

NEW REPORT OF *TUTUFA BARDEYI* (JOUSSEAUME, 1881) (MOLLUSCA: GASTROPODA) FROM JIWANI COAST, PAKISTAN

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ABSTRACT

Study presents the report of occurrence of a novel Bursid species from Pakistan. A single specimens was procured from surrounding area of Jiwani harbor (25.0473° N, 61.7459° E) during October 2015. Detailed morphometric examination was carried out and species was identified as *Tutufa bardeyi* on the basis of external taxonomic features. Measured shell size was 370mm.

Key-words: Mollusca, Gastropoda, Bursidae, *Tutufa bardeyi*, Jiwani coast Balochistan

INTRODUCTION

Jiwani coast is one of the well known coast for their rich faunal and floral diversity dwelling mangrove forests, rocky habitats and sandy beaches. In general, molluscans of Jiwani have not received much attention in comparison to some other fauna and flora like mangroves and sea turtle.

Regarding to Pakistan coastline the available published literature signifying information relating available molluscans, specially gastropod catches of commercial importance by several authors such as Tirmizi and Zehra (1982, 1984), Ahmed *et al.* (1982), Kazmi (1995), Kazmi and Naushaba (2003, 2004), Kazmi *et al.* (1996), Moazzam and Ahmed (1995), Siddiqui and Ahmed (2002), Barkati and Rehman (2005), Rehman and Barkati (2012), Kazmi and Moazzam (2014), Psomadakis *et al.* (2015). However, from Balochistan coast information's are very tapering in molluscan which includes some basic work formerly carried out by Khan and Dastagir, (1971, 1972), Tirmizi and Zehra (1984), Ahmed *et al.* (1982), Afsar *et al.* (2012), Jahangir *et al.*, (2012), Ghani and Afsar (2017). Seeing this studies are needed to explore the true diversity, composition and distribution of molluscan fauna of Balochistan.

MATERIAL AND METHODS

Single specimen belonging to gastropod family Bursidae was procured from sub tidal area of South-Western part of Jiwani coast (25.0473° N, 61.7459° E) by some fishermen during shrimp trawling season (September to October 2015) subsequently specimen was dredged by shrimp trawling gear. Later specimen brought to the Institute of Marine Science (IMS) for further detailed examination and stored at the IMS laboratory.

Systematic is based on description given by Beu (1981) and Bosch *et al.* (1995) and verified by the help of online material (World Register of Marine Species WoRMS: WoRMS Editorial Board 2016). Measurements were taken by using measuring tape (Fig. 1 and Table 1). Further an updated checklist of species under the family Bursidae from Pakistan coastline also compiled based on published reports and literatures as given in Table 2.

RESULT

Study reports the existence of marine gastropod *Tutufa bardeyi* (Jousseume, 1881) along the Jiwani coast, Balochistan, Pakistan for the first time. Morphometric data is given in Table 1. Recorded species was found to be a member of family Bursidae (Table 1, 2 and Figure 1). In addition, an updated checklist of Bursid species inhabiting Pakistan coastline based on available published literatures has also been provided as shown in Table 2.

Systematic

Class: GASTROPODA Cuvier, 1795

Subclass: CEANOGASTROPODA Cox, 1960

Order: LITTORINIMORPHA Golikov & Starobogatov, 1975

Super family: TONNOIDEA Suter, 1913

Family: *BURSIDEA Thiele, 1925*
Genus: *Tutufa Jousseame, 1881*
Species: *Tutufa bardeyi Jousseame, 1881*

Synonyms

Bursa (Tutufa) rubeta var. gigantea (E. A. Smith, 1914); *Bursa rubeta var. gigantea* (E. A. Smith, 1914); *Lampas bardeyi* (Jousseame, 1881); *Tutufa (Tutufa) bardeyi* (Jousseame, 1881).

Material Examined

Specimen was collected from Jiwani (25.0473° N, 61.7459° E) Southwest coast of Pakistan during September to October 2015 shrimp trawling. 1 empty shell obtained from subtidal area and measurements were taken as **SL** (Standard Length), **SW** (Standars Width), **SpW** (Spire Width), **SpL** (Spire Length), **AL** (Aperture Length), **AW** (Aperture Width), **TAL** (Total Aperture Length) and **ShL** (Siphonal canal Length) (Table 1).

DESCRIPTION

370 mm, thick heavy shell, high spired (pointed apex eroded), body whorl greatly enlarged; nearly two (2) unobtrusive thin varices per whorl. Large blunt nodules on each whorl with irregular coarse, extremely vague spiral cords. Both siphonal and posterior canal short, a bit deep and open widely. Outer lip of aperture convex (clearly not seen from posterior rim because posterior edge of outer lip mostly eroded, but wavy structure keenly observed and can be seen as of the siphonal canal to the mid of the outer lip suggesting the sculpture outer lip. Columella smooth and weakly curling, colored whitish to oranges brown. Aperture white, shell color in overall not clear being an eroded shell; but mostly observed to be whitish to reddish brown and darker brown among nodules.

DISTRIBUTION

In the north-western Indian Ocean occurrence of this species is very rare. However, distributed in the Red Sea, from the coast of Kenya to the Gulf of Oman. Most samples collected and provided by Dr. Donald Bosch from the Eastern Arabia suggesting that this species is coexistent with *Tutufa bubo* (Linnaeus, 1758) throughout its range (Beu, 1981). This species also recorded from Somalia, South Africa, and Gulf of Aden and during the present course of study recorded from Pakistan.

Table 1. Morphometric data of *Tutufa bardeyi*.

Features	Size (mm)
SL (Standard Length)	370
SW (Standard Width)	200
TAL (Total Aperture Length)	218
AL (Aperture Length)	180
AW (Aperture Width)	143
SpL (Spire Length)	170
SpW (Spire width)	165
ShL (Siphonal canal Length)	38

REMARKS AND DISCUSSION

In the genus *Tutufa*, species *Tutufa bardeyi* differs from other species within the genus due to its giant size. Spire more straight sided, inner lip more weakly sculptured, interior of the outer lip more weakly noded and less thickened and external sculpture very much weaker (Beu, 1980). Previously from Pakistan reports of occurrence of five (5) species belonging to Bursidae are available in published literature (Table 2). *Bufonaria echinata* cited as *Bursa spinosa* (Khan and Dastagir, 1971; Tirmizi and Zehra, 1984), pl: XXIII; Fig: 79; Pp: 111 and Fig: 42; Pp: 63, *Bursa granularis* cited as *Bursa granularis* (Khan and Dastagir, 1971), Pl: XXIII; Fig: 80; Pp: 111; *Tutufa bubo* cited as *Bursa lampus* ("lampas" misspelled) (Khan and Dastagir, 1971), Pl: XXIV; Fig: 81; Pp: 113, *Tutufa bufo* cited as *Tutufa bufo* (Tirmizi and Zehra, 1984), Fig: 43; Pp: 64 and *Bufonaria rana* listed as *Bursa subgranosa* (Rehman and Barkati, 2012). Earlier *Tutufa bardeyi* has been reported from Eastern Arabia (Bosch *et al.*, 1995) on

sand or among rocks from Gulf of Oman, Masirah and Southern Oman measuring 250 mm, Fig: 375; pp: 103.

The recent collected specimen critically compared with the most closely related reported species from Pakistan *Tutufa bubo* "cited as *Bursa lampus*" (Khan and Dastagir, 1971) differ in size and description given.

Table 2. List of previously reported species of family Bursidea (Thiele, 1925) from Pakistan.

Species	Taxa	Reference	Locality
1	<i>Bufonaria echinata</i> (Link, 1807)	Khan & Dastagir, 1971	Karachi fish harbour/ obtained from local fish market
	<i>Bufonaria echinata</i> (Link, 1807)	Tirmizi & Zehra, 1984	Astola Island, Makran coast
2	<i>Bursa granularis</i> (Roding, 1798)	Khan & Dastagir, 1971	Astola Island, Makran coast
3	<i>Bufonaria rana</i> (Linnaeus, 1758)	Rehman & Barkati, 2012	Mannora, Buleji and Cape Monze, Karachi Sindh coast
4	<i>Tutufa bubo</i> (Linnaeus, 1758)	Khan & Dastagir, 1971	Pasni, Makran coast
5	<i>Tutufa bufo</i> (Roding, 1798)	Tirmizi & Zehra, 1984	Karachi fish harbour, obtained from local fish market

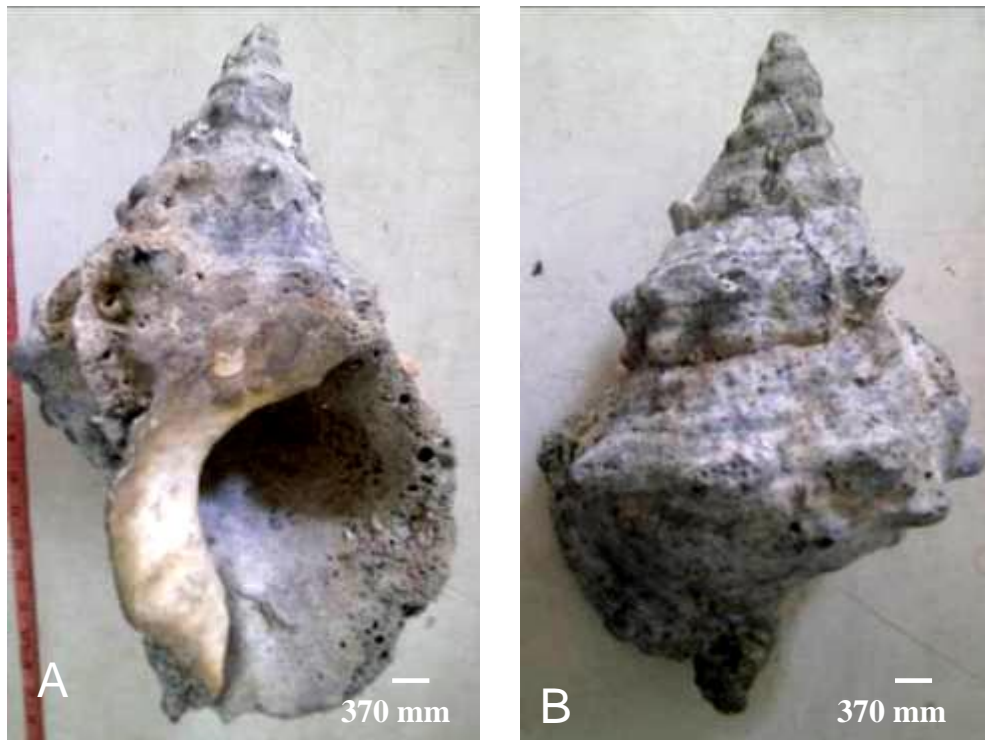


Fig. 1. A-B: *Tutufa bardeyi*.

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