The Black Country Geological Society

NEWSLETTER No. 148
August 2001

The Society does not provide personal accident cover for members or visitors on field trips. You are strongly advised to take out your own personal accident insurance to the level you feel appropriate. Schools and other bodies should arrange their own insurance as a matter of course.

Leaders provide their services on a purely voluntary basis and may not be professionally qualified in this capacity.

The Society does not provide hard hats for use of members or visitors at field meetings. It is your responsibility to provide your own hard hat and other safety equipment *(such as safety boots and goggles/glasses) and to use it when you feel it is necessary or when a site owner makes it a condition of entry.

Hammering is seldom necessary. It is the responsibility of the hammerer to ensure that other people are at a safe distance before doing so.

FUTURE PROGRAMME

Lecture meetings are held at Dudley Museum, St James's Road, Dudley. Phone (01384 815575)
7.30 for 8 o' clock start.

THURSDAY 13th TO SATURDAY 15th SEPTEMBER Fourth Annual UKRIGS conference 'Upon this Rock' RIGS & the Planning System. This year this will be held at Stoke Rochford Hall near Peterborough. This includes a very varied programme of talks, workshops and field trips and concludes with the annual general meeting.

MONDAY 24th SEPTEMBER Lecture: Enigmatic fossils of the Burgess Shale.
Duncan Friend(formerly Rockwatch)
The Burgess Shale of British *Columbia,* Canada has yielded thousands of fossils showing exquisite soft-bodied preservation since its discovery by Charles Doolittle Walcott in *1909.* Nearly 100 years on and what is the current state of play with our understanding of these magnificent fossils? This talk gives a brief history of the work, with a look at some of the bizzare-looking Burgess Shale creatures. Specific attention is to be paid to *Eldonia ludwigi* a medusi-form creature with relatives found in China, Australia, U.S.A., Poland and Siberia. Finally, the trials and tribulations of excavating fossils from the Burgess Shale site will be discussed.

SATURDAY 29th SEPTEMBER. Field meeting 'TALKING DIRTY'.
A study of superficial landscape deposits in the Telford area. Meet at 10.15 am at the Granville Waste Disposal Site, for a conducted tour. The Site is off the A5. (Grid Reference SJ 724 120). From Jot 4 of the M54 head north on B5060 until you come to a roundabout with the *A5.* Turn towards Cannock. The Site is on the left hand side of the road. The geo-technical aspects *of* the site, the geology, the old mine workings and the recovery of methane for power will be explained. The waste site is a modern state of the art facility, which is forming the geology and landscape of the future.

12 00 am. Visit the old Lillishall Furnaces and canal basin in Granville Country Park, followed by a walk over the old coal tip, where it is possible to find fossils amongst the coal waste .Lunch at the Bell and Bails St. Georges.

14 00 pm. There will be an easy walk up Lillishall Hill, which has glorious views over the landscape of Shropshire. There will be a chance to see the geology exposed in the landscape and view the glacial legacy of The Weald Moors and surrounding superficial till deposits.

SATURDAY 6th OCTOBER. Family Fossil Fun Day at Dudley Museum between lOam and 4pm. This will feature fantastic fossils and a wide range of activities including quizzes, remote control trilobite, fossil cast making and more. Admission is free.

SATURDAY 13th OCTOBER. Walsall Local History Fair. Held at Walsall Town Hall, Leicester Street, Walsall from 10.OOam until 400pm. Admission free.
Last year's event was highly successful, enjoyable and interesting and the event is recommended for
anyone interested in Walsall or Black Country history and heritage.

MONDAY 29th OCTOBER. Lecture: The Disposal of Carbon Dioxide in Spent Oil Wells — an ongoing experiment jointly funded by the USA, Canada and Europe. Dr Christopher Rochelle, British Geological Survey.

