Swiss TPH
Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse

Associated Institute of the University of Basel

Jürg Utzinger
Directorate

Swiss TPH Winter Symposium 2017: closing words

Basel, 8 December 2017

How it all came about

- Autumn 2015 – call for Swiss TPH Winter Symposium 2016
  - Malaria (Christian Lengeler & Konstantina Boutsika)
  - Helminthiasis (Jennifer Keiser, Peter Odermatt & Hanspeter Marti)
- Winter Symposium 2016 → Malaria

Helminth Infection - from Transmission to Control

***7-8 December 2017**, Parterre Rialto, Basel, Switzerland*

The Swiss TPH Winter Symposium 2017 invites medical parasitologists, infection biologists, epidemiologists and public health specialists and students to review and discuss progress in research, control, elimination and eradication of helminth infections. Topics will include:

- Health impact versus health benefits of helminth infections
- Towards better treatment options for helminth infections
- Latest diagnostic developments
- From morbidity control to elimination and eradication

Programme

Thursday, 7 December 2017

Welcome and Registration

08:15 Registration
08:45 Welcome and Introduction, *Jennifer Keiser and Peter Odermatt, Swiss TPH*

Session 1 – Setting the Scene

Chair: J. Utzinger, Swiss TPH

09:00 Helminthiasis Epidemiology and Control: Scoring Success, *Charles King, Case Western Reserve University, USA*
09:30 Worms, History and Swiss TPH, *Hanspeter Marti, Swiss TPH*
10:00 Coffee Break

Session 2 – Helminth Diagnosis

Chairs: J. Keiser and P. Odermatt, Swiss TPH

10:30 Coprological Methods, *Bruno Levecke, Ghent University, Belgium*
11:00 *Echinococcus multilocularis* Diagnosis, *Peter Deplazes, Vetsuisse-Faculty, University of Zurich*
11:20 Sushi Worms – Diagnostic Challenges, *Beatrice Nickel, Swiss TPH*
11:40 Mobile Phone and Handheld Microscopy for Helminth Diagnosis, *Isaac Bogoch, Toronto General Hospital, Canada*
12:00 Limitations and Future Considerations in Helminth Diagnostics, *Daniel Paris, Swiss TPH*
12:20 Lunch

Session 3 – Anthelminthic Drugs

Chairs: G. Panic, Swiss TPH and D. Rollinson, Natural History Museum, UK

13:30 Combination Chemotherapy for Soil-Transmitted Helminthiasis, *Jennifer Keiser, Swiss TPH*
14:00 DND*i* Helminth Portfolio, *Ivan Scandale, DNDi, Switzerland*
14:20 Paediatric Praziquantel, *Elly Kourany-Lefoll, Merck, Switzerland*
14:40 Tribendimidine Dose Finding in School-Aged Children Infected with Hookworm, *Jean Coulibaly, Université Félix Houphouët-Boigny, Côte d'Ivoire*
15:00 Coffee Break

Session 4 – Anthelminthic Drugs and Beyond

Chairs: E. Hürlimann, Swiss TPH and R. Stothard, Liverpool School of Tropical Medicine, UK

15:30 ICE Health Promotion for Helminth Control, *Giovanna Raso, Swiss TPH*
15:50 Elimination of Urogenital Schistosomiasis in Zanzibar: Results of a 5-Year Multi-Disciplinary Integrated Intervention Approach, *Stefanie Knopp, Swiss TPH*
16:10 Evaluation of a Novel Treatment Approach for the Treatment of Human Cystic Echinococcosis, *Andreas Neumayr, Swiss TPH*
16:30 WASH for Accelerating Progress on NTDs – New Frontiers, *Yael Velleman, WaterAid, UK*
17:00-17:30 Film Preview and Cocktails, "Why Rudolf Geigy Left for Africa" *by Stéphane Kleeb*

Friday, 8 December 2017

Session 5 – Helminth Infection: Pain and Gain

Chairs: O. Fedorova, Siberian State Medical University, Russia and C. King, Case Western Reserve Uni., USA

