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THE WHALE SHARK, *RHINEODON TYPUS*

NEAR HAVANA HARBOR, CUBA

THE FIFTH RECORD FROM THE STRAITS OF FLORIDA

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This specimen of the whale shark was taken on November 20, 1927, at Jaimanitas, a fishing village in the suburbs of Havana, about five miles west of the mouth of the harbor. Figure 1 shows the great fish and its captors shortly after it was drawn to the beach and left partly dry by the ebbing of the tide. Unfortunately the picture was not made for scientific purposes, and the large number of men sitting on the back of the fish obscure much that one would like to see. However, attention may be called to the wide head, the terminal mouth, the eye just back of the corner of the mouth, the gill slits, and the spots on the head and shoulder region. One also gets an idea of the enormous size of the fish even in its collapsed state (due to its lack of bony parts).

The fish roughly speaking was 32 feet in length and 18 in girth, and its weight was estimated at 9 tons. The skin was fully 2 inches thick and its weight is said to have been a ton. The weight of the liver is given as 900 pounds and that of the heart as 43 pounds. The body of the fish was about 6 feet deep, and the "small" of the tail was so large that a tall man could barely encircle it with both arms. The caudal fin was rather lunate and fairly symmetrical, the upper lobe being the longer. The depth of the caudal from tip to tip was about 6 feet. The anterior edge of the fin was thick and fleshy, the hinder thin and membranous. The anterior dorsal fin was about 32 inches high. These points may be fairly well seen in Fig. 2, a photograph made of the fish left stranded on the beach by the fallen tide. Exposure to sun and air had already badly affected the skin. Still one can make out the general form of the body proper, the spots, the longitudinal keels, the two dorsal fins and the caudal.

This specimen of the whale shark was a male. The claspers were about two feet long and as large as a man's leg at the knee. The adjacent

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pelvic fins were about 16 inches long. The pectoral fins at the base were about 24 inches broad, while their length was about 48 inches. The small eye was placed almost directly behind the angle of the mouth, and at about an equal distance back of this was the relatively minute spiracle.

The color of the fresh specimen was a dark brown approaching black above, while the ventral surface was greenish gray. A line running over the back and connecting the median points of the bases of the pectorals divides the markings into two distinct groups. Forward of this line there



Fig. 1. The Havana whale shark partly out of water, as seen in left front-lateral view. Note the harpoon in the left gill region.

were about 30 to 40 vertical rows (the spots are rather irregularly placed and the rows hard to count) of about 20 spots each. The spots grow smaller and more crowded toward the mouth. Back of the line noted, and above the mid-lateral region of the body were 34 vertical rows of three spots each—the spots about double the size of a silver dollar. No vertical lines separating the rows of spots were noted. For these points see Fig. 1.

These rows of spots, taken in connection with the three longitudinal keels extending back from the shoulder region to a point behind the

second dorsal (Fig. 2), give the sides of the fish a characteristic checkered appearance which leads to its local name "pez dama." Now pez means fish, and dama ordinarily lady; hence, the lady-fish. But dama also means checker-board and hence *Rhineodon* is rather appropriately called "pez dama," the checker-board fish. The dark blocked-off sections of skin with their large round white spots certainly do resemble the squares of a checker-board with the draughts in the center of each. This effect would be heightened if the vertical bars found on other specimens were present—as they presumably were at the time of capture. In keeping with the idea implied in the name, when the fish was moved to the

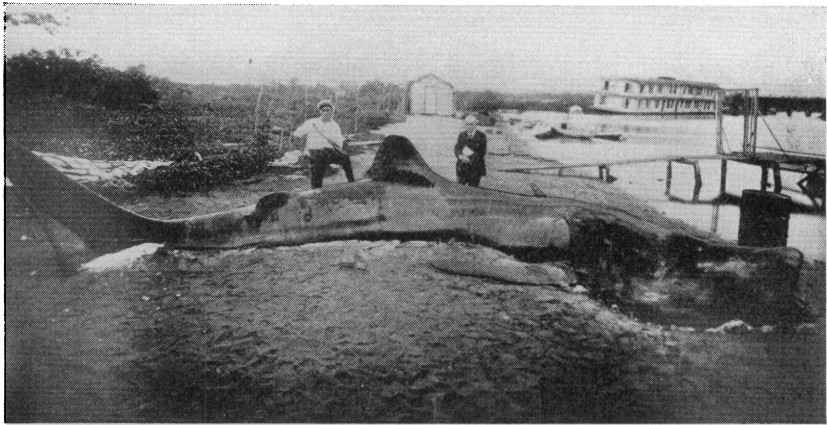


Fig. 2. Right lateral view of the whale shark showing the blunt head, the median fins, the lateral keels, and the upper lobe of the caudal.

center of Havana for exhibition (as set out below), on the placard outside the owner had painted the checker-board tablet on which the game is played.

