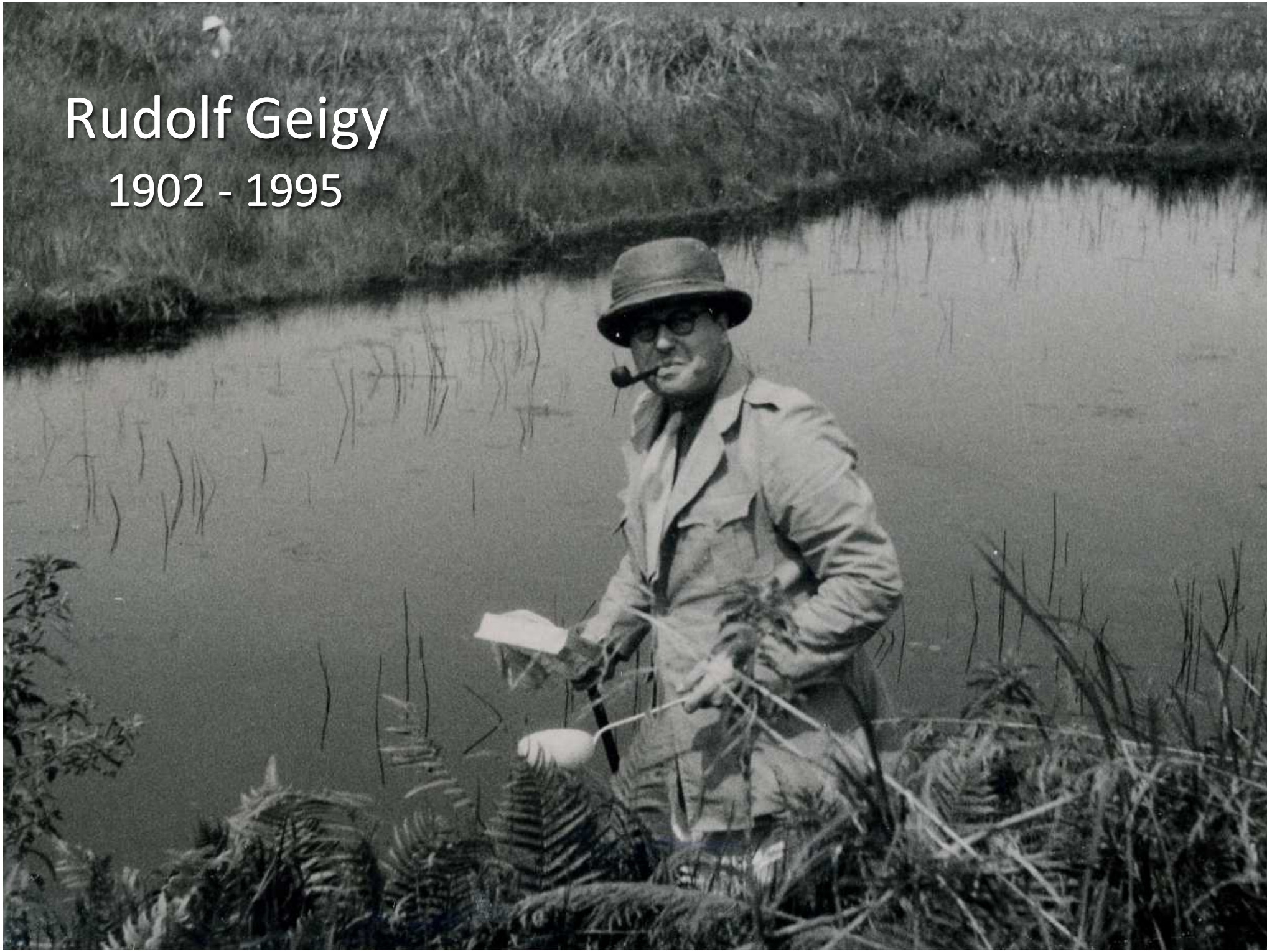
Swiss TPH
Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse

Pascal Mäser
Parasite Chemotherapy Unit
Medical Parasitology and Infection Biology

