



From the top: A felt making workshop, children using the Story Mat, exploring the Darwin Discovery Chest in the Sedgwick Museum.

Discovering Darwin for All Ages

Although the new exhibition *Darwin the Geologist* is now complete, work has continued on several educational projects related to the exhibition. We have worked with nursery, primary and secondary schools to develop new activities and resources to help children to learn more about Darwin's science and discoveries.

Children and teachers from Brunswick Nursery School and Milton Road Primary School worked with storyteller Marion Leeper and textile artist Ricki Outis on a project called Darwin Stories. The older children learned about Darwin's explorations and adventures during his time on *HMS Beagle*, including how he built up his collections of rocks and fossils. They then created their own explorer stories which they shared with the younger children at a special story bazaar at the nursery school.

Children at both schools learned about felting, creating collaborative picture banners and felt geodes. All of the stories the children learned, created and told were based around and inspired by the Story Mat, a commissioned piece created by textile artist Jenny Langley. She worked with Museum staff and the storyteller to create an amazing tactile map, evoking places and environments that Darwin explored and investigated.

New resources for schools, including a brand new visit programme for older primary age classes called Darwin Stories, and a Darwin Evidence Loan Box for secondary schools will be launched later this year, and will all be featured on the new *Darwin the Geologist* website.

We have also added more in-gallery hands-on activities aimed at families with younger children. The Darwin Discovery Chest is a treasure chest full of stimulating collecting, sorting and storytelling puzzles, puppets and activity cards. No writing required - just add imagination to go on your own adventure. The chest and activities were devised and developed by freelance museum educator Gilly Vose who worked with museum staff to interpret the themes from the exhibition through play.

If you have any questions or comments about resources for family learning or about the schools' education programme, please contact Annette Shelford, the Museum Education Officer.

You can learn the story of Darwin's adventures and discover the Story Mat for yourself at the Norris Museum, St. .Ives, on Wednesday 7th April. To find out more, contact the Norris Museum on 01480 497314.

The artwork made by the children from Brunswick Nursery and Milton Road School as part of the Darwin Stories project is on temporary display at the Sedgwick Museum until June 2010.

The Sedgwick Museum of Earth Sciences, Downing Street, Cambridge CB2 3EQ

Opening hours: Monday – Friday 10 am – 1 pm and 2 pm – 5 pm Saturday 10 am – 4 pm

Telephone: (01223) 333456

Fax: (01223) 333450

Email: sedgwickmuseum@esc.cam.ac.uk

Website: www.sedgwickmuseum.org



Student Conservation Project



As an undergraduate conservation student at the University of Lincoln, I have always enjoyed preserving and protecting historical objects. However, my real interest lies in the conservation of Natural History objects. As a nature enthusiast and amateur taxidermist, I knew I wanted to specialise in the conservation and restoration of taxidermy mounts, fluid preserved specimens and geological collections.

I was invited to the Sedgwick Museum to conserve the lower mandible (jaw bone) of a fossil hippopotamus from Barrington, Cambridgeshire. My project has been carried out under the supervision of the Museum's Conservator, Sarah Finney. This has been my first time working with fossilised materials and the amount I have learnt so far is incredible. Fossilised materials are much more fragile than I expected. The conservation plan therefore has been based on minimal intervention.

The first stage was to clean the fossil by removing the 19th century resin which had been applied to 'protect' the fossil upon excavation. However, due to environmental factors, it was rapidly deteriorating and removing a layer of the bone surface as it broke away. Not only this, but it was not aesthetically pleasing. Preliminary experiments established that the resin itself was removable with water and so this was applied in minimal amounts and removed with a soft brush.

Once the fossil was clean, the next crucial stage was to construct a support which would not only securely hold and protect the fossil during transport and in storage, but act as a mount for my final year exhibition. This was measured and carved from Ethafoam, a polyethylene cushioning medium, which was ideal as it allowed the fossil to be suspended and avoided any unnecessary pressure to the angular process, which is the most delicate and easily breakable section of the mandible.

The final stage is to securely reattach the tusks and left incisor tooth followed by a road trip up north taking the fossil to my final year conservation exhibition *Suspension of Time* at the University of Lincoln, starting May 24th 2010. Final photos to follow!

