

another four in July 1956, all normal-coloured. Then, one of the female cubs of the second litter was mated with her father, the white tiger, Mohan, and on 30th October 1958, four white cubs were born. Three more were born in June 1960, but in this litter one was a normal-coloured female. In the next litter there were only two cubs, the animals now at Bristol Zoo.

The few white tigers that have been seen in the wild have all seemed to be big animals and the signs are that the male at the Bristol Zoo will be a large animal too.

HAWAIIAN MONK SEALS -

Monachus schauinslandi

AND GREEN TURTLES

Chelonia mydas

AT WAIKIKI AQUARIUM

by Louis S. Mowbray*

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MONK seals are warm-water seals and today represented by three species: the Mediterranean monk seal, *Monachus monachus*, the Caribbean monk seal, *M. tropicalis* and the Hawaiian monk seal, *M. schauinslandi*. All three species are rare and the Caribbean monk seal is thought to be almost extinct (Scheffer, 1958). The Hawaiian species is found on a number of the small islands of the Hawaiian Chain as far as Kure Atol, about 1,200 miles north-west of Honolulu, Oahu. There is evidence of considerable inter-island migration, verified by a tagging programme. Four seals tagged on Laysan Island were recovered on Pearl and Hermes Reef, more than 300 miles distant. The Hawaii State Fish and Game Department and the Smithsonian Institution have recently carried out a survey on the populations of the Hawaiian monk seal. In 1957 the estimated population was 1,000 animals. The 1964 survey indicates that a more realistic figure is 1,500 seals; and the estimate may be somewhat on the conservative side.

The Waikiki Aquarium in Hawaii has had

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several of these interesting seals during the past few years, and one lived as long as two years in captivity; another lived only about six months. Post-mortem examination indicated that death was caused by heavy infestations of tape-worm and round-worm, resulting in heavy ulceration of the stomach and the intestine. Post-mortem examination by Smithsonian Institution workers of a dead Hawaiian monk seal found on Kure indicated that death had been caused by the same worms.

On 13th December 1963, a fine immature male, weighing about 150 lb., was obtained by the Waikiki Aquarium. It was captured on Kure Atol. After it had been in captivity for one month and had learned to eat dead fish, the animal was treated for intestinal worms (Vermiflex, and Caricide, which had been recommended by the Curator of Marineland of the Pacific, California). The recommended dose is 10 mg. per pound of body weight; this can be repeated if necessary after a period of three or four weeks. Results were good and the seal has progressed well. At the time of writing (June 1964) it weighs about 220 lb. and is about two-and-a-half years old.

We had hoped to obtain a female monk seal at the same time but it was not possible. However, one was obtained on 22nd March 1964. This animal refused food for twelve days and lost much weight until it weighed only 100 lb. After twelve days, it started to accept food and it began to gain weight. It was de-wormed after one month in captivity and at the time of writing it weighs at least 200 lb. and is about one-and-a-half years old.

The monk seal's habit of lying for hours on sandy beaches, throughout their habitat, indicates that they are primarily nocturnal feeders. The large eye would tend to substantiate this. Their natural food consists of littoral fishes, morays and conger eels. Earlier specimens kept at the aquarium had to be fed on live fish of similar species, and taught gradually to accept dead fish, such as herring or smelt. They now thrive on this diet and have not received live food since they have been in captivity.

The two monk seals at the Waikiki Aquarium are kept in an outdoor pool with a capacity of approximately 90,000 gallons of

seawater. The pool is shared without compatibility problems with four Harbour seals, *Phoca vitulina*, and about a dozen large sea turtles, *Chelonia*, *Caretta* and *Eretmochelys*. There is an island in the pool on which the seals rest. It is beneficial if the monk seals can have a sand-box or beach on which to lie as they prefer sand to the hard rock. There is a continuous flow of seawater through the pool, though it is drained and scrubbed once a week to control the growth of algae.

GREEN TURTLE EXHIBIT

The Pacific green turtle, *Chelonia mydas*, mate regularly in the big pool at the aquarium, and later deposit eggs on the bottom of the pool (in the water). As far as is known, this is the only record of this happening in captivity. With the provision of a suitable ramp and sand pit, these sea turtles would surely lay their eggs in the proper medium and these would hatch as the result of normal incubation by the heat of the sun. Provision of such facilities for the turtles is proposed for 1964-5.

REFERENCE

Scheffer, V. B. (1958): *Seals, sea lions and walruses; a review of the Pinnipedia*. Stanford.

WHITE

BOTTLE-NOSED DOLPHIN

Tursiops truncatus

AT MIAMI SEAQUARIUM

by William B. Gray

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As far as we know, the white Bottle-nosed dolphin at Miami Seaquarium is the only true albino of this species that has ever been caught. Our specimen, 'Carolina Snowball', is 8 ft. long, weighs 400 lb. and is estimated to be between twelve and fifteen years old.

In 1961 we heard that a dolphin as 'white as snow' was reported to have been seen several times in the St Helena sound area of South Carolina's coastal waters. It was said to have been seen in there over a period of seven or eight years. Our chief specimen collector, Captain Emil Hanson, went to the area and did indeed see a ghost-like dolphin in the company of a large school of dark-skinned

Bottle-nosed dolphins. As a result of his report we arranged an expedition to try and catch the white dolphin. After cruising about the area, we came across the gleaming white animal cavorting with a large group of normal-coloured dolphins. After fifteen days attempting to capture it, we realized that our ordinary dolphin nets were unsuitable for the deep waters of the sound. In January 1962, we returned with a special longer and deeper nylon net, three-quarters of a mile in length. But once again we failed, this time because the rough weather made it impossible to find any dolphins, let alone a white one. In July, we returned once more and again found the white dolphin. As before, there was a small grey dolphin swimming by its side. They seemed to be inseparable. It was obvious that the white dolphin was a female and the little one was her baby. After three weeks, we finally caught both of them and returned to the Seaquarium on 4th August 1963, with both specimens in perfect condition. We estimated the baby, a male, to be about two years old for he was just about ready to be weaned (baby dolphins live entirely on their mother's milk for the first eighteen months of their lives).

From the moment she was captured, the white dolphin was friendlier, more placid in temperament and less skittish and nervous than other dolphins I have known. She keeps her pink eyes half-closed because they are extremely sensitive to light, as are the eyes of all albinos.

Dr Clyde Keeler, a mammalian geneticist and professor at Georgia State College for Women, has been studying the white dolphin and her son. We were interested to find that his studies tallied with our observations. He believes the albino is characteristically gentle and friendly because of a low basal metabolism. He disagrees with those who hold that lower intelligence accompanies albinism. (He has made detailed studies of the San Blas Indians, a Central American tribe with the highest incidence of albinism in the world. From these studies of San Blas 'neon-children' he is of the opinion that the albino is just as intelligent as his fellows with normally coloured skins, and may learn more readily because of a less nervous temperament.)

As the young dolphin carries one gene for

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Int. Zool. Yearbook
5: 146-7 1965