

Bellamya chinensis (Reeve 1863)

Chinese mysterysnail



Taxonomy & Systematics. *Bellamya* is an Old World genus in the worldwide family Viviparidae, a strictly freshwater family of relatively large-bodied prosobranch gastropods, bearing concentric opercula. Viviparids have evolved specializations of the gill and mantle cavity allowing them to filter feed as well as graze. They are also distinguished by their ovoviviparity. Females brood eggs in a "uterus," releasing young as crawling juveniles. The penis arises as a modified right tentacle.

Originally described in the genus *Paludina*, the nomen *chinensis* was subsequently transferred to *Cipangopaludina*, either at the genus level or as a subgenus of *Viviparus*. Smith has pointed out, however, that the genus *Bellamya* is preferred for this group of viviparids throughout the Old World. The nomen "*malleatus*" as a species or subspecies is a synonym of *B. chinensis*.

Habitat & Distribution. We have not confirmed *B. chinensis* in southern Atlantic drainages. But the earliest records of *Bellamya* in the American southeast are reports of "*Viviparus*" or "*Cipangopaludina*" *chinensis* in Alamance and Pitt Counties, North Carolina from the 1940's. Scattered records from Virginia and North Carolina have been added in more recent years. Elsewhere, *B. chinensis* is widely introduced throughout the United States, especially in northern latitudes, extending into Canada.

Ecology & Life History. The initial introduction of *Bellamya* into the New World seems to have occurred in the oriental markets of the west coast. An anecdote relayed to me by North Carolina Fish and Game officials in 2005, involving fishermen of Laotian descent harvesting *Bellamya* from High Rock Reservoir by night, suggests that the rapid spread of *Bellamya* through the Carolinas in recent years may have been promoted by artificial "seeding."

It is also quite likely that many recent introductions of *Bellamya* in the southern United States are traceable to water-garden hobbyists, who purchase the snails to clarify the water in their backyard ponds. That *Bellamya* populations can, in fact, clarify small ornamental ponds attests to their efficiency as filter-feeders. They probably also graze, or at least scavenge excess fish food. But they do not typically consume macrophytic vegetation.

There is some experimental evidence that *Bellamya* invasion may have a negative impact on native populations of pulmonate snails, although this has not been confirmed by field surveys. Positive correlations have been reported in northern Wisconsin lakes between the presence of *Bellamya* populations and general measures of productivity, as well as such measures of lake disturbance as boat landings and shoreline housing.

The (surprisingly sparse) life history studies of *B. chinensis* suggest that maturity may be reached at age one year, with iteroparous reproduction for several years thereafter.

Conservation Status. NatureServe G5/SNA - Secure/Not Applicable (exotic).