

Myth and Geology

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Myth and Geology

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Preface

This volume provides an overview of the study of the geological foundation to human myths, an emerging discipline in the Earth sciences called 'geomythology'. This term was coined by Dorothy Vitaliano, in her pioneering book *Legends of the Earth: their geologic origins* (1973), as 'the study of the actual geologic origins of natural phenomena which were long explained in terms of myth and folklore'. That book represented the first systematic approach to such matter in a systematic way. More than thirty years later, the present volume aims to make this discipline a recognized scientific research field, by providing the first peer-reviewed collection of papers discussing the study of the geological reality lying behind myths and legends of the past.

The publication of this volume was inspired after the 'Myth and Geology' session held at the 32nd International Geological Congress in Florence, Italy, in August 2004. Dorothy Vitaliano presented the keynote address to the symposium and her address is presented as the first chapter. It outlines the great strides that have been made during the past three decades and the potential for future growth and change. Most of the papers included in this volume were presented at that session; they analyse a variety of myths, legends and ancient folk tales, that is historical documents derived from oral tradition, whose origins appear to contain memories of geological phenomena that occurred in the past. Such phenomena were codified in terms of the local knowledge of the time and gave rise to well credited myths which spread abroad and influenced the local cultures for centuries, in many cases lasting up to the present time.

The term 'geomythology' is not yet enlisted in vocabularies and encyclopaedias. Hence, the term has been used with very different meanings, from 'world mythologies' to 'false ideas supposedly based on geological data' or 'wrong geological concepts which have attained large popularity'. It is due to the preparation of the current volume that this term is now accepted by respected scientific journals (e.g. *Science*, 4 November 2005) and, following an entry of December 2005, it is defined on the on-line encyclopaedia Wikipedia (<http://en.wikipedia.org/wiki/>) as follows: '*Geomythology is the analysis of mythological stories to learn about geological events portrayed in them. Sometimes this gives very valuable information about old earthquakes, tsunamis, floods, etc. which are either scientifically not known or hard to know. These stories give scientists hints and clues about old unknown geological events which can then later on be analyzed and scientifically studied in detail*'. This

definition still remains restrictive. Geomythology indicates every case in which the origin of myths and legends can be shown to contain references to geological phenomena and aspects, in a broad sense including astronomical ones (comets, eclipses, meteor impacts, etc.). As indicated by Vitaliano (1973) '*primarily, there are two kinds of geologic folklore, that in which some geologic feature or the occurrence of some geologic phenomenon has inspired a folklore explanation, and that which is the garbled explanation of some actual geologic event, usually a natural catastrophe*'.

The famous myth of the Chimera (represented on the volume cover), the indestructible three-headed fire-breathing dragoness, provides a perfect example of a geomyth. The Chimera was slain at her lair by the hero Bellerofronte. Being an indestructible dragon, her fire-tongue remained forever burning at that place. It can still be visited today, on the coast of Turkey, at the site called Yanartaş (burning mountain). There, high on a slope facing the sea, one can see ignited gas emissions (probably methane) that continue to burn after millennia. These flames have been used by sailors, since ancient times, as a natural lighthouse. Similar natural flames exist at many sites in the world, and their origin is always explained by a myth.

The interpretation of geological folklore, to be correctly and exhaustively carried out, requires the integration of knowledge in the fields of geology, archaeology, history, comparative mythology and anthropology. The geological study of mythology and legendary accounts may reveal encoded memories of past geological events, thus providing a reservoir of geological information. On the other hand, it also helps to provide new insight to historical, archaeological and anthropological research, opening a new window on a field traditionally reserved for anthropologists, and improving the 'self knowledge' of Man, by shedding new light on his early perception of the world. '*Know thyself*' was the motto inscribed on the temple of the most famous sanctuary of antiquity, the Oracle of Apollo at Delphi. The myth at the origin of this Oracle has recently been the subject of one of the best case histories in geomythology.

In addition to outlining the relationship between myth and geology, this volume will inspire its readers to look deeper into the roots of culture and our perception of the natural environment, through various case histories of myths, legends, folk tales and oral traditions from around the world.

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