

CONTENTS

Introduction	IX
<i>Presidential Address</i>	
One man's view of a research gap P.K. Theobald (Denver, Colo., U.S.A.)	1
<i>Water and Gas Geochemistry</i>	
Simultaneous determination of sulfide, polysulfides and thiosulfate as an aid to ore exploration J. Boulègue (Paris, France)	21
Hydrogeochemical exploration for uranium ore deposits: use of the computer model WATEQFC D.D. Runnells and R.D. Lindberg (Boulder, Colo., U.S.A.)	37
Mercury and mercury compounds in surface air, soil gas, soils and rocks E. Krömer, G. Friedrich and P. Wallner (Aachen, F.R.G.)	51
Meteorological noise in crustal gas emission and relevance to geochemical exploration R.W. Klusman and J.D. Webster (Golden, Colo., U.S.A.)	63
A mercury vapor survey in an area of thick transported overburden near Shanghai, China W. Zonghua and J. Yangfen (Beijing, The People's Republic of China)	77
<i>Rock Geochemistry</i>	
The geochemistry of the leached capping of the La Granja porphyry copper deposit, Peru M.O. Schwartz (Hannover, F.R.G.)	93
Mechanisms of ore formation and primary dispersion at the Dexing porphyry copper deposit, Jiangxi, and their implications in geochemical exploration Y. Chung-Wen (Hubei, The People's Republic of China)	115
Regional reconnaissance exploration rock geochemistry for massive sulphides, New Brunswick, Canada G.J.S. Govett (Kensington, Australia) and A. Pwa (Rangoon, Burma)	139
Geochemical dispersion in wallrocks associated with the Norbec deposit, Noranda, Quebec I.D. Pirie and I. Nichol (Kingston, Canada)	159
Lithogeochemical exploration data in sulphide prospecting in northern Sweden O. Selinus	181
The geochemistry of the sedimentary rocks in the vicinity of the Tom Pb-Zn-Ba deposit, Yukon Territory, Canada D. Large (Braunschweig, F.R.G.)	203
Uranium anomalies in paleo-aquifers near sandstone-type uranium deposits in the Devonian Catskill Formation of Pennsylvania S. Pirc and A.W. Rose (University Park, Penn., U.S.A.)	219
Uranium redistribution in weathered conglomerates of the early Precambrian Pongola Supergroup, South Africa — inferences from a study by alpha spectrometry and fission track micromapping R. Saager, K. Thiel, G.J. Hennig and U. Bangert (Cologne, F.R.G.)	233
The use of petroleum-well samples and data for geochemical prospecting of metals in sedimentary basins R.W. Lewis, Jr. and C.S.M. Bandeira (Brazil)	251
Geochemical prospecting for stratabound mineralization in late Precambrian sediments of East Greenland (72–74°N) H. Stendal (Copenhagen, Denmark) and M. Hock (Aachen, F.R.G.)	261
A new way of interpreting trace element concentrations with respect to modes of mineral formation P. Möller, P. Dulski, F. Schley, J. Luck and W. Szacki (Berlin-West)	271

