

KAODZERA

KULIMBANA NDI MATENDA OOPSA KWAMBIRI





University
of Glasgow

Wellcome Centre for
Integrative Parasitology



KAODZERA: KULIMBANA NDI MATENDA OOPSA KWAMBIRI, NDI BUKU LA NTHABWALA LOMWE LINASINDIKIZIDWA NDI WELLCOME CENTRE FOR INTEGRATIVE PARASITOLOGY, A JAMIE HALL NDI A EDWARD ROSS MUCHAKA CHA 2022.

BUKULI LINALEMEDWA NDI A JAMIE HALL NDI A EDWARD ROSS. LINANTHAUZIRIDWA MUZINTHUNZI NDI A EDWARD ROSS. DR ANNETTE MACLEOD ANATHANDIZA NDI ULANGIZI WA SAYANSI.

ULAMULIRO WONSE WA BUKU LI NDI WA WELLCOME CENTRE FOR INTEGRATIVE PARASITOLOGY NDI OLEMBA. SIKOLOLEDWA KUTI GAWO LILILONSE LA BUKULI LITSINDIKIZIDWE KAPENA KUKOPEDWA MWANJIRA ILIYONSE POPANDA CHILOLEZO CHA OTSINDIKIZA NDI OLEMBA.

BUKULI LINA SINDIKIZIDWA PA MAPEPALA OBWEZEREDWANSO



KAODZERA

KULIMBANA NDI MATENDA
OOPSA KWAMBIRI

OLEMBA: EDWARD ROSS NDI JAMIE HALL

KAODZERA INE
AMANDIOPSA



NDILI NDI MWAYI OSAKHALA NAWO MATENDA WA, KOMA KWA ANTHU AMBIRI MATENDA A KAODZERA NDI VUTO LALIKULU

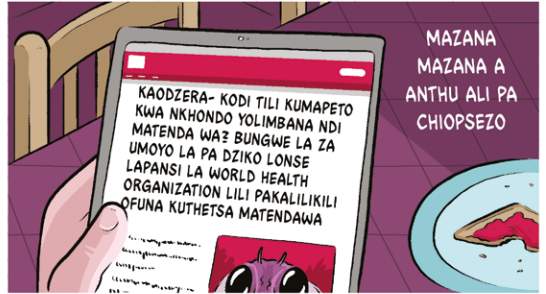
KWA ZAKA ZAMBIRI, NDAKHALA
NDIKUFUFUZA ZA MATENDA A KAODZERA
NDI M'MENE TIZILOMBO TOSAONEKA NDI
MASO TIMAWAYAMBITSIRA



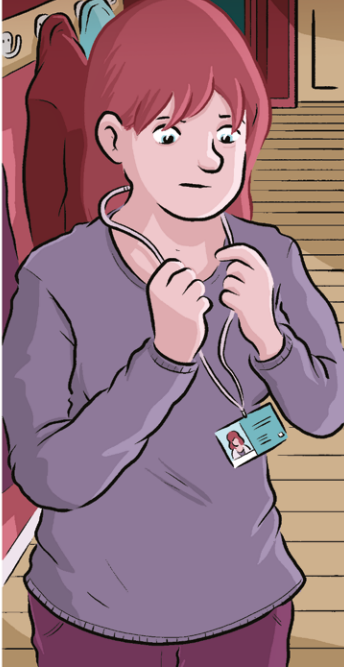
KAODZERA NDI MATENDA
OSAUTSA KWAMBIRI AMENE
AMAKHUDZA MAKUMI ZIKWI
ZIKWI A ANTHU M'MAIKO
OSAUKITSITA PA
DZIKO LA PANSI



MAZANA
MAZANA A
ANTHU ALI PA
CHIOPSEZO



MATENDA WA AMAFOOKETSA ANTHU
NDI KUTENTHA KWA THUPI, KUKANIKA
KUGONA, KUWAWA KWA MUTU
KOMANSO KUKOMOKA. ZIZINDIKIRO
ZA MATENDA WA NDI ZOFOOKETSA
KOMANSO AMATHA KUPHA NGATI
MUNTHU SANALANDIRE CHITHANDIZO



AKAGWIRA
ZIWETO,
AMASOKONEZA
NJIRA ZOPEZERA
NDALAMA
PAKHOMO
KOMANSO CHUMA
CHA M'MADERA



KWA INE, IZI SIZONGONDISANGALATSA. NDAKHALA
ZAKA MAKUMI AWIRI NDIKUFUFUZA ZA MATENDA
WA POGWIRA NTCHITO NDI BUNGWE LA
**WELLCOME CENTRE FOR INTEGRATIVE
PARASITOLOGY**, LIMENE LILI LIMODZI
MWA MA BUNGWE A ZA SAYANSI
A PAMWAMBA KWAMBIRI DZIKO
LONSE LAPANSI PANKHANI
ZA MATENDA NGATI
A KAODZERA.



