New and Recent Book Titles 2021
Special Publication 504

The Basins, Orogens and Evolution of the Southern Gulf of Mexico and Northern Caribbean

Edited by I. Davison, J. N. F. Hull and J. Pindell

This volume brings together 17 comprehensive, data-rich analyses to provide an updated perspective on the Mexican Gulf of Mexico, Florida and northern Caribbean. The papers span a broad range of scales and disciplines from plate tectonic evolution to sub-basin scale analysis. Papers are broadly categorised into three themes: 1) geological evolution of the basins of the southern Gulf of Mexico in Mexico, Bahamas and Florida and their hydrocarbon potential; 2) evolution of the region’s Late Cretaceous to Neogene orogens and subsequent denudation history; and 3) geological evolution of the basins and crustal elements of the northern Caribbean. This book and its extensive data sets are essential for all academic and exploration geoscientists working in this area. Two large wall maps are included as fold-outs.

Special Publication 503

Pannotia to Pangaea: Neoproterozoic and Paleozoic Orogenic Cycles in the Circum-Atlantic Region

Edited by J. B. Murphy, R. A. Strachan and C. Quesada

Special Publication 503 celebrates the career of R. Damian Nance. It features 27 articles, with more than 110 authors based in 18 different countries. These articles include contributions on the processes responsible for the formation and breakup of supercontinents, the controversies concerning the status of Pannotia as a supercontinent, the generation and destruction of Palaeozoic oceans, and the development of the Appalachian-Ouachitan-Caledonide-Variscan orogens. In addition to field work, the approaches to gain that understanding include examining the relationships between stratigraphy and structural geology, precise geochronology, geochemical and isotopic fingerprinting, geodynamic modelling, regional syntheses, palaeogeographic modelling, and good old-fashioned arm-waving!
New titles from the Geological Society

For full details visit the online bookshop: www.geolsoc.org.uk/bookshop

**Memoir 54**
The Geology and Tectonics of the Jabal Akhdar and Saih Hatat Domes (Oman Mountains)
Edited by A. Scharf, F. Mattern, M. Al-Wardi, G. Frijia, D. Moraetis, B. Priceus, W. Bauer, I. Callegari

The Himalaya–Karakoram–Tibet mountain belt resulted from Cenozoic collision of India and Asia and is frequently used as the type example of a continental collision orogenic belt. The last quarter of a century has seen the publication of a remarkably detailed dataset relevant to the evolution of this belt. Detailed fieldwork backed up by state-of-the-art structural analysis, geochemistry, mineral chemistry, igneous and metamorphic petrology, isotope chemistry, sedimentology and geophysics produced a wide-ranging archive of data-rich scientific papers. The rationale for this book is to provide a coherent overview of these datasets in addressing the evolution of the mountain ranges we see today.

**Memoir 53**
The Middle and Late Jurassic Intrashelf Basin of the Eastern Arabian Peninsula
By A.O. Wilson

This memoir provides a thorough review of the geology of the rimmed Arabian Intrashelf Basin, reconciling differing interpretations of lithostratigraphy, sequence stratigraphy and biostratigraphy. Variation of energy levels and facies due to its setting in the SE palaeotradewind belt are described. The roles subtle tectonism played in developing the basin and in the Late Jurassic creating restriction by uplift and exposure of the Tethys shelf are evaluated. The intrashelf basin formed during rising sea level as a single rimmed carbonate intrashelf basin. A possible global cooling phase resulted in a lowstand which restricted the basin, resulting in petrographically unique carbonate source rock facies dominated by cyanobacterial deposition.

**Special Publication 489**
Archean Granitoids of India: Windows into Early Earth Tectonics
Edited by S. Dey and J.-F. Moyen

Granitoids form the bulk of the Archean continental crust and preserve key information on early Earth evolution. India hosts five main Archean cratonic blocks (Aravalli, Bundelkhand, Singhbhum, Bastar and Dharwar). This book summarizes the available information on Archean granitoids of Indian cratons. The chapters cover a broad spectrum of themes related to granitoid typology, emplacement mechanism, petrogenesis, phase-equilibria modelling, temporal distribution, tectonic setting, and their roles in fluid evolution, metal delivery and mineralizations. The book presents a broader picture incorporating regional- to craton-scale comparisons, implications for Archean geodynamic processes, and temporal changes thereof. This synthesis work, integrating modern concepts on granite petrology and crustal evolution, offers an irreplaceable body of reference information for any geologist interested in Archaean Indian granitoids.

