Paracoccidioides

(P. brasiliensis & P. lutzii)

PARACOCCIDIOIDOMYCOSIS

A chronic granulomatous disease of the lungs, mucous membranes, skin and lymph nodes.

Dimorphic Fungi

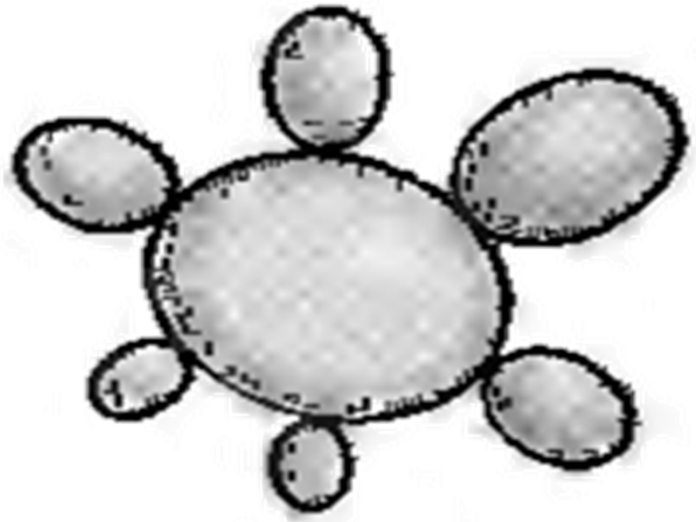
- Histoplasmosis
- Blastomycosis
- Coccidioidomycosis
- Paracoccidioidomycosis
- Sporotrichosis
- Penicilliosis marneffei

Disease of *Paracoccidioides*

- Paracoccidioides brasiliensis causes para-coccidioidomycosis, also known as South American blastomycosis.

