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The Geology, Geochemistry and Evolution of Nisyros Volcano (Greece) Geological Society of London
Proceedings of the NATO Advanced Study Institute `Tephra Studies as a Tool in Quaternary Research', Laugarvatn and Reykjavik, Iceland, June 18-29, 1980
The Parting of the Sea Concept Publishing Company
This comprehensive book addresses the pressing need for up-to-date literature on volcanic destinations (active and dormant) and their role in tourism worldwide in chapters and case studies. The book presents a balanced view about the volcano-based tourism sector worldwide and discusses important issues such as the different volcanic hazards, potential for disasters and accidents and safety recommendations for visitors. Individual chapters and case studies are contributed by a number of internationally based co-authors, with expertise in geology, risk management, environmental science and other relevant disciplines associated with volcanoes. Also covered are risk aspects of volcano tourism such as risk perception, risk management and public safety in volcanic environments. Discussions of the demand for volcano tourism, including geotourism and adventure tourism as well as some historical facts related to volcanoes, with case studies of interesting socio-cultural settings are included.
Volcano-Tectonic Processes Springer
The Hellenide orogen in Greece is part of the Alpine-Himalaya mountain belt, created during the destruction of the Tethys ocean by the convergence of Gondwana and Eurasia. Within Greece, there is the record of a complete Wilson tectonic cycle of continental rifting, sea-floor spreading, plate subduction, and continental collision during Mesozoic and Cenozoic time. This book presents a new synthesis of the geological history of Greece as revealed by the varied igneous rocks. It is based on more than 30 years of field and laboratory studies by the authors together with a synthesis of the widely scattered published literature, that was written in many different languages. Basement rocks record Hercynian subduction and plutonism on the northern margin of Gondwana, which in the Permian and Triassic rifted into several microcontinents, thereby creating the eastern Mediterranean Neotethys ocean. Partial closure of strands of the Neotethys ocean resulted in the emplacement of Jurassic and Cretaceous ophiolites. Early Tertiary age collision produced a Hellenide mountain chain similar to the Alps and Himalayas. Rapid Neogene extension of the Hellenides behind the modern South Aegean arc has formed the Aegean Sea, triggered widespread back-arc igneous activity, and unroofed mid-crustal rocks. The geological setting, geochemistry, and significance of each group of rocks is presented in detail, with numerous maps and figures.
Report Availability Notice Princeton University Press
This volume explores the climates, landscapes, ecosystems and hazards that comprise the Mediterranean world. It traces the development of the Mediterranean landscape over very long timescales and examines modern processes and key environmental issues in a wide range of settings. The Mediterranean is the only region on Earth where three continents meet and this interaction has produced a very distinctive Physical Geography. This book examines the

landscapes and processes at the margins of these continents and the distinctive marine environment between them. Catastrophic earthquakes, explosive volcanic eruptions and devastating storms and floods are intimately bound up within the history and mythology of the Mediterranean world. This is a key region for the study of natural hazards because it offers unrivalled access to long records of hazard occurrence and impact through documentary, archaeological and geological archives. The Mediterranean is also a biodiversity hotspot; it has been a meeting place for plants, animals and humans from three continents throughout much of its history. The Quaternary records of these interactions are more varied and better preserved than in any other part of the world. These records have provided important new insights into the tempo of climate, landscape and ecosystem change in the Mediterranean region and beyond. The region is unique because of the very early and widespread impact of humans in landscape and ecosystem change - and the richness of the archaeological and geological archives that chronicle this impact. This book examines this history and these interactions and places current environmental issues in long term context. Contributors : Ramadan Husain Abu-Zied Harriet Allen Jacques Blondel Maria-Carmen Llasat James Casford Marc Castellnou Andrew Goudie Andrew Harding Angela Hayes Tom Holt Babette Hoogakker Philip Hughes Jos Lelieveld John Lewin Francisco Lloret Francisco Lopez-Bermudez Mark Macklin Jean Margat Anne Mather Frédéric Médail Christophe Morhange Clive Oppenheimer Jean Palutikof Gerassimos Papadopoulos Josep Piñol David Pyle Jane Reed Neil Roberts Eelco Rohling Iain Stewart Stathis Stiros John Thornes Chronis Tzedakis John Wainwright