**Special Publication 499**
The Changing Role of Geological Surveys
Edited by P.R. Hill, D. Lebel, M. Hitzman, M. Smelror and H. Thorleifson

Senior managers and Heads of Geological Survey Organizations (GSOs) from around the world have contributed a collection of papers to provide a benchmark on how GSOs are responding to national and international needs in a rapidly changing world. GSOs continue to provide key scientific information about Earth systems, natural hazards and climate change. As countries adopt sustainable development principles and the public increasingly turns to social media to find information about resource and environmental issues, the generation and communication of Earth science knowledge become increasingly important. This volume provides a snapshot of how GSOs are adapting their activities to this changing world. The different national perspectives presented converge around several common themes related to resources, environment and big data.
New titles from the Geological Society

For full details visit the online bookshop: www.geolsoc.org.uk/bookshop

MEMOIR 52
United Kingdom Oil and Gas Fields: 50th Anniversary Commemorative Volume
Edited by G. Goffey & J.G. Gluyas

Geological Society Memoir 52 records the extraordinary 50+ year journey that has led to the development of some 458 oil and gas fields on the UKCS. It contains papers on almost 150 onshore and offshore fields in all of the UK's main petroliferous basins. These papers range from look-backs on some of the first-developed gas fields in the Southern North Sea, to papers on fields that have only just been brought into production or may still remain undeveloped, and includes two candidate CO2 sequestration projects. These papers are intended to provide a consistent summary of the exploration, appraisal, development and production history of each field, leading to the current subsurface understanding which is described in greater detail. As such the Memoir will be an enduring reference source for those exploring for, developing, producing hydrocarbons and sequestering CO2 on the UKCS in the coming decades. It encapsulates the petroleum industry's deep subsurface knowledge accrued over more than 50 years of exploration and production.

SPECIAL PUBLICATION 484
Application of Analytical Techniques to Petroleum Systems
Edited by P. Dowey, M. Osborne and H. Volk

Cutting-edge techniques have always been utilized in petroleum exploration and production to reduce costs and improve efficiencies. The demand for petroleum in the form of oil and gas is expected to increase for electricity production, transport and chemical production, largely driven by an increase in energy consumption in the developing world. Innovations in analytical methods will continue to play a key role in the industry moving forwards as society shifts towards lower carbon energy systems and more advantaged oil and gas resources are targeted. This volume brings together new analytical approaches and describes how they can be applied to the study of petroleum systems.

SPECIAL PUBLICATION 486
Global Heritage Stone: Worldwide Examples of Heritage Stones
Edited by J. T. Hannibal, S. Kramar and B. J. Cooper

Heritage stones are building and ornamental stones that have special significance in human culture. The papers in this volume discuss a wide variety of such stones, including stones from Europe, Asia, North and South America, Africa and Australia. Igneous (basalt, porphyry, granite), sedimentary (sandstone, limestone) and metamorphic (marble, quartzite, gneiss, soapstone, slate) stones are featured. These have been utilized over long periods of time for a wide range of uses contributing to the historic fabric of the built environment. Many of these stones are of international significance, and so are potential Global Heritage Stone Resources, that is stones that have the requisite qualities for international recognition by the Heritage Stones Subcommission of the International Union of Geological Sciences.

SPECIAL PUBLICATION 497
Geomagnetic Field Variations in the Past: New Data, Applications and Recent Advances
Edited by E. Tena, A. Di Chiara and E. Herrero-Bervera

In the last decades, palaeomagnetic research has provided important information about the past variation of the Earth's magnetic field (EMF) from its origin to the present day. However, questions regarding the origin and evolution of the EMF as well as the frequency and spatial distribution of its variations still remain open to debate. This Special Publication provides new insights into the study of the temporal and spatial evolution of the EMF presenting new data from palaeomagnetic and rock magnetic studies of archaeological materials, sediments and lavas.
New titles from the Geological Society
For full details visit the online bookshop: www.geolsoc.org.uk/bookshop

Special Publication 490
Fold and Thrust Belts: Structural Style, Evolution and Exploration
The outer parts of collision mountain belts are commonly represented by fold and thrust belts. Major advances in understanding these tectonic settings have arisen from regional studies that integrate diverse geological information in quests to find and produce hydrocarbons. Drilling has provided tests of subsurface forecasts, challenging interpretation strategies and structural models. This volume contains 19 papers that illustrate a diversity of methods and approaches together with case studies from Europe, the Middle East and the Asia-Pacific region. Collectively they show that appreciating diversity is key for developing better interpretations of complex geological structures in the subsurface – endeavours that span applications beyond the development of hydrocarbons.

