MASS EXTINCTION EVENTS: PALEOCLIMATOLOGY OF THE PALEOCENE EOCENE THERMAL MAXIMUM (PETM)

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Abstract

The diversity of both marine and continental life has grown very rapidly since the end of the Precambrian. Although it is evident from the record available that most of the organisms became extinct or have suffered dramatic descend in their species diversity at certain specific moments. The availability of such broad literature dealing with different episodes of mass extinction supports its importance and interest among the paleontologists and other geoscientists. Of these events, five major extinction episodes generally referred to as "**The Big Five"** stays amongst some of the hot topics for the geoscientists of the day. The disappearing of a certain group of specie and its complete waning from the geologic record requires possible and acceptable casual explanation from the paleontologists and different geologists. For instance, the Late Permian extinction phase has received particular attention because of the number of major groups of fauna affected and the sharpness of the change with which these groups disappeared from the sedimentary record in this very period. Recurring catastrophic events in the Earth's history which included Paleoclimatology, Oceanic Geochemistry, Volcanic activities, Bolide Impacts, Glaciation and Global Warming episodes, and Sea level fluctuations (Anoxia); these all contributed towards strengthening the effects of mass extinction in one way or another. Theories about extinction fall into three groups: catastrophic extinction, gradual extinction, and step-wise extinction. In any event, worldwide extinctions of major groups of organisms, while extremely interesting and significant, play only a limited role in biostratigraphy because these major extinctions provide only a few correlation horizons. Whereas, a more probable and significant cause of extinction of individual species and its linkage with the changing local environmental conditions forms the most important basis for biostratigraphy. In particular the economic aspects of these age rocks (PETM) are studied for determining future prospects of hydrocarbon accumulation using modern techniques and laboratory work.