

Coordinated feeding by Clymene dolphins (*Stenella clymene*) in the Gulf of Mexico

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Little is known of the natural history of the Clymene dolphin (*Stenella clymene*). Available information on its feeding habits is limited to stomach contents of two individuals. One animal that stranded in New Jersey contained squid beaks and small otoliths, mostly myctophids (Perrin *et al.*, 1981); the second specimen had squid beaks and eye-lenses (N. B. Barros and D. K. Odell, Southeast US Stranding Network, unpubl. data). Perrin *et al.* (1981) presumed that Clymene dolphins may take prey largely at night and in deep waters, since myctophids are mesopelagic and most species vertically migrate to the water's surface at night. We report an account of Clymene dolphins feeding in a coordinated manner on schooling fish in the Gulf of Mexico. Our observations are of interest because the feeding episode described here occurred during the daytime, and observations on feeding behaviors by this species have not previously been published.

On 24 September 1996, between 1420 and 1500 h, a group of approximately 30 dolphins was observed feeding in a coordinated manner in the Gulf of Mexico, south of Port O'Connor, Texas (27°12.44 N; 95°17.61 W) in water 1243 m deep. Observations were made from the 19.8 m vessel M/V *Chip XIII*, using handheld 10 × 40 power binoculars. Overcast skies, with a Beaufort sea state of 3, made detailed observations difficult.

The dolphins were observed feeding in an area of 15 m diameter (based on comparison with adult dolphin body lengths of approximately 2 m). The dolphins displayed a negative response (ceasing their coordinated behaviors and moving away) twice when the boat approached within 100 m of the activity; therefore, the boat was kept at an appropriate distance so as to not disrupt the dolphins.

Clymene dolphins are easily confused with spinner dolphins (Jefferson *et al.*, 1993). These dolphins were identified as Clymene dolphins based on the

following criteria: a body size and shape that is more robust than that of the spinner dolphin; a shorter rostrum than that of the spinner; and a dark gray cape that dipped above the eye and below the dorsal fin. From the observation distance, it was not possible to see a distinctive black 'moustache' on the rostrum. No birds were associated with the feeding activity. The fish were approximately 10–15 cm in length and slender; it was not possible to identify the fish species. While the majority of the dolphins worked to keep the fish together in a ball near the surface, individuals appeared to take turns pursuing fish. The containment was very fluid, with many of the surfacings being made counter-clockwise to the fish school. Some dolphins passed through the edge of the aggregation, rolling on their sides in an arc towards the fish. Some dolphins were observed gliding through the fringes, and even the center, of the fish school. They became more active outside the fish school, with some splashing as the animals arced back towards the school. After 40 minutes of observation, the boat resumed its course, while the dolphins continued their activity.

Clymene dolphins have been sighted primarily in deep waters (250–5000 m or deeper) (Mullin *et al.*, 1994; Perrin & Mead, 1994). This report is consistent with the known range of this species in the Gulf of Mexico, where it occurs in water depths ranging from at least 704–3064 m (Mullin *et al.*, 1994).

Using a variety of feeding behaviors, many dolphin species are opportunistic and take advantage of available prey. Opportunistic observations of coordinated feeding on fish schools have been made for a number of delphinids, including killer whales (*Orcinus orca*) (Similä & Ugarte, 1993), dusky dolphins (*Lagenorhynchus obscurus*) (Würsig & Würsig, 1980), Atlantic spotted dolphins (*Stenella frontalis*) (Martin, 1986; Fertl & Würsig, 1995), long-beaked common dolphins (*Delphinus capensis*) (Gallo-Reynoso, 1991), rough-toothed dolphins (*Steno bredanensis*) (Smeenk & Richards,

1995; Steiner, 1995), and bottlenose dolphins (*Tursiops truncatus*) (Bel'kovich *et al.*, 1991; Shane, 1990). It is not known whether this reported observation is typical or atypical of Clymene dolphin feeding habits or behavior. It has been suggested that the Clymene dolphin's diet is similar to that of the spinner dolphin (Perrin *et al.*, 1981). Like the spinner dolphin, the Clymene dolphin probably feeds primarily on mesopelagic fish and squid. Both dolphin species presumably feed opportunistically on epipelagic fish occurring near the surface. For example, spinner dolphins have been observed feeding on flying fish (Würsig *et al.*, 1994).

Fifteen years after its redescription, the Clymene dolphin remains a poorly known cetacean (e.g. Perrin & Mead, 1994; Jefferson *et al.*, 1995; Jefferson, 1996). As noted by Mullin *et al.* (1994), continued monitoring of cetacean distribution and numbers in the Gulf of Mexico will add much needed information to the knowledge of this species.

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Direct catches: Clymene dolphins were taken by harpoon in small numbers in a subsistence fishery at St Vincent in the Lesser Antilles (Perrin and Mead, 1994 and refs. therein). Off the coast of West Africa, this species is possibly one of several taken in large numbers in tuna purse seines in the Gulf of Guinea (Van Waerebeek et al. 2000).
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• Jefferson TA, Leatherwood S, Webber MA (1993) *FAO Species identification guide. Marine mammals of the world*. UNEP/FAO, Rome, 320 pp. Clymene dolphins, *Stenella clymene*, are found in tropical and subtropical waters of the Atlantic Ocean (eastern North America to West Africa), the Caribbean, and the Gulf of Mexico. In the United States they have been recorded as far north as New Jersey and as far west as Texas. Sightings in Brazil have also been reported. They inhabit deep waters that are between 250-5,000 m, therefore sightings from shore are rare. These dolphins travel in pods that are often separated by gender. Clymene dolphins also often swim with other spinner dolphins and common dolphins, although the clymenes tend to resemble *Stenella clymene* (Gray, 1850). *Stenella clymene*: (click for more). See tree map.
FAO Names. En - Clymene dolphin, Fr - Dauphin de Clymène, Sp - Delfín clymene.
The clymene dolphin is found only in the tropical and subtropical Atlantic Ocean, including the Caribbean Sea and Gulf of Mexico. There are records as far north as New Jersey on the U.S. east coast and as far south as southern Brazil. The limits on the West African coast are not well known.
Interest to Fisheries. In the Caribbean, clymene dolphins appear, at least occasionally, to be taken in the Lesser Antilles small cetacean fishery, and in gillnets. They may be one of the species taken in tuna purse seines in the eastern tropical Atlantic. IUCN: Insufficiently known.
Source of Information. *Marine mammals of the world*. The clymene dolphin, *Stenella clymene*, Gray (1846) is endemic to the tropical and subtropical Atlantic Ocean. Its cranial features closely resemble those of *Stenella coeruleoalba*, but its external appearance and behaviour are more similar to those of *Stenella longirostris* [20], which has led to some confusion regarding its recognition as a full species.
Samples from *Stenella clymene* were mostly obtained from the Gulf of Mexico and adjacent Atlantic Ocean waters and included a mass stranding that occurred near Tarpon Springs, in Florida (USA), in 1995.