LIVING WORLD
Journal of the Trinidad and Tobago Field Naturalists' Club
admin@ttfnc.org

ISSN 1029-3299

TRINIDAD AND TOBAGO
FIELD NATURALISTS' CLUB

New Records of Two Freshwater Gastropod Molluscs for Trinidad, West Indies

Ryan S. Mohammed and Mike G. Rutherford

Mohammed, R.S., and Rutherford, M.G. 2012. New Records of Two Freshwater Gastropod Molluscs for Trinidad, West Indies. *Living World, Journal of The Trinidad and Tobago Field Naturalists' Club*, 2012, 85-86.

New Records of Two Freshwater Gastropod Molluscs for Trinidad, West Indies

The freshwater molluscs of Trinidad have been studied since the 1860s. R.J.L. Guppy wrote many papers on the terrestrial and freshwater molluscs of Trinidad, culminating in his comprehensive list in 1893. In this he names nine species of freshwater gastropods. E.A. Smith, working at the same time, came up with ten species in his 1896 paper, although he did write that one of them was possibly a synonym of one of Guppy's species. Workers since then have added a few more and by 2007 Maharaj and Alkins-Koo had listed 15 potential species from nine families: Ampullariidae, Ancylidae, Planorbidae, Thiaridae, Neritidae, Physidae, Lymnaeidae, Hydrobiidae and Pleuroceridae. However, several of the specimens found in this last study were not identified to species level.

This note reports on one new record of an Ampullariidae and one new record of a Lymnaeidae. Although information found during this study indicates that both of these species have been in Trinidad for several years, there have as of yet been no records in the literature. Specimens were identified using F.G. Thompson's 1984 manual and the Lymnaeidae was confirmed by Kenneth Hayes at the University of Hawaii.

Between May 1992 and January 2012, one of us (RSM) found specimens of the Spike-topped Apple Snail *Pomacea diffusa* (Blume) at several sites (Fig. 1). The sites span three central Trinidad drainages including the Caroni, Guayamare and Cunupia systems. Specimens can be found along the Trantrill Road, St. Augustine and in some isolated artificial drainages in Arima. There is a high density of approximately 40 individuals per m^2 in some shallow drains within the Cunupia network where they seemingly outnumber the native *P. glauca* (Linnaeus) (Fig. 2). There was one isolated pond at the base of the San Fernando Hill in the early 1990s with a large population (RSM); this population is now extinct but it is included here for the record. A lone specimen was also collected in 2009 from the artificial irrigation trenches which tap the Oropouche Lagoon in south Trinidad.

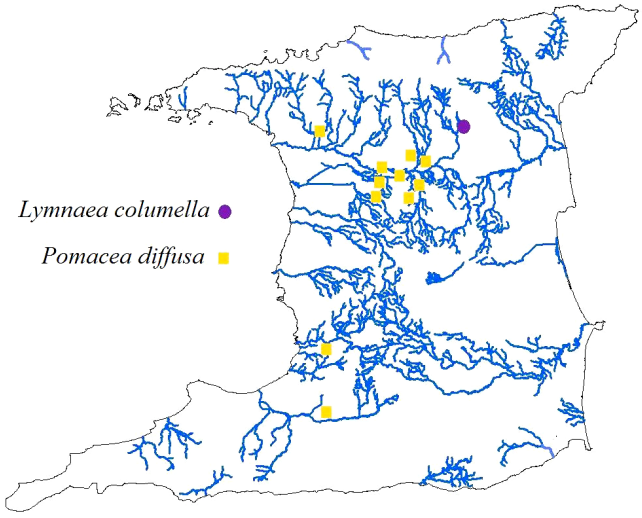

Fig. 1. Central Trinidad distribution of *Pomacea diffusa* within the low portions of the Caroni Drainage and middle courses of the Guayamare and Cunupia Rivers. The single site where *Lymnaea columella* was collected is indicated at the upper site on the Aripo River.

Fig. 2. High density of golden yellow *Pomacea diffusa* outnumbering the brown *P. glauca.*

Although *Pomacea diffusa* is South American in origin, it is very unlikely it is a natural colonizer based on its distribution pattern spanning from central Trinidad. There are two ornamental fish importers located at the core of this distribution with the network of the Caroni, Guayamare and Cunupia Drainages surrounding them, and it is quite likely that this was the source of the snails. This particular species could be considered an alien invasive as, based on the high densities of individuals observed, it clearly outnumbers the native Ampullariidae at certain sites.

Lymnaea (Pseudosuccinea) columella Say (Fig. 3) was collected by RSM in June 2011 at the upper reaches of the Aripo River in the shallow man-made channels used for crop irrigation (Fig.1). It is quite possible that specimens of this species were collected by L.D. Maharaj during the mid 2000s, but as they were only identified to family level and the original specimens cannot be located, this cannot be confirmed.

Lymnaea columella has a worldwide distribution that was facilitated by the trade of aquatic freshwater plants (Cowie 2000). It is very possible this was the mode of transport for this genus to our island as there is a very active ornamental trade in the island for both plants and animals. This species is also of medical importance as

Fig. 3. Two live *Lymnaea columella.*

it is an intermediate host for the trematode *Fasciola hepatica* (Linnaeus) which is known to cause fascioliasis in livestock and sometimes in humans (Mas-Coma *et al.* 2005). As such it is important that the spread of this species is monitored closely.

Specimens of both species are stored in The University of the West Indies Zoology Museum, St. Augustine, Trinidad and Tobago under the following accession numbers: UWIZM.2011.34 – dry shells, alcohol and formalin preserved specimens of *P. diffusa,* UWIZM.2012.11 – dry shells and alcohol preserved specimens of *L. columella.*

REFERENCES

Cowie, R. H. 2000. Non-indigenous land and freshwater molluscs in the islands of the Pacific: conservation impacts and threats. *Invasive species in the Pacific: A technical review and draft regional strategy*. South Pacific Regional Environment Programme. SPREP's Publications Unit, Samoa.

Guppy, R. J. L. 1893. The land and freshwater mollusca of Trinidad. *The Journal of Conchology*, 7: 210-231.

Maharaj, L. D. and **Alkins-Koo, M.** 2007. Proposed sampling protocol for rapid bioassessment of rivers in Trinidad and Tobago using macroinvertebrates. Appendix 10. Use of Benthic Macroinvertebrates To Assess Anthropogenic Impacts. *In* The Rivers of Trinidad and Tobago. Report to The Environmental Management Authority.

Mas-Coma, S., Bargues, M. D. and **Valero, M. A.** 2005. Fascioliasis and other plant-borne trematode zoonoses. *International Journal for Parasitology,* 35: 1255-1278.

Smith, E. A. 1896. A list of the land and freshwater mollusca of Trinidad. *Journal of Conchology,* 8: 231-251.

Thompson, F. G. 1984. Freshwater Snails of Florida: A Manual for Identification. Gainesville: University of Florida Press. 94 p.

Ryan S. Mohammed[1] and **Mike G. Rutherford**[2]
Department of Life Sciences,
The University of the West Indies,
St. Augustine, Trinidad and Tobago.
1. *rmohammed@gmail.com*
2. *mike.rutherford@sta.uwi.edu*