Inside Risk: A Strategy for Sustainable Risk Mitigation Geological Society of Amer

The geology and metallogeny of "base metal sulfide deposits" in Europe, Africa and Australia was the topic of the DMG-GDMB-SAG Joint Meeting held in Aachen (FRG), September 16-19, 1985. Divided into two parts, the presented papers cover the description and interpretation of sediment-hosted as well as volcanic-sediment-hosted and volcanic-hosted copper-zinc-lead (gold-silver) deposits. The present compilation is an overview of current research activities and results on copper-zinc-lead deposits in classical mining districts considering geological, lithological, geochemical and tectonic parameters of ore formation. Even in periods of depressed metal prices, "base metal sulfide deposits" still remain one of the most attractive mineral exploration targets. This extensive review provides valuable information to researchers and explorationists.

Thera in the Bronze Age Springer Science & Business Media

This book introduces the reader to the unique geology of Greece. This country is a natural geology laboratory that can help us understand the present-day active geodynamic processes in the Hellenic orogenic arc, including earthquakes, volcanoes, coastline changes and other processes of uplift and subsidence, as well as the intense erosion, transport and deposition of sediments. Additionally, Greece offers a remarkable geological museum, reflecting the complex history of the area over the last 300 million years. By studying the rocks of Greece, one can discover old oceanic basins, e.g. in the Northern Pindos and Othrys mountains, crystalline rocks of Palaeozoic age, old granitic and volcanic rocks, as well as other sedimentary rocks including fossils from the shallow neritic facies to pelagic and abyssal facies. The younger sediments demonstrate the continuously changing palaeogeography of Greece, with areas of lakes, high plateaus and gulfs that are transformed into new forms of islands, peninsulas or high mountains, etc. All the above subjects are included in the book, which describes the tectonic structure of the geological strata, together with the evolutionary stages of the palaeogeography and geodynamics within the broader Mediterranean context. A special characteristic of the book is the development of the orogenic model of the Hellenides with the application of the tectono-stratigraphic terrane concept in the Tethyan system.

Geological Society of America Bulletin Dunedin Academic Press Ltd

Cumulative global transformations, occurring daily, affect important aspects of our life. Characteristic cultural and natural heritage, including sites of priceless value, is under constant threat. There are growing pressures, of both natural and human origin, such as wars, con icts, natural or technological disasters and the effects of global climate change. These provoke the continuous degradation of many sites included in the World Heritage List. In consequence, immediate strategic measures must be taken. Natural heritage is our legacy from the past, that we inherited from our ancestors and pass on to future generations. It is vital to realize its value and protect it by all possible means, enforcing innovative and sustainable action plans that promote global international co-operation. This book aims to address speci c natural heritage sites in Europe, from West to East. The six countries of study interest are Portugal, Malta, Greece, Italy, Romania and Turkey. For each case, the corresponding current status is presented. This is accompanied by recommended action plans for protection and conservation, tra- ing initiatives that improve the public awareness of natural heritage issues and efforts to estimate the natural/environmental value of the sites. The book is the overall result of an interregional initiative aiming to promote convergence, provoke public interest and recommend action for radical changes in our attitude towards heritage conservation.

The Geology of Greece Geological Society Publishing House

There are over 1300 active volcanoes worldwide and many more dormant or extinct. Some are developed as tourist destinations; others are not, but have great potential. Mount Fuji in Japan attracts over 100 million visitors per year and has immense cultural and spiritual significance, while a number of volcanic areas in national parks, for example Teide in Spain, Yellowstone in the US, Vesuvius in Italy and Tongariro in New Zealand, attract between one to four million tourists each year. In the last decade the designation of nearly 50 geoparks around the world has highlighted their potential for tourism development. This book provides the first global review and assessment of the sustainable use of active and dormant volcanic and geothermal environments for geotourism. The volcano-based tourism sector is further augmented through a closely linked range of geothermal resources and attractions, such as geysers and hot springs, which are discussed in detail throughout individual chapters covering all key volcanic and geothermal regions around the world. It is shown that volcano and geothermal tourism is a subsection of nature-based geotourism and incorporates a variety of other tourism categories such as adventure tourism, extreme tourism, ecotourism, green tourism, educational tourism, and hot spring tourism. This comprehensive book covers the most important issues of this growing tourism sector whilst incorporating relevant global research, making it an essential resource for all in the field. Includes colour plates.

