Whiteman A J The Geology Of The Sudan R Lic

Contains details on the geological units of Nigeria and the associated mineral resources. The book is divided into three parts. Part 1 discusses the geology of the crystalline rocks and their regional distribution while the sedimentary basins constitute the subject of Part 2. Part 3 takes the mineral resources of Nigeria one on one, their geological environment, mode of occurrence, localities and where possible the reserves estimation. Thereafter, an account of the previous and current mining policies (including that of petroleum) of the Nigerian government is given and goes ahead to list some specific investment opportunities in the solid minerals sector.

This book furnishes a detailed description of the deposits of metallic, non-metallic, solid energy, gemstones and industrial minerals in Nigeria with emphasis on their location, geological setting, mode of occurrence, physical and chemical characteristics, ore reserve estimates and metallogeny. It also provides a geoscientific analysis of the solid mineral sector, mineral production statistics, mining, and potential targets for mineral exploration. There are twenty chapters in the book, divided into five parts: Part 1 (geological setting), Part 2 (metallic minerals), Part 3 (energy minerals), Part 4 (industrial minerals & gemstones), and Part 5 (metallogeny, mining & exploration). This is an invaluable source of information, not only for geology and mining students, but also for practicing geoscientists, exploration and mining professionals and administrators in government and private companies who are interested or involved in economic geology, mineral exploration, and mineral resource development in Nigeria

The Geology of the Sudan RepublicProceedings. Ed. by T.F.J. Dessauvagie and A.J. WhitemanNigeria: Its Petroleum Geology, Resources and PotentialSpringer Science & Business Media

Geology is the Component of Encyclopedia of Earth and Atmospheric Sciences, in the global Encyclopedia of Life Support Systems (EOLSS)), which is an integrated compendium of twenty Encyclopedias. The theme on geology in the Encyclopedia of Earth and Atmospheric Sciences, presents many aspects of geology under the following nine different topics: The Organized Earth.; Tectonics and Geodynamics; Igneous and Metamorphic Petrology; Sedimentary Geology and Paleontology; Overview of the Mineralogical Sciences; Geology of Metallic and Non-Metallic Mineral Resources; Regional Geology; Geology of Petroleum, Gas, and Coal; Environmental and Engineering Geology.

This unique volume discusses various aspects of the Grand Ethiopian Renaissance Dam (GERD) and the Aswan High Dam (AHD) including their positive and negative impacts. It presents up-to-date research findings by Egyptian scientists and researchers covering several interesting hot topics under the following main themes: · Major impacts of GERD compared with the AHD · Environmental impacts of the AHD · Modeling scenarios investigating the impacts of GERD on the AHD and downstream · Environmental and social impacts of GERD on Egypt · Status and assessment of the sediment of the AHD reservoir and modeling the impacts of GERD on Lake Nubia sediment accumulation · Proposed scenarios for maximizing the benefits of the AHD reservoir · International aspects of GERD and the AHD The volume also offers a set of conclusions and recommendations to optimize the cooperation between Egypt, Sudan, and Ethiopia. It appeals to postgraduate students, researchers, scientists, professionals and policy planners.

At attempt is made here to provide a comprehensive The Basement "massifs" roughly delimit the main account in book form of the Petroleum Geology of sedimentary areas of the: Nigeria, a country which in 1979 was the world's 1. ABAKALIKI, BENUE, GONGOLA AND YOLA sixth largest oil producer and rated the twelfth gIant TROUGHS petroleum province of the world by Ivanhoe (1980) 2. BIDA OR MIDDLE NIGER BASIN in terms of known recoverable resources (cumulatIve 3. SOKOTO EMBAYMENT OF THE IULLEM production + proven + probable reserves) of oil and MEDEN BASIN 4. BORNU-CHAD BASIN gas. . 5. DAHOMEY BASIN Nigeria, which has been an indepe. ndent sovereIgn country since 1960, faces the AtlantIc Ocean on the These basins and troughs, taken together with the south, is bounded by the Peoples' Republic of Benin onshore part of the Nigeria Delta Complex, occupy (ex-Dahomey) on the west, by the Republic of Niger about 178 000 square miles, half the total area of and by the Sahara on the north, the Republic of Chad Nigeria. Figure 3 shows the area of Nigeria in com on the northeast, and is bounded by the Umted Re parison to areas of other well known petroleum public of Cameroun on the east. It now consists of provinces and units, such as the Gulf. Coast of. the 19 states organized in a federation and, largely be United States, North Sea etc.

