Anales Inst. Biol Univ. Nac. Autón. México, Ser. Zool. 69(1): 129-134. 1998

FIRST RECORDS OF DWARF SPERM WHALE (*KOGIA BREVICEPS*) PYGMY SPERM WHALE (*K. SIMUS*) AND PYGMY KILLER WHALE (*FERESA ATTENUATA*) IN VERACRUZ, MEXICO

There are up to 27 marine mammal species in the northern part of Gulf of Mexico (Mullin, K.D. *et al.*, 1994. *Fish. Bull. 92*(4):773-786). Most of these have been recorded as strandings and as sightings. We believe that these species are also found in the Mexican part of the Gulf of Mexico, but we have only few records of them in the area.

In this paper we document the occurrences of three cetaceans with pelagic distribution (Leatherwood, S. & R.R. Reeves, 1983. *La Sierra Club handbook of whales and dolphins.* Sierra Club Books, San Francisco, California, pp. 92, 95, 161), which are scarcely known in the southern Gulf of Mexico. The specimens were stranded alive in three different localities of the Veracruz coast (Fig. 1).

The first stranding, a dwarf sperm whale male with 327 cm of total length occurred on 27 June 1995, in La Trocha, Alvarado municipality.

The second stranding, a male pigmy sperm whale with 218 cm of total length, stranded in Anton Lizardo on 20 October 1995.

The external characteristics used to distinguish between the two species of *Kogia* were: total length, general shape, and width and the number of teeth; proportionally the teeth of *K. breviceps* are larger and longer than *K. simus*, but in these they are more sharply pointed (Caldwell,D.K. & M.C. Caldwell, 1989. *Handbook of marine mammals, Vol. 4: River dolphins and the larger toothed whales.* Academic Press, London, pp. 235-260).

The cranea of both *Kogia* were hand-cleaned, and dermestids were used for final cleaning and preparation. Cranial measurements are shown in Table 1. The skulls show the following characteristics: both of them had an unusually short rostrum, the shortest among living cetaceans, and a marked asymmetry with no independent jugal. A well-developed facial depression and a pronounced saggital septum extending from the narial aperture to the vertex (Caldwell, D.K. & M.C. Caldwell, 1989., *op. cit.*). In 1979 Ross, G.J.B. (1979. *Ann. Cape Prov. Mus. (Nat. Hist.)* 11:259-327) reported that in *K. breviceps*, the septum is broad near its apex and slopes gradually into the cranial fossae on each side, while in *K. simus*, the septum is narrow, with nearly vertical sides, and often pinched posteriorly.