Postcollisional Tectonics and Magmatism in the Mediterranean Region and Asia Geological Society of America

The modern excavations at Akrotiri, on the Greek island of Thera (also known as Santorini), have provided students of antiquity with a unique opportunity to examine the civilization of the Aegean Bronze Age (3000-1100 BC) and the role of Thera within it. "Thera in the Bronze Age" presents a detailed study of the geography, history, and culture of a vibrant society that met its end in a catastrophic volcanic eruption which, ironically, preserved the city at Akrotiri just as it was in its final moments.

Volcanic Tourist Destinations OUP Oxford

This book presents the first compilation of scientific research on the island of Nisyros, involving various geoscientific disciplines. Presenting a wealth of illustrations and maps, including a geological map of the volcano, it also provides valuable insights into the geothermal potential of Greece. The island of Nisyros is a Quaternary volcano located at the easternmost end of the South Aegean Volcanic Arc. The island is nearly circular, with an average diameter of 8 km, and covers an area of approximately 42 km2. It lies above a base of Mesozoic limestone and a thin crust, with the mantle-crust transition located at a depth of approximately 27 km. The volcanic edifice of Nisyros comprises a succession of calc-alkaline lavas and pyroclastic rocks, as well as a summit caldera with an average diameter of 4 km. Nisyros marks the most recent volcano in the large prehistoric volcanic field between Kos-Yali-Strongyli-Pyrgousa-Pachia-Nisyros, where the largest eruption (“Kos Plateau Tuff”) in the history of the eastern Mediterranean devastated the Dodecanese islands 161,000 years ago. Although the last volcanic activity on Nisyros dates back at least 20,000 to 25,000 years, it encompasses an active hydrothermal system underneath the volcano with temperatures of roughly 100°C at the Lakki plain, the present-day caldera floor and 350°C at a depth of 1,550 m. A high level of seismic unrest, thermal waters and fumarolic gases bear testament to its continuous activity, which is due to a large volume of hot rocks and magma batches at greater depths, between 3,000 and 8,000 m. Violent hydrothermal eruptions accompanied by major earthquakes occurred in 1873 and 1888 and left behind large, “world-wide unique” explosion craters in the old caldera. Through diffuse soil degassing, the discharge of all hydrothermal craters in the Lakki plain releases 68 tons of hydrothermal-volcanic derived CO2 and 42 MW of thermal energy per day. This unique volcanic and hydrothermal environment is visited daily by hundreds of tourists.

The South Aegean Active Volcanic Arc Springer Science & Business Media

Proceedings of the Third International Seminar on the Results of EC Geothermal Energy Research, held in Munich, 29 November-1 December, 1983

Volcano and Geothermal Tourism Springer Science & Business Media

This book delivers the present state-of-the-art of scientific characteristics of the unique Ciomadul volcano (Romania, East-Central Europe) from as many aspects as possible.. Multidisciplinary research results obtained on this geologically young volcanic complex are presented to a wider audience (geologists, volcanologists, botanists, archaeologists, historians and teachers). Moreover, the book provides information at a general level for interested laypersons and decision-makers. The first part of the book, after summarizing the research history of Ciomadul, presents the details of the volcanism and related topics (volcanology, geology, landscape evolution, minerals, post-volcanic activity and spa culture) in eight chapters; the second part deals with the palaeo-environmental issues of the larger area, along with human history, in nine chapters.