TIKHOZA KUKHALA KUTALI NDI KUMENE MATENDA A KAODZERA AMAPEZEKA, KOMA NGAKHALE ZILI CHONCHO, KWA NTHAWI YAITALI, DZIKO LA SCOTLAND LAKHALA LILI PA TSOGOLO POPANGA KAFUKUFUKU WA MATENDA WA

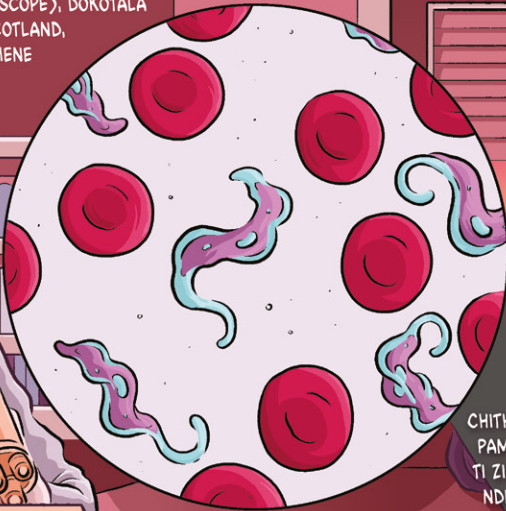
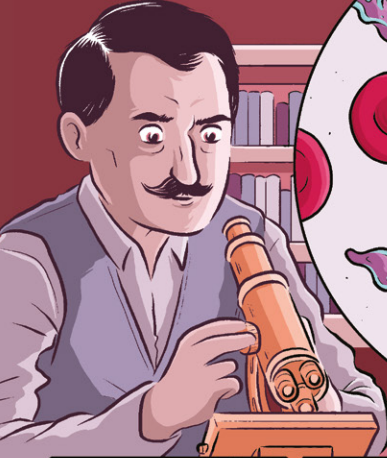


KUMAYAMBILIRO A ZAKA ZANA MAKUMI AWIRI, M'NTHAWI YA ATSAMUNDA, MATENDA A KAODZERA ANKASAUTSA KU MWERA KWA AFRICA.

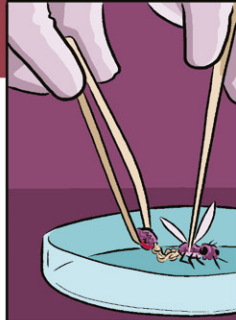
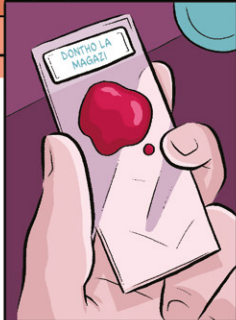
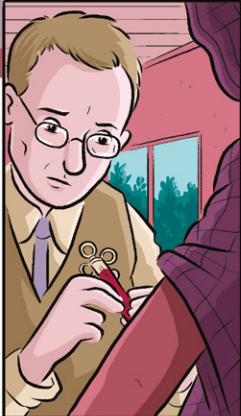


KUFA KWA ANTHU OKWANA KOTALA YA MAZANAMAZANA KUNAPANGITSA KUTI KAFUKUFUKU WOFUNA KUMVETSETSA ZA MATENDA WA AYAMBITSIDWE

POUNIKA MAGAZI NDI MAKINA OONERA TIZILOMBO TOSAONEKA NDI MASO (MICROSCOPE), DOKOTALA WACHILUYA WOCHOKERA KU SCOTLAND, DR DAVID BRUCE ANAONA CHIMENE CHIMAYAMBITSA MATENDA WA



CHITHUNZITHUNZI CHOJAMBULIDWA PAMANJA NDI MKAZI WAKE MARY, TI ZILOMBO TOSAUTA TOSAONEKA NDI MASO TIMENE TIMAYAMBITSA MATENDA WA TINAONEKA