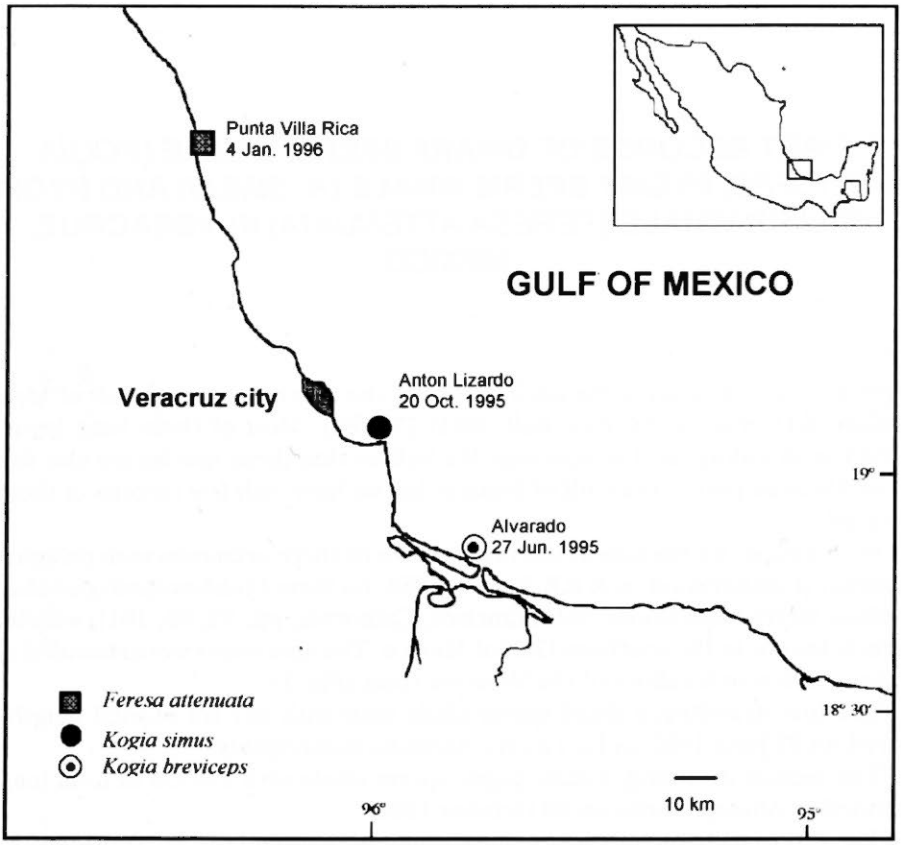

Fig. 1. Stranding locations of the three cetacean species in Veracruz coast.

The mandibles of *K. simus*, are unusually so delicate, almost translucent (Nagorsen, D. 1985. Mammalian Species Nº 239, pp. 1-6) that we have to manipulate them with special care.

The males of *K. breviceps*, reach sexual maturity at 270 cm (Ross, G.J.B. 1979, *op. cit.*), then the Veracruz dwarf sperm whale must have heen a physically and sexually mature male.

In the review of a videotape film, we were able to recognize squid beaks and shrimp on the fore stomach of the dwarf sperm whale; on the other hand, the pygmy sperm whale's fore stomach had great quantities of squid ink. Both animals presented nematodes in their stomachs and intestine tracts. It's known that the dwarf and pygmy sperm whales feed on squid, crabs, shrimps and fishes (Schmidly, D.J. 1981. *Marine mammals of the southern United States coast and the Gulf of Mexico.* U.S. Fish and Wildlife Service, Office of Biological Service, Washington, D.C. FWS/OBS-80/41, 163 pp).

Table 1. Skull measurements (mm) of three cetacean species stranded in Veracruz coast, Mexico (IBUNAM Catalog number)

Skull measurements	*K. simus* (38919 IBUNAM)	*K. breviceps* (38918 IBUNAM)	*F. attenuata* (38917 IBUNAM)
Condylobasal length	265	404	361
Length of rostrum	104	225	165
Length of rostrum at base	120	139	109
Length of rostrum at midlength	115	72	87
Width of premaxillaries at midlength of rostrum	50	92	49
Distance from the tip of rostrum to external nares (left-right)	112-124	247-248	199-199
Distance from the tip of rostrum to internal nares (left-right)	139-113	256-282	190190
Greatest preorbital width	208	250	204
Greatest postorbital width	259	385	227
Least supraorbital width	246	380	197
Greatest width of external nares (left-right)	33 (17-11)	55 (42-19)	50
Greatest width across zygomatic processes of squamosal	240	360	210
Greatest width of premaxillaries	67	102	96
Greatest parietal width, within posttemporal fossae	180	269	167
Greatest length of posttemporal fossae (left-right)	34-40	57-64	85-85
Greatest width of posttemporal fossae, at right angle to his length(left-right)	47-44	80-68	64
Length of the orbit, from apex to preorbital process of frontal to apex of pos torbital process (left-right)	51-54	79-79	63-63
Length of anterorbital process of lacrimal (left-right)	75-75	141-138	40-36
Greatest width of internal nares (izquierdo-derecho)	32 (21-5)	71 (44-9)	57

Table 1, continued

Skull measurements	*K. simus* (38919 IBUNAM)	*K. breviceps* (38918 IBUNAM)	*F. attenuata* (38917 IBUNAM)
Greatest length of pterygoides (left-right)	59-65	116-115	81
Length of upper left toothrow, from hindmost margin of hindmost alveolus to tip of rostrum (left-right)	51-59	80-85	128-126
Number of teeth, upper toothrow (left-right)	0-0	0-0	11-11
Number of teeth, lower toothrow (left-right)	10-10	15-13	12-12
Length of lower left toothrow, from hindmost margin of hindmost alveolus to tip of madible	82	190	135
Greatest length of left ramus	240	430	280
Gretaest height of left ramus at right angles to before measurement	66	101	80
Length of left mandibular fossa	136	222	106