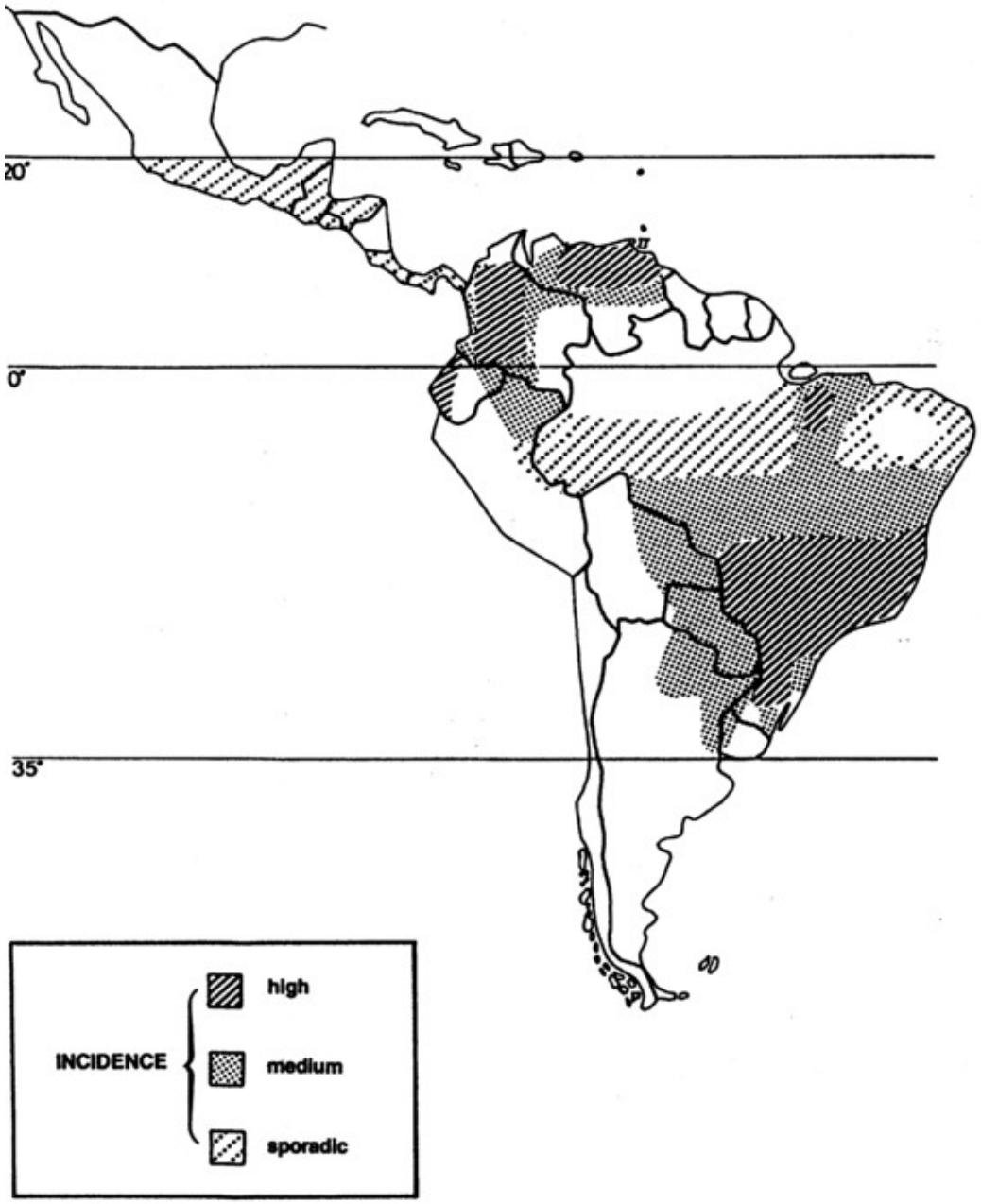
Properties of *Paracoccidioides*

- P. brasiliensis is a dimorphic fungus that exists as a mold in soil and as a yeast in tissue.
- The yeast is thick walled with multiple buds, in contrast to *B. derrnatitidis,* which has a single broad-based bud.



Transmission & Epidemiology of *Paracoccidioides*

- The spores are inhaled and early lesions occur in the lungs.
- Asymptomatic infection is common.
- Alternatively oral mucous membrane lesions, lymph node enlargement and sometimes dissemination to many organs develop.



Geographic distribution of paracoccidioidomycosis.

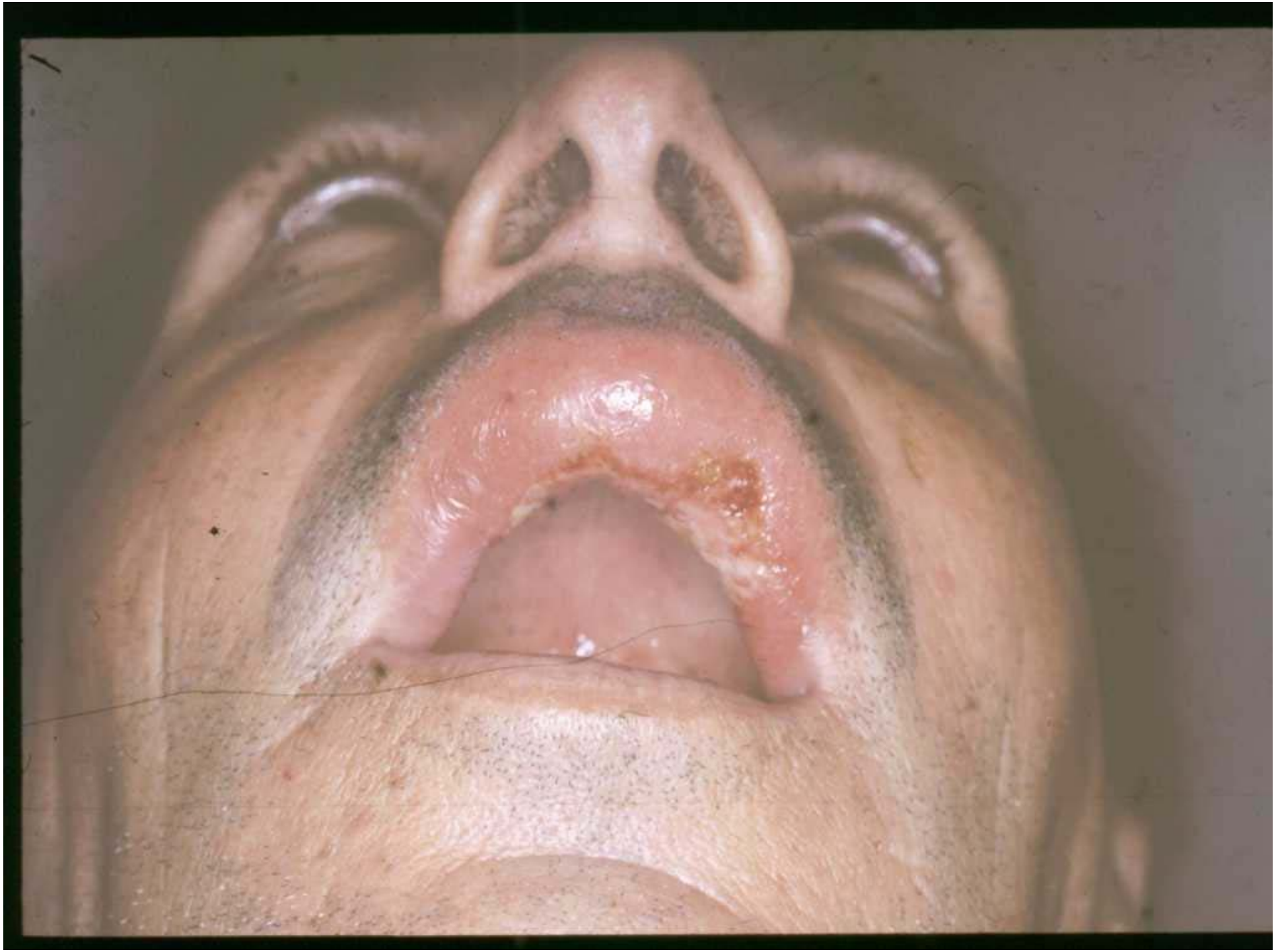
Pathogenesis & Clinical Findings of *Paracoccidioides*