The mouth is wide and terminal, and the tooth-bands are found immediately inside it as though they were a part of the lips. For this see Fig. 3, which shows the tooth-band in the lower jaw. Each band was about 31 inches long by 2.25 inches wide. The teeth were arranged in about 20 longitudinal (right-left) rows, and in about 300 transverse (front-back) rows. Thus there were approximately 6000 teeth in each jaw, those near the angles of the jaws being very minute. The longest (those in the middle) were only about $\frac{1}{8}$ of an inch high. The teeth in these card-like bands are all set pointing slightly backward, and,

when the jaws are nearly closed, serve to retain the food, but not to cut or rend it.

The fish was crudely but rather effectively mounted on some kind of a framework or manikin, and presented a huge whale-like appearance as may be seen in Fig. 4. The spots, which had faded in process of time, were painted in none too artistically, and the whole skin was varnished. At first the fish was exhibited in a tent in the suburb where it was captured. Later it was carried to various parts of Havana, and still later was exhibited for some time in a large room near the center of the city. Thus

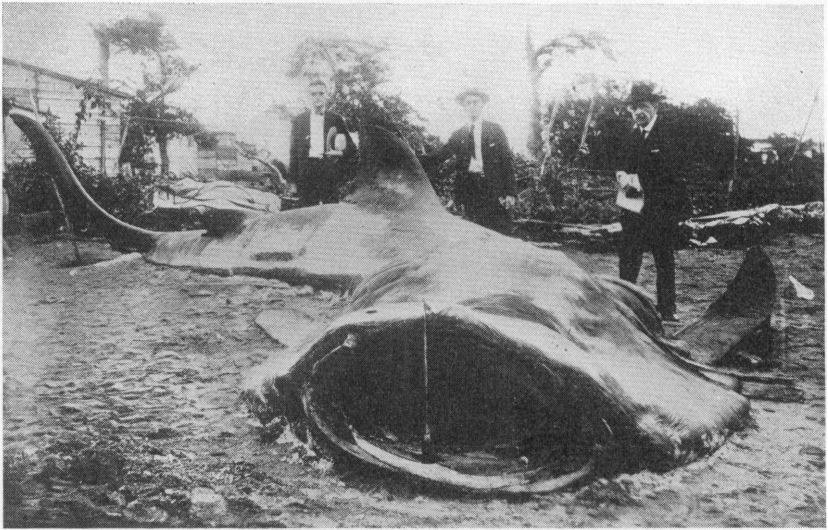


Fig. 3. Nearly head-on view of *Rhineodon* showing the broad collapsed body, and the cavernous mouth with the tooth band in the lower jaw. The harpoon shown is the one used in its capture.

mounted and exhibited, the fish attracted considerable attention and netted its captor and owner a comfortable sum. Later it was removed to some other part of the island and all trace of it has been lost.

The fish was sluggish and stupid, making no demonstration even when the boat was "nosed" up against him. He was harpooned in the left gill region (see Fig. 1) and, some of the branchial vessels having been cut, he bled profusely. Even after being harpooned he offered practically no resistance, merely dragging the boat around with him. Finally he became so weakened by loss of blood that he was towed to shore, some 20

hours after the boat was made fast to him. Here, after being stranded, he lived several hours longer. The non-resistant behavior of this specimen tallies exactly with that of the other 3 fishes taken in the Straits of Florida or in waters immediately contiguous, as I have noted in recording these other captures.¹ These data were obtained from the head fisherman of the crew that captured this *Rhineodon*. This man (Miguel by name), in all the interviews with him, left the impression of being entirely trustworthy. He reports that the fish harpooned had been seen in the vicinity for two or three days before being captured. Furthermore, there are various rumors that four or five other huge fish had also been seen, but these accounts do not speak of any spots, and we doubt if these were whale sharks. However, the head fisherman referred to says that on January 20, 1928, he saw another huge spotted fish and harpooned it, and that while it too offered little or no resistance it finally got away. It is possible that this might have been the mate of the captured *Rhineodon*.

A possible explanation of this occurrence of the whale shark on the northwest coast of Cuba is to be found in the fact that in early winter small fishes (the head fisherman called them "sardines") come inshore from the Gulf Stream in vast shoals. Possibly *Rhineodon* normally feeds on these. At any rate the specimen captured was reported as feeding on them when taken (his mouth being literally full of them). Unfortunately his stomach was not opened until after several days, when all its contents had gone to pieces. However, this reported feeding habit tallies exactly with information sent by a scientific man in the Seychelles Islands, in the western Indian Ocean, that *Rhineodon* comes inshore there at that season of the year when vast shoals of a certain small fish on which it feeds come into shallow water.

This is the fifth whale shark taken in or near the Straits of Florida. The first specimen came ashore dead at Ormond Beach, in 1902. The second, was captured by Captain Charles Thompson of Miami, Florida, and Mr. Charles T. Brooks of Cleveland, Ohio, at Knight's Key, in May, 1912. The third was taken in the Bay of Florida by Dr. H. Schlegel and others on June 10, 1919. The fourth was taken by Captain Newton Knowles of Miami and Mr. Claude Nolan of Jacksonville, at Marathon, 16 miles below Long Key, on June 9, 1923.

