

Review

Justice where justice is due: A posthumous Nobel Prize to Carlos Chagas (1879–1934), the discoverer of American Trypanosomiasis (Chagas' disease)

Reinaldo B. Bestetti*, Cláudia A. Martins, Augusto Cardinali-Neto

Department of Cardiology and Cardiovascular Surgery, Hospital de Base, Faculty of Medicine of São José do Rio Preto, Brazil

Received 19 December 2008; accepted 22 December 2008

Available online 30 January 2009

Abstract

Working in the Brazilian backland, Chagas described a new disease. He discovered the etiologic agent, the vector, the reservoir, the acute stage, the several clinical aspects of the chronic stage (particularly the heart disease), role of autoimmunity in its pathogenesis, and anticipated the social impact of the disease. Chagas was nominated to Nobel Prize twice: in 1913, and in 1921. In 1913, Richet won the prize because his work on anaphylaxis. In 1921, no one received the Nobel Prize. It is believed that detracting of Chagas' work at the National Academy of Medicine, made by jealousy, mediocrity, and political rivalries can be maculated the image of the scientist. Furthermore, misperception of Chagas' work may also have led the Nobel Committee not to award him. One-hundred years after the discovery, we can appreciate the greatness of the discovery of Carlos Chagas, never seen in the realm of biological research. Time to make justice, therefore, has finally come. © 2008 Elsevier Ireland Ltd. All rights reserved.

Keywords: Chagas' disease; American Trypanosomiasis; Nobel Prize; Heart failure; Sudden death

1. Introduction

Chagas' disease affects 20 million people in South America, other 100 million are at risk of acquiring the disease [1], and 50,000 persons die of the disease annually [2]. The disease is no longer confined to South America. In view of international immigration, it has been estimated that 700,000 people are living outside the American continent [3]. Social costs of Chagas' disease are impressive: US 1 billion dollars are spent annually in the treatment of the disease only in Brazil [4].

In this article, we reviewed the history of the discovery and the building up of the knowledge of Chagas' disease as a background for discussing an obscure point: the Nobel Prize of 1921. We focus on happenings that may have precluded

Chagas' award. We are convinced that the completeness of Chagas' discovery, never seen in biological sciences, well deserves reconsideration.

2. Search strategy

We did a search in PubMed (www.ncbi.nih.gov) linking the terms Chagas and Nobel Prize, Chagas' disease and history, and Chagas disease and historical aspects. We have searched papers on Carlos Chagas life as well. The primary objective was to identify studies carried out on Carlos Chagas and the Nobel Prize. We identified 353 references potentially related to the objective of the study. All papers were read by abstract; 349 were excluded. The remaining studies were read in full, fulfilled inclusion criteria and were entered this work. A hand-search on references quoted in the papers retrieved was also performed. All papers and conferences by Carlos Chagas were read to construct the body of this study. We accessed the site <http://www4>.

* Corresponding author. Hospital de Base, Setor de Eletrocardiografia, Av. Faria Lima, 5544, São José do Rio Preto city, 15090-000, Brazil.

E-mail address: rbestetti@netsite.com.br (R.B. Bestetti).



Fig. 1. A. House which served as outpatient service to Chagas in 1909. Nowadays, Carlos Chagas Memorial, Lassance, Brazil, 2008. B. Vivarium where animals used in Chagas' experimental research were housed.

prossiga.br/Chagas/ to look for papers related to historical aspects of Chagas' disease as well as the sites <http://nobelprize.org> as well as <http://www.google.com.br> to search for information regarding Chagas' nomination to Nobel Prize and on historical aspects of Nobel Prize.

3. The beginning

Carlos Chagas earned his medical degree at Rio de Janeiro Medical School in 1902 at the age of 23. He presented his doctoral thesis on hematological aspects of malaria in 1903. After practicing in the interior of Rio de Janeiro state, he accepted an invitation to work at Santos Docks Company to combat a malaria epidemic in 1905 [5]. Convinced that malaria was acquired indoors [6,7], Chagas focused his work on the elimination of the vector inside the houses by caulking and indoor application of pyrethrum [8], thus controlling the epidemic. He was also successful in combating another malaria epidemic in the outskirts of Rio de Janeiro city. These successes certainly open the door for a full-time position as assistant researcher at Manguinhos Serum Therapy Institute, later on known as Institute of Manguinhos, under the leadership of Oswaldo Cruz in 1906. Chagas dedicated himself to research on malaria until 1907. His clinical skills as well

as his scientific background made him an authority on malaria research and on malaria epidemic.

4. The discovery

In 1907, Chagas was sent to Lassance, a very small city in the interior of Minas Gerais state, to combat a malaria epidemic which was affecting railway workers of the Estrada de Ferro Central do Brasil. Chagas used a wagon as his home and partially as his laboratory, and a small abandoned house as outpatient service and a vivarium (Fig. 1A and B). Chagas had the opportunity to exam the local inhabitants and his clinical skills soon allowed him to diagnose several types of uncommon neurological disorders, cardiac abnormalities in young people, and massive goiters.

He used his leisure time to study the vital cycle of the mosquitoes in general, and *Anopheles* in particular, and to examine blood of domestic animals and small mammals [9]. In 1908, Chagas described a new protozoan, *Trypanosoma minasense*, found in the blood of a small monkey living in that region, which was not pathogenic for the host [10].

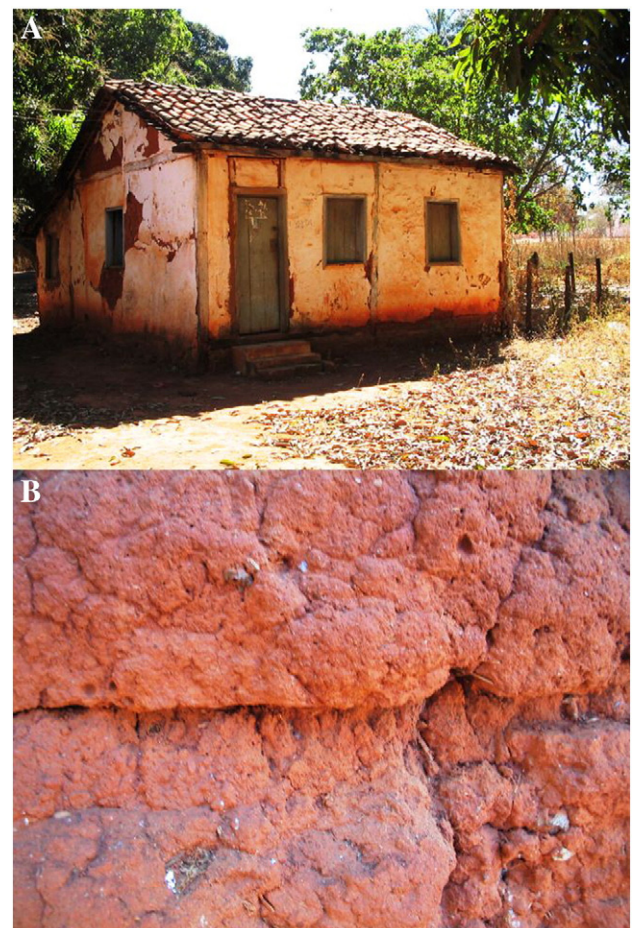


Fig. 2. A. House made with adobe uncovered with cement in the vicinity of central region, Lassance city, 2008. B. Detail of a crack in the mud wall in which a "barbeiro" can hide during the day.

Download English Version:

<https://daneshyari.com/en/article/2932986>

Download Persian Version:

<https://daneshyari.com/article/2932986>

[Daneshyari.com](https://daneshyari.com)