

Occurrence of marine shells and fossilized fish vertebra from two inland sites in Vaikom, Kerala

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Studies conducted by the Geological Survey of India published in the 1980s indicate several transgressions and regressions of sea along the coast

of Kerala occurred during the Pleistocene and Holocene era corroborating the mythological concept of Kerala's emergence from the sea.

Reports of unearthing marine molluscan shells, hard corals, parts of sea-going ancient vessels etc from Pattanakad, Thaikkal and Muziris along the Kerala coast are also available. The occurrence of stony corals and marine molluscs observed from a well-cutting at Vazhakala 9 km away from seashore near Kakkanad, Cochin at a depth of 8 m from MSL during February 1995 was reported (Pillai *et al.*, 1999, *Indian J. Mar. Sci.*, 28:96-98).

During March 2016 some shells of marine molluscs and woody stem of some plants were found at a depth of 8-10 m in the mud excavated from the piling pit of a house construction site near the famous Vaikom Sree Mahadeva Temple which is one of the oldest Siva temples in Kerala. In the ancient sanskrit text such as *Bhargavapurana* and *Sanalkumar Samhitha* Vaikom is mentioned as Vaiaghragham or Vaiaghrapuram and later under the influence of Tamil the name probably transformed to Vaikom.

Shells were recovered from the clay sediment (9° 45' 066" N ; 76° 23' 620" E) among which, 8 species of mollusc shells were documented (Fig. 1 and Table. 1).

Similar collection of shells and vertebrae of some finfish were recovered from a 3 m deep pond during the pond renovation work near Thirumani Venkitapuram (T.V. Puram), located 6 km south of Vaikom (9° 42' 13" N; 76° 23' 05" E). A total of 17 species consisting of five gastropods and nine bivalves were observed. The shells of *Turbinella* and *Chicoreus* were mineralized and fish vertebra was fossilized. Other shells were intact and fresh when collected. These shells were washed and cleaned

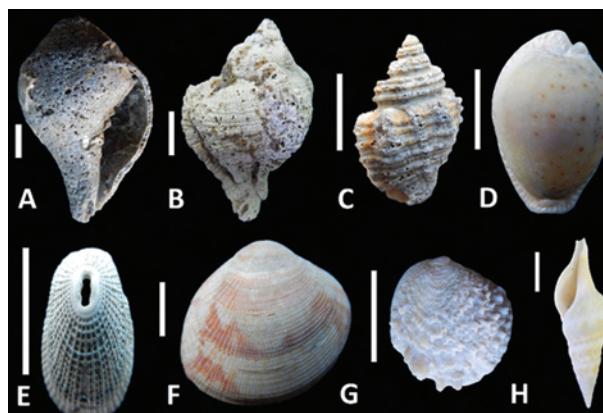


Fig. 1. Shells collected from Vaikom; A: *Turbinella pyrum*, B: *Chicoreus virgineus*, C: *Cantharus tranquebaricus*, D: *Erronea erronea*, E: *Diodora ticaonica*, F: *Gafrarium divaricatum*, G: *chama* sp. and H: *Unedogemmula* sp. (Scale bar= 1 cm).

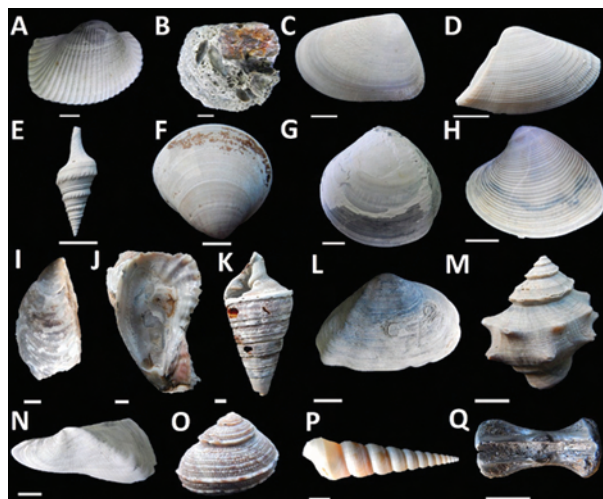


Fig. 2 Samples collected from T.V. Puram; A: *Tegillarca granosa*, B: *Crassostrea* sp., C: *Donax spinosus*, D: *Donax* sp., E: *Unedogemmula indica.*, F: *Meretrix casta*, G: *Meretrix meretrix*, H: *Callista* sp., I: *Perna* sp., J: *Saccostrea* sp., K: *Telescopium telescopium.*, L: *Tellina* sp., M: *Thais* sp., N: *Trisidos tortuosa*, O: *Turbo* sp., P: *Turritella* sp. and fish vertebrae (Scale bar=1 cm)