Special Publication 496
Integrated Fault Seal Analysis
Edited by S. Ogilvie, S. Dee, R.W. Wilson and W. Bailey
Faults commonly trap fluids such as hydrocarbons and water and therefore are of economic significance. During hydrocarbon field development, smaller faults can provide baffles and/or conduits to flow. There are relatively simple, well established workflows to carry out a fault seal analysis for siliciclastic rocks based primarily on clay content. There are, however, outstanding challenges related to other rock types, to calibrating fault seal models (with static and dynamic data) and to handling uncertainty. The variety of studies presented here demonstrate the types of data required and workflows followed in today’s environment in order to understand the uncertainties, risks and upsides associated with fault-related fluid flow.

Memoir 51
New Caledonia: Geology, Geodynamic Evolution and Mineral Resources
Edited by P. Maurizot and N. Mortimer
This memoir summarizes the current knowledge of New Caledonia’s geology, geodynamic evolution, and mineral resources, based on published and unpublished information. It comprises 10 research papers, each addressing a particular geological assemblage or topic. After an introductory chapter, and a review of the published geodynamic models of evolution of the SW Pacific, chapters 3 to 5 focus on the main geological assemblages of Grande Terre: the Pre-Late Cretaceous basement terranes, the Late Cretaceous to Eocene cover, and the Eocene subduction-obduction complex, one of the largest and best-preserved in the world. Chapter 6 is devoted to the Loyalty Islands and Ridge. Chapter 7 deals with the mostly terrestrial post-obduction units including regolith. Chapter 8 deals with palaeobiogeography and discuss plausible scenarios of biotic evolution. Chapters 9 and 10 provide an comprehensive review of New Caledonia’s mineral resources.

Special Publication 500
Subaqueous Mass Movements and Their Consequences: Advances in Process Understanding, Monitoring and Hazard Assessments
This GSL volume focuses on underwater or subaqueous landslides with the overarching goal of understanding how they affect society and the environment. The new research presented here is the result of significant advances made over recent years in directly monitoring submarine landslides, in standardising global datasets for quantitative analysis, constructing a global database, and leading international research projects. This volume demonstrates the breadth of investigation taking place into subaqueous landslides, and shows that while events like the recent ones in the Indonesian archipelago can be devastating they are at the smaller end of what the Earth has experienced in the past. Understanding the spectrum of subaqueous landslide processes, and therefore the potential societal impact, requires research across all spatial and temporal scales.
**New titles from the Geological Society**

For full details visit the online bookshop: [www.geolsoc.org.uk/bookshop](http://www.geolsoc.org.uk/bookshop)

---

**Special Publication 491**

*Post-Archean Granitic Rocks: Petrogenetic Processes and Tectonic Environments*

Edited by V. Janoušek, B. Bonin, W. J. Collins, F. Farina, P. Bowden

Granites (sensu lato) represent the dominant rock-type forming the upper–middle continental crust but their origin remains a matter of long-standing controversy. The granites may result from fractionation of mantle-derived basaltic magmas, or partial melting of different crustal protoliths at contrasting P–T conditions, either water–fluxed or fluid-absent. Consequently, many different mechanisms have been proposed to explain the compositional variability of granites ranging from whole igneous suites down to mineral scale. This book presents an overview of the state of the art, and envisages future avenues towards a better understanding of granite petrogenesis.

**Special Publication 498**

*Cretaceous Climate Events and Short-Term Sea-Level Changes*

Edited by M. Wagreich, M. B. Hart, B. Sames, I. O. Yılmaz

Sea-level constitutes a critical planetary boundary for geological processes and human life. Sea-level fluctuations during major greenhouse phases are still enigmatic and strongly discussed in terms of changing climate systems. The geological record of the Cretaceous greenhouse period provides a deep-time view on greenhouse-phase Earthsystem processes that facilitates a much better understanding of the causes and consequences of global, geologically short-term, sea-level changes. In particular, Cretaceous hothouse periods can serve as a laboratory to better understand a near-future greenhouse Earth.

