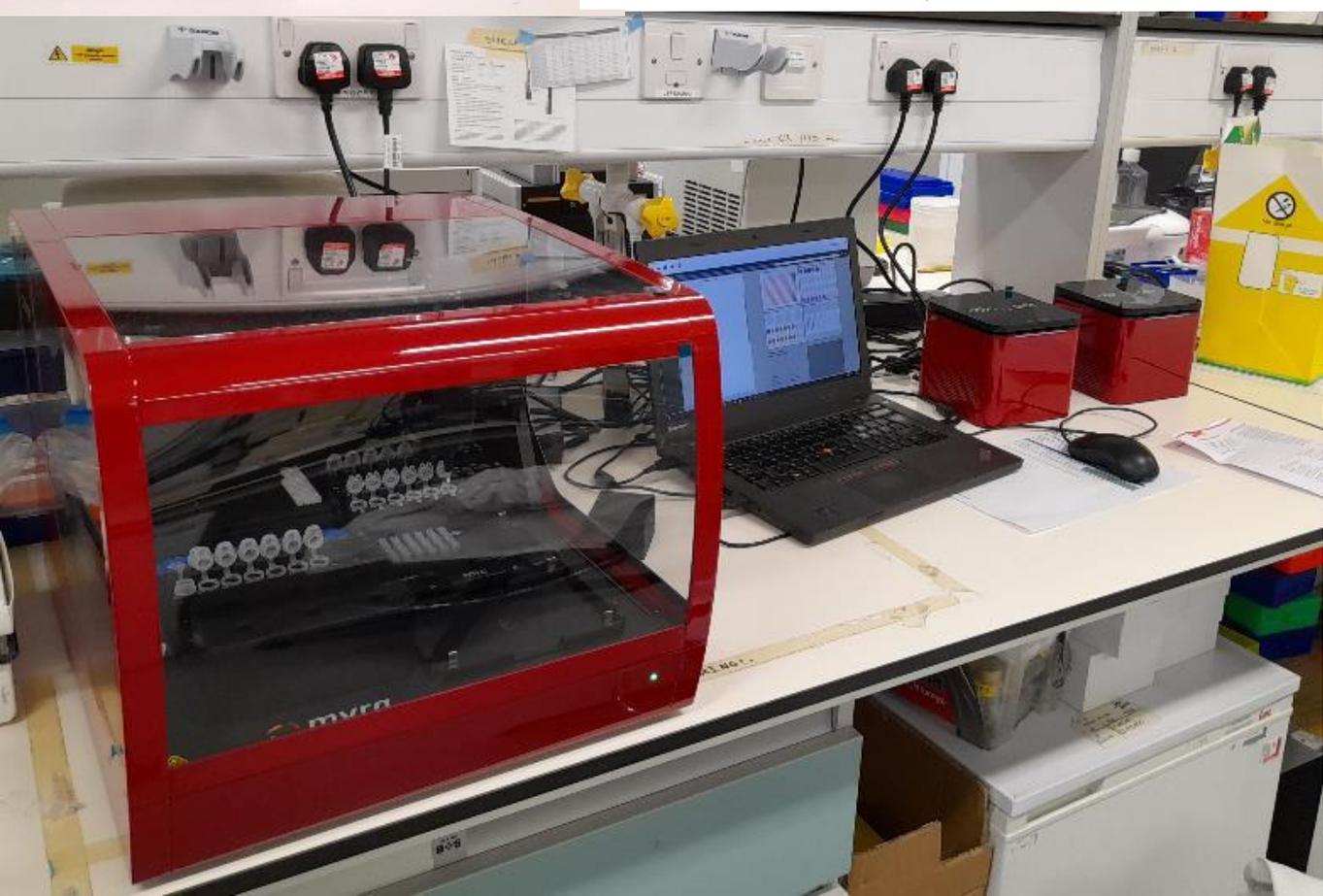
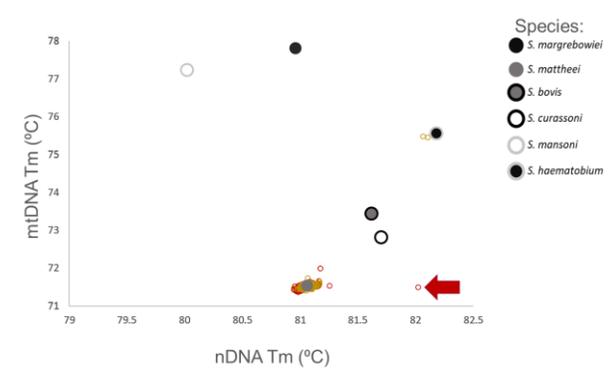
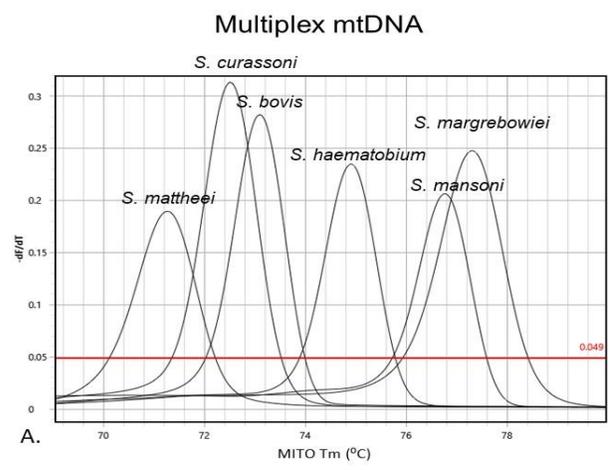
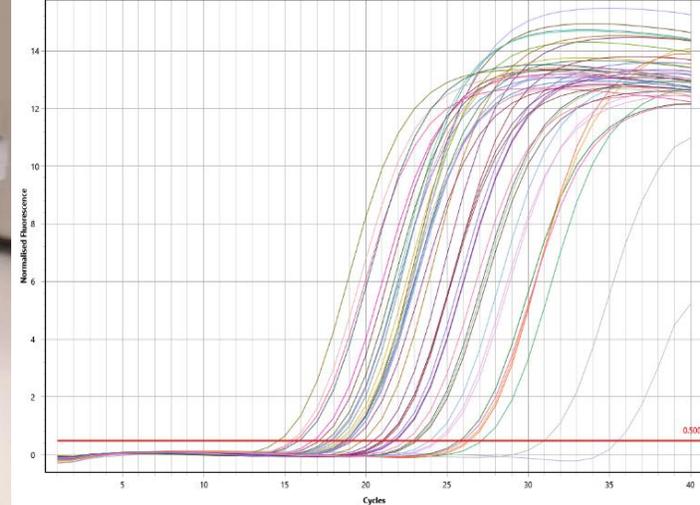
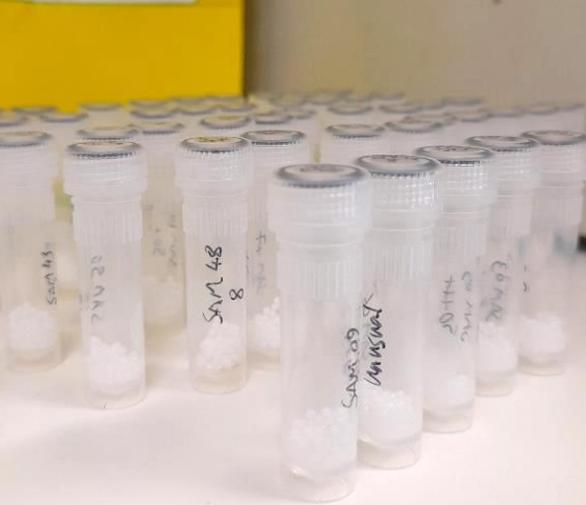
Screenshot of a BLAST search results page. The title is "BLAST Alignment: Eukaryote Whole genome sequences (ITS alignment of p[...])." The table shows DNA sequences for various species, with the top few highlighted in red.