KENAKO, KAGULU KA AKADAULO AZA SAYANSI AKU SCOTLAND NDI ENA, ANAYAMBA KUFUFUZA ZA ZOBISIKA ZA MATENDA WA

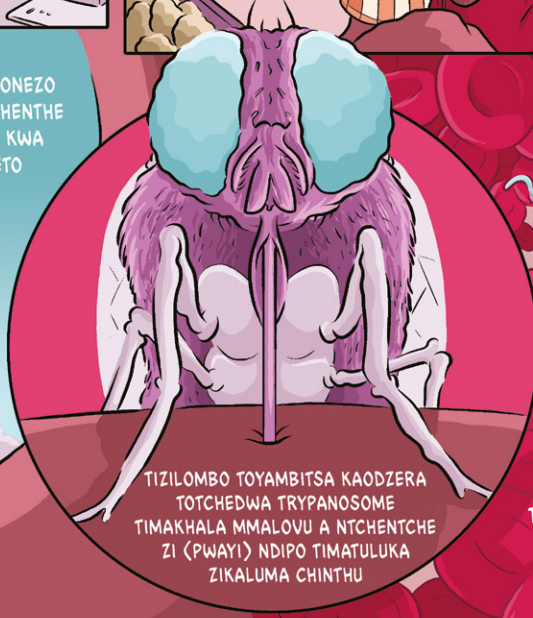


NDIZOTHEKA BWANJI KA CHINTHU KA KANG'ONO KWAMBIRI KUYAMBITSA MAVUTO AMBIRI?



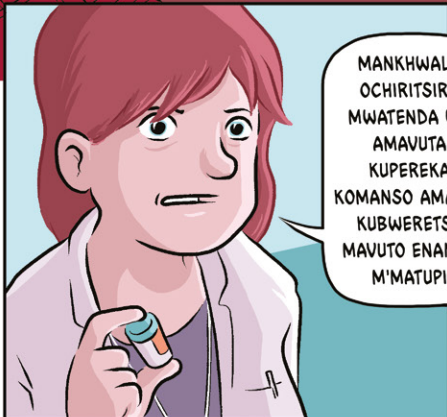
M'MAIKO AMBIRI AKU SAHARA KU AFRICA, NTCHENTCHE ZA PWAYI OLUMA OFALITSA MATENDA A KAODZERA ZIMAKHALA ZIKUWULUKA TSIKU LONSE

ZINA MWA NTCHENTHE ZI SIZAMAKHALA ZA CHISOKONEZO CHABE. KULUMA KWA NTCHENTHE ZI NDI KOOPSA KWAMBIRI KWA ANTHU KOMANSO KU ZIWETO ZOMWE ZIMADALIRA

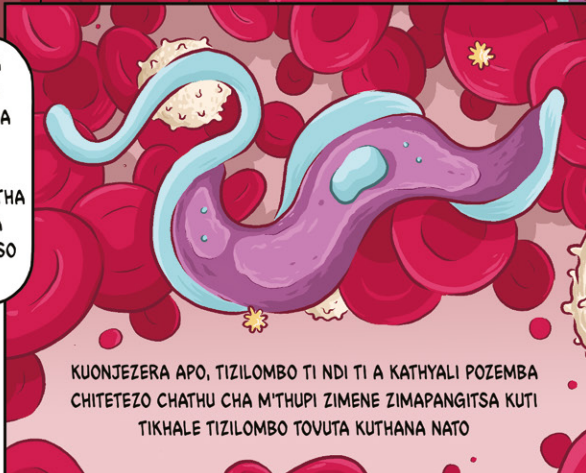


TIZILOMBO TOYAMBITSA KAODZERA TOTCHEDWA TRYPANOSOME TIMAKHALA MMALOVU A NTCHENTCHE ZI (PWAYI) NDIPO TIMATULUKA ZIKALUMA CHINTHU

TIZILOMBO TI TIKALOWA PANSI PA THUPI, KUMAKHALA KOVUTA KUTHANA NATO



MANKHWALA OCHIRITSIRA MWATENDA WA AMAVUTA KUPEREKA KOMANSO AMATHA KUBWERETSA MAVUTO ENANSO M'MATUPI



KUONJEZERA APO, TIZILOMBO TI NDI TI A KATHYALI POZEMBA CHITETEZO CHATHU CHA M'THUPI ZIMENE ZIMAPANGITSA KUTI TIKHALE TIZILOMBO TOVUTA KUTHANA NATO



