



COPROLITE

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DROPPINGS FROM THE GEOLOGICAL CURATORS GROUP

Coprolite is compiled and produced by Helen Kerbey, Production Editor, *Mineralogical Magazine*, 12 Baylis Mews, Amyand Park Road, Twickenham, TW1 3HQ. (e-mail coprolite@geocurator.org, tel +44 (0)2920 513901). It is published three times a year in March, June and November. Any material for inclusion should be sent to Helen Kerbey by the first of the previous month, i.e. by 1 February, 1 May or 1 October.

Chairman: Matthew Parkes, Assistant Keeper, Natural History Division, National Museum of Ireland, Merrion Street, Dublin 2, Ireland. Email: chairman@geocurator.org

Secretary: Sarah King, York Museums Trust, Yorkshire Museum, Museum Gardens, York, YO1 7FR. Email: secretary@geocurator.org

Treasurer: Dr Rachel Walcott, Principal Curator, Earth Systems, Department of Natural Sciences, National Museums Scotland, Chambers St, Edinburgh EH1 1JF. Email: treasurer@geocurator.org

Membership news

I would urge all members to check their subscription standing orders. If you are still paying the old rate of £15 (or £10 or £12), then you should please change this to the new rate