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A Beaked Whale from the Bahama Islands and Comments on the Distribution of *Mesoplodon densirostris*

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On October 17, 1944, a small whale said to be 14 feet long "plunged through the mangroves to the rocky shore" of Green Turtle Cay (latitude 26° 46' N., longitude 77° 18' W.) on the Atlantic Ocean side of Abaco, Bahama Islands, "and died trying to get free." It was said to have "a thin black skin covering two or three inches of blubber, a horizontal tail, a breathing hole in the top of its head . . . no teeth, [and] a tapering . . . upper jaw [lying] in a trough between two . . . tusks in the lower jaw." The above quotations are from an item in the "Nassau Tribune" of October 19, 1944, and aroused the curiosity of Mr. John Hutton of Nassau who engaged a resident of Green Turtle Cay, one G. L. Lowe, in correspondence about it. Hutton then sought help from the American Museum of Natural History in identifying the strange little whale and eventually arranged for the skull and lower jaw to be brought to him and then shipped to New York to be deposited in this Museum, where it is A.M.N.H. No. 143910 in the permanent mammal collections.

Hutton published a very brief account of this occurrence of *Mesoplodon densirostris* on page 752 in the May 20, 1950, issue of the London weekly "The Field" in an article on sports fishing. However, he gave less information there than the above, which he had earlier provided to the American Museum in his letters.

The present specimen, although it may be judged to be an adult

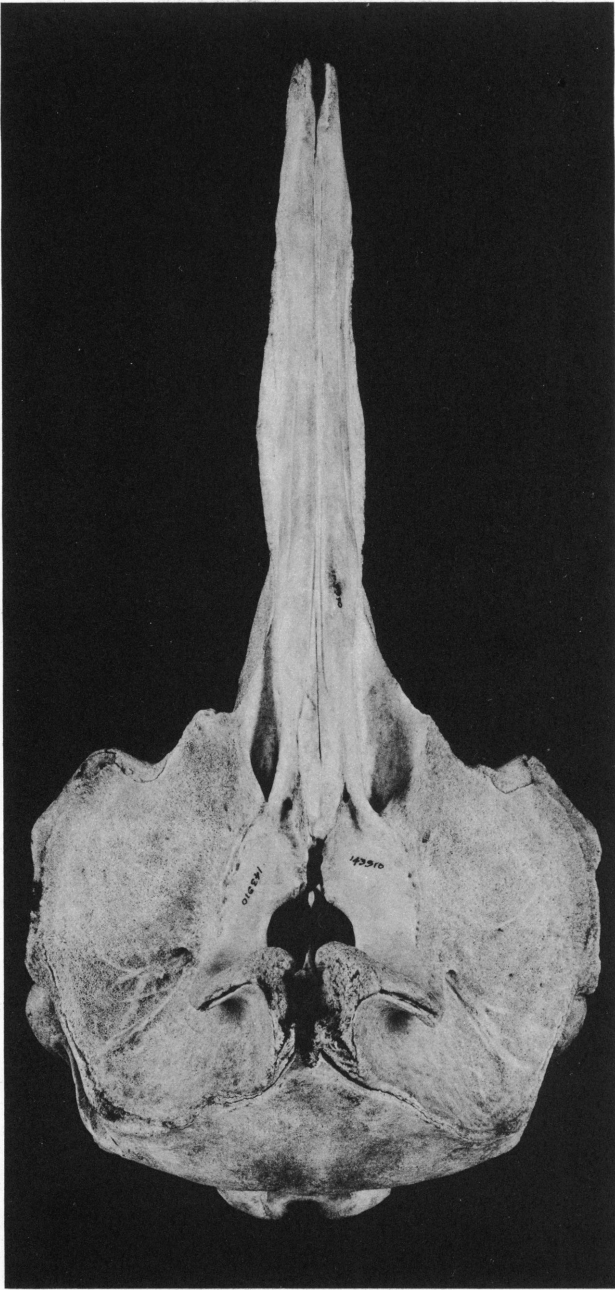


FIG. 1. Dorsal view of skull of beaked whale *Mesoplodon densirostris* from Bahama Islands. Right maxillary prominence broken.

