

# Tropical Dermatology

## WRAIR- GEIS 'Operational Clinical Infectious Disease' Course

**WRAIR**

Walter Reed Army  
Institute of Research

Soldier Health • World Health



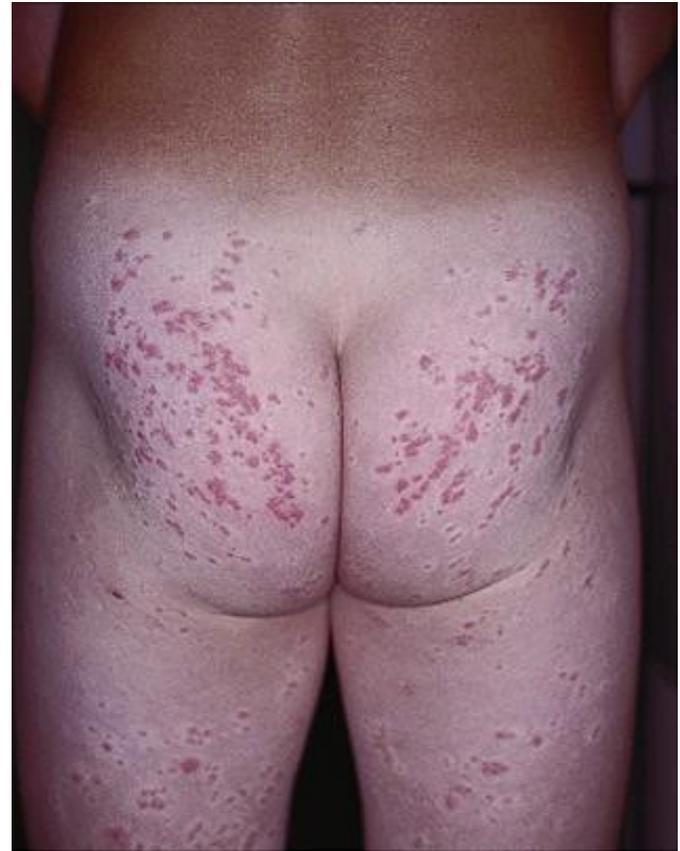
# Tropical Dermatology

... the skin diseases that one sees when traveling



# Tropical Dermatology

. . . and the skin diseases one sees in returned travelers



# Tropical Dermatology

General dermatology  
Infectious Disease



# Common dermatoses in rural, tropical, developing nations

- Eczematous dermatitis
- Infestations
- Pyodermas
- Superficial fungal infections
- Pigmentary disorders



