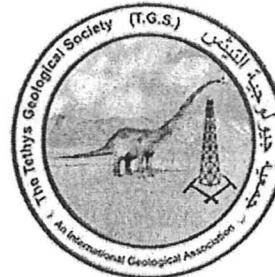


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Brito Meles



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## ALPINO-TYPE OROGENS DURING THE FUSION OF WESTERN GONDWANA

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The Gondwana supercontinent was built by the fusion of some descendants of Rodinia during the Neoproterozoic (from 880 up to 500 Ma), following the consumption of many oceanic branches were accomplished. In South America, this cycle of orogeneses is called Brasiliano (~ Pan-African). The detailed study of the development of the Brasiliano branching systems of orogens is pointing out to some similarities with those of the Himalayan-type and Alpine-type collision belts, as they were defined (Sengör 1991). Particularly, along the whole periphery of the cratonic São Francisco Peninsula - eastern part of Brazil- an almost continuous ring of Brasiliano orogens used to exhibit strong centripetal vergences as well as many of the characteristic of those of Alpine-type architecture. They present proximal belts (quartzite-pelite-carbonatic assemblages) laterally followed by distal belts (terrigenous sediments, bimodal volcanism, ophiolitic remnants). The former ones used to overlap the cratonic interior either as almost undeformed cratonic cover or as thrust-and-fold belts exhibiting thin-skin features. There are many evidences of the overriding of one continent (S. Francisco) by others (back lands) at shallow structural levels what makes these belts to present highly irregular suture traces, with many saliences (basement promontories, irregular-shaped nappes) and reentrances. Usually the marginal belts are under greenschist facies of metamorphism and their paleogeographic history may easily be restored. The rock assemblages of the distal belts, whether associated with ophiolites or not are usually deformed and metamorphosed under high grades, and the fragments of ophiolitic sequences are sparse, dismembered and incomplete. Subduction-related arc magmatism used to occur (differently of the paradigms) some times, the earliest ones ca. 700 Ma and the youngest ones ca. 570 Ma. Post-collisional magmatism is absent or very rare.

### ORÓGENOS ALPINÓTIPOS DURANTE A FUSÃO DE GONDWANA OCIDENTAL

O Supercontinente Gondwana foi construído pela fusão de alguns descendentes de Rodinia durante o Neoproterozoico (entre 880 e 500 Ma), seguindo ao consumo de muitos ramos oceânicos. Na América do Sul, este ciclo de orogêneses é chamado de Brasiliano (~Pan-Africano). O estudo detalhado do desenvolvimento dos sistemas ramificados de orógenos do Brasiliano estão mostrando algumas similaridades com aqueles dos tipos Himalaiano e Alpino, como estes foram definidos por Sengör 1991. Particularmente, ao longo de toda a periferia da Península Cratônica do São Francisco - parte oriental do Brasil - um quase contínuo anel de orógenos do Brasiliano exibindo vergências centripetais e muitas características daqueles de arquitetura Alpinótipo. Eles dispõem de faixas móveis proximais (quartzitos-pelitos-carbonatos) seguidas lateralmente por faixas móveis distais (sedimentos terrígenos, vulcanismo bimodal, remanescentes ofiolíticos). Os primeiros costumam adentrar o cráton, como coberturas moderadamente dobradas e/ou como zonas descoladas tipo "thin skin". Há muitas evidências de acavalamento de uma massa continental (S. Francisco) por outras (países) sob níveis crustais ricos, o que faz com que essas faixas apresentem traços de sutura muito irregulares, com muitas saliências (promontórios do embasamento, nappes irregulares) e reentrâncias. Usualmente, essas faixas marginais estão sob facies de metamorfismo de baixo grau e têm suas histórias paleogeográficas facilmente restauradas. As assembleias lito-estruturais das faixas distais, associadas com ofiolitos ou não, estão deformadas e metamorfoseadas sob graus elevados, e os fragmentos das sequências ofiolíticas são esparsos, desmembrados e incompletos. Magmatismo de arco costuma ocorrer (diferentemente do paradigma), os mais precoces em torno de 700 Ma e os mais jovens em torno de 570 Ma. Magmatismo pós-collisional é ausente ou muito raro.

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## MIDDLE EOCENE - RECENT TECTONICS IN THE QENA AREA, UPPER EGYPT

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A field-based study was carried out on three sectors in the Qena area comprising the Nile Valley around Qena, Wadi Qena and the Qena - Safaja Road. A complex history of initiation, reactivation and cross-cutting of faults was concluded. The change from a compressive regime (strike-slip) to transtensive and transpressive regimes (oblique faults) and a later extensive regime (normal faults) is a common character of faults. Probably after the Early Eocene, a dextral movement along the NW-SE faults happened and controlled the course of the Nile Valley. A dextral movement along N-S faults, which also controlled the course of Wadi Qena, modified the NW - SE faults. Later on, these two fault directions were modified by a dextral shear running in the NE - SW direction. Prior to the Pliocene and probably earlier, all fault trends changed to normal faults and the Qena area was occupied by a mosaic of grabens and horsts giving rise to the present shape of the Nile Valley and Wadi Qena. Plio-Quaternary sediments were deposited on the hanging-wall of these faults. During this deposition, the faults were active as indicated by undulations and thickness variations of the Plio-Quaternary sediments. Two main stages of subsidence were inferred during the Pliocene. Until now, there is a reactivation of all fault trends in the Qena area. Low degree of active tectonics affects Wadi Qena as indicated by drainage anomalies and morphotectonic tests. Some parts of the Nile Valley are also affected by low degrees of active tectonics.