

EVIDENCES OF A EVAPORITIC-CARBONATE BASIN NORTHWARD OF THE PONTA GROSSA ARCH, PARANÁ BASIN

JOHANNA MÉNDEZ DUQUE; ANDRÉ OLIVEIRA SAWAKUCHI; JOHN MAURICIO RICO BAUTISTA

Instituto de Geociências, Universidade de São Paulo

Email: johanamendezduque@usp.br

The Teresina Formation (Passa Dois Group, Late Permian of the Paraná Basin, Western Gondwana) is composed of heterolithic laminated siltstones and fine sandstones, limestones (mudstones, oolitic and bioclastic packstones and grainstones and stromatolites) and laminated, massive or nodular silicified facies. The depositional model for the Teresina Formation sediments, especially regarding its silicified facies, is still a subject of discussion. Data from wells and outcrops along the eastern edge of the Paraná Basin provided new informations regarding the distribution of limestones and significance of the silicified facies. The carbonate and silicified facies have higher frequencies of occurrences and thickness in the regions of Taguaí (TA) and Santo Antonio da Platina (SAP). Optical and scan electron microscope analysis indicated the presence of barite crystals and pseudomorphs of halite (cubic and hopper crystals) and gypsum crystals within recrystallized carbonate and silicified levels. The association among these crystals, silicified beds with enterolithic folds and stromatolites indicate carbonate deposition in a hypersaline environment. The silicified beds are interpreted as evaporite facies. The TA and SAP regions are in the northern flank of the Ponta Grossa Arch (PGA) and the thickness of the carbonate and evaporite facies decreases northward, with their isopachs being almost parallel to PGA axis. Lithological, paleocurrents and faunal differences observed between sedimentary units at the north and south of the PGA suggest that its influence on the sedimentation of the Paraná Basin during the Carboniferous, Early Permian and Triassic. We hypothesize that the PGA controlled deposition of carbonate and evaporite facies of the Teresina Formation during the Late Permian, acting as a barrier southward the AT and SAP regions. This barrier would have decreased the input of terrigenous sediments as well as restricted the entering of water masses from the south, reducing water circulation and favoring the deposition of carbonate and evaporite sediments.