

**A *PSEUDORCA*-LIKE DOLPHIN FROM THE PLEISTOCENE OF RHODES
(GREECE): TOWARD THE ESTABLISHMENT OF THE EXTANT
DELPHINID STOCK (CETACEA, ODONTOCETI)**

Giovanni BIANUCCI^{1*}, Alberto COLLARETA¹ & Polychronis STAMATIADIS²

¹ Dipartimento Scienze della Terra, Università degli Studi di Pisa, Pisa, Italy.

² Museum of Mineralogy & Paleontology, IALISOS, Rhodes, Greece.

* Presenting author; e-mail: giovanni.bianucci@unipi.it

Oceanic dolphins (family Delphinidae) are the most speciose group of extant cetaceans, being represented by 19 genera and at least 37 species. Their high diversity correlates with a significant disparity that is clearly evident when considering their wide ranging in body size values (from 1.5 m up to 9 m total body length) and the shape of their skull and teeth. Variability of these characters is mainly due to the different trophic strategies carried out by dolphins, namely, suction, raptorial feeding, and grip-and-tear. Furthermore, dolphins are found throughout fluvial, coastal and open-sea environments, sometimes diving at great depths to feed. Molecular data suggest that the remarkable present-day diversity of delphinids is due to a very fast radiation that would have occurred in rather recent times, i.e., during the Pliocene and Pleistocene epochs. The fossil record of delphinids supports these molecular inferences. Indeed, most of the Pliocene delphinids were referred to extinct genera, and consequently, the rise of the modern delphinid stock seems to have occurred during the Quaternary; the latter does unfortunately feature a much fragmentary global record of fossil cetaceans. Here we report on a partial delphinid skeleton from the early Pleistocene clays of the Lindos Formation of Rhodes (Greece). This specimen, kept in the Museum of Mineralogy & Paleontology, Ialisos, Rhodes, consists of an almost complete cranium including the ear bones, both the mandibles, several teeth, a portion of the vertebral column including the atlas, several ribs and the sternum. Pending a more detailed analysis of this significant skeleton, our preliminary observations support a close affinities between the Rhodes dolphin and the extant *Pseudorca crassidens*, the so-called false killer whale, a large delphinid today reported as a visitor in the Mediterranean Sea. Indeed, the cranium of the Rhodes dolphin shares with *P. crassidens* i) a wide rostrum having most of its dorsal surface covered by the transversely wide premaxillae, ii) a dorsoventrally narrow supraorbital process, and iii) broadly similar ear bones. Moreover, similarly to *P. crassidens*, the Rhodes dolphin exhibits very large and cylindrical teeth and a small tooth count (nine teeth are present on each mandible). Interestingly, *Pseudorca crassidens* and the *Orcinus orca* (killer whale) are the two only extant cetaceans that feed via grip-and tear, and they have an important role as macropredators in the modern marine trophic chains. This new discovery represents a crucial step for better understanding the last phases of the explosive radiation of oceanic dolphins as well as the establishment of the present-day marine ecosystems.