

ANGIOSPERMAE PALEOGEOGRAPHY AND CRETACEOUS PLATE TECTONICS

1MARTINS Jr., P.P., 2ALBERTÃO, G.A. and 3ASSIS, L.M. 1Fundação CETEC, Belo Horizonte, 2 PETROBRAS, 1, 2 ESCOLA de MINAS, Ouro Preto, Brasil

Angiospermae is the sole class of plants which all known families are alive. Previous descriptions of pollen from Jurassic are controversial. First occurrences are from Hauterivian - 67 families out of 267 evolved previously to the Mesozoic Chicxulub final impact event. No fossils have been found for approximately 110 families. The majority of them date back from Tertiary and very few from the Quaternary. Their paleodistribution is presented in world maps [Boreal Region, American Mediterranean, Gondwana, SE Asia and Australasia, Austral Region, late Pangea, Pacific hemisphere] with relative plate and continental positions. Their cradle and vectors of space distribution during K are considered as continents were progressively set apart. Various possibilities are reconsidered as an integrated explanation for the biogeographic distribution of this class. The mass extinction of the final Mesozoic set up special conditions for previous K Angiospermae, Aves and Mammalia co-evolution. Survival during the post impact immediate intensive period of ecological stress was a determinant factor for evolution to occur wherever the climatic conditions became more favourable. Data presented here must be reviewed for K fossils. At the present time around 50% of all families are cosmopolitan, 28% are endemics and 22% are geographically discontinuous. About 4% of all genera belong to cosmopolitan families, 80% to the endemics and 6% to the discontinuously distributed families. These numbers present significant ecological implications for the pulses of evolution [K with 4 pulses of evolution Cenomanian, Coniacian, Campanian / Maestrichtian] and the remaining pulses in the Cenozoic Era.