

## REDISCOVERY OF VENERID BIVALVES BELONGING TO GENUS *PELECYORA* DALL, 1902 FROM PAKISTAN

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### ABSTRACT

*Pelecypora katiawarensis* was originally described as *Dosinia katiawarensis* by Fischer-Piette and Métivier (1971) based on holotype collected from Katiawar, Gujarat, West Coast of India and paratype from Sindh, along Pakistan coast. No subsequent information on this species was available since its original description. Similarly *P. ceylonica* (Dunker, 1865) was also known from Karachi but no recent records were available. *Pelecypora nana* (Reeve, 1850) was also known from Karachi, Pakistan but there seems no any subsequent record of this species from Pakistan. The paper gives description of these species and their distribution along the coast of Pakistan based on recent collection.

**Keywords:** *Pelecypora katiawarensis*, *Dosinia*, *P. nana*, *P. ceylonica*, re-description, distribution, Balochistan, Sindh

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### INTRODUCTION

Genus *Dosinia* from Pakistan is known through the work of Melvill and Standen (1906) who reported seven species of this genus including *D. alta*, *D. angulosa*, *D. exasperata*, *D. histrio*, *D. pubescens* and *D. subrosea*. They also reported *D. globa* from Karachi which included in synonym of *Pelecypora ceylonica*. Fischer-Piette and Delmas (1967) in their review of genus *Dosinia* reported six species from Karachi including *D. alta*, *D. subrosea*, *D. tumida* and *D. angulosa*. They also reported *D. derupta* (considered as synonym of *Pelecypora nana*) and *D. ceylonica* Dunker, 1865 (considered as a synonym of *Pelecypora ceylonica*) from Pakistan.

In a recent review Kazmi *et al.* (2018) reported ten species of *Dosinia* from Pakistan including *D. prostrata*, *D. alta*, *D. angulosa*, *D. levissima*, *D. histrio*, *D. subrosea*, *D. biscocta*, *D. penicillata*, *D. kaspiawi* and *D. puella*. However, no species of *Pelecypora* was recorded by Kazmi *et al.* (2018).

During a recent study of mollusca from Pakistan, collections have been made from coast of Pakistan (including both Sindh and Balochistan Provinces) which revealed that the presence of three species of *Pelecypora* occurring occasionally. Present paper re-describe based on the specimen collected from Pakistan.

### MATERIALS AND METHODS

Shells of bivalve molluscs were collected along the coast of Pakistan stretching between Ketu Bundar in Sindh and Jiwani in Balochistan since 1973. These shells were housed in Marine Fisheries Department, Government of Pakistan as well as some retained by the authors. The shells were photographed using digital cameras. Measurements were made to nearest of millimetre.

### RESULTS AND DISCUSSION

Three species of bivalves belonging to genus *Pelecypora* were collected from Pakistan coast which previously have been reported by Fischer-Piette and Delmas (1967), Fischer-Piette and Métivier (1971) and Melvill and Standen (1906). However, since publication of these reports, these species were not reported from Pakistan. In the present paper these species are reported afresh with some details of their taxonomy.

#### Taxonomic Description

*Pelecypora katiawarensis* (Fischer-Piette and Métivier, 1971)

(Fig. 1)

#### Synonym:

*Dosinia katiawarensis* Fischer-Piette and Métivier (1971)

Holotype: Katiawar, Gujrat, India. Paratype, from Sindh, Pakistan has Width: 19 mm; height: 19 mm; thickness (of a valve): 6 mm.

**Description** (after Fischer-Piette and Métivier, 1971): Width: 32.5 mm; height: 32.5 mm; thickness for a single valve: 10 mm. Yellowish white color. Fairly regularly rounded shape, except the hook which is moderately inclined. The lunula extends over most of the anterior border and is 16 mm long and 5 mm wide; it is very lightly depressed in relation to the rest of the valve, hull marked and barely obtuse. The ligament visible from the outside and 12.5 mm long. The ligamentous area is quite hollow, enough clearly defined, 23.5 mm long and 2 mm wide. The concentric ribs are not very numerous. Their count, on the median line between two points 1 and 2 cm from the top are 23 ribs. These ribs are separated by furrows as wide as they, inclined towards the peak. Approaching the posterior edge of the shell the ribs gets weaken, gradually. The end of the pallial sinus is almost in the center of the valve: in position slightly higher. This pallial sinus, very ascending, very broad at its base, has both sides which are, from the bottom, before parallel, about two-thirds of the way; at this level each of them marks a sharp angle from which the anterior side goes straight up to the top sinus, whereas the posterior side, consisting of two rectilinear segments, of which the second short enough suddenly straightened up to join the anterior side and form a very pointed vertex, is located in the axis of the pallial sinus. The cardinal plateau, rather sinuous, has a rather large height: 3 mm at middle. Of the three cardinal teeth, the widest is the median, and the narrowest the posterior blade-shaped; they are normally divergent and inclined. The lateral tooth not very prominent, is slightly elongated and slightly oblique.

