

Identity: *Lissachatina fulica* (Bowdich, 1820)

Systematics: Achatinidae, Pulmonata, Gastropoda, Mollusca

Common names: Giant African Snail, Caracol Africano Gigante, Escargot Géant, Caramujo



USDA photo by David G. Robinson

Description

Dimensions

Up to 20 cm in height, and 10 cm in maximum diameter, but generally smaller.

Shell description

“When full-grown, the shell of [*L.*] *fulica* consists of from 7 to 9 (very exceptionally 10) whorls, with a moderately swollen body-whorl and a sharply conical spire, which is distinctly narrowed but scarcely drawn out at the apex. The outline varies greatly, even in the same colony, from very slender to moderately obese, the broader specimens tending to be shorter for the same number of whorls. All whorls are decidedly convex, due to the broadly

impressed sutures. The aperture is relatively short, even in the broadest specimens, being [usually] shorter than the spire, often considerably so. The outer lip is usually sharp and thin, rarely somewhat thickened, or even slightly expanded in very old specimens; it is very convex, evenly curved into a regular semi-ellipse, and inserted on the body-whorl at a sharp, open angle, the upper part of the body-whorl being scarcely or not flattened behind the lip. The columella is more or less concave, sometimes rather weakly so, in which case it may be slightly or even much twisted; it tends to be more concave in broader shells. In all stages, from the nepionic shell on, [the shell has] the umbilical slit completely closed and the columella truncate. In all specimens seen, which on general shape and sculpture were referable to [this species], both columella and parietal callus are white or bluish white, without any trace of pink.” (Bequaert, 1950)

Hosts

As a phytophagous gastropod, this species is not host-specific.

Pest Significance

Economic impact: The giant African snail has been documented as causing economic damage to more than 500 different species of economically important agricultural plants, as well as plants of horticultural, cultural and medicinal value. It also distributes in its feces spores of *Phytophthora palmivora*, the cause of black pod disease in cacao plants in Ghana, as well as *P. parasitica* and *P. colocasiae*. This species is responsible for the spread of foot rot in *Piper nigrum*.

Geographic Distribution

Original distribution: It is believed to be originally from East Africa. It is now established in Ivory Coast and Morocco, and throughout the Indo-Pacific Basin, including Guam and the Northern Mariana Islands, American Samoa and the Hawaiian Islands. In the New World, it is established in Anguilla, Saint Martin/Sint Maarten, Antigua and Barbuda, Guadeloupe, Marie-Galante, Dominica, Martinique, Saint Lucia, Barbados, Trinidad, Aruba, and Curaçao as well as throughout Brazil and northernmost Argentina. It was reported from Ecuador in 2009 and in the Galapagos Islands shortly thereafter, and in November of 2007, it was discovered in Maracay in the state of Aragua, Venezuela, some 150 km from Caracas. It was reported from Colombia in 2010, but introduction is

believed to have been somewhat earlier. The giant African snail was detected in Cuba in a Havana neighborhood in 2014 and has been rapidly spreading across the island ever since. In 2017, it was reported in La Altagracia Province, Dominican Republic, where an eradication program is currently being implemented and in the Port of San Juan, Puerto Rico in 2018, where it was successfully extirpated. A population was discovered in Guanacaste Province, Costa Rica in 2021. A substantial population in southern Florida was detected in 2010 and was declared eradicated in 2021.

Life History

The giant African snail is highly adaptable to new environments and its life history reflects those changes. In general, the number of eggs in a single clutch range from 300 to 1000 or more, laid at 2–3-month intervals. The laying of eggs can occur year-round in humid environments or restricted to the rainy season(s) where there are distinct dry and rainy periods during the year. Eggs can hatch between 1 and 17 days, depending on how long the viable eggs are withheld within the oviduct. Being hermaphroditic, reciprocal copulation typically occurs between two mature individuals, although individuals are capable of self-fertilization if no other adults are present. Being protandrous hermaphrodites, the male genitalia mature before the female genitalia, so initially each snail functions as male, and towards the end of its life, the snail becomes exclusively female. Neonates are detritus feeders and algal grazers, but after a few months become large enough to feed on any available vegetation. Egg-laying can start after 4-5 months. Mature individuals have very varied feeding habits, consuming detritus, plants, dead animals and feces. Individuals may live for up to 9 years.

Movement and Dispersal

Natural spread is extremely slow.

Man-assisted spread: Transportation on vehicles, on local produce, intentional spread by individuals for food, as folk medicine and for religious ceremonies. Routinely intercepted by the USDA Predeparture inspectors in Hawaii and in containers and in baggage of international travelers from Asia, and occasionally from Africa, the West Indies and South America. It is also part of an illegal pet trade, both within the United States and from Europe.

Parasitology and Public Health Significance

Lissachatina fulica is known as an important intermediate vector of the Rat lungworm *Angiostrongylus cantonensis*, causing eosinophilic meningoencephalitis in humans and livestock.

Selected References

- Bequaert, J. C.**, 1950, Studies in the Achatininae, a Group of African land Snails. *Bulletin of the Museum of Comparative Zoölogy at Harvard College*, **105**(1): 1-216, 81 pl.
- Raut, S. K. & G. M. Barker**, 2002, *Achatina fulica* Bowdich and Other Achatinidae as Pests in Tropical Agriculture. In: Barker, G.M. (ed.) *Molluscs as Crop Pests*, CAB International 2002, pp. 55-114