

Paper Number: 4369

***Homo sapiens* Corridor - Cradle of our species and emergence of our culture**

Anderson, J.M.^{1,2} and de Wit, M.²

¹Evolutionary Studies Institute, University of the Witwatersrand, Johannesburg, South Africa.

jmanderson.gondwana@googlemail.com

²Africa Earth Observatory Network, Nelson Mandela Metropolitan University, 6031 Port Elizabeth, South Africa.

At a selection of 20 sites along the spectacular southernmost coastline of Africa is preserved, without peer, the story of our human (*Homo sapiens*) cultural evolution—from the emergence of our mutual ancestor, Mitochondrial Eve, at some 200,000 BP, till now. The ever-growing number of Middle Stone Age cave sites looking out to sea; and of Later Stone Age rock-art sites a little inland in the Cape Mountains, have opened an unprecedented window onto our past. Here we find, for instance, the earliest known recognition of the tie between tides and moon, and the start of harvesting marine proteins (162,000 BP, Pinnacle Point); our earliest known human footprints (120,000 BP, Langebaan); the earliest evidence of cannibalism (115,000 BP, Klasies River); our oldest dated abstract art and jewellery (75,000 BP, Blombos); and the first suspected use of bow and arrow (71,000 BP, Pinnacle Point again).

Climate change over the last million years -and more- has been remarkably rhythmical (based on patterns of orbit, tilt and wobble of the Earth). Cyclic swings from glacial to interglacial periods, with shifts of some 10°C, have occurred very roughly every 100,000 years. Two such major cycles (and there are many smaller perturbations in between) have coloured our modern-human tenure on Earth. And superimposed on this is a host of non-cyclic events inducing climatic spikes, such as large volcanic explosions like Toba at 70 ka, meteorite impacts like Tswaing at 220 ka, and general erosion. Climate change no doubt is a driver of evolution, and it has undoubtedly been a major force in driving our cultural evolution. Along with these major climatic shifts occur dramatic shifts in sea level and migrations of the coastline, as well as similarly major concurrent changes in vegetation patterns and of the associated fauna. This is all an intimate part of our early human story.

It can hardly be over-emphasised that our epic story along the Cape coast has been played out between the grandest of geological backdrops and the most dramatic of coastlines. Here, too, both on land and out to sea, we are witness to biodiversity that is amongst the richest anywhere globally. The Cape Floral Kingdom at the southern tip of Africa is considered one of the six global floral kingdoms. Included is the Fynbos, the most biodiverse plant biome known. Offshore, the diversity superlatives can be continued; including even the whales that are more species rich here than anywhere but New Zealand. This is all undeniably part of who we are as a species!

Since the recolonization of Africa from outside, especially from Europe just in the last few hundred years, the loss of this richness has escalated beyond control. The Knysna Forest has shrunk as a natural refuge, the Fynbos has been fatally infiltrated by Argentinian ants, the estuaries have been all but irreversibly polluted—to name but a few of the most obvious examples.

Will we learn to bring other species into our discourse, or do we see ourselves as alone? We divorce ourselves from nature at our ultimate peril!