According to Fischer-Piette and Métivier (1971), this species resembles closely with *Dosinia gibba* described from Tatiyama (Japan) by Adams (1869), however, it differs from it in the shape of pallial sinus which is rounded at its end and its two sides deviate regularly and the base is very broad in *D. gibba*, whereas in *P. katiawarensis*, the top of pallial sinus is sharply angular, and both sides almost parallel and widely separated. The pallial sinus resembles with *Dosinia tripla* described by Romer (1860) and figured by Fischer-Piette and Delmas (1967), but this species is sub-trigonal, while *P. katiawarensis* is almost circular. Specimens collected during present study come in confirmation with the description given by Fischer-Piette and Métivier (1971) except that colouration of the outer side of the valve has orange-red tinge in the middle which may be because of the environmental conditions of the area rather than character of the species.

#### **Distribution**

This species is known from India and Pakistan (Fischer-Piette and Métivier, 1971).



Fig. 1 *Pelecypora katiawarensis* Fischer-Piette and Métivier (1971) sample collected from Jiwani in August 10, 2010.

#### ***Pelecypora ceylonica* (Dunker, 1865)**

(Fig. 2)

#### **Synonym:**

*Dosinia ceylonica* Dunker, 1865

*Dosinia globa* (Adams) Melvill, 1897

*Dosinia (Sinodia) ceylonica* Fischer-Piette and Métivier (1971)

Holotype: Sri Lanka

**Description** (after Fischer-Piette and Métivier, 1971): It has also been reported from Mekran coast and Karachi by Melvill and Standen (1906) as *Dosina globa*. The dimensions of the type has a width 27 mm, height 26 mm, thickness 15.5 mm. This species has a very high cardinal plane, a very ascending, narrow and terminally flattened pallial sinus, a ligamentous area, which has two valves in conflict with one another. Ligament is not visible or

narrow and letting the ligament perceive through a thin slit. Costulation is very peculiar: in the region of the apex, it is made of blades erect and separated by large intervals. then the ribs become progressively less prominent and less separated, and in the region of the ventral edge of the valve, they are juxtaposed bulges. The lunula is very delimited or almost indistinguishable, the lamellous ribs reaching the edge of confrontation of the valves without their crossing with the boundary

**Distribution**

This species is known from India, Sri Lanka and Pakistan (Arathi *et al.* 2017; Fischer-Piette and Métivier, 1971; Oliver, 1995)



Fig. 2. *Pelecycora ceylonica* (Dunker, 1865) collected from Ketu Bundar, Sindh coast on March 1, 2013

***Pelecycora nana* (Reeve, 1850)**

(Fig. 3)

**Synonym:**

*Artemis nanus* Reeve, 1850  
*Dosinia derupta* Römer, 1860  
*Dosinia gibba* A. Adams, 1869  
*Dosinia nanus* (Reeve, 1850)  
*Pelecycora nana* (Reeve, 1850)  
 Holotype: Malacca



Fig. 3. *Pelecycora nana* (Reeve, 1850) collected from Shamspar backwater on 12 May, 2007 (length 20.1 cm)

**Description** (as *Artemis nanus*) based on Reeve (1850): The shell is orbicular, subcordate, rather gibbose and concentrically ridged. The ridges are sharp, rather distant. Area of the ligament is simple. Lunule very large and superficial. The colour is white. *Dosinia derupta* which is a synonym of this species was described by from Malacca by Romer (1860) and its holotype is housed in the British Museum. It measures 25 x 24 x 15.5 mm. It is reported from Karachi by Fischer-Piette and Delmas (1967).

### Distribution

This species is known to be distributed in Karachi, Bombay, Malacca, China (Amoy) and Japan (Fischer-Piette and Delmas, 1967; Melvill and Standen, 1906; Parmar *et al.*, 2019).

### DISCUSSION

Genus *Pelecypora* was created by Dall (1902) to accommodate *Cytherea hatchetigbeensis* Aldrich, 1886 (now known as *Pelecypora hatchetigbeensis*). Now this genus is represented by 15 species (WORMS, 2020). Usually species belonging to this genus are confused with members of genus *Dosinia* Scopoli, 1777. It can be, however, distinguished as lunule is sunken in member of genus *Dosinia* whereas in *Pelecypora* lunule is superficial and large (Kilburn, 2000). According to Kilburn (2000) ten species i.e. *Pelecypora gouldii* (Reeve, 1864), *P. trigona* (Reeve, 1850), *P. insulgrum* (Fischer-Piette & Delmas, 1967), *P. tripla* (Romer 1860), *P. derupta* (Romer, 1860), *P. exilium* (Sowerby, 1909), *P. eudeli* (Fischer-Piette & Delmas, 1967), *P. sinuata* (Gmelin, 1791) and *P. nana* (Reeve, 1850) are reported from south east Asia. Of these *P. derupta* is now considered as synonym of *P. nana*.

Preston (1915) reported *P. jukesbrowniana* (as *Sinodia jukesbrowniana*) from Calcutta. Ramakrishna and Dey (2010) reported two species i.e. *P. jukesbrowniana* and *P. trigona* from India whereas Tudu *et al.* (2018) have reported 2 species from Odisha coast, India including *P. excise* and *P. trigona*. With addition of *P. ceylonica* from Pakistan, India and Sri Lanka and *P. katiawarensis* from India and Pakistan, the total species known from south and south-east Asia stands at 12 species.

Considering the diversity in the habitats along Pakistan coast especially muddy, muddy cum sandy and rocky cum sandy shore it is expected that other species of genus *Pelecypora* may occur along Pakistan coast which requires extensive surveys in the coastal areas.

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