Species/Abbr	Group Name	Sequence
1. B.martinei_Whole_worm32 ITS		TCCCTGTTATTAAGCTACCGTCCAGTCCTTAAATATCCCATCCAGCTGCTTCC
2. Bam_156 ITS		TCCCTGTTATTAAGCTACCGTCCAGTCCTTAAATATCCCATCCAGCTGCTTCC
3. RB_12c ITS		TCCCTGTTATTAAGCTACCGTCCAGTCCTTAAATATCCCATCCAGCTGCTTCC
4. CHM_12b ITS		TCCCTGTTATTAAGCTACCGTCCAGTCCTTAAATATCCCATCCAGCTGCTTCC
5. Mon_93 ITS		TCCCTGTTATTAAGCTACCGTCCAGTCCTTAAATATCCCATCCAGCTGCTTCC
6. Nsango_20 ITS		TCCCTGTTATTAAGCTACCGTCCAGTCCTTAAATATCCCATCCAGCTGCTTCC
7. 29AAT2 ITS		TGGTGGTATTAAGCTAGGCTCCAGTGGTAAATATGGGATGGAGCTGGCTTCC
8. 29AAT1401 ITS		TGGTGGTATTAAGCTAGGCTCCAGTGGTAAATATGGGATGGAGCTGGCTTCC