Bethany Palumbo

My Favourite Fossil

A clash in the Jurassic seas is captured in the bite-marks preserved in this plesiosaur fossil.

The Sedgwick Museum houses a fantastic collection of marine reptile fossils, including complete plesiosaur skeletons and huge pliosaur teeth. How did these magnificent animals live and interact with each other? My favourite fossil, displayed in the central tablecase near the 'Forests and shallow seas' display, give us a glimpse into the lives of these amazing creatures.

It is the humerus, or upper arm bone, of a plesiosaur called *Muraenosaurus* ('moray eel lizard'). Plesiosaurs were long-necked marine reptiles with small heads, and which swam using four paddle-like limbs in a unique 'underwater-flying' motion.

The bone comes from a series of mudrocks known as the Oxford Clay, which were deposited during the Middle Jurassic. A warm shallow seaway, only a few 10's of metres deep and rich in marine life covered much of central southern Britain at the time.



On close inspection the bone shows several large dimples. These are unusual features which reveal more about this particular animal's life. The indentations are actually bite-marks from another marine reptile. Bite-marks are a type of trace fossil - the remains of the activity or behaviour of an animal or plant, rather than the remains of its body. They are important tools for palaeobiology researchers as they can provide information that a body fossil alone could only suggest.

The most fascinating thing for me is that the combination of this body and trace fossil bring the creatures to life. This fossil shows conclusive evidence of a moment in a clash between two extinct reptiles, where one bit the other so hard its teeth pierced the bone, and that violent encounter has been preserved for over 150 million years.

The fossil comes from the clay brickpits of Whittlesey, a small town in north Cambridgeshire. The town is also the one I grew up in and I know the brickpits pretty well. Individual reptile bones are relatively common there, but despite numerous visits I have yet to find one! The Friends of The Sedgwick Museum are planning a visit to the Whittlesey brickpits on Saturday 22nd May. Book your place (details on page 4) and perhaps you will be lucky enough to find your own!.

Rob Theodore, Documentation Assistant



The Friends’ Tenth Birthday

The first general meeting of the Friends was held in the year 2000, so we feel the urge to celebrate ten years of successful support of the Museum! We now have more than 400 people on our membership list and have a reputation for running a very lively and friendly series of events. We have been supporting the Museum in many ways, helping to finance exhibits, buying equipment and books for Museum staff, providing grants to allow staff to attend conferences, and also paying undergraduate prize-holders to assist in the Museum.

We propose to hold a party in the Museum on 12th October, inviting a wide range of non-members to join us in raising money for a specific Museum project. More details will be included in the next Newsletter.

Field visits have become a major part of our events list. We have visited a remarkable range of places widely across East Anglia, allowing us to enjoy fossil collecting, learn about the bedrock and its uses, make museum visits, and investigate historic houses, villages and towns in their landscape settings. We have also arranged a hugely enjoyable series of longer, weekend trips. Starting in 2002, these have been to: North Yorkshire, North Wales, Lyme Regis, Sedbergh, Ludlow, Isle of Wight, Durham Pennines, Mendips and Derbyshire.

We are considering planning a field visit abroad, to celebrate the success of so many of our visits. We remember with affection the brilliant idea of our first Chairman, Peter Fuchs, who in 2004 led a party of



sixteen of us, to examine over a week the Volcanoes of Italy, from Etna to Vesuvius, via the Aeolian Islands. The friendships made on that trip have provided much of the energy that continues to keep the Friends working so well. Plans are afoot to repeat the idea of an overseas visit in the summer of 2011. Top favourite seems to be the Auvergne volcanic area of central France.

Cambridgeshire Geology Club

Talks take place at the Friends Meeting House, 91-93 Hartington Grove, Cambridge CB1 7UB at 7:30pm. Full information on www.cambridgeshiregeologyclub.org.uk or contact Alan Murphy on 07768 821385 or Ken Rolfe on 07777 678685. Upcoming talks: 12th April – ‘Canadian High Arctic’, 10th May – ‘The Earliest Occupation of Britain’ and 14th June – ‘Climate change - a Polar perspective’, 13th September – ‘Exploring the Gamburtsev Mountains in East Antarctica with airborne geophysics’.

