

PESTALTO INTERNATIONAL HEALTH SERVICES

A Division of Pestalto Environmental Health Services Inc.

MOSQUITO LARVICIDING

MALARIA MOSQUITO MANAGEMENT

Part 1

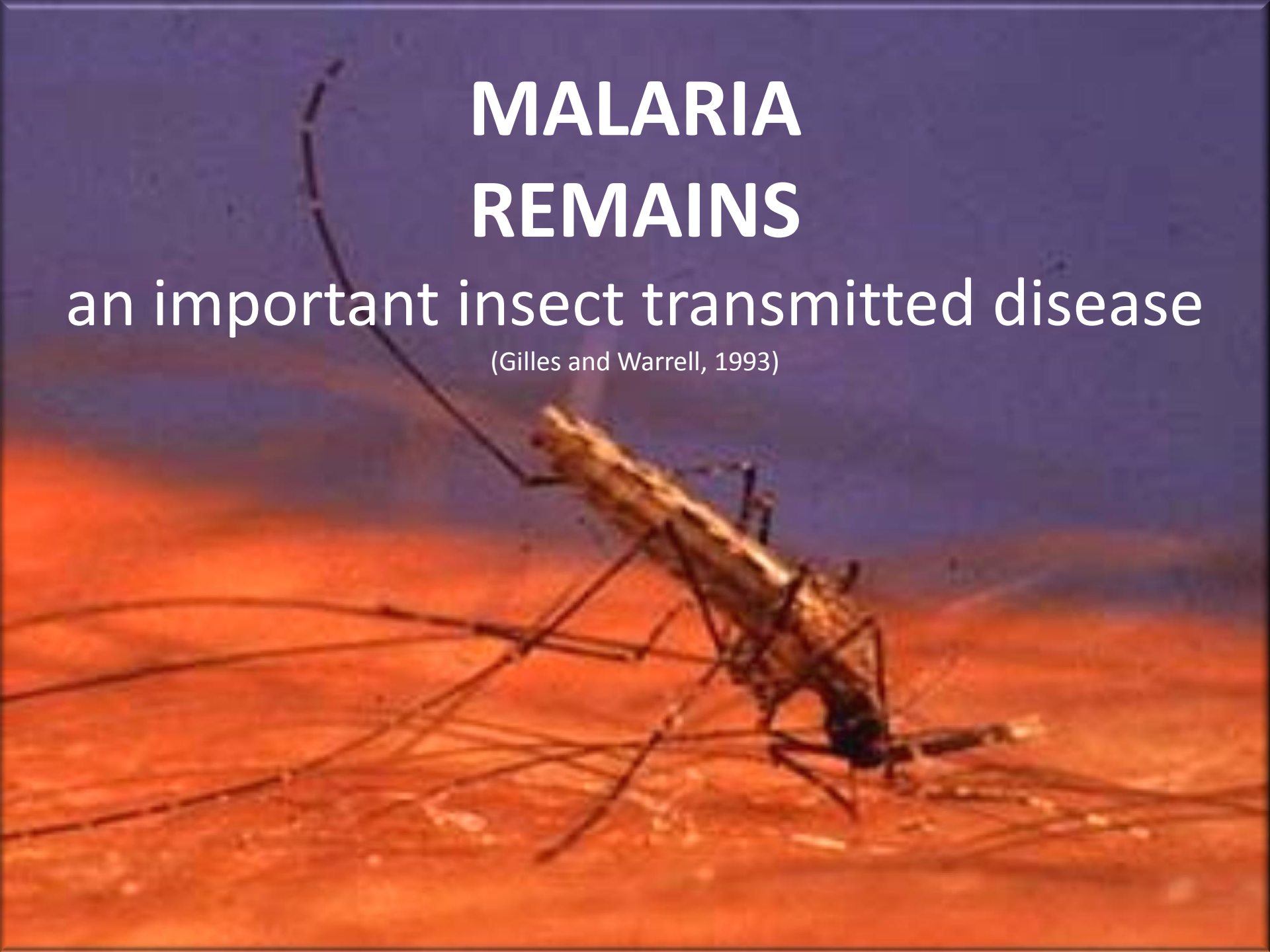
THE PURPOSE OF THIS PRESENTATION

- Describe Malaria and Its Impact
- Explain the Resurgence of the Disease Globally
- Describe the Current Approaches and Concerns
- Discussion - Reintroduction of an Old Concept
Mosquito Larviciding
- Provide Examples of Successful Integrated
Malaria Control Programs and the Components of
Those Programs
- Elaborate on the Centres for Excellence (deleted in
this presentation)