Academic research case No. 3

African trypanosomes


1943

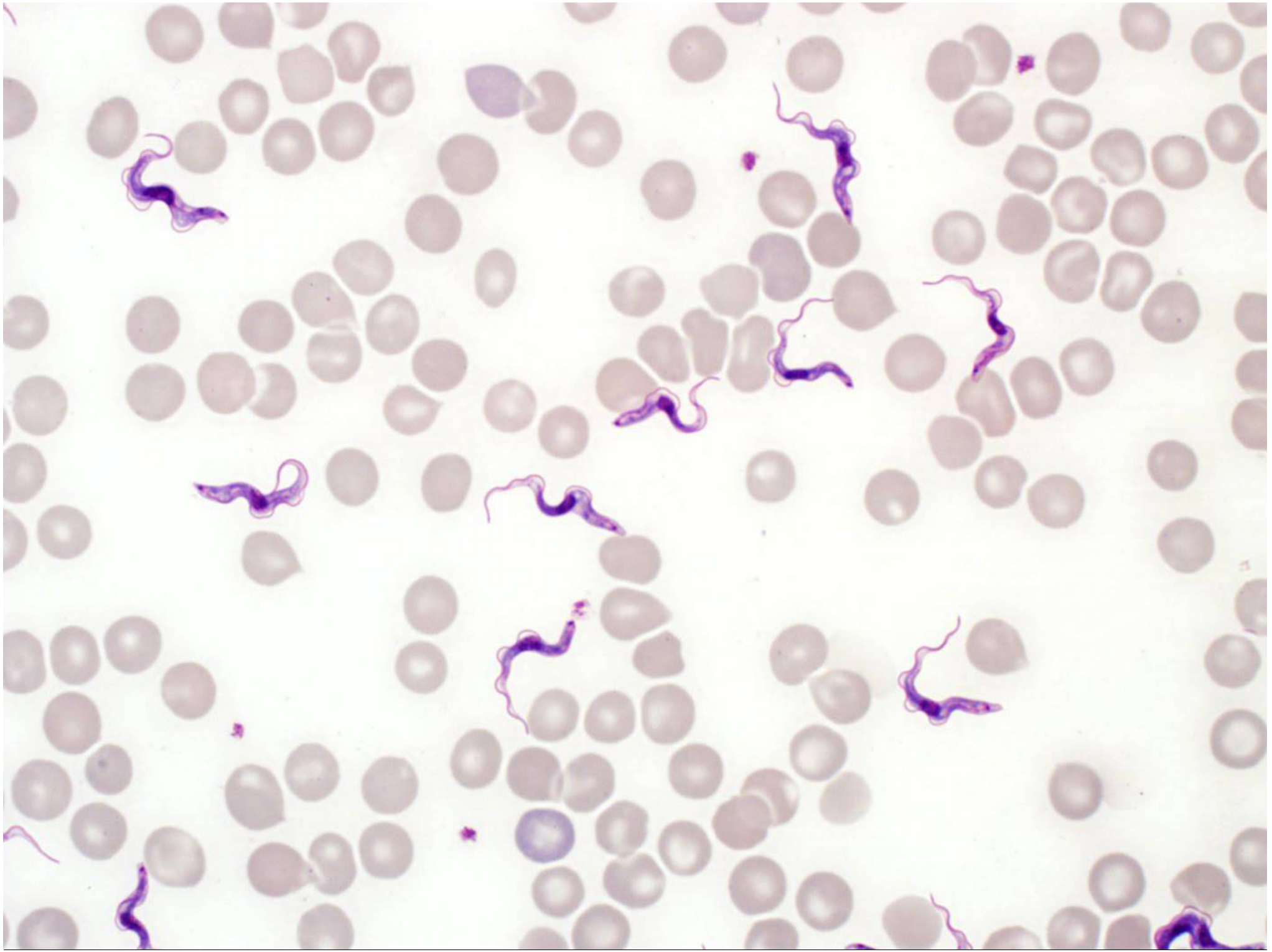

Rudolf Geigy
1902 - 1995

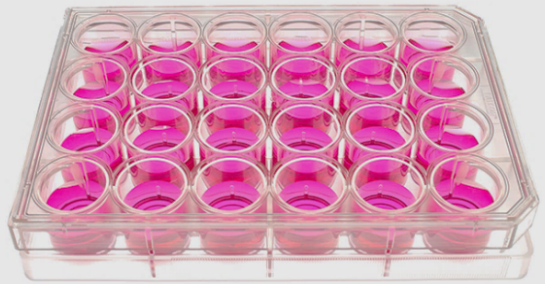
Sleeping Sickness Survey in the Serengeti Area 1971

