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Mr Paul Nessling, Acting British High Commissioner to Zambia (left), formally hands over samples of maps and reports produced by the BGS to the Permanent Secretary of the Zambian Ministry of Mines, Mr Albert Kashimu (right). The work was completed as part of a World Bank funded project in northern Zambia.

Zambia Project

The BGS has completed a four-year project in Zambia. The three components of the project comprised regional mapping and geochemical exploration of 15 000 square miles in north-west Zambia, preparation of a modern database and Geographical Information System (GIS) of the mineral resources of Zambia and the production of new 1: 250 000 scale structural geology maps of eastern Zambia showing mineral potential.

The work started in 1997 and finished in August 2001 with the formal hand over shown above. Together with linked projects co-funded by DFID and the EU, some twelve BGS staff were involved at different stages.

Mr Nessling, on behalf of the BGS and the British Government, said in his speech that the work carried out by the BGS would benefit the people and the economy of Zambia for generations to come.

Papua New Guinea's mining industry receives skills boost

Two new contracts worth over US\$250 000, to help Papua New Guinea (PNG) develop its huge mineral resources effectively, have been awarded to the British Geological Survey (BGS).

The contracts, part of a series of projects funded by the World Bank, will help the local mining industry assess ways of improving educational and skill levels among employers and employees and to provide a strategic plan for the implementation of IT-based systems. Both projects began in January 2002 and are expected to last between two and three months. Once in place, these frameworks will be used to help promote the mining potential of PNG throughout the world.

The Head of International at BGS, Dr David Ovadia, said:

“This is great news for the British Geological Survey and great news for Papua New Guinea. It will contribute towards a more effective mining industry that will, in turn, lead to economic development and poverty alleviation in Papua New Guinea.”

The Executive Director of BGS, Dr David Falvey, welcomed the receipt of the contracts. He added:

“The British Geological Survey is no stranger to Papua New Guinea having completed a number of projects including working with the Petroleum Division of the Papua New Guinea Government from 1995 to 1999. The BGS is known internationally for its extensive experience and high quality of work and the awarding of these contracts reflects the capability, experience, and high reputation the BGS has in Papua New Guinea and the Pacific region.”



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Hydrogeology and geochemistry experts from across Europe gathered at BGS Murchison House in October 2001 to discuss the CEC project ‘Water Quality Improvements through Fluoride Reduction in Groundwater of Central Europe’ (IC 15-CT98-0139). Professor Edward Zhovinsky (Fellow of the Ukrainian Academy of Sciences), the leading expert on fluoride geochemistry in Ukraine examines a map of fluoride stream water concentrations in the BGS Regional Geochemical Atlas of Wales.

From left to right: (back) Bryony Hope (BGS), Bozena Machova (Roscon, Czech Republic), Dr Gyorgy Toth (Niobium, Hungary), Dr James Baker (Selor, Netherlands), Dr Peter Rosendahl (Roscon, Netherlands), Dr Kamil Vrana (Hydeko, Slovakia), (front) Fiona Fordyce (BGS) and Prof. Edward Zhovinsky (Institute of Geochemistry and Ore Mineral Formation, Ukraine).



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Visit to the BGS of Ministerial delegation from Mauritania

Following the signing of a contract for geological mapping and other work in Mauritania, the Minister of Mines and Industry, His Excellency Ishac Ould Rajel (*front row, second from left*) and his party visited the BGS Headquarters at

Keyworth on 14 June 2001. The Mauritanian party included their Ambassador to Britain, His Excellency Dr Diagana Yousouf (*standing behind the Minister*) and Directors/Heads of various Mauritanian institutes of geology, minerals, and petroleum. Also pictured are BGS staff hosting the visit, including David Ovadia, Head of International

(*front row left*), Peter Mosley, Project Manager for Mauritania (*back row right*), and Eugene O'Connor, Regional Manager, Africa and the Middle East (*standing in front of Mr Mosley*).

The BGS work in Mauritania has already started with a reconnaissance field trip and a visit by the project manager to start the mobilisation process. Detailed fieldwork will start in the autumn when the temperature cools in Mauritania, and is expected to last for at least four years.