Developments in Geotectonics, 12: Sedimentary Basins of Continental Margins and Cratons focuses on the formation, movements, characteristics, and evolution of sedimentary basins of continental margins and cratons. The selection first offers information on mechanisms of basin subsidence and rheology of the lithosphere. Discussions focus on hypotheses of basin subsidence mechanism, testing the hypotheses, elastic properties and flexural rigidity of the lithosphere, and rheology of young continental margins. The text then elaborates on flexure of the lithosphere and continental margin basins and thermal and mechanical evolution of the Michigan basin. The book ponders on the formation of sedimentary basins of graben type by extension of the continental crust and major synchronous events in continental shelves. Topics include inception of shelf development, mid-cretaceous change, taphrogenic subsidence, and energy budget of wedge subsidence mechanism. The manuscript also examines development of graben associated with the initial ruptures of the Atlantic Ocean and observations on the processes of sedimentary basin formation at the margins of Southern Africa. The selection is a dependable reference for readers interested in the study of continental margins.

Since the 3rd edition of this publication, emphasis within the petroleum industry has shifted from exploration to appraisal and development of existing hydrocarbon resources. This change is reflected in this new 4th edition, which has been significantly expanded to accomodate additional material. The centrepiece of the book, however, remains a series

of descriptions, in stratigraphic order, of the depositional history and hydrocarbon related rock units of the North Sea.

The continental margins of the world constitute the most impressive and largest physiographic feature of the earth's surface, and one of fundamentally great geological significance. Continental margins have been the subject of increasing attention in recent years, an interest focused by a body of new data that has provided new insights into their character. This interest was further stimulated by the realization that, in addition to the abundant living resources, continental margins contain petroleum and mineral resources that are accessible with existing technology. This realization, along with their basic geological importance, has provoked further research into the nature of continental margins throughout the world. A summary of these findings, as related to both recent and ancient continental margins, is the subject of this book. At various times in the past we had been approached individually to prepare a basic reference to continental margins; we then proposed to do such a volume jointly. However, the stimulus for the present volume eventually arose from a Penrose Conference arranged through the Geological Society of America. This conference was attended by specialists of numerous disciplines and from throughout the world, many of whom insisted that such a volume would be both timely and useful. Consequently, we agreed to undertake the task of assembling this book, with the objectives of making it available as soon and as inexpensively as possible.

This text provides a snap-shot of current understanding on the petroleum geology of the East Irish Sea and adjacent areas.

In this text, attention is focused mainly on those literature is accessible, however, it is to be expected countries in western Africa lying south of the Sahara, that teachers and lecturers will know of it and will be that is, between about SON and 15°N, and westward able to acquaint their students with it, where neces of about 15°E. Parts of the region as far north as sary. about 200N are considered from time to time, for A glossary of terms is provided at the end of the purposes of correlation and cQntinuity. The map on volume, and there is a summary at the beginning of p. xiii indicates the approximate extent of the cover each chapter. age. This book is dedicated to the many colleagues and The principal aim is to provide a broad view of students with whom we have worked in West Africa West African geology as a whole, for undergraduates and who have stimulated and encouraged our teach who are studying for honours degrees in geology and ing and research in various ways. We hope also that it may help the work of international organizations who already have an understanding of basic geologi cal principles. It is increasingly important that such as AGID, CIFEG and UNESCO to encourage the growing trend towards geological co-operation geologists working in this region should see it as made up of geological 'provinces' which transcend and correlation between different countries in West national boundaries. Africa.