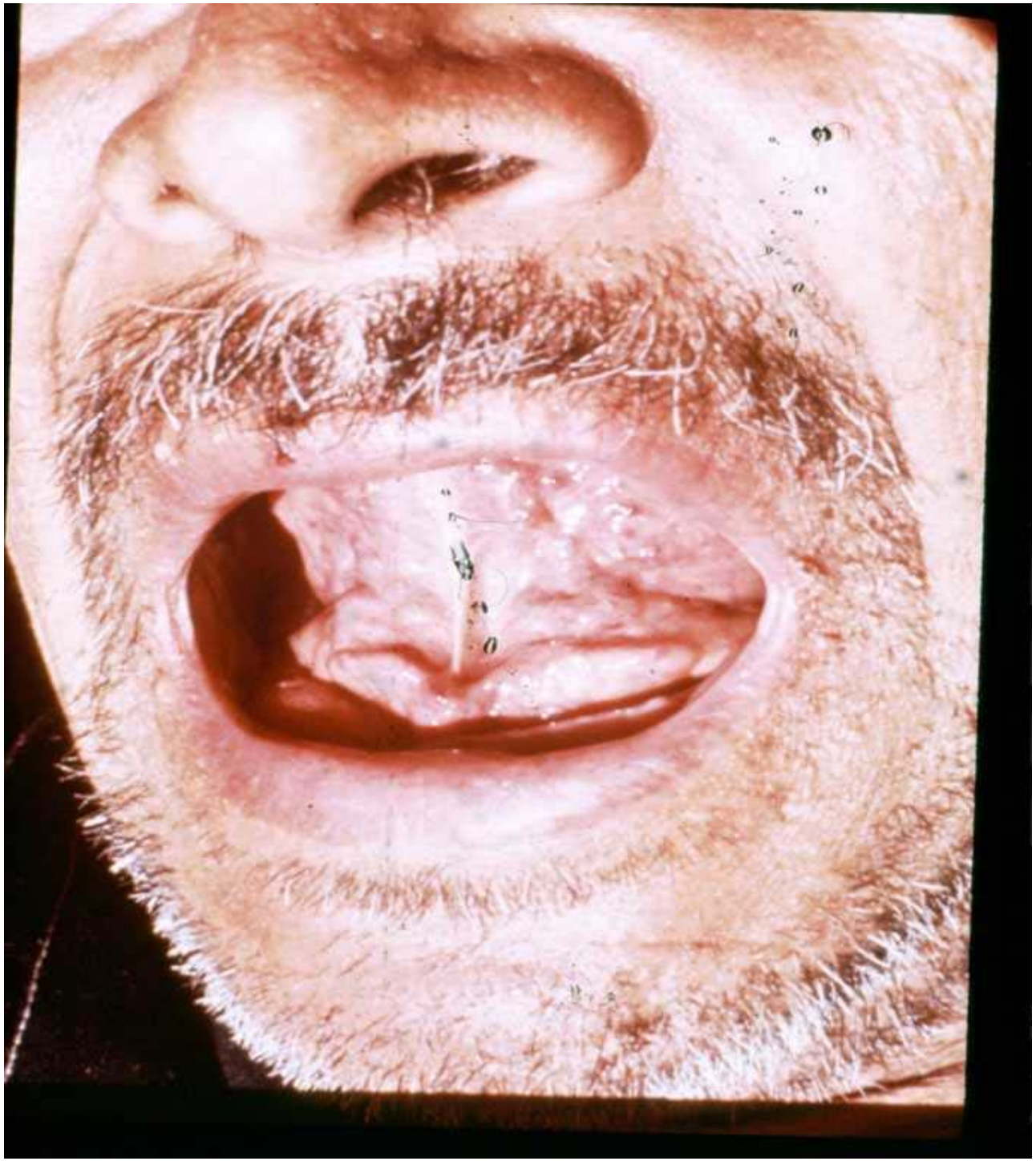
- This fungus grows in the soil and is endemic in rural Latin America. Disease occurs only in that region.