Screenshot of a BLAST search results page. The title is "BLAST Alignment: Top over 1000 alignment hits." The table shows COX sequences for various species, with the top few highlighted in green.

Species/Abbr	Group Name	Sequence
1. 471251801 COX 4 COX		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
2. 471251801 COX 4 Acox1		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
3. 471251801 COX 3 COX		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
4. 471251801 COX 3 Acox1		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
5. 471251801 COX 1 COX		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
6. 471251801 COX 1 Acox1		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
7. 456931921 COX 32 COX_R		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA
8. 456931921 COX 32 COX_F		AAAAAGCAAGATTAAACCAACATTCATAAATAAATCAATGACCGTCAAA



## Malawi HUGS-Team training in the UK

BLOG 17 APR 2023

From: [Tropical Disease Biology](#)



Lucas, Priscilla & Donales in the laboratory, seeing things under new light

As part of HUGS' overarching knowledge exchange and capacity development in hybrid schistosome research, Ms Donales Kapira and Ms Priscilla Chamudzi left Malawi to visit the UK for two week's training. Here in the CTID laboratories, Dr. Lucas Cunningham provided bespoke one-to-one teaching in various molecular DNA methods and diagnostic genotyping assays. Leaving Malawi was particularly significant for Donales, being her first visit to the UK but more importantly, her first time in a plane.

In between periods in the laboratory, they attended various lectures, a DTM&H lecture on rabies being very memorable, and toured the Centre for Snakebite Research's herpetarium, alongside LSTM's insectaries with its tsetse colony. The latter is of special interest for together with Prof. Janelisa Musaya, Donales and Priscilla have each worked on trypanosomiasis in Malawi. On their last day, they attended Vector Biology Department's symposium on "Anthropogenic and Climate Change" listening to HUGS, U-SMRC and SHIRE\_VEC latest findings as presented by Prof. Russ Stothard.

To close, our two-week experience made us appreciate UK life. We sampled 'fish and chips' with Dr James LaCourse, learned about LSTM's wider efforts on research and control on neglected tropical disease and interacted with several staff and students, exploring different activities and disciplines. We were especially grateful to the Wellcome Trust to have had this opportunity. We really covered a lot of new ground, for not only have we learned much about molecular epidemiology, we've now been inspired to become better scientists with further reaching career horizons in sight.



