News In Brief . . .

Ghana Hosts First Meeting of New IUGS Executive

January 20 - 24, 1981, Accra and Koforidua, Ghana

The Executive Committee's 23rd Session will be remembered for a number of notable "firsts". This was the first time that the new IUGS management team had met in full force since the elections at the Council's VI Session in July, 1980, headed by a new President - **Prof. E. Seibold** (F.R.G.) and a new Secretary General - **Dr. C.C. Weber** (France). And, for the first time in IUGS history, they met on the African continent - in Accra and Koforidua - where the Ghanaian welcome they received could not have been warmer.

In the tradition started during the Executive's 20th Session in Zurich, a "mini-conference" preceded the meeting - this time devoted to the Precambrian of Africa and its mineral resources, and co-sponsored by Unesco, GSA and IGCP. The conference too boasted its "firsts": it succeeded in bringing together one of the largest gatherings of anglophone and francophone Africans "under one roof"; it also charted some practical proposals for regional programs to be incorporated into Unesco's new "Geology for Development" project (see "Conference Reports" section).

Reporting to the Executive on the scientific results of the conference, **Dr. C.A. Kogbe** (Nigeria), a new Vice President of IUGS and Secretary General of GSA, noted that input to the program proposals had largely come from West Africans and that many challenges lay ahead in terms of meaningfully integrating the various geological components in Africa.

Another new initiative taken by the Executive stemmed from the Committee's first-hand appreciation of problems that are potentially serious for developing countries. An exploratory working group on geology as related to human problems was established, aimed at

- (i) identifying major problems of human activity and environment which need geological study and/or attention by geoscientists;
- (ii) defining the most serious of the above-noted problems and relating them to specific actions that might be taken by IUGS or its affiliates to resolve them;
- (iii) recommending a continuing mechanism whereby IUGS could monitor geoscientific activity in these areas and stimulate or initiate activity where necessary, and
- (iv) suggesting actions needed to increase the flow of geological publications, improve geological libraries, and to strengthen geological capabilities in developing countries for more effective action in these areas.

Prof. R. Trümpy (Switzerland), Past President of IUGS, agreed to convene the group, which will probably consist of about 6 members representing appropriate IUGS constituent bodies, the IGCP and associations such as the IAEG, IAH, AGID, and INQUA. In drafting the terms of reference for the group, **Dr. J.A. Reinemund** (U.S.A.), IUGS Treasurer, noted

that it will also look into the status of present activity and needs for additional activity in subjects such as environmental pollution, waste disposal, environmental safety, geological hazards, geological aspects of urban development and land utilization, and the coordination of research on energy and mineral resources.

Other highlights:

Three new member countries were accepted, pending confirmation by Council at its next session: **Ecuador, Jamaica, and Transkei**, all under Category I;

A bold new proposal by the Chairman of the Advisory Board for Publications, **Dr. D.F. Merriam** (U.S.A.) - to start a new IUGS scientific journal called "Geology International" was discussed at length and will be examined in greater detail by both the Advisory Board and the Executive;

The terms of reference and the objectives of the IUGS Advisory Committee on Comparative Planetology, headed by **Dr. J.W. Head** (Chairman) and **Dr. R.A.F. Grieve** (Secretary), were approved;

The scope of the newly-appointed working groups under ICL (see "News in brief") and the program's plans and budget were scrutinized;

The progress made in defining the IUGS Research Development Program, under Board Chairman **Dr. W.W. Hutchison** (Canada), was commended and the Chairman was asked to appoint the proposed members of the Board.

A remarkably large number of annual reports were submitted by affiliated associations, who unlike the IUGS commissions,

Escorted to the haunting tunes of the traditional horns (above), the Executive Committee was given the privilege of meeting "Nana" (below, shaking hands with Prof. Seibold), the supreme chief of the New Juabeng Traditional Area, Koforidua, Ghana, as well as his family and senior advisers.

Left to right: IUGS Bureau members **Dr. J.A. Reinemund**, Treasurer, **Prof. Dr. E. Seibold**, President, and **Dr. C.C. Weber**, Secretary General. At far right is **Mme. L. Bourlard**, IUGS Executive Secretary.