NOVEMBER 2nd to 4th • Geologists Association Festival of Geology — Earth Science Fair at the University of Liverpool. Some details available from The Secretary at meetings. Further details on the event from Sarah Stafford of the GA on 0207 434 9298
(Email geol.assoc@btinternet)
Briefly:
Sat 3rd— Foresight Centre— group displays, commercial exhibits, rock & fossil fayre, discovery room
Sat 3rd — Dept of Earth Sciences, Livepool University — geology open day where several lectures will be presented by the department.
Sun 4th — Field excursion programme.

MONDAY 26th NOVEMBER. Lecture: 'Snippets from a Suture — A Tibetan Geologue'. Gordon Hillier of Shropshire Geological Society. This is a personalised look at the Geol. Soc. trip in July 1999 to see Himalayan Geology, led by Roger Mason. After a brief introduction in travelogue style, the basic concept of Indian Plate movement towards the Asian Plate and the consequent formation of the Himalayan Belt is outlined. Principally the talk describes the 3 terrains visited-- the southern part of the Lhasa Block, the Suture Zone, & the Tethys Himalayas. Tibetan culture & some of the difficulties associated with travelling in Tibet are lightly commented on.

EDITORIAL

Following on from the last editorial we would like to formally record the thanks of the membership to Kate Ashcroft who has edited the newsletter for the last ten years. We will miss her skills and efficiency. At present there is a team preparing the newsletter — Graham Worton, Alf Cole and Sue Fairclough — who will do their best to keep communication to the members flowing smoothly. Please bear with us while we get used to the job. If you have any material for the newsletter please send it to the Secretary (see address below).

A few points to note. Firstly, we have a change of venue for all indoor meetings. They will be held at Dudley Museum from September onwards. A map is enclosed with this newsletter. Secondly, remember that the Rock and Fossil Fair to be held in Dudley in September has been cancelled but look out for the event in 2002. Thirdly, as a way to keep costs down in printing and mailing the newsletter, we're looking into the practicalities of Emailing the newsletter to those who would like to receive it in this format. Further details in the October newsletter.

REPORTS

MONDAY MAY 21st 2001 Lecture 'The Geology of Eastern Europe' by Dr Jan Zalaseiwicz, University of Leicester

Jan focussed on the geology of Poland and the Czech Republic. He began at the golden dome of the cathedral in Krakow, Poland with a general introduction describing some of the changes to the city as a result of western influence, since the end of the 'cold war'. In contrast, the countryside hasn't changed much at all. In terms of geography Poland is generally of fairly low relief with rolling hills. The land is mostly covered by a thick layer of glacial deposits (sometimes more than a hundred metres in thickness). This material has been derived predominantly from the erosion of the Scandinavian uplands. There are however a number of places where the solid bedrock does manage to reach the surface, as follows. The main hard rock exposures are in the Carpathian range of mountains, the Holy Cross and Subetan mountains. There is also an obvious geological 'line' running northwest — southeast across the country. Here the rocks of Poland meet those of the Russian Platform (where they are 'scrunched up' and heavily deformed).

Next Jan showed us some examples of the Tertiary brown coal mining operations (lignite opencast mining). These coals were being used in combined heat and power schemes, heating communities in the vicinity of the operations. However, the operations were very poorly insulated and only 10% efficient. The large-scale power production has resulted in acid rain and major pollution. This was damaging the ecology of large areas and had even stripped gold from the dome on Krakow cathedral shown at the beginning of the lecture.

The heavy industries of the pre 1940 era were shown next where Jan had been collaborating in a number of geochemical research projects. Dumping of slag and mineral waste around these vast industrial complexes was contaminating the ground and water systems. 2 miles from the industrial complex of Nova Louta water was found to be at body temperature and full of dissolved metal species. The sediments of the stream were ore grade in terms of their heavy metal content.

This water pollution problem has the people very worried and much analytical work is now going on particularly with reference to clay minerals and their potential to 'fix' the metals into the sediment rather than to allow it to dissolve in the water. Jan showed an example of a water well 50km away from the city where people come from the city to get their water as this provides Holocene waters which have not been tainted by the industrial effluents and contamination.

