

## Madagascar Hissing Cockroach



Kingdom: Animalia  
Phylum: Arthropoda  
Subphylum: Uniramia  
Class: Insecta  
Order: Blattaria  
Family: Blattidae  
Genus: *Gromphodrhina*  
Species: *portentosa*



Photo courtesy of Karen Marzynski

### Habitat

- **In the Wild:** This species of cockroach is found in leaf litter on the forest floor only in Madagascar.
- **Exhibit Location:** USS Antiquities, Zoo to You Collection

### Characteristics

- The Madagascar hissing cockroach is wingless and can reach a length of 2-3 inches.
- They have grasshopper-like mouthparts designed for chewing. They also have special adhesive pads on their feet and forelegs to help them move over slick surfaces.
- Males are distinguished by prominent bumps or horns behind their heads, which they use as battering rams in territorial and courtship shoving matches, jockeying for position. Females lack these horns.
- **Lifespan: In the Wild** Unknown; **In Captivity** 2-5 years

### Behaviors

- Madagascar hissing cockroaches are nocturnal and semi-communal. They are not aggressive to other species and are too slow to escape most predators.
- Males are territorial and have a hierarchy, but they are not social like ants. They are aggressive towards each other but not towards females or nymphs (young).
- They produce a snake-like hissing that startles predators. When disturbed, the entire colony hisses together for a really disturbing sound. There are at least 5 types of hisses: a male combat hiss, 2 types of courting and 1 mating hiss, and an alarm hiss.
- Dominant males show off by standing on their toes (called stiling). Male combat involves ramming each other with their horns, using their abdomens to flick, push or thrash, hissing the whole while. The male that is larger and hisses more usually wins.
- Forcing air through spiracles on the abdomen does the hissing. Air sacs work like bellows and squeeze out the air. They are the only insects to make sounds this way.
- **Enrichments at the Zoo:** rearranging exhibit furniture (branches, leaves and other objects that simulate their natural habitat)

### Reproduction

- Sexual maturity is reached at 7 months of age.
- During courtship, the pair strokes each other's antennae, then their bodies, while hissing sweet nothings to each other. Females can tell the rank of males and will prefer to mate with the dominant male.
- The gestation period is 2 months. The female produces 20-60 nymphs. In one lifetime, a female can breed 30 times, producing more than 750 babies.
- The mother appears to give birth to live young, but they actually come from eggs in a capsule inside her abdomen. She retains the capsule until the eggs hatch, and then she eats it. The nymphs remain grouped around her while she protects them by raising her body over them. The nymphs mature in 5-10 months and leave the mother.

### Diet

- **In the Wild:** decaying fruit, vegetable matter, other insects (speed up the process of decomposition by eating dead and decaying plants)

- **At the Zoo:** fruits, vegetables, monkey biscuit

### **Conservation Status**

- **IUCN status:** not listed; **CITES Appendix:** not listed
- This species of cockroach is common in Madagascar and is restricted only to that island.
- Predators: birds, mammals

### **Did You Know?/Fun Facts**

- They are an important source of food for other animals. Insects have 3 times more protein than chicken or beef, weight for weight.
- Madagascar hissing cockroaches have recently become a common pet. They make ideal teaching insects because they don't bite, don't fly, and are generally odorless and not very active.

### **Sources:**

- Gordon, D. (1996). *The complete cockroach*. Berkeley, CA: Ten Speed Press.
- Singapore Zoo, (n.d.). Madagascar giant hissing cockroach. Retrieved Oct. 22, 2005, from Singapore Zoo Web site: <http://www.szgdocent.org/resource/ff/f-bhiss.htm>.