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are encouraged but not required to report on their activities annually. In keeping with the practice established over the last few years of rotating representation from the various IUGS constituent bodies, invited observers at the 23rd session included **Prof. A. Kröner** (F.R.G.), Secretary of the Commission on Tectonics, **Dr. L. Delbos** (France), Secretary General of ASGA, **Dr. G.O. Kesse**, President of GSA, and **Dr. E. von Braun**, Secretary of IGCP.

The Executive is especially indebted to **Dr. G.O. Kesse**, Director General of the Geological Survey of Ghana, his staff at the Survey, and also to **Mr. J.E. Cudjoe**, former Vice President of IUGS, for their untiring assistance with all the arrangements for the 23rd Session and their kind hospitality. (*Minutes of the 23rd Session have been distributed to all constituent and related bodies of IUGS; additional copies are available, on request, from the IUGS Secretariat, Maison de la Geologie, 77, rue Claude Bernard, 75005 Paris, France.*)

Dr. G.O. Kesse (second from left) joins the Executive Committee during the final session; others are, left to right, Vice Presidents P.F. Howard (Australia), C.A. Kogbe (Nigeria), F.F. de Almeida (Brazil).

Deep Sea Drilling Recovers Oldest Oceanic Sediments

Scientists aboard the drilling research vessel "Glomar Challenger" have completed one of the technologically most difficult and demanding drilling projects ever undertaken in the oceans. They have recovered the oldest basement and sedimentary rocks ever sampled from the oceans.

To accomplish this, drilling operations at a critical scientific site about 300 miles east of Florida were carried out between October 20 and December 16, 1980, as part of Leg 76 of the Deep Sea Drilling Project (DSDP) in the international phase of ocean drilling. Scientists from six nations are participating in the research, under the leadership of **Dr. Robert E. Sheridan** of the University of Delaware, U.S.A., and **Dr. Felix M. Gradstein** of the Geological Survey of Canada, the co-chief scientists on the cruise.

The operation, working out of Ft. Lauderdale, Florida drilled to a depth of 5498 feet beneath the sea floor after constructing a re-entry cone-casing system to 1710 feet. This is the deepest that casing has ever been run in the deep ocean floor. Six drill bits were used and changed via the re-entry system to drill through the hard sedimentary rocks.

The oldest sedimentary rocks sampled in the deep ocean basins were drilled below a target seismic reflection boundary called Horizon D, which has been mapped over a wide area of the Western North Atlantic Ocean nearest the North American Continental Margin. This reflector, which marks a transition from soft to hard sedimentary rocks, has never before been sampled in the oceans. Because the North Atlantic Ocean, the oldest of all the existing oceans was created by a rifting apart of Africa and North America and the spreading apart of these continents, the oldest sediments of the ocean are confined to regions nearest the continents. Dr. Sheridan, who is a marine geophysicist, has surveyed the extent of Horizon D and is confident that the reflector underlies all the younger sediments farther away from the margin.

Surprising results were obtained upon crossing Horizon D. While the oldest oceanic rocks recovered were Callovian to Oxfordian (Middle to Late Jurassic) in age, they were distinctly younger by several million years than had been expected. Before Leg 76, the oldest oceanic rocks had been recovered by Leg 11 of the DSDP, and were thought to be about 150 ma. Their age may now be revised to about 143 ma. Scientists now believe that this part of the Atlantic Ocean was created by the continents spreading apart at a rate 300 per cent faster than present Atlantic spreading.

The remarkable discovery supports the theory that spreading occurs in pulses and is especially rapid when the continents first break and oceans first form. The theory of pulsation tectonics predicts that these rapid spreading phases are caused by plume eruptions of hot mantle material from the core/mantle boundary, which in turn have the effect of

causing a quiescence in an otherwise reversing magnetic field. Indeed, areas adjacent to the Atlantic Ocean margins are marked by a smooth magnetic field: a magnetometer towed by a ship or plane does not measure large variations.

