



CAES

The Connecticut Agricultural Experiment Station

Putting Science to Work for Society since 1875

Founded in 1875

Putting science to work for society

Dr. Gale E. Ridge
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

Email: gale.ridge@ct.gov

Website: <https://portal.ct.gov/caes>

MADAGASCAR HISSING COCKROACH *(Gromphadorhina portentosa)*

Of the approximately 4,000 species of cockroaches on the planet, only about a dozen are true 'synanthropes' - house-infesting pests. The majority of cockroaches instead play a vital role in the recycling of nutrients as scavengers in ecosystems all over the world. The Madagascar hissing cockroach is among the largest roaches in the world. On its native island of Madagascar, this large cockroach eats decaying organic matter, vegetation, fruit, and rotting wood.



Fig. 1: Adult Madagascar Hissing Cockroach

Its large size, docile nature, and ease of care in captivity have made it attractive as a 'feeder' insect for pet fish and reptiles. Hissing cockroaches are also used in research and kept as pets due to their interesting

appearance and behavior. Unlike pest species, hissing cockroaches are poorly adapted to man-made environments and cannot infest homes in temperate regions of the world.

Description and Life Cycle:

Hissing cockroaches are very large. Adults can be up to 2 - 3 inches long. Females are usually longer and heavier than males. Both sexes are completely wingless, with long antennae, a dark brown to black head and pronotum and a brown abdomen (Fig. 1). Like all cockroaches, they undergo incomplete metamorphosis with 3 life stages: eggs, nymphs that resemble miniature adults, and adults. Nymphs molt multiple times while developing.

Hissing cockroaches are named for their ability to hiss. This is a trait shared only by a small group of 20 cockroach species in the taxonomic tribe Gromphadorhinini. The hissing is produced when the cockroach forces air out of modified spiracles. These are respiratory openings in the abdomen through which the insects breathe. Hissing is used as both a warning signal and for communication. Males hiss at each other to establish dominance and will also hiss to females during courtship. All adults and older

nymphs are also capable of producing a loud disturbance hiss used against perceived danger. Another unique quality of hissing cockroaches is their maternal care. Like all cockroaches, their eggs are contained in leathery cases called ootheca. After it is formed, the hissing cockroach female does not drop it, but instead carries the ootheca inside an abdominal cavity. The eggs hatch inside her and she gives ‘live birth’ to several dozen nymphs. The nymphs reach adulthood in about 10 – 12 months.

Hissing Cockroach Care:

Madagascar hissing cockroaches are easy to keep and breed in captivity. Like most cockroaches, they are semi-social and thrive best when kept in groups. A 5 to 10-gallon terrarium or storage bin with a bedding of wood chips (not cedar chips) or coconut fibre makes a suitable habitat. An inch of Vaseline around the top of the tank or bin will prevent roaches from escaping.

Provide climbing/hiding places for the roaches, using wood blocks or egg cartons. They do well on a diet of protein-rich food such as fish flakes or grain meal, supplemented with fresh fruits and vegetables. Replace all food regularly to avoid spoilage. A gelatin-based water source such as ‘cricket-quencher’ will provide the roaches with fluids while limiting drowning or wetting the bedding. The habitat can also be lightly misted to provide water and elevate humidity. Similar to tropical fish, hissing cockroaches require warm conditions year-round to thrive. Use a small heating pad to keep the terrarium warm during colder months. In good conditions, a hissing cockroach may live up to 5 years.

If males and females are kept together, they will breed. Since females carry their ootheca internally, it may not be immediately apparent if a female is ‘pregnant,’ so a clutch

of nymphs may suddenly appear. Young nymphs are very small, so make sure breeding tanks have both a Vaseline barrier and a tight-fitting and/or fine meshed lid to prevent escape. If breeding is not desired, keep the sexes separate. To identify the sexes: males have slightly thicker antennae and a pair of horn-like projections on their pronotum. Females have a smoother pronotum, thinner antennae, and tend to be slightly larger than males. Adults and older nymphs can also be sexed by looking under the last abdominal segment (Fig. 2).

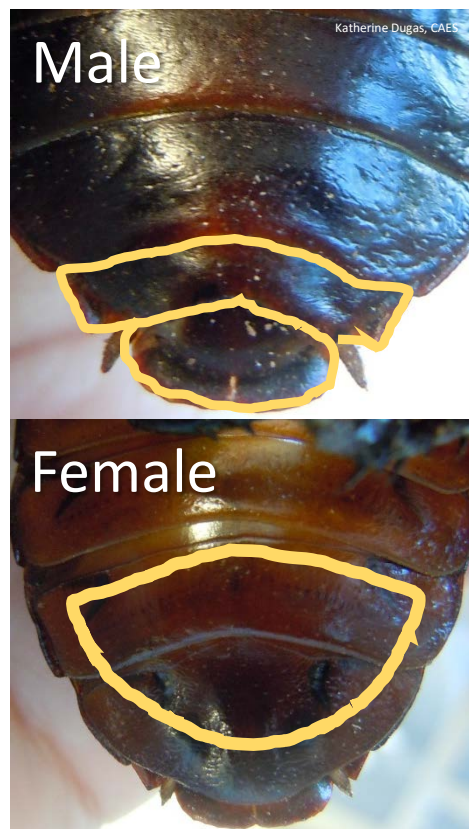


Fig. 2: Male roaches have a triangular ‘notch’ in their last abdominal segment(top), females do not(bottom).