DISTRIBUTION, ECOLOGY AND TAXONOMY OF APPLE SNAILS OF THE GENUS *Pomacea* IN THE WET ZONE OF SRI LANKA

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Distribution, Ecology and Taxonomy of apple snails of the genus (*Pomacea* spp.) in the wet zone of Sri Lanka.

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Abstract

Pomacea species (Amphiulariidae) commonly known as "apple snails" are a new world genus. This genus contains about 50 species, some of which are endemic to South America (Naylor, 1994). Several species of *Pomacea* have been introduced in to South Asian countries as a food source (*Pomacea canaliculata*) or as an aquarium species *Pomacea bridgesi* (Naylor, 1996). Identification of the above two species of *Pomacea* is difficult, because they show similar morphological characters. *Pomacea canaliculata* is considered as the most destructive pest of rice in certain South Asian countries (Halwart, 1994). Identity of the *Pomacea* species found in Sri Lanka has not been confirmed to date. Present study was conducted to study the distribution and ecology and confirm the identity of *Pomacea* spp. found in Sri Lanka.

A reconnaissance survey of known locations (selected water bodies of Kandy, Colombo and Rathnapura districts) was carried out to study the distribution of *Pomacea* spp. in the wet zone of Sri Lanka. In each site, habitat type, surrounding land use pattern, vegetation types, predators, water temperature, water source and water depth were recorded. Field observations were carried out to study the ecology and laboratory experiments were conducted to study the food preferences. Twenty snails were hand picked and brought to the laboratory for detailed studies. The height and width of the shell of ten snails were taken from each site, and morphological characters recorded. Representative samples were sent to the

Natural History Museum, London for confirmation of its identity. Disturbances to human activities were recorded using a pre-prepared questionnaire. Control methods were suggested on the basis of information gathered in the field. *Pomacea* spp. were recorded from eleven sites namely; Polgolla, Katugasthota, Pinga Oya, Kadugannawa, in the Kandy district, and Aththidiya, Boralasgamuwa, Bellanwilla, Rajagiriya, Bombuwella, Thalawathugoda in the Colombo district and Kalawana in the Rathnapura district. Field observations as well as laboratory experiments showed that the snails feed on most of the aquatic plants (especially on soft tissues) available in their habitat. Damage to rice plants (as a pest) was not recorded. Number of predators such as birds, (Open bill stork *Anastomus oscitans,* Coucal *Centropus sinensis parroti,*), reptiles (Water snake *Natrix* spp. Water monitor *Varanus salvator)* were recorded during field studies.

Two shell colour variants (brown and yellow) of *Pomacea* were observed from different sites. However, no significant variations in the morphological features except for colour of the specimens collected from different study sites were observed. Taxonomic characteristics of the *Pomacea* species found in Sri Lanka are more similar to *Pomacea bridgsi* than to *Pomacea canaliculata.* It could be concluded that only one species of *Pomacea* is found in Sri Lanka, which is one of the subspecies of *Pomacea bridgesi.* It was also evident, that *Pomacea canaliculata* is not found in Sri Lanka. Fishermen face difficulties, especially because *Pomacea* get entangled in their nets and removal of them from the net is a time consuming process. Sharp edges of the snail shell cause injuries to sand miners as well as to humans who bathe in the stream with high population densities of *Pomacea.*