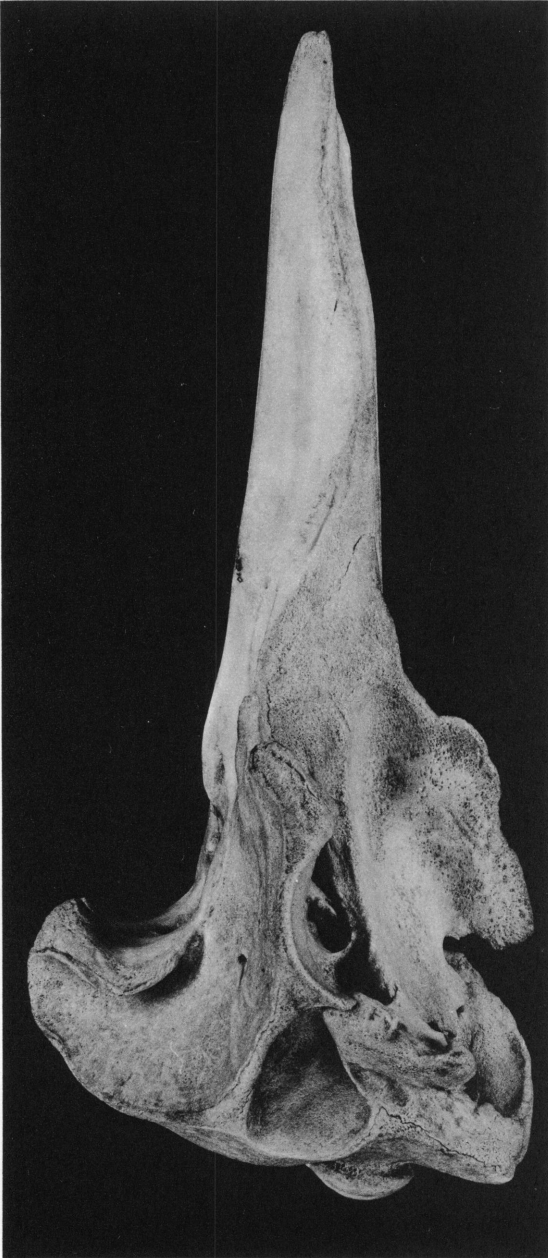


FIG. 2. Lateral view of skull of beaked whale *Mesoplodon densirostris* from Bahama Islands. Entire inferior border of pterygoid irregularly broken away.

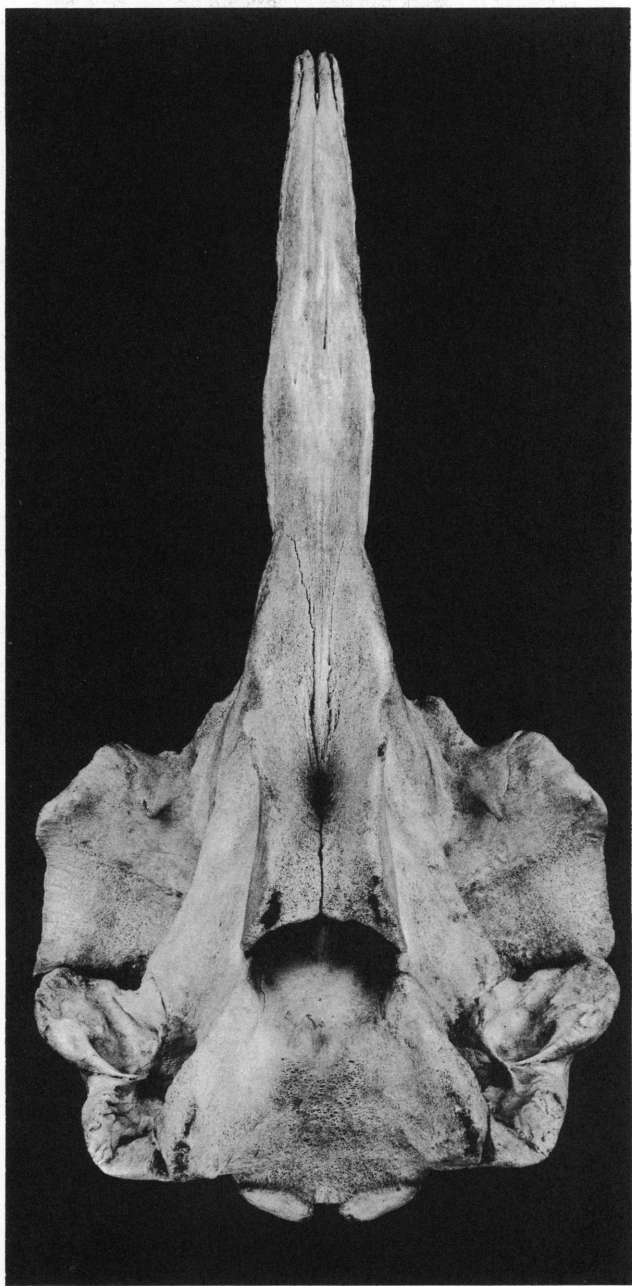


FIG. 3. Ventral view of skull of beaked whale *Mesoplodon densirostris* from Bahama Islands. All but anterior ends of jugals, periotic bones, tympanic bones, and auditory bullae missing.