Another problem that Jan related was the increasing use of agricultural chemicals and fertilisers. These are readily soluble and wash easily through the sandy glacial sediments that covers most of Poland causing massive eutrophication and algal blooms in many waterways.

The final part of the talk was given to Jan's research into the unravelling of the crumpled zone rocks in the Subetan mountains. Here there is very little exposure and what can be seen is often very deformed and metamorphosed (grey pintalites with strong tectonic fabrics of foliation and lineation which sometimes intersect). This is part of a Devonian/Carboniferous belt that is incredibly 'mangled' at the Polish border. Consequently there has been much debate about their age and original parental materials. The research identified leisengang structures and possible ripple marks that were possibly pointing towards shallow water sandstones. Using zircon crystals extracted from the se sandstones they were able to identify that they were probably derived from acid and intermediate volcanics. Further researches revealed what they believe to be hummocky cross stratification that could represent stormy conditions in a shallow sea (less than lOOm in depth).

This is pointing towards a palaeogeography that has a shallow sea lapping against land depositing thick volcanic-derived sediments inshore and thinner deposits further out to sea which are getting well sorted due to winnowing by storms. In places there were clearly melanges with large blocks or rafts of rocks that were very different to the matrix in which they

sat. These were indicating that major submarine debris flows were occurring due to continental collision and subduction which began to squeeze and shear these rocks some time after deposition. We were shown slides of sectioned boreholes obtained from depths of greater than 1km. These had very complex sedimentary/tectonic structures in them that were explained as subducted materials with mud escapes.

This was a fascinating incite into the culture, geography, environmental problems and complex geology of an area that is not often known at all by practising western geologists. Our thanks to Dr Jan Zalaseiwicz for these near eastern delights.

Graham Worton

CONSERVATION COLUMN

Alan Cutler stands as the Treasurer of the UKRIGs Executive at this years Annual UKRIGS conference Upon this Rock' RIGS & the Planning System. The programme focuses on the planning system and how to use it to conserve and manage geological sites. The talks include two of us who have been involved in geological conservation in the West Midlands. I will be talking about how to get attention for the geological heritage in the local areas so that the planners take note. Steve Havers, the former planning contact for the BCGS in Dudley, will be talking about how to engage the planners in the process.

Unfortunately I have some negative items to relate in this newsletter. Some of you may be aware of the potential future demise of Rockwatch and the decision of the Royal Society for Nature Conservation (RSNC) to opt out of Earth Science Conservation work altogether. The future of Rockwatch hangs in the balance because of RSNC pulling out of their partnership with the Geologists Association. The Geologists Association are currently trying to raise sponsorship to enable handover of the Rockwatch service and resources in October 2001. If you would like more information about this you can call the Geologists Association on 0207 434 9298.

A new initiative has been proposed for geological conservation by Mick Stanley in response to the RSNC position. He has suggested that 'Earth Trusts' similar to Wildlife trusts are established. This initiative will be put forward with more detail at the conference in Peterborough. I'll let you know

OTHER NEWS ITEMS

Halesowen College. A/S level Geology The course lasts for 30 weeks and will take place on Tuesday evenings 6.30-9.00 beginning on 18th September 2001. Course fee is £110 (including exam entry). Topics covered will include Earth Structure, Weathering and Erosion, Palaeontology, Geological Recording, Geological Hazards, Waste Disposal etc. Alan Richardson is the course tutor. For further details ring Halesowen College Booking Centre on 0121 561 4466.

Fossil Hail Bookshop BOOK SALE. We understand from Stuart Baldwin, the proprietor, that he is closing the bookshop in Witham, Essex and he has thousands of books to dispose of. If you're after a particular secondhand book, journal or map on a wide range of earth science and other scientific topics why not contact him on 01376 583502 or email sbaldwin@fossilbooks.co.uk.

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