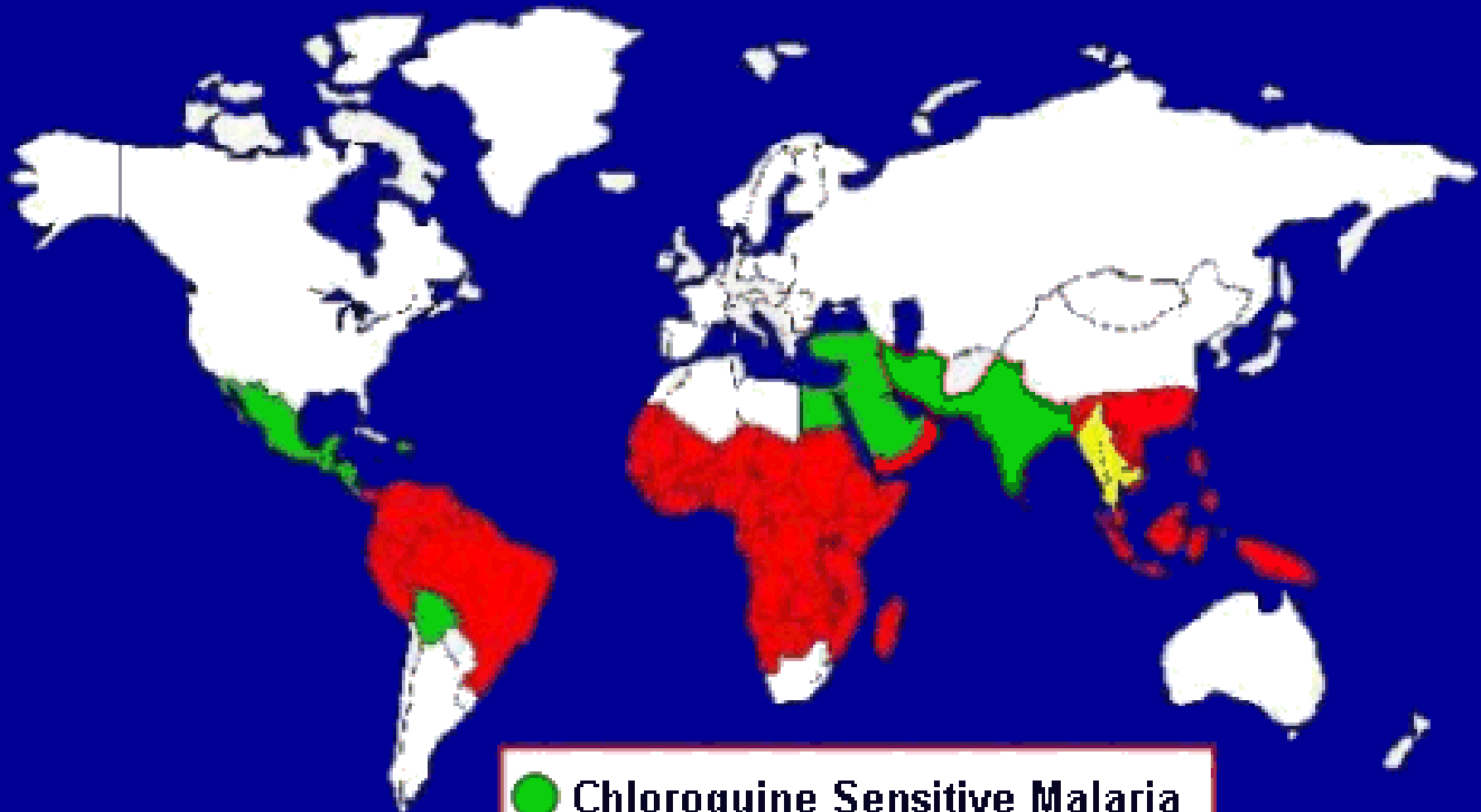
MALARIA REMAINS




an important insect transmitted disease

(Gilles and Warrell, 1993)



Malaria Endemic Areas



