

MAGMATISMO Y SEDIMENTACION CLASTICA EN ALGUNAS CUENCAS INTRAMONTANAS DE LOS ANDES CENTRALES (PERU MERIDIONAL)

MAGMATISM AND CLASTIC SEDIMENTATION IN SOME INTRAMONTANE BASINS OF THE CENTRAL ANDES (SOUTHERN PERU)

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For some years, ORSTOM and the Pau University (France) began to study the filling of some intramontane mesocenozoic basins of the Central Andes (Southern Peru and Bolivia). The sedimentary filling of these basins may be contemporaneous with a volcanic activity (generally explosive). In both studied basins (Cuzco - Sicuani Red Beds Basin, Moquegua Basin), the volcanism is linked with a coarse grained sedimentation.

1. The Cuzco-Sicuani Red Beds Basin

This basin is filled by more than 5000 m of red beds arranged in some ten 4th order sequences. The lower part is fine grained and shows no volcanic rocks. The upper part, more and more conglomeratic to the top, is characterized by evidences of a volcanic activity (feldspars, volcaniclastic debris). For a long time, the age of the Cuzco - Sicuani Red Beds was considered as Uppermost Cretaceous to Eocene; the recent investigations of Ch. Noblet indicates that this age is probably exclusively Maestrichtian.

It seems that the same disposition exists in the Lake Titicaca Red Beds (Uppermost Cretaceous Eocene): a fine grained non volcanic lower part overlaid by a coarse grained upper part, containing evidences of a volcanic activity.

2. The Moquegua Basin

This basin, located on the south peruvian coast, is filled by 1000 to 2000 m of oligocene continental sediments (post incaic tectonic phase, roughly 42 Ma). The lower part of the series (Lower Moquegua form.) consists in relative fine grained sediments without marks of volcanism. The upper part (Upper Moquegua form.) overlay the previous formation with an angular unconformity (30 Ma Tectonic phase). Upper Moquegua formation presents thick conglomeratic intercalations and an abundant volcanic material: pyroclastic falls and flows essentially.

Conclusions

The andean intramontane basins subsequent to the "peruvian tectonic phase" (roughly 80 Ma). show an evident correlation between volcanism and coarse grained sedimentation. Coarse grained sedimentation is a consequence of mobility and uplifting of the source areas. So, it is possible to correlate volcanic pulsations and andean uplift phases.

In addition to these correlations, our study indicates that an important volcanic activity occurred, at the Maestrichtian, in a zone 300 km away from the trench. This fact modifies the classic ideas about the gradual migration eastwards of the andean mesocenozoic volcanism.