08:30 Helminth Infections and Cancer: Lessons from Human Liver Flukes, *Banchob Sripa, Khon Kaen University, Thailand*
09:00 Helminths, Disability and Health-Related Quality of Life, *Thomas Fürst,* Swiss TPH
09:20 Helminth Infection, Asthma and Diabetes, *Maria Yazdanbakhsh, Leiden University Medical Center, The Netherlands*
09:40 Tuberculosis and Helminth Co-Infections in Tanzanian Adults, *Claudia Daubenberger, Swiss TPH*
10:00 Influence of Helminths on Cognition and Physical Activity, *Markus Gerber, University of Basel*
10:20 Coffee Break

Session 6 – Helminth Transmission

Chairs: S. Knopp and H. Marti, Swiss TPH

10:50 Breaking the Schistosome Life Cycle, *David Rollinson, Natural History Museum, UK*
11:20 Helminthiasis Risk Profiling in Africa, *Penelope Vounatsou, Swiss TPH*
11:50 Helminthiasis Mapping and Prediction in Southeast Asia, *Peter Odermatt, Swiss TPH*
12:10 *Opisthorchis viverrini* Transmission Models, *Nakul Chitnis, Swiss TPH*
12:30 COUNTDOWN on WHO 2020 Targets: A Focus on Helminthiasis, *Russell Stothard, Liverpool School of Tropical Medicine, UK*
13:00 Lunch

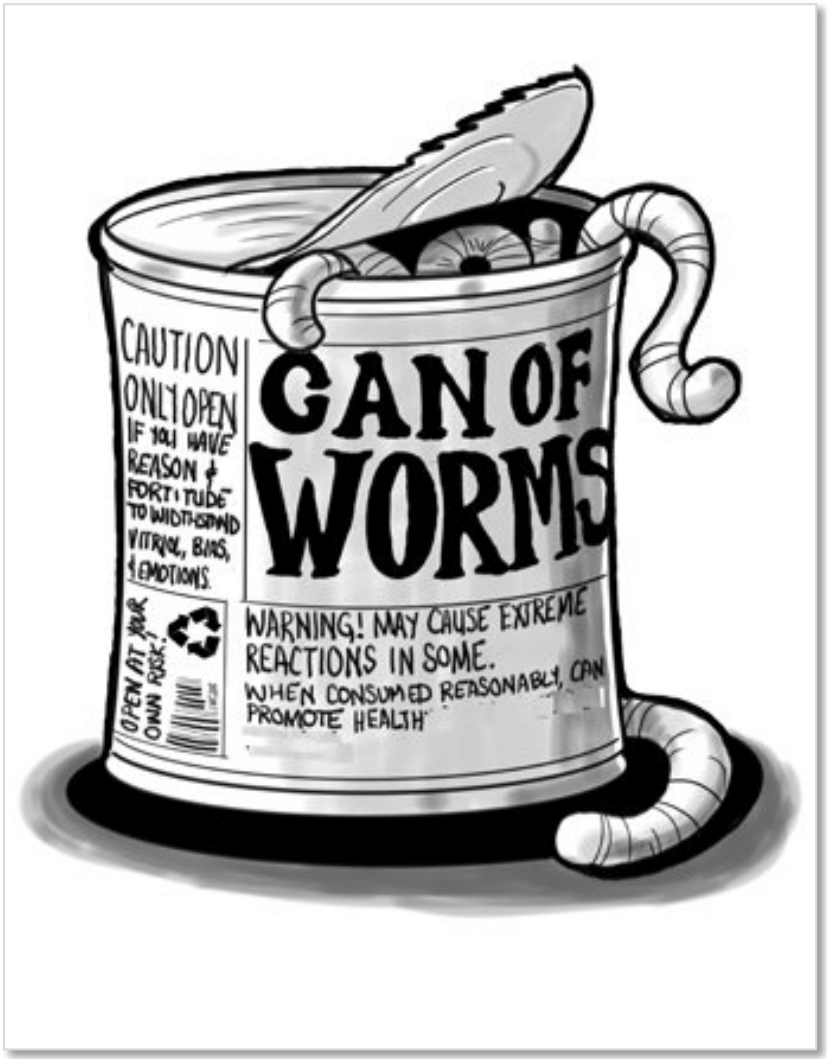
Session 7 – From Control to Elimination and Eradication

