

Aliens of Kamayca

a newsletter on non-indigenous species in Jamaica

Alien Amongst Us—Quilted Melania Snail



Source: <http://www.elrincondelmalacologo.com/Web%20fotos%20agua%20dulce/Fotos%20coleccion/Thiaridae/Tarebia%20granifera.jpg>

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The *Thiara granifera* (quilted melania snail) is a freshwater snail from the Thiaridae family that has a common place in the aquarium industry world-wide. The native range of the animal is the south-eastern Asian countries of India, Sri Lanka, Ceylon, Philippines and Hawaiian Islands, Taiwan, Hong Kong, Thailand, small islands south of Japan as well as south of Society Islands but the snail now has a world-wide distribution. Physical features of the snail include the presence of an operculum, and an elongated shell (which may be bicolour) with body whorls that end in a distinct spire. It is suspected that its introduction was brought about in the USA in the 1940’s by an aquatic plant and fish dealer¹. It has since then been recorded in Caribbean islands but the exact time of introduction in Jamaica is unknown.

Its widespread distribution in freshwater systems across the island was noted in 1996. Mode of entry into Jamaica’s freshwater system re-

mains unconfirmed but is believed to have been accidental through aquaculture, aquatic plants or the aquarium trade. Presence of the species has been confirmed along the Black River, Rio Cobre, and Wag Water as well as lentic environments such as the Moneaque Lake. Studies of the bedrock along the Rio Cobre shows that *T. granifera* comprised up to 80% of standing crop and was collected at all sites investigated along the river².

This thiarid snail naturally occurs in a variety of freshwater habitats such as river systems, streams, riffles and pools. They are benthic species dwelling in sand, mud or on rocky sediment types however when densities are high they can be collected from surfaces of aquatic and marginal vegetation. Studies of freshwater systems in countries of the Caribbean show the potential for the quilted melania snail to quickly displace populations of native freshwater snails. Deliberate introduction of the snail in the Lesser Antilles exploits its ability to out-compete other snail which aids in the biological control of the schistosome vector *Biomphalaria* sp.

Locally the wide-spread invasion of the quilted melania snail has affected populations of *Neritina punctulata* (common name: bussu)

and *Hemisinus lineolatus* (another species from the Thiaridae family)³. The snail displays tolerance to changes in environmental conditions which is a key factor in its successful introduction and establishment. Ellis-Tabanor and Hyslop (2007) concluded that the ability of *T. granifera* to displace other snails arise from their tolerance to pollutants and their presence in such habitats makes them useful for water quality assessment⁴.

Displacement by this species has the potential to cause ecological disturbance therefore having negative impacts on the island’s freshwater biodiversity as well negative economic impacts. The continued displacement of the bussu snail which is the chief ingredient in the bussu soup of Portland has implications for the yearly celebrated Bussu festival in the Eastern region of the country.

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References

¹Pointier, J.P., S. Samadi, P. Jarne and B. Delay. (1998) Introduction and Spread of *Thiara granifera* (Lamarck, 1822) in Martinique, French West Indies.
²Fender, Andrea B. and Hyslop, Eric J. (2003) Evaluation of the benthic macroinvertebrate fauna of Rio Cobre and selected tributaries, with emphasis on the Family Thiaridae, Gastropoda.
³T3N Jamaica website: http://jamaica.inbiar.org.ar/ver_especie_invasion.asp?id_especie=18
⁴Ellis-Tabanor, M and Hyslop, E.J. (2007) acute Toxicity of Endosulphan to Three Freshwater Snails in Jamaica. *Caribbean Journal of Science*, Vol 43 (2)

Developing Regional IAS Strategies for Freshwater, Marine and Terrestrial Ecosystems

The GEF/UNEP/CABI *Mitigating the Threat of Invasive Alien Species in the Insular Caribbean* (MTIASIC) Project has shown that Caribbean countries recognized that Invasive Alien Species (IAS) are a major threat to their already vulnerable freshwater, terrestrial and marine biodiversity. Regionally, IAS pose a threat to the livelihood of fisher-folks, farmers and major economic earners such as the tourism industries. To achieve its main objectives of mitigating the threat of IAS to local biodiversity and economy the project's objective seeks to:

1. Assist participating countries in developing National IAS Strategies
2. Establish Caribbean-wide Cooperation and Strategy (Regional IAS Strategy)
3. Generate, manage and disseminate IAS related knowledge
4. Increase capacity to strengthen prevention of new IAS introduction in terrestrial, freshwater, and marine systems
5. Increase capacity to detect, respond, control and manage IAS impacts in terrestrial, freshwater, and marine systems

In fostering regional cooperation frameworks through which Caribbean strategies can be developed there is a move to adopt guidelines for the creation of a draft regional strategy for marine, freshwater and terrestrial IAS in



Dr. Dane Buddo presents the process of developing a Marine Regional Strategy to participants at the June 2010 Consultation Meeting on the Draft Regional Strategy for Managing IAS

the Caribbean. The Regional Strategy will speak to a regional mechanism to combat the threat posed by IAS to trade, biodiversity and livelihood. The regional strategy developed should be adopted and implemented by CARICOM states in fulfilment of their various international commitments to combat IAS.