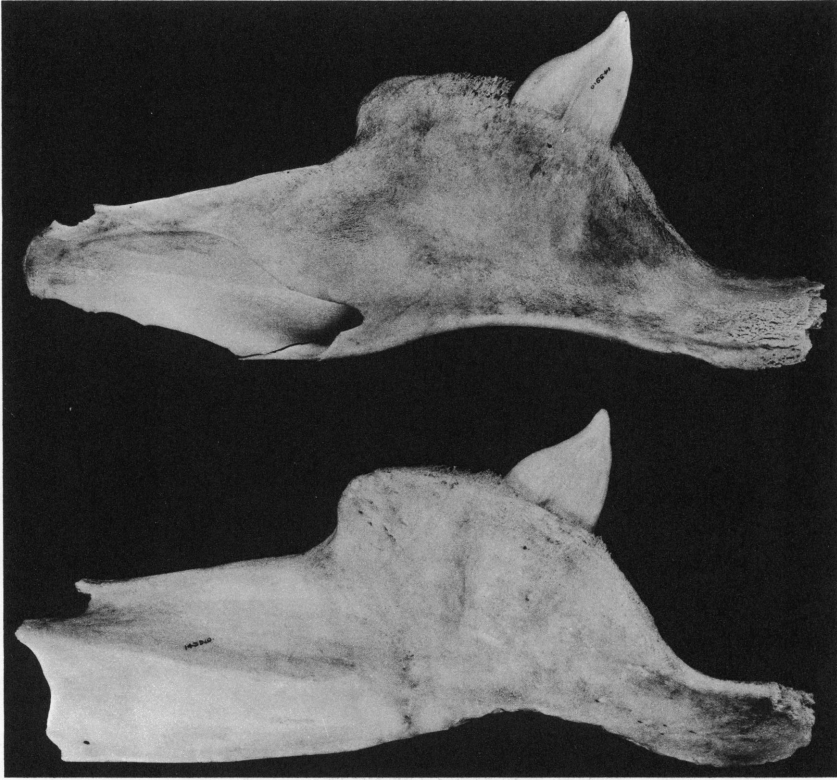


FIG. 4. Lateral view of lower jaw of beaked whale *Mesoplodon densirostris* from Bahama Islands. Above is inside aspect of left ramus; below, outside aspect of right. Posterior end of right ramus and anterior ends of both rami entirely broken away. Bone was chopped away from lower edge of right ramus directly beneath tooth, possibly in a crude fleshing out of skull.

male by the fact that the vomer fills, and rises above, the mesirostral groove, and by the size of its teeth, is a little smaller in some respects than other adult males of which the skull measurements have been published. However, the differences appear to be those of perhaps greater age in the present specimen, and also individual variation. These differences are shown in tables 1 and 2. The data for the Nova Scotia, New Jersey, and Madeira Islands specimens are derived from measurements published, respectively, by Raven (1942, p. 33), Ulmer (1941, p. 116), and Harmer (1924, p. 560).

An impressive number of small differences have been found by the present writer between the skull of the Bahama specimen and that of

TABLE 1
MEASUREMENTS (IN MILLIMETERS) OF THE BEAKED WHALE *Mesoplodon*
densirostris FROM THE BAHAMA ISLANDS

