# *Lacazia loboi* [Lah-kah′-zee-uh loh-boy′]

W. Clyde Partin

Lobomycosis is the name given to the cutaneous mycosis for which *Lacazia loboi* is the etiologic agent. *L. loboi* lives primarily in dense tropical rain forests and the oceans of the Central and South America Coast. Humans and dolphins are the only known hosts for this fungus (*1*–*4*). *L. loboi* cannot be cultured and is identified by histologic analysis of excised lesions. This uncultivatable characteristic played a role in the convoluted path the fungus has traversed in arriving at the current binomial designation.

The etymologic journey of *L. loboi* began in 1931 when Brazilian dermatologist Jorge O. Lobo reported a case in a 52-year-old man who had keloid-like lesions over his sacral region (*5*). Lobo called this novel disease *Blastomicose keloidiana*, the first misstep in the nomenclatural misadventures. Lobo believed that the fungus was similar to *Paracoccidioides brasiliensis*. *Paracoccidioides loboi* was proposed by Fonseca and Lacaz in 1971 (*6*), honoring Lobo with the species name, but inadequate Latin description resulted in rejection. This resemblance with *Paracoccidioides* caused nearly endless taxonomy problems (*7*).

Sufficient Latin validation gathered, Lacaz resubmitted an updated proposal in 1996 (*8*). Lacaz was unable to locate Lobo's original sample. Taborda and colleagues (*9*) studied specimens stored in the US National Fungus Collections (*10*), concluding "no existing genus can accommodate this taxon" (*9*). In 1999, they advanced *Lacazia loboi* for validation, heralding Lacaz, an esteemed physician and director of the Tropical Medicine Institute of São Paulo, with the genus designation.

At least 6 genera (*Glenosporella*, *Blastomyces*, *Glenosporosis*, *Paracoccidioides*, *Lobomyces*, and *Loboa*) and 2 species (*brasiliensis* and *amazonica*) preceded *Lacazia loboi*. The repetitive *Loboa loboi* was proposed in 1956 (*5*), but deemed "nomem nudum and illegitimate" and incorrectly identified as *P. brasiliensis*. Herr and colleagues showed that *L. loboi* is in the sister taxon of *P. brasiliensis* and confirmed their confusing similarity (*11*). Vilela and colleagues, using updated phylogenetic DNA data analysis, identified the uncultivable *P. ceta,* isolated from dolphins, and *L. lobo* as species that belonged in the genus *Paracoccidioides* (*12*).

Because *P. loboi* had been discarded, *Paracoccidioides lobogeorgii* (*georgii* represents an Anglicization of the Spanish Jorge) was submitted as the replacement. For the disease itself, Francesconi and colleagues catalogued 8 monikers and mercifully declared, "Lobomycosis is the correct name for this disease" (*13*).

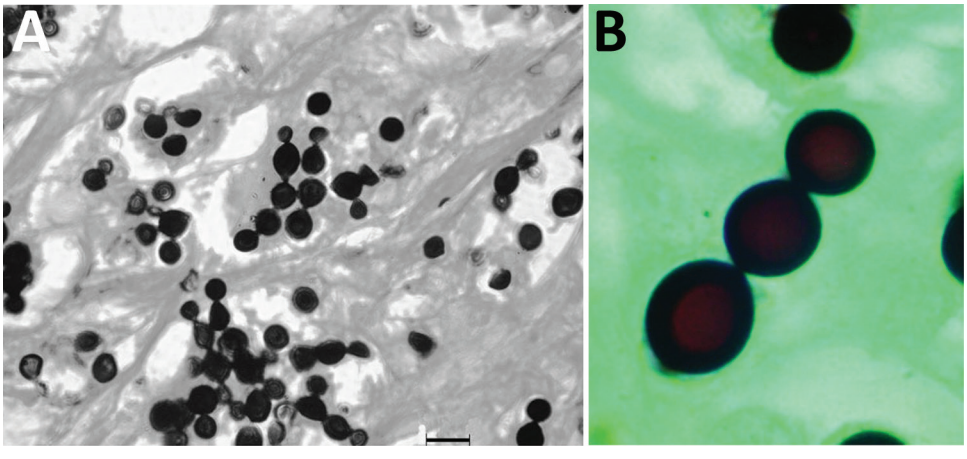


**Figure 1.** A) Grocott methamine silver–stained section from a skin biopsy specimen of a bottlenose dolphin (*Tursiops truncatus*) showing abundant *Lacazia loboi* yeast cells individually and in chains connected by thin tubular bridges. Source: Emerging Infectious Diseases 15 (4) April 2009. B) *L. loboi* yeast cells in chains connected by thin tubular bridges. Source: Centers for Disease Control and Prevention.


