

There is a need to treat the neglected disease Cutaneous Leishmaniasis in Buriticupu, Brazil. Our approach to this need is to propose a plan for a clinic treating Cutaneous Leishmaniasis through patient compliance.

Cutaneous Leishmaniasis: Overview

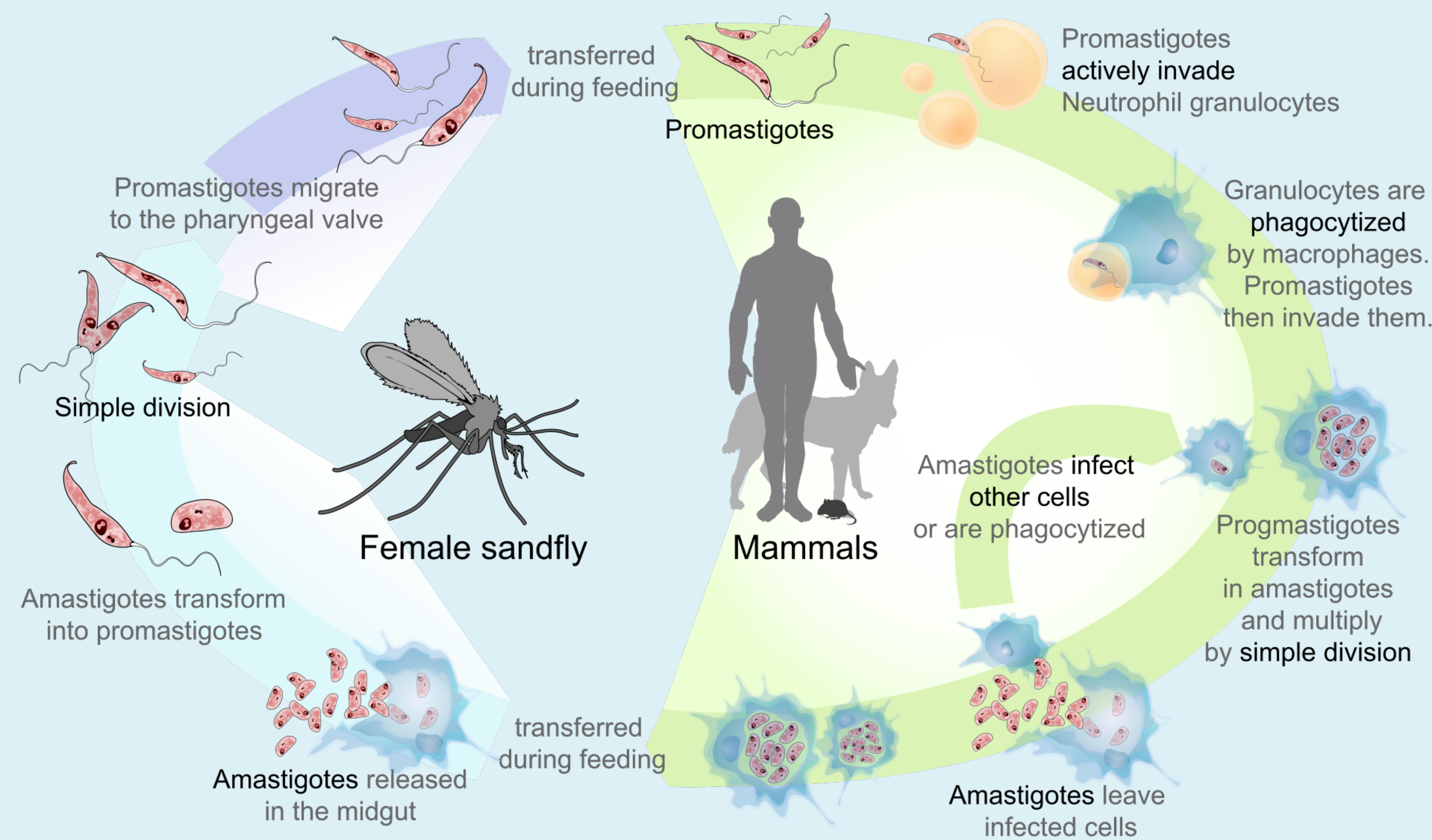
- Caused by the *Leishmania* parasite
- About 20 species of the parasite
- Transmitted by sand flies; breed in organic waste (feces)
 - mosquito nets ineffective
- Scarring, skin infections, ulcers, skin erosions heal slowly