1	Total length of skull	665
2	Height, vertex to inferior border of pterygoids	284
3	Width at centers of orbits	315
4	Width on zygomatic processes of squamosals	318
5	Width of occipital condyles	97
6	Width of foramen magnum	45
7	Rostrum, length from level of bases of antorbital notches	398
8	Rostrum, width between bases of antorbital notches	187
9	Rostrum, width at midlength	62
10	Rostrum, depth at midlength	67
11	Rostrum, least width proximal to midlength	50
12	Rostral depth at same point	80
13	Breadth of expanded proximal ends of premaxillae	136
14	Least breadth of premaxillae opposite anterior nares	104
15	Breadth of premaxillae opposite premaxillary foramina	56
16	Breadth of anterior nares	48
17	Least distance between the posterodorsal margins of the maxillary foramina	59
18	Posterior border of left maxillary foramen to anterior extremity of left maxillary protuberance	60
19	Length of vomer visible on palate	203
20	Depth of mandible at posterior margin of tooth	150
21	Length of right tooth	154
22	Width of right tooth (anteroposterior)	69
23	Width of right tooth (transverse)	32

the Nova Scotia one. However, the specimen from the Madeira Islands of the North Atlantic Ocean figured by Harmer (1924), and also the evidently adult male one from the Seychelles in the Indian Ocean figured by Van Beneden and Gervais (1868-1879), agree with the Bahama specimen in some of these characters and with the Nova Scotia one in others.

Raven (1942, p. 23) mentioned nine specimens of *Mesoplodon densirostris* known to science. In addition Ulmer (1941, p. 118) lists a rostrum in the United States National Museum; Longman (1926) describes a beach-worn skull found at Yeppon in 1924, near Rockhampton, Queensland, Australia, in the Queensland Museum; and Gunter (1955) reported a male stranded in early September of 1946, presumably by a hurricane tide, 40 miles south of Port Aransas, Texas.

A single tooth (A.M.N.H. No. 150037) from the individual reported by Gunter measures 96.2 mm. in greatest length, 51 mm. in greatest anteroposterior width, and 14.9 mm. in greatest transverse diameter.



FIG. 5. Lateral views of teeth of beaked whale *Mesoplodon densirostris* from Bahama Islands. *Left*: Left tooth, inside aspect. *Right*: Right tooth, outside aspect.

Evidently it is the left lower tooth of a beaked whale that is adult, because it is not open at the root and because the thin layer of enamel is worn off the tip, which indicates that it was rather well exposed above the gum in life. The evidence that this tooth was exposed above the gum in life strongly suggests that the animal was a male. The fact that the person who found and examined the stranded animal reported it as a male suggests that he must have seen the penis of the animal, for, unless this organ chances to be visible, whales of both sexes appear to be females to the uninitiated. In shape the tooth is unlike the triangular teeth of known *densirostris* females. It is much smaller and proportionally thinner than the teeth of males of that species, and it differs further from the teeth of *densirostris* in having a longitudinal curve, concave on the lingual surface.

Dr. Gunter has kindly lent me the eight photographs of the beaked

TABLE 2

SKULL PROPORTIONS OF THE FOUR MALE BEAKED WHALES,
Mesoplodon densirostris, FROM THE NORTH
 ATLANTIC OCEAN

(Measurements, in millimeters, are in roman; proportions,
 in hundredths of the greatest length of the skull, are in
 italics; characters, numbered, are as given in table 1.)

	Bahama Islands	Nova Scotia	New Jersey	Madeira Islands
1	665	770	692	765
2	0.43	0.41	0.42	0.39
3	0.47	0.43	0.46	0.40
4	0.48	0.42	—	0.40
5	0.15	0.14	0.15	—
6	0.07	—	—	—
7	0.60	0.64	0.60	0.64
8	0.28	0.25	0.25	0.24
9	0.09	0.09	0.08	0.08
10	0.10	0.09	0.11	—
11	0.08	0.06	—	—
12	0.12	0.11	—	—
13	0.20	0.16	0.16	0.16
14	0.16	0.12	0.13	0.14
15	0.08	0.09	0.09	0.09
16	0.04	0.06	0.06	0.06
17	0.09	0.06	0.07	0.09
18	0.09	0.08	0.10	0.08
19	0.30	0.31	—	—

whale from the Texas coast which Ben Martin had taken. The condition of the animal suggests that it had been dead for perhaps three or four weeks, and such features as the eyes and blowhole are but uncertainly evident in the photographs. However, it is clearly a beaked whale, and one view of the head of the animal shows the single pair of protruding teeth in the lower jaw to be no more than a decimeter from the tip of the lower jaw (distance estimated as slightly more than twice the greatest exposed width of the tooth). The occlusal surface of the lower jaw appears, furthermore, to be relatively straight, as is that of *mirus*, for example (Ulmer, 1941, pl. 21, upper left), rather than to rise sharply to form a pulpit about the tooth as in *densirostris* (Raven, 1942, figs. 3, 4, and 13B; the present paper, fig. 4). These two facts further indicate that the species of beaked whale from the Texas coast is not *Mesoplodon densirostris*. Its proper identity remains unknown.



