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## Whales: transition in translation

Samuel A. McLeod

**General Features of the Paleobiological Evolution of Cetacea.** By G.A. Mchedlidze. *Balkema:1984. Pp.139 + plates. Dfl. 65, £16.50, \$26.*

FOR the general reader there is, surprisingly, still no overview of cetacean evolution to replace Kellogg's 1928 *History of Whales*. Despite its title, Mchedlidze's book will not suffice as a successor to Kellogg's work. Specialists, on the other hand, will find this to be a very useful volume, though they will also need access to Mchedlidze's 1970 monograph (published in Russian) and his 1977 English-language summary of some of his ideas on cetacean evolution. Mchedlidze's monographs are separate publications, not generally available; this translation provides a much-needed introduction to some of the Soviet fossil cetacean faunas (including important Azerbaidzhan and Georgian fossils discovered over the past two decades), together with several rather idiosyncratic essays on particular morphological transformations.

The descriptions of the fossil cetaceans alone make the book invaluable, though a couple of them are confusing. *Oligodelphis azerbaijanicus* and *Kelloggia barbarus* were both originally described in a 1968 manuscript by Mchedlidze and his erstwhile Russian collaborator, S.M. Aslanova, but by the rules of zoological nomenclature those species names are available only as of 1976. *Kelloggia barbarus* is also said to have "intercostal plates", reminiscent of the now-disproven cetacean "armour" of Küenthal and Lydekker. In 1970 Mchedlidze described a new genus and species, *Mirocetus riabinini*, but in the 1976 work, and this translation of it, the species name appears as *M. rjabini*.

The drawbacks of the book for the unwary reader are several. For example, while Mchedlidze cites most of the pertinent Western palaeontological research, he seems unaware of, or ignores, the general systematic literature. His systematic methodology is therefore seriously out of date. Although he uses individual characters to assign species to higher taxa, most of these characters are primitive and the assignments are based on the vague notion that the characters "most closely resemble" those of a higher taxon. His conclusions frequently are not borne out by the anatomy of the specimens in the photographs. Thus he describes *Ferecetotherium kelloggi* and assigns it to the Aetiocetidae (here placed in the Archaeoceti, although the family is now usually classified in the

Mysticeti), and considers it transitional to mysticetes. But there is no derived character, beside the supposed lack of a mandibular symphysis (not demonstrable from the plate), that this species shares uniquely with any archaeocete or mysticete. It may be a sperm whale. Many of his interpretations about the origin of mysticetes and the evolution of cetacean dentitions rely heavily on the systematic position of this species.

Mchedlidze initially cites the age of all the Russian fossil cetaceans as Upper Oligocene, but notes they are of different evolutionary stages. Subsequently he mentions that most of the specimens were not found *in situ* and that they may actually be of different ages. This problem also affects his systematic conclusions in terms of which taxa might be ancestral to other cetaceans. A different sort of chrono-evolutionary difficulty appears when Mchedlidze uses the old and extreme gradualistic argument that there was not enough time for the evolution of the various cetacean groups from their closest but more primitive reputed relatives. Most particularly, he believes the direct ancestors of cetaceans are "archaic [presumably Late Cretaceous] placental mammals".

Many of Mchedlidze's essays are adaptive scenarios for the origin and evolution of various cetaceans. This is a thought-provoking approach, but it depends directly on the soundness of the systematic conclusions; these, in my opinion, are the book's greatest failing. Several bizarre ideas, some initially espoused by such zoologists as W. Küenthal, R. Lydekker and A.B. Howell, are re-cycled. Noteworthy is Mchedlidze's resurrection of the idea that odontocete skull asymmetry evolved because of increased swimming speed. More astounding is his statement that the dorsal position of the external nares allows cetaceans to remain "out of sight of predators for longer periods of time"!

The translator, editor and publisher have done a fine job on the book, correcting some mistakes, adding several text citations not in the original bibliography and, most particularly, reproducing the plates more clearly. The disparity between the number of specimens listed in the legends and those on the plates remains, however, and the genus *Mirocetus* appears in three places instead of the original *Microcetus*, which changes the author's meaning.

This book is indispensable for the specialist. It will also be of interest to Western zoologists more generally, but they should treat its conclusions with great caution. □

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