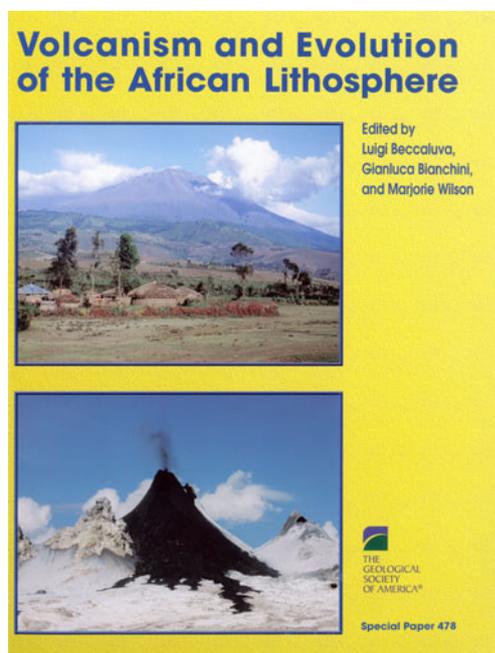


L. Beccaluva, G. Bianchini and M. Wilson (eds): *Volcanism and evolution of the African lithosphere*

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Eastern Africa is the cradle of mankind as well as being the cradle of a new ocean, at the Great Rift Valley, where East Africa is breaking apart along a volcanically active spreading centre. Beyond the rift, the African continent and tectonic plate encompass a great variety of other tectonic settings and volcanic features. This collection of 16

articles does a good job of presenting all different aspects of the geological life of a tectonic plate from its rifting to create new oceans to its destruction through subduction. Each article forms a standalone chapter, but altogether, they are woven so as to present a journey through the whole tectonic plate. The book results from the symposium “Cenozoic volcanism and evolution of the African lithosphere” held at the 33rd International Geological Congress in Oslo, Norway, in August 2008.

The first half of the book is dedicated to the rifting of East Africa, with six chapters focusing on the lithosphere’s evolution prior to and during the rifting event. These studies mainly investigate the lithospheric structure through the geochemistry of mantle xenoliths and lava erupted in the rift region and through seismic surveys. Two further chapters focus on magmatic aspects of volcanic activity along the rift system, at Kilimanjaro and Oldoinyo Lengai. Each article in the remainder of the book treats a distinct aspect of the African lithosphere, mainly through the study of the geochemistry and mineralogy of volcanic and xenolith suites from Cameroon to Angola, from Madagascar to Cape Verde, and ending in the Tyrrhenian Sea. On the magmatic aspect, there is something for every taste, from basanite to rhyolite, from tholeiite to kimberlite, from syenite to granite and also a good account of carbonatitic and dolomitic volcanism (the latter being only one among three such cases recorded worldwide). As well as the breadth of themes treated, the information on very rare occurrences, such as the dolomitic volcanism, makes this book an excellent opportunity to learn about poorly understood and researched phenomena.

Given the wide coverage of geological aspects, there is no broad introduction to the tectonic and magmatic settings of the African plate, though each article gives a brief but comprehensive introduction and background to the partic-

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ular area treated. There is a good balance between data presentation and discussion, and a wealth of well-illustrated plots facilitates the reading, although I would have liked to have seen wider use of colour printing. Each article gives a good explanation of the methodologies used to investigate the particular aspect treated in the article. For this reason, I, as a young researcher, have also found this useful as a reference or a source to redirect my search to cited earlier work.

As the title clearly states, the focus of this book is on describing and discussing the characteristics of the lithosphere. However, given that our knowledge of mantle composition is drawn from the study of mantle xenoliths carried to the surface by volcanic eruptions, there is a good

discussion of magmatic suites too, including parent melts and evolutionary processes such as fractionation and assimilation. In addition, although my personal interest makes me focus on the chemical petrogenetic side of the book, I find the supporting tectonic links and discussions very useful to set the volcanism into context. The Earth is a complex system, and integrating information from a variety of scientific disciplines is necessary to understand it. Although the book is about the African lithosphere and continent, analogous conclusions and discussion are applicable and may help in understanding other sites and geological phenomena worldwide. Therefore, this book can easily complement the collection of any volcano scientist.