

PETROGENESIS AND OCCURRENCES OF GABROIC ROCKS
IN THE LIMIT EASTERN CORDILLERA-HIGH PLATEAU
IN THE ABANCAY DEFLECTION AREA
(CURAHUASI -SOUTH PERU)

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RESUMEN.- Rocas gabroicas de tipo cumulats que constituyen la cámara magmática en el borde norte del batolito Andahuaylas-Yauri, afloran en la zona de la Deflexión de Abancay, como cabalgamientos plurikilométricos sobre cuarcitas del grupo Yura.

KEY WORDS.- Batholith, Gabbros, Abancay Deflection, Thrust, Curahuasi.

INTRODUCTION

Gabbroic rocks in the Curahuasi zone, north border of Andahuaylas-Yauri batholith, south of E-W striked Abancay Deflection, were described by MAROCCO (1975, 1978), however more detailed investigations about their origin and occurrences have never been done. In this paper the authors provide information about field relations, petrography, rock and mineral chemistry. The conclusions could have important tectonic implications in setting the Eastern Cordillera-High Plateau limit as well as understanding the Andean shortening.

GENERAL GEOLOGY AND TECTONIC SETTING

Limestones and black shales of lower-middle Permian age (Copacabana Group), continental red beds and andesitic volcanics of upper Permian-Triassic age (Mitu Group) constitute the Paleozoic basement.

During the Mesozoic the basin was divided into two parts with different deposition, separated by E-W faults (Abancay Thrust systems), parallel to the Abancay Deflection (MAROCCO, 1978; LIGARDA et al, 1991). To the south the western basin consists of upper Sinemurian-Belemnian(?) limestones (Lagunillas Group), it follows the deposition of black shales

The tectonic setting was characterized by E-W to WNW-ESE thrust systems, which dip to the south, downdip these faults become listric faults. The Abancay Thrust is the most important structure that puts the Yura Group and Yuncaynata Formation together; associated with it are

these gabbros are poor in both, alkalines and incompatible elements (Zr, Rb, Y, Nb, Hf) and are enriched in MgO, CaO, Ni, Co, V (Fig. 6). The comparison of the oxides against the differentiation index DI, with surrounding tonalitic stocks and microdioritic dikes, show that these gabbros are not comagmatic with the last one (LIGARDA, 1989). These chemical data also indicate that the gabbroic rocks are originated from a type I magma (CHAPPELL & WHITE, 1974).

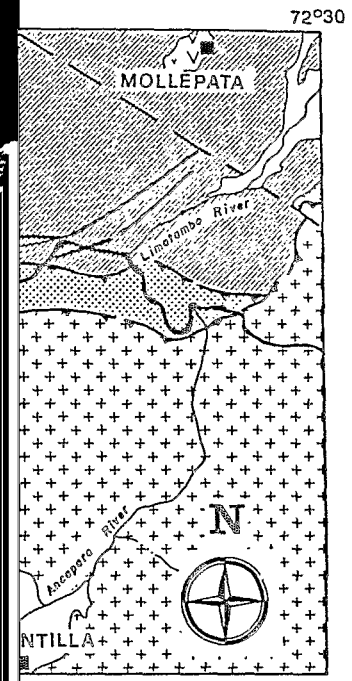
CONCLUSIONS

Based on their mineralogical and petrographic characteristics and chemical data (cumulate rocks); it is believed that these rocks constitute the deepest level of Andahuaylas-Yauri batholith and probably represent the magmatic chamber, that were lifted by a plurikilometric overthrust from south to north (?) caused by thrust systems in the late Cretaceous. Also, these systems controlled the sedimentation in the western and eastern basins in the Jurassic and Cretaceous times, and later, during the andean tectonics, located the western basin over the eastern basin as an allochthonous block.

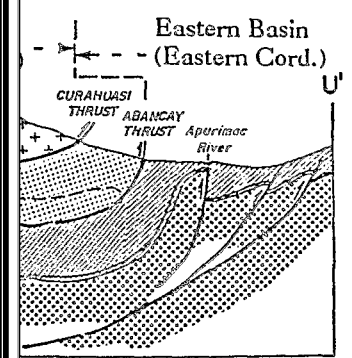
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and Mitu Group);
in (Huancané and
Tonalitic stocks; 6:



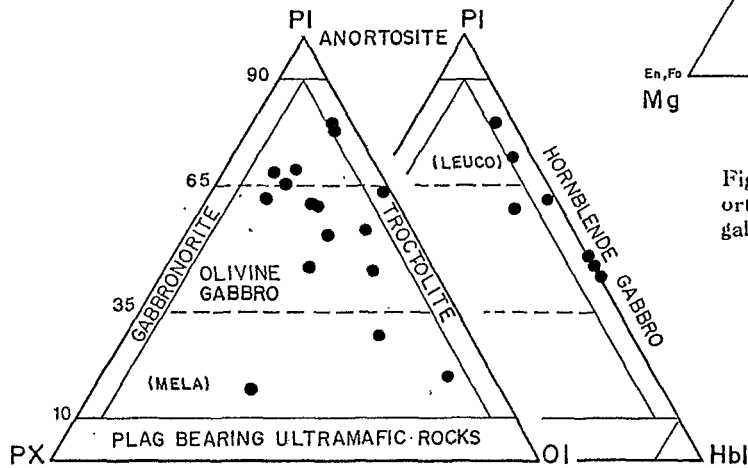


Fig.4.- Modal of gabbroic Rocks using the IUGS diagrams PI-Px-Ol and PI-Px-Hbl.

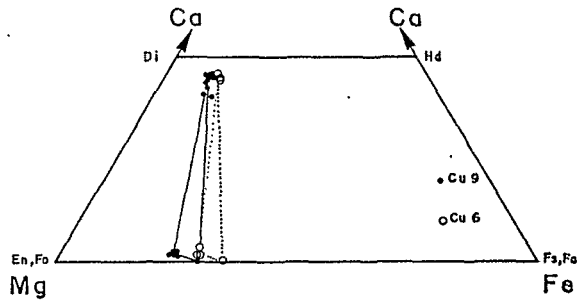


Fig.5.- Ca-Mg-Fe diagram, showing the olivine-ortho-clinopyroxene equilibrium for two gabbroic rocks samples.

