

U-PB AGE OF THE TONSTEINS OF CANDIOTA COALFIELD, SOUTHERNMOST BRAZIL

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Several tonstein beds are found intercalated in coal beds of the Candiota Coalfield, Guata Group, in the southernmost part of the Paraná basin, Rio Grande do Sul, Brazil. These tonsteins were recognized as altered tuffs due to their mineralogical composition and stratigraphic behavior. Light colored beds of constant thickness spreading for tens of kilometers with pyroclastic zircon, beta quartz pseudomorphs and apatite comprise the main evidence for the origin of the tonsteins. Thus, they record pyroclastic ash and dust fall out and accumulation in areas of organic matter deposition. The zircon from tonstein A of the Candiota Coal Bed dated by the U-Pb method yielded a radiometric age of 267.1 ± 3.4 Ma, corresponding to the Artinskian in the Early Permian. This is the first absolute U-Pb age obtained for a sedimentary interval of the Paraná Basin and will be of great value for calibration of palynomorph zones. The time of tonstein deposition coincides with the peak of volcanic activity in the western part of Gondwana, now central-northwestern part of Argentina. The tonsteins from Candiota are also correlated with other tuff beds found both in South American sedimentary basins and in African sedimentary basins where the Karoo Supergroup occurs.