**Figure 2.** A, B) Extensive lobomycosis-like disease on the beak and dorsal fin of a bottlenose dolphin (*Tursiops truncatus*) stranded on Margarita Island, Venezuela. Source: Emerging Infectious Diseases 15 (8), August 2009. C) Lobomycosis in a 41-year-old soldier from Colombia. Erythematous, lobulated plaque (4 cm × 2.5 cm) on the sternal notch with hematic crust and black areas on the surface. Source: Emerging Infectious Diseases 25 (4), April 2019.

## References


1. Arenas CM, Rodriguez-Toro G, Ortiz-Florez A, Serrato I. Lobomycosis in soldiers, Colombia. Emerg Infect Dis. 2019;25:654–60. https://doi.org/10.3201/eid2504.181403
2. Bermudez L, Van Bressem MF, Reyes-Jaimes O, Sayegh AJ, Paniz-Mondolfi AE. Lobomycosis in man and lobomycosis-like disease in bottlenose dolphin, Venezuela. Emerg Infect Dis. 2009;15:1301–3. https://doi.org/10.3201/eid1508.090347
3. Migaki G, Valerio MG, Irvine B, Garner FM. Lobo's disease in an Atlantic bottle-nosed dolphin. J Am Vet Med Assoc. 1971;159:578–82.
4. Paniz-Mondolfi AE, Sander-Hoffmann L. Lobomycosis in inshore and estuarine dolphins. Emerg Infect Dis. 2009;15:672–3. https://doi.org/10.3201/eid1504.080955
5. Lobo JO. A case of blastomycosis produced by a new species, found in Recife [in Portuguese]. Rev Med Pernamb. 1931;1:763–5.
6. de Fonseca OJ, Lacaz CS. Study of isolated cultures of keloid form blastomycosis (Jorge Lobo's disease). Taxonomy of etiological agent [in Portuguese]. Rev Inst Med Trop São Paulo. 1971;13:225–52.
7. Ciferri R, Acevedo PC, Campos S, Carneiro LS. Taxonomy of Jorge Lobo's disease fungus. Inst Micol Univ Recife. 1956;53:1–21.
8. Lacaz CC. *Paracoccidioides loboi* (Fonseca Filho et Arêa Leão, 1940) Almeida et Lacaz, 1948–1949. Description of the fungus in Latin. Rev Inst Med Trop São Paulo. 1996; 38:229–31. https://doi.org/10.1590/S0036-46651996000300013
9. Taborda PR, Taborda VA, McGinnis MR. *Lacazia loboi* gen. nov., comb. nov., the etiologic agent of lobomycosis. J Clin Microbiol. 1999;37:2031–3. https://doi.org/10.1128/JCM.37.6.2031-2033.1999
10. US Department of Agriculture. Mycology and nematology genetic diversity and biology laboratory, Beltsville, MD, 2022 [cited 2023 Oct 14]. https://www.ars.usda.gov/northeast-area/beltsville-md-barc/beltsville-agricultural-research-center/mycology-and-nematology-genetic-diversity-and-biology-laboratory/docs/us-national-fungus-collections-bpi/us-national-fungus-collections-databases
11. Herr RA, Tarcha EJ, Taborda PR, Taylor JW, Ajello L, Mendoza L. Phylogenetic analysis of *Lacazia loboi* places this previously uncharacterized pathogen within the dimorphic Onygenales. J Clin Microbiol. 2001;39:309–14. https://doi.org/10.1128/JCM.39.1.309-314.2001
12. Vilela R, de Hoog S, Bensch K, Bagagli E, Mendoza L. A taxonomic review of the genus *Paracoccidioides*, with focus on the uncultivable species. PLoS Negl Trop Dis. 2023; 17:e0011220. https://doi.org/10.1371/journal.pntd.0011220
13. Francesconi VA, Klein AP, Santos AP, Ramasawmy R, Francesconi F. Lobomycosis: epidemiology, clinical presentation, and management options. Ther Clin Risk Manag. 2014;10:851–60. https://doi.org/10.2147/TCRM.S46251


Address for correspondence: W. Clyde Partin, Department of Internal Medicine, Emory University¸ 1365 Clifton Rd NE, Atlanta, GA, 30322-1007, USA; email: wpart01@emory.edu

Author affiliation: Emory University, Atlanta, Georgia, USA

DOI: https://doi.org/10.3201/eid2912.231271