Chairs: M. Yazdanbakhsh, Leiden Uni. Medical Center, The Netherlands and B. Sripa, Khon Kaen Uni., Thailand

14:00 The Global Programme to Eliminate Lymphatic Filariasis, *Jonathan King, WHO, Switzerland*
14:30 Schistosomiasis Elimination in China, *Guojing Yang, Swiss TPH*
14:50 Integrated Control Strategy for Elimination of Mekong Schistosomiasis in Lao PDR, *Peter Odermatt, Swiss TPH*
15:10 *Opisthorchis felineus* Control in Siberia, *Olga Fedorova, Siberian State Medical University, Russia*
15:30 Uniting against NTDs - An Introduction to the Swiss Alliance against Neglected Tropical Diseases (SANTD), *Peter Steinmann, Swiss TPH*
15:40 Closing Words, *Jürg Utzinger, Swiss TPH*
15:55 End of Day 2

- **Meta-data**
  - Setting the scene
  - 6 sessions
    - Helminth diagnosis
    - Anthelminthic drugs
    - Anthelminthic drugs and beyond
    - Helminth infection: pain and gain
    - Helminth transmission
    - From control to elimination/eradication
  - 30 speakers, 13 chairs (33 individuals)
    - 17 Swiss TPH, 16 external speakers
    - Basel, Geneva, Zurich
    - Belgium, Canada, Côte d'Ivoire, Netherlands, Russia, Thailand, UK, US
    - 20 males, 13 females
  - 3 linked events
    - Why Rudolf Geigy set out to Africa?
    - Swiss Alliance against Neglected Tropical Diseases
    - TOPIC consortium meeting

Getting started



Getting started

Helminth species reported from human hosts

• Acanthocephala	7 species
• Nematoda	138 species
• Nematomorpha	24 species
• Platyhelminthes	173 species
• **TOTAL**	**342 species**

This wormy world

The Journal of Parasitology

Volume 33 FEBRUARY, 1947 Number 1

THIS WORMY WORLD*

NORMAN R. STOLL

Rockefeller Institute for Medical Research, Princeton, New Jersey

One cannot have experienced the war without having been impressed anew, and depressed, by the amount of parasitism in the world. Speaking helminthologically, it may be referred to as the grave host rôle which the lives of men play in the lives of worms. Or, think of it the other way about, for there is likewise the great parasitic rôle the lives of worms play in the lives of men. Back from the Pacific come a thousand-odd Americans with schistosomiasis, and a few times that many with filariasis, and several multiples more with ancylostomiasis (*sensu stricto*). To homes widely dispersed throughout the land go these ex-service men, to live a lifetime in familiarity with the strangely sounding names of their distantly-acquired helminthiases.

These observations suggest familiar concepts to the parasitologist. The One World of Wendell Wilkie that struck with the force of a new idea at the politico-economic level, is, of course, decades, and in some respects centuries old, to the student of disease-producing agents. However, each parasitologist is wont to live in his thinking in One World with the species which particularly interests him. There have been, therefore, only a few attempts to bring all species of major human concern into the short focus of a brief presentation. In the belief that there might flow from such renewed consideration certain emphases useful to world citizens and in our science, this attempt at such a succinct statement has been made.

Just how much human helminthiasis is there in the world?

