

THE SERIDÓ GROUP, NE BRAZIL: A LATE NEOPROTEROZOIC (650 MA), PRE-COLLISIONAL, BRASILIANO FLYSCH BASIN?

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SHRIMP U-Pb ages for detrital zircons from the Seridó Group, NE Brazil, show conclusively that most of it is younger than 650 Ma. SHRIMP zircon ages were measured from Jucurutu Fm. at Jucurutu, RN, Seridó Fm. at Faz. São Pedro, RN, to the north, and Seridó Fm. SE of Barra de Santa Rosa, PB, in the east. Most grains yielded ages between 1000 and 640 Ma. Most zircons have primary igneous zoning, and C-L photos show virtually no metamorphic rims. Thus, the depositional ages must be younger than or equal to 650 Ma. Isotope dilution (ID) analyses of zircons earlier suggested an age of 740 Ma, but this is superceded by the SHRIMP data. Sm-Nd TDM ages of 1.2 to 1.6 Ga from the Seridó Group show it was derived in part from sources younger than 1200 Ma. Older TDM ages from some localities indicate dominance of local basement. ID and SHRIMP analyses of zircons from meta-arkose near the base of the Jucurutu Fm. yield ages of 2100 Ma and 1750 Ma. Thus, all Jucurutu Fm must be younger than 1750 Ma, with most, if not all, younger than 650 Ma; overlying Seridó Fm. must be younger than 650 Ma. These units were deformed and metamorphosed in the 600 ± 10 Ma Brasiliano orogeny during assembly of West Gondwana, so deposition probably occurred soon after 650 Ma. We conclude the Seridó Group was deposited in flysch basins developed upon Transamazonian (2.1 Ga) basement of the Rio Grande de Norte domain during the Brasiliano orogeny.