FIG. 6. Dorsal view of lower jaw of beaked whale *Mesoplodon densirostris* from Bahama Islands. Tip of jaw and posterior ends of rami, except for left condyle, broken away.

One photograph of the Gulf of Mexico whale has three men casually posed behind the animal as if to show its length, and the report of "at least sixteen feet long" is probably approximately correct. The beak of the animal seems to be no different in shape from that of the specimen of *densirostris* shown in the flesh by Raven (1942, figs. 2 and 3), but, as indicated above, the location and elevation of the pair of teeth are extremely different. The flipper appears to be small and not sharply pointed.

The Bahama occurrence apparently provides the eleventh locality for *Mesoplodon densirostris* known to science.¹ The geographical distribution of these 11 records is such that, because the animal is rare, it could too easily be called world wide. In the Pacific, it is known from two Southern Hemisphere occurrences about 600 miles apart on the east side of Australia. In the Indian Ocean it is known from two Southern Hemisphere occurrences about 2500 miles apart. In the Atlantic it is known from seven Northern Hemisphere occurrences. Ten of the 11 known localities are on the western sides of these oceans. The occurrences are, therefore, 10 to one in the tropics or on coasts past which warm oceanic currents flow.

The rarity of reported strandings of course suggests that the species is pelagic. The pattern of presently available distributional data strongly suggests a tropical and subtropical habitat, and occurrences as far from the tropics as Nova Scotia are presumed to represent the drifting astray of sick or injury-weakened individuals. The relative rarity of records from the tropics is presumed to result from the relatively small amount of research that has yet been done in the tropics. The one known occurrence near the eastern side of an ocean is at Porto Santo, Madeira Islands, which can hardly be called a cold-water locality. The absence of any report of *Mesoplodon densirostris* from the shores of the British Isles, where whale strandings have been reported systematically since 1913, supports the suggestion of a warm-water habitat.

¹ Dr. K. H. Barnard, in his "A guide book to South African whales and dolphins" (1954, Cape Town), very casually reported on *Mesoplodon densirostris*: "Two examples were stranded in Algoa Bay in 1952, and their skeletons are in the Port Elizabeth Museum." I supposed that this was a reference in error to the specimen from Algoa Bay of a century earlier. To my inquiry he replied that it was not an error and referred me to E. R. McLachlan of the Port Elizabeth Museum. Director McLachlan sent me convincing photographs and the statement that his museum has "two skulls, one skeleton and a model of one" from the 1952 stranding (letter of March 19, 1958). This raises the total of known specimens to 14.

There are as yet, then, no reports of *Mesoplodon densirostris* from the entire South Atlantic Ocean or from the entire North Pacific Ocean. Perhaps it is to be expected that a presumed tropical, pelagic cetacean, which strands so rarely, would not yet have been discovered in the South Atlantic Ocean. There has been less active interest in cetology even in temperate South America than in other temperate parts of the world. However, the absence of records from the vicinity of Japan seems, in view of the great amount of scientific interest in Cetacea there, surprising indeed. If this species does occur in the tropical and subtropical North Pacific Ocean, one would expect at least rare strandings in the vicinity of Japan, for the principal current would carry any weakened individual in that direction.

Kuroda (1938, p. 14) in his list of Japanese mammals, reported a specimen of *densirostris* from "Kiusiu: Sotono-ura in Hiuga, 6.1.1935." Nishiwaki (1957, p. 151) considered that this specimen was more probably *Mesoplodon bidens*. Dr. Nishiwaki writes me (letter of February 10, 1958) that he is preparing a publication which further considers the identity of that specimen, which is evidently a female, and that it will apparently not prove to be *M. densirostris*.

SUMMARY

An occurrence of the rare beaked whale *Mesoplodon densirostris* is reported for the Bahama Islands. Measurements of the skull of this male specimen and its proportions are presented with those of three males from other parts of the North Atlantic Ocean, showing the relationship and variation. Photographs of skull, mandible, and teeth are presented. The reported occurrence of this species in the Gulf of Mexico is shown to be unfounded. The species range is thought to be not cosmopolitan, but pelagic in tropical and subtropical waters, from which sick or injured individuals may drift to colder shores.

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