

Geochemistry

EXPLORATION, ENVIRONMENT,
ANALYSIS

The journal is abstracted and/or indexed in *AGI's Bibliography and Index of Geology*, *Chemical Abstracts*, *Current Contents*, *Engineering Index*, *GEOBASE*, *GeoRef*, *Mineralogical Abstracts*, *PASCAL/CNRS*, *GeoArchive*

Editor: G. E. M. Hall, Geological Survey of Canada, Ottawa, Canada (e-mail: Ghall@NRCan.gc.ca)

Associate Editors: C. R. M. Butt (CSIRO, Perth, Australia), *J. G. Farmer* (University of Edinburgh, Scotland), *P. Freyssinet* (BRGM, Orleans, France), *M. Leybourne* (University of Texas at Dallas, USA), *C. Reimann* (Verbundplan GmbH, Austria)

Production Editor: Helen Floyd-Walker, Geological Society Publishing House, Bath, UK (e-mail: helen.floyd-walker@geolsoc.org.uk)

Advertising sales: Please contact Adam Williams, DP Media, Second Floor, 16 St Stephen's Street, Bristol BS1 1JR. Tel: 0117 904 1283; Fax: 0117 904 0085; E-mail: adamwilliams@dpmedia.co.uk

CONTENTS - Volume 2, No. 2

Special Issue - Metal Mining and the Environment (Part 1), edited by Rod J. Allan, Arthur J. Horowitz & Jerry R. Miller

Preface

by R. J. Allan, A. J. Horowitz & J. R. Miller **98**

Modelling dispersal of metals from a copper smelter at Rouyn-Noranda (Quebec, Canada) using peatland data

by Inez M. Kettles & Graeme F. Bonham-Carter **99**

Mercury in surface waters of three mine-dominated river systems: Idrija River, Slovenia; Carson River, Nevada and Madeira River, Brazilian Amazon

by J. C. Bonzongo, W. B. Lyons, M. E. Hines, J. J. Warwick, J. Faganeli, M. Horvat, P. J. Lechner & J. R. Miller **111**

Mushrooms from two metal-contaminated areas in Norway: occurrence of metals and metallothionein-like proteins

by C. Collin-Hansen, K. E. Yttri, R. A. Andersen, B. O. Berthelsen & E. Steinnes **121**

The effect of mining and related activities on the sediment trace element geochemistry of the Spokane River Basin, Washington, USA

by Cecile A. Grosbois, Arthur J. Horowitz, James J. Smith & Kent A. Elrick **131**

Mercury methylation at mercury mines in the Humboldt River Basin, Nevada, USA

by John E. Gray, James G. Crock & Brenda K. Lasorsa **143**

Copper tolerance testing in populations of *Mimulus luteus* var. *variegatus* exposed and non-exposed to copper mine pollution

by R. Ginocchio, I. Toro, D. Schnepf & M. R. Macnair **151**

Air-surface exchange of mercury in natural and anthropogenically impacted landscapes in Atlantic Canada

by S. Beauchamp, R. Tordon, L. Phinney, K. Abraham, A. Pinette, A. MacIntosh, A. Rencz, H. Wong & J. Dalziel **157**

Contents of Cu, Ni and Zn in smelter polluted soil-plant systems

by T. M. Nieminen & A. Saarsalmi **167**

An atmospheric pollution history for lead-zinc mining from the Ystwyth Valley, Dyfed, mid-Wales, UK as recorded by a upland blanket peat

by T. M. Mighall, J. P. Grattan, S. Timberlake, J. A. Lees & S. Forsyth **175**

Elemental mercury in copper, silver, and gold ores: an unexpected contribution to Lake Superior sediments with global complications

by W. Charles Kerfoot, S. L. Harting, Ronald Rossmann & John A. Robbins **185**

Nickel and copper tolerance of phytoplankton isolated from a recovering lake near Sudbury, Canada

by D. G. Woodfine, M. Havas & J. Acreman **203**

Geochemistry: Exploration, Environment, Analysis (ISSN 1467-7873) is published in February, May, August and November by the Geological Society Publishing House for the Geological Society, London and the Association of Exploration Geochemists.

Subscriptions (volume 2, 2002): The subscription rate is £105 (UK), £105/\$175 (rest of Europe, USA & Canada) and £121/\$202 (rest of world) per volume, including postage and air-speeded delivery. Single issue price is £30 (UK), £30/\$50 (rest of Europe, USA & Canada) and £35/\$60 (rest of world). Trade subscriptions should be addressed to Journals Subscriptions Department, Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath BA1 3JN, UK (Tel: +44 (0) 1225 445046; Fax +44 (0)1225 442836).

Periodical postage paid at Middlesex, N.J. *Postmaster:* send address changes to *Geochemistry: Exploration, Environment, Analysis*. The Geological Society, c/o Pronto Mailers, PO Box 177, Middlesex, NJ 08846.

© 2002 The Geological Society of London and AEG. Except as otherwise permitted under the Copyright, Designs and Patents Acts, 1988, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency, 90 Tottenham Court Road, London W1P 9HE, UK. Enquiries concerning reproduction outside these terms should be sent to the Publishers at the Bath address. Users registered with the Copyright Clearance Center, 27 Congress Street, Salem, MA 01970, USA: The item-fee code for this journal is 1467-7873/02 \$15.00.

The Geological Society and AEG make no representation, express or implied, with regard to the accuracy of the information contained in this publication and cannot accept any legal responsibility for any errors or omissions that may be made.

Cover illustration: Mono Lake, California, USA. Photo: Ted Nield