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GO 326

The Seychelles Microcontinent

The Seychelles is a group of islands located in the Indian Ocean off of the east coast of Africa and north of Madagascar. The Seychelles Microcontinent was formed from a portion of central Gondwana when the continent started breaking up in the Late Proterozoic (Mondon, 2014). The Seychelles Microcontinent is also the first scientifically recognized microcontinent (Collier et al., 2004).

The Seychelles Microcontinent consists primarily of granite basement with overlying sediment and remnants of the Deccan traps LIP (Mondon, 2014). The granite of the Seychelles base was formed in the Neoproterozoic (~750Ma) with younger granites in two of the island being ~65 Ma in age (Mondon, 2014). The sediments overlying the Seychelles Microcontinent consist of the types that occur in shallow waters and swamps, as well as pollen consistent with being near an ancient shoreline (Mondon, 2014).

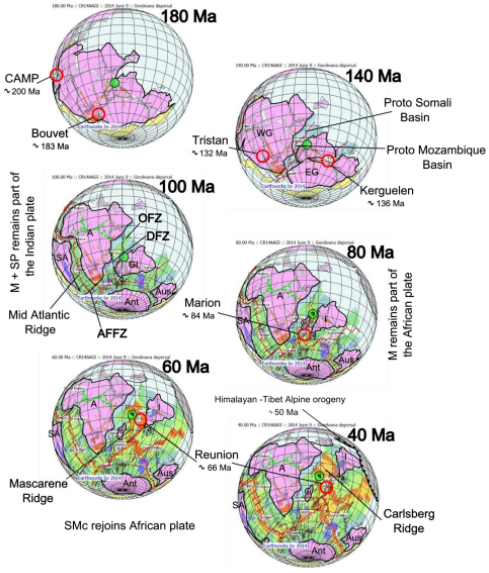

Figure 2.5: Sequences of Gondwana break-up highlighting the Indian Ocean, shown at ca.180 Ma, 140 Ma, 100, 80 Ma, 60 Ma and 40 Ma. The red circles indicate the position of the various hotspots and the green circle indicates the successive positions of SMc. WG=West Gondwana; EG=East Gondwana; A=Africa; SA=South America; M=Madagascar; GI= Greater India (India+Madagascar+Seychelles); I= India; Ant=Antarctica; Aus=Australia; OFZ= Owen Fracture Zone; DFZ= Davie Fracture Zone; AFFZ= Agulhas-Falkland Fracture Zone (Source: C. Reeves, www.reeves.nl/gondwana)

Mondon, 2014

The subsidence of the Seychelles Microcontinent is broken up into three distinct events, Middle Jurassic, Late Creatacous, and Middle Eocene (Mondon, 2014).

References:

Collier, J. S., T. A. Minshull, J.-M. Kendall, R. B, Whitmarsh, G. Rumpker, P. Joseph, P. Samson, C. I. Lane, V. Sansom, P. M. Vermeesch, J. Hammond, J. Wookey, N. Teanby, T. M. Ryberg, and S. M. Dean, 2004. Rapid Continental Breakup and Microcontinent Formation in the Western Indian Ocean. *EOS*, vol. 85, no. 46, p. 481-496.

Mondon, J.-L. A, 2014. Analysis of the Tectonic and Basin Evolution of the Seychelles Microcontinent during the Mesozoic to Cenozoic, based on seismic and well data. *Department of Geosciences and AEON-ESSRI, Nelson Mandela Metropolitan University, South Africa.*