Palau Giant Clam Hatchery

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Hippopus hippopus—5 months post-fertilization.

Attempts to culture giant clams in the laboratory began in the 1960s, but these early efforts resulted in extremely high larval losses and complete juvenile mortality after 60-90 days. During the past four years, however, the staff of the Micronesian Mariculture Demonstration Center (MMDC) in Palau have successfully reared four of the six species of giant clams, including the largest, *Tridacna gigas*. *T. gigas* and *T. derasa* have been reared to male-phase maturity at 3.5 and 3 years, respectively. *T. squamosa* and *Hippopus hippopus* have been reared to seed size (2-3 cm) in five months. During the past year more than 10,000 giant clam juveniles of seed size have been produced in outdoor breeding tanks.

Although giant clam larvae can be reared using conventional bivalve culture methods, in which single-celled phytoplankters are supplied as food, all post-larval rearing has been achieved without supplemental feeding, since the clams derive most of their nutrition from the zooxanthellae living in their mantle tissue.

The MMDC has successfully air-shipped hundreds of seed clams to Guam and Hawaii, and has initiated an experimental reef-seeding program in Koror State. Survival rate of hatchery produced *T. derasa* (11-15 cm) released unprotected onto a natural reef was 97%/month during a six-month period. Smaller clams (2-3 cm) survived well when placed in plastic trays directly on the substrate.

The long-term objectives of the work at Palau are to increase the standing stocks of giant clams in Palau and to re-establish populations that have recently become extinct in other areas, such as Guam, Truk, Ponape and Kosrae. Although export of the valuable giant clam meat is now prohibited by law in Palau, it may be possible to lift this ban in future years if the MMDC hatchery can produce sufficient juvenile clams. ●

Above: Palau Rock Islands—giant clam habitat. *Below:* MMDC-Palau, site of giant clam hatchery.

Tridacna derasa—3 years post-fertilization.