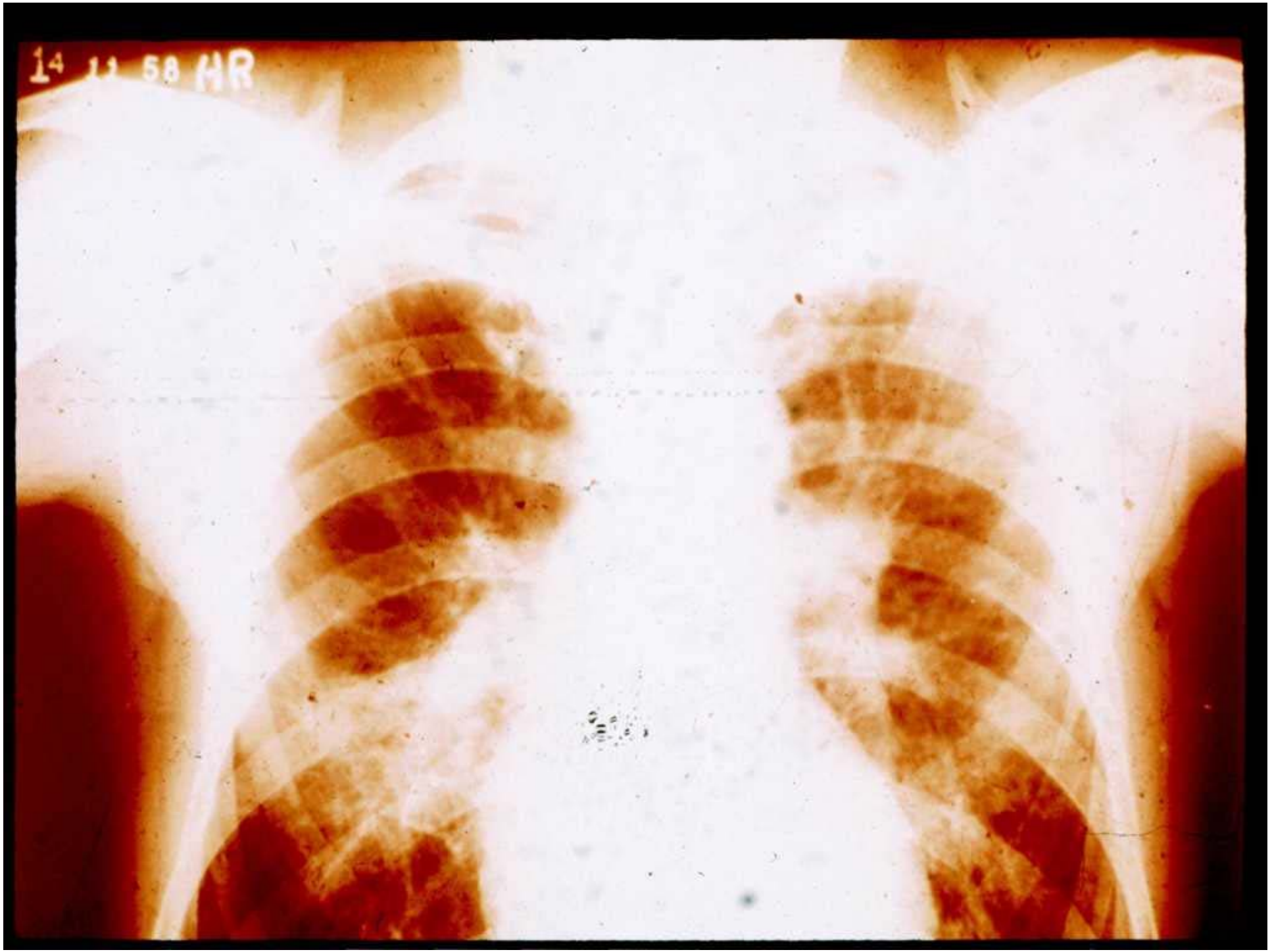
Extensive destruction of facial features

Ulcerated lesion on the pharyngeal mucosa

Ulcerated lesion on the nasal mucosa



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ECOLOGICAL ASSOCIATION

Probably soil

Armadillos

Paracoccidioidomycosis Triad

1. Pulmonary lesion
2. Cervical adenopathy
3. Edentulous

Paracoccidioidomycosis Triad

1. Pulmonary lesion

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Paracoccidioidomycosis Triad

1. Pulmonary lesion
2. Cervical adenopathy
3. Edentulous

Prolonged latency

10 – 20 years

CLINICAL SPECIMENS

- Sputum
- Biopsy material
- Pus
- Crusts
- Bronchial washings

Mycology

- At 25 degrees it is a white, dense, septate mycelium
- Terminal or intercalary spores (non-diagnostic)
- Slow growing 20 – 30 days

Mycology

- At 37 degrees it is a white-tan, creamy, cerebriform colony.
- Single or multiple buds
- Narrow base.

Laboratory Diagnosis of *Paracoccidioides*

- In pus or tissues, yeast cells with multiple buds are seen microscopically.
- A specimen cultured for 2-4 weeks may grow typical organisms.
- Skin tests are rarely helpful.
- Serologic testing shows that when significant antibody titers (by immunodiffusion or complement fixation) are found, active disease is present.

