

WHAT CONTROLS THE CHARACTERISTICS AND DISTRIBUTION OF GRANITOIDS IN THE PAN AFRICAN BELT IN CAMEROON?

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Pan-African granitoids in Cameroon form three tectonically related suites (early-, late-, and post-tectonic) variably distributed in three main blocks. The northern block (NB) includes Poli and western regions; the central block (CB) includes Adamaoua and eastern regions and is separated from the NB by the Tcholliré-Banyo fault (TBF); the southern block (SB) includes the Yaoundé late-tectonic nappe on the Archean Congo craton. Early tectonic (*600 Ma) granitoids (orthogneisses) are present in all units, while late-tectonic (600-580 Ma), dominantly porphyritic, granitoids are present only in the NB and CB; both suites are dominantly calc-alkaline and medium to high-K in the NB and dominantly monzonitic with local shoshonitic trend in the CB. A Nd isotopic (TDM) boundary appears across the TBF (older TDM to the south). Post-tectonic (*550 Ma) alkaline granitoids characterize the NB; these will later be the locus of the Tertiary Cameroon volcanic line. These differences result from the variable influence of the Congo craton. The SB was thrust over the craton and did not undergo late-tectonic melting. The CB results from melting of Archean to Paleoproterozoic crust that extends northward from the Congo craton. The NB is Paleo- to Neoproterozoic crust with no major contribution from the Archean craton. We infer that the TBF is a major crustal boundary and may continue to the NE along a gravity anomaly in Chad; its extension into SW Cameroon and Brazil are not yet defined precisely.