

Kid's KOrner

Giant clams threatened by predation



Diver off the east coast of Australia encounters a giant clam about 3.5 feet long. The excurrent siphon (hole in fleshy part) expels water and waste. Sought for their shells are disappearing in many parts of the world. Scientists hope to check their decline through aquaculture.

WASHINGTON — Giant clams don't deserve their reputation as man-eaters.

"They're the gentlest of creatures," says Richard L. Radtke, a marine biologist at the University of Hawaii. "There's never been a documented case of a giant clam devouring a swimmer or even grabbing an unsuspecting victim long enough to cause a drowning."

Radtke should know. He's been studying giant clams at Rose Atoll, a remote chunk of coral about 137 miles east of American Samoa. The atoll is protected as a wildlife refuge and is so isolated that it is one of the few places in the world where thousands of giant clams can still be found in a relatively confined area.

DIVES DESPITE HANDICAP

The giant clams and the occasional sharks that nose about are the least of Radtke's worries. A victim of multiple sclerosis, the scientist gets around mostly in a wheelchair. But that doesn't stop him from donning scuba gear to do his underwater research.

"The water's a great equalizer," explains Radtke. "The freedom I have beneath the waves helps make me view my affliction as more of a nuisance than a tragedy. It's an incentive to find different ways to do things and pursue my research."

Such determination has enabled Radtke to work in places far less congenial than the South Seas.

He was the first legally handicapped scientist chosen by the National Science Foundation to do a project in Antarctica. He hopes to return there this year for another field season.

Radtke's work with the giant clam, *Tridacna maxima*, has already turned up some major

surprises. Examining the hinges of the creatures with a scanning electron microscope, he discovered minute laminations. He suspects these markings, which look like curving lines when magnified, may be added annually, much like the rings that mark a tree's growth.

Microscopic, straight-line laminations inside the valves or shells seem to occur daily.

Based on these findings, Radtke estimates that the clams reach their biggest size, about 16 inches long and 15 pounds, when they are about 16 to 20 years old, their maximum age.

AID TO CONSERVATION

By determining the age, growth rates, and interaction of clams in a relatively undisturbed environment, Radtke hopes to gather information that will aid giant-clam conservation efforts.

There is some urgency to his work, because both local and federal government officials are anxious to know whether the clam population at Rose Atoll is secure enough to be harvested.

His information would also be useful in many other parts of the world where giant clams are threatened with extinction. Especially hard-pressed is the heavyweight of the species, *Tridacna gigas*, which can weigh more than 500 pounds, measure more than three feet long, and live 50 years.

People of the Indo-Pacific prize the giant clam for its meat. They sell the shells as curios and souvenirs. The World Wildlife Fund reports that the shells also are being used in the manufacture of luxury floor tiles.

One hope for the future may be clam farming, already started experimentally at a mariculture

station on Palau in the Caroline Islands. There, mature clams are left in a large tank to spawn naturally.

After fertilization, eggs hatch into larvae that settle on a hard surface. They need only sunlight, clean seawater, and protection from predators. No feeding is required.

The tiny clams initially filter food from the seawater, but as they grow they depend more and more on minute algae called zooanthellae. These live in the cells of the clams' distinctive wavy mantles and use sunlight to produce nutrients by photosynthesis. Once the clams become large enough, they can be planted on reefs to grow in the wild.

"What a dream crop," says Radtke. "It doesn't move, it doesn't eat; it just sits there and soaks in the sun."

Golden Guernsey 4-H Club

The final meeting of the Golden Guernsey Dairy 4-H Club was held at the home of George Rohrer on Oct. 23. The group had a business meeting followed by a Halloween party with games and tricks.

