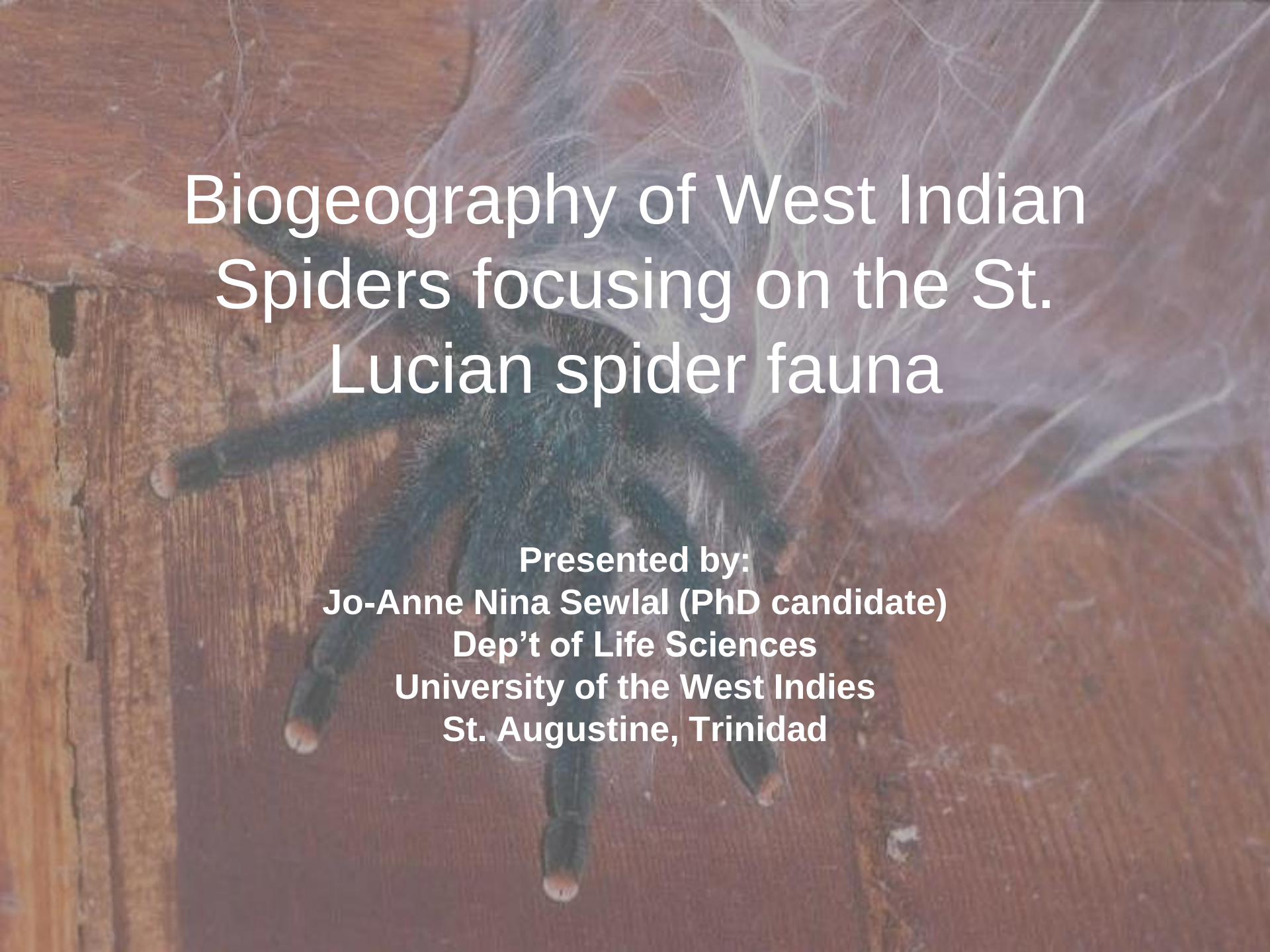

# Biogeography of West Indian Spiders focusing on the St. Lucian spider fauna

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# What is biogeography?

