

# History of Rabies in Bats in Brazil



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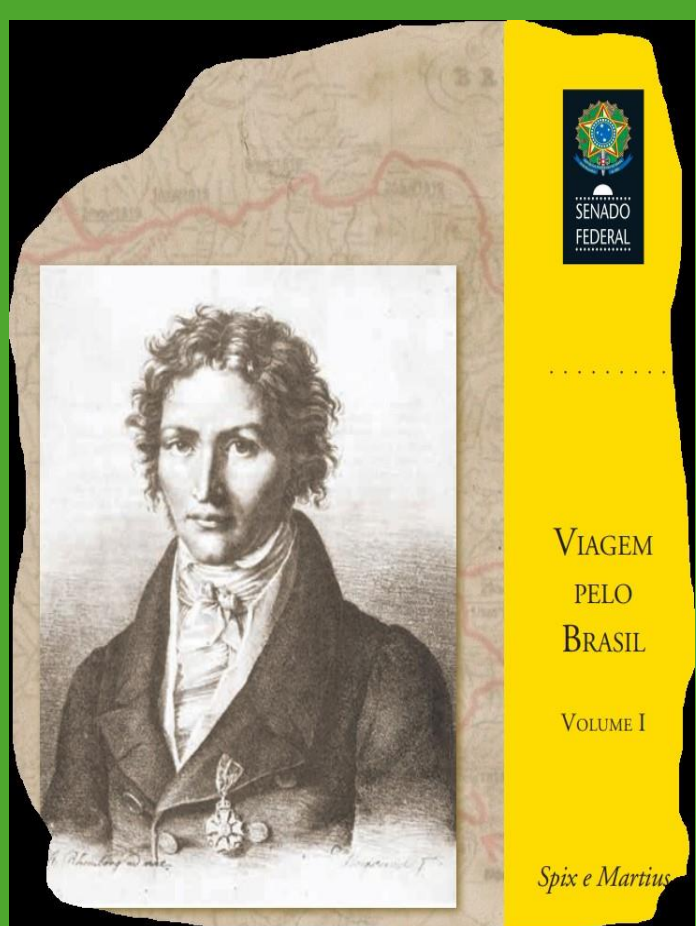
## Introduction

Rabies is a fascinating chapter in the history of science and medicine walking with humanity since antiquity. In our book, we dedicate ourselves to study more deeply the history of bats rabies in Brazil. Many questions arose and guided us during the study: what did people know about bats and their role in rabies transmission? Were bats already a rabies virus reservoir when the Europeans arrived in Brazil or was the disease introduced by colonization? How was the relationship between humans and bats in the 16th, 17th and 18th centuries? What was the reaction of Europeans towards hematophagous bats?