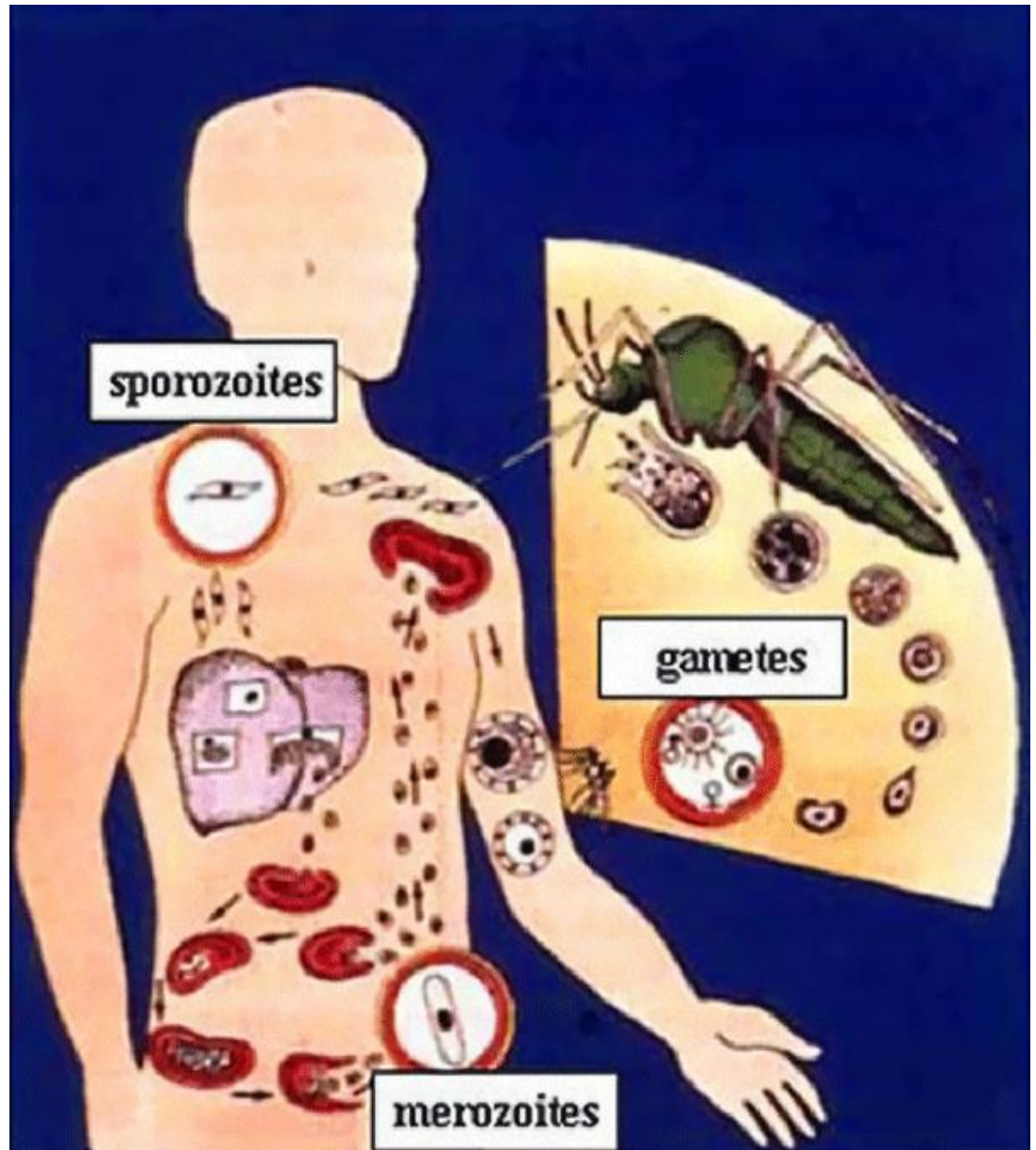
-  Chloroquine Sensitive Malaria
-  Chloroquine Resistant Malaria
-  Multi-Resistant Malaria