TIZILOMBO TOYAMBITSA MATENDA A KAOZERA TAKHALA TIKUVUTITSA ANTHU KWA KA NTHAWI KOMANSO KUBWERETSA MAVUTO OSANENEKA PA DZIKO LAPANSI. KUNO KU WCIP, TIMAFUNA TICHITEPO KANTHU

TITATI TIMVETSETSE MMENE TIZILOMBO TI TIMAYAMBISIRA MATENDA A KAOZERA KWA ANTHU NDI NYAMA, TILI NDI CHIKHULUPIRIRO TIKHOZA KUPEZA NJIRA ZOTHANA NATO



MATENDA WA AMAYAMBA TIZILOMBO TI TIKALOWA PA KHUNGU LATHU

A KAFUKUFUKU AKU WCIP ANAPEZA LUSO LATSOPANO LOMWE AMAGWIRITSA NTCHITO POTSATIRA TIZILOMBO TI M'MENE TIMAYENDERA NDI KULOWA M'THUPI

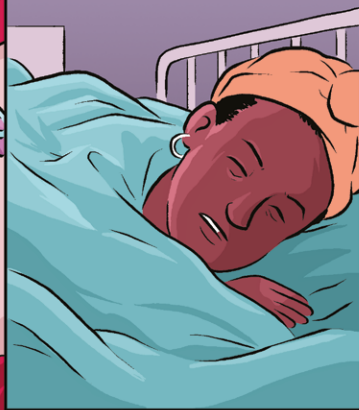


POGWIRITSA NTCHITO DAYA WOWALA KWAMBIRI, TIMATHA KUONA MMENE TIMAYENDERA PANSI PA KHUNGU LATHU KOMANSO KUTITSATIRA NJIRA ZIMENE TIMAYENDA TIKAMAYAMBISA MATENDA

ZOTSATIRA ZATHU ZIKUSONYEZA KUTI
TIZILOMBO TI TIMATHA KUKHALABE NDI
MOYO M'THUPI MWATHU KWA NTHAWI
YAITALI OSAYAMBITSA MATENDA



IZI ZIMAYAMBITSA MAVUTO CHIFUKWA
ANTHU MWAKUSADZIWA AMAKHALA ALI
NDI MATENDA WA NDIPO AMATHA
KUWAFALITSA KWA ZAKA ZAMBIRI

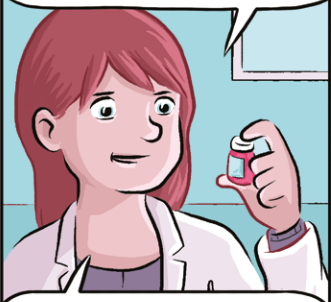


KUPEZA MATENDA
MWACHANGU NDI
NJIRA IMODZI
YOFUNIKIRA KU MBALI
YOWAGONJESERA,
KOMA TIZILOMBO
TOYAMBITSA KAODZERA
TI TIMAVUTA
KUTIZINDIKILA,
KOMANSO, ZIZINDIKILO
ZA MATENDA WA
ZIMAFANANA NDI
MATENDA ENA AMBIRI

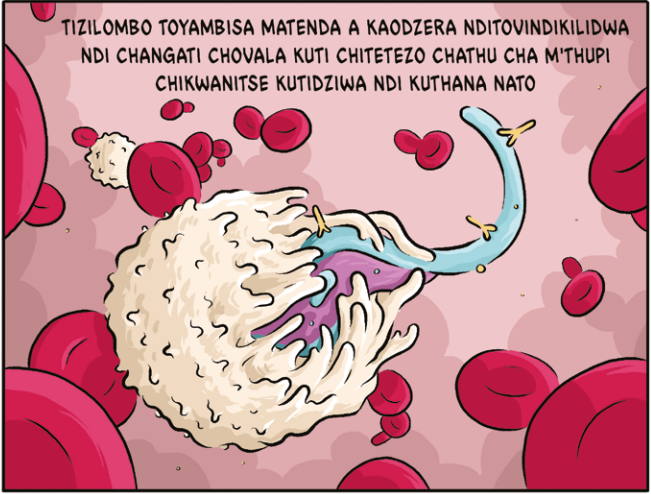


ICHI NDI CHIFUKWA CHAKE KAFUKUFUKU WA MATENDA A KAODZERA AKANGOYAMBA
ALI OFUNIKIRA CHIFUKWA ATHA KUONETA NJIRA ZATSOPANO ZOZINDIKILA TIZILOMBO
TI MWANSANGA KUTI TITHE KUTHANA NATO TISANAFIKE POPEZA MWAYI WOKHAZIKIKA