Herpes Zoster



Leishmaniasis



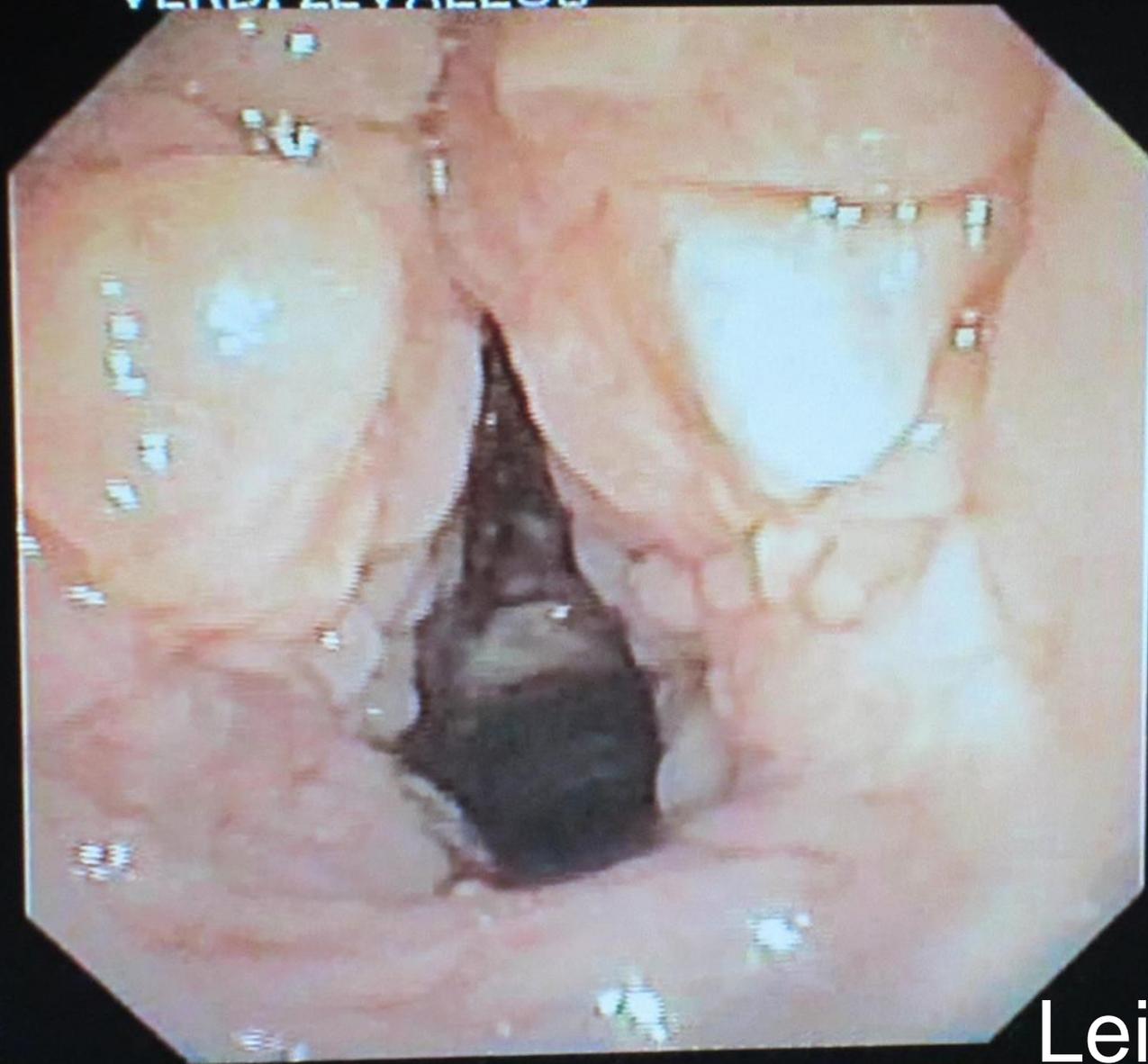
Dermatophytosis –  
Tinea Corporis



Eczema herpeticum



VERDI ZEVALLOS



Leishmaniasis

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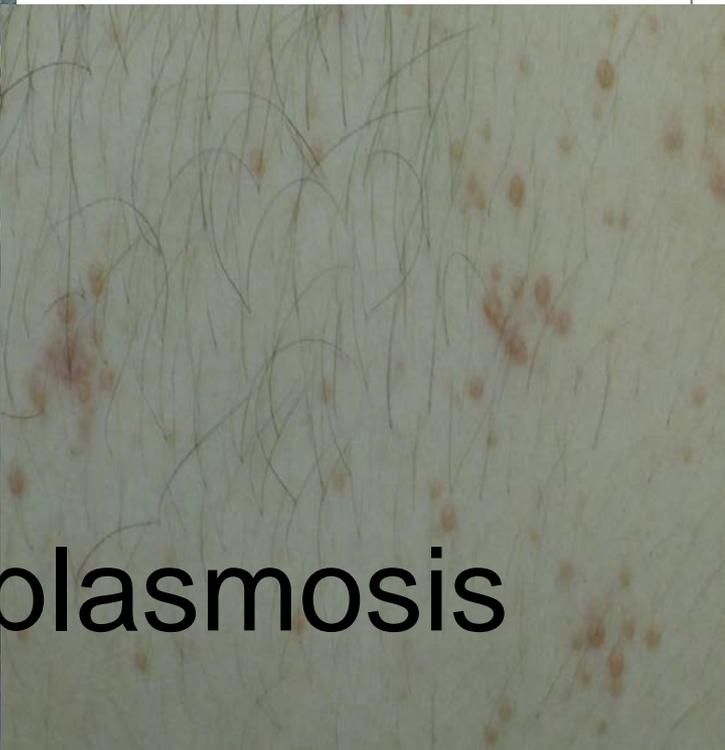
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**Dermatophytosis –  
Tinea Capitis**



**Histoplasmosis**



# Eczematous dermatitis



# Eczematous dermatitis

- Bathing Instructions
- Lubrication is key – emollients/vaseline
- Bleach baths
- Topical steroids for flares



You are stationed at a refugee camp in southern Africa. This 32 yo woman presents with a symmetric dermatitis of the face, upper chest, and arms.

# Pellagra (niacin deficiency)



**Dermatitis**

**Dementia**

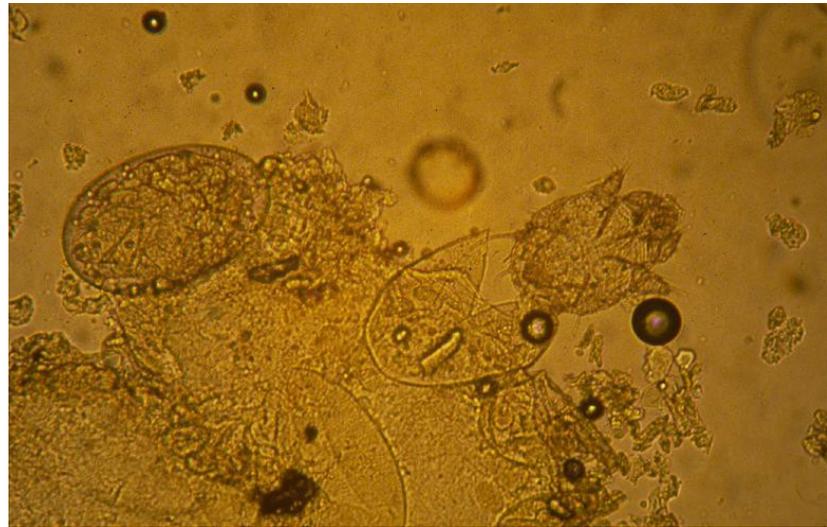
**Diarrhea**

**Treatment:**

- Correct malnutrition, especially protein
- Nicotinamide 100 mg TID for several weeks ( skin should improve within 24 hours)
- Correct electrolyte loss

# Scabies

Intraepidermal  
infestation by  
*Sarcoptes  
scabiei*

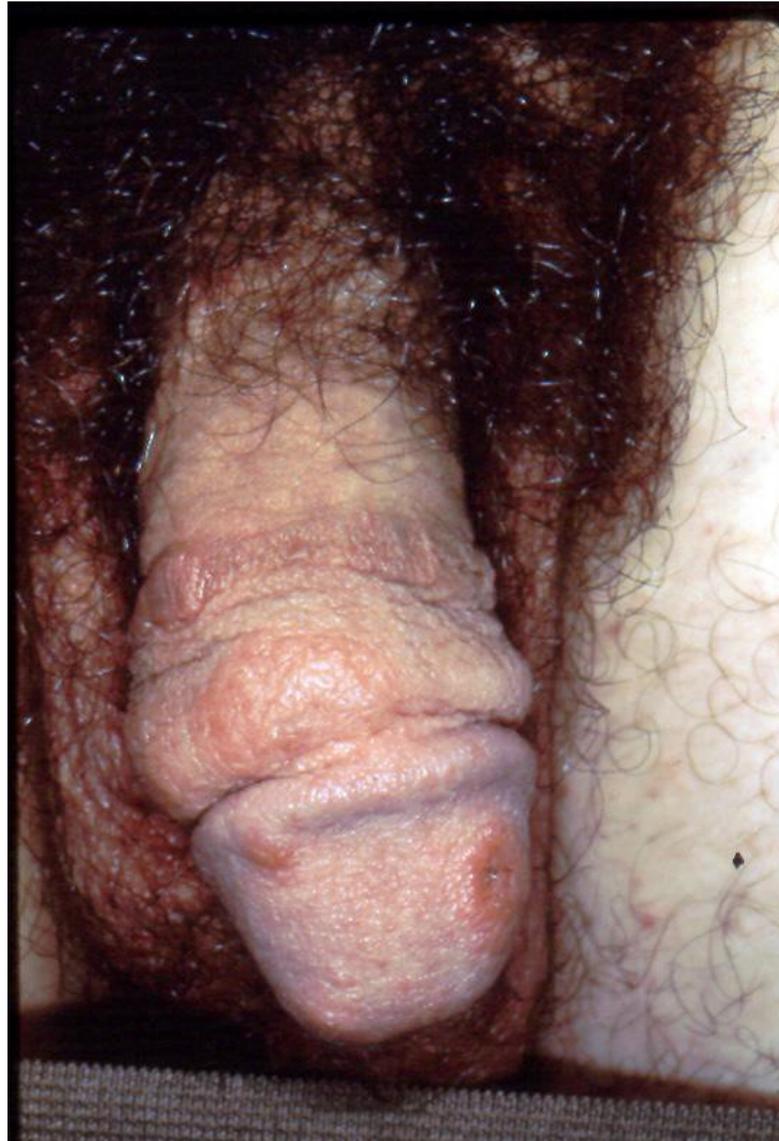




Child and her mother



# Nodular scabies



# Scabies



- Scabies leads to secondary streptococcal infection
- Post-streptococcal glomerulonephritis is a major cause of renal failure in tropical, developing nations
- There is huge morbidity, mortality, and economic costs