Following on from the first 2 books in the series, Sedimentary Basins of the World, which covered Chinese Sedimentary Basins (Volume 1) and South Pacific Sedimentary Basins (Volume 2), comes Volume 3, on African Basins. Africa covers a larger land area than the USA, Europe, India and the ASEAN nations put together. It is rich in natural resources, including oil, gas, coal and nearly every metalliferous mineral. Yet Africa is still one of the least explored continents. This book brings together in one volume, concise reviews of basins previously documented in a vast array of diffuse literature. It also contains some of the first detailed accounts of several basins which have never before been described in such depth. These include the onshore Owambo, Iullemmeden, and Sudanese rift basins, and the offshore basins of southern Africa. The contributions are by authors, and teams of authors, with great knowledge and experience of the basins that they describe. The thirteen chapters are arranged in 3 parts covering North Africa, Central Africa and Southern Africa and the book is illustrated by maps, cross-sections, stratigraphic sections and seismic lines. Each chapter includes a comprehensive bibliography and the book concludes with a subject index. For academic geologists researching the geology of Africa, and for industrial geologists seeking natural resources within African sedimentary rocks, this book is an invaluable source of information.

This book is the first of three volumes in which the recent knowledge of the extent and chronology of Quaternary glaciations has been compiled on a global scale. This information is seen as a fundamental requirement, not only for the glacial workers, but for the wider user-community of general Quaternary workers. In particular the need for accurate ice-front positions is a basic requirement for the rapidly growing field of palaeoclimate modelling. In order to provide the information for the widest-possible range of users in the most accessible form, a series of digital maps was prepared. The glacial limits were mapped in ArcView, the Geographical Information System (GIS) used by the work group. Digital maps, showing glacial limits, end moraines, ice-dammed lakes, glacier-induced drainage diversions and the locations of key sections through which the glacial limits are defined and dated are included. For major parts of Europe also the extent of the maximum Eemian transgression has been indicated. The digital maps in this volume cover all of Europe and parts of northwestern Siberia. Both overview maps and more detailed maps are provided.

This book broadens readers’ understanding of the stratigraphic framework and structural styles for improved hydrocarbon prospectivity in the intermediate and deeper horizons of the eastern Coastal Swamp Depo-belt of Nigeria’s Niger Delta Basin. It equips readers to interpret complex sedimentary units, such as the paralic sequence of the Niger Delta Basin, using sequence stratigraphic tools integrated with well logs, biostratigraphic, paleobathymetric and seismic data. It also offers numerous tips and insights into reservoirs, seals, source rocks and hydrocarbon-type trends/distribution across several production fields, and provides a valuable guide to support exploration and production.

Groundwater is Africa’s most precious natural resource, providing reliable water supplies for many people. Further development of groundwater resources is fundamental to increasing access to safe water across the continent to meet coverage targets and reduce poverty. There is also an increasing interest in the use of groundwater for irrigated agriculture as the climate becomes more variable. Sustainable development of the resource is not a trivial task and depends crucially on an understanding of the hydrogeology and people with the skills to make informed decisions on how groundwater can best be developed and managed in a sustainable fashion. Despite these obvious needs, however, little attention has been paid to the systematic gathering of information about groundwater resources in the past few decades, with the result that data are patchy, knowledge is limited and investment is poorly targeted. This book was written to start to bridge the knowledge gap. The 29 chapters are written by a combination of practitioners and researchers mainly from within Africa using experience from recent and ongoing projects. The chapters highlight the complexity and variety of issues surrounding the development and management of groundwater resources across Africa, and provide a snapshot of groundwater research and application in the early 21st century. Chapters range from strategic discussions of the role of groundwater in development and poverty reduction, to case studies on techniques used to develop groundwater, and modelling methods for managing groundwater systems.