Stephen Foster named Groundwater Management Advisory Team Leader

Dr Stephen Foster (a member of the BGS Directorate during 1991–99 and more recently based at the BGS Wallingford Office) has been named by the World Bank and Global Water Partnership as Leader of their Groundwater Management Advisory Team (GW-MATE), a major joint initiative following on the World Water Forum at The Hague in March 2000.

Dr Foster was also awarded the CIWEM Transatlantic Reciprocal Award in June 2001, for the best paper published in the Journal of the Chartered Institution of Water & Environmental Management during 1996–2000 as judged by the NEWWA Editorial Panel (the CIWEM sister-organisation in the USA). The paper entitled ‘Groundwater Resources — balancing perspectives on key issues affecting supply and demand’ was originally presented to the CIWEM British Drought Conference of March 1996 and published in June 1997.



R Tyler-Whittle, BGS © NERC

Science and Society:

Matthew Attree from BGS Wallingford explaining the importance of groundwater to school children at the Environment Agency Groundwater Festival, held at the Hill End Field Centre, Oxford in May 2001.



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Stephen Foster.

Blood of the Vikings

A mention of 1066 and we all recall the Battle of Hastings. However, perhaps fewer people remember that Harold Godwinson defeated the last Viking invasion forces at Stamford Bridge, just days before his bloody encounter with William of Normandy.

Beginning on 6 November 2001, *Blood of the Vikings*, a BBC2 archaeology series with presenter Julian Richards, examined the history of the Vikings in Britain.

In *Last of the Vikings*, aired Tuesday 4 December, Julian re-examined skeletons from Riccall, Yorkshire, the site where the Viking army landed and disembarked. Oxygen and strontium analysis provided by Carolyn Chenery and Jane Evans of the NERC Isotope Geoscience Laboratory at the BGS, helped to determine whether these bones could provide the first physical evidence for the Battle of Stamford Bridge. Chemical evidence stored in teeth at the time they

were formed provides evidence about where a person lived, their lifestyle, and what they ate. Oxygen isotopes give an indication of the type of climate, while strontium isotopes help identify the underlying geology, at a person's place of origin. By analysing both oxygen and strontium isotopes, it is possible to identify the general locality where the people buried at Riccall came from.

Geological Gardens Competition

The BGS has commissioned the Royal Institute of British Architects to run a competition to design a series of 'geological' gardens in the BGS grounds at Keyworth. The gardens are to be a permanent educational facility, and will seek to explain not only the geological history but also the evolution of life on Earth. As well as increasing public understanding of science, the BGS hopes that the gardens will prove to be an enjoyable and exciting experience for visitors of all ages.

In November 2001, an open day was held at Keyworth for all potential competitors, and over 130 architects, landscape garden designers, artists and sculptors attended the event. Dr Stuart Monro, the scientific director of Edinburgh's Dynamic Earth exhibition, gave a talk on some of the major events in Earth's geological history.

The competition has attracted more than 80 entries, including some from Japan, the USA, Canada, and the Netherlands. A panel of judges, which includes Stuart Monro; Professor Jane Plant; Jane Buxey, the Chair of the Stone Federation; and Rosie Atkins, the Editor of the BBC's Gardening Illustrated magazine (recently appointed Curator of Chelsea Physic Garden), will assess the designs for their innovation, educative value, and practicality. The results will be announced in May 2002.

The construction of the Gardens is likely to be staged over a number of years, as funding from sponsors is secured.

The Earth Alert Festival of Geology **Scarborough 23-26 August '02**

Earth Alert is the only national event designed to encourage amateurs and professionals, children and lifelong devotees to share their enthusiasm in an atmosphere of fun and adventure. The three-day Festival will include a 'Discovery Room' for youngsters, where science and play will mix under the watchful eye of specialists; an exhibition; and a series of lectures. There will be guided geological walks and field trips. The events encompass the whole spectrum of geology from the deepest bedrock to the ceramic gloss on the Festival catalogue.



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