KWA MATENDA ENA NGATI CHIKUKU, TIKHOZA KUGWIRITSA NTCHITO KATEMERA YEMWE AMATHANDIZIRA CHITETEZO CHATHU CHA M'THUPI POLIMBANA NDI TIZILOMBO TI



KOMA, TIZILOMBO TI NDI TOVUTIRAPO



TIZILOMBO TOYAMBISA MATENDA A KAODZERA NDITOVINDIKILIDWA NDI CHANGATI CHOVALA KUTI CHITETEZO CHATHU CHA M'THUPI CHIKWANITSE KUTIDZIWA NDI KUTHANA NATO




TIMATHA KUGONJETA CHITETEZO CHATHU CHA M'THUPI POSINTHA MAONEKEDWE A ZIVINDIKILO ZAWO ZIMENE ZIMAPANGITSA KUTI TISAMAZINDIKIRIDWE NDI CHITETEZO CHI

MAWANGA ATSOPANOWA AMAPELEKA MPATA WOTI TIZILOMBO TI TITHAWE NDIKUYAMBITSANSO MATENDA. TIZILOMBO TOMWE SITINASINTHE TIMAGWIDWA NDI KUONONGEDWA, NKUONEKERA PAMBALANGANDA



POSINTHASINTHA MAWANGA, TIZILOMBO TI TIMATHA KUKHALA SITEPE IMODZI PATSOGOLO KUTHAWA CHITETEZO CHATHU CHA M'THUPI ZOMWE ZIMAPANGITSA KUTI TIKHALE TOVUTA KUTIGONJETA.



TIZILOMBO TINA TIMATHA KUPANGA ZINTHU ZOFANANA
NGATI TIZOLOMBO TOYAMBITSA KAODZERA. KOMA
TIZOLOMBO TOYAMBITSA KAODZERA TI NDI TI A KATAKWE
POSINTHASINTHA MAWANGA A TIZIVINDIKILO TAWO

KAFUKUFUKU WA KU WCIP
ANAONETSА KUTI TIZILOMBO TI TILI
NDI PAFUPIFUPI CHIKWI CHIMODZI
CHA MAJINI A TIZIVINDIKILOZI. NDIPO
MAJINI WA AMATHA KULUKANALUKANA
PAMODZI NKUPANGA TIZIVINDIKIRO
TINA TA TSOPANO

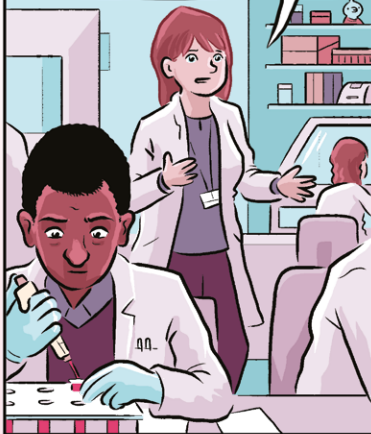


KUTHEKERA KODZISINTHA MAWANGA
MOTEREMU KUMAKHALA KOSANENKA

IZI ZIMPANGITSA CHIYEMBEKEZO
CHOPEZA KATEMERA WOGONJETSERA
TI ZILOMBO TI KUSOWA. KOMA
AZAKAFUKUFUKU AKU WCIP AKUGWIRA
NTCHITO POFUNA KUDZIWA MMENE
TIZILOMBO TI TIMASINTHIRA MAWANGA
MWASATANESATANE.



NGATI TINGAKWANITSE KUTILETSA KUSINTHA MAWANGA, TIKHOZA
KUPELEKA MWAYI KWA CHITETEZO CHA M'THUPI KUTI CHIGWIRE
NTCHITO MOSAVUTA NDI KUTHANA NATO MOTHERATU



CHIKHULUPILIRO CHINA CHOPEZERA MANKHWALA
 ATSOPANO A KAODZERA CHIMACHOKERA PAMENE
 TIKUFUFUZA ZA TIZILOMBO TOYAMBITSA KAODZERA
 KU TCHIRE. TIZILOMBO TI TIKAYAMBITSA MATENDA
 KWA NJATI KAPENA AGWAPE, ZOTSATIRA ZAKE
 SIZIKHALA ZOSAUTSA KWAMBIRI NGATI MMENE
 ZIMAKHALIRA KWA ANTHU