Fish and chips with James



(HUGS) Hybridisation in UroGenital Schistosomiasis

# ... Where did the One Health HUGS journey begin?...

- Dr Mohammad Al Harbi – PhD 2017 - 2021



**CDC** Centers for Disease Control and Prevention  
CDC 24/7. Saving Lives. Protecting People™

## EMERGING INFECTIOUS DISEASES®

DOI Journal > Volume 25 > Number 3 > March 2019 > Main Article

Volume 25, Number 3—March 2019  
Research Letter

### *Biomphalaria pfeifferi* Snails and Intestinal Schistosomiasis, Lake Malawi, Africa, 2017–2018

Mohammad H. Alharbi, Charlotte Condemine, Rosie Christiansen, E. James LaCourse, Peter Makaula, Michelle C. Stanton, Lazarus Juziwele, Seke Kayuni, and J. Russell Stothard

Author affiliations: Ministry of Health, Qassim, Saudi Arabia (M.H. Alharbi); Liverpool School of Tropical Medicine, Liverpool, UK (M.H. Alharbi, C. Condemine, R. Christiansen, E.J. LaCourse, S. Kayuni, J.R. Stothard); Research for Health Environment and Development, Mangochi, Malawi (P. Makaula); Lancaster University Medical School, Lancaster, UK (M.C. Stanton); Ministry of Health, Lilongwe, Malawi (L. Juziwele); Medical Aid Society of Malawi, Blantyre, Malawi (S. Kayuni)

[Cite This Article](#)

#### Abstract

Two surveys conducted in 2017 and 2018 demonstrated *Biomphalaria pfeifferi* snails in Lake Malawi in Africa. Epidemiologic examination of 175 local children at 3 primary schools confirmed emergence of intestinal schistosomiasis. These findings highlight autochthonous transmission of *Schistosoma mansoni* flukes in Lake Malawi and the need to revise international travel advice.

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ISSN: 1088-6059

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**MDPI**

Tropical Medicine and Infectious Disease

### *Biomphalaria pfeifferi* (Gastropoda: Planorbidae) in Lake Malawi and Upper Shire River, Mangochi District, Malawi: Distribution, Genetic Diversity and Pre-Patent Schistosome Infections

Mohammad H. Alharbi <sup>1,2,\*</sup>, Charlotte Condemine <sup>1</sup>, Josie Hesketh <sup>1</sup>, Sekeleghe A. Kayuni <sup>1,3</sup>, Thomas M. Arne <sup>1,4</sup>, John Archer <sup>1</sup>, Sam Jones <sup>1</sup>, E. James LaCourse <sup>1</sup>, Peter Makaula <sup>5</sup>, Janelisa Musaya <sup>6</sup> and J. Russell Stothard <sup>1</sup>

<sup>1</sup> Department of Tropical Disease Biology, Liverpool School of Tropical Medicine, Liverpool L3 5QA, UK  
<sup>2</sup> Ministry of Health, Buraydah 52367, Saudi Arabia  
<sup>3</sup> MASM Medi Clinics Limited, Medical Society of Malawi (MASM), Lilongwe P.O. Box 1254, Malawi  
<sup>4</sup> School of Biodiversity, One Health & Veterinary Medicine, University of Glasgow, Glasgow G12 8QQ, UK  
<sup>5</sup> School of Health, Environment and Development (RHED), Mangochi P.O. Box 345, Malawi  
<sup>6</sup> Malawi Liverpool Wellcome Trust Clinical Research Programme, Private Bag, Blantyre P.O. Box 30096, Malawi  
\* Correspondence: mohammad.alharbi@stmed.ac.uk or mohdhalbeshri@gmail.com; Tel.: +966-(0)-508010605