The dwarf sperm whale also presented two circular holes, one of which was found on the right lobe of the tail and the other on the left pectoral fin probably made by a cookie-cutter shark *Isistius brasiliensis.*

In the northern part of Gulf of Mexico many strandings of these species appear to be directly related to the birth process as females with newborn calves often strand, as well as females whose ovaries and uteri show evidence of having been involved in births just prior to stranding (Schmidly, D.J., 1981. *op. cit.*).

In Mexico the cetaceans records of those species are very scarce (sightings or strandings) especially in the gulf of Mexico, where there is little research in pelagic areas. These records confirm the presence of dwarf and pygmy sperm whales in the southern part of the Gulf; other Mexican records of genera *Kogia* have occurred in the Gulf of California (Maldonado, F. *et al.*, 1985. *Memorias IX Reunión Internacional para el Estudio de los Mamíferos Marinos*, UABCS, pp. 9; Vidal, O. *et al.*, 1985. *Mar. Mamm. Sci. 3*(4):354-356; Delgado-Estrella, A., pers. obs.).

The third stranding was of a male pigmy killer whale (*Feresa attenuata*), 246 cm in total length and 150 kg weight. The number of teeth, total length and pectoral fin shape were used to distinguish it from the other small whales like *Peponocephala electra* and *Pseudorca crassidens* (Leatherwood, S. & R.R. Reeves, 1983. *op. cit.*). It was found in Punta Villa Rica (19° 41.4' N- 96° 24.2' W) (Fig. 1) on 4 January, 1996. The pygmy killer whale arrived at a rocky shore; the live animal was recovered and taken in a pick up truck to the Veracruz Aquarium, where it was kept in a circular pool (5 m of diameter and 1.40 m depth). The animal showed dermal injuries on the abdominal and dorsal regions; furthermore, as it could not maintain buoyancy it was placed in a pallet in the water.

The pygmy killer whale died 22 hours after arrival. In the necropsy we found the lungs with evidence of pneumonia and stomach with ulcers and nematodes. These factors may have complicated the situation of the animal and could have been the cause of death; moreover, blood in the abdominal cavity was found.

The pygmy killer whale is a pelagic species that inhabits warm and tropical waters (Caldwel, D.K. & M. C. Caldwell, 1975. *Cetology 18*:1-4.). The only previous record of this species in the Mexican area of the Gulf of Mexico is a stranded individual found near Tampico, Tamaulipas (Villa-R., B. & E. Hoz Zavala, 1997. Colección Científica No. 357. Instituto Nacional de Antropología e Historia, México, pp.367-372).

The three strandings had a common factor in that the animals arrived at the shore alive and they in the chase of their preys or by illness approached shallow water and were trapped in the sand or in the breaking zone.

With these records at Mexican shores, we can achieve more information about the existence and abundance of cetaceans not previously recorded and we think that it is necessary to set up a stranding network to obtain more and better information.

ACKNOWLEDGMENTS

We thank the staff of Acuario de Veracruz specially to Ing. Luis Kasuga and Ing. Manuel Rodríguez for their facilities and logistic support. The cleaning process of the bones was assisted by Claudia Villa Lozano. We thank J. Doshner for his translation assistance. To Dr. J. P. Gallo for the review and suggestions to the manuscript. The research, collection and preparation of the osteological material was carried under permit Nº 2652 of the Secretaría del Medio Ambiente, Recursos Naturales y Pesca of México.

ALBERTO DELGADO-ESTRELLA, BERNARDO VILLA-R. Laboratorio de Mastozoología, Instituto de Biología, UNAM, Apartado Postal 70-153, 04510 México, D.F. & LAURA E. VÁZQUEZ M. Instituto de Química, Laboratorio 2-6, UNAM, Apartado Postal 70-213, 04510 México, D.F.