Development of the strategy is the responsible of three Regional Task Teams (Marine, Freshwater and Terrestrial). The task teams are comprised of scientist and administrators from participating countries involved in research and management of IAS in their respective countries. Teams are also comprised of members from regional groups such as the Inter-American Institute for Cooperation on Agriculture (IICA) and U.S. Department of Agriculture—Animal and Plant Health Inspection Services (USDA—APHIS) that lend their support to the process. Teams

share national experiences with IAS and agree on solutions that will create a more robust response to the threats of IAS in other participating country. It further seeks to coordinate and harmonize actions taken by national, regional and international stakeholders in their fight against possible invasions.

Another component of the regional approach against IAS is the strengthening of existing frameworks and the adoption of existing webtools in support of the decision-making processes involved in IAS management. Database such as the IABIN¹ Invasives Information Network (I3N), hosted in Jamaica at the Institute of Jamaica, provides information on the common and scientific names of IAS, description, native range, places where the species is invasive, habit, vectors and pathway for dispersal, control methods, impacts, projects related to the species or

background information on the species in the country. Practitioners can use this tool to conduct IAS Risk Assessment within the Caribbean. With the continued introduction of IAS into countries for economic gain the I3N has developed a protocol to properly assess the risk associated with these introductions. Along with other websites such as Caribbean Invasive Alien Species Network (<http://www.ciasnet.org/>) information, resources and experts in the field will be readily available to institutions involved in the management of IAS regionally and internationally.

A successful regional approach to IAS management will bring about the implementation of a robust early detection mechanism without the duplication of efforts, that will sufficiently bring about coordinated responses in countries where IAS have been detected. Emphasis will also be placed on the rehabilitation of ecosystems to combat the spread of IAS as well as preventative measures against the introduction of particular species. Another high priority issue in the strategy is the need for a sensitization component that will involve rigorous public awareness/education campaigns.

¹Inter-American Biodiversity Information Network

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LIONFISH TRAINING PROGRAMME 2010

The GEF/UNEP/CABI/GOJ *Mitigating the Threat of Invasive Alien Species in the Insular Caribbean* Project and the UWI Mona, Discovery Bay Marine Laboratory as a part of Jamaica's Lionfish Pilot Project, have developed a 2 day Train-the-Trainer programme which features theoretical and hands on training in safe capture and handling of the Lionfish from sea to plate. The training targets representatives from the Ministry of Agriculture and Fisheries, National Environment and Planning Agency, Marine Park Officers, Dive Operators, Outreach Officers (various agencies) as well as Environmental NGO groups. The training is facilitated in partnership with Nahkle Hado from Food for the Poor.



Dr. Buddo looks on as Nakle Hado demonstrates safe handling of lionfish

The training exposes participants to the following:

- Characteristics of Marine IAS with Case Studies
- Description of Lionfish
- Using a Sling, Speargun, Pole Spear
- First Aid for Envenomation
- Safe handling of the Lionfish
- Hands-on Training in Active Capture in-water
- Spine removal and disposal
- Scientific Data Collection (measuring, dissection of gut con-

tents, data entry)

- Preparation and Handling for Cooking
- Cooking and Tasting

The training also covers information on biology and behaviour of the lionfish; the history, and predicted future of the invasion; potential impacts on the environment, fisheries, tourism and the economy; venomology, reactions and how to treat stings, and methods of control and management.

The programme is hands on and teaches participants proper techniques of handling the species. This includes how to handle a lionfish to minimize risk, spine removal and disposal.



A Fisheries Officer showing the lionfish after the spines have been removed

Participants are also exposed to the process of collecting scientific data. This includes measurement of the length and weight, counting spines to distinguish the species, determining the sex and stomach content analysis. This information when collected is fed into the National Lionfish database. Trainees also receive training in how to input data into the database.