---

**Special Publication 476**

*Passive Margins: Tectonics, Sedimentation and Magmatism*

Edited by K. R. McClay and J. A. Hammerstein

This volume has evolved from papers written in memory of Professor David Roberts. They summarize the key findings of recent research on passive margins, from tectonics, bathymetry, stratigraphy and sedimentation, structural evolution and magmatism. Papers include analyses of the central and southern Atlantic margins of South America and Africa, papers on magmatism and extension in the NE Brazilian margin and on the Cote de Ivoire margin, rift architectures of the NW Red Sea margin, tectonics of the eastern Mediterranean margin, salt tectonics of passive margins of the Gulf of Mexico and Brazil, and papers on the NW Shelf margin of Australia. The volume provides readers with new insights into the complexities of passive margin systems that are in reality, not so passive.

---

**Engineering Geology Special Publication 29**

*Geological Hazards in the UK: Their Occurrence, Monitoring and Mitigation*

Edited by D.P. Giles and J.S. Griffiths

The UK is perhaps unique globally in that it presents the full spectrum of geological time, stratigraphy and associated lithologies within its boundaries. With this wide range of geological assemblages comes a wide range of geological hazards, whether they be geophysical (earthquakes, effects of volcanic eruptions, tsunami, landslides), geotechnical (collapsible, compressible, liquefiable, shearing, swelling and shrinking soils), geochemical (dissolution, radon and methane gas hazards) or georesource related (coal, chalk and other mineral extraction). An awareness of these hazards and the risks that they pose is a key requirement of the engineering geologist.

The Geological Society considered that a Working Party Report would help to put the study and assessment of geohazards into the wider social context, helping the engineering geologist to better communicate the issues concerning geohazards in the UK to the client and the public.
The Fossil Woman: A Life of Mary Anning
By Tom Sharpe

Described as ‘the greatest fossilist the world ever knew’, a fully illustrated biography of Mary Anning is long overdue. Drawing on recent research into her life and times, yet always aware of her character and personality, Tom Sharpe has taken a fresh and often surprising look at the achievements of a woman who is finally gaining the recognition she merits.

Mary Anning was born in 1799 in the Dorset town of Lyme Regis, dying there when only forty-seven. She made her living finding and selling fossils.

Publisher: Dovecote Press
November 2020
240 pages  Hardback
Prices
List price: £20
Fellow’s price: £18
Buy online: www.geolsoc.org.uk/MPDANN

Geologists’ Association Guides
The Geologists’ Association publishes a series of detailed, accessible and attractive field guides for both British and international sites of geological interest. The guides offer an excellent introduction to the geology of a particular area and are the perfect complement for a day trip or longer holiday.

The Rocking Book of Rocks: An illustrated guide to everything rocks, gems and minerals
By Amy Ball and Florence Bullough. Illustrated by Anna Alanko.

Learn everything you ever wanted to know about rocks and minerals in this stunning book. Discover space rocks, gemstones, metals, volcanoes, world wonders and more. With out-of-this-world artwork from Anna Alanko and expert content written by two geologists, this is the book all rock-crazy kids need.

Publisher: Wide Eye Editions, distributed by GSL
September 2019
96 pages  Hardback
Prices
List price: £12.99
Buy online: www.geolsoc.org.uk/MPRBR

Scotland’s Mountain Landscapes: a geomorphological perspective
By Colin K. Ballantyne

Scotland’s mountain landscapes are remarkably diverse, encompassing the isolated summits of the far northwest, the serrated ridges of Skye, the tor-studded high plateau of the Cairngorms and the rolling hills of the Southern Uplands. Born on ancient continents and uplifted by tectonic forces, the mountains of Scotland have been sculpted by successive glaciers and ice sheets, landslides, frost, wind and rivers.

ISBN: 978-1-78046-079-6
Publisher: Dunedin Academic Press
November 2020
183 Pages  Hardback
Price
List price: £28
Buy online: www.geolsoc.org.uk/MPSML

Hutton’s Arse: 3 billion years of extraordinary geology in Scotland’s Northern Highlands (2nd edition)
By Malcolm Rider & Peter Harrison

The extraordinary and beautiful scenery of the Northern Scottish Highlands has been created by a geological history lasting over three billion years. The new and thoroughly up-dated edition of this popular book takes its readers through those three billion years, shows the rocks, visits the places, introduces some famous researchers and presents the geological theories that have been inspired by the Highlands.

Publisher: Dunedin Academic Press
August 2019
240 pages  Paperback
Prices
List price: £19.99
Fellow’s price: £17.99
Buy online: www.geolsoc.org.uk/MPHUT

Prices are subject to change at short notice due to publisher or supplier increase. Please see the online bookshop for up-to-date pricing.
Discover the
Lyell Collection

One of the largest integrated collections of Online Earth Science in the world

Visit www.lyellcollection.org
The Geological Society’s Lyell Collection: journals, Special Publications and books online.

