Use of Giant Clam Resources in the Philippines

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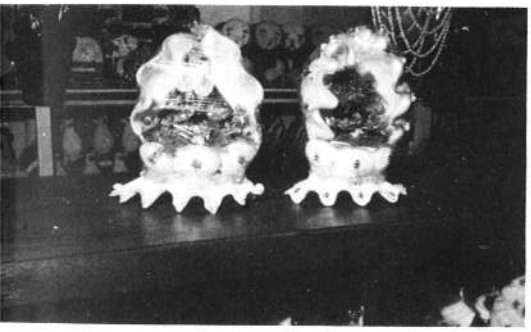
In the Indo-Pacific, giant clams of the family Tridacnidae are of commercial importance because of their use for food and shellcraft (see Newsletter, Jan. 83, p. 3). All living species of giant clams are found in Philippine waters and are commercially important.

Meat and Muscle

In various coastal localities, giant clams are a popular but minor food item for local residents. They are commonly eaten raw with vinegar and spices *(kilaw)* after the kidney is removed. In most places, fishermen do not go out deliberately to gather clams. If clams are chanced upon in their fishing trips, the meat is generally taken for home consumption. However, in some localities, the meat is sold in the local market. In Guiuan, Samar, fresh giant clam meat and muscle sold for ₱15-18*/kg in 1983.



Tridacna maxima and other bivalves used as mounts for Sto. Niño statue and flowers.

Approximately 10 kg were reported to be sold every week when the weather was fine and spearfishermen were able to go out. In the last two years, fresh *Tridacna crocea* meat was bought at ₱7-10/kg in Polillo, Quezon, by Japanese businessmen based in Manila. As much as 1 t of fresh meat was exported to Japan in 1984. About 50-60 average-sized *T. crocea* (6-8 cm in length) make 1 kg of fresh meat. Small quantities (10-12 kg) are occasionally sold in the markets in nearby towns either fresh or salted. A few live clams are stocked nearshore as supplemental food during times when the weather permits little fishing.

*₱11 = US$1 in 1983.

In Naic, Cavite, clam meat is sold at ₱25/kg and in Alaminos, Pangasinan, a good-sized clam could fetch as much as ₱25. Live clams are also sold in the markets of Sta. Cruz, Zambales. Giant clams are traditionally harvested from Apo Reef in Mindoro and waters around Palawan (e.g., Tubbataha). The meat, including the muscle, is dried primarily for local consumption. A bunch of 5-6 medium pieces (10-18 cm) of dried meat sells for ₱5 in Bonggao, Tawi-Tawi. In Catanduanes, clam meat is made into fish sauce.

Considerable local trade of live clams was observed in Cebu, the shell trade capital in the Visayas where 15-20 pieces are usually available in the public market. In November 1984, live *T. squamosa, T. maxima* and *Hippopus hippopus* were sold at ₱2-20 per piece including the shell for clams 7.5-20 cm. In two popular places frequented by drinking habitues, live clams are prepared with vinegar and spices. Clams are stocked in corrals in waters 3-4 m deep and retrieved when ordered. At least 40-50 clams were estimated to be consumed daily in each place. In Mactan Island, live clams are sold from house to house in the resort areas at prices similar to market prices excluding the shell.

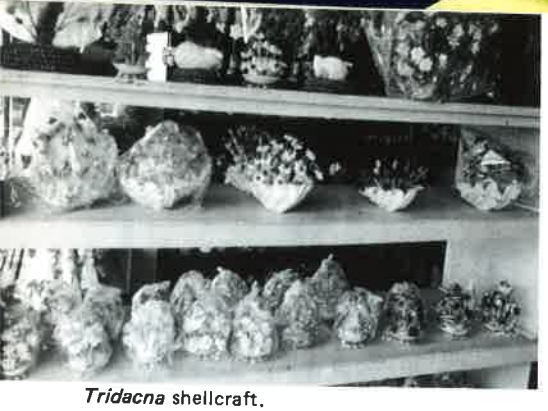
There is negligible legitimate export (cleared by the Philippine Bureau of Fisheries and Aquatic Resources (BFAR)) of giant clam meat and muscle. Clam meat exports reflected in the Fisheries Statistics of the Philippines were for other clam (e.g., *Paphia*) species. According to the biggest local clam meat exporter, there is a market for, but no substantial supply of, giant clam muscle. It is likely that a considerable amount of muscle and perhaps the meat get out through offshore transactions with Taiwanese and Japanese vessels reported to buy giant clam muscle particularly around Palawan. Dried clam muscle sells for ₱70-120/kg.

