

## **ORIGIN OF PHOSPHATIC PARTICLES FROM LATE CRETACEOUS PHOSPHORITES IN EGYPT**

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The phosphate deposits of Egypt, called the Duwi Formation, forms a portion of an extensive Middle East-North Africa phosphogenic province of late Cretaceous-Paleogene age. The province holds for the greatest accumulation of phosphorites in the geological history, possibly in excess of 70 billion metric tons of phosphate rock. The phosphate resources in Egypt alone exceed 3 billion metric tons. The Duwi Formation conformably overlies a sequence of non-marine varicolored shale of the Qusseir Formation in Campanian age and conformably overlain by a series of marine laminated gray foramineferal-rich shale of the Dakhla Formation in Maastrichtian-Danian age. The main phosphatic bed occurs in two horizons which are separated by montmorillonite-rich laminated shale. The petrographical observations indicate that the Egyptian phosphorites are composed of well sorted medium sand size grains which consist of approximately 60% fish bones and shark teeth fragments and 40% structureless rounded pellet-like grains. This means that bone and teeth fragments represent the major constituent of the Egyptian phosphorites. Electron microprobe analyses proved that there is no compositional difference between bone and teeth fragments and rounded grains. This may suggest that the rounded particles could be either rounded bioclasts or the rounded internal molds of bone cavities.