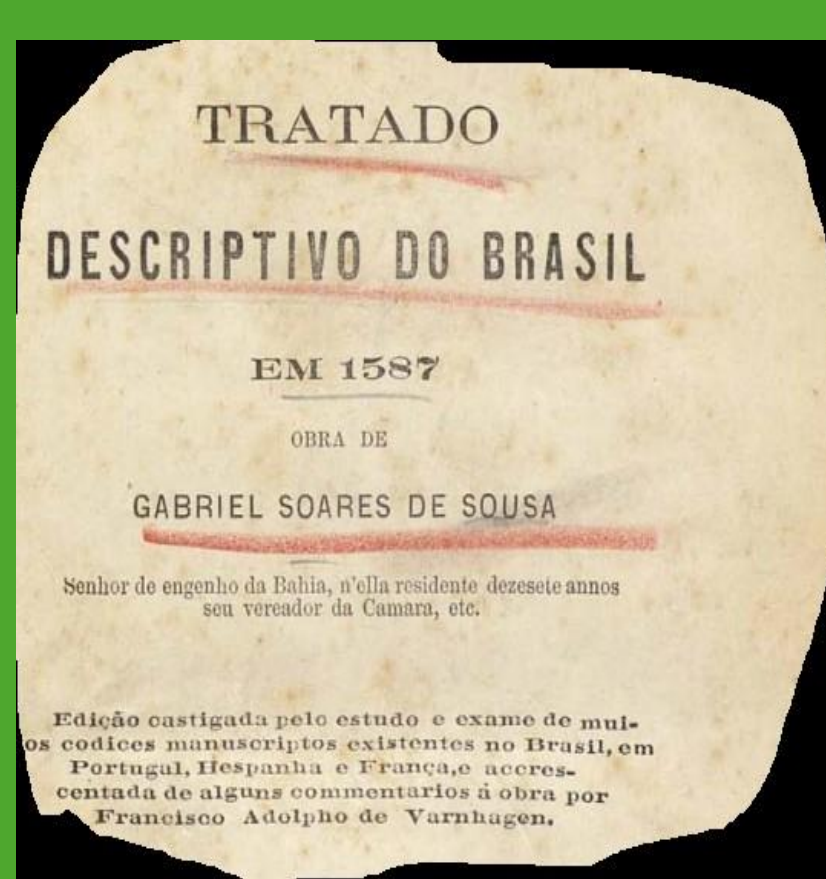
## Methods

Sources: Relates of Naturalist; Medical Magazine; Newspapers; Lows; International and Brazilian Libraries; reports; letters; bulletins and thesis.

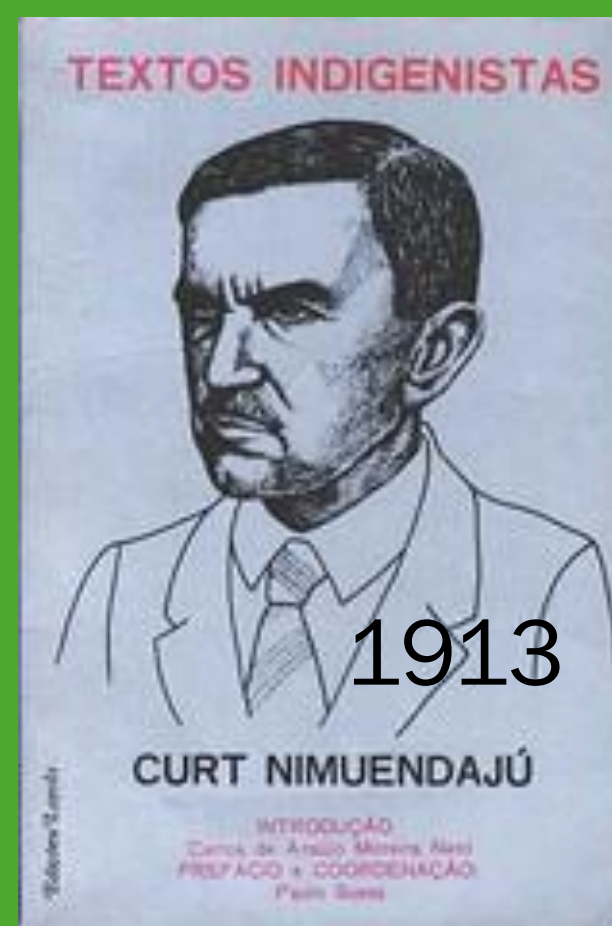
✓ Newspapers and magazines have started to press in Brazil only in 1808.



Spix and Martius (1817-1820)