The bare mention of the question will make those of you with nosogeographical interests—or, better, helminthogeographical interests—warily scratch a mental ear and mull over a remark that ends "where angels fear to tread." If so you are doing furtively what I did openly and frequently in these last weeks, as the difficulties in the accomplishment of such a combined analysis and synthesis presented themselves. I need scarcely remind you of what some of those hurdles are: so many parasitological surveys of but small numbers of people, frequently of other design than to represent fair samples of an area, done by workers of varying aims and by techniques of even more variable efficiency in relation to the task at hand. Worse, at first sight, from a true census standpoint, is the fact that in order to gain a comprehensive perspective, examination results made at intervals over years have needed to be compressed as if made at a single recent point on the time scale, sometimes without full knowledge of what complicating or ameliorative factors had been interposed in the meantime.

One cannot change this state of affairs at the moment. Instead, one takes the

* Address of the President, American Society of Parasitologists, December 27, 1946, Boston.

This wormy world (according to Stoll, 1940)

• Soil-transmitted helminthiasis		
• *Ascaris lumbricoides*	644.4 Mio	(29.7%)
• Hookworm	456.8 Mio	(21.1%)
• *Trichuris trichiura*	355.1 Mio	(16.4%)
• Schistosomiasis		
• *Schistosoma japonicum*	46.0 Mio	(2.1%)
• *Schistosoma haematobium*	39.2 Mio	(1.8%)
• *Schistosoma mansoni*	29.2 Mio	(1.3%)
• Food-borne trematodiasis		
• *Clonorchis sinensis*	19.0 Mio	(0.9%)
• *Paragonimus westermani*	3.2 Mio	(0.2%)
• *Opisthorchis felineus*	1.1 Mio	(<0.1%)

This wormy world (according to King, 2017)

- Hookworms = 451 million cases
- *Ascaris* = 800 million
- *Trichuris* = 435 million

- *Schistosoma* (Bilharzia) = 190 million
- Food-borne trematodes = 75 million

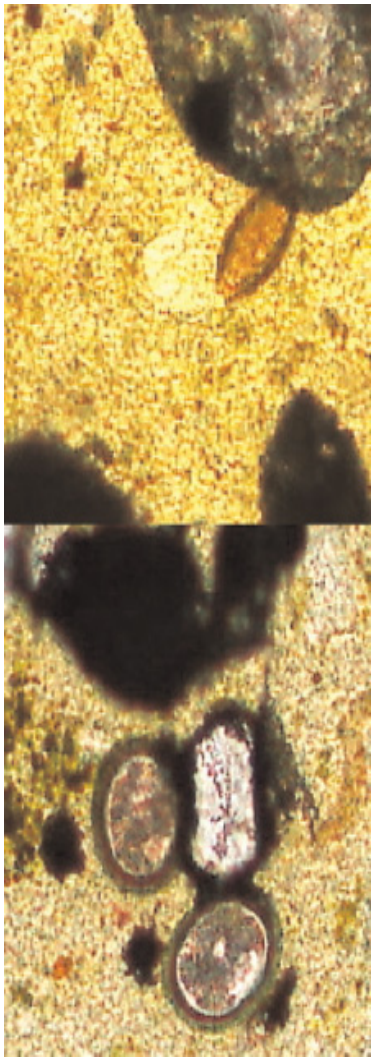
- Filariasis (elephantiasis) = 29 million
- Onchocerciasis = 15 million

- Neurocysticercosis = 2.7 million
- Cystic echinococcosis = 1 million

What did we learn?