American Cutaneous Leishmaniasis (ACL): Brazil

- Caused by parasite *Leishmania braziliensis*
- Sore begins at the bite; lesions spread to other parts of the body and face
- Males have higher exposure rate
- Co-infection with HIV is an emerging threat

Treatment

Medication Name	Effectiveness	Dosage
Pentavalent antimony (Glucantime and Pentostam)	94% Cure rate	20 (mg/kg)/Day for 20 days
Amphotericin B (Fungizone)	Reserved for antimony failure	0.5 (mg/kg)/Day for 8 weeks
Pentamidine isethionate (Pentam 300)	Toxic Effects	2 (mg/kg) every other day for 7 days



Orphan (Neglected) Disease:

1. A rare disease that affects fewer than 200,000 people
2. A common disease that is being ignored because it is more prevalent in developing countries

Facts and Figures:

- Endemic in 88 countries
- 350 million people at risk
- 12 million people infected
- 1 million new cases annually
- Cases in Brazil are increasing:
 - 1985: 10.45 cases/100,000 people
 - 2000: 18.63 cases/100,000 people
- 15% patients have severe forms that need frequent and lengthy treatment
- 3-5% of patients with ACL develop Mucocutaneous Leishmaniasis

Labor	\$700/ month x 2
Concrete floor	\$1,600
Rammed Earth	\$7,000
Tile Roof	\$5,000
Total Cost	\$15,000

Leprosy Project:

- Started in 1983
- <15 cases a year
- 6 month treatment
- 30 USD/ person
- Counseling with locals
- Early reporting
- Patient compliance

Leprosy Project in India

"Assisting the community in the prevention of communicable disease, to empower those affected by poverty, oppression or gender to sustainably develop themselves socially, economically, politically, environmentally and in health."

Arogya Agam



About the Clinic:

- Founded in 1960's
- Leprosy clinic in 1983
- National Program for TB and Leprosy
- Secular NGO
- Emmaus Swisse
- Damien foundation Belgium

Involve patients in their treatment

- Ask people what they know
- Provide counseling
- Staff consisting of several locals
- Treatment follow-ups

Early reporting and compliance for long-term treatment

How:

- Foster good relations with community leaders
- Have testing at clinic
- Explain severity of condition
- Outpatients receive daily treatment; keep severe cases at clinic and provide disability compensation

Our idea is to transfer the principals of Arogya Agam in to a clinic in Brazil, funded by an NGO, that would use patient compliance to help eradicate Leishmaniasis in the area.

We propose a plan to build a clinic based on the principles of Arogya Agam that is sustainable, uses local supplies and labor, and is staffed by the local health professionals.

Maranhão

Buriticupu

- Adobe technique using dirt, water, clay
- Poured concrete floor
- Tile roof
- Cost effective
- Local labor



	Arogya Agam	Buriticupu
Cases-inpatient	35/month	10/ month
Cases-outpatient	50/month	60/month
Land	~12 acres	~1 acres
Medicine total year	~\$30,000/ year	~\$27,720/ year
Medicine/ person months	~\$30/6	~\$22/20
Employment	100 people	5 people

