LIVING WORLD
Journal of the Trinidad and Tobago Field Naturalists' Club
admin@ttfnc.org

ISSN 1029-3299

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Aweeda Newaj-Fyzul, Carla Phillips, John D. Watkins and John E. Cooper

Newaj-Fyzul, A., Phillips, C., Watkins, J.D., and Cooper, J.E. 2005. Attempted Re-Floating and Subsequent Necropsy of a Bryde's Whale, *Balaenoptera edeni* at La Brea, Trinidad and Tobago. *Living World, Journal of The Trinidad and Tobago Field Naturalists' Club*, 2005, 62-64.

Attempted Re-Floating and Subsequent Necropsy of a Bryde's Whale, *Balaenoptera edeni* at La Brea, Trinidad and Tobago

Aweeda Newaj-Fyzul, Carla Phillips, John D. Watkins, John E. Cooper
School of Veterinary Medicine,
The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: abryfy@hotmail.com

ABSTRACT
An adult, male, Bryde's whale (*Balaenoptera edeni*) was stranded in shallow water at La Brea, Trinidad, in May 2004. It was assessed clinically by a team from UWI's School of Veterinary Medicine (SVM) and several attempts were made to return it to the sea. Three days later, the whale was found dead five metres from where it had been stranded. A group from the SVM carried out a partial post-mortem examination. Valuable morphometric and other data were collected together with a selection of tissue samples for laboratory investigation. No specific cause of death has yet been diagnosed but tests are still in progress or pending. The case illustrates the need for a concerted approach to strandings of live or dead cetaceans and the value of an input by scientists from UWI and elsewhere. The establishment of a regional stranding network is essential.

INTRODUCTION

Whales of various species are found throughout the oceans of the world and the waters surrounding Trinidad and Tobago are no exception. Around the turn of the last century, there was a small-scale whaling industry centered on the islands of North Western Trinidad which caught up to 25 animals per season (Reeves *et al.* 2001).

Over the past six years there have been at least nine incidents of marine mammals being stranded on Trinidad and Tobago's shores. Between April and October 1999, there were five separate incidents of pilot whale *Globicephala macrorhynchus* strandings in Trinidad (Trinidad Express Newspaper April 28, 1999 and October 15, 1999). In 2002, a porpoise had beached in Chaguaramas on Trinidad's north-western coast. In January 2003, yet another pilot whale was temporarily stranded: at Waterloo on Trinidad's western coast (White and Gosine 2003). In 2004, three marine mammals were reported as stranded: a Bryde's whale *Balaenoptera edeni* in La Brea on Trinidad's south-western coast in May 2004 (Trinidad Express Newspaper May 11, 2004), the subject of this article; and two dolphins in Mayaro on Trinidad's south-eastern coast in September 2004. Unfortunately, in the latter case, by the time help arrived, the dolphins had already been slaughtered and shared among villagers (Newaj-Fyzul and Cooper, unpublished data).
On the morning of Sunday May 9, 2004, a La Brea resident discovered a floundering, "40-foot" whale, approximately one km east of Pt. Sable, La Brea. Over the following 36 hours, some villagers poured buckets of water on the animal and attempted to coax the whale into deeper water. Other people allegedly sought to do harm to the animal by cutting out portions of the blubber and inscribing their names and the date into the animal's skin with penknives.

