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Stranding of a Cuvier's Beaked Whale (*Ziphius cavirostris*) in Southern Texas, with Comments on Stomach Contents

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SHORT PAPERS AND NOTES

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STRANDING OF A CUVIER'S BEAKED WHALE (*ZIPHIUS CAVIROSTRIS*) IN SOUTHERN TEXAS, WITH COMMENTS ON STOMACH CONTENTS.—

It has been suggested that the Cuvier's beaked whale (*Ziphius cavirostris*) is the most common beaked whale in the northern Gulf of Mexico (Jefferson and Schiro, 1997). Since 1983, eight strandings have been reported for the Gulf of Mexico, with three occurring on the Texas coast. Few actual stomach contents of Cuvier's beaked whales have been analyzed (reviews in Heyning, 1989 and Clarke, 1996; Debrot and Barros, 1994; Fiscus, 1997; Frantzis and Cebrian, 1998; Rosario-Delestre and Mignucci-Giannoni, 1998; N. Barros, pers. comm.). This species is thought to feed primarily on deep-water squid (Heyning, 1989; Clarke, 1996), but also takes fish and some crustaceans (Heyning, 1989). We provide information on partial stomach contents that were collected from a Cuvier's beaked whale that stranded in southern Texas.

A stranded whale was reported on 2 April 1994 and was collected the following day on South Padre Island, TX (26°32.5′N, 97°16.0′W). The animal was initially reported alive but showed signs of slight decomposition upon examination by stranding network personnel. The whale was identified as a Cuvier's beaked whale based on characteristics in Jefferson et al. (1993). It was relatively robust compared to other beaked whale species. A pair of V-shaped throat grooves was present. The whale's forehead gently sloped to a relatively short, poorly defined beak; the mouthline was upcurved at the rear. The animal was determined to be a female by examining the genitals. The whale had a total length of 570 cm; its size would suggest that it was not fully mature. Two unexposed teeth at the tip of the mandibles and somewhat elevated maxillary ridges behind the nasals were later found during necropsy of the skull. Because of difficulties in moving the animal out of the surf, only the head, flippers, and partial stomach contents were collected. Although we (AJS and SC) were able to retrieve only partial stomach contents, samples were taken from multiple chambers. The contents included squid beaks and eye lenses, Nematoda (D. Harper and W. Wardle, pers. comm.), a mango seed (*Mangifera indica* L., M. H. Mayfield, pers. comm.), a corncob, and black, coal-like material. Both the corncob and mango seed were covered with green algae. The squid beak lot consisted of two large upper beaks (not matched by any lower beaks), one medium-sized upper beak, and one medium-sized lower beak (possibly matched) (J. Wormuth, pers. comm.). The one identifiable lower beak is from *Loligo peali*, which is found over the continental shelf in the Gulf of Mexico (J. Wormuth, pers. comm.). The coal-like material was insoluble in methylene chloride. Based on the way it fractured, it was not tar, but probably coal (M. C. Kennicutt II, pers. comm.). The occurrence of coal-like material is relatively common in the Gulf of Mexico (Alcazar et al., 1989).

The presence of *Loligo peali* adds a new species to the known prey of Cuvier's beaked whales. Prior to this report, allophagia by Cuvier's beaked whales has been reported for six individuals. Corn cobs were found in the stomach of two Cuvier's beaked whales: one stranded in South Carolina, the other in the Miami, FL area (N. Barros, pers. comm.). A Cuvier's beaked whale that stranded in San Diego, CA, was found with a piece of asphalt in the stomach (Walker and Coe, 1990). The presence of metal and paint flecks and a small fragment of wood was mentioned for a Cuvier's beaked whale that stranded in Kodiak, AK (Foster and Hare, 1990). Two Cuvier's beaked whales that stranded in Virgina were reported to have plastic bags in the stomach; one of those individuals also had plastic straw and a horse chestnut present (Walker and Coe, 1990).

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ACCELERATED DECOMPOSITION OF *CAULERPA PASPALOIDES* DUE TO INFLUENCE OF GRAZING BY *OXYNOE AZUROPUNCTATA*.—Over the past two decades research on the decomposition of plant matter has revealed the importance of plant detritus to aquatic ecosystems (Knauer and Ayers, 1977; Thayer et al., 1977; Godshalk and Wetzel, 1978). These studies investigated primarily decomposition of vascular macrophytes, such as seagrasses, marsh grasses, and mangroves, whose biomass is generally not grazed directly but instead consumed as detritus (Odum et al., 1972; Mann, 1973). Few quantitative analyses of macroalgal decomposition have been performed. Presumably, this is because macroalgae are heavily consumed by herbivores, whereas vascular plants are consumed more frequently by detritivores (Paine and Vadas, 1969; Hunter, 1976; Tenore, 1977; Hanson, 1982; Rice, 1982; Luning, 1990; Mathieson and Nienhuis, 1991).

However, marine rhizophytic siphonous green macroalgae (Order Caulerpales) have evolved mechanisms to escape or deter herbivores. These algae use either calcification or toxicity, making them logical candidates for studies of decomposition and detritus formation. In addition, these algae, which are often the dominant macroalgae of tropical softbottom environments, have the ability to grow from unstable sediments by root-like rhizoids that anchor the plants and stabilize sediments (Williams, 1984). Consequently, rhizophytic macroalgae have an important ecological role as an early colonizing species of seagrass beds (Den Hartog, 1977). Several authors suggest that nitrogen accumulation in the sediments is the rate-limiting step in seagrass bed succession (McRoy and Lloyd, 1981; Kenworthy et al., 1982). Nutrient cycling in seagrass beds is characterized by detritus decomposition processes (Klug, 1980). Therefore, an important input to the nutrient pool accumulating in the sediments may be from decomposition of rhizophytic algae.

Despite their adaptations, siphonous green macroalgae are consumed by a few opisthobranch molluscs (Taylor, 1967; Trench, 1973). These ascoglossans demonstrate great feeding specificity (Kay, 1968). For example, *Oxynoe azuropunctata* shows extreme trophic specificity, exhibiting near exclusive food preference for the siphonales algae, *Caulerpa paspaloides*. The purpose of this experiment was to determine

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