Such variations are common over the present rift systems of the oceans where relatively slow spreading is now taking place. It is widely believed by geologists that these pulses of fast sea floor spreading cause large scale rises in sea level which periodically flood the continents. The fast pulse in spreading documented on Leg 76 correlates with a major global Middle and Late Jurassic transgression.

Another surprise was the evidence found for changes in the ocean paleoenvironment caused by changes in bottom current activity and continuous surface currents. It had been expected that since the older Atlantic Ocean was much narrower, and pathways to the adjacent Pacific and the Mediterranean Oceans were limited, that deep and surface currents might have been temporarily stifled in the confined Atlantic Basin. Indeed, over 20 m of strongly organic-rich, phosphatic deposits almost directly on the ocean crust show limited flushing of the Middle Jurassic deep basin; younger Upper Jurassic deposits, however, indicate more current action. The oldest sediments deposited 145-153 ma are also rich in the tiny skeletons of many planktonic plants and animals known from the ancient seas once covering Europe and the Mediterranean.

Clearly, the earliest Atlantic Ocean was an open ocean shortly after its origin. Dr. Gradstein, a specialist in Jurassic paleontology, thinks that this helps to explain the puzzles of similar fossils of that time being found in the Pacific and Mediterranean. Both surface and deep currents could have been circulating between these areas as early as Late Jurassic.

Earlier in the cruise, coring at a depth of 2200 feet below the sea floor, the scientists found evidence for much less or no Oligocene bottom erosion (about 35 ma) than previously anticipated. Near 2200 feet there occur two thin, hitherto unsuspected, sediment layers in the deep basin - a multi-coloured clay of Late Cretaceous (70 ma) age, and a chert-rich, Late Eocene (40 ma) one.

From previous drilling by D/V Glomar Challenger in the Blake Bahama Basin sediments, it was expected that a major hiatus would be found, where Miocene (20-27 ma) beds directly overlie the Mid-Cretaceous (100 ma). This hiatus was thought to be the result of erosion 35 ma when the bottom currents intensified under the influence of significant global cooling. The presence of beds where the hiatus was expected, with weathering resistant clay minerals and metals in them, reflects extremely quiescent and slow sedimentation and no erosion in the basin.

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Also accomplished on this cruise was the drilling of a test hole into gas hydrate deposits, a solid ice-like substance of methane and water that covers a wide area of the sea floor on the continental margin east of the U.S.A. Gas hydrates are considered significant because they may signal the presence of exploitable natural gas. For the first time in the marine environment, these methane hydrates were tested in a quantitative geochemical experiment. **Dr. Keith Kvenvolden** of the U.S. Geological Survey, an organic geochemist, measured the pressure changes on specially contained samples as the hydrates decomposed with increasing temperature. These controlled experiments proved the existence of the hydrates and allowed their quantification.

The gas hydrate experiments were only possible because of the development at DSDP of the pressure core barrel (PCB), a device that maintains the pressure on a drilled sample until it can be "bled off" in a controlled experiment on deck. This was the first cruise where the PCB was used routinely and four successful samples were obtained.

Detailed seismic and temperature measurements were also done at the gas hydrate test site. Gas hydrates, being ice-like, have higher seismic velocities than normal sediments, but these velocities drop sharply when the thermal gradient below the sea floor causes the ice to melt. Both the seismic and the thermal measurements made aboard *Challenger* support the theories of gas-hydrate behaviour. Some day these large amounts of methane might be exploited if technology is available.

27th IGC: Moscow

Dr. R. Volkov, Secretary of the U.S.S.R. National Committee of Geologists, informs us that the dates for the 27th International Geological Congress in Moscow have now been set: **August 4-14, 1984**, with excursions scheduled both before and after the Congress.

The Congress Organizing Committee has been named as follows: President: **Acad. Sidorenko**, Vice President of the U.S.S.R. Academy of Sciences; Vice Presidents: **Dr. Zubarev** of the Ministry of Geology; **Dr. Zhabrev** of the Ministry of Gas Industry; **Dr. Khalimov** of the Ministry of Oil Industry; **Acad. Menner**, President of the U.S.S.R. National Committee of Geologists and a Vice President of the IUGS; **Acad. Sokolov** of the Presidium, Academy of Sciences; **Acad. Ianshim** of the Siberian Division of the Academy of Sciences. The Secretary General is **Prof. N. Bogdanov**, while **Dr. Volkov** will be Deputy Secretary General.

