



# Fungus in the air

One hundred years ago,  
Adolpho Lutz published  
two articles describing  
a new disease

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In the early 20<sup>th</sup> century, doctor and researcher Adolpho Lutz very carefully studied two patients in São Paulo with different illnesses that caused serious lesions and destroyed the gums' mucosa, with painful effects upon the ganglia. In April 1908, after almost three years of research, Lutz published two articles in *Brazil-Medico – Revista Semanal de Medicina e Cirurgia* [Brazil-Medical – Weekly Journal of Medicine and Surgery], in which he qualified the disease as a pseudococcidial mycosis, after identifying the fungus that caused it and describing its typical reproduction system.

“What Lutz did was highly remarkable and rare,” says pharmacist and biochemist Cezar Mendes de Assis, a researcher from the Adolpho Lutz Institute. “He described the disease, observed its agent in clinical material under a microscope, isolated it in cultures, showed that it was dimorphous (had two distinct forms, mildew at 27°C and yeast at 36°C), described its characteristics, reproduced the disease in different laboratory animals and re-isolated the agent.” Furthermore, he was worried about claiming that he had discovered a new disease and warned of the difficulty of differentiating it from similar conditions.

The name for the disease since 1971, after a specialists congress held in Colombia, is paracoccidiomycosis, although it has had several names since 1908 – one of them being “Lutz’s disease.” It is a mycosis caused by

# Brazil-Medico

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## TRABALHOS ORIGINAES

**Uma mycose pseudococcidica localisada na bocca e observada no Brazil. Contribuição ao conhecimento das hyphoblastomyces americanas.**

Pelo Dr. ADOLPHO LUTZ

Director do Instituto Bacteriologico de S. Paulo

*albicans*. Outro fungo semelhante, frequentemente encontrado no leite coalhado, é conhecido como *oidium lactis*.

Neste ultimo grupo de mycoses os elementos encontrados nos tecidos não lembram formas conhecidas de cogumelos, porque se trata de elementos completamente redondos, munidos de membrana exterior, por tal modo espessada que mais lembra coccidios enkystados ou ovos de entozoarios. Por causa disso, o primeiro caso foi considerado como psoroptose, e ainda por bastante tempo predominou a idéa de tratar-se de coccidios, até que se conseguiu isolar e cultivar o fungo causador do processo pathologico.

Este caso deve deter-nos um pouco, porque, além de ser o primeiro descrito, mostra também muitas feições interessantes nas observações feitas e publicadas a respeito delle pelo Dr. POSADAS e pelo prof. WERNICKE, em BUENOS AIRES.

Ocupado com a histologia dos tumores, o Dr. POSADAS teve occasião de examinar uns neoplasmas cutaneos e ganglionares que despertaram a sua atenção pela sua estrutura singular e pelos elementos especies que continham. Provinham de um individuo de nacionalidade argentina, sem antecedentes hereditarios e perfeitamente sadio antes do aparecimento dos tumores, o que se deu no Chaco, onde

Issue  
with  
Lutz's  
first  
article

the fungus *Paracoccidiodes brasiliensis*, found in rural areas and that most often enters the human body via inhalation. When not diagnosed at the right time it causes skin sores and mouth lesions, may contaminate the lungs, spleen and liver, and may infiltrate the bones, joints and central nervous system. Some of the risk activities are linked to agriculture,

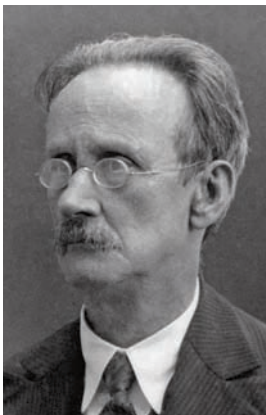
gardening and transporting vegetables. Deforestation and preparing the soil for planting increase the number of particles of the fungus in suspension.

As notification is not compulsory, there is a shortage of accurate information about the incidence of this mycosis in Brazil. Health Ministry data show 3,181 deaths from 1980 to 1995

and a mortality rate of 1.45 cases per million inhabitants. 'Consensus' about paracoccidiomycosis, a technical report published in 2006 by the *Revista da Sociedade de Medicina Tropical (Journal of the Society of Tropical Medicine)*, showed that few people exposed to the fungus develop the disease. When the mycosis manifests itself,

however, the public health problem becomes significant because mortality rates are high – those who do not die are frequently disabled and unable to work. For the time being there is no effective vaccine.

After the pioneering articles in 1908, the mycosis continued to be studied. Italian bacteriologist Alfonso Splendore and São Paulo mycologist Floriano Paulo de Almeida added substantially to understanding it. In the same year in which he published his research, Lutz (1855-1940) left the Bacteriological Institute of São Paulo (now the Adolfo Lutz Institute), where he had been director for 15 years, and returned to his hometown, Rio de Janeiro, to work solely as a researcher. A lover of the solitude of laboratory work and field collecting, to the end of his life he remained at the Oswaldo Cruz Institute, where he continued studying topics of medical or purely biological interest.



Lutz (above) and with daughter Bertha (other page), in the laboratory. On the right, collecting snails in the country