Visit www.lyellcollection.org

Content of interest
For full details visit the Lyell Collection: www.lyellcollection.org

The Shibantant Lagerstätte: insights into the Proterozoic–Phanerozoic transition
By Shuhai Xiao, Zhe Chen, Ke Pang, Chuanming Zhou and Xunlai Yuan

The Shibantant Lagerstätte (551–543 Ma) in the Yangtse Gorges area in South China is one of the best-known examples of terminal Ediacaran fossil assemblages preserved in marine carbonate rocks. Taxonomically dominated by benthic organisms, the Shibantant Lagerstätte preserves various photoautotrophs, biomineralizing tubular fossils, Ediacara-type macrofossils (including rangeomorphs, arboreomorphs, erniettomorphs, palaeopascichnids, a possible dickinsoniomorph, the mobile bilaterian Yilingia and soft-bodied tubular fossils), abundant ichnofossils and a number of problematic and dubious fossils.

Read more in the Lyell Collection jgs.lyellcollection.org/content/178/1/jgs2020-135

The temperature of Britain’s coalfields

Low-temperature heat recovery, cooling and storage schemes, using abandoned flooded mine workings, are a viable option for low-carbon heating solutions within many abandoned British coalfields. The temperature of mine water is a useful parameter, coupled with depth to water, sustainable yield and recharge potential, to identify suitable locations and calculate the likely performance of heat recovery schemes. This paper aims to provide the first mapping and synthesis of the temperature of Britain’s coalfields to support this emerging technology.

Read more in the Lyell Collection qjegh.lyellcollection.org/content/early/2020/10/19/qjegh2020-109

Understanding the Earth: the contribution of Marie Tharp
By Bettie Matheson Higgs

Marie Tharp worked all her life as a geoscientist, and for the most part for the recognition and benefit of her male colleagues. She was employed to assist researchers at Columbia University. Her male colleagues readily used her ingenuity and insights without giving her recognition. Marie tolerated this at first but eventually began to ask for recognition for her own work. Her most influential work was the production of physiographical maps of the ocean floor.

Read more in the Lyell Collection sp.lyellcollection.org/content/early/2020/10/12/SP506-2019-248

Structural development of the Arabian Intrashelf Basin region
By A. O. Wilson

This chapter summarizes the tectonic events that have affected the region of the Arabian Intrashelf Basin and the development of the intrashelf basin. Precambrian–Infracambrian fault systems provided a structural framework, which was later reactivated during the Late Paleozoic. Further development along the structural trends continued in the Triassic and Early Jurassic with the development of an Early Jurassic tectonically controlled intrashelf basin.

Read more in the Lyell Collection mem.lyellcollection.org/content/53/1/21
Structural and Thermal Evolution of the Himalayan Thrust Belt in Midwestern Nepal
Edited by P.G. DeCelles, B. Carrapa, T.P. Qjha, G.E. Gehrels, and D. Collins

Spanning eight kilometers of topographic relief, the Himalayan fold-thrust belt in Nepal has accommodated more than 700 km of Cenozoic convergence between the Indian subcontinent and Asia. Rapid tectonic shortening and erosion in a monsoonal climate have exhumed gneiss to upper amphibolite facies rocks along with unmetamorphosed rocks, including a 5–6-km-thick Cenozoic foreland basin sequence. This Special Paper presents new geochronology, multisystem thermochronology, structural geology, and geological mapping of an approximately 37,000 km2 region in midwestern and western Nepal. This work informs enduring Himalayan debates, including how and where to map the Main Central thrust, the geometry of the seismically active basal Himalayan detachment, processes of tectonic shortening in the context of postcollisional India-Asia convergence, and long-term geodynamics of the orogenic wedge.

Mississippian Reservoirs of the Midcontinent

The story of the Mississippian lime play began more than a century ago and captures the evolution of oil and gas exploration in Kansas and Oklahoma—from early drilling of simple traps to the current development of unconventional resource plays characterized by high fluid volume and the associated intensive surface and subsurface plumbing infrastructure.

Straddling the Kansas–Oklahoma border, the play fairway stretches in the subsurface from Grady County, Oklahoma, at its southern tip, northeastered into Osage county, Oklahoma, out to the northwestern corner of Kansas, and also includes scattered drilling throughout western Kansas and northwestern Oklahoma. The petroleum system can be most simply described as Mississippian reservoirs charged with hydrocarbons largely migrated from mature Woodford source basins and trapped by the overlying blanket of Pennsylvanian shales.