**Abstract:** In November 2017, *Biomphalaria pfeifferi*, the key intermediate host for *Schistosoma mansoni* in Africa, was first reported in Lake Malawi, Mangochi District. Two subsequent malacological surveys in 2018 and 2019 confirmed its lacustrine presence, as well as its presence along the Upper Shire River. These surveys provided sufficient specimens for analyses of the genetic structure and a transmission assessment for intestinal schistosomiasis. A total of 76 collected snails were characterized by a DNA assessment for intestinal schistosomiasis. A total of 26 collected snails were characterized by a DNA sequence analysis of a 650 bp fragment of the mitochondrial cytochrome oxidase subunit I (cox1); subsequent identification of six fluorescently labelled mitochondrial microsatellite loci (Bglu116, Bglu1, Bp68, rgs6, U-7, and U-8) confirmed the presence of pre-patent *Schistosoma* infection by real-time PCR.

check for updates

# ... but it also began with ...

- Dr Seke Kayuni – PhD 2016 - 2020



Kayuni et al. *Infectious Diseases of Poverty* (2020) 9:121  
<https://doi.org/10.1186/s40249-020-00736-w>

Infectious Diseases of Poverty

RESEARCH ARTICLE

Open Access

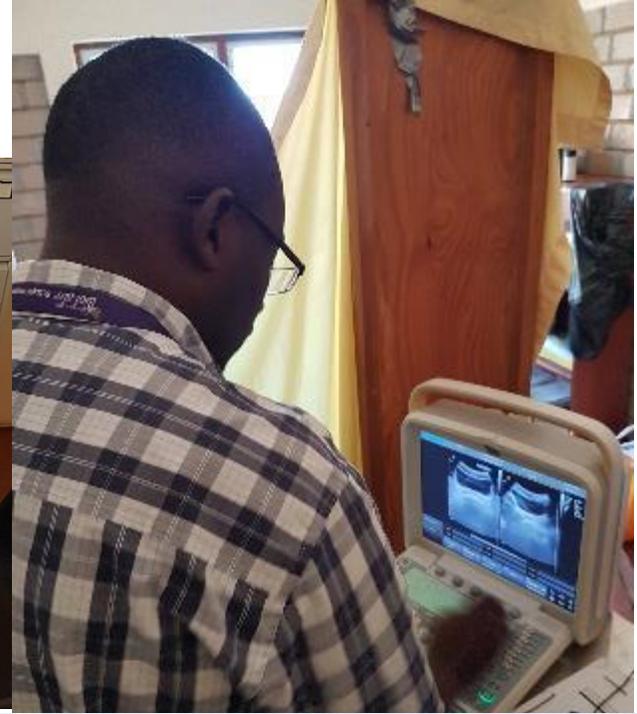
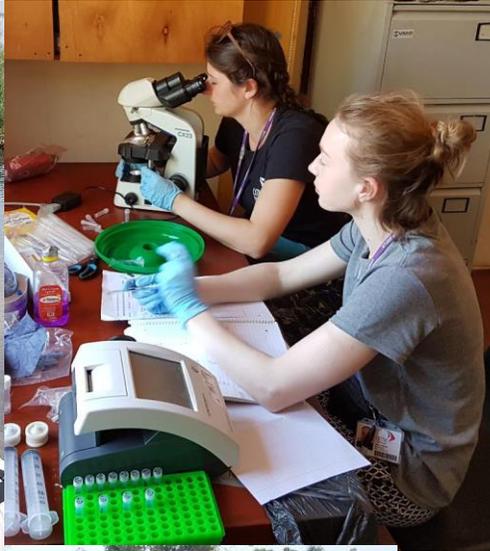
An outbreak of intestinal schistosomiasis, alongside increasing urogenital schistosomiasis prevalence, in primary school children on the shoreline of Lake Malawi, Mangochi District, Malawi

Sekeleghe A. Kayuni<sup>1,2†</sup>, Angus M. O'Ferrall<sup>1†</sup>, Hamish Baxter<sup>1†</sup>, Josie Hesketh<sup>1</sup>, Bright Mainga<sup>3</sup>, David Lally Jr<sup>4</sup>, Mohammad H. Al-Harbi<sup>5</sup>, E. James LaCourse<sup>1</sup>, Lazarus Juziwelo<sup>6</sup>, Janelisa Musaya<sup>4,7</sup>, Peter Makaula<sup>8</sup> and J. Russell Stothard<sup>1\*</sup>



# ... whilst also beginning with ...

- MSc students ... 2018...