¹Gudger, E. W., 1913, 'A Second Capture of the Whale Shark, *Rhineodon typus*, in Florida Waters,' Science, XXXVIII, p. 270; 1920, 'A Third Capture on the Florida Coast of the Whale Shark, *Rhineodon typus*,' Science, LII, pp. 191-192; 1923, 'A Fourth Capture in Florida Waters of the Whale Shark,' Science, LVIII, pp. 180-181.

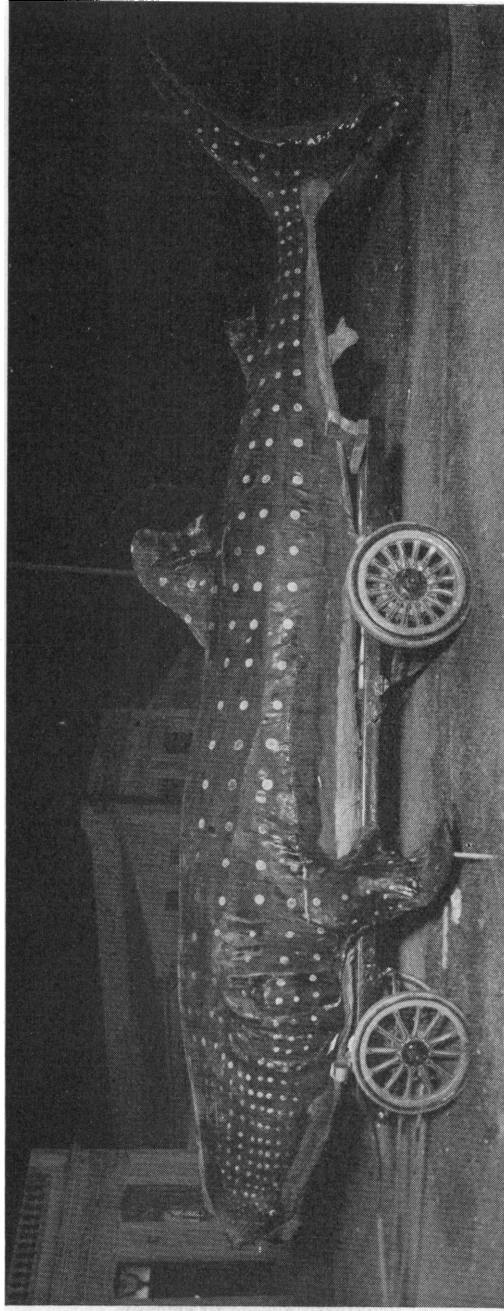


Fig. 4. The mounted whale shark on a truck. The mounting is crudely done as are the hand-painted spots.

The present specimen is the fifth for this region. It was 32 feet long; number 4 was also 32 feet long; number 3 was 31 feet in length; number 2, the largest (38 feet), and number 1 the smallest (evidently a young one), 18 feet. These facts lead to the tentative conclusion that the normal length of adult whale sharks in this region is somewhere between 30 and 40 feet. This estimate falls in line with the sizes given of other *Rhineodons* in various parts of the world. The longest measured specimen—45 feet—was taken in the western Indian Ocean (Seychelles Islands).

• Whether the fish is indigenous to these immediate waters cannot be said. Data at hand, but not from scientific sources, lead us to conclude that the fish is to be found in the Straits of Yucatan and farther east about Trinidad. All the other specimens from the Straits of Florida have been captured in the summer, and it has been thought that they were summer migrants. The present capture, however, would seem to negative this conclusion.

Two other captures of whale sharks in the Atlantic have been recorded and curiously enough both have been taken in the same manner—by being impaled on the bow of a steamer. One was taken on May 19, 1923, near the Abrolhos Light off the southern coast of Brazil, the other in the northern part of the Gulf of Guinea on July 6, 1924.¹ In addition there is a report by George Bennett in 1834 of two large “bone-sharks” seen near the Azores in 1831. These were not close enough for the markings to be made out, and it is a question whether they were *Rhineodon typus* or *Cetorhinus maximus*—both fishes being sometimes called “bone-shark” because of their gill-raker structure.

Thus, while the whale shark has been taken on both the east and west sides of the Atlantic, and while there are newspaper and other unconfirmed reports of its occurrence near Trinidad and off the Yucatan reefs, yet we must go to the Straits of Florida for the greatest number of authentic records in the western Atlantic. Here it has been taken five times, and either the fish or photographs of it have been seen and put on record.

¹Gudger, E. W., 1923, 'An Extraordinary Capture of the Giant Shark, *Rhineodon typus*,' *Natural History*, XXIII, pp. 62-63, Fig.: 1927, 'A Second Whale Shark, *Rhineodon typus*, Impaled on the Bow of a Steamship,' *Bulletin New York Zoological Society*, XXX, pp. 76-77, Fig.