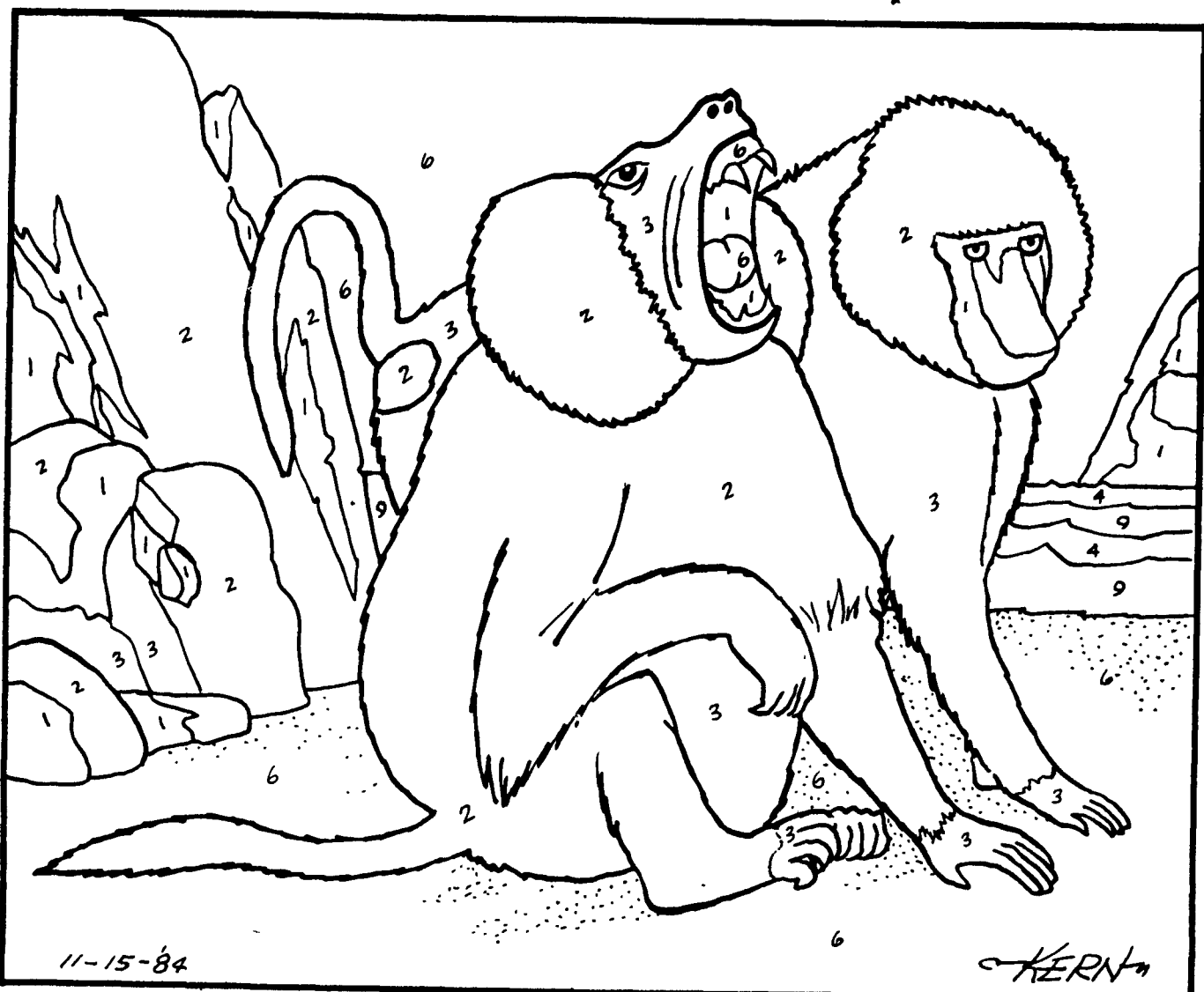
The group gave special thanks to their leaders Peter Witmer and Gerald Garber for their hard work and dedication throughout the year.



COLOR THIS!

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| 1. BLACK | 6. PEACH |
| 2. GREY | 7. GREEN |
| 3. DK. GREY | 8. LT. BROWN |
| 4. BLUE | 9. LT. BLUE |
| 5. BROWN | 10. LT. GREEN |

BABOONS: THEY BELONG TO A GROUP OF MAMMALS CALLED PRIMATES. THE NAME SUGGESTS THAT THE BABOON IS A PRIME OR TOP ANIMAL. THEY RATE THIS POSITION BECAUSE THEY ARE VERY INTELLIGENT WITH WELL DEVELOPED BRAINS. THEY HAVE STRONG POWERFUL TEETH AND A FIERCE DISPOSITION. THIS MAKES IT DIFFICULT TO CAPTURE THEM.



11-15-84