- MSc students ... 2019...

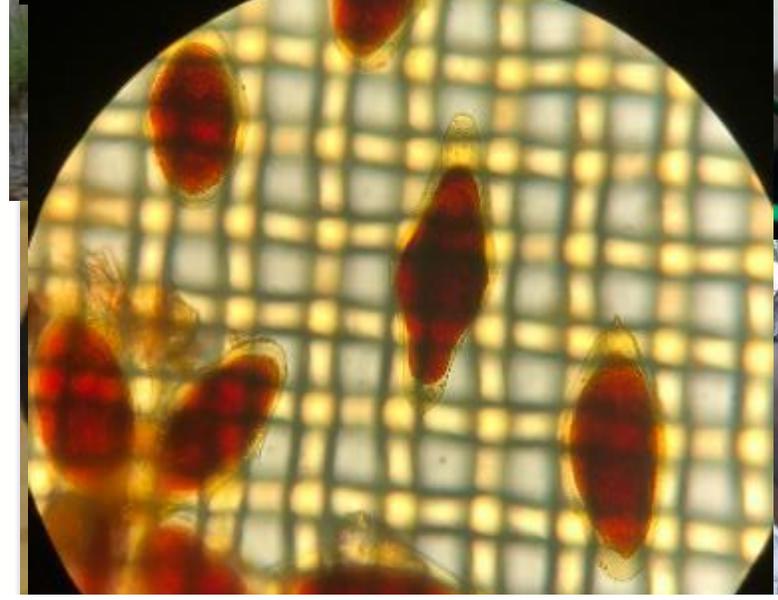
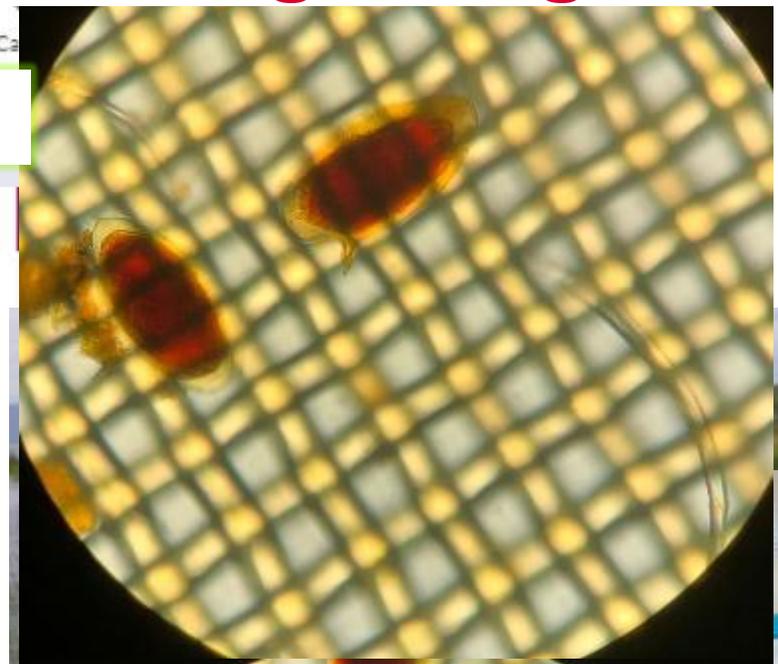
## LSTM students present their work at RSTMH 'Research in Progress' conference

NEWS ARTICLE 12 DEC 2019



LSTM students, Angus More O'Ferrall and Hamish Baxter, doing their research in Malawi

LSTM MSc students in **Tropical Disease Biology** and **Humanitarian Studies** presented their work at the RSTMH 'Research in Progress' conference at the University of London, earlier this week.