The Appalachian Geology of John M. Dennison: Rocks, People, and a Few Good Restaurants along the Way
Edited by Katharine Lee Avary, Kenneth O. Hasson and Richard J. Diecchio

Dr. John M. Dennison spent his career studying the Appalachians; teaching and mentoring his students and professional colleagues; publishing papers; leading field trips; and presenting ideas at regional, national, and international conferences. This volume is a collection of papers contributed by former students and colleagues to honor his memory. Topics include stratigraphy and paleontology ranging in age from Ordovician to Mississippian in Kentucky, New York, Tennessee, Virginia, and West Virginia; Devonian airfall tephras throughout the eastern United States; a Devonian limestome; a Middle Eocene bentonite in North Carolina and its relationship to a volcanic swarm in western Virginia; and a 3D model of a ductile duplex in northwestern Georgia. The stratigraphic and geologic diversity of the papers reflects Dennison’s many interests and collaborative relationships.

The Physical Geography and Geology of the Driftless Area: The Career and Contributions of James C. Knox
Edited by Eric C. Carson, J. Elmo Rawling III, J. Michael Daniels, and John W. Attig

Over the course of his 43-year career, James C. Knox conducted seminal research on the geomorphology of the Driftless Area of southwestern Wisconsin. His research covered wide-ranging topics such as long-term landscape evolution in the Driftless Area; responses of floods to climate change since the last glaciation; processes and timing of floodplain sediment deposition on both small streams and on the Mississippi River; impacts of European settlement on the landscape; and responses of stream systems to land-use changes. This volume pre-sents the state of knowledge of such as long-term land-scape evolution in the Driftless Area; and responses of floods to climate change since the last glaciation; processes and timing of floodplain sediment deposition on both small streams and on the Mississippi River; impacts of European settlement on the landscape; and responses of stream systems to land-use changes. This volume pre-sents the state of knowledge of
The Year of Space will see the Society direct its gaze upwards, beyond the earth beneath our feet, towards the lesser explored corners of our universe. Space science seeks to answer some of life’s biggest questions - why are we here, how did life evolve, and are we alone?

Find out about our Year of Space publications:

Martian Geomorphology
www.geolsoc.org.uk/SP356

Martian Gullies
www.geolsoc.org.uk/SP467

Volcanism and Tectonism
www.geolsoc.org.uk/SP401

www.geolsoc.org.uk/publications/bookshop/yearofspace2021

Image courtesy of Marco Milanesi
What is Online First?

Online First is a feature offered through the Geological Society’s electronic content platform, the Lyell Collection. It enables articles to appear online soon after they have been accepted for publication and ahead of the printed volume or issue.

Chapters for the Special Publications, Memoirs and Engineering Geology Special Publications book series are usually posted in Online First as accepted manuscripts and then replaced by the published article (the version of record) once available, before being placed into a complete final volume.

Sign up to Online First alerts in 6 easy steps at www.geolsoc.org.uk/journal_alerts

Special Publication 512
sp.lyellcollection.org/online-first/512
The Carboniferous Timescale
Edited by S. G. Lucas, J. W. Schneider, X. Wang and S. Nikolaeva
The Carboniferous was the time of the assembly of Pangea, most of the late Paleozoic ice ages and the accumulation of vast coal deposits. This book reviews the Carboniferous timescale and includes comprehensive analyses of Carboniferous radioisotopic ages, magnetostratigraphy, isotope-based correlations, cyclostratigraphy and timescale-relevant marine and non-marine biostratigraphy and biochronology.

Special Publication 511
sp.lyellcollection.org/online-first/511
Applications of Non-Pollen Palynomorphs:
from Palaeoenvironmental Reconstructions to Biostratigraphy
Edited by F. Marret, J. O’Keefe, P. Osterloff, M. Pound and L. Shumilovskikh
This volume presents an up-to-date and seminal overview of all non-pollen palynomorphs. Providing introductory information, contextual examples, reviews and thought-provoking discussion, this book is an essential read for any student, academic or practitioner interested in everything else in their palynology preparations.

Special Publication 510
sp.lyellcollection.org/online-first/510
Active Volcanoes of China
Edited by J. Xu, C. Oppenheimer, J. Hammond and H. Wei
China is not renowned for its volcanoes and yet one of the largest eruptions in history took place there – the tenth century “Millennium Eruption” of Tianchi (Heaven Lake) volcano. Over a dozen other volcanic areas are now recognised in China. This Special Publication presents the latest research on the origins, history, activity and monitoring of these volcanoes.