The Earth And Its Inhabitants (in 8 Volumes) American Geophysical Union

This book comprises the main results of the Scenario (Support on Common European Strategy for sustainable natural and induced technological hazards mitigation) project, funded as a Specific Support Action under the VI FP. This book addresses three main needs: first, it constitutes an assessment of the situation of Europe as far as natural na-tech risks are considered; second, it suggests future research themes to be opened of widened so as to tackle new and emerging threats as well as changes in the potential response to risk governance, in order to improve the way scientific and technical expertise informs decision making regarding all fields of mitigation, ranging from structural to non structural measures, such as training, education and land use planning.

Updates in Volcanology Springer

"The Mediterranean region and Asia provide a natural laboratory to investigate the driving forces of continental tectonics in an ongoing collisional orogen and the crustal and mantle response to various modes of deformation associated with plate boundary processes. The multidisciplinary research efforts in this region over the last fifteen years have produced a wealth of new data to better understand the interplay and feedback mechanisms between crustal and mantle processes and the dynamic landscape evolution in a complexly deforming area. A number of discrete collisional events between the Gondwana-derived continental fragments (i.e., Adria, Pelagonia, Arabia, India) and Eurasia controlled the geodynamics of the Mediterranean region and Asia during the late Mesozoic and Cenozoic. This book is a collection of research papers, presenting new data, interpretations, and syntheses on various aspects of the collision-induced tectonic, magmatic, metamorphic, and geomorphic processes that have affected the evolution of this orogenic belt. It should help us better understand the mode and nature of tectonic and magmatic processes and crustal evolution in active collision zones, and the distribution and causes of seismic and volcanic events and their impact on landscape evolution."--Publisher's website.

Thera and the Aegean World III: Chronology Springer Science & Business Media

The continent of Europe, as a recognisable geographic entity, attained roughly its present shape around 20 million years ago. Even since then, the European coastline has undergone significant changes, due mainly to sea-level movements, to form the outline of the continent that we are familiar with from maps and the photographs of Europe from space that we view today.Graham Park relates how Europe has been assembled through geological time by the accretion of various distinct geological components, some of which have travelled a considerable distance across the globe to reach their present positions.The Making of Europe is a book for all those curious about the origins, variety and geological history of the continent of Europe. Why are there such distinct regions and landscapes, ranging from the wide plains of Northern Europe to the mountains of the South? Although some previous knowledge of geology will be useful, important geological concepts are explained in the Introduction, technical terms are kept to a minimum and a comprehensive glossary is provided in addition to an index. Copiously illustrated in colour, this book will educate and inform all those who are interested in European geology.

Annales Tectonicae Peter Lang Pub Incorporated

Volcanoes have terrified and, at the same time, fascinated civilizations for thousands of years. Many aspects of volcanoes, most notably the eruptive processes and the compositional variations of magma, have been widely investigated for several decades and today constitute the core of any volcanology textbook. Nevertheless, in the last two decades, boosted by the availability of volcano monitoring data, there has been an increasing interest in the pre-eruptive processes related to the shallow accumulation and to the transfer of magma approaching the surface, as well as in the resulting structure of volcanoes. These are innovative and essential aspects of modern volcanology and, as driving volcanic unrest, their understanding also improves hazard assessment and eruption

forecasting. So far, the significant progress made in unravelling these volcano-tectonic processes has not been supported by a comprehensive overview. This monograph aims at filling this gap, describing the pre-eruptive processes related to the structure, deformation and tectonics of volcanoes, at the local and regional scale, in any tectonic setting. The monograph is organized into three sections (“Fundamentals”, “Magma migration towards the surface” and “The regional perspective”), consisting of thirteen chapters that are lavishly illustrated. The reader is accompanied in a journey within the volcano factory, discovering the processes associated with the shallow accumulation of magma and its transfer towards the surface, how these control the structure of volcanoes and their activity and, ultimately, improve our ability to estimate hazard and forecast eruption. The potential readership includes any academic, researcher and upper undergraduate student interested in volcanology, magma intrusions, structural geology, tectonics, geodesy, as well as geology and geophysics in general.

