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NEW RECORD OF TWO FLAG PEN SHELLS (MOLLUSCA: BIVALVIA) FROM BANDRI BEACH, JIWANI COAST, PAKISTAN

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ABSTRACT

The present work provides the first ever evidence of the presence of molluscan species, *Atrina vexillum* (Born, 1778) and *Atrina pectinata* (Linnaeus, 1767) species procured from Bandri Beach (25.0667° N, 61.8000° E), along the Jiwani coast Pakistan. Systematic and characteristic features have been provided which were used for identification. The measured sizes, 95mm and 235 mm, have been recorded for *Atrina vexillum* and *Atrina pectinata*, respectively.

Keywords: Mollusca, Bivalvia, Flag Pen shells, Bandri beach, Balochistan, North Arabian Sea

INTRODUCTION

The coastline of Pakistan is about 990 km long, enfolds the Northern Arabian Sea. Molluscs constitute the most diverse groups among certain floral and faunal assemblages found on beaches of Pakistan along the Sindh and Makran coast in terms of species diversity, richness, abundance and local distribution (Ahmed, 1977; Ahmed *et al*., 1982; Barkati and Burney, 1995; Nasreen *et al*., 2000, Afsar and Siddiqui, 2013; Afsar *et al*., 2013).

Bivalves belonging to the family Pinnaidae are economically valuable marine species and these are widely distributed from New Zealand, Melanesia and South Eastern Africa in the Indo-Pacific region (FAO, 1998; Butler and Keough, 1981). Reports of occurrence of such valuable species have been presented by several authors (Munguia, 2004; Butler and Keough, 1981; Rosewater, 1961) from American and Mediterranean waters. Along the Indo-Pacific region *Atrina vexillium* species is common and it is reported from areas including New Caledonia, Queensand, Hawaii, Japan, eastern Polynesia, Persian Gulf, Eastern Arabia, Madagascar and East Africa (Huber, 2010; Boesh *et al*., 1995; Barnard *et al*., 1993; Abbott and Dance, 1982; Morris and Purchon, 1981; Habe, 1968; Hedley, 1924). Generally, shell shape and size is triangular and dorsally pallianorgan and a bit and or almost covered in the substratum are one of the distinct characters (Beesely et al., 1998). From South India and Sri Lanka, Winckworth (1929) described the pen shells of the area. For the taxonomic study Rosewater (1982) has suggested examination of interior valves as a tool. For identification interior nacreous area is vital for Pinnidae species. If the division of nacreous area by an anterio-posteriorly directed sulcus into dorsal and ventral lobes then the species belong to the genus Piina, while the nacreous area completely covers the anterior inner valve surface it is a unique character of genus Atrina (Rosewater, 1982). Species from the family Pinnidae are being cultured in different countries by different method for various economic purpose (An *et al*., 2011 and Velasco, 1998). Species from the genus Pinna and *Atrina* are very valuable pearl producers and used for decoration and other purposes. According to the Annual Checklist of species (2014) an Integrated Taxonomic Information System (ITIS) describes the subfamily Pinnoidae with only a single family Pinnidae and three genus comprised of *Atrina* containing 27 species, *Pinna* (23 species) and *Streptopinna* which contains one (1) species (Solandt, 2003).

MATERIAL AND METHODS

Material Examined

Specimens of *Atrina vaxillum* and *Atrina pectinata* (Fig. 2) were collected from Bandri Beach (25.0667° N, 61.8000° E), Jiwani coast, Balochistan (Figure 1) by hand picking method, kept in polythene bags and transferred to IMS laboratory for further study.

Systematic

Class: Bivalvia (Linnaeus, 1758)
Sub class: Pteriomorphia (Beurlen, 1944)
Order: Ostreida (Férussac, 1822)
Family: Pinnidae (Leach, 1819)
Genus: Atrina (Gray, 1842)
Species: *Atrina vexillium* (Born, 1778)

(Fig. 2)

Synonyms: *Pinna vexillum* (Born, 1778), *Atrina (Atrina) vexillm* (Born, 1778), *Atrina gouldii banksiana* (Iredale, 1939), *Pinna nigra* (Dillwyn, 1817), *Pinna nigrina* (Lamarck, 1819).
Description: Shell triangular in shape, somewhat circular posteriorly to hatchet in shape. Actually nacreous layer is not divided into two lobes; large muscle scar projecting beyond the extent of the nacreous layer. The color is mostly black but in some cases reddish or brown, upraises spines on posterior end as described by Boesh *et al*. (1995).