KOMANSO, A NYANI NTHAWI
 ZAMBIRI SAMAGWIDWA NDI
 TIZILOMBO TI



TIKAUNIKA PAMAKINA OONERA TIZILOMBO TOSAONEKA NDI MASO,
 TIMATHA KUONA TI ZINTHU TATING'ONOTING'ONO TA M'MAGAZI A
 ANYANI TOMWE TIMAPANGITSA TIZILOMBO TA KAODZERA
 KUFUFUMA KENAKO KUPHULIKA TISANAFIKE POONONGA



NGAKHALE ANTHU ALI NDI CHITETZO
 CHOFANANIRAKO NDI CHA ANYANI,
 CHITETZO CHI SICHAMPHAMU
 KUYEREKEZA NDI ANYANI ZIMENE
 ZIMAPANGITSA TIZILOMBO TA
 KAODZERA TI TISAMAPHEDWE




A KAFUKUFUKU AKU
WCIP AKUGWIRA
 NTCHITO MOLIMBIKA
 KUFUFUZA ZA
 CHITETEZOCHI. PODZIWA
 MMENE ANYANI
 AMAGONJESERA
 TIZILOMBO TI KUPOSA
 ANTHU, MWINA TITHA
 KUPEZA NJIRA
 ZA TSOPANO
 ZOTIGONJESERA.





NGAKHALE
TIKUGWIRA
NTCHITO
PANG'ONOPANG'ON
O POFUNA KUPEZA
MANKHWALA
ATSOPANO A
MATENDA WA,
TIZILOMBO TI
TIMATHANSO
KUSINTHA KUTI
TISAMAPHEDWE
NDI MANKHWALA
AMENE TI
MAGWIRITSA
NTCHITO PAKALI
PANO



INE NDI ANZANGA KU WCIP
TINAPEZA KUTI TIZILOMBO TI
TIMATHA KUSIYA KUPHEDWA NDI
MANKHWALA POSINTHA JINI
IMODZI YOKHA.

ZOTSATIRA
ZAKUSINTHAKU
ZIMAKHALA
ZONONGA,
MANKHWALA
AMASIYA KUGWIRA
NTCHITO
KUONJEZERA
CHIOPEZO KU
MIYOYO YA ANTHU

CHILUNGAMO CHAKE NDICHOTI
MATENDA A KAODZERA WA NDIWUVUTA
KUWAGONJETSJA NDIPO TIZILOMBO
TAKE TI TIKUNKA NASINTHASINTHA.

POFUNA KUGONJETSJA
MATENDA WA, NDIZOFUNIKA
KUTI TIMVETSETSE MMENE
TIZILOMBO TI TIMASINTHIRA,
KUFALITSIDWA NDI KUSIYA
KUPHEDWA NDI MANKHWALA

POONA MMENE TIKUYENDERA MU MCHIGULU PA MAKINA A MICROSCOPE, NDIMAGANIZA MMENE TIZILOMBO TI TILI TODABWITSA

POSIYANA NDI IFE KWA ZAKA MAZANA MAZANA, NTHAWI ZINA ZIMAONEKA NGATI TIZILOMBO TI TINACHOKERA KU MAYIKO ENA AKUMWAMBA



TIZILOMBO TI TIMATHA KUTIPHUNZITSA ZA ZACHILENGEDWE ZAMOYO, MBIRI ZAKE KOMANSO KUSIYANASIYANA KWAKE.

TIZILOMBO TI NDI ADANI OSAMVA. NGAKHALE CHIWELENGERO CHA ANTHU ODWALA MATENDA A KAODZERA CHIKUTSIKA, NTCHITO YAMBIRI IKADALIPOBE POFUNA KUTIGONJETSA.



