

# JOURNAL OF THE GEOLOGICAL SOCIETY EDITORIAL BOARD

**Chief Editor:** Quentin Crowley (Trinity College, Dublin, Ireland)

## Editors

Ian Alsop (University of Aberdeen, UK)	Andrew Carter (Birkbeck College, London, UK)	John Marshall (University of Southampton, UK)	Ivan Sansom (University of Birmingham, UK)
Robert Anczkiewicz (Polish Academy of Sciences, Poland)	Moonsup Cho (Seoul National University, Korea)	Ken McCaffrey (University of Durham, UK)	Sarah Sherlock (Open University, UK)
Brian Bell (Glasgow University, UK)	Chris Clark (Curtin University, Australia)	Tim Needham (University of Leeds, UK)	Martin Whitehouse (Swedish Museum of Natural History)
Bernard Bingen (Geological Survey of Norway)	Gary Hampson (Imperial College, London, UK)	Ellen Platzman (University of Southern California, USA)	Jamie Woodward (University of Manchester, UK)
Erdin Bozkurt (Middle East Technical University, Turkey)	Jim Hendry (University of Portsmouth, UK)	David Pyle (University of Oxford, UK)	

## Advisory Editors

Jon Blundy (Bristol University, UK)	Haakon Fossen (University of Bergen, Norway)	Victor Ramos (University of Buenos Aires, Argentina)	James Scourse (Bangor University, UK)
Stephen Daly (University College Dublin, Ireland)	Dave Harper (University of Copenhagen, Denmark)	Robin Renaut (University of Saskatchewan, Canada)	Cees van Staal (Geological Survey of Canada)
Trevor Elliot (Liverpool University, UK)	Peter Kokelaar (Liverpool University, UK)	Hugh Rollinson (University of Derby, UK)	Mike Watkeys (University of KwaZulu-Natal, SA)
Richard England (University of Leicester, UK)	Richard Law (Virginia Tech, USA)	Karel Schulmann (Université Louis Pasteur, Strasbourg, France)	Wenjiao Xiao (Chinese Academy of Sciences)
Ian Fitzsimons (Curtin University, Australia)	Victoria Pease (Stockholm University, Sweden)		

**Production Editor:** Hannah Sime (e-mail: [hannah.sime@geolsoc.org.uk](mailto:hannah.sime@geolsoc.org.uk))

*The Journal of the Geological Society* is published bi-monthly in January, March, May, July, September and November.

**Subscriptions:** All correspondence relating to trade subscriptions should be addressed to the Journal Subscriptions Department, Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, UK, BA1 3JN (tel 01225 445046; fax 01225 442836; e-mail: [sales@geolsoc.org.uk](mailto:sales@geolsoc.org.uk)). The online + print subscription prices for 2011 to institutions and non-Fellows is: £1043.71 (UK), £1158.36 (EU), £980/\$1960 (RoW). Prices include tax. More information about subscription options can be found at <http://www.geolsoc.org.uk/LyellCollection>.

Outside Europe, the Journal is dispatched by various forms of airspeeded delivery; Periodicals Postage paid at Rahway, NJ. POSTMASTER: send address corrections to *The Journal of the Geological Society*, c/o Mercury International, 365 Blair Road, Avenel, NJ 07001. Back numbers are normally dispatched by surface mail.

**Editorial correspondence and material submitted for publication:** see inside back cover.

**The Geological Society of London** was founded in 1807. It is the oldest national geological society in the world and the largest in Europe. It was incorporated under Royal Charter in 1825 and is Registered Charity 210161. To find out about the Society and how you can join, please visit our website at [www.geolsoc.org.uk](http://www.geolsoc.org.uk) or e-mail [enquiries@geolsoc.org.uk](mailto:enquiries@geolsoc.org.uk).

© Geological Society 2011

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988, this publication may not be reproduced, stored or transmitted, in any form or by any means, except with prior permission in writing of the publishers, or in the case of reprographic reproduction, in accordance with the terms of licences or permissions issued or administered by the Copyright Licensing Agency, 90 Tottenham Court Road, London W1P 9HE. Enquiries concerning reproduction outside those terms should be sent to the publishers at the editorial address above. Users registered with Copyright Clearance Center, 27 Congress Street, Salem, MA01970, USA: the item-fee code for this journal is 0016-7649/10 \$15.00.

Typeset by Keytec Typesetting Ltd, Bridport, Dorset, UK

Printed by in the UK by Henry Ling Ltd, The Dorset Press, Dorchester DT1 1HD