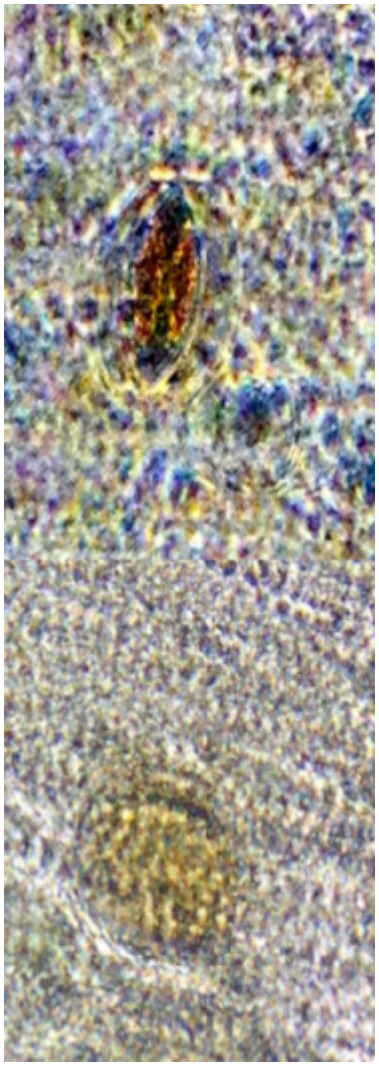
- Parasitic worms are everywhere!
- Progress made
  - Diagnosis – from Kato-Katz to next generation protein mircrorarrays
  - Drugs – new drugs, optimization of existing drugs, combination therapy
  - Major expansion of preventive chemotherapy – shrinking risk maps
  - Integrated control approaches – drugs + IEC + WASH + snail control
  - Recent drive towards elimination/eradication

Diagnostics



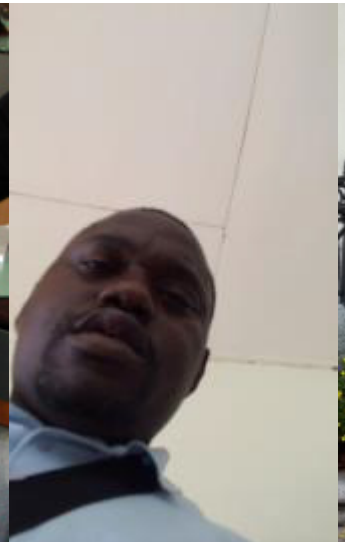
T. trichiura

A. lumbricoides



My personal highlights

- Heavy thinking – where and how?!
- Unintended “selfie”
- The remarkable cycle – will it ever be broken?



What is still needed

- A lot!
- Next generation – with plenty of hair…
- Data, innovation and going beyond status quo
- The best science to address the most neglected issues
- Interdisciplinary research, partnership
- Integrated, multisectorial approaches

Outlook

- Swiss TPH Spring Symposium 2018 (25 April 2018)

Decision Support and Patient Management Systems: Potential and Pitfalls

25 April 2018, Basel, Switzerland

Analyse how digitalisation and technology progress can transform health services and systems in low-and middle-income countries

- Patient management - electronic decision support systems
- Algorithm for diagnosis and treatment of patients
- Health information systems for monitoring and assessment
- Operational challenges and opportunities for health systems strengthening

www.swisstph.ch/en/about/events

Outlook

- Swiss TPH Summer Symposium 2018 (28 June 2018)

Clinical Research in Resource Limited Settings – Mission Impossible or Role Model for Future Drug Development?

28 June 2018, Zentrum für Lehre und Forschung, University Hospital Basel, Switzerland

The Swiss TPH Summer Symposium 2018 invites clinical researchers, drug development specialists and students to review and discuss future approaches to drug development. Topics will include:

- Cost explosion of drug development
- Impact of GCP-guideline amendment 2016
- Conducting sponsor-investigator trials in Switzerland
- Clinical trials in low resource settings
- The Biotech approach to clinical development
- The Pharma view on clinical development
- Alternative business models and partnerships
- What we can learn from R&D in low resource settings

Thanks

- Jennifer Keiser, Peter Odermatt, Hanspeter Marti

Thanks

- Hanh Tran, Theresa Reiker, Adrian Denz, Adithya Pradyumna
  - Our students helping with registrations, etc.
- Marianne Rocha (laptop)
  - Assistance with presentations on both days!
- Charles King, Bruno Levecke, Peter Deplazes, Isaac Bogoch, Ivan Scandale, Elly Kourany-Lefoll, Jean Coulibaly, Yael Velleman, Banchop Sripa, Maria Yazdanbakhsh, Markus Gerber, David Rollinson, Russell Stothard, Jonathan King, Olga Fedorova
  - Our dear speakers from afar

Thanks

- Joanne Blackwell