Shell

As a whole, giant clam shells are of greater commercial value than the meat and muscle. All species of tridacnids are used in various forms in the shell trade in Zamboanga, Cebu and Manila. Of these, *H. hippopus, H. porcellanus* and *T. squamosa* are the most widely used either as specimen/ornamental shells or materials for various shellcrafts (e.g., ashtrays, lamps, vases, choker beads). Large *T. gigas* shells are made into bird baths, wash basins and garden ornaments. *T. derasa* is commonly not distinguished by shell dealers as a separate species but rather as a "heavier variety" of *T. gigas* or *H. porcellanus.* Small shells of this species were found to be occasionally lumped with *H. porcellanus* while bigger shells were lumped with *T. gigas. T. maxima* was fairly common but *T. crocea* was rarely encountered in considerable quantity.

The bulk of clams landed in Zamboanga are harvested from waters around the Sulu Archipelago (e.g., Tawi-Tawi) and southern Palawan; for Cebu, other sources of giant clam shells are Samar and Mindoro. The Kalayaan Islands are also a regular harvesting area particularly for *H. porcellanus.* Most of the supply available in shell shops in Manila comes from Zamboanga, Cebu and/or Polillo, Quezon, particularly *H. hippopus* and *T. squamosa.* Suppliers of giant clam shells in Zamboanga and Cebu are mostly middlemen who buy the shells directly from small subsistence fishermen or local brokers. *T. gigas* shells in Cagayancillo Island for instance. are bought at ₱0.60/kg. In 1985, *T. squamosa, T. maxima* and *H. hippopus* shells (7.5-13 cm long) were sold at ₱3/pair and *H. porcellanus* of the same size at ₱6-8/pair, for export. Unpaired shells of all species

Various species of giant clams harvested in Cagayan Island, Palawan.



Tridacna shellcraft.

Table 2. Price ranges (per pair up to 12 cm and per kg for larger shells) for exported giant clams from 1979 to 1985 in US$.

General size categories (cm)	*T. squamosa* white	*T. squamosa* colored	*T. maxima*	*T. crocea*	*T. gigas*	*H. hippopus*	*H. porcellanus*
> 5		0.15–0.20					
5 – 7.5	0.15–0.70	0.20–0.85	0.15	0.15–0.30		0.20–0.25	
7.5 – 12	0.20–0.35	0.40–1.50	0.15–0.40	0.15–0.30		0.17–0.25	0.15–0.60
12 – 18	0.20–0.75	0.45–3.00	0.20–0.40			0.17–0.60	0.45–1.50
20.5 – 25.5	0.20–0.80	0.60–6.50				0.25–1.80	0.40–1.50
28 – 36	0.17–0.80						0.45–0.80
25.5 – 102.5					0.22–0.80		

cost ₱6-11/kg except those of *H. porcellanus* which cost ₱12-14/kg.

The minimum yearly exports of giant clams from Zamboanga based on the records of BFAR from January 1978 to October 1985 are shown in Table 1 and the species composition in the Figure. *H. porcellanus* has remained the most marketable species since 1982. The volume of exported *T. crocea* and identified *T. derasa* was comparatively negligible. The most common destinations were Japan, Australia, and various places in Europe (e.g., France, Greece, Belgium) and the United States (e.g., Florida, California, Hawaii).