Forthcoming Friends’ Events

Unless otherwise stated, events will be held in the Department of Earth Sciences (entrance below the Sedgwick Museum). Parking is available on the Downing Site during these events, with access from Tennis Court Road. Before talks and experimental classes held in the Department, tea, coffee and biscuits will be available from 6:15pm, and the event will start at 7:00pm. At most events we will invite donations of £1/head towards expenses and the support of the Museum.

Contacting the Friends

Some of the events listed require pre-booking or pre-payment as detailed on the list. Talks do not normally require this, unless you are thinking of bringing a group. Visits often do require pre-booking so that numbers and logistics can be sorted out. Pre-payment should be made by cheque made out to the “Friends of the Sedgwick Museum”, and sent to the “Friends of the Sedgwick Museum”, Department of Earth Sciences, Downing St., Cambridge CB2 3EQ. Pre-booking and other communications should be emailed to swri07@cam.ac.uk and copied to pff1000@cam.ac.uk, or phoned to 01223 333400. The Friends now have a mobile phone on 07754 592439 which will be switched on for 90 minutes before the start of each event, and kept on for 2 hours.

Sedgwick Birthday Dinner

Saturday 20th March 2010

Christ’s College, 7 for 7:30 pm. £43 (with wines), £35 (soft drinks). For tickets, send a cheque made out to the “Friends of the Sedgwick Museum” by 8th March. After Dinner speaker will be Professor David Hodell, Woodwardian Professor, who studies environmental and climate change.

Visit: Wandlebury and Linton

Saturday 24th April 2010, 11am

We shall be making a traverse to the south-east across the Chalk escarpment picking out the way the Chalk stratigraphy influences the landscape and local water supply, and the story of the gravels that also form topographic features along the traverse. Leaders: Steve Boreham, Peter Friend, Josephine Leggo and Rosemary Wellings. Meet up at 11am, in the Cambridge PPF (Past, Present and Future, formerly Cambridge Preservation Society) car-park (£2 unless you are a member), sign-posted off to the left of the busy A1307, some 3.5 km south-east of the Addenbrooke’s Hospital main roundabout. Please bring packed lunch. There will be a small charge per head, for use of the lunch room. We then plan a number of stops further south-east, and will have some tea before we disperse. Please phone 01223 333400 or email pff1000@cam.ac.uk to register your intention to come (£2 donation requested).

Visit: the Suffolk Coast

Saturday, 8th May 2010, 11am

We shall be visiting the Sutton-Bawdsey Peninsular, south-east of Woodbridge (Suffolk) to see recent work on the Tertiary London Clay, Coralline Crag and Red Crag, under the leadership of Bob and Caroline Markham. Meet up in the car park at 11am (TM357401) 300 m North of the Martello Tower at the sea-ward end of the B1083 east of Bawdsey village, where beach engineering work has *(Events listings continue on page 4)*



Trilobite – Friends' News

(Continued from page 3)

recently revealed new bedrock. Bring a packed lunch with you. We will move on to examine the fine new developments that have made it possible to see the Sutton Knoll Crag deposits (TM304442) and their fossils, and the way these provide evidence of sea-level change. Please phone 01223 333400 or email pff1000@cam.ac.uk to register your intention to come (£2 donation requested).

Visit: Peterborough Area

Saturday 22nd May 2010, 11am.

Meet at the Barnack Stone "Hills and Holes" Nature Reserve (TK 075 047) car-park, the site of long-term quarrying of the Middle Jurassic Barnack building stone. We shall then drive to Barnack village church (TF 079 050) to see the use of Barnack Stone in its Anglo Saxon and later construction. A wide variety of other building stones have been used in the church and the churchyard, and we will attempt to classify these and suggest their origins. Bring a packed lunch with you. We shall also visit the Norman church at St Kyneburgha, at Castor (TL 125 985) to examine further use of Middle Jurassic stone in its structure. In the afternoon, we plan to drive to King's Dyke, near Whittlesey, where boots and polythene bags will be needed as we collect ammonites, belemnites, brachiopods and bivalves etc., from a sample dump of Late Jurassic Oxford Clay provided by the quarry company. Leaders: Mike Tuke, Peter Friend and Rob Theodore.