Hypertension → stroke

Hematuria → anemia → poor maternal outcome

Proteinuria → hypoalbuminemia → worsens malnutrition

# Pediculosis Capitis - Head Lice



# Pediculosis Pubis

## Pubic Lice



© Gary Williams, MD

# Pediculosis Corporis - Body Lice



# Scabies / Lice

- Disinfect all clothing and bedding
- Treat entire family
- Topical Rx: Permethrin 5% cream, benzyl alcohol 5%, precipitated sulfur 10% in petrolatum, Pyrethrin Systemic Rx: Ivermectin 0.2 mg / kg as a single dose
- Repeat treatment (topical or systemic) in one week
- Itch can continue for weeks until the skin clears the dead mites

# Bacterial Pyoderma - MRSA abscess



# Bacterial Pyodermas



# Bacterial Pyodermas

- It is probably *Staph aureus*
- If tender and fluctuant --> incise, drain, and leave open
- Dicloxacillin 500 mg PO QID for 2 weeks
- Doxycycline 100 mg PO BID for 3-4 weeks for MRSA (also Septra and Clindamycin)

# Dermatophytosis - Tinea Corporis



# Tinea Manuum

"Two foot, One Hand"

Tinea  
Pedis



# Tinea Infections

- Clinical diagnosis
- KOH if possible
- Topical terbinafine or azole BID until clear, then for one more week (usually 4-6 weeks)
- Oral terbinafine 250 mg PO daily x 10-20 days

# 37yo woman noticed light spots on her chest



- Tinea versicolor or Pityriasis versicolor
- Ubiquitous fungal organism (*Malessezia furfur* or *Pityrosporum ovale*)
- Treat with Azoles (oral or topical), selenium shampoos

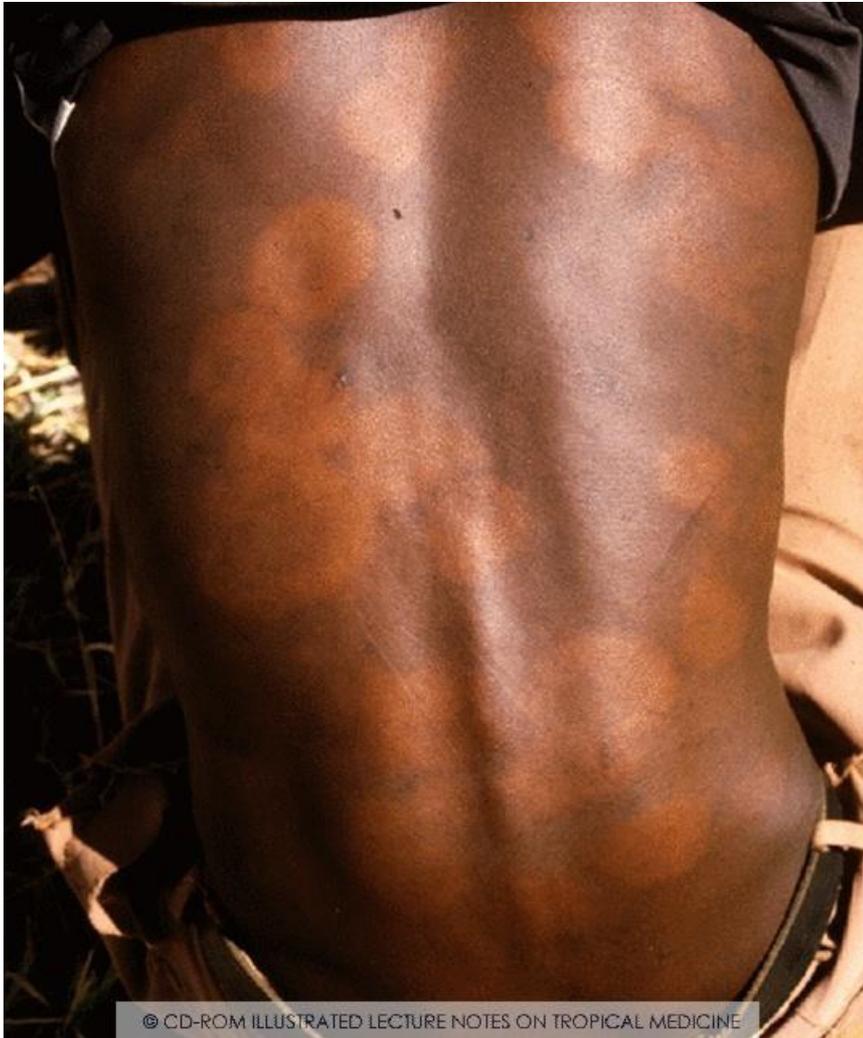
# Postinflammatory hypo- and hyperpigmentation





28yo Zambian  
woman with  
asymptomatic,  
hypopigmented  
plaque on thigh

# Hansen's disease - Leprosy



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**DO YOU HAVE  
A SPOT ON YOUR  
SKIN?**

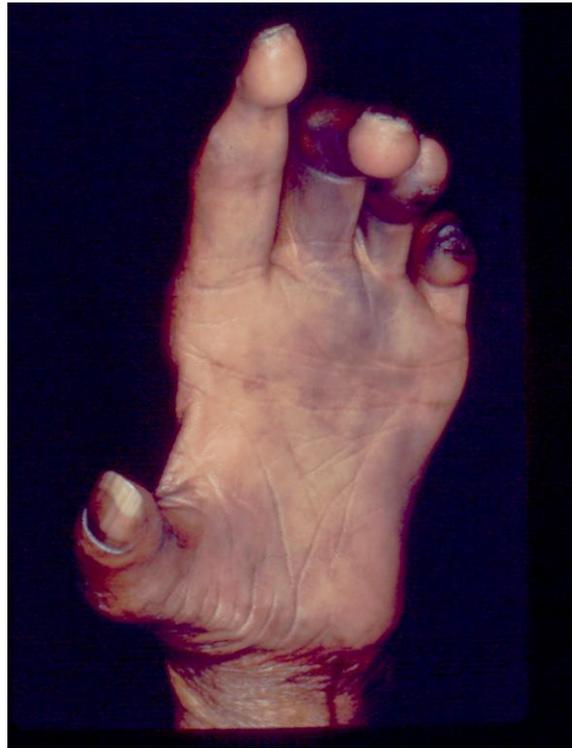
**SEE YOUR DOCTOR!**

**THE PROBLEM**

- ▶ It may be **HANSEN'S DISEASE**.
- ▶ Hansen's Disease is caused by a bacteria (germ).
- ▶ It affects the skin and can damage the nerves.
- ▶ If Hansen's Disease goes untreated, feelings in the hands and feet will be lost.
- ▶ Bruises, ulcers and other damaged skin can result from loss of feeling.
- ▶ Other disabilities can occur.