<https://www.lstmed.ac.uk/news-events/news/lstm-students-present-their-work-at-rstmh-%E2%80%99research-in-progress%E2%80%99-conference>



TROP942: Dissertation

Surveillance of intestinal schistosomiasis in school-aged children along the southern shoreline of Lake Malawi, Mangochi District, Malawi: A comparison of three diagnostic tests five years post-outbreak

James Lee

This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Tropical Disease Biology

A malacological survey of the intermediate hosts of *Schistosoma* with a focus on *Biomphalaria* distribution, and their transmission potential of *Schistosoma mansoni* in Lake Malawi, Mangochi region.



Josie Hesketh

Supervisor: Professor Russel Stothard  
Secondary supervisor: Dr James LaCourse, Dr Seke Kayuni, Mohammad Alharbi  
Liverpool School of Tropical Medicine

2019

This dissertation has been submitted in partial fulfillment of the requirements for the award of Tropical Disease Biology Master's degree program

Prevalence of schistosomiasis in ruminants and snail populations within Mangochi, Malawi: A OneHealth epidemiological study.

Lennon Turner  
Supervisor: Professor Russel Stothard  
Liverpool School of Tropical Medicine  
2023  
This dissertation has been submitted in partial fulfillment of the requirements for the award of Tropical Disease Biology MSc Programme  
Word count: 11262



Cattle on the shoreline that were included in this study



Assessing the prevalence and infection status of schistosome intermediate hosts throughout Mangochi District, Malawi

James Anthony Hardaker

Liverpool School of Tropical Medicine  
Supervisors: Professor Russel Stothard / Dr James LaCourse

2022

This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Tropical Disease Biology

Word count: 10,271



The clinical importance of hybrid schistosomiasis in urogenital schistosomiasis in Malawi with a focus on Female Genital Schistosomiasis.



Christine Rice  
Liverpool School of Tropical Medicine  
2023  
This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Tropical Disease Biology



Hybridisation of *Schistosoma haematobium* group schistosomes in Mangochi and Nsanje districts of Malawi, Africa.

LSTM  
LIVERPOOL SCHOOL OF TROPICAL MEDICINE

Morgan McKee

Liverpool school of tropical medicine

Intestinal schistosomiasis along the shoreline of Lake Malawi: emergence or outbreak?



Hamish Baxter

Liverpool School of Tropical Medicine  
This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Tropical Disease Biology

The changing epidemiological landscape of schistosomiasis in Lake Malawi, Mangochi District: prevalence and morbidity associated with urogenital schistosomiasis in school children



Photo: Makumba School

Angus More O'Ferrall  
Liverpool School of Tropical Medicine  
2019

This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Biology and Control of Parasites and Disease Vectors

Developing a micro-map of freshwater snail distribution around a novel focus of *Biomphalaria* in Lake Malawi: Assessing the local transmission for intestinal schistosomiasis in Mangochi District, Malawi.



Charlotte Condemine  
Supervisor: Russell Stothard  
Liverpool School of Tropical Medicine  
2018

This dissertation has been submitted in partial fulfillment of the requirements for the award of Biology and Control of Parasites and Disease Vectors Masters Degree Program



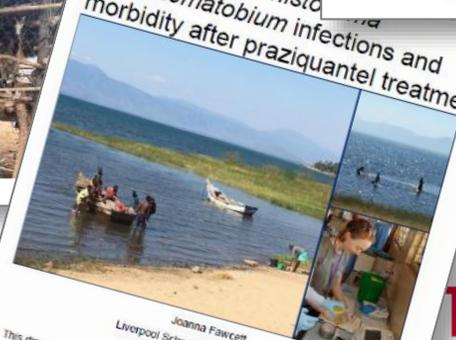
A pilot study investigating the performance of Praziquantel treatment against caprine schistosomiasis in a natural setting