Laboratory diagnosis

1. Clinical material:

- Skin scrapings
- Respiratory specimens
- CSF
- Pleural fluid and blood
- Bone marrow
- Urine
- Tissue biopsies from various visceral organs

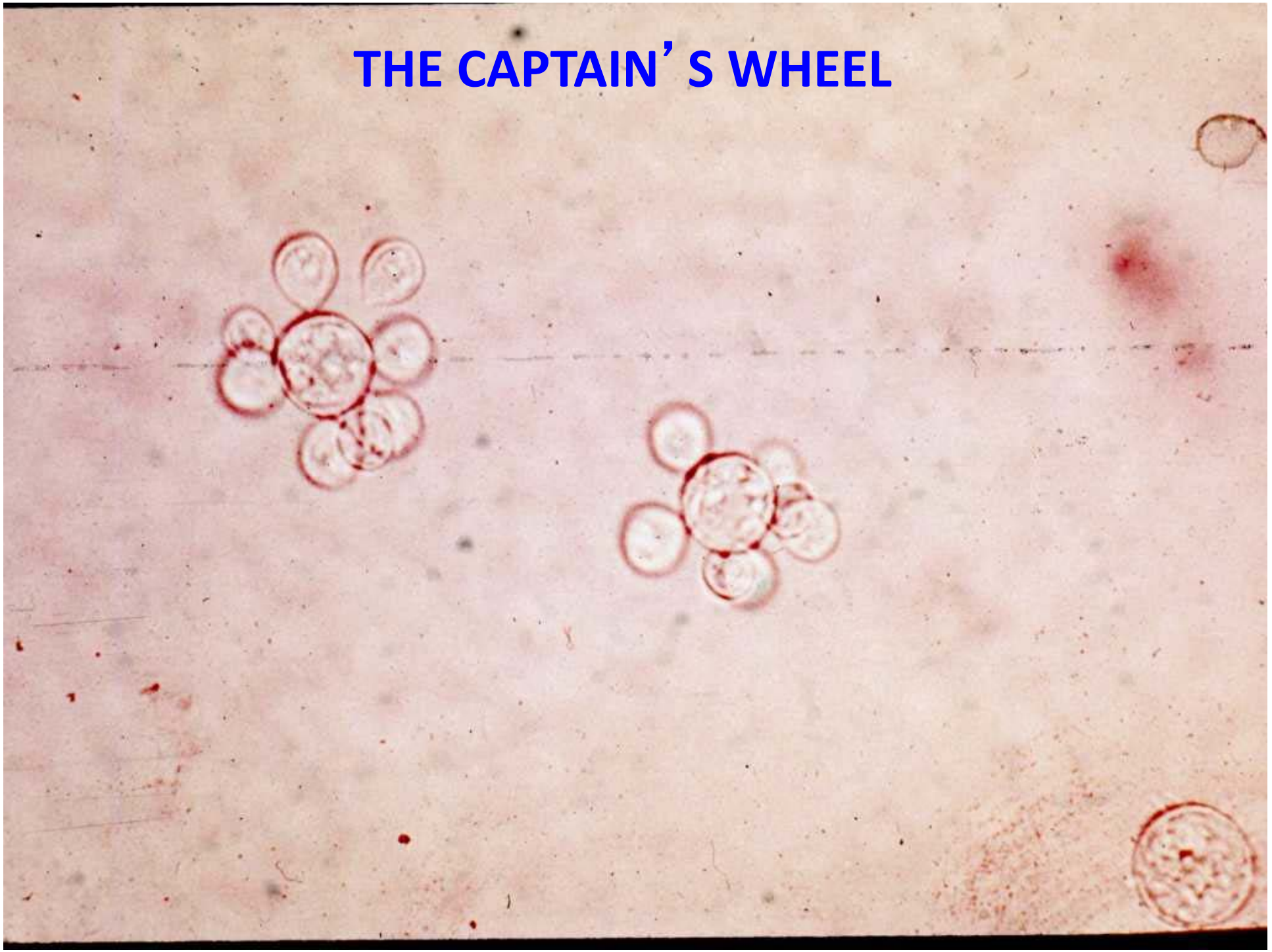
2. Direct Microscopy:

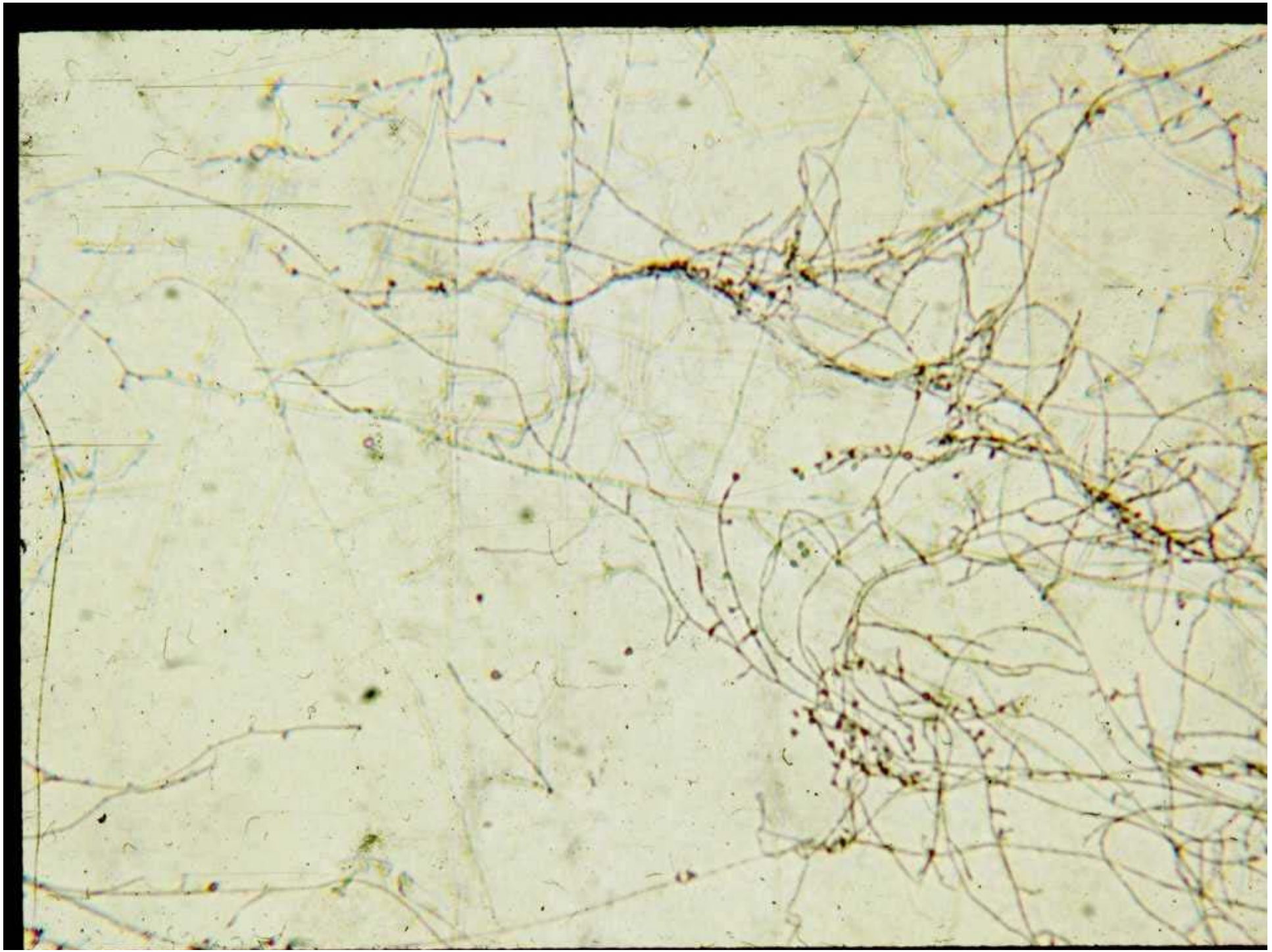
- 10% KOH, PAS, Silver or Gram stain

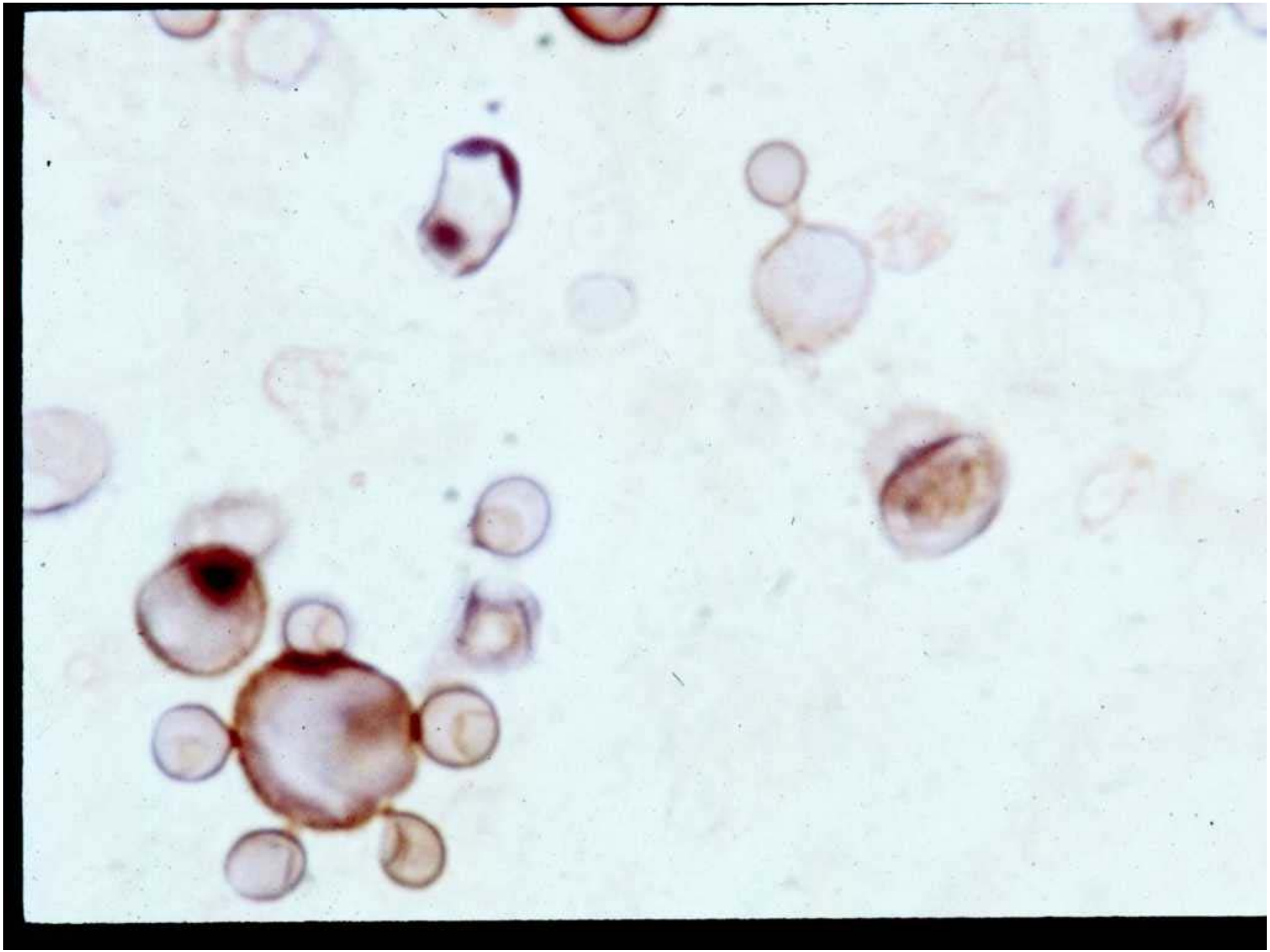
3. Culture:

- SDA + BHIA at 37°C

THE CAPTAIN'S WHEEL





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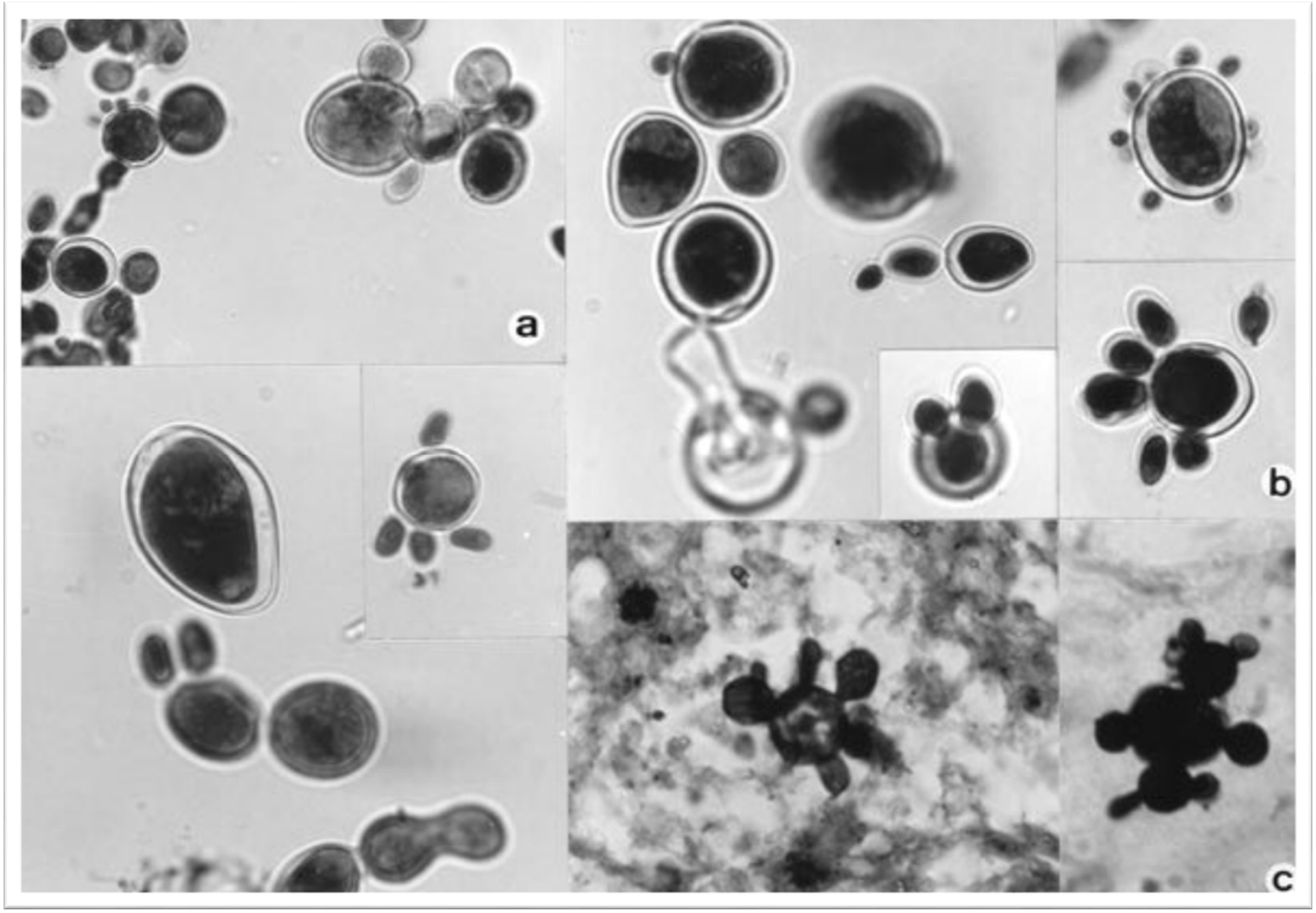
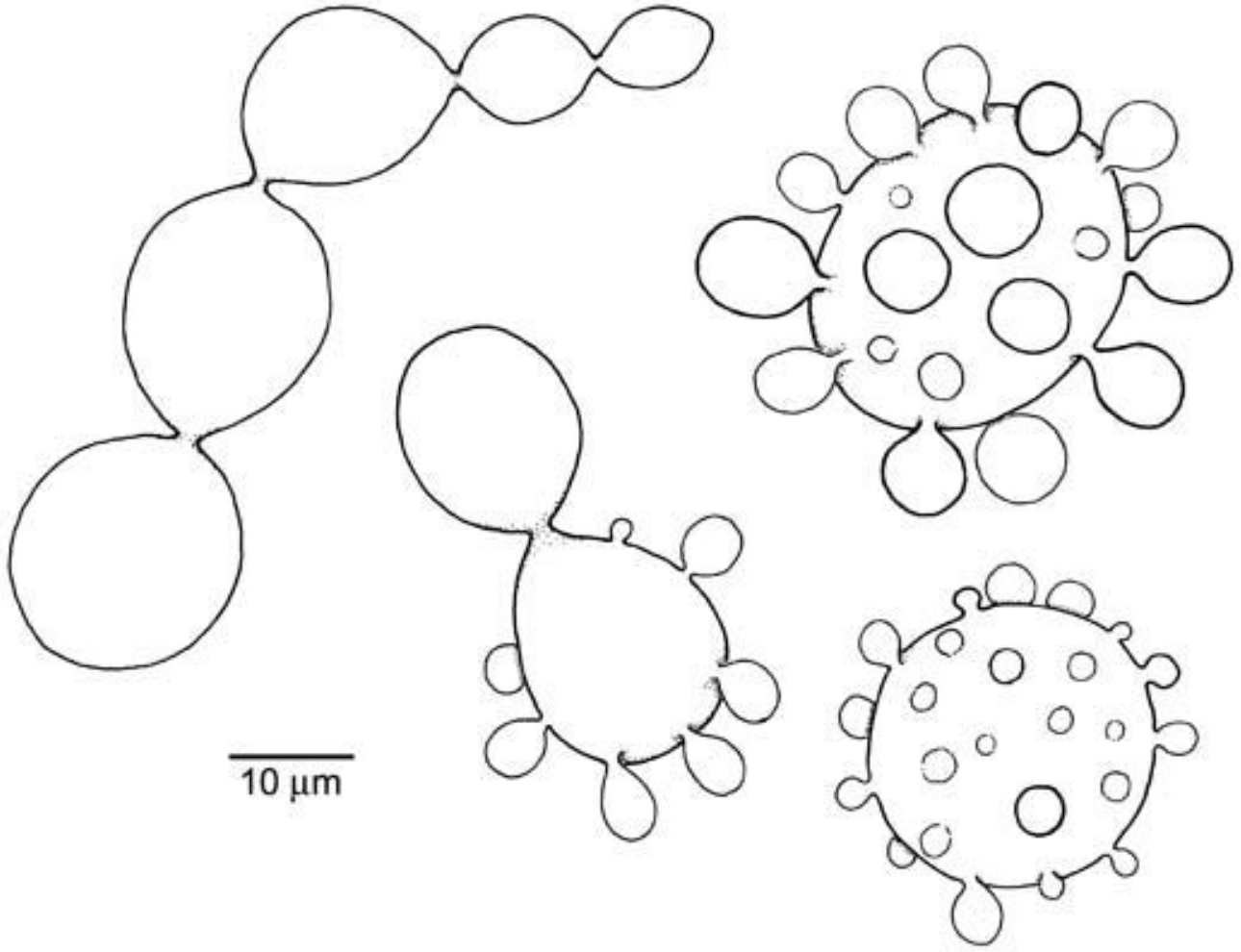
Paracoccidioides brasiliensis



Multiple, narrow base, budding yeast cells
"steering wheels" of *P. brasiliensis*

Paracoccidioides brasiliensis



Multiple, narrow base, budding yeast cells
"steering wheels" of *P. brasiliensis*

SEROLOGICAL TEST

IMMUNODIFFUSION

Sensitivity - 99 %

Specificity - 84 %

DRUGS OF CHOICE

- Amphotericin B
- Sulphonamide-trimethoprim
- Itraconazole
- Voriconazole

Treatment & Prevention of *Paracoccidioides*

- The drug of choice is itraconazole taken orally for several months.
- There are no means of prevention.