The first draft of the Congress' Scientific Program will be submitted to IUGS shortly, and it is anticipated that EPISODES will carry a summary of it in the next issue. All enquiries on the 27th IGC should be addressed to the Secretariat: *27th IGC Secretariat, Lithosphere Institute, 22 Staromónetny per., 109180 Moscow, U.S.S.R. (Tel: 238-8588).*

Ordovician Chart for Australia

Dr. Reuben J. Ross, Chairman of the IUGS Subcommittee on Ordovician Stratigraphy, reports that the Correlation Chart and explanatory notes on the Ordovician system in Australia and New Zealand, prepared by **Dr. B.D. Webby**, has gone to press and will be available for distribution as IUGS Publication No. 7 in April.

Publication No's 1 and 2, on the Ordovician systems in China and the Near and Middle East respectively, have been selling rapidly at the modest price of \$6.00 (U.S.) each or \$10.00 (U.S.) for two if purchased together.

Address all orders to: *EPISODES Secretariat, Rm. 177, 601 Booth St., Ottawa, Canada K1A 0E8.*

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Finance Experts Scrutinize UN Science Centre

The first meeting of an intergovernmental group of experts, appointed to plan the United Nations financing system for Science and Technology for Development, focussed on four elements: the amount of funding required, the optimal means of raising additional resources, the appropriate structure for the financing system, and the identification of the range of activities to be supported by it. Meeting for the second time between November 24 to December 3, 1980, the 27-member group delved into a number of subjects related to existing bilateral and multilateral programmes, potential sources of funding, and institutional arrangements.

Their study is meant to culminate in a thorough report on all the arrangements relevant to operating a financing system that will support a broad range of activities aimed at strengthening the endogenous scientific and technological activities of developing countries, and specifically, to implement some of the measures envisaged in Programme of Action resulting from the UNCSTD meeting in Vienna (see EPISODES 1980, No. 1, p. 46 and No. 2, p. 30). The long-term financing system is expected to become operational in January, 1982.

Pending the system's inauguration, the General Assembly had also created an interim fund, sustained by voluntary contributions and administered by UNDP. The resources of the fund are to be used at the request of Governments to support projects that are congruent with national development policies, related research, and development programs distinct from the activities of the regular operations of UNDP. Following a pledging conference held on November 6, 1980, the resources available to the interim fund are approximately \$48 million (U.S.) in firm and shortly anticipated contributions. The conference had targeted a minimum of \$250 million (U.S.).

In addition to appointing the financial group, the UN Intergovernmental Committee on Science and Technology for Development also established a UN advisory body on science and technology for development comprising 28 scientific and technical experts who are expected to meet once a year. This group will also provide, through the Intergovernmental Committee, advice to the Economic and Social Council and other Intergovernmental bodies of the UN system.

The United Nations Centre for Science and Technology for Development (UNCSTD) was established in June of 1980, pursuant to a decision by the General Assembly, as a new, organizationally distinct entity within the UN Secretariat, headed by an Assistant Secretary-General responsible to the Director-General for Development and International Economic Co-operation, and located at United Nations Headquarters.

Mr. Amílcar F. Ferrari was appointed in May by UN Secretary-General **Kurt Waldheim** as Assistant Secretary-General of the Centre. He joined the UN after having served as Director in the National Council for Scientific and Technological Development of Brazil. Mr. Ferrari had represented Brazil at the UNCSTD meeting in Vienna.

Science Teaching Sub-Committee Invites Papers

The ICSU Committee on the Teaching of Science has set up a sub-committee to collect world-wide information on problems associated with the transition of students from school to university. Anyone interested and willing to collaborate is invited to send papers to sub-committee convener **Prof. M. Matyas**, Institute of Physics, Czech Academy of Science, 18040 Prague 8, Na Slovance 2, Czechoslovakia.