Sensory



Motor



Auto-amputation

- Atypical mycobacterial infection of cutaneous nerves. Invades lipid-laden myelin in cooler regions of body.
- Causes motor and sensory deficits.



# *Varicella*







*Variola* (Smallpox)

# Monkeypox



A child affected with monkeypox, CDC

Monkeypox is a rare disease that is caused by infection with monkeypox virus, similar to smallpox, but with swollen lymph nodes

**Lymphadenopathy is a distinguishing feature of monkeypox from smallpox.**

The incubation period (time from infection to symptoms) for monkeypox is usually 7–14 days but can range from 5–21 days. Pt may be asymptomatic during this time

<http://www.cdc.gov/poxvirus/monkeypox/symptoms.html>

## **Prodrome**

Persons with monkeypox will develop an early set of symptoms. A person may sometimes be contagious during this period.

The **first symptoms** include fever, malaise, headache, sometimes sore throat and cough, and lymphadenopathy.

This typically occurs with fever onset, 1–2 days before rash onset, or rarely with rash onset. Lymph nodes may swell in the neck (submandibular & cervical), armpits (axillary), or groin (inguinal) and occur on both sides of the body or just one.

## **Rash**

Following the prodrome, lesions will develop in the mouth and on the body. Lesions progress through several stages before falling off. A person is contagious from the onset of the enanthem through the scab stage.

## **PREVENTION:**

Do not consume bushmeat and avoid direct contact with rodents and other animals in affected regions. Virus enters the body through broken skin, respiratory tract, or the mucous membranes.

Human-to human transmission via respiratory droplet or by contact with skin lesions is possible. (Respiratory droplets generally cannot travel more than a few feet, )

<http://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html>

## **CURRENT OUTBREAK in Democratic Republic of the Congo**

*FEB 2016:* **51 cases** of monkeypox have been reported in Aketi Territory, Oriental Province since early February 2016; approximately **190 cases** have been reported in an unspecified time frame. Preliminary data suggests a large, widespread outbreak. In the past, limited outbreaks have occurred sporadically throughout the Congo Basin and West Africa.

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# Ugly feet in the Tropics



# Foot ulcers in the tropics



# Foot ulcers in the tropics

Ecthyma

Anthrax

Malignancy

Buruli ulcer

Tropical ulcer

Diabetic ulcers

Leprotic ulcers

Sickle cell disease Deep

fungal infection

Tuberculosis



# 16yo boy in refugee camp, Congo/Zaire



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# Mycetoma

Madura foot

Mossy foot

## Clinical triad

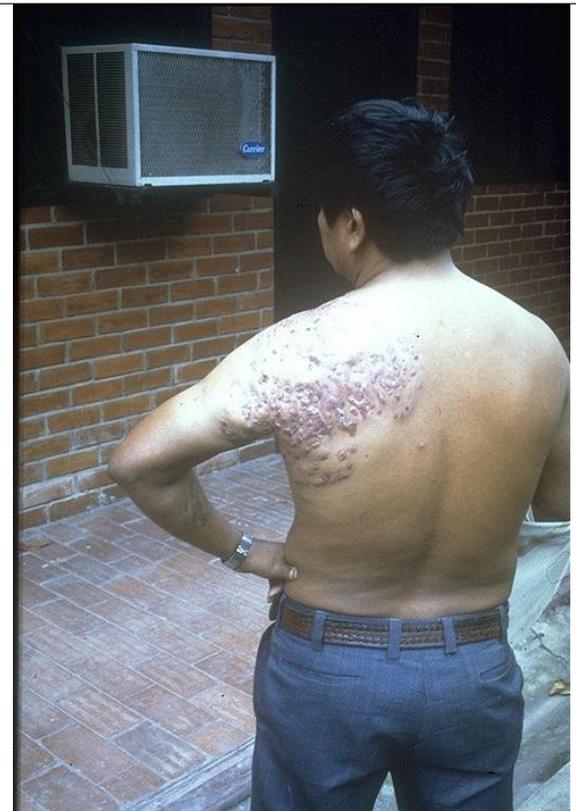
Tumefaction

Draining sinuses

Extruded grains

## Etiology

True fungal (Eumycetoma) vs  
bacterial (Actinomycetoma)



© Develoux, 2003



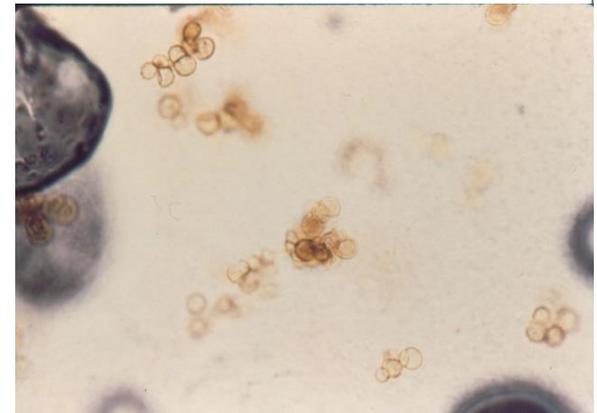
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Other causes  
of fungating lesions  
on the legs & feet?