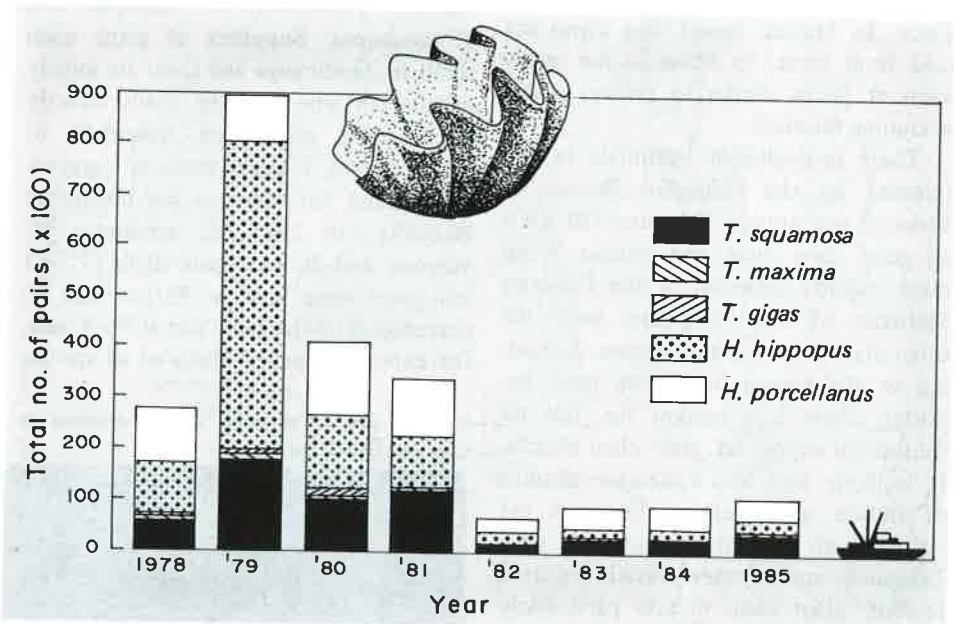
The export price ranges for each species from Zamboanga with respect to general size categories are shown in Table 2. While there was expectedly a general increase in prices of giant clam shells through the years, prices of various shell dealers for any year varied considerably depending on the quality of the shells and the destination. First-class shells which were perfect and thoroughly cleaned or polished were more expensive than uncleaned shells in the same size category. Thus, the lower limits in the price ranges do not necessarily reflect prices in 1979 and likewise the upper limits do not necessarily reflect prices in 1985. However, prices of both species of *Hippopus*, colored *T. squamosa* and *T. gigas* increased steadily by an average of $0.10 per year up to 1982. Thereafter prices tapered off with the exception of the China clam, *H. porcellanus* and big *T. gigas* shells which had become scarce.

On the whole, colored *T. squamosa* was the most expensive particularly those 13 cm or more. *H. porcellanus* was the second most expensive followed by the uncolored *T. squamosa* and *H. hippopus*. Paired *T. gigas* shells sold for $0.80/kg. Thus, a pair 90 cm long (≈ 125 kg) would cost $100.00. The smaller *T. maxima* and *T. crocea* which had the lowest market demand were the cheapest. The most marketable size ranges for each species are as follows: 5-15 cm for *T. squamosa;* 10-18 cm for *T. maxima,* *H. hippopus* and *H. porcellanus* and 30-40 cm and 66-76 cm for *T. gigas*.

Exports were highest in 1979 to 1981 in Cebu, Manila and Zamboanga (Table 1) but have since declined. Moreover, direct shell buyers noted a decrease both in the supply for all species and in international demand. Present international demands can be met by existing stocks despite the decline in supply, except for *H. porcellanus* which continues to be very marketable. *H. hippopus* has a reasonably high local demand for shellcraft material. ●

Table 1. Giant clam shells exported from Zamboanga from 1978-1985 based on records of export invoices from BFAR in Zamboanga.

	1978	1979	1980	1981	1982	1983	1984	1985
Minimum total weight (t)	271	1,003	353	292	63	80	65	98
No. of pairs ($\times 10^3$)	277	895	410	337	67	91	94	112



Yearly species composition of exported giant clam shells (expressed as total number of pairs) from Zamboanga based on export records of BFAR from January 1978 to October 1985.