

## First record on *Loxosceles laeta* (Nicolet, 1849) (Araneae, Sicariidae) in the West Zone of São Paulo City, São Paulo, Brazil, and considerations regarding its geographic distribution

Primeiro registro de *Loxosceles laeta* (Nicolet, 1849) (Araneae, Sicariidae) na Zona Oeste do Município de São Paulo, São Paulo, Brasil, e considerações sobre sua distribuição geográfica

Rute Maria Gonçalves-de-Andrade<sup>1</sup> and Denise Vilarinho Tambourgi<sup>1</sup>

**Abstract** *Loxosceles laeta* spiders were captured in the West zone of São Paulo City, this being the first record of the specie in this area. Since loxoscelism is an important public health problem in the South region of Brazil, it is necessary to investigate the presence of this spider in São Paulo City.

**Key-words:** *Loxosceles laeta*. *Loxoscelism*. *Geographic distribution*.

**Resumo** Espécimens da aranha *Loxosceles laeta* foram capturados na zona Oeste do município de São Paulo, Por ser o loxoscelismo importante problema de saúde pública na região Sul do Brasil, é necessário investigar a presença dessa espécie na cidade de São Paulo.

**Palavras-chaves:** *Loxosceles laeta*. *Loxoscelismo*. *Distribuição geográfica*.

Loxoscelism is the clinical condition produced by the venom of spiders belonging to the genus *Loxosceles*, which can be observed as two well-defined clinical variants: cutaneous loxoscelism (CL) and systemic or viscerocutaneous loxoscelism (VCL) which occur in around 83.3% and 16.7% of the cases respectively<sup>10</sup>.

Pain, edema and liveloid plaque that develop later into a necrotic scar, are the predominant local manifestations in CL. In VCL, hematuria and hemoglobinuria are always observed, while jaundice, fever and sensorial involvement occur in most of the cases. Although systemic loxoscelism is less common than the cutaneous form, it is the main cause of death associated with *Loxosceles* envenomation. Most of the fatalities occur in children and are related to the South American species, *L. laeta*<sup>2</sup>.

Human cases of loxoscelism have been reported in diverse countries of various continents in temperate and tropical regions. One hundred *Loxosceles* species have

been described: eighty-six in America, two in Asia (China) and twelve in Africa. Two species are cosmopolitan: *L. rufescens* (North American specie) and *L. laeta* (South American specie), both found in Europe and the latter also in Australia<sup>9</sup>.

In the anthropic environment *Loxosceles*' dispersion is highly facilitated because, as it is cryptozoic, it can shelter and proliferate among piles of bricks, wood and roof tiles, which also enables its transportation to other geographical areas.

Among South American species, *L. laeta*, possibly the most toxic of all the species, has the widest geographical distribution, a fact that can be associated to its resistance to long periods without food or water<sup>9</sup>. This characteristic contributes to its survival when transported for long distances. Furthermore, *L. laeta* presents significant reproductive potential: each female can produce up to fifteen egg sacs during its life<sup>3</sup> and each of these may contain from fifty to one hundred

1. Laboratório de Imunoquímica do Instituto Butantan, São Paulo, SP.

Address to: Dr<sup>a</sup> Rute Maria Gonçalves de Andrade. Laboratório de Imunoquímica/Instituto Butantan. Av Vital Brazil 1500, Butantã 05503-900 São Paulo, SP, Brasil.

e-mail: rutemgdeandrade@butantan.gov.br

Recebido para publicação em 14/12/2002

Aceito em 26/5/2003

and forty six eggs (Gonçalves-de-Andrade, data not published), with a high egg fertility index<sup>6</sup>.

According to Gerstch<sup>4</sup>, *Loxosceles laeta* is possibly an endemic species of the Southwest America, which has been introduced into the East of this continent and also into both North and Central America. In Brazil, it occupies urban and periurban ecotops predominantly in the South country region. Knowledge of the current geographic distribution of *Loxosceles laeta* is very important, considering the toxicity of its venom and the association of this specie with most of the fatal cases of loxoscelic envenoming reported in South America.

*Loxosceles laeta* spiders have been captured manually in the *Hospital Psiquiátrico Pinel*, localized on Raimundo Pereira de Magalhães Avenue, 5214, Pirituba District, West area, São Paulo, SP, Brazil. They were placed in round plastic pots (9.5cm diameter x 5.5cm height) and are being kept in the *Biotério de Criação de Aranhas Loxosceles* of the Immunochemistry Laboratory, Butantan Institute.

Three males and one spiderling probably in the fourth instar were captured. A male was found inside one of the complex buildings; the other two were found in an open area under the construction, where it was possible to observe several *L. laeta* skins, as well as webs and egg sacs, whose eggs had already hatched and the spiderlings, dispersed. The spiderling has been captured in a deposit for disused material. Three females have also been observed, but were not captured as they were in a difficult location for collection. Several skins of *L. laeta* have been observed in construction sites of the park.

*Loxosceles laeta* belongs to Gertsch' *laeta* group, which includes another twenty-four species distributed in Central (Guatemala and Panama) and South America (Curacao, Trinidad, Venezuela, Colombia, Ecuador, Peru and Chile)<sup>4</sup>. This is the largest species of the group and

its presence has already been registered at heights from 200 up to 2340m<sup>4 5</sup>. In North America, its presence has been well notified: there are records of *L. laeta* populations in Vancouver, Canada<sup>5</sup> and in the United States, in Cambridge (Massachusetts)<sup>7</sup>, California (Los Angeles)<sup>11</sup>, Kansas<sup>5</sup> and, more recently, in Florida<sup>1</sup>. In Central America, it has been found in Guatemala and Belize and, in South America, in Brazil, Ecuador, Peru, Bolivia, Chile, Argentina and Uruguay. In addition to the Americas, *L. laeta* is also present in Finland and Australia<sup>5</sup>.

In Brazil, the presence of this specie has already been registered in the states of Paraíba, Minas Gerais (Riacho da Cruz), Rio de Janeiro (Barcelos), Paraná (Vale do Ribeira, Curitiba and Ponta Grossa), Santa Catarina and Rio Grande do Sul (Santo Angelo, Pelotas)<sup>4</sup>.

In the state of São Paulo, data of Gertsch<sup>4</sup> show records of the species in the cities of Francisco Sodr , Cerqueira C sar, S o Carlos, Pindamonhangaba and, in S o Paulo city, in the neighborhood of Ipiranga, south city zone.

We have, recently, captured specimens of *L. laeta* in the State of S o Paulo, in S o Paulo City, west area, Pirituba District, in a public hospital. The hospital has an area of 77 square meters, 32 thousand of which are green areas. The spiders were captured inside buildings that belong to the hospital complex and in the external area.

The presence of *Loxosceles laeta* in several different environments and diverse heights and climate, associated with its high reproductive capacity<sup>3 6</sup>, are characteristics that distinguish it as an eurioic specie, determining a high adaptability and, consequently, wide ecological valence.

This is the first record of *L. laeta* in this area of S o Paulo City and stresses the necessity of studies investigating its population dynamics in order to prevent dispersion and the risk of human envenomation.

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