# Chromoblastomycosis

Several species of dematiaceous fungi



# 16yo boy returns home from Venezuela





# Tungiasis

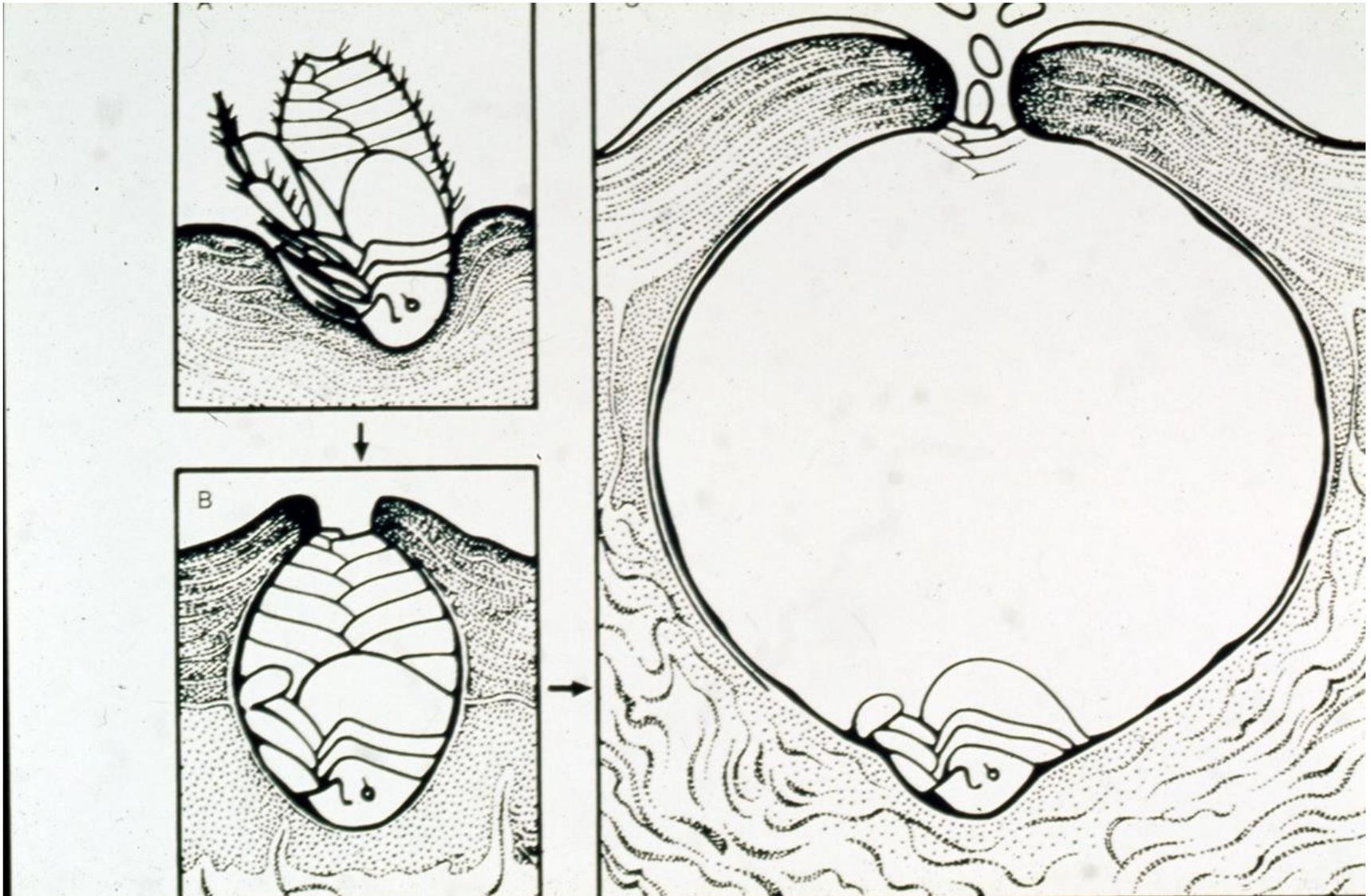
*Tunga penetrans*

(chigoe or jigger flea)

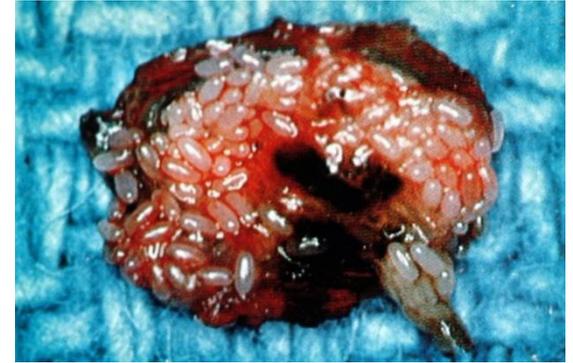
Embedded gravid flea



Gravid female burrows into flesh, leaving uterine pore open.



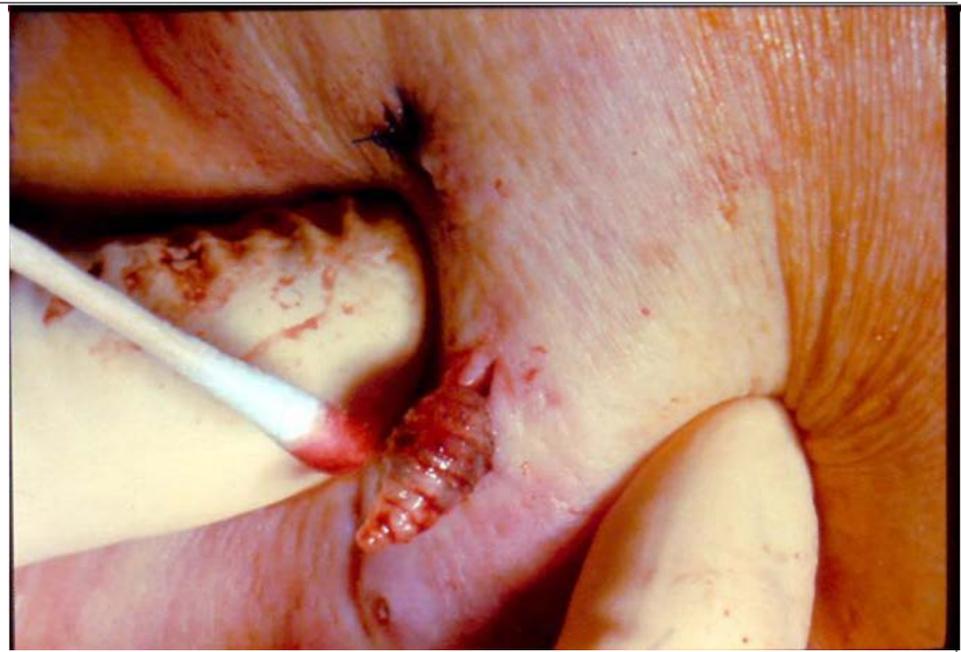
# Tungiasis



- Prevention is key - wear shoes!
- Curettage or excision of the burrow is recommended to remove organism
- Thiabendazole 25 mg/kg/day for several weeks for heavy infestation

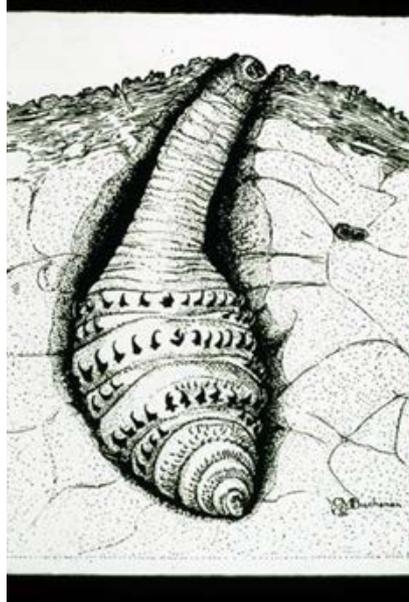
# 44 yo Peace Corps volunteer returned from Ghana with this "pimple" . . .





