

PROTEROZOIC META VOLCANICS FROM WESTERN SIERRAS PAMPEANAS TERRANE, ARGENTINA

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Detailed geological studies in a new locality west of Sierra de La Huerta, in the eastern sector of the province of San Juan, Argentina, allow to propose a more comprehensive model for the tectonic setting of western Sierras Pampeanas Terrane.

The study area comprises the Proterozoic exposures of Loma de Las Chacras where a series of amphibolites, gneisses, schists, metaquartzites, metalimestones, ultramafic rocks and granitoids are recognized. The amphibolites paragenesis are hor-pg-epi-bio and hor-plg-ep with syn- and post-tectonic garnets. The gneisses paragenesis are qtz-plg-bio-gar, qtz-plg-alk fld-bio-gar with ky and/or sill, and qtz-pg-musc-di-gar. The schists are represented by qtz-microcl-musc-ep-gar, and qtz-plg-bio-gar-(musc).

The petrographic and geochemical studies of these sequences permit to identify a series of acidic and mafic volcanics, which are now preserved in medium metamorphic grade, as quartz-feldspar-muscovite schists and orthoamphibolites.

Although the dominant metamorphic facies correspond to almandine amphibolite, a gradient from greenschist to hypersthene facies is also recognized.

The geochemical analyses of these volcanics indicate an island arc tholeiitic setting as the most probable tectonic environment. Based on an evaluation of the different hypothesis previously proposed, a more complete model for the tectonic evolution of western Sierras Pampeanas terrane is discussed.

The new data here presented are coherent with a west-facing subduction zone developed on a quasi-oceanic to quasi-ensialic crust. The magmatic arc that was active since Late Proterozoic times, migrated toward the cratonic continent up to Early Paleozoic times. The cease of magmatism occurred after the Latest Ordovician. These magmatic and tectonic histories are integrated into the regional evolution of Sierras Pampeanas terranes.

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