Short Communication

A Comparison of Fossils of the Two Whale Families: Physeteridae and Monodentidae (Cetacea)

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Abstract

Whales are a group of marine creatures that have elicited scientific and layman's curiosity since long. The present paper has a focus on elucidating fossils of two Odontoceti families viz. Physeteridae and Monodentidae. Extant Physeteridae is a monotypic family, while Monodentidae is restricted geographically to cold waters of the Arctic and adjoining seas. Physeteridae fossil data showed a total of 28 species, while Monodentidae had only half a dozen species. Warming of the climate in the past appears to have played a role in northward migration of Monodentids.

Introduction

Cetaceans are taxonomically most diverse clade of aquatic mammals with fossils being as old as Middle Eocene (52 Ma) (Fordyce & Barnes, 1994). Odontceti are toothed whales. The present paper has a focus on investigating fossil species of two families of this group viz. Physteridae and Monodentidae. Physteridae is a family that has survived the longest in the cetacean lineage (Fordyce & Barnes, 1994). Physeteridae have a cranium with marked left skew asymmetry around the dorsal narial area and a large supracranial basin (Kimura *et al*., 2006). Hampe (2006) described a new species of hoplocetine physterid from North Germany, while Kimura *et al*. (2006) described the fossil sperm whales from Gunma and Ibaraki prefectures of Japan.

Methods

The paleo-database from www.paleodb.org was used. First, in the analyze section
1. Count taxa was used

2. After this, generate data summary tables was used; in this option a) items to count was chosen as occurrences, and b) fields to tabulate (rows) was selected as 'continent'. The second field (optional) for columns was left blank.

3. Analysis of taxonomic ranges was used. Taxon name was given and then break taxa into species option was selected. It generated confidence interval taxon list. It was submitted to display confidence interval options, wherein options shown by default were used, as a result of which confidence interval output was obtained. Taxa were arranged by first occurrence.

Results and Discussion

The outcome of the above methods has been depicted in Table 1 (Physeteridae) and Table 2 (Monodentidae). Table 1 shows that in case of Physeteridae, two species were earliest in evolution viz. *Ferecetotherium kolloggi* and *Preaulophyseter gualichensis*, appearing 28.4