Abstract

The Guyana Shield has long been interpreted as the source of siliciclastic detritus within the Cretaceous passive margin strata of northern Venezuela. We have determined U-Pb ages of detrital zircons separated from Early Cretaceous strata of the passive margin. Although the Guyana shield is the probable source for much of the Archean, Paleoproterozoic and early Mesoproterozoic detrital zircon grains, there is a prominent age population (ca.0.95-1.2Ga) that is not easily explained as being derived from the shield. A western source in the Venezuelan and/or northern Colombian Andes is suggested for this detrital component. We propose that a Proto-Orinoco river system drained both the Guyana Shield and the Venezuelan and Colombian Andes and that branches of this river system were funneled through Triassic/Jurassic rift basins that formed during initial opening of the Proto-Caribbean Seaway. The detrital zircon age data have implications for paleogeographic reconstructions of the Caribbean region prior to the breakup of Pangea and the longevity of continental scale river systems.

Keywords

Detrital Zircon, Passive Margin, Venezuela.