International Mountain Society

An International Mountain Society, recently incorporated in the State of Colorado (U.S.A.) as a non-profit organization, is dedicated to achieving a better balance between human welfare, mountain environment, and development of resources. The Society has evolved from the work of numerous international organizations (including IGU's Commission on Mountain Geocology, the UN University Programme on Natural Resources, Unesco's Man and the Biosphere Programme, and the International Union for the Conservation of Nature and Natural Resources) in recognition that the overuse and abuse of mountain lands has not only caused economic losses, but has also become a major threat to human welfare.

The term "mountain" is interpreted by the Society to include uplands and steep slopes at lower elevations. Problems facing the world's mountain lands and peoples include population pressures, mismanagement of both renewable and non-renewable resources, deforestation, and uncontrolled growth of tourism. Mountains influence life support systems for about 400 million people and affect the welfare of many millions more.

The Society plans to use a rational world-wide, interdisciplinary approach to studying these problems. It will further international collaboration, encourage basic and applied research in disciplines such as natural, earth and human sciences, medicine, architecture, engineering and technology, disseminate and apply knowledge, and help create research centers and national organizations throughout the world. A major component of the Society's work will be the production of a quarterly scientific journal entitled "Mountain Research and Development", co-published with the UN University and supported by Unesco. The first issue is scheduled to appear in May, 1981.

Membership in the International Mountain Society is open to all individuals for an annual subscription of \$25, students - \$18, institutions - \$45. Additional membership categories are Contributing Member - \$1,000 and Benefactor - \$5,000 or

more. Members will receive the quarterly journal and other benefits of the Society. Subscriptions and enquiries should be addressed to: *International Mountain Society, P.O. Box 3148, Boulder, Colorado 80307, U.S.A.*

Acid Rain: A Major Issue in Canada

Air pollution, falling as "acid" rain on the many lakes of Ontario in Canada, is receiving considerable attention from the provincial environment ministry in Ontario and the scientific communities in Canada. The ministry has identified 200 "dead" bodies of water in Ontario destroyed by decades of sulfur dioxide emissions from nickel smelters around Sudbury.

Emissions from polluters in both Canada and the United States produce doses of sulfuric and nitric acid, which end up as acid rain over much of eastern Canada. Lakes in the Canadian Shield lack the natural buffers needed to counteract the acid rainfall and are therefore more susceptible to acidification than those in limestone areas south of the shield.

A recent survey of 500 lakes in pollution-prone areas of Ontario indicates that 75% of them are susceptible to acidification. Scientists hope that a research project currently underway on the survival potential of the eight Dorset Lakes, located in one of the susceptible areas, will answer some questions on the life-expectancy of other lakes, but the project will not be completed until 1983. In the meantime, stronger controls are being placed on major polluters in Ontario, and the federal government is studying possible methods of controlling all of Canada's major acid rain contributors. Maps produced by the Geological Survey of Canada, currently in press, provide information on the potential sensitivity of terrain to acid rain and hence a scientific assessment of its current threat.

Acid rain is obviously a problem that is not unique to Canada; it has been studied by scientists in Europe and North America for over 25 years. A recent OECD study showed that acid precipitation has continued to spread and today covers nearly all of NW Europe.

ESCAP Sedimentary Basins Map Completed

The first edition of a map of the sedimentary basins of the ESCAP region (Asia and the Pacific) is now complete (see index). Apart from China and Mongolia, the basins shown in the map have been compiled or agreed upon by national institutions such as geological surveys, and can therefore be regarded as authoritative. The map is available gratis from the *Mineral Resources Section, ESCAP, The United Nations Building, Rajadamnern Avenue, Bangkok 2, Thailand* - but supplies are limited.

Work on the first edition map sheets has been carried out by a working group under the auspices of IGCP Project 32 - "Stratigraphic Correlations between the Sedimentary Basins of the ESCAP Region". The working group has recommended that the second edition of the map be prepared in colour, and that it be timed, ideally, to benefit from various offshore surveys now in progress or planned.

