The following measurements and notes were taken: Total length 9 feet; width 7 ft. 9 in.; eye to snout 14 in.; diameter of orbit 5 in; eye to base of pectoral 17 in.; length of pectoral 15 in.; width 12½ in.; gill opening 4¼ x 6½ in.; length of dorsal (mutilated) 2 ft. 5 in.; width 23 in.; length of anal 21 in.

Color silvery; body, especially anteriorly, covered with hard, bony, silvery, stellate or granular plates.

After the fish had been caught in the net it was attacked by sharks and badly mutilated, especially on the fins and about the nose.

It was said that this fish weighed 2,500 pounds, but I cannot vouch for the truth of this statement. My own estimate was not to exceed 1,800 pounds.

This was said to be the largest fish of this species ever taken by San Francisco fishermen. Smaller examples weighing 300 to 400 pounds are occasionally taken. One was brought in in April of this year that weighed about 300 pounds. One was taken in June, 1893, off Redondo Beach, California, that measured 8 ft. 2 in., and weighed 1,800 pounds.

Barton Warren Evermann,
San Francisco, Cal.

[The mounted skin of a *Mola* 10 ft 2 in. in total length from Long Beach, California, May, 1911, is exhibited in the American Museum of Natural History, New York.—*Ed.*]

HIBERNATION OF REPTILES.

A friend in Bridgeport, Connecticut, is my authority for the statement that there seems to be a great difference in animals, as to their tendency to hibernate in winter, and the effect of temperature upon the physical phases of their life. He had had for three years, in 1910, a brace of rattle-snakes,

(*Crotalus horridus*) from the neighborhood which he kept in a glass case, and maintained a summer temperature the year round, with the result that during that period of three years the snakes did not hibernate, but maintained an active existence during the entire time. He has observed that they have shed their epidermis at shorter periods than has been generally supposed; to wit, about once in three months, and that this is not a constant factor, but will vary. It has popularly been held as an indisputable fact that the rattle-snake adds one joint to the rattle each year, but Mr. Ford has discovered that a new joint is added to the rattle with each shedding of the eperdermis, and the snakes in his collection have added from three to four buttons each year, proving that the old time hypothesis is erroneous. The snakes have fine rattles with perhaps ten or twelve buttons and have attained a length of maybe less than twenty inches. In this collection, under the scrutiny of Mr. Ford, is a small mud turtle (species unknown) that is kept at about the same temperature as the snakes but with different results. As winter approaches and the proper season arrives it declines to eat, draws in its head and becomes lethargic and finally falls into a stupor, which lasts till spring when it awakes again to its wonted life and activity. From these facts, it would be interesting to determine what degree of cold a dormant animal may be subjected to without destroying its latent vitality, and what degree of temperature is necessary to induce hibernation in any given animal.

Herman Haupt, Jr.,
South Haven, Michigan.

ON ONE OR TWO COMMON STRUCTURAL ADAPTATIONS IN FISHES.

The caudal fin of fishes is the chief propelling organ. As such its form is a good criterion of a fish's