Sousa, 1587



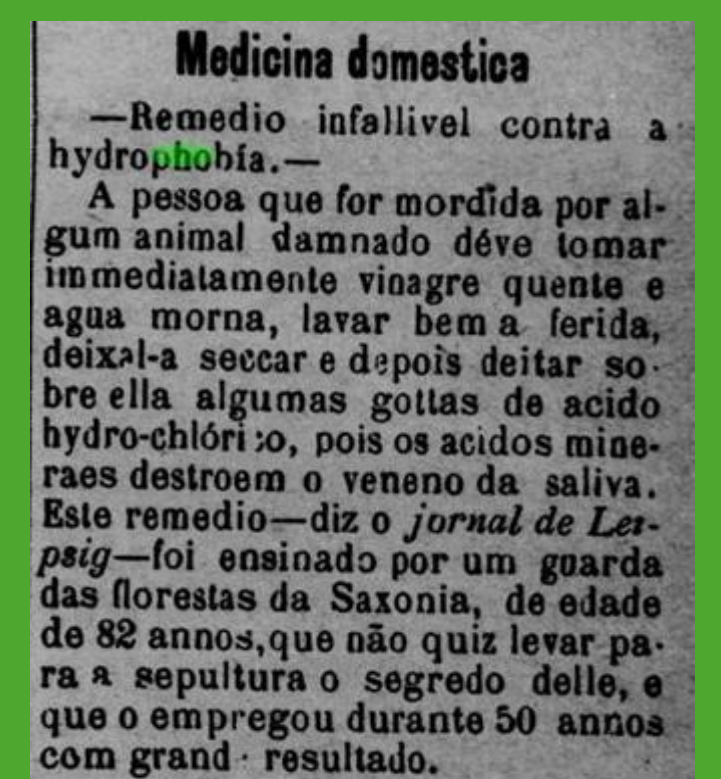
1913



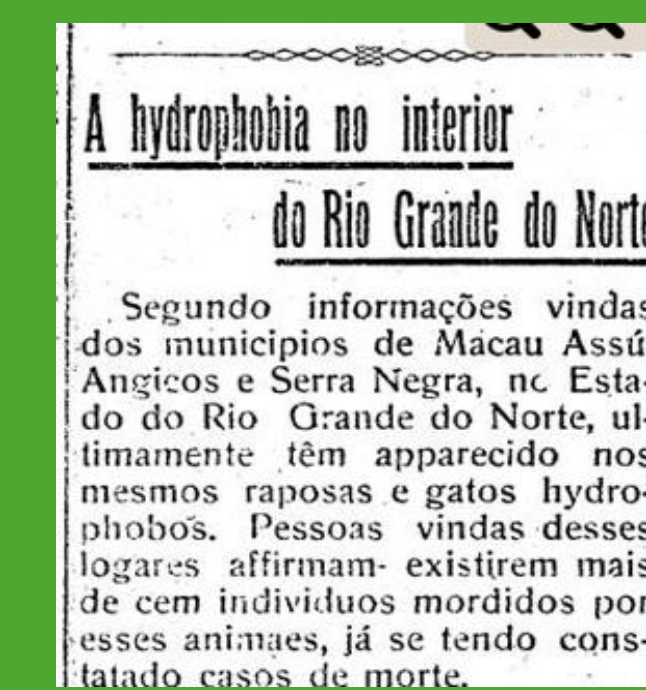
1866



1915



A Salvação (A.S., 1897)



Alto Andara (AC), 1913



1887

## Results

First relate of hematophagous bats: Álvaro Núñez Cabeza de Vaca (1555), Santa Catarina (1531), Mato Grosso (1543):

- the Indigenous raise chickens and gather them at night for fear of bats that cut their crests;
- there are many bats in this Paraguai river that they are bigger than birds;
- cut so gently with their teeth that no pain feel those who bite;
- Bite the man in the tip of feet or hands; always bit the same person.



Names used by Brazilian indigenous to bats: andará, endará, andérica, guardará, mopi and topi.



Georg Marcgrave, 1638 and Guilherme Piso, Historiae Naturalis Brasiliae (1648)

