

Contents

Introduction

J. Parnell	1
------------------	---

Nomenclature and Methodology

Nomenclature, Classification, Characterization, and Genesis of Natural Solid Bitumen (Migrabitumen)	
H. Jacob	11

The Analysis of Organic Matter in Ore Deposits	
A.P. Gize	28

Transmission Electron Microscopy of Carbonaceous Matter in Precambrian Shungite from Karelia	
J. Jehlicka and J.-N. Rouzard	53

Interpretation of Thermal Mesophase in Vanadiferous Bitumens from Upper Proterozoic Lava Flows (Mítov, Czechoslovakia)	
B. Kříbek, V. Holubář, J. Parnell, Z. Pouba, and J. Hladíková	61

Petroleum in Modern Hydrothermal Systems

Hydrothermal Activity and its Effects on Sedimentary Organic Matter	
B.R.T. Simoneit	81

Hydrocarbons, Sulphides, and Carbonate Deposits Related to Sublacustrine Hydrothermal Seeps in the North Tanganyika Trough, East African Rift	
J.-J. Tiercelin, J. Boulègue, and B.R.T. Simoneit	96

Bitumens in Precious Metal and Mercury Deposits

Hydrocarbons and Gold Mineralization in the Hot-Spring Deposit at Cherry Hill, California E.C. Percy and R.C. Burruss	117
Gold and Other Metals in Graphite C.B. Dissanayake	138
Noble Metals Associated with Organic Matter, Kupferschiefer, Poland H. Kucha	153
Bitumen and Dispersed Organic Matter Related to Mineralization in Stratabound Deposits, South China D. Liu, J. Fu, and R. Jia	171
The Association of Cinnabar and Bitumen in Mercury Deposits of the California Coast Ranges C.E. Peabody	178

Bitumens in Uranium/Thorium Deposits

Bitumens in Uranium Deposits P. Landais	213
Nature and Role of Organic Matter in Sandstone Uranium Deposits, Grants Uranium Region, New Mexico, USA C.E. Turner, N.S. Fishman, P.G. Hatcher, and E.C. Spiker	239
Uranium-Hydrocarbon Association in Francevillian Uranium Ore Deposits, Lower Proterozoic of Gabon F. Gauthier-Lafaye and F. Weber	276
Kerogens and Bitumens in Precambrian Uraniferous Ore Deposits: Witwatersrand, South Africa, Elliot Lake, Canada, and the Natural Fission Reactors, Oklo, Gabon B. Nagy	287
Paragenetic Relationships of Vein Pyrobitumen in the Panel Mine, Elliot Lake Uranium District, Ontario, Canada J. Mancuso, J. Frizado, J. Stevenson, P. Truskoski, and W. Kneller	334
Mineralogy of Thoriferous Bitumen Nodules, Northwest Irish Basin B. Monson	350

Organic Matter Associated with Mineralized Reduction Spots in Red Beds	
B.A. Hofmann	362

Bitumens in Base Metal/Manganese Deposits

Organic Matter (Bitumen and Other Forms) as the Key to Localisation of Mississippi Valley-Type Ores	
C.S. Spirakis and A.V. Heyl	381

Bitumen Associated with Precipitation of Sulphides in Carbonate-Hosted Vein Mineralization, North Greenland	
U.H. Jakobsen and H. Ohmoto	399

Geochemical Data for Organic Matter in Stratabound Sulphide and Other Ore Deposits in China	
W. Yang and Y. Liu	415

Organic Matter and its Significance for the Genesis of the Copper-Bearing Shales (Kupferschiefer) from the Fore-Sudetic Monocline (Poland)	
Z. Sawlowicz	431

Occurrence of Anthraxolite (Bitumen) Spheroids in Xiangtan-Type Manganese Carbonate Deposits of South China	
D. Fan, T. Liu, P. Yang, and J. Ye	447

Applications to Exploration for Metals and Hydrocarbons

Occurrence and Significance of Metals in Solid Bitumens: An Organic Geochemical Approach	
J.A. Curiale	461

Metal Enrichments in Bitumens from the Carboniferous of Ireland: Potential in Exploration for Ore Deposits	
J. Parnell	475

Polymerisation of Hydrocarbons by Radioactive Minerals in Sedimentary Rocks: Diagenetic and Economic Significance	
B. Rasmussen, J.E. Glover, and C.B. Foster	490

Chemical Age Dating of Hydrocarbon Migration Using Uraniferous Bitumens, Czech-Polish Border Region J. Parnell	510
Subject Index	519