NDITIZILOMBO TOPATSA CHIDWI NDITHU, KOMA NDIKOVUTA KUTISILIRA PODZIWA MAVUTO AMENE TIMAYAMBITSA



KAFUKUFUKU AMATIPATSA NZERU ZIMENE ZIMAFUNIKA KUTI TIPEZE ZIDA ZA TSOPANO ZOMWE TINGAGWIRITSE NTCHITO POLIMBANA NDI KUGONJETSA TIZILOMBO TI

LOTO LATHU NDILOTI TSIKU LINA TIZATHA KUTHETSERATU MATENDA A KAODZERA WA



WELLCOME CENTER FOR INTEGRATIVE PARASITOLOGY IMAPEZEKELA
KU SUKULU YA UKACHENJEDWE YA GLASGOW. NTCHITO YATHU YAIKULU NDI
KUFUFUZA ZA MMENE TIZILOMBO TOYAMBITSA MATENDA OSIYANASIYANA
TIMAGWILRA NTCHITO M'THUPI MWA MUNTHU KUTI TIPEZE MANKHWALA NDI
NJIRA ZINA ZOTIGONJETSERA

KUTI MUDZIWE ZAMBIRI ZA NTCHITO YATHU, ONANI TSAMBA LA INTANETI:-
WWW.GLA.AC.UK/WCIP

KAPENA CHEZANI NAFE PA TSAMBA LA MCHEZO LA TWITTER [@WCIPGLASGOW](https://twitter.com/WCIPGLASGOW)

TIKUTHOKOZA DR ANNETTE MACLEOD, DR VICKIE CURTIS, NDI ONSE AMENE ANATENGAPO GAWO
POWELENGA BUKULI KUTI LIMVEKE BWINO

ZAMBIRI ZA OLEMBA BUKU LA NTHABWALI MUNGAZIPEZE PA WWW.EDWARDROSS.CO.UK



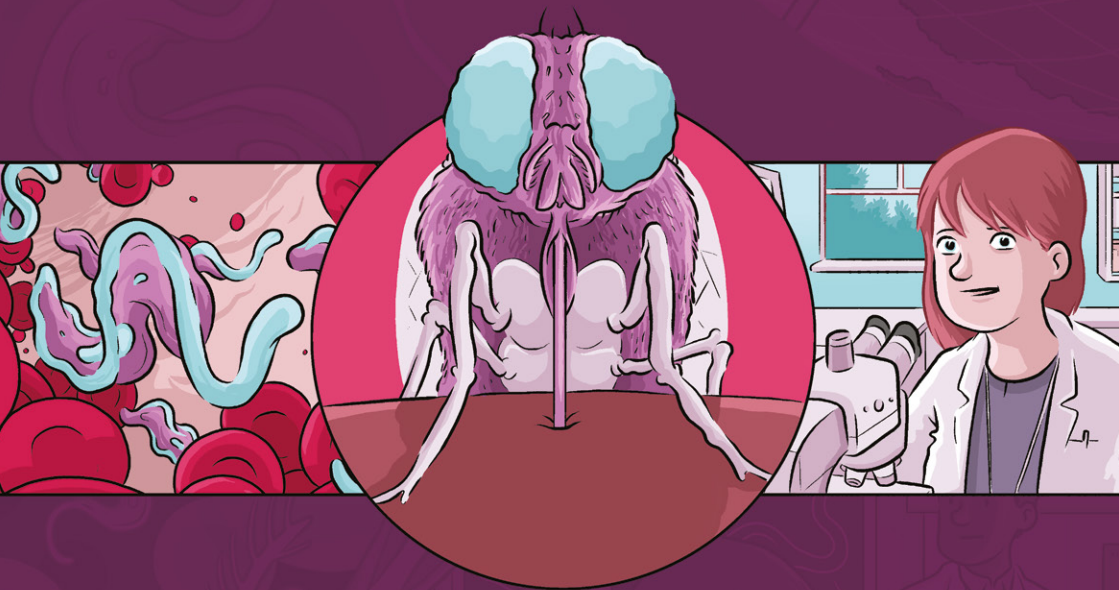
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KAODZERA NDI MATENDA OOPSA KWAMBIRI AMENE AMASAUTSA
MIYoyo YA ANTHU MAZANAMAZANA. MATENDA WA AMAYAMBITSIDWA
NDI TIZILOMBO TOSAONEKA NDI MASO TOMWE TILI NDIKUTHEKERA
KOSINTHA MAWANGA NDICHOLINGA CHOTI TI TISAMAPHEDWE NDI
CHITETEZO CHA M'THUPI KOMANSO KUBISALA KUTI TISAMAONEKE

AKADAULO AZA SAYANSI PA DZIKO LONSE LAPANSI AKULIMBANA
NAWO MATENDA WA POFUNAFUNA NJIRA ZOPEZERA MANKHWALA NDI
A KATEMERA ATSOPANO.



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