



Freshwater mollusc *Physa acuta* (Gastropoda: Pulmonata) new distributional record from Andhra Pradesh, India

M. Karuthapandi, D.V. Rao and B. Xavier innocent*

Freshwater Biology Regional Centre, Zoological Survey of India, Hyderabad - 500 048.

*Department of Zoology, St, Xavier's College (Autonomous), Palayamkottai - 627 002.

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Abstract

A freshwater mollusca belonging to Gastropoda *Physa acuta* which was reported earlier only two localities from India. The present study is reporting this species as a new distributional record from state of Andhra Pradesh for the first time. Morphometric analysis of the shell shows that the significant correlation between total length and width ($r = 0.965$). It is also been observed that the numerical abundance of population in eutrophic water bodies, could be used as biological indicator for further bio-monitoring of the water bodies and conservation of faunal diversity.

Keywords: Freshwater mollusc, *Physa acuta*, morphometric, bio-monitoring and Andhra Pradesh

Introduction

Freshwater molluscs play vital role in the food chain and decomposition in the aquatic ecosystem. Among the various freshwater molluscan species, *Physa acuta* (Class Gastropoda; family Physidae) was reported first time from India by Subba Rao *et al.* (1994) from Pune and Sury Rao *et al.* (1997) from Delhi. Interestingly, the present study also reported *Physa acuta* from two different freshwater habitats of Andhra Pradesh. Further, it prefer polluted waters and also it was reported as biological indicator of polluted environment and it could be used as biological tool for biomonitoring of freshwater environment and its conservation Karuthapandi and Rao (2012). The morphometric measurements were made through vernier caliper and the regression analyses shows significant correlation between total length and width of the shell ($r=0.9824$), aperture length and width of the shell ($r=0.852$) and aperture length and total length of the shell (Fig. 1 - 4). The analysis of variance reveals that the total length and width of the shell

significant at $P=0.001\%$ (Table - 1). The study reports *Physa acuta* as a new distributional record from Andhra Pradesh (Fig - 5).

***Physa acuta* Draparnaud, 1805** (Fig - 5)

Material examined:

Four examples, Himayatsagar (latitude $17^{\circ}18'37.70''N$ and longitude $78^{\circ}21'38.19''E$), 25.04.2011. 16 examples, Osmansagar (latitude $17^{\circ}21'57.96''N$ and longitude $78^{\circ}18'14.83''E$), 29.01.2011, R.No: FBRC/ZSI/Inv/N/ 853 and 854. Coll. D: M. Karuthapandi.

Diagnostic features

Shell total length between 5.10 - 11.30mm, width 3.51-8.04mm, small, ovate, sinistral, light greenish white colour, thick and transparent. The apex pointed, body whorl is large and globose; sutures oblique; aperture ovate and sculpture is smooth. The tentacles are slender and long with broad base; eyes are located at the base of the tentacles.

Distribution

Delhi, Maharashtra (Pune) and the present report from Andhra Pradesh (Hyderabad) Fig- 6.

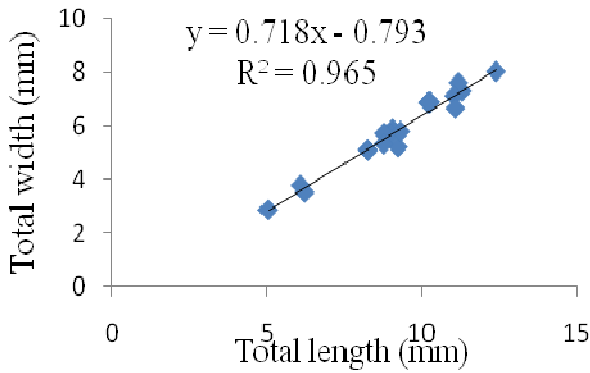


Fig. - 1 Regression between shell length and width

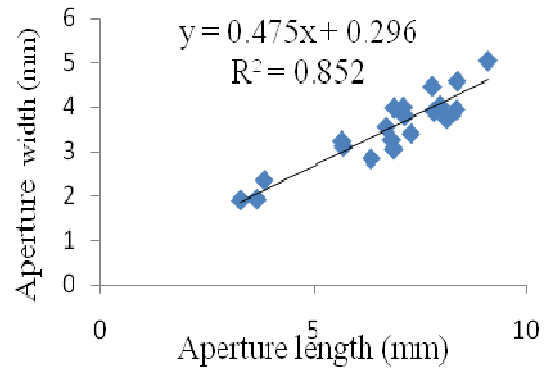


Fig. - 2 Regression between aperture length and width

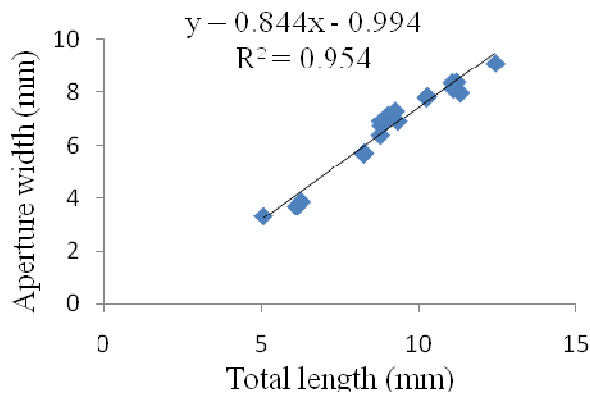


Fig. - 3 Regression between shell length and aperture length

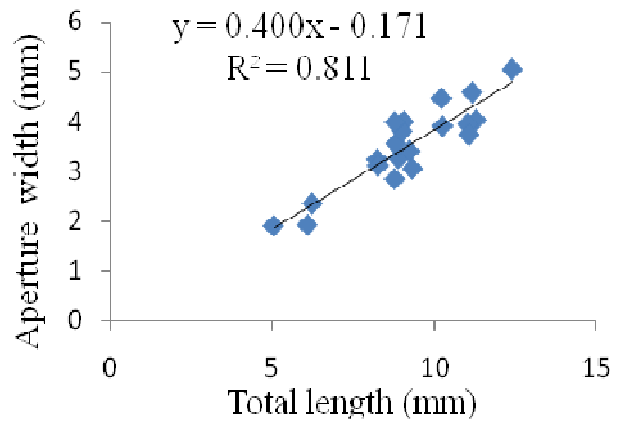


Fig. - 4. Regression between shell length and aperture width

Table - 1. ANOVA of total length and width of the shell *Physa acuta*

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	63.4442	63.4442299	498.451	1.43017E-14
Residual	18	2.29100	0.12728278		
Total	19	65.7353			



Fig. - 5. *Physa acuta* from Hyderabad, Andhra Pradesh



Fig. - 6 *Physa acuta* distribution in India

Elsewhere

North America, including in Europe, Africa and South East Asia: Pakistan.

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