# Myiasis

the infestation of human tissue by fly larvae

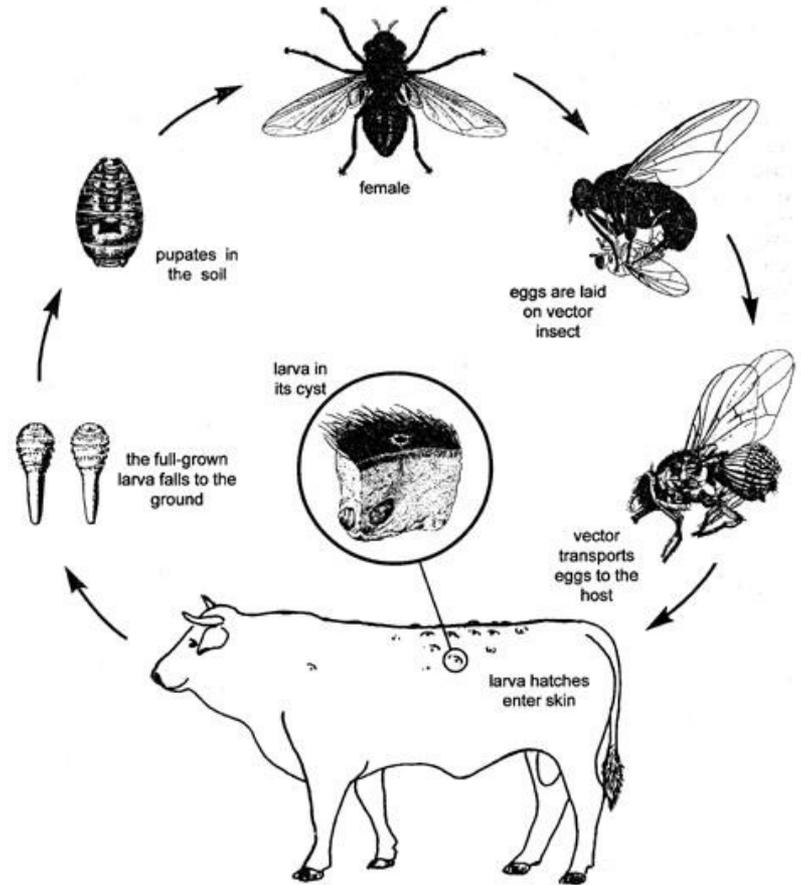




**Cordylobia anthropoga**



**Dermatobia hominis**



# Myiasis

- Incise lesion and remove larva with forceps
- Inject local anesthetic under larva to force out
- Anesthetic will paralyze the larva and make for easier extraction
- Occlude opening of breathing hole which will cause larva to migrate outwards



34 yo anthropologist  
returning from a mission in  
rural Laos, Cambodia, and  
Vietnam.

Developed oddly-shaped itchy  
rash after returning home.

