

nests were dismantled, in connection with another phase of the study, and the tinfoil balls recovered.

Data obtained by this method were compared to live-trapping data. Trap nights totaling 1260 were logged during a 2-year investigation using Havahart (size no. 2) live traps placed 50 feet apart in a grid pattern. The data obtained by live-trapping indicated that the home range of each woodrat was within 200 feet of the nest. Each recovered tinfoil ball was considered to be the same as a trapping record. The tinfoil ball method indicated a somewhat smaller home range of 175 feet. This method did not restrict the movement of the animals for long periods of time as did live-trapping and was useful in tracing the movement of the woodrats in trees. The tinfoil ball method, however, may have caused the woodrats to make unnatural trips back to the nest, and the shiny objects may have attracted some animals beyond their normal home range.—PATRICK H. IRELAND AND H. A. HAYS, *Department of Zoology, University of Arkansas, Fayetteville, Arkansas 72701 and Department of Biology, Kansas State College of Pittsburg, Pittsburg, Kansas. Accepted 27 January 1969.*

THE HARBOR SEAL, *PHOCA VITULINA CONCOLOR*, IN FLORIDA

The recorded southern limit of the western Atlantic range of the harbor seal, *Phoca vitulina concolor*, is the southern end of Hilton Head Island, South Carolina, or just north of latitude 32° N near the South Carolina-Georgia border (Caldwell, J. Mamm., 42: 425, 1961).

On 16 January 1968, Mr. Jurgen Stehnik of the Daytona Beach News-Journal reported to us that Mr. Francis Greene of Wexford, Pennsylvania, had landed a small seal on hook and line, using shrimp as bait, during the day at Ponce de Leon Inlet just south of Daytona Beach, Florida (at about latitude 29°05' N). The seal was released, apparently unharmed, and stayed on the gently shelving open ocean sand beach for several hours before returning to the water. That same night a small seal was found sleeping on the beach a mile or so to the north of the Inlet by Captain Charles Stiles of the Daytona Beach Shores police department. Capt. and Mrs. Stiles took several color photographs of the animal before it returned to the water. Mr. Larry Bolch, also of the Daytona Beach News-Journal, already had made black and white photographs of the seal during the afternoon. We compared all of these photographs and the descriptions of the animal given by various observers and concluded that the two reports almost surely applied to the same seal. The photographs show that the animal was a small harbor seal. It was correctly reported as this species by the Daytona Beach press on 17 January, but was incorrectly reported as a harp seal by the Jacksonville Florida Times-Union on 18 January, and by the Florida State Board of Conservation in Florida Conservation News, 3(5): 4, February, 1968.

On 23 January 1968, we received notice that a small dead seal had washed ashore on the open ocean beach during the early morning within the northern city limits of Daytona Beach, or about 11.5 miles north of the original seal sighting and capture. The carcass was collected by the Daytona Beach police, and we found it to be a small harbor seal. The size and weight of the carcass were almost exactly as estimated for the live seal seen in the immediate vicinity only a few days before, and the color pattern on the fur of both the carcass and the photographs were the same. State and other establishments were checked, and none reported an escaped harbor seal. We feel confident that the record is a legitimate one. It therefore constitutes a range extension from South Carolina and is the first record of the harbor seal in Florida. The skull is in the collections of the Marineland Research Laboratory, along with several of Bolch's photographs of the live seal.

The following measurements were taken according to the suggestions of the Committee on Marine Mammals of the American Society of Mammalogists (J. Mamm., 48: 459-462, 1967): tip of snout to tip of tail, 88.5 cm; anterior length of front flipper, 15.0 cm; anterior

length of hind flipper, 20.0 cm; thickness of ventral blubber, 8.0 mm. The animal weighed 38 pounds and, except for a bad head injury, appeared to be in excellent physical condition. It apparently had been hit by a boat, which probably was the cause of death. The stomach was empty, but yellowish-brown fluid feces were found in the lower intestine, indicating that the animal had fed recently. Externally the seal was heavily infested with live sucking lice, which were clinging to hair primarily in the dorso-lateral region of the head and neck and in the ventro-lateral region of the posterior belly. These lice were identified as *Echinophthirius horridus* by Dr. Stephen G. Zam of the University of Florida, and a sample has been retained at the Marineland Research Laboratory. King (Seals of the world, British Mus. (Nat. Hist.), p. 135, 1964) reported this species of louse from *Phoca vitulina*, but did not record locality or subspecies of seal.—DAVID K. CALDWELL AND MELBA C. CALDWELL, Marineland Research Laboratory, St. Augustine, Florida 32084. Accepted 25 November 1968.

DEEP BODY TEMPERATURES OF SWIMMING AND WALKING POLAR BEAR CUBS

The polar bear shows great skill in crossing rough sea ice. The animal is also a good swimmer, and has been observed swimming more than 160 kilometers from the nearest land. When hunting for seals, polar bears are forced to alternate between travelling across the ice and traversing open leads by swimming. Because of this special way of life, the polar bear might be expected to have acquired thermoregulatory mechanisms adapted to both marine and terrestrial life under arctic conditions.

The transfer of heat through samples of polar bear pelts in air and water has been measured by Scholander *et al.* (Biol. Bull., 99: 225, 1950), who found high values, especially to water, and postulated that heat loss is reduced by peripheral vasoconstriction and cooling, and over a long period is compensated by heat produced during swimming. Frisch (Master's thesis, Univ. Oslo, 1969) found nearly the same value for the conductance

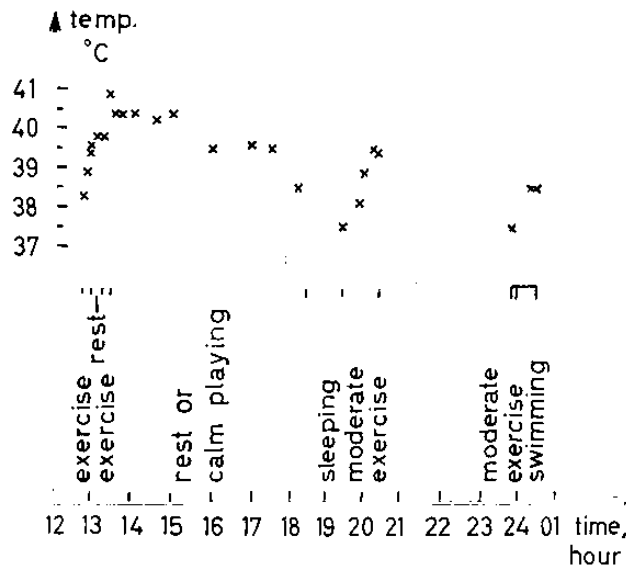


FIG. 1.—Deep body temperature of exercising polar bear cub at Spitsbergen. Air temperature 2°C, sea temperature 0 to 2°C.