WITH NATIONAL HEALTH LABORATORY SERVICE QUALITY ASSURANCE

NHLS Blood Parasitology PT Scheme Clinical Scenarios 03/22

CHALLENGE:	CLINICAL HISTORY:	INSTRUCTIONS:
PB11/22 (Thick and Thin film)	A sick child in Tonga village, Mpumalanga Province.	A thick and thin stained blood film has been sent to your laboratory; please examine the smear for parasites. If appropriate , perform a parasite count on your thin film and express your count as a percentage, to one decimal place.
PB12/22 (Thick and Thin film)	A toddler is admitted with fever.	You have been provided with a thick and thin stained blood film. Please examine for parasites. If appropriate , perform a parasite count on your thin film and express your count as a percentage, to one decimal place.
PB13/22 (Thin film)	A South African businessman, with recurrent fever following travel in Zambia and Malawi.	You have been provided with a thin stained blood film. Please examine for parasites. If appropriate , perform a parasite count on your thin film and express your count as a percentage, to one decimal place.
PB14/22 (Paper challenge)	A scientist who did Ebola research work in Gabon rainforest, has eosinophilia.	Please examine the micrograph on the paper challenge (page 2) and record your response using answer codes.
PB15/22 (Paper challenge)	Blood slide from a patient who presented for routine testing.	Please examine the micrograph on the paper challenge (page 3) and record your response using answer codes.

PAPER CHALLENGE

PT Scheme: NHLS Blood PTS Challenge number: PB14/22



Micrographs of Giemsa-stained thick and thin blood films (x1000 oil magnification), for challenge: PB 14/22.

PAPER CHALLENGE

PT Scheme: NHLS Blood PTS Challenge number: PB15/22



Micrographs of Giemsa-stained thin blood films (x1000 oil magnification), for challenge: PB 15/22

TEACHING SERIES: Basic guide for identifying Trypanosomes

African trypanosomesor "Old World trypanosomes" are protozoan hemoflagellates of the genus *Trypanosoma*, in the subgenus Trypanozoon. Two subspecies that are morphologically indistinguishable cause distinct disease patterns in humans: *T. b. gambiense*, causing chronic African trypanosomiasis ("West African sleeping sickness") and *T. b. rhodesiense*, causing acute African trypanosomiasis ("East African sleeping sickness"). The third subspecies *T. b. brucei* is a parasite primarily of cattle and occasionally other animals, and under normal conditions does not infect humans.

Life Cycle African Trypanosomiasis **G**DPDx Trypanosoma brucei gambiense & Trypanosoma brucei rhodesi **Tsetse Fly Stages** Mammali Tsetse fly takes **Epimastigotes multiply** a blood meal in salivary gland. They (injects metacyclic trypomastigotes) transform into metacyclic trypomastigotes. Procyclic trypomastigotes leave the midgut and transform into epimastigotes. Tsetse fly takes a blood meal

Fig 1. Life cycle of Trypanosoma

For Survey 0222 a picture of an artefact PB10/22 was sent which most participants identified as *Trypanosoma*, hence the challenge was not assessed.



Fig 2. Artefact from PB10/22



Fig 3. Trypanosoma brucei spp.

A typical trypomastigote has a small kinetoplast located at the posterior end, a centrally located nucleus, an undulating membrane, and a flagellum running along the undulating membrane, leaving the body at the anterior end. Trypomastigotes are the only stage found in patients. Trypanosomes range in length from 14 to 33 μ m.

<u>Reference</u>

https://www.cdc.gov/dpdx/trypanosomiasisafrican/index.html [Accessed 02/11/2022]