THE CASE

On the morning of Tuesday May 11, 2004, a request was received at the School of Veterinary Medicine (SVM), University of the West Indies (UWI), for assistance with the stranded animal. A coastguard helicopter was dispatched to transport a team that included Professor John E. Cooper, Dr. Carla Phillips and Dr. John Watkins to the site. From the helicopter, many people, several small boats and a commercial tug were spotted with the whale in about 1 – 2 m of water about 100 m offshore on the gently sloping beach. At the site of the beaching, the team of veterinarians was assisted by officials of the Environmental Management Authority (EMA), the Institute of Marine Affairs (IMA) and the Forestry Division. The animal was now positively identified as a Bryde's whale *Balaenoptera edeni* (see later). Although the whale was mostly submerged, it could easily be seen to be a 'large one' and it was pointing out to sea – possibly a positive sign. After taking aerial pictures, the UWI representatives landed on the beach and waded out to the animal. It was estimated to be approximately 15 m long. The team divided forces, with a veterinarian at the head, body and tail. Physical examination following standard procedures (Barnett and Robinson, 2003) was not easy because of strong waves, but it was concluded that the whale was not seriously sick or grossly injured externally. It was breathing regularly. It was not possible, because of the circumstances (an almost totally submerged whale and large waves), to carry out tests of sensibility or vitality on the lines suggested by Butterworth *et al.* (2004) but the animal appeared to be very aware of stimuli and was definitely 'vital'.

Interviews with people present revealed that one attempt was made earlier in the day to tow the whale into deeper water using small boats and ropes, but this failed. The team, with stronger ropes and a tug, decided to try again to translocate the whale out to sea. This decision was not taken lightly and was one of Herculean proportions as large cetaceans are never easy patients. This is in marked contrast to the smaller species which are relatively easily manipulated and can even be taken into care (Townsend 1999). In view of the whale's apparent healthy state, other options, such as tending the animal where it was first stranded or even leaving it to die were not realistic and in any case would have been futile because of the impossibility of providing protection for the whale, 24 hours a day.

After a small mishap with the rope slipping off on the first attempt, a second try was made with the strap and rope replaced around the body, just behind the fins and the whale was very gently and slowly towed some 3 - 4 km out to sea in deeper water, where it displayed dives in a very encouraging way.

Whilst debating how best to release the whale from the straps and tow rope – which was some 30 m long – the whale divested itself of them and headed out to sea.

The tug and some other small boats then patrolled up and down the shore for about half an hour, making lots of noise and with engines running hard in an attempt to discourage the whale from a possible return. A very optimistic team returned to the SVM, feeling that a job had been well done.

The next day, however, the whale was in a similar position on shore. It was returned by the tug to deeper water three times. On

the third tow it was reported that the whale was either dead or in very poor condition, but no further reports were received for three days until Friday May 14, 2004, when the dead whale washed ashore some five kilometres to the west on Guapo Beach.

On Saturday May 15, 2004, a team from the SVM again visited the site, this time to conduct a post-mortem examination to ascertain the possible cause of death and to investigate any underlying pathology. This team included Professor John Cooper, Mrs. Margaret Cooper, Dr. Carla Phillips, Dr. John Watkins, Mrs. Aweeda Newaj-Fyzul and Mr. Anthony Bastaldo. Professor C. F. Brownie, an External Examiner at the SVM and Dr. Sham Bissessar of the Veterinary Public Health Unit, as well as a number of veterinary students, later joined the group.

POST-MORTEM EXAMINATION

A team effort was needed to carry out the post-mortem (necropsy) examination on the whale, which started at 0950 h. The beach area was fenced off, creating a "clean" area where onlookers and assistants could stand, and a "dirty" area for those appropriately dressed and protected who were performing the necropsy. The work was hampered by the fact that the whale was in water, albeit on the edge of the beach, and that the tide was rising. Also there was a time restriction in that the Solid Waste Management Company Limited (SWMCOL) wanted to dispose of the whale's carcass by 1400 h. Therefore only a limited necropsy could be performed.

The necropsy technique broadly followed the recommendations of the European Cetacean Society (Kuiken and Hartmann 1991) with modifications based on the authors' experiences and the particular features of the case.

The animal was confirmed as a male, with a conspicuous penis that measured 59 cm in length. The total length of the whale was 11.33 m. Other measurements were: mandible – snout 26 cm; girth cranial to dorsal fin 158 cm; girth at pectoral fin 230 cm.