AGM and Museum Showcase

Tuesday 8th June 2010, 6:00pm. Doors open 5:15pm. We appeal specially to local members to attend this meeting. In addition to voting for the Committee for 2010-11, this will be the opportunity to influence the way the Friends have been supporting the Museum and developing our scientific outreach in the community. Ken Rolfe will briefly review plans for the audit of Cambridgeshire geological sites, and invite Friends to become involved with this programme. We also plan to have a short talk on the recent (27th February 2010) severe earthquake in central Chile.

Weekend Visit to Derbyshire

Friday 11th to Sunday 13th June 2010

Members have been making their own accommodation bookings for this visit to the Castleton-Hathersage area, using the internet, an accommodation list available from marjeveale@ntlworld.com or pff1000@cam.ac.uk or by phoning the Department of Earth Sciences. The group will meet up at the George Inn, Hathersage (the Courtyard Suite) at 8pm on Friday 11th June for an introductory talk by Dr Ian Sutton (formerly of Nottingham University). Dr Sutton and Marj. Veale are planning a very varied programme which will depend, in practice, on weather conditions. Possibilities for the Saturday include: Short walk up Cave Dale to see Carboniferous reefs and volcanics, mineral veins and lavas, followed by a further short walk to the Winnats Pass area; visit to the Treak Cliff show cave; visit to Mam Tor and land-slip features. In the evening, a group meal is being arranged at the George Hotel, Hathersage. Sunday morning's programme may involve a visit to Stanage Edge to see features in the Carboniferous Millstone Grit, and then

possibilities include visits to Chatsworth House (where there is a remarkable collection of different ornamental and other stones), and/or the National Stone Centre at Wirksworth (5 km south of Matlock). Depending on individual plans, it will be possible to leave the main group at different stages during this Sunday programme. Assuming people have booked their own accommodation, please check that we have registered you. We will be asking registered people for payment for the group meal, leaders' costs etc., and will send you tickets in acknowledgement of payment.

Cancellation of the Midsummer Tea Party

This event will not be held this year, because of a clash with another event in the Bullard grounds.

Tenth Anniversary Party

Tuesday 12th October 2010

Plans are still being made for this event. The idea is to ask our members, and non-members to attend a supper evening (probably from 6pm to 8pm) held in the Department and Museum. We shall present the occasion as a fund-raising and recruiting occasion, when people will be asked specially to contribute to a specified Museum project.

Leverhulme Centre for Human Evolutionary Studies (LCHES)

Tuesday 26th October 2010

This visit is part of our series of events on Human Evolution. Cars may be parked in the Downing Site car park after about 5pm. Members are invited, as normal for talks, to meet in the Department of Earth Sciences ground-floor common room, where tea/coffee will be available, and the group will then walk together at 6pm to the LCHES building (about 400 m).

Icelandic volcanism and the growth of the Atlantic ocean

Tuesday 16th November 2010, Department of Earth Sciences, 7pm, doors open 6:15pm

We are sorry that this talk by Dr. John Maclennan, Department of Earth Sciences, had to be cancelled in October 2009, but it has now been rearranged, incorporating new ideas, for this autumn.

Friends' Christmas Party

Tuesday 7th December 2010, 6- 8pm

A lively programme of short talks, mainly by students, will be interspersed with mulled wine, bread, cheese and other snacks, for which we will ask for a donation of £5 at the door. People are asked to bring suitable items for our raffle. **Please book a few days ahead.**

Join the Friends

The Friends of the Sedgwick Museum exists to support and encourage the development of the Sedgwick Museum and promote the collections to a wider audience (Charity no 101911393). Membership is open to anyone. Annual subscriptions are: £6 (under 18's), £8 (full-time students, unemployed or over 60's), £12 (individual) or £18 (family).

For further details and an application form please ring the Department of Earth Sciences on 01223 333400 or write to Reception (Friends), Department of Earth Sciences, Downing St., Cambridge CB2 3EQ or visit the Museum website www.sedgwickmuseum.org