Table 1. List of marine molluscan species and their physical dimensions collected from the site near Vaikom

Scientific Name	Number of shells collected	Length range (mm)	Weight range (g)	Accession number
<i>Turbinella pyrum</i>	2	63.9-112	34.1-227	DB.30.2.1.1
<i>Chicoreus virgineus</i>	1	54.2	23	DB.22.7.5.1
<i>Cantharus tranquebaricus</i>	1	35.8	6.9	DB.24.2.1.1
<i>Erronea erronea</i>	1	31.7	6	DB.15.5.1.1
<i>Diodora ticaonica</i>	1	16.6	0.25	DB.21.1.5
<i>Gafrarium divaricatum</i>	2	22.3-35.3	1.2-4.8	DC.17.2.9.1
<i>Chama</i> sp.	1	15.4	0.56	DB.9.4.1.1
<i>Unedogemmula</i> sp.	1	51.7	6.2	DB.3.4.3.5

with fresh water and later identified to species level (Fig. 2. and Table 2). These shell samples were deposited in Designated National Repository (DNR) of ICAR CMFRI with accession numbers for future reference.

Both the observation sites are more than 10 km away from seashore and are situated adjoining the Vembanad Lake system. It is well known that the floods in the year 1341 believed to have brought

into existence of Vypin Island from the sea. Earlier reports on the existence of marine fossils including reef forming corals at Vazhapalli, Changanacherry (Menon, 1967. *A Survey of Kerala History*, N.B.S., Kottayam), Vazhakkala, Ernakulam district (Pillai *et al.*, 1999 *Indian J. Mar. Sci.*, 28:96-98) and the present observations appear to indicate that the western part of Kerala did emerge from the sea through regressions.

Table 2. List of shells and fish vertebra collected from T.V. Puram

Scientific Name	Number of shells collected	Length range (mm)	Weight range (g)	Accession number
<i>Tegillarca granosa</i>	1	50.6	8.5	DC.1.1.1.1
<i>Crassostrea</i> sp.	2	46.4-50.4	16.3-22.9	DC.3.3.8
<i>Donax spinosus</i>	2	22.8	0.60	DC.18.2.8
<i>Donax</i> sp.	1	30.1	0.93	DC.18.2.7
<i>Unedogemmula indica</i>	2	28.1-30.9	0.63-0.85	DB.3.4.2.5
<i>Meretrix casta</i>	2	33.7	4.3	DC.17.5.10
<i>Meretrix meretrix</i>	1	70.4	21.6	DC.15.4.1.1
<i>Callista</i> sp.	2	39.1-44.4	1.65-4.4	DC.17.2.10
<i>Perna</i> sp.	4	36.5-39.1	1.3-1.8	DC.3.3.7
<i>Saccostrea</i> sp.	3	23.7-74	-	DC.11.4.1
<i>Telescopium telescopium</i>	2	96.9-103	42.9-80	DB.8.1.3.1
<i>Tellina</i> sp.	3	32.9-45	1-6.3	DC.17.3.1
<i>Thais</i> sp.	2	18.1-39.2	0.60-10.6	DB.22.9.2.1
<i>Trisidos tortuosa</i>	2	32.7-58.3	1.3-4.5	DC.3.1.10.1
<i>Turbo</i> sp.	2	13-16.7	0.68-1.3	DB.4.2.8
<i>Turritella</i> sp.	6	31.6-73.7	0.9-23.9	DB.6.1.2
<i>Notocochlis tigrina</i>	1	11.9	0.47	DB.14.1.1
Vertebra of some finfish	1	23.7	4.1	Misc.55