



KAMARAJ IAS ACADEMY
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Darwin's Bark Spider

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Context: Recent studies by scientists from **China, Madagascar, Slovenia, and the US** explored **Darwin's Bark Spiders** (*Caerostris darwini* and *C. kuntneri*) to understand the **exceptional toughness of their silk**.

About Darwin's Bark Spider

- **Scientific Name:** *Caerostris darwini*
- **Family:** Araneidae (orb-weaver spiders)
- **Discovery:** First observed in **2001**, formally described in **2009**
- **Habitat:** Riverine forests and wetlands
- **Distribution:** Forests of **Madagascar**

Appearance

- **Size:** Females: 2–2.5 cm; males smaller
- **Color:** Dark brown with mottled patterns ? **camouflage against tree bark**

Unique Characteristics

1. Silk Properties:

oProduces **largest and toughest webs** known in the animal kingdom

oSilk **outperforms steel** and most human-made fibres in **strength and toughness**

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oMore than **twice as tough** as silk from other spider species

1. **Web-Building:**

oConstructs **orb webs over rivers and streams**

oWeb diameter can reach **25 m (82 ft)**

oUnusual among orb-weavers, which typically build in vegetation

1. **Lifespan:**

oShort, typical of orb-weaving spiders

o**Females live longer** than males

1. **Ecological Role:**

o**Controls insect populations**

oMaintains **riverine forest ecosystem balance**