Special Publication 509
sp.lyellcollection.org/online-first/509
Seismic Characterization of Carbonate Platforms and Reservoirs
Edited by J. Hendry, P. Burgess, D. Hunt, X. Janson and V. Zampetti
Over the past 20 years seismic imaging has revolutionized understanding of carbonate geomorphology, stratigraphy and reservoir architecture in industry and academia. This book showcases recent advances in seismic imaging and characterization of carbonate strata, demonstrating impact in exploration and appraisal, and understanding of deep-time carbonate platform development and climate history.

Special Publication 508
sp.lyellcollection.org/online-first/508
Geoethics: Status and Future Perspectives
Edited by G. Di Capua, P. T. Bobrowsky, S. W. Kieffer and C. Palinkas
This book is a significant step forward in the development of geoethical thinking, its theoretical foundations and practical applications. Geoethics is now ready to be introduced outside the geoscience community as a platform for global ethics addressing anthropogenic changes and the responsible interaction between humans and the Earth system.
Publish a volume with the Geological Society

The Geological Society is one of the largest publishers of Earth science books in the world, producing a wide range of peer-reviewed titles. We offer authors choice, flexibility and a personal service from a dedicated team of in-house editors.

The focus of the Society’s commissioning is acquiring books in our main Lyell Collection and GSW ebook series, primarily:

- Special Publications
- Engineering Geology Special Publications
- Memoirs

The Society has arrangements with the following organisations for the publications of books arising from their activities:

- IAVCEI
- SCAR
- IUGS
- BSG
- TMS
- IASC

Proposals undergo an appraisal process involving internal and external review and a financial assessment. Publishing House staff will then present a recommendation to the Society’s Books Editorial Committee, for approval.

All book proposals should be submitted by email to the Head of Editorial Development, David Boyt, via david.boyt@geolsoc.org.uk.

For further information, including the specific information to include with a proposal, please visit the relevant page on our website: www.geolsoc.org.uk/proposals

Sign up to our bookshop newsletters!

Sign up to our newsletter and keep up to date with new titles published throughout the year at www.geolsoc.org.uk/about/email-newsletter
Become a Corporate Patron

Join us as a Corporate Patron and demonstrate your commitment to the Earth sciences

We have a number of Corporate Patrons: companies from geology-related fields such as energy and mining, who wish to support our work and potentially pursue their own corporate social responsibility objectives through an official association with the Society.

Benefit from:
- Employee use of our prestigious central London premises in Burlington House
- Invites to exclusive networking events
- Special rates on conference attendance
- Access to one of the largest geoscience libraries in the world
- Complimentary copies of the Society’s Geoscientist magazine
- Promotion of your Corporate Patron status both digitally and in person

‘Access to the Society’s historic venue and the unique networking opportunities provided by the Society are all immensely valuable. Even more importantly, we are proud to be associated with an organisation that is relevant to our business and championing the future of geosciences in this ever-changing world.’

Iain Bartholomew
Subsurface Director, Siccar Point Energy

For further information, please contact: E: development@geolsoc.org.uk W: www.geolsoc.org.uk/patrons

Become a Fellow of the Geological Society

Join a community of more than 12,000 geoscientists.

Benefit from:
- Opportunity to become a Chartered Geologist or Chartered Scientist
- Free magazine, Geoscientist
- Free Society journals of your choice
- Discounted publications and meeting rates
- Access to Continuing Professional Development (CPD) scheme
- Access to one of the most important geological libraries in the world, plus 100+ e-resources and books
- Regional and specialist groups

For further information, please contact: E: membership@geolsoc.org.uk W: www.geolsoc.org.uk/membership
The Geological Society Corporate Patron’s scheme

Put your organisation at the forefront of geoscientific information, develop a wider network of business and scientific contacts and invest in the science on which your business depends by becoming a Corporate Patron of the Geological Society of London.