R. Geigy & M. Kauffmann

Species	No. examined	No. infected
Panthera leo	43	39
Crocuta crocuta	31	23
Kobus defassa	1	1
Alcelaphus buselaphus	20	11

Acta Tropica 30: 12-23





Swiss TPH

Tropical Medicine and International Health

VOLUME 2 NO. 1 PP 13–18 JANUARY 1997

Susceptibility of Ugandan isolated from man and a isometamidium and mel

Enoch Matovu[1,2], Monika Iten[2], John C. K. E and Ronald Kaminsky[2]

[1] *Livestock Health Research Institute, Tororo, Ugan*
[2] *Swiss Tropical Institute, Basel, Switzerland*
[3] *Faculty of Veterinary Medicine, Makerere Universi*

Summary Thirty-six *Trypanosoma bru* south-east Uganda were stud melarsoprol *in vitro*. All stoc isolated from a sleeping sick drugs diminazene and isomet isometamidium were require contrast, the remaining stock 0.01–0.20 ng/ml isometamidi showed reduced susceptibilit population. Control of sleepi therefore, face serious proble likely not be eliminated by r

GENOME BIOLOGY AND EVOLUTION

SMBE

GBE

Comparative Genomics Reveals Multiple Genetic Backgrounds of Human Pathogenicity in the *Trypanosoma brucei* Complex

Mark Sistrom[1,*], Benjamin Evans[1], Robert Bjornson[2], Wendy Gibson[3], Oliver Balmer[4,5], Pascal Mäser[4], Serap Aksoy[6], and Adalgisa Caccone[1]

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Accepted: September 30, 2014

Data deposition: This project has been deposited at NCBI under the accession 705162.

Abstract

The *Trypanosoma brucei* complex contains a number of subspecies with exceptionally variable life histories, including zoonotic subspecies, which are causative agents of human African trypanosomiasis (HAT) in sub-Saharan Africa. Paradoxically, genomic variation between taxa is extremely low. We analyzed the whole-genome sequences of 39 isolates across the *T. brucei* complex from diverse hosts and regions, identifying 608,501 single nucleotide polymorphisms that represent 2.33% of the nuclear genome. We show that human pathogenicity occurs across a wide range of parasite genotypes, and taxonomic designation does not reflect genetic variation across the group, as previous studies have suggested based on a small number of genes. This genome-wide study allowed the identification of significant host and geographic location associations. Strong purifying selection was detected in genomic regions associated with cytoskeleton structure, and regulatory genes associated with antigenic variation, suggesting conservation of these regions in African trypanosomes. In agreement with expectations drawn from meiotic reciprocal recombination, differences in average linkage disequilibrium between chromosomes in *T. brucei* correlate positively with chromosome size. In addition to insights into the life history of a diverse group of eukaryotic parasites, the documentation of genomic variation across the *T. brucei* complex and its association with specific hosts and geographic localities will aid in the development of comprehensive monitoring tools crucial to the proposed elimination of HAT by 2020, and on a shorter term, for monitoring the feared merger between the two human infective parasites, *T. brucei rhodesiense* and *T. b. gambiense*, in northern Uganda.

Swiss TPH

2nd edition

A Guide for Transboundary Research Partnerships

11 Principles

Swiss Commission for Research Partnerships with Developing Countries (KFPE)

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Swiss Academy of Sciences
Akademie der Naturwissenschaften
Accademia di scienze naturali
Académie des sciences naturelles

1. Set the agenda together
2. Interact with stakeholders
3. Clarify responsibilities
4. Account to beneficiaries
5. Promote mutual learning
6. Enhance capacities
7. Share data and networks
8. Disseminate results
9. Pool profits and merits
10. Apply results
11. Secure outcomes

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Researchers cannot sell their results as a farmer would sell potatoes on the market.

Most research partnerships produce knowledge as a public good.

However, the situation becomes more difficult in cases where several of the parties involved lay claim to the same piece of the cake.

When property rights or patent rights are at stake, it is essential to set clear rules early on.