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A stranded pygmy killer whale (*Feresa attenuata*) in Puerto Rico

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The pygmy killer whale (*Feresa attenuata*), though a rare species, can be found worldwide in various deep tropical and warm temperate waters (Caldwell & Caldwell, 1971; Ross & Leatherwood, 1994). While numerous sightings have been recorded for the Western North Atlantic, especially in the southeastern United States and Gulf of Mexico (Caldwell & Caldwell, 1975; Forrester *et al*., 1980; Hoberg, 1990; Ross & Leatherwood, 1994; J. G. Mead, pers. comm.), only two reports exist for the Caribbean. Caldwell & Caldwell (1971; 1975), and Caldwell *et al*. (1971) reported the capture of a pygmy killer whale in 1969 from St. Vincent Island in the Lesser Antilles. Mignucci-Giannoni *et al*. (in press) reported a mass stranding of five pygmy killer whales in the British Virgin Islands in September 1995. We document a new record of the pygmy killer whale for the Caribbean and document the species for Puerto Rico.

Early in the morning of 25 February 1997, fishermen from Puerto Rico's northwest coast found a pygmy killer whale stranded alive in Barrio Espinal, 1.6 km SSW of Aguadilla (18°25.0′N, 67°09.4′W). The whale was pushed back to sea by the fishermen, but again beached itself. Upon being notified, Puerto Rico's Department of Natural and Environmental Resources officials secured the animal from by-standers and alerted the Caribbean Stranding Network (CSN) team for assistance. The animal was transported by van to San Juan for initial treatment at the CSN provisional facilities.

The animal, a male, measured 220 cm and weighed 111 kg, and was found to be in good shape, except for a few scars probably from the stranding process and handling. About a dozen cyamids (whale lice) were found scattered on the body surface and three soft barnacles were attached to a tooth in the lower left mandible.

Blood samples and a nasal swab were taken to assess the health of the dolphin. Hematogram levels appeared to be between normal ranges (Table 1). Analysis of the obtained blood chemistry values (Table 1), diagnosis based on Bossart & Diefauf

Table 1. Hematogram and blood chemistry values from a stranded pygmy killer whale from Puerto Rico

Parameter	Value
Hematogram	
Red blood cell count (RBC)	4.2×10^6
Mean corpuscular volume (MCV)	113.0 fl
Mean corpuscular hemoglobin (MCH)	38.7 fl
MCHC	34.2 g/dl
Platelets	170.0×10^3
Hemoglobin	16.4 g/dl
Hematocrit	47.9%
White blood cell count (WBC)	8.9×10^3
SEG	81.0%
Monocytes	1.0%
Eosinophils	3.0%
Lymphocytes	13.0%
Band cells (immature neutrophils)	0.0%
Basophils	0.0%
Blood chemistry	
Aspartate aminotransferase (AST)	1150.0 U/L
Alanine aminotransferease (ALT)	115.0 U/L
Total bilirubin	0.3 mg/dl
Creatinine kinase (CK)	416.0 U/L
Blood urea nitrogen (BUN)	77.0 mg/dl
Creatinine	1.4 mg/dl
BUN/Creatinine	54.6 (ratio)
Uric Acid	0.1 mg/dl
Alkaline Phosphatase (AP)	32.0 U/L
Lactic dehydrogenase (LDH)	1301.0 U/L
Glucose	61.0 mg/dl
Triglycerides	22.0 mg/dl
Cholesterol	260.0 mg/dl
Total protein	7.1 g/dl
Albumin	4.0 g/dl
Globulin	3.0 g/dl
Sodium	145.2 mEq/L
Potassium	4.0 mEq/L
Chloride	112.0 mEq/L
Phosphorus	5.2 mg/dl
Calcium	8.6 mg/dl
Total carbon dioxide (CO_2)	21.0 mEq/L

(1990), suggested that the animal suffered from stress due to handling and cardiac muscle damage, as evidenced by the slightly high levels of creatine kinase (CK), as well as prolonged fasting, as evidenced by low glucose and triglycerides levels. Low levels of alkaline phosphatate (AP) indicated that the animal appeared to be suffering from a critical illness, which is in accordance with high lactic dehydrogenase (LDH) values indicating general cell damage. Of importance were elevated aspartate aminotransferase (ALS) and alanine aminotransferase (ALT) levels, indicating liver or heart disease. All other values appeared normal. Culture of the nasal swab showed no growth, indicating no sign of bacterial infection.

The animal was hydrated with 2 l of lactated ringers and antibiotics (Baytril®, enrofloxacin) were prescribed. A 24-hour watch was maintained, with volunteers assisting the animal to stay afloat. Despite the efforts, the dolphin died the next morning.

