

The *Scottish Journal of Geology* continues the *Transactions of the Edinburgh Geological Society* and the *Transactions of the Geological Society of Glasgow*, and is sponsored by the councils of the two societies. It contains two parts per volume. The *Journal* is sent to members of both societies. Details of membership may be obtained from the secretaries, whose names appear below.

Contributions or legacies to assist towards the cost of publication of the *Journal* would be welcomed by the Editorial Board.

EDITORIAL BOARD

Chief Editor: Colin Braithwaite (*University of Glasgow; e-mail: colin.braithwaite@glasgow.ac.uk*)

Secretary: Heather Stewart (*British Geological Survey, Edinburgh; e-mail: hast@bgs.ac.uk*)

Editors

Brian Bell
(*University of Glasgow*)

Thomas Challands
(*University of Edinburgh*)

Martin Kirkbride
(*University of Dundee*)

Romesh Palamakumbura
(*British Geological Survey, Edinburgh*)

Journal Manager: Helen Floyd-Walker (sjg@geolsoc.org.uk)

Secretaries of Societies

EDINBURGH
NEIL MACKENZIE
secretary@edinburghgeolsoc.org

GLASGOW
WALTER SEMPLE
sec@gsocg.org

Front cover illustration

Tintinnid imaged using an Environmental Scanning Electron Microscope (ESEM). Sample from a megacore acquired in Hatton-Rockall Basin, 500 km west of the UK within UK territorial waters during the MRV 'Scotia' 0915S expedition awarded to the Marine

Alliance for Science and Technology Scotland (MASTS) Deep-Sea Forum through an open call for ship time by Marine Scotland Science (Scottish Government). Image © British Geological Survey (United Kingdom Research and Innovation).

Scottish Journal of Geology, ISSN 0036-9276, (USPS 772590) is published in May and November by the Geological Society of London, Burlington House, Piccadilly, London W1J 0BG, UK for the Edinburgh Geological Society and the Geological Society of Glasgow.

The US annual subscription price is \$764 (online + print). Airfreight and mailing in the USA by agent named WN Shipping USA, 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431.

US Postmaster: Send address changes to *Scottish Journal of Geology*, WN Shipping USA, 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.

Subscription records are maintained at The Geological Society Publishing House, Unit 7 Brassmill Enterprise Centre, Brassmill Lane, Bath, BA1 3JN, UK. Air Business Ltd is acting as our mailing agent

All other subscriptions: All correspondence relating to trade subscriptions should be addressed to the Journal Subscriptions Department, Geological Society Publishing House, tel 01225 445046; fax 01225 442836; e-mail: sales@geolsoc.org.uk. The online + print subscription prices can be found here: <https://www.geolsoc.org.uk/lcprices>. More information about subscription options can be found at <http://www.geolsoc.org.uk/lcaccess>.

Outside Europe, the *Journal* is dispatched by various forms of airspeeded delivery.

© *Scottish Journal of Geology* 2020. Except as otherwise permitted under the Copyright, Designs and Patents Act, 1988, this publication may only be reproduced, stored or transmitted, in any form or by any other means, with the prior permission in writing of the publisher, or in the case of reprographic reproduction, in accordance with the terms of a licence issued by the Copyright Licensing Agency in the UK, or the Copyright Clearance Centre in the USA. In particular, the Society permits the making of a single photocopy of an article from this issue (under Sections 29 and 38 of this Act) for an individual for the purposes of research or private study. Open access articles, which are published under a CC-BY licence, may be re-used without permission, but subject to acknowledgement.

Full information on the Society's Permission Policy can be found at: <https://www.geolsoc.org.uk/permissions>