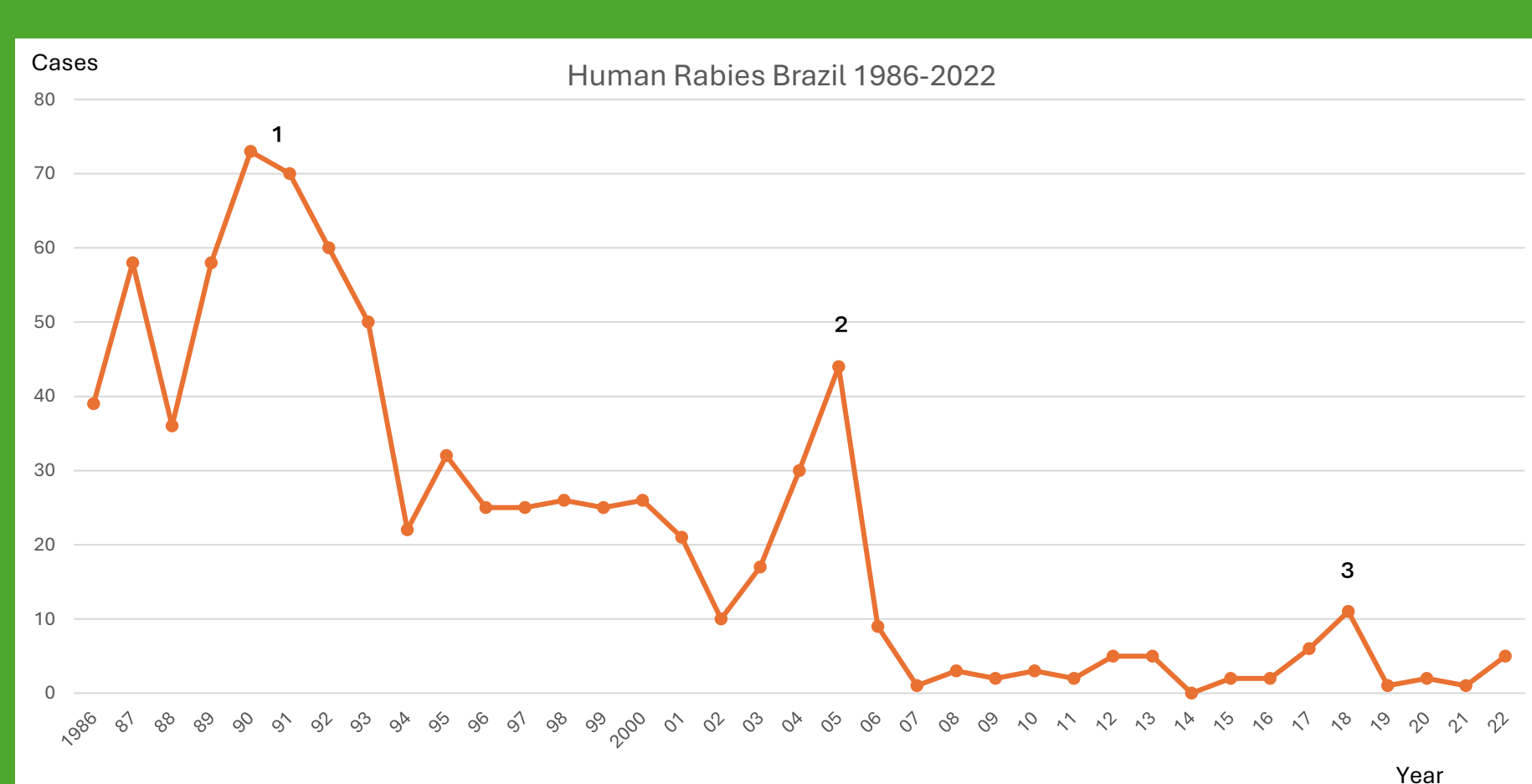
Brief description of bats species Artibeus planirostris (andara uca).

“The first report suggesting a relationship between rabies and bats was made in 1658 by Piso: “the venom of these bats... which could be compared to the venom . of a rabid dog, which causes hydrophobia”.