**The study of the geographic distribution of organisms.**

# Biogeographic regions

- Nine primary terrestrial biogeographic regions of the World:
- **Antarctic**
- **Western Palearctic**
- **Eastern Palearctic**
- **Afrotropical**
- **Indo-Malayan**
- **Australasian**
- **Micronesian**
- **Nearctic**
- **Neotropical** (that's us)

# Who is included in the Neotropics

- This region extends southward from the Straight of Tehuantepec, in southern Mexico and includes the Central and South America as well as several groups of oceanic islands:
- Antilles in the Caribbean Sea
- Galapagos in the Eastern Pacific Ocean
- Falklands in the Southern Atlantic Ocean

# Oceanic vs. Continental Islands - definitions

Oceanic islands - are already separated by sea barriers when they first emerge above the surface.

A fall in the sea level can create a new island, or it can arise through vulcanism or uplift.

Continental islands - land masses that were originally part of a continent, but became islands through such processes as faulting, drifting and sea-level rise.

# Oceanic vs. Continental Islands - fauna

**Oceanic islands**:

- High degree of endemism
- Lower species diversity
- Takes a long time for species diversity to build up

**Continental islands**:

- High species diversity
- Established ecosystems

# Introduction to the spiders

- **Spiders have a worldwide distribution, occupying all land environments except at the polar extremes (Foelix 1996).**
- **Currently there are approximately 40,700 known species worldwide (Platnick 2009).**
- **This is believed to be approximately one-fifth the total.**
- **Thus the world's fauna is far from being known, especially in the neotropics.**

# What are spiders?

**Spiders belong to the order Arachnida, as do scorpions and mites. The defining characteristics of arachnids are:**

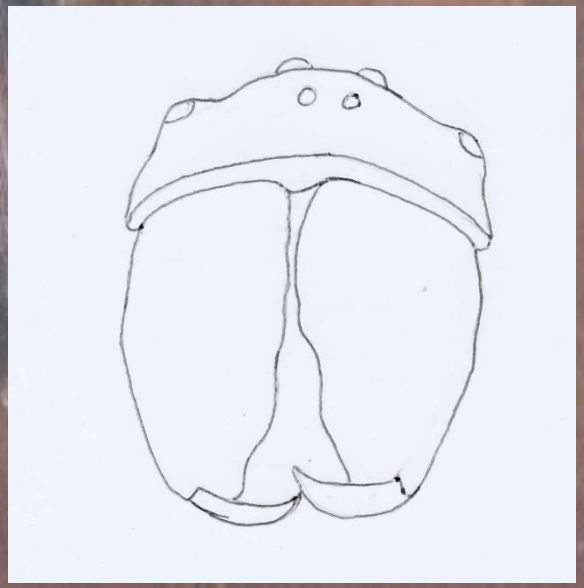
- **Two body segments consisting of a cephalothorax (fused head and thorax segments) and an abdomen**
- **Eight legs**
- **No antennae**
- **No wings**

# What are spiders? (cont'd)

**There are two main groups of spiders;**

**Mygalomorphae to which the tarantulas belong**

**Araneomorphae which house the other types, like hunting, jumping and web-building spiders.**



# How do spiders reach these islands?

- Float on debris
- Blown by the wind
- Brought in by humans – visitors or through imports.

# Problems

- Exotic species are introduced
- They may be able to compete better for habitats and food
- They may eliminate the native species
- They may become a problem to humans, for example, the Black Widow (***Latrodectus mactans***)

# Methodology

- Field:
  - Sweep-netting
  - Visual search
    - Ground search
- Aerial search
- Lab:
  - Identification
- Data analysis

# Habitat types sampled

**Natural Habitats:**

- Semi-evergreen seasonal forest
- Deciduous seasonal forest
- Lower montane rainforest
- Mangrove Woodland
- Littoral Woodland
- Riparian vegetation

**Disturbed habitats:**

- Farmland
- Secondary vegetation
- Roadside vegetation

# Preliminary Results

| Family | Number of species |
|---|---|
| Araneidae | 7 |
| Linyphiidae | 2 |
| Miturgidae | 1 |
| Oecobiidae | 1 |
| Oxyopidae | 1 |
| Pholcidae | 3 |
| Salticidae | 4 |
| Sparassidae | 1 |
| Tetragnathidae | 3 |
| Theridiidae | 2 |
| Thomisidae | 1 |
| Uloboridae | 1 |
| Unidentified species | 7 |
| **TOTAL** | 29 |

# Some common spiders in St. Lucia

***Argyrodes elevatus***

***Leucauge argyra***

**Cyclosa *sp.***

**Argiope argentata *with prey***

# So what good are spiders?

- They eat insects, including mosquitoes which are vectors of disease.
- They regulate pest numbers in crop fields.
- They can be used as bio-indicators

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The End