Applied techniques are employed during the facilitation of the training. Participants are exposed to in-class demonstrations of proper spear fishing techniques using prerecorded video footage of facilitators demonstrating correct and incorrect techniques. This is followed by in-water demonstration and prac-

tice sessions using SCUBA techniques. The participants then return to the classroom for video review of SCUBA session to identify shortcomings and reinforce good techniques. Participants then receive instructions on preparation of the Lionfish followed by cooking and eating.



Participants removing spines during hands on laboratory segment of training

Discussions are also facilitated on how to relay the information received to different stakeholder groups and the requirements for follow-up on dissemination of information based on training received.



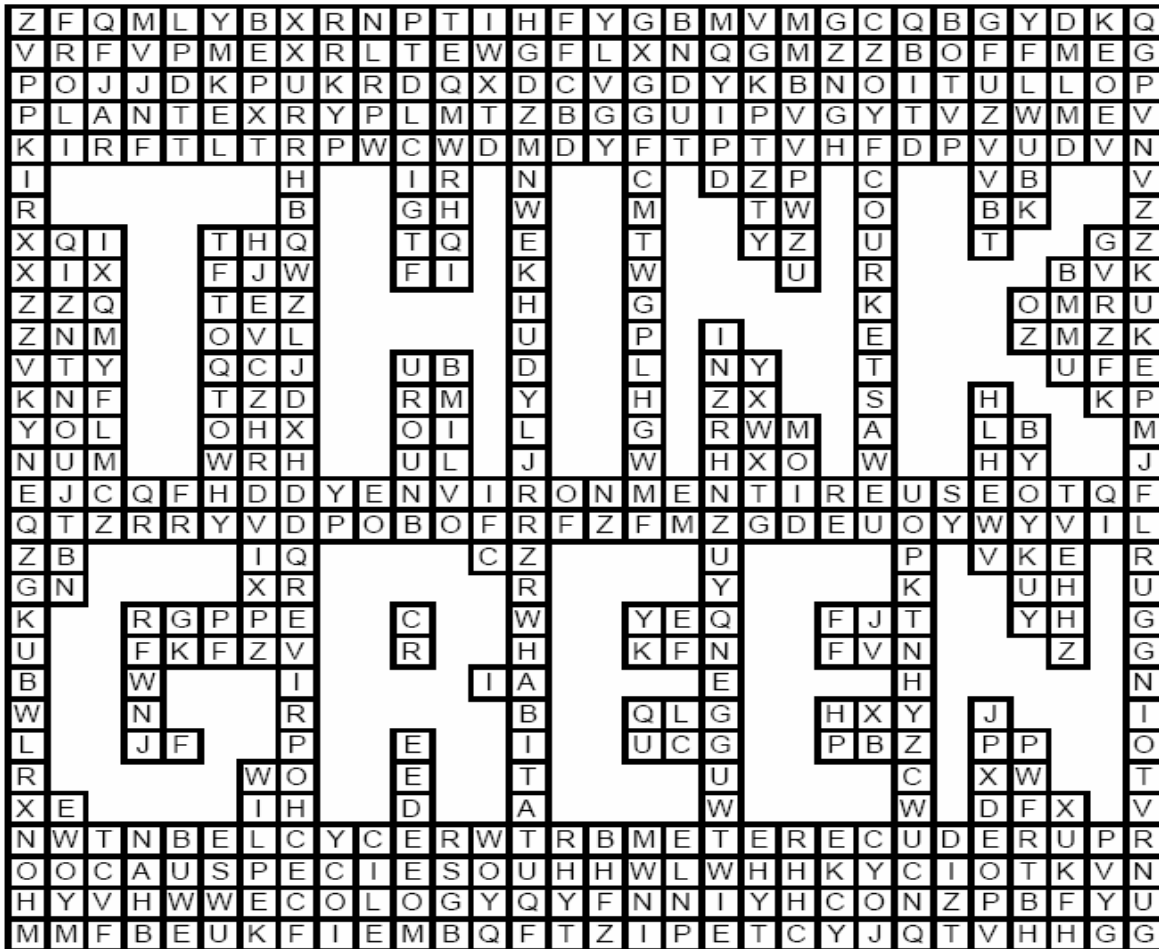
Recipients of the first train-the-trainer programme which focused on NEPA and the Fisheries Division

The Programme has trained 20 Trainers to date and an additional 35 persons have been trained through the efforts of the programme trainees since then.

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WORD SEARCH

Recycling



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|-----------|-------------|---------|-------|
| ECOLOGY | ENVIRONMENT | HABITAT | PLANT |
| POLLUTION | RECYCLE | REDUCE | REUSE |
| RIVER | SPECIES | WASTE | WATER |

