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CERTIFICADO  
DE REPORTE

## 1. INFORMACIÓN DEL CERTIFICADO

Número de certificado: **16D88EE8AA7**

Fecha de la última actualización del conjunto de datos: **2019-10-01**

URL del conjunto de datos: [https://ipt.biodiversidad.co/cr-sib/resource.do?r=0359\\_lonomia\\_20191001](https://ipt.biodiversidad.co/cr-sib/resource.do?r=0359_lonomia_20191001)

Número de registros biológicos reportados: **2**

## 2. INFORMACIÓN DEL PERMISO

### **Autoridad**

Autoridad Nacional de Licencias Ambientales

### **Número del permiso**

IDB0359

### **Titular**

Universidad de los Andes

### **Nit o cédula**

860.007.386-1

### **Fecha de emisión del permiso**

2014-10-09

## 3. INFORMACIÓN DEL RECURSO

### **Título del proyecto**

Revealing the ecology and toxinology of deadly venomous caterpillars from the genus *Lonomia* in Colombia

### **Resumen**

In South America, accidents caused by contact with lepidopterous larvae are common and can produce a diversity of reactions that vary from dermatological problems to severe haemorrhagic syndromes, as caterpillars from the genus *Lonomia* (Saturniidae) may cause. In Colombia, several cases of medical importance due to contact with *L. achelous* caterpillars, have been reported. The only treatment available is the anti-*lonomia* antivenom produced by the Instituto Butantan in Brazil against *Lonomia obliqua*. Through this project, we aim to improve our knowledge of venomous caterpillars, providing the necessary tools to support development of adequate treatment against *Lonomia* caterpillars. By understanding species distributions and ecological characteristics, we can design prevention strategies and determine how antivenom

supply in distant regions should be guaranteed. The aim of this project is to define *Lonomia* species present in Colombia, to evaluate their ecological patterns (spatial and temporal distribution) and their toxinology, this way we wish to understand the sudden appearance of this caterpillars and the aggregated spatial distribution of human accidents. We hypothesize that more than one species is responsible for envenoming in humans in Colombia and the number of accidents has increased due to a shift in *Lonomia* distribution caused by environmental changes.

**Palabras clave**

Occurrence Ecology Toxinology *Lonomia* Colombia, Specimen

### 3.1 Contacto del recurso

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### 3.4 Cobertura geográfica

Colombia CO Meta Guamal Vereda la Paz Colombia CO Casanare Tauramena Finca Terrónduro de José Rodríguez Coordenadas: 4°58'33.24"N y 4°58'33.24"N Latitud; 72°36'18.77"W y 72°36'18.77"W Longitud

### 3.5 Cobertura taxonómica

Polillas del género *Lonomia* identificadas a especie

**Categorías taxonómicas**

Especie: *Lonomia casanarensis*, *Lonomia orientoandensis*

### 3.6 Cobertura temporal

4 de junio de 2018 - 19 de agosto de 2018

### 3.7 Métodos de muestreo

Methodologies and techniques to achieve the aims of the project To achieve our specific objectives, we will use the following methodologies: 1. To identify the *Lonomia* species in Colombia that are presumably involved in accidents we will perform species identification based in adult morphology and associate collected larvae to identified species through the use of DNA barcoding techniques. DNA barcoding will further allow identification of larvae involved in accidents. Taxonomic identification will be part of the proposed one month training in the National History Museum (London) with collaborator Dr Ian Kitching. 2. To describe ecological patterns of spatial and temporal distribution comparing periurban and sylvatic ecosystems we will conduct a field sampling where we will collect moths at light and caterpillars from tree trunks when observed or notified by local people. Field sampling will be performed mainly in Casanare department, where most cases have been notified and *Lonomia achelous* is known to occur. In Casanare, we will select three municipalities with recent reports of accidents that are spatially separated. Within each municipality we will sample the periurban area and the closest conserved area to try to determine whether the greatest risk of contact is due to caterpillars colonizing trees surrounding houses or if accidents occur mostly to people moving through sylvatic habitats. Additionally, two conserved areas, one in the Orinoquia Region and one in Amazonia, will be sampled two times a

year in different seasons. In this way, we will explore the original distributions of *Lonomia* species in primary forest habitats prior to intervention, and test which of two hypotheses; a) colonization or b) habitat shift due to environmental change is more likely. In each locality, sampling will be conducted four times a year during one year, to allow for seasonal variation of rainy/dry periods. Each sampling will last 5 days in each locality and each habitat (periurban and sylvatic). All collected individuals will be taken to the laboratory at CIMPAT (Universidad de los Andes) for further processing. Based on caterpillar collections we will measure local abundances in each habitat, we will acquire data on species seasonality and host plant specificity. We want to determine whether the increase in accidents is due to colonization of periurban trees by *Lonomia* or whether accidents are restricted to contact with caterpillars in sylvatic areas. 3. To characterize the venom composition of each identified *Lonomia* species and 4. To test the efficacy of the anti-*Lonomia* antivenom against all species present in Colombia. Based on caterpillar collections, we will perform venom extraction and characterization using established protocols (11,12,13,14). Different *Lonomia* species show different venom compositions so this step is critical to support adequate antivenom design. Characterization of venom composition and efficacy of anti-*Lonomia* antivenom will be performed as a part of the training in the Instituto Butantan. 4. To generate risk maps and design an alert system to prevent accidents with *Lonomia*. Our most important goal is to provide health authorities with the necessary information to design adequate prevention strategies. If *Lonomia* species are colonizing periurban areas due to deforestation, the at-risk population will not only be field workers but also women and children. Under this scenario, accidents are likely to be more frequent and require antivenom doses to be available. Understanding gained through this project will benefit not only local people and health authorities but will allow the generation of strategies to treat accidents involving venomous caterpillars in other countries such as Peru where cases were recently notified.

La veracidad de este certificado se puede corroborar en la siguiente dirección web:  
[https://ipt.biodiversidad.co/cr-sib/pdf.do?r=0359\\_lonomia\\_20191001&n=16D88EE8AA7](https://ipt.biodiversidad.co/cr-sib/pdf.do?r=0359_lonomia_20191001&n=16D88EE8AA7)

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