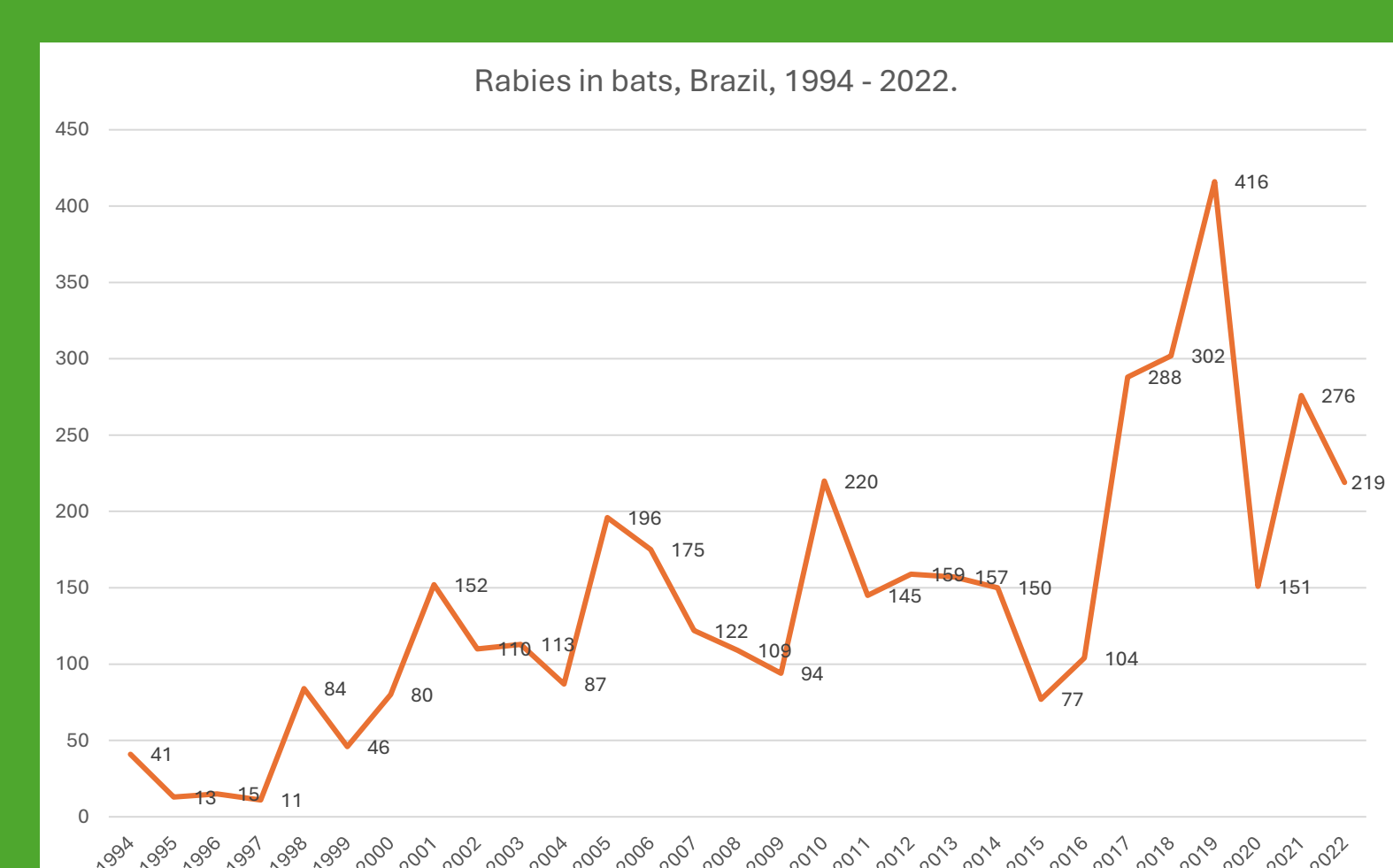
“The indigenous people knew how to cauterize the wound caused by the hematophagous bats, using hot sea water or hot ashes”.

If a person sleeps with their feet uncovered, they come and bite their toes, especially the big toe, and make a lot of blood flow. I believe that they make us sleep without feeling us bite and as soon as they bite, they take a lot of flesh away (Lisboa, C. early 17th century).

- ✓ Documents and newspapers has showed the rabies virus circulation and human deaths by rabies since 1840s.
- ✓ Lutz (1908) isolated rabies vírus from horses: “equines suffered greatly from bat bites”, but he didn't relate the disease to bat bites.
- ✓ Carini (1911) suggested the causal relationship between bats and herbivores death. He isolated the rabies virus from cows and horses and identifying the furious and paralytic forms of this zoonosis (Biguaçu epidemy).



Nowadays, human rabies in Brazil has occurred sporadically and accidentally. Human epidemics transmitted by hematophagous bats occurred in 1990-92<sup>1</sup>, 2003-04<sup>2</sup> and 2018<sup>3</sup>.



Since the end of the 19th century data showed the rabies treatment of individuals bitten by hematophagous bats. Nowadays, cases of rabies involving bats have been identified, mostly with cats as the intermediate animal in the rabies cycle.