# Cutaneous larva migrans

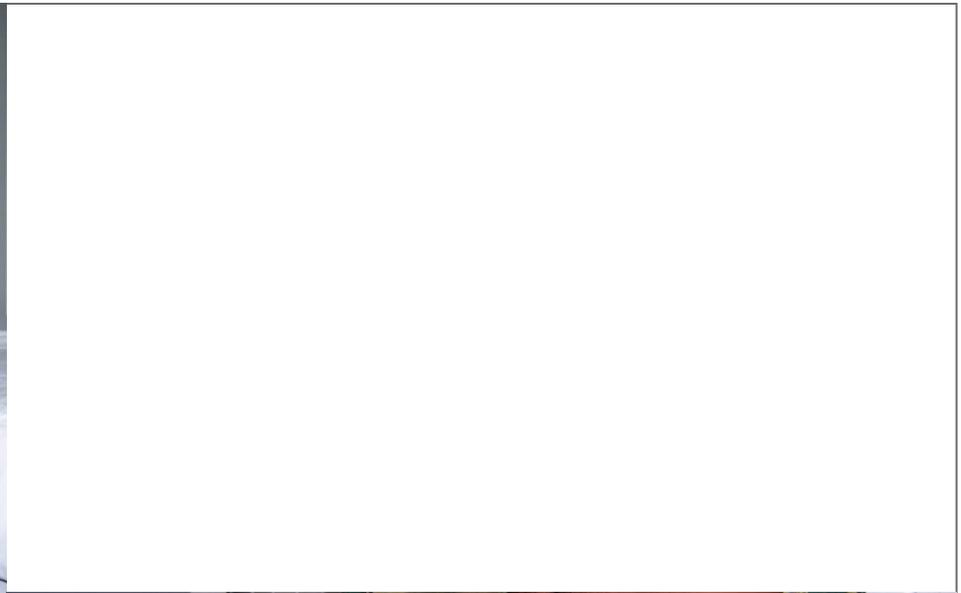
## Dog hookworm

*Ancylostoma Brazilense*

Albendazole 400mg/day x 3 days

Ivermectin 0.2mg/kg single dose





18yo Guyanese male  
reporting for medical  
entrance exam

# Lymphatic Filariasis

Estimated 120 million people affected

More than 80 countries endemic

Physical, Economic, Social and Psychological Impact

Global burden

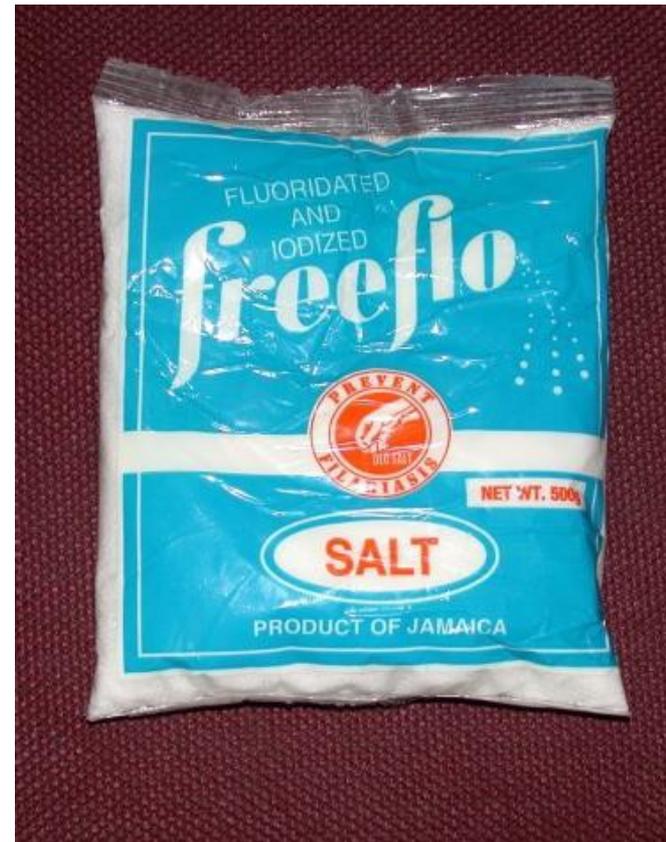
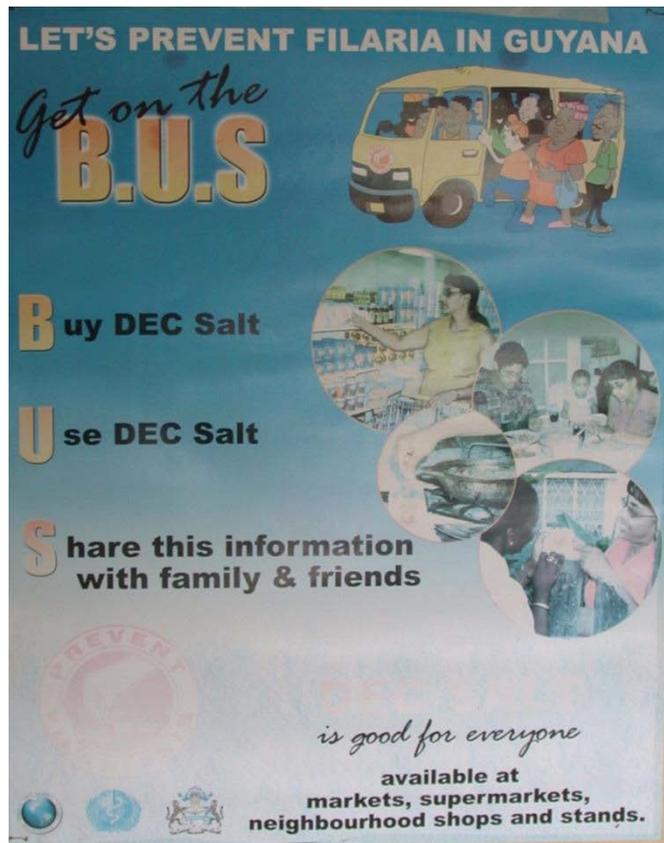
Total infected (microfilaria positive)	45 million
Lymphoedema/ elephantiasis	15 million
Hydrocele/ Urogenital	25 million
Acute inflammatory attacks	15 million

\*WHO, *World Health Report*

Global campaign to eliminate lymphatic filariasis

uses ivermectin and albendazole to treat cases.

DEC Salt (diethylcarbamazine) to treat low levels of filaremia.



# 15yo girl complains of chronic ankle pain and swelling . . .



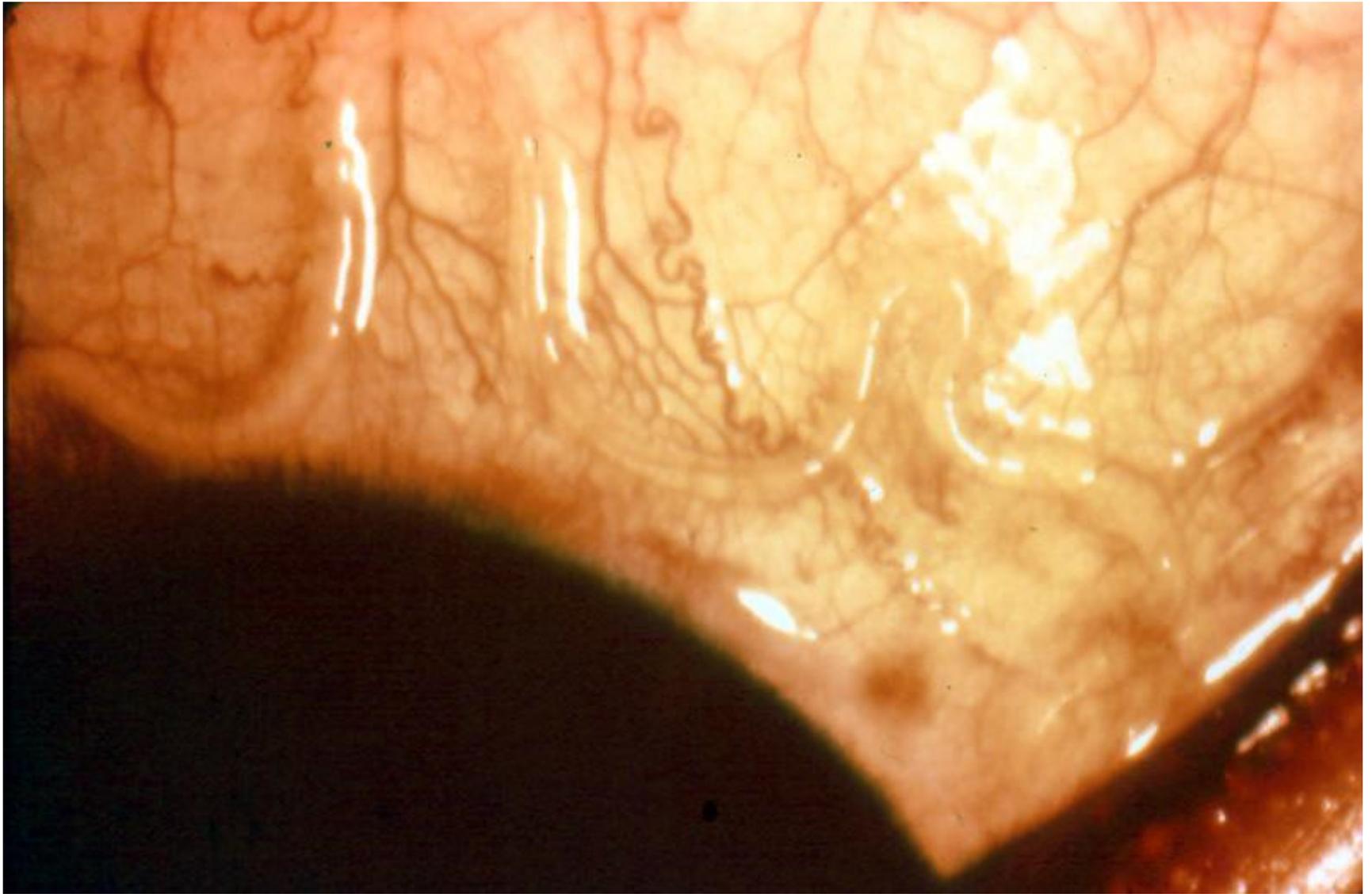
**... and is being evaluated for delusions of parasitosis**