Lewis Field  
Supervisor: Professor Russel Stothard  
Liverpool School of Tropical Medicine  
2022

This dissertation has been submitted in partial fulfillment of the requirements for the award of Tropical Disease Biology MSc Programme  
Word count: 12397



Urogenital schistosomiasis in fishermen in the Mangochi District of Malawi: short-term morbidity after praziquantel treatment of *Schistosoma haematobium* infections



Joanna Fawcett  
Liverpool School of Tropical Medicine  
2018

This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Biology and Control of Parasites and Disease Vectors

A parasitological survey to ascertain the prevalence of intestinal schistosomiasis in school-aged children around a new focus of *Biomphalaria* in Lake Malawi



Rosie Christiansen  
Liverpool School of Tropical Medicine  
2018

This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Biology and Control of Parasites and Disease Vectors

Investigating the burden and resolution of male genital schistosomiasis in fishermen: Baseline epidemiological and parasitological analysis with a paired six-month follow-up fieldwork study following treatment along Lake Malawi, Mangochi District



Alexandra Rose Shaw  
Liverpool School of Tropical Medicine 2018

This dissertation has been submitted in partial fulfillment of the requirements for the award of MSc Biology and Control of Parasites and Disease Vectors

125 YEARS  
1898 - 2023

# ... The HUGS Project was born ... and results are emerging...

## August 2023: A HUGS milestone, completion of first annual follow-up

BLOG 1 SEP 2023



The HUGS Nsanje field team – our thanks to Mthawira community



The HUGS Mangochi field team – our thanks to Samama community

Between 19<sup>th</sup> June and 21<sup>st</sup> July the UK and Malawi HUGS teams were fully deployed in Nsanje and Mangochi. There we undertook our first annual human cohort follow-up. In total over 20 staff and auxiliary workers were united in this common effort. Indeed, this was a critical deployment for HUGS to ascertain current levels of schistosomiasis (re)infection in Mthawira and Samama villages. This was some 12-months after a community-wide distribution of praziquantel immediately after our baseline inspection. The delivery of medicines was in close association with the national control programme.

### Themes



Neglected  
Tropical Diseases

### Project



(HUGS) Hybridisation in  
UroGenital Schistosomiasis

- Human  
*S. haematobium* ~ 49%
- Human  
*S. mansoni* ~ 15%
- Cattle  
*S. mattheei* ~ 43%
- Hybrids in human ~ 8%
- Hybrids in cattle ~ 0.5%

# The 'One Health' Star Students...

- Rosie Christiansen
- Charlotte Condemine
- Alexandra Shaw
- Joanna Fawcett
- Josie Hesketh
- Angus More-O'Ferrall
- Hamish Baxter
- Bright Mainga
- Lewis Field
- Ffion Doull
- Morgan McKee
- James Lee
- James Hardacker
- Lennon Turner
- Christine Rice
- Sam Jones
- John Archer
- Seke Kayuni
- Mohammad Alharbi
- Amber Reed
- Clinton Nkolokosa



# HUGS Team

- Prof J. Russell Stothard (LSTM)
- Prof Janelisa Musaya (MLW)
- Dr Seke Kayuni (MLW)
- Dr Alexandra Juhasz (LSTM)
- Dr Lucas Cunnigham (LSTM)
- John Archer (LSTM)
- Sam Jones (LSTM)
- Peter Makaula (MLW)
- Bright Mainga (MLW)
- Gladys Namacha (MLW)
- David Lally Jr (LW)
- Donales Kapira (MLW)
- Priscilla Chammudzi (MLW)
- Dr Sarah Rollason (Cardiff/LSTM)
- Amber Reed (LSTM)



125  
YEARS  
1898 - 2023

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