

## Dr. Ted Walker and California gray whales

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by David L. Ringler

It was out in the Pacific Ocean twenty years ago that Scripps' scientist Dr. Ted Walker, then a naval gunnery officer and marine biologist by training, found a fascination for whales that today has placed him among the most prominent of experts in the field.

He would be sound asleep in his cabin when suddenly a message would come for him to report to the skipper. There, on the bridge, he would be expected to identify by sight all whales that came within the area of the ship.

Today Dr. Walker specializes in the study of the California gray whale, which very conveniently migrates past the Scripps Institution of Oceanography labs every December and on into March, allowing him to make observations on their habits. Dr. Walker was instrumental in the founding of the Point Loma observatory, where during the migrating season thousands of people come to watch the herds parade past the point. Dr. Walker has also written for the Park service a "Whale Primer," which is centered around the gray whale in particular.

As the initial speaker in a seven-part series to be presented to the 44 students participating in the National Science Foundation program this summer at UCSD, Dr. Walker recently spoke of his exciting experiences with this zing animal. He is interested in whale orientation-- how the whale, especially the gray whale, is able to navigate in the vast expanses of the Pacific and Arctic oceans.

Whales, Dr. Walker points are divided into two basic classes, the toothed whales, such as the sperm whale, which feeds on fish and squid, and the baleen whales, which have thin strainer-like bones through which are forced large volumes of water, leaving behind shrimp and small fish. Of the approximately 100 species of whales, 15 are baleens, among them the California gray whale. Other baleens include the blue (the largest creature who has ever lived) and hump whales.

Whales are the largest of all mammals, which are characterized by their ability to feed their offspring milk from glands. Curiously enough, the gray whale has amazingly small set of eyes, they being one-six hundredth the mass ratio in comparison to one-sixtieth for man. In other words, if a gray whale were the size of a man, his eyes would be the size of pearls.

The California gray whale is a familiar sight to Californians living along the coast. Once a year hundreds of these huge animals migrate along the shore and far out into the Pacific in their annual trip to the mating and birth giving grounds in the lagoons along Baja California.

"For all the whales the whalers have hunted," says Dr. Walker, "the California gray whale is the most wary, the cagiest of the lot." As late as 1850 the gray whales would be seen cavorting in San Diego harbor, as relatively few ships entered there. But being a coast hugger, the California grays were a natural prey for whalers and many perished before the harpoon. Finally, in 1934 international law forbade the hunting of the animal.

Gray whales aren't as sociable as porpoises. Dr. Walker has stalked them for five and six hours at a time, but then suddenly they seem to grow bored with the game of follow the leader and with a flip of their massive tails will disappear beneath the waves, never to be seen again.

"One of my life's ambitions is to follow the California gray whale on the entire migration," says Dr. Walker. One whale was tracked at an average speed of 2.8 knots for thirty miles before night came. Radar and sonar have been tried in the dark, but the animal is somehow too elusive and always escapes, a capability many a submarine commander would envy.

Whales eat an enormous amount of food to maintain their large bodies, which grow to weigh as much as 150 tons. The 100-foot gray whale will eat six and seven wheelbarrows full of fish at one feeding. The baby blue whale grows as much as two hundred pounds in a single day by drinking fifty-five gallons of milk from its mother.

The best of the divers are the great sperm whales, which reach depths of three thousand feet and then stay below longer than one hour. It is a mystery to Scripps' scientists, including Dr. Walker, how whales are able to rise from such great depths and not incur what is commonly referred to by divers as the "bends." The "bends" are the painful result of nitrogen accumulating in small bubbles in the nervous system causing paralysis and often death.

In order to avoid the "bends" human divers must come to the surface gradually, a few feet at a time. Whales can rocket to the surface in a matter of a few minutes. Scripps' scientists suspect that a seemingly purposeless network of minute capillaries at special places in the whale's body may serve as strainers, catching all nitrogen bubbles evolved during the dive and disposing of them in some unknown manner.

As more sophisticated systems for tracking whales are devised in the Scripps' laboratories in La Jolla, Dr. Walker and others will map out expeditions for the study of this most fascinating and elusive of animals, the California gray whale.