MALARIA SYMPTOMS

The parasite infects & multiplies in red blood cells and ruptures them

symptoms include:

anaemia ,
light headedness,
shortness of breath,
fever and sweating,
chills with shivering,
joint pain, vomiting,
convulsions,
jaundice
death





300-500 million cases of clinical malaria per year, with 1.4-2.6 million deaths, mainly among African children

(Curtis 2009)

Copyright Pestalto

Economic Impact



Lost Productivity & Economic Growth

US 12 Billion Annually

(Global Malaria Action Plan)

Copyright Pestalto

Burden on the Medical Systems

A photograph of a patient lying in a hospital bed. The patient is wearing a grey t-shirt and is covered with a white blanket. An IV drip is visible on the left side of the bed. The room has a light-colored wall and a green patterned curtain on the left.

40% of healthcare investments in more than
100 affected countries are used to treat
malaria

(Role Back Malaria Partnership 2008)

Past Successful Malaria Control Programs

Diverse & Meticulously Planned
Implemented by Colonial Governments & Entrepreneurs



ROAN COPPER MINE

Successful Malaria Management Program 1929-1949

Program Components

- Mosquito nets
- Medical Treatments
- Adult Mosquito Control
- Environmental Management
- Larval Mosquito Control

Uttinger et al. 2001



Indicates substantial risk - antimalarials usually advised

Surrounding countries with malaria risk

This map is only intended as a guide since mosquitoes do not respect boundaries and the risk areas shown may not be exact.

Click on an icon below for additional country information

Regional Information



Major Airports



Major Railways



NORTH EAST BRAZIL

Success Eradication of *Anopheles gambia* from 54,000 km² 1930's and 1940's

Program Components

➤ An integrated program but relied overwhelmingly on larval mosquito control

Killeen et al. 2002, Soper & Wilson 1943



Low risk - antimalarials not usually advised

High risk - antimalarials usually advised.

Surrounding countries with malaria risk

This map is only intended as a guide since mosquitoes do not respect boundaries and the risk areas shown may not be exact.

Click on an icon below for additional country information

Regional Information



Major Airports



Major Railways



EGYPT

Success Eradication of *Anopheles gambia* 1930's and 1940's

Program Components

➤ An integrated program but
relied overwhelmingly on
larval mosquito control

(Repeated the Brazilian
experience)



Killeen et al. 2002, Shousha 1948

DAR ES SALAAM & TANGA TANZANIA

Successful Malaria Management Program 1988-1996

Supported by Japanese \$\$

Program Components

- Insecticide Treated Nets
- Medical Treatments
- Indoor Residual House Spraying
- Environmental Management
- Larval Mosquito Control

De Castro et al. 2004



KENYA

Significantly Reduced the Incidence of Malaria In Children 2004-2007

Fillinger et al. 2009

Program Components

- Insecticide Treated Nets
- Medical Treatments
- Larval Mosquito Control



© TRAVAX, Health Protection Scotland

Indicates minimal
risk - antimalarials
not usually advised

Indicates substantial
risk - antimalarials
usually advised

Surrounding
countries with
malaria risk

This map is only intended as a guide since mosquitoes do not respect boundaries and the risk areas shown may not be exact.

Click on an icon below for additional country information

Regional Information



Major Airports



Major Railways