*Adobe, Cob, Soil-Cement & Rammed Earth." Home building technical information resources builders construction remodeling innovations. Web. 05 Dec. 2009. <http://www.toolbase.org/TechnologyInventory/Whole-House-Systems/adobe-cob-soil-cement-rammed-earth>.
 *Baker, Laurie. "Rural House Plans." 2008. Web. 15 Nov. 2009. <http://www.sheltercenter.org/library/rural-house-plans>.
 *Cost of a Tile Roof - Get Prices and Estimates. - CostHelper.com. Dec. 2008. Web. 05 Dec. 2009. <http://www.costhelper.com/cost/home-garden/tile-roof.html>.
 *Cutaneous Leishmaniasis: Why are they Neglecting Me? World Health Organization. Web. 15 Nov. 2009. http://www.who.int/neglected_diseases/resources/CutaneousLeishmaniasis.pdf.
 *Dalton, John. "The Alarm From ICSS with a few questions." Message to Chelsea Miller. 24 Nov. 2009. E-mail.
 *El Khouri, Marcelo, Leandro Savoy Duarte, Janes Valery Gyariczo, and Carlos Eduardo Pereira Corbett. "Partnership Between Universities and the Local Healthcare System to Benefit the Town of Buriticupu, a Poor Community in the State of Maranhão, Brazil." *SciELO Brazil* 60.2 (2005): Web. 15 Nov. 2009. <http://www.scielo.br/scielo.php?pid=S1807-5932200500020002&script=sci_arttext>.
 *Hsia, Renee Y. "Leishmaniasis: Multimedia - eMedicine Emergency Medicine." *eMedicine - Medical Reference*. 31 Mar. 2008. Web. 15 Nov. 2009. <http://emedicine.medscape.com/article/783750-media>.
 *Lacerda, Mariza M. "The Brazilian Leishmaniasis Control Program." *Mem Inst Oswaldo Cruz (Rio de Janeiro)*. July & Aug. 1984; 489-95. Web. 15 Nov. 2009. <http://memorias.icp.fiocruz.br/pdf/Vol0899/vol89(9).182.188.pdf>.
 *Leishmaniasis. "New York Times." 28 Aug. 2009. Web. 15 Nov. 2009. <http://health.nytimes.com/health/guides/disease/leishmaniasis/overview.html>.
 *The Leishmania Life Cycle." Akhtar, Masood. Web. 19 Nov. 2009. <http://homepages.ucl.ac.uk/ku/p_bumber/akhtar.html>.
 *Markie, William H., and Khalidou Mahboul. "Cutaneous Leishmaniasis: Recognition and Treatment." *American Family Physician: AAFP*. 15 Mar. 2004. Web. 15 Nov. 2009. <http://www.aafp.org/afp/20040315/1455.html>.
 *Martins, Luzenice M., Jose M. Rebelo, Marcio C. Vaz Dos Santos, Jackson M. Costa, Antonio Rafael Da Silva, and Luiz A. Ferreira. "Epidemiologia of Integumentary Leishmaniasis in the Municipality of Buriticupu, Amazon of Maranhão, Brazil, 1996 to 1998." *SciELO Public Health* 20 (2003). Web. 15 Nov. 2009. <http://www.scielo.org/scielo.php?script=sci_arttext&pid=S0102-311X2004000200010&lng=en&nrm=iso&tlng=pt>.
 *Mohammadi, Khalil B., Mohammad A. Munnir, Muhammad N. Babikerhly, and Fauziah Kakar, eds. *Guidelines for the Treatment and Prevention of Cutaneous Leishmaniasis in Pakistan*. July 2002. Web. 15 Nov. 2009. <http://74.125.93.132/search?q=cache:54yQ2H1wCSJ:www.who.gov/pdf/search/leishmaniasis_0001.ET.pdf+health+brazil+%2B+cutaneous+leishmaniasis&cd=10&hl=en&ct=chkg&lnus>.
 *Moreno, Saulo. "Brazil Tries to Build a House for 30,000 Homeless Indians." *7 Dec. 2004*. Web. 19 Nov. 2009. <http://www.brazzilmag.com/content/view/full/41/>.
 *WHO | Control of Neglected Tropical Diseases." *The Disease and its Epidemiology*. 20 Nov. 2009. Web. 04 Dec. 2009. <http://www.who.int/neglected_diseases/en/>.
 *WHO | Control of Neglected Tropical Diseases." *Neglected Tropical Diseases*. 20 Nov. 2009. Web. 04 Dec. 2009. <http://www.who.int/neglected_diseases/en/>.
 *Wys, Arthur. *Brazil Land For Sale*. Web. 19 Nov. 2009. http://www.brazil-land-sales.com/landforsale.htm.