The map forms part of the major focus of the Project's efforts - production of an atlas of standard stratigraphic columns representing the features of the sedimentary succession in each of the main sedimentary basins of the ESCAP region and the correlations between them. The first two parts of the "Atlas of Stratigraphy" have been published; Part III, which includes contributions from Australia, Fiji, Tajikistan, Bangladesh, India, Indonesia, Nepal, and Solomon Islands, and which covers the onshore basins of Burma, Japan, Malaysia, and the Philippines, as well as most of India's coal-bearing Gondwana basins, has now been prepared for printing. All inquiries regarding the Atlas should be addressed to the Chief of the Natural Resources Division at the address noted above.

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Lithosphere Program Establishes Working Groups

The Inter-Union Commission on the Lithosphere (ICL) has announced the establishment of nine working groups to address the various scientific problems identified in planning the program's goals (see EPISODES, 1980, No. 3, p.26-27). They are:

1. Recent Plate Movements and Deformation
2. Phanerozoic Plate Motions and Orogenesis
3. Proterozoic Lithospheric Evolution
4. The Archean Lithosphere
5. Intraplate Phenomena
6. Nature and Evolution of the Oceanic Lithosphere
7. Paleoenvironmental Evolution of the Oceans and the Atmosphere
8. Subduction, Collision and Accretion
9. Processes and Properties in the Earth that Govern Lithospheric Evolution.

In addition, a series of eight coordinating committees have been appointed to foster appropriate integration of the various components into the program as a whole, to promote regional cooperation, and to facilitate participation of earth scientists from developing countries and scientists primarily concerned with applications. The committees are:

1. Environmental Geology and Geophysics
2. Mineral and Energy Resources
3. Geosciences within Developing Countries
4. Evolution of Magmatic and Metamorphic Processes

Geothermal Energy in Developing Countries

Development of geothermal energy is becoming increasingly more important around the world as the cost of hydrocarbon fuels continues to soar. Research and development into geothermal energy is currently underway in some 60 (primarily developing) countries. In 1979, the total installed electrical generating capacity of the world was approximately 1950 megawatts, with geothermal fields in 11 countries. The U.S.A. was the largest producer (668mw).

Smaller countries relying heavily on geothermal energy include El Salvador, which meets about 37 per cent of its total electrical production from geothermal sources, and Iceland, with about 33 per cent. The Philippines had only 3mw of geothermal power in 1977, but 220mw in 1979, 223mw in 1980, and 1448mw planned by 1989. A remarkable achievement resulting from a strong government energy policy, enthusiastic Philippine scientists, and the aid of foreign geothermal experts, primarily from New Zealand and the U.S.A. Large geothermal plants are also scheduled for Costa Rica, Guatemala, Indonesia, Kenya, and Nicaragua.

In China, warm springs are present in all its provinces and autonomous regions. However, more than half of the hot springs and fumarols are found in the high temperature thermal zone on the southwestern plateau in Xizang (Tibet) and Yunnan, and the medium temperature zone in the southeastern coastal zone in the provinces of Fujian, Guangdong, Jiangxi and Hunan.

A power plant, built two years ago at the high temperature (up to 150°C or more) thermal field of Yangbajing (in Xizang), has a 1000kw capacity using wet steam. It will be expanded to provide additional electricity to the surrounding area and to the city of Lhasa.

Experimental power stations have also been built in medium and low temperature thermal areas. In some areas without natural hot springs, significant amounts of thermal water have been discovered at shallow depths - such as at Beijing where some 20 production wells have been drilled. Here the water (35° - 69°C) is used for heating, air conditioning, fish farming, and medical treatment. In other areas, low temperature thermal water is also used to heat greenhouses and, in the textile industry, to wash and dry cloth.

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5. Structure and Composition of the Lithosphere
6. Continental Drilling
7. Data Centers and Data Exchange
8. Coordinating Committee of National Representatives.

The ICL Steering Committee and Bureau have put forward a set of recommendations regarding the membership nucleus of each working group, including suggested chairmen; these lists, along with any remaining memberships that may be named by the chairmen and "core" members are currently being finalized.