# Loiasis - subcutaneous filariasis

## Loa loa



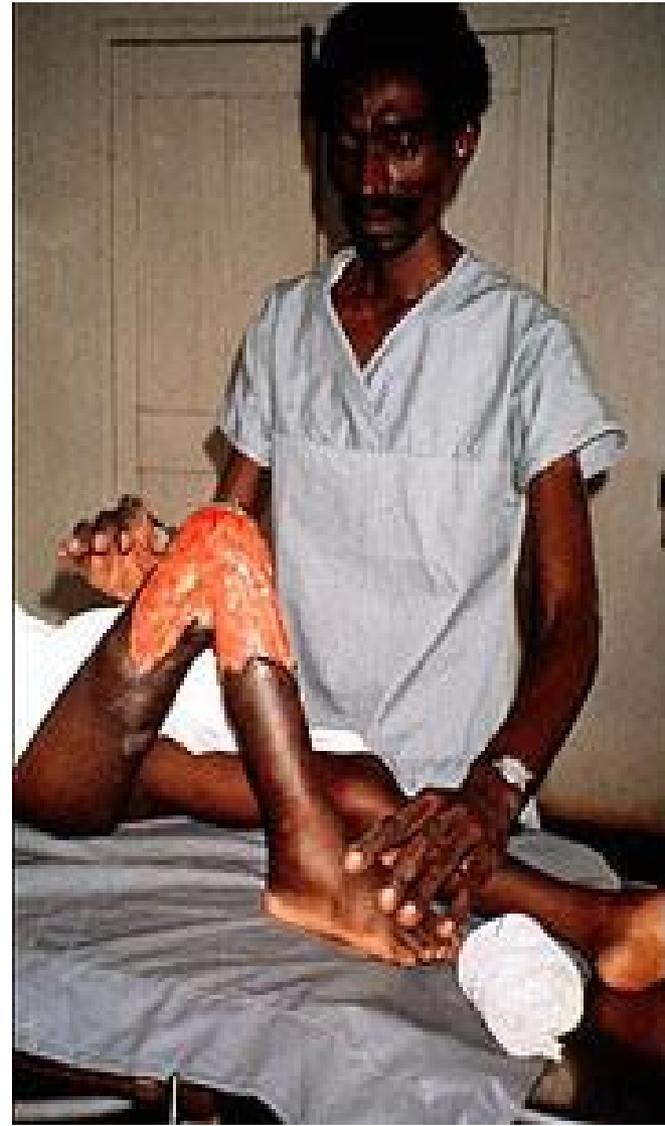




# Loiasis - Tropical Swelling

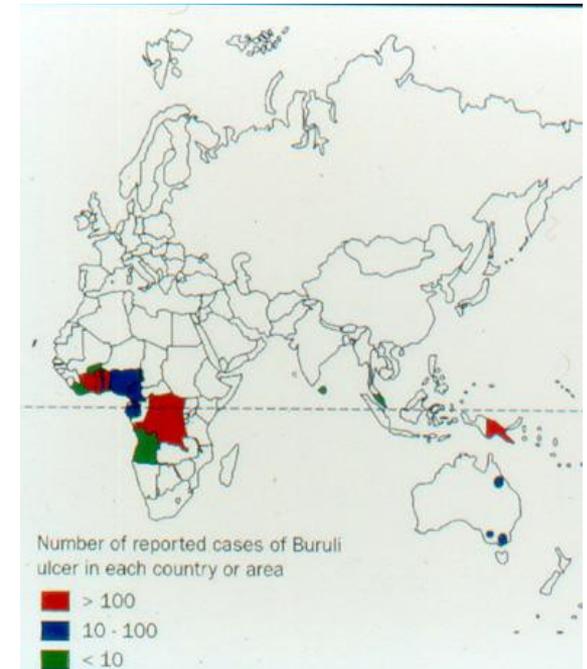
- **FOUND IN WEST/CENTRAL AFRICA**
- **FIRST SIGN IS PAINFUL SUBCUTANEOUS SWELLINGS (CALABAR SWELLINGS)**
- **TRANSMITTED BY THE MANGO FLY**
- **DIETHYLCARBAMAZINE KILLS ADULTS AND MICROFILARIAE AND IS GIVEN FOR 3 WEEKS**

# Children in Ghanaian village



# Buruli Ulcer

- Caused by mycobacterium ulcerans
- Painless early nodule, late ulcer
- Produces toxin, little or no inflammation
- Treatment is wide, deep, excision



# Common Dermatology

# Acne



# Herpes Simplex Virus



# Herpes Zoster



# Psoriasis



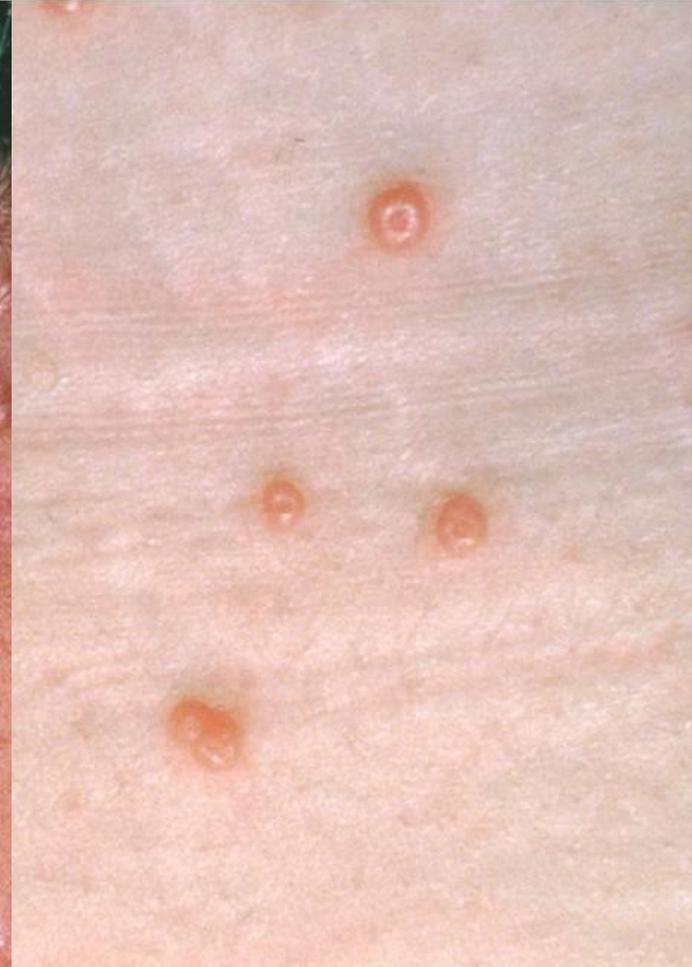
# Vitiligo



# Warts



# Molluscum



# Keloids



# Prurigo Nodules



# Dermatitis