The necropsy performed in the afternoon revealed gross problems associated with the lungs. Tissues from lung, spleen, kidney, adrenal gland and testes were collected for histopathology. The lung, interstitium and alveoli exhibited severe, lobar, subacute congestion and hemorrhage. The spleen, white pulp and follicles showed moderate to severe diffuse cytolysis and loss as well as lymphoid depletion. Kidney tissue showed moderate diffuse interstital congestion, hyperpigmentation and vacuolar degeneration. The testis was aspermatogenic, indicating the immature status of the animal. No significant lesions were observed in the adrenal gland. The most significant finding was congestion and hemorrhage in the lung, suggesting marked cardiovascular insufficiency, possibly associated with the demise of the animal. Stomach contents included squid beaks and fish otoliths. Nematodes were found in the stomach, and cestodes were found embedded in the blubber. The complete skeleton was salvaged for the University of Puerto Rico Biology Museum (Mignucci-Giannoni *et al*., 1997).

The internal parasites found were identified as the nematodes *Anisakis* sp. and *Terranova* sp. from the stomach, and the cestodes *Monorygma grimaldii* in the blubber (Mignucci-Giannoni *et al*., 1998). These three helminths were also found in two of the pygmy killer whale specimens studied from the British Virgin Islands (Mignucci-Giannoni *et al*., 1998). The stalked barnacle found attached to a tooth of the dolphin was identified as *Conchoderma auritum*, which has been previously reported from the species (Ross & Leatherwood, 1994). Identification of the cyamid specimens is still pending. However, no published record was found for the presence of whale-lice in this species. Stomach content analyses are still pending, but so far are consistent with Ross (1984) and Leatherwood & Reeves (1989) who reported cephalopod beaks in the stomach of animals from South Africa, and squid beaks and small otoliths from pygmy killer whales from Sri Lanka, respectively.

This stranding event constitutes the third record of the species for the Caribbean and documentation of the pygmy killer whale as part of the cetacean biodiversity of Puerto Rico.

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References

Bossart, G. D. & Dierauf, L. A. (1990) Marine mammal clinical laboratory medicine. In: L. A. Dierauf (ed.) *Handbook of Marine Mammal Medicine: Health, Disease, and Rehabilitation*, pp. 1–52. CRC Press, Boca Raton.

Caldwell, D. K. & Caldwell, M. C. (1971) The pygmy killer whale in the western Atlantic with a summary of world records. *J. Mamm.* **52,** 206–209.

Caldwell, D. K. & Caldwell, M. C. (1975) Pygmy killer whales and short-snouted spinner dolphins in Florida. *Cetology* **18,** 1–5.

Caldwell, D. K., Caldwell, M. C., Rathjen, W. F. & Sullivan, J. R. (1971) Cetaceans from the Lesser Antillean island of St. Vincent. *Fish. Bull.* **69,** 303–312.

Forrester, D. J., Odell, D. K., Thompson, N. P. & White, J. R. (1980) Morphometrics, parasites, and chlorinated residues of pigmy killer whales from Florida. *J. Mamm.* **61,** 356–360.

Hoberg, E. P. (1990) *Trigonocotyle sexitesticulae* sp. nov. (Eucestoda: Tetrabothriidae): a parasite of pygmy killer whales (*Feresa attenuata*). *Can. J. Zoology* **68,** 1835–1838.

Leatherwood, S. & Reeves, R. R. (1989) Marine mammal research and conservation in Sri Lanka 1985–1986. *UNEP Mar. Mammal Tech. Rep.* **1,** 1–138.

Mignucci-Giannoni, A. A., Toyos-González, G. M., Pérez-Padilla, J., Montoya-Ospina, R. A. & Williams Jr, E. H. (1997) First osteological collection of marine mammals for Puerto Rico and the Virgin Islands. *Caribb. J. Sci.* **33,** 288–292.

Mignucci-Giannoni, A. A., Hoberg, E. P., Siegel-Causey, D. & Williams, E. H. (1998) Parasites and commensals of cetaceans from the Caribbean. *J. Parasitol.* **84,** 939–946.

Mignucci-Giannoni, A. A., Toyos-González, G. M., Pérez-Padilla, J., Rodríguez-López, M. A., Overing, J. (In press) Mass stranding of pygmy killer whales (*Feresa attenuata*) in the British Virgin Islands. *J. Mar. Biol. Assoc. UK.*

Ross, G. J. B. (1984) The smaller cetaceans of the south east coast of southern Africa. *Ann. Cape Prov. Mus. (Nat. Hist.)* **15,** 173–410.

Ross, G. J. B. & Leatherwood, S. (1994) Pygmy killer whale *Feresa attenuata* Gray, 1874. In: S. H. Ridgway and R. J. Harrison (eds) *Handbook of Marine Mammals, Volume 5: The First Book of Dolphins*, pp. 387–404. Academic Press, New York.