Exploratory activities carried out in the Anambra Basin have revealed that the basin has the potential of generating hydrocarbon. Subsurface core samples obtained from Enugu 1325 and 1331 wells within the Anambra Basin were utilized in this study with the aims of characterizing the organic matter as well as determining the maturity in order to deduce the hydrocarbon potential of the basin. The study was also aimed at determining the palaeo-depositional environment as well as highlighting the source input of the organic matter. The analytical procedure for

total organic matter and rock eval pyrolysis was achieved by the use of LECO 600 analyzer. Soluble organic matter (SOM) was determined by the use of Soxhlet Extractor while whole rock analysis and biomarker distributions were determined by the use of gas chromatography (GC) and gas chromatography/mass spectrometry (GC-MS) respectively. The lithologic sequence of both wells consists of coals, shales and siltstones. The coals are black while the shales range from light to dark grey with some coal intercalation. The coals and shales are fissile while the siltstones with light grey colour are medium grained. Results of the Total Organic Carbon (TOC), Soluble Organic Matter (SOM) and Generic Potential (GP) ranged from 1.59 - 70.33wt%, 238.1 - 4095.2 ppm and 2.34 - 177.36 respectively. These imply that the source rocks are moderately to fairly rich in organic matter. Cross plots of hydrocarbon potential versus TOC, SOM against TOC indicated that the source rock is Type III and gas prone. Tmax value ranges from 426 - 435 degrees C and Bitumen ratio is from 22.4 - 106 which indicate low maturation level for the source rock. The ratios of C29 hopane (beta)(alpha)/(alpha)(beta), C30 (beta)(alpha)/(alpha)(beta), and 22S/22S+22R C32 hopane ranged from 0.32 to 0.57, 0.20 to 0.59, and 0.49 to 0.56 respectively thus suggesting immature organic matter. Cross plot of hydrogen index (HI) versus Tmax, production index (PI) versus Tmax both suggest that the source rock is immature. Methyl Phenanthrene Index (MPI-1), Methyl Dibenzothiophene ratio (MDR) and calculated vitrinite reflectance (Rm), showed ranges of 0.14-0.76, 0.99-4.21, 0.62-0.82 respectively. These further indicate immature to marginally mature status for the sediments. Values of C24 tetracyclic/C24 tricyclic terpanes and the C19/C20 tricyclic terpane ratios, show respective ranges of 1.54-2.25 and 0.74-1.34 respectively, which are indicative of terrigenous organic matter. The dominance of C29 over C28 and C27 further indicate higher terrigenous input. The abundance of 1,2,5 TMN(trimethyl naphthalene) suggests a significant land plant contribution to the organic matter. The Pr/Ph ratio values of 7.2 - 8.9 point to terrestrial organic input under oxic conditions. A cross plot of Ts/Ts+Tm versus dia/(dia + reg) C27 steranes and high ratio of C30/C29Ts suggests suboxic depositional condition. The presence of C27 to C29 steranes and diasteranes indicates mixed sources (marine and terrigenous) with prospects to generate both oil and gas. It can be deduced that the sediments were deposited in a suboxic, low Eh environment, and contain moderately to fairly rich organic matter with a substantial terrigenous input. The source rock has the potential to generate gas rather than oil given sufficient maturity.

This book is devoted to different aspects of tectonic researches, especially to modern geodynamic processes. Syntheses of recent and earlier works, combined with new results and interpretations, are presented here for diverse tectonic settings. Most of chapters include up-to-date materials of detailed geological-geophysical investigations, which can help more clearly understand the essence of mechanisms of different tectonic processes. Among general problems of tectonics are discussed processes in axes of slow-spreading mid-ocean ridges on example of central part of Mid-Atlantic Ridge and in continental collision zones. Formation of sedimentary basins are considered on examples of Niger Delta, Triassic Cuyana Basin (Argentina), and Mesozoic and Cenozoic basins of the Alpine margin (Tunisia); neotectonic processes examined in Turkey and Morocco; tectonic evolution of the southern margin of Laurasia in the Paleozoic discussed as well as interrelation of western Troms-Lofoten and the Lewisian complexes in the Midle Paleoproterozoic.