



Physa gyrina (Say 1821) tadpole physa



Taxonomy & Systematics. The basommatophoran pulmonate family Physidae is worldwide in distribution but reaches its maximum diversity in North America. The gill has been lost, leaving respiration to occur across the entire mantle cavity, as is true for pulmonates in general. Their ability to enfold an air bubble within this cavity can be seen as an adaptation to the colonization of warm or stagnant freshwaters, where the concentration of dissolved oxygen may be reduced. Physids are hermaphroditic, as is also true for pulmonates in general; typically capable of self-fertilization and laying eggs in

irregular, loosely-packed, gelatinous masses.

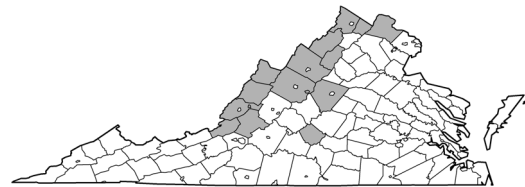
Until recently it was believed that the North American Physidae numbered more than 40 species, and a variety of elaborate classification schemes have been proposed. All of the physids common in the southeastern U.S. have at times been referred to the genus "*Physella*," which VDGIF recognizes following Turgeon et al. It is now clear that most of this nominal diversity is attributable to phenotypic plasticity, however, and that the true number of American species is closer to ten. The simple two-genus system favored by earlier workers would seem sufficient, all species of the American southeast referable to the genus *Physa*.

The shell apex of *Physa gyrina* is convex, and the penial sheath subdivided into glandular and non-glandular portions. Junior synonyms include *ancillaria*, *aurea*, *crocata*, *elliptica*, *inflata*, *hildrethiana*, *lordi*, *microstoma*, *microstriata*, *oleacea*, *parkeri*, *sayii*, and *utahensis*.

Habitat & Distribution. The range of *P. gyrina* extends from California to the Gulf of Mexico, and northward to Quebec and the Northwest Territories. In Virginia populations are primarily found in limestone-rich regions of the Ridge & Valley Province. Populations of *P. gyrina* inhabit almost any permanent or intermittent freshwater habitat type, including ponds, lakes, creeks and rivers. Substrata occupied include mud, sand, gravel, rock, and plants. In northern states, populations are often very abundant in macrophyte stands.

Ecology & Life History. *Physa gyrina* seems to thrive under a broad variety of environmental conditions, and is considered a dietary and habitat generalist. Populations of *P. gyrina* have documented effects on algal and macrophyte biomass, and can alter primary producer community structure through grazing.

In the lab, *P. gyrina* reproduces at a median age of 11 -12 weeks, significantly behind *P. acuta*, demonstrating significantly lower weekly mean fecundity as well. A variety of life history patterns have been reported in the field, including one and two generations per year, semelparous and iteroparous.



Conservation Status. NatureServe G5/S5 - Secure.