**CURRENT PATRONS OF THE SOCIETY:**

**Platinum**
- BP
- Halliburton

**Gold**
- Blue Water Energy
- Dana Petroleum
- Radioactive Waste Management
- Rio Tinto
- Schlumberger Oilfield UK PLC

**Silver**
- Cairn Energy
- Equinor
- Neptune Energy
- SRK Consulting

**Bronze**
- Anglo American Plc
- Atkins
- C&C reservoirs
- CGG
- CNOOC Limited
- Condor Gold
- Cornish Lithium
- ERC Equipoise Ltd
- Fasken Martineau LLP
- Getech Group PLC
- Ikon Science Ltd
- INEOS Upstream Ltd
- Norton Rose Fulbright
- PGS
- Premier Oil

**Bronze (cont.)**
- Reabold Resources
- RPS Energy
- Sasol
- Scotgold Resources Ltd
- Siccar Point Energy
- Terrafirma Search Ltd
- Tullow Oil
- Vinson and Elkins LLP
- Wood Mackenzie

For further information, please contact: Jenny Boland, The Geological Society, Burlington House, Piccadilly, London W1J 0BG
**T:** 020 7434 9944 **E:** development@geolsoc.org.uk **W:** www.geolsoc.org.uk/affiliates-list

Welcome to one of the finest Earth science libraries in the world

The Geological Society Library at Burlington House, Piccadilly, London, contains over 300,000 volumes of books and serials and 40,000 maps, covering all aspects of geological sciences and making it a collection of international importance.

To purchase high-quality prints of images from our historical collections incl. the 1815 William Smith map, please visit our Picture Library www.geolsoc.org.uk/ PictureLibrary

For a full list of all Library services, Burlington House Bookshop and opening hours, please contact  
**E:** library@geolsoc.org.uk  
**W:** www.geolsoc.org.uk/library
Order Form

NB Prices and postage rates are subject to change, please visit www.geolsoc.org.uk/bookshop_faqs for more information

Ways to shop

You can order online, by phone or, alternatively fill in the order form below and email or post it to us in Bath (address below). Other catalogues can be requested via email at sales@geolsoc.org.uk or downloaded from www.geolsoc.org.uk/catalogues

More information about these new and recently published titles can be found on the Geological Society online bookshop at www.geolsoc.org.uk/bookshop

For AAPG and GSA titles for the UK and Europe please use the order form or visit the online bookshop. For orders outside Europe please order direct.

Sign up to our bookshop newsletters!

For all the latest information on our new publications and our Online Bookshop Sales please sign up to our newsletter at www.geolsoc.org.uk/about/email-newsletter

MEMBERSHIP DETAILS

Name:
Prof/Dr/Mr/Mrs/Miss/Ms – initials – surname/family name

Discount qualifying societies (if applicable):
- ESSB (Petroleum Exploration Society of Great Britain)
- AAPG (American Association of Petroleum Geologists)
- SEPM (Society for Sedimentary Geology)
- ESGA (Geological Society of America)
- RAS (Royal Astronomical Society)
- EFG (European Federation of Geologists – please give membership organisation and number)

Membership no:
(A membership number must be quoted to be eligible for discount)

Tel:
Fax:
(An contact number is required on all orders)

Email:

Occasionally the Publishing House may wish to send you information by email about new publications and bookshop sales. If you DO NOT wish to receive this information please tick this box

Please send me the following:

<table>
<thead>
<tr>
<th>Title</th>
<th>Product code</th>
<th>Qty</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
</table>

Postage Rates: UK: +5% (£4.50 minimum) Europe: +15% (£9.00 minimum) Rest of world: +15% (£13.50 minimum)

UK: VAT at the current rate applies to Maps, CDs, DVDs and Rite in the Rain products.

Overseas: The recipient is liable to pay any inbound duties and taxes to the local customs authority.

Date of order:
Please allow up to 28 days for delivery of in-stock items in the UK. Parcels to the rest of the world are sent by surface mail and can take from 6 to 12 weeks to arrive depending upon the destination country. Please ask for air or courier quote if required.

PAYMENT DETAILS

Payment can be made in £ sterling by cheque, VISA, MasterCard or American Express or in US$ by cheque only. Cheques should be made payable to Geological Society.

Please order from: Geological Society Publishing House,
Unit 7 Brassmill Enterprise Centre, Brassmill Lane, Bath BA1 3JN, UK
Tel: +44 (0)1225 445046 Fax: +44 (0)1225 442838 Email: sales@geolsoc.org.uk
Society website: www.geolsoc.org.uk Online bookshop: www.geolsoc.org.uk/bookshop
The Geological Society of London is a registered charity, no. 210161 VAT no. GB 877 0147 09

Cover image: Cuillins & Fairy Pools, United Kingdom. Image courtesy of Louise Squire.
Page 2 or next image courtesy of William J. Asch, Thomas W. Kammer and Georgy V. Mirantsev featured in the paper “Carboniferous crinoids.”
Page 13 image courtesy of Alberto Restifo.

Delivered by www.openamara.com