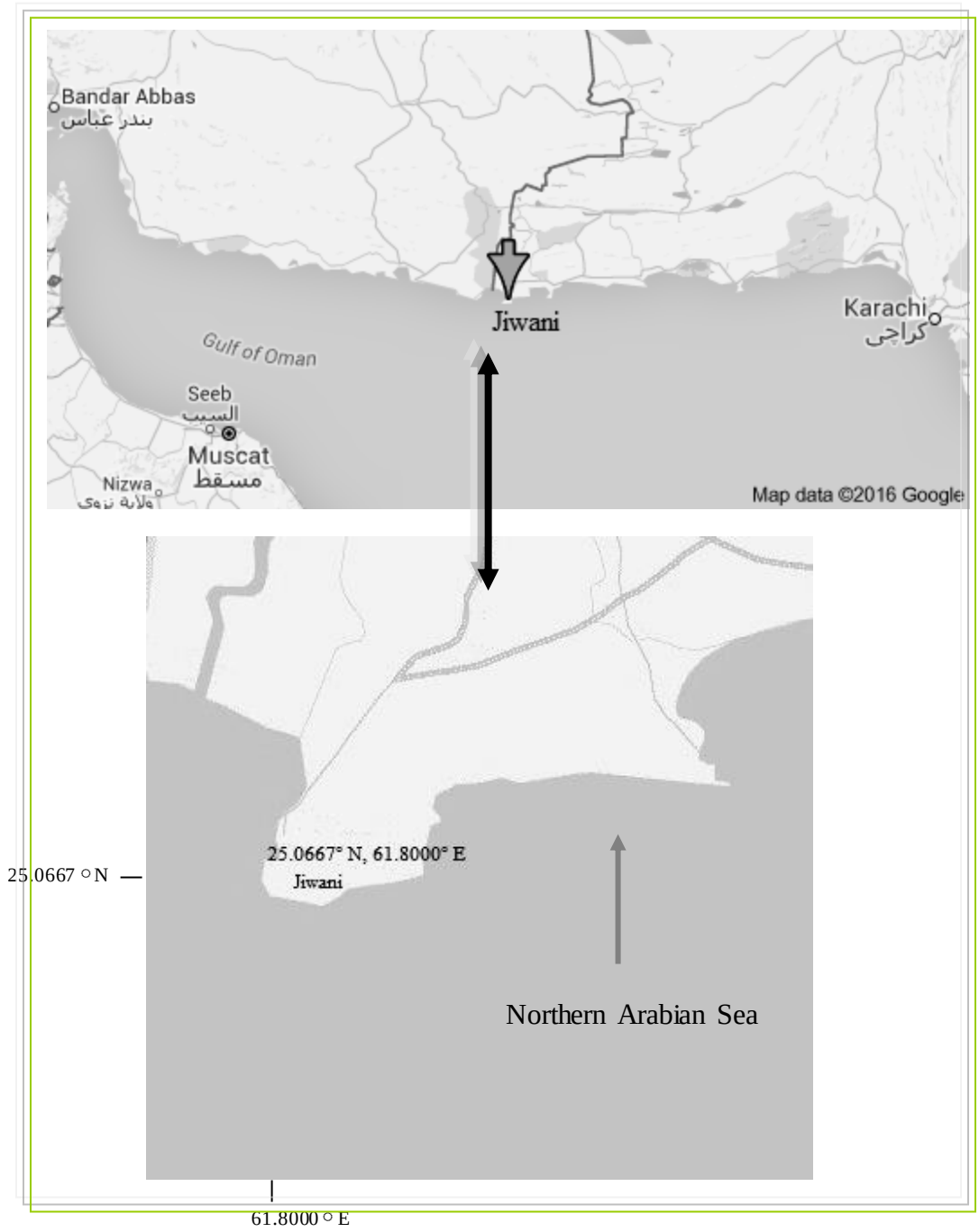

Fig. 1. Map is showing collection site Bandri beach, Jiwani.

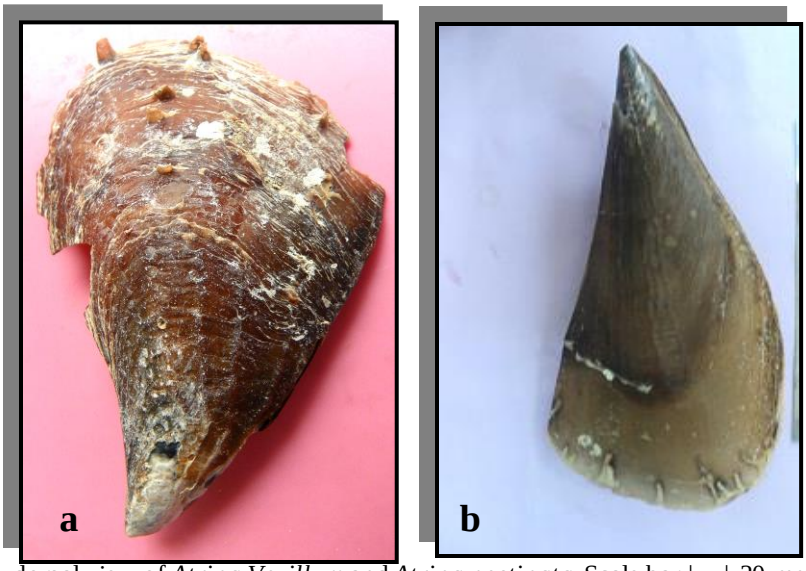

Fig. 2. A dorsal view of *Atrina Vexillum* and *Atrina pectinata*. Scale bar |----| 30 mm)

Systematic

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Sub class: Pteriomorphia (Beurlen, 1944)
Order: Ostreida (Férussac, 1822)
Family: Pinnidae (Leach, 1819)
Genus: Atrina (Servatrina) (Iredale, 1939)
Species: *Atrina pectinata* (Linnaeus, 1767)
(Figures 2)

Synonyms: *Pinna pectinata* (Linnaeus, 1767), *Pinna hanleyi* (Reeve, 1858).

Description: Triangular wedge-shaped, posterior margin a little rounded. Radial sculpture of 15-30 weak ribs on posterior slope; very fine ribs or smooth on ventral area, ribs weakly imbricate with a few short spines. Nacreous layer not divided into two lobes. Adductor muscle scar well developed. Tan to reddish brown in color as described by Boesh *et al*. (1995).

Habitat: Found in soft sediments, offshore.

Specimen examined: 2 specimens

Size: 235mm.

Remarks: Previous reports of occurrence from Pakistan coast are available in published literature pertaining records of some *Pinna* species i. e., *Pinna fragilis* and *Artina vexillium* (Zehra, 2001; Sultana and Jamil, 2013). However, recently FAO (2015) included these species in identification guide to living marine resource of Pakistan. However, localities have not been specified.

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