Base Metal Sulfide Deposits in Sedimentary and Volcanic Environments Springer Science & Business Media

When the Greek island of Santorini, classically known as Thera, erupted dramatically in 1613 BC (+/- 13 years), it produced one of the largest explosions ever witnessed, thereby possibly giving rise to the legend of Atlantis. This so-called 'Minoan' eruption triggered tsunamis that devastated coastal settlements in the region, and on Santorini it left behind a Bronze Age Pompeii, which is currently being excavated. Thriving Bronze Age settlements on the island - rich in colorful wall paintings and highly sophisticated pottery - were buried under thick layers of volcanic ash. The ejection of an immense volume of dust into the atmosphere also altered global climate for several years. The author, a well-known geologist, blends the thrill of scientific discovery with a popular presentation of the geology, archeology, history, peoples, and environmental settings of the island group of Santorini. He not only gives a comprehensive overview of the volcanic island and its past, but also reports on the latest discoveries: The finding, for example, of the olive trees which had been buried alive by the Minoan eruption has made it possible now to give a direct and precise radiocarbon date for the volcanic catastrophe. Furthermore, he seeks to assign certain geological structures, such as faulted rocks, red lavas and harbor sites, as depicted on the Bronze Age frescos from Santorini, to still-existing details in the Santorini landscape of today. Excellent color photographs and illustrations along with easily understandable scientific and historic details will make this book highly appealing to a wide audience. It will also be useful as a supplementary text for introductory courses in earth and atmospheric science, geology, volcanology, and paleoclimatology, as well as ancient history and archeology.

Tephra Studies BoD – Books on Demand

For more than four decades, biblical experts have tried to place the story of Exodus into historical context--without success. What could explain the Nile turning to blood, insects swarming the land, and the sky falling to darkness? Integrating biblical accounts with substantive archaeological evidence, The Parting of the Sea looks at how natural phenomena shaped the stories of Exodus, the Sojourn in the Wilderness, and the Israelite conquest of Canaan. Barbara Sivertsen demonstrates that the Exodus was in fact two separate exoduses both triggered by volcanic eruptions--and provides scientific explanations for the ten plagues and the parting of the Red Sea. Over time, Israelite oral tradition combined these events into the Exodus narrative known today. Skillfully unifying textual and archaeological records with details of ancient geological events, Sivertsen shows how the first exodus followed a 1628 B.C.E Minoan eruption that produced all but one of the first nine plagues. The second exodus followed an eruption of a volcano off the Aegean island of Yali almost two centuries later, creating the tenth plague of darkness and a series of tsunamis that "parted the sea" and drowned the pursuing Egyptian army. Sivertsen's brilliant account explains inconsistencies in the biblical story, fits chronologically with the conquest of Jericho, and confirms that the Israelites were in Canaan before the end of the sixteenth century B.C.E. In examining oral traditions and how these practices absorb and process geological details through storytelling, The Parting of the Sea reveals how powerful historical narratives are transformed into myth.

Explosive Subaqueous Volcanism Elsevier

Annotation "A full understanding of the complex interaction between volcanic activity and Quaternary environmental change requires the collaboration of both volcanologists and Quaternary scientists. Volcanoes in the Quaternary brings together papers from workers in both fields and reflects the diversity of current research. The papers are grouped geographically and focus on New Zealand's North Island, the East African Rift Valley, the Mediterranean and Iceland. They cover the determination of eruptive chronologies, discuss the impacts on local vegetation and society, outline the importance of tephrostratigraphic records and provide detailed studies of hazard assessment."--BOOK JACKET. Title Summary field provided by Blackwell North America, Inc. All Rights Reserved.

Santorini Volcano Springer Nature

Updates in Volcanology - From Volcano Modeling to Volcano Geology is a new book that is based on book chapters offered by various authors to provide a snapshot of current trends in volcanological researches. Following a short Introduction, the book consists of three sections, namely, ''Understanding the Volcano System from Petrology, Geophysics to Large Scale Experiments,'' ''Volcanic Eruptions and Their Impact to the Environment,' and ''Volcanism in the Geological Record.'' These sections collect a total of 13 book chapters demonstrating clearly the research activity in volcanology from geophysical aspects of volcanic systems to their geological framework. Each chapter provides a comprehensive summary of their subject's current research directions. This book hence can equally be useful for students and researchers.