Gross post-mortem findings were minimal and complicated by decomposition. There was contusion (bruising) of skin and subcutaneous tissues, much of which was recent and probably attributable to damage when the whale was stranded and when attempts were made to re-float it. No parasites were detected. Various bacteria were isolated from internal organs but did not appear to include significant pathogens. A wide range of tissues, collected for histopathological investigations are still being processed: initial examination of some of these has shown no microscopical changes suggestive of infectious disease but there are traumatic and inflammatory lesions. All samples have been retained and catalogued at the SVM, as the start of a UWI Reference Collection.

THE SPECIES INVOLVED

The Bryde's whale *Balaenoptera edeni*, belonging to the order Cetacea Sub-order Mysticeti and Family Balaenopteridae, is easily recognised by the three parallel longitudinal ridges on the head which is unique to the species. The head is very large. There are twin blowholes with a low splashguard to the front. This whale has no teeth, but has the most extravagant baleen apparatus. The two rows of baleen plates consist of about 250-410 short plates each.

The skin on the back and upper surface of the whale is usually grey, but may appear mottled with circular scars, because of parasitic infection or Cookie cutter shark bites. (Our whale was very dark grey). There are slender, short, pointed tip flippers with a broad flattened tailstock. The underside of the whale is purple-grey, blue-grey or creamy, while the underside of the tail fluke may appear dirty white.

The average length at sexual maturity is about 12.5 m for a female, which is usually larger than the male (12.2 m). The female reaches sexual maturity at around 10 years while the male averages 9 to 13 years. The gestation period is one year and lactation may be less than a year. The female gives birth every two years and the calves are about four metres in length.

These whales prefer tropical, sub-tropical and some warmer temperate waters and are present most commonly in areas between 30 degrees North and 30 degrees South latitude. They feed all year round and their diets consist of euphauriids, schooling fish, especially anchovies, herring and mackerel. Some Bonito and smaller sharks may also be eaten (Ellis R. 1980).

Bryde whales do not employ sophisticated underwater "sonar" system (echolocation) to supplement their knowledge of the surrounding environment (none of the mysticete species has been shown capable of echolocation). These whales may dive for about ten minutes and average four to seven blows with a long dive. They swim in loose groups or singly and spread over several kilometres. They rarely show the top of their heads; however, they often expose their backs and dorsal fin before a long dive and their diving sequence is irregular.

DISCUSSION

Analysis of the medical aspects of this case are still being worked on and will be presented at a later date. The incident is reported here in order to provide a record of the stranding, of the species involved and of the basic steps taken first to attempt to save the live whale and, subsequently, to obtain maximum scientific value from the animal's carcass.

Strandings of cetaceans in the Caribbean are likely to continue to occur and there is a need for an organised response to such incidents. Collaboration between government bodies, UWI and Non-Governmental Organisations – with an input from local people and concerned, knowledgeable naturalists – is essential if best practice is to be followed in future. Advice and assistance from experienced people overseas, especially in North America and Europe, will also be required, and at the time of writing, discussions are underway with a view to establishing a stranding network on Trinidad and Tobago. In the long term it is important that Trinidadians and other Caribbean nationals gain the necessary expertise and, in this respect, the 2004 incident, although disappointing in its outcome, was educational and provided very useful lessons for all those involved.

ACKNOWLEDGEMENTS

We are grateful to the Director, staff and students of the SVM for their help and support for this venture and for assistance with diagnostic and research samples. Our thanks are due to Petrina Shepherd and Deborah Daniel for typing this manuscript. The encouragement of the Principal of UWI is much appreciated.

The various governmental bodies – Wildlife Section (Forestry Division), EMA, IMA, Coastguard, Police and SWMCOL – all provided essential support and advice. Individual officers from these organizations were painstaking in their concern for the whale and in their willingness to help. In the same vein, thanks are due to those local residents of La Brea who did their best to protect the whale when it was first located and to the tug owners who made their boats available for the operation.

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