A report outlining specific terms of reference for the working groups and coordinating committees, the global significance of their work to society and to the activities of other international scientific groups, the scientific rationale for launching the joint program, its organizational and administrative mechanisms, is now available as ICL Report No.1 - "Dynamics and Evolution of the Lithosphere. The Framework for Earth Resources and the Reduction of Hazards." Copies may be obtained from: *Edward A. Flinn, Secretary-General, International Lithosphere Program, c/o Geodynamics Program Office, Mail Code ERG-2, National Aeronautics and Space Administration, Washington, DC 20546, U.S.A.*

The Commission is scheduled to meet again in July in London, Ontario, Canada in conjunction with the IASPEI General Assembly.

Need for Geomagnetic Data

World Data Center A for Solid Earth Geophysics is responsible for maintaining the data base of surface magnetic observations used to derive mathematical models of the earth's main magnetic field (see EPISODES 1979, No. 2, p. 26-28). Principal uses for these models are in navigation, geophysical prospecting for minerals and petroleum, and in scientific studies. They are also useful for correlative studies with LANDSAT.

Because there are many serious gaps in the data base, particularly those data useful in determining recent secular change, and because of the many important analyses being made to determine new models such as MAGSAT and the International Geomagnetic Reference Field (IGRF), **K.L. Svendsen**, a geomagnetic specialist from WDC-A, is attempting to encourage new surveys. He has been visiting responsible institutions and conferring with geophysicists and geologists in several areas of the world where new or more recent magnetic observations are needed. Particularly impressive is the cooperative system established among European observatories.

Having just returned from a tour of 17 countries in West and Central Africa, Mr. Svendsen has found much interest in the project, especially among mining agencies, and has received the promise of assistance from several institutions. Any organizations interested in cooperating on this project and that have not as yet been contacted are encouraged to write to **K.L. Svendsen, World Data Center A for Solid Earth Geophysics, EDIS/NOAA, 325 S. Broadway, Boulder, Colorado, 80303, U.S.A.** Information on the European system may be obtained from **D. Voppel, Deutsches Hydrographisches Institut, Postfach 220, D-2000 Hamburg 4, F.R.G.**

Bauxitization Working Group

Anyone interested in becoming a collaborator in a Working Group on Bauxitization being formed within the framework of the IGCP Project No. 58 - "Mid-Cretaceous Events", is urged to write to the Chairman, **Prof. A.-F. Poignant**, Laboratoire de Géologie des Bassins Sédimentaires, Université Pierre et Marie Curie, Tours 14-15-16, 4ème étage, 4, place Jussieu, F-75230 Paris Cedex 05, France.

The new working group includes **Drs. P. Bildgen** and **B. Hieronymus**, collaborators of the recently deceased **Dr. Jean Nicolas**, founder of the Ecole Française.

Volcanic Eruptions Linked to Climate Changes

Are volcanic eruptions influenced by changes in atmospheric temperatures? **Dr. Michael Rampino**, a geologist with the Goddard Institute for Space Studies, U.S.A., has compared volcanic eruptions with atmospheric changes of the last 100 000 years to ascertain the nature of the relationship between them. His findings indicate that atmospheric cooling preceded many of the great eruptions in history, including the 1883 explosion of Krakatoa near Java. In fact, since the 1940's, the atmospheric temperature has decreased by about 0.9°F, while the number of large volcanic eruptions has increased.

Dr. Rampino believes that over the short term, cooling trends trigger volcanic eruptions because they increase the velocity of the trade winds, which blow opposite to the Earth's rotation. These winds act as a brake on the Earth's rotational speed. He says that "the braking and jarring of the Earth's surface may cause magma to flow in turbulent convection currents underground, which in turn might set off subcritical volcanoes - ones that are ready to blow. Mount St. Helens may have blown its top for this very reason".

Over longer periods of time, such as the glacial periods of the Earth's history, continents sank under the weight of the ice. Water removed from the oceans to form ice sheets reduced pressure on the ocean floors allowing them to rise. When the glaciers melted and water returned to the oceans, continents began to rise and ocean floors to sink. This movement created crustal strains and caused magma to flow beneath the Earth's surface, triggering large volcanic eruptions.