Geochemistry of apatites in the granitic rocks of the Molybdenum, Tungsten, and Barren provinces of Southwest Japan A. Tsusue (Kumamoto, Japan), M. Nedachi (Kagoshima, Japan) and K. Hashimoto (Kumamoto, Japan)	285
Application of various geochemical proximity indicators to the tin favorability of South-Sardinian granites M. Biste (La Paz, Bolivia)	295
<i>Drainage Geochemistry</i>	
Pathfinder applications of arsenic, antimony and bismuth in geochemical exploration M. Hale (London, England)	307
Anomalous geochemical patterns from northern Sumatra: their assessment in terms of mineral exploration and regional geology B.G.N. Page (Nottingham, England) and R.D. Young (London, England)	325
Geochemical evidence for a Brooks Range mineral belt, Alaska S.P. Marsh and J.B. Cathrall (Denver, Colo., U.S.A.)	367
Exploration for scheelite in East Greenland — a case study C.P. Hallenstein, J.L. Pedersen and H. Stendal (Copenhagen, Denmark)	381
Geochemistry of stream sediments along the western coast of the Gulf of Elat (Aqaba) A. Ayalon, M. Bar-Matthews and Y. Nathan (Jerusalem, Israel)	393
Metal transport, partition and fixation in drainage waters and sediments in carbonate terrain in southeastern Ontario E.W. Bogle and I. Nichol (Kingston, Canada)	405
Evaluation of lake sediment surveys using the relationship of metal tenor to organic content G.R. Parslow (Regina, Canada)	423
<i>Soil and Vegetation Geochemistry</i>	
The biogeochemical expression of deeply buried uranium mineralization in Saskatchewan, Canada C.E. Dunn (Regina, Canada)	437
Geochemical soil prospecting in northwest Kalimantan, Indonesia W. Viaene (Leuven, Belgium), T. Suhanda (Bandung, Indonesia), N. Vandenberghe (Leuven, Belgium), Y. Sunarya (Bandung, Indonesia) and R. Ottenburgs (Leuven, Belgium)	453
Trace-element patterns in lateritic soils applied to geochemical exploration G. Matheis (Giessen, F.R.G.)	471
The use of soil geochemistry in outlining phosphate deposits, northern and southern Venezuela S.E. Rodriguez (Caracas, Venezuela)	481
<i>National Geochemical Exploration Programs</i>	
Geochemical exploration in China X. Xuejing, S. Huanzhen and L. Shanfang (Beijing, The People's Republic of China)	489
Developments of geochemical methods for ore prospecting in Bulgaria S.S. Kuikin (Sofia, Bulgaria)	507
<i>Computer and Statistical Techniques</i>	
Q'GAS: a minicomputer-based system to aid in the interpretation of exploration-oriented geochemical data O.P. Lavin and I. Nichol (Kingston, Canada)	521
Statistical analysis of stream sediment data from the Ife-Ilesha area of southwest Nigeria T.R. Ajayi (Ife-Ife, Nigeria)	539
<i>Analytical and Selective Extraction Techniques</i>	
Organic matter scavenging of copper, zinc, molybdenum, iron and manganese, estimated by a sodium hypochlorite extraction (pH 9.5) S.J. Hoffman and W.K. Fletcher (Vancouver, Canada)	549

The partitioning of copper among selected phases of geologic media of two porphyry copper districts, Puerto Rico R.E. Learned, T.T. Chao and R.F. Sanzalone (Denver, Colo., U.S.A.)	563
Elemental interferences in the analysis of uranium by delayed-neutron counting H. Kunzendorf and L. Løvborg (Roskilde, Denmark)	583
Application of radionuclide energy-dispersive X-ray fluorescence analysis in geochemical prospecting U. Kramar and H. Puchelt (Karlsruhe, F.R.G.)	597
Manganese dioxide causes spurious gold values in flame atomic-absorption readings from HBr-Br ₂ digestions W.L. Campbell (Denver, Colo., U.S.A.)	613
Laser fluorometric analysis of plants for uranium exploration T.F. Harms, F.N. Ward and J.A. Erdman (Denver, Colo., U.S.A.)	617
A contribution to geochemical prospecting for fluorite N. John and H. Puchelt (Karlsruhe, F.R.G.)	625
Kinetics of the selective extraction of iron oxides in geochemical samples. Association between Fe and Cu in acid brown soils P. Warnant, H. Martin and A.J. Herbillon (Louvain-la-Neuve, Belgium)	635
Selective extraction procedures applied to geochemical prospecting in an area contaminated by old mine workings F. Sondag (Louvain-la-Neuve, Belgium)	645
 <i>Geochemical Exploration for Petroleum</i>	
C ₂₄ —C ₂₇ degraded triterpanes in Nigerian petroleum: Novel molecular markers of source/input or organic maturation? C.M. Ekweozor, J.I. Okogun, D.E.U. Ekong (Ibadan, Nigeria) and J.R. Maxwell (Bristol, England)	653
A contribution to geochemical correlation between crude oils and potential source rocks in the Eastern Molasse Basin (southern Germany) A. Hirner, W. Graf and P. Hahn-Weinheimer (Garching, F.R.G.)	663
The organic matter of a Gulf Coast well studied by a thermal analysis—gas chromatography technique A.Y. Huc (Woods Hole, Mass., U.S.A. and Orléans, France), J.M. Hunt and J.K. Whelan (Woods Hole, Mass., U.S.A.)	671
 <i>Paper belonging to the section Rock Geochemistry:</i>	
Geochemical exploration of a Precambrian batholith, source of a Cu-W mineralization of the tourmaline breccia type in southern Finland G. Gaál, K. Front and K. Aro (Helsinki, Finland)	683