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Exploitation of marine molluscs is a seasonal activity in Tuticorin. Exploitation of windowpane oyster *Placuna placenta* was reported earlier in 2001 at Tuticorin Bay mainly for the collection of pearls and the empty shells for shell craft industry. This was followed by large scale collection of the windowpane oyster *P.placenta* in 2002 at Vellapatti near Tuticorin for utilization of their shells in cosmetic and paint industry, in poultry feed and lime preparations. In February 2004 large scale exploitation of clams had taken place in Tuticorin for shell craft industry.

The cockle clams (*Gafrarium tumidum*) were collected from mudflats of the Tuticorin Bay (Fig. 1). As the shell of this clam is sculptured with thick, nodular radial ribs towards the ventral margin, it is locally called *vari matti*. The existence of these clams in large numbers

in the bay over mudflats made them exposed during February 2004 especially during low tide and was susceptible for exploitation by fishing nets or hand picking. Stranding of clams received attention of fisher folk for large scale exploitation. Additional collections were made by hand picking. The exploitation is purely seasonal and based on the demand from the traders. Collection of clams was done mostly by fisherwomen along with a few fishermen during low tide in the early hours of the day. A round sieve made of palmyra sheath was used. The sieve facilitated the collection of clams alone by allowing sand and mud out of sieve. The clams thus collected were piled up on the seashore in live condition and sun-dried. After sufficient collection and ensuring proper drying, they were packed in polyethylene bags by the traders and stocked. Based on the demand the shells were sold to

shell craft industry. Shells of good shape and colour were mostly utilized for ornamental purposes and other shells, as they are thick, used for lime preparation.

The population density of *G.tumidum* was 45 numbers per sq. m with a total weight of 572 gm. The population exists along the western side of the bay stretching a distance of 600 m north to south. The clams have been distributed 50m from the shore to 400m towards eastern sea side of the bay having the depth of 0.3 to 2 m. The total area of the bay occupied by the clams is about 24 ha. The population does not appear beyond 400 m towards eastern sea side as there is heavy deposition of fly ash and on the southern side there is influx of hot water from the Tuticorin Thermal Power Plant. The total estimated stock of clams in the Bay was about 137.2 tonnes, of which 1.2 tonnes of clams were exploited during February 2004.

The dorsoventral measurement (DVM) or the shell height of cockle clam (*G.tumidum*) varied from 22.0 to 34.5 mm with an average of 29.6 mm and the anteroposterior measurement (APM) or the shell length ranged from 25.5 to 43.0 mm (average 38.5mm). The shell depth (D) or thickness of the animal measured 14.0 to 28.5 mm (average 20.4 mm). The total weight of a clam ranged from 6.5 to 27.0 gm (average 16.4 gm). Females dominated (61.7%) over the males (38.3%).

The collection of clams prolonged for two weeks. Each person was paid Rs.25 per day by the trader. A labour could collect two bags full of clams per day. A small group of 5-6

persons were engaged in the collection. A total of 60 bags were collected during the period. The wet weight of clams in each bag varied from 35 to 50 kg and the dry weight was approximately about 20 kg. The cost of each bag of shells was Rs.25.

Stray specimens of *Marcia opima* locally called *Vazhukku matti* were also collected along with *G.tumidum* in the Tuticorin Bay. The resource of *M .opima* was negligible in



Fig 1 The Cockle clam *Gastridium tumidum*

the Bay. The DVM of *M. opima* ranged from 27.5 to 29.5 mm (average 28.5 mm) and the APM from 34.0 to 35.5 mm (average 43.7 mm). The shell depth varied from 20.5 to 23.0 mm (average 21.7 mm) and the total live weight was from 12.0 to 15.5 gm (average 14.2 gm). The male and female ratio of this clam was in equal proposition.

Exploitation of the clam *Donax faba* was also done in the Tuticorin Harbour Beach (Fig.2). These clams are locally called *Vazhi matti* having polymorphic shell characters. The clams were exploited purely for ornamental purposes in shell craft industry as these shells exhibited multihued colours and multidesigns.

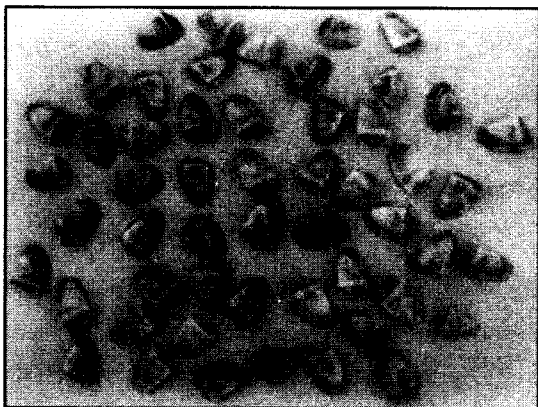


Fig 2. The clam *Donax* sp.

Clams occur in sandy coast and were collected by sieving. A total of 50 bags of clams were collected.

The population density of *Donax faba* was 1092 numbers per sq.m. in the Tuticorin Harbour Beach. The clams were found in large numbers all along the beach extending from South of Tuticorin Harbour up to Punnakayal. There was no clam population upto 2m level from the highest water tide mark. Towards low tide mark the population

increased to 231, 2281, 1965, 3563 and 579 nos./sq.m at 4,6,8,10 and 12 m respectively. Dense population occurred between 6 and 10 m levels in the intertidal zone where there is frequent lashing of water. In the present observation it was found that the population consisted mostly of juveniles (98%). A total of 6.99 kg of clams was recorded in 13.44 sq.m area between highest water tide mark to low tide water mark. About 1.0 ton of *D. faba* was exploited during February 2004 from this area.

The DVM of *D. faba* ranged from 10.0 to 13.5 mm with an average of 11.7 mm and the APM from 13.0 to 18.5 mm (average 16.7 mm). The shell depth varied from 5.3 to 7.5 mm (average 6.6 mm) and the live weight of a clam varied from 0.1 to 0.75 gm with an average weight of 0.21 gm. The males constituted 49.0 %.

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