Logo for "Decade" Project

With so much of the planning for the international "Decade of North American Geology" project (see EPISODES 1979, No.4, p.28-29) being geared to publications, an important factor in the choice of the project's logo was its suitability to the spine of a book or the corner of a page. The Geological Society of America decided to run a contest for the logo, and the winning entry (shown below) is based on a design submitted by **Gerald Meyer** of the USGS in Reston.

Current project plans call for a synthesis of knowledge about an entire crustal plate, which will include new tectonic, geological and geophysical maps, correlation charts, geological and geophysical transects, and 26 volumes of regional geology covering the area from the Arctic Ocean to northern South America and the Mid-Atlantic Ridge to Hawaii.

National compilations, including tectonic maps for Mexico and Canada, regional correlation charts for the Phanerozoic rocks of the U.S.A., and the various maps and charts being produced as part of an update of the Geology and Economic Minerals of Canada, will be additional contributions to the Decade project.

Energy Complex in Oklahoma

Oklahoma State Regents for Higher Education have endorsed a plan to create a new College of Geosciences at the University of Oklahoma (U.S.A.), and to construct a multi-million dollar energy complex. The proposed complex will house the Energy Resources Center, the Oklahoma Geological Survey, the Oklahoma Mining and Minerals Resources Research Institute, the Schools of Geology, Geophysics, Meteorology, Geography, Petroleum Engineering, Geochemistry and Geological Engineering, a computer facility, the core and sample laboratory, a geology-related library, and a proposed new program of mineral economics.

The plan builds upon a history of energy research that once placed the university among the best in the U.S.A. The new college is expected to be in operation by the fall of 1981.

U.S.S.R. Oil Field

Petrostudies, a Swedish consulting firm, reports discovery of one of the world's largest oil fields, known as the Bazhenov accumulation, in western Siberia. According to the report, official Soviet documents estimate the field to have oil reserves of 619 billion tons in place over a one million square kilometre area.

While deposits of bituminous shale have been known in the region since 1965, it is only recently that Soviet geologists have been able to confirm that the shale is oil rich. The problem of extracting the oil is now being worked out.

The oil-rich bituminous shale, named "bazhenite" by Soviet geologists, yields a high quality crude oil that flows freely into wells. In the Great Salym area, twelve wells are apparently producing 7,300 barrels of crude oil daily. Commercial production, however, will not begin until after 1985.

German Geoscientists in Africa

A new group called "German Geoscientists Working in Africa" (Afrikagruppe deutscher Geowissenschaftler) has been formed to facilitate sharing of information on African geoscientific events amongst some 50 F.R.G. geoscientists working in Africa and to foster communications between German and African geoscience institutions on matters of common interest.

The group plans to keep files on the research interests of individual geoscientists in the office of the Secretary, produce a newsletter (in German) twice a year, and hold annual meetings; the topic for 1981 is "Sahara". Heading the group in 1980-81 is **Prof. A. Kroener**, in 1981-82 - **Prof. H. Hagedorn**; the group's Secretary is: **Dr. G. Matheis**, Dept. of Geology and Paleontology, University of Giessen, Senckenbergstr. 3, 6300 Giessen, F.R.G.

Soviet Deep Well

Soviet geologists have apparently drilled a well to a record depth of 10 500m. The well, located in the Baltic shield of the Kola Peninsula, was begun in the 1960's.

In an article in *Izvestiya*, **Yevgeniy Kozlovskiy**, the Minister of Geology, said that geologists had hoped to reach the basaltic layer of the crust below 7000m. Drilling continued, however, through sedimentary layers for 6800m before the granitic layer was reached. At 10 500m drilling is continuing through granite.

Geologists found that below 3000m, the Earth's temperature gradient increased from 1°C per 100m to 2.5°C. They also found copper sulfide and nickel ores at 1600m and 1800m and signs of magnetite, phlogopite, muscovite, and sulfide mineralization at 7000m. Another deep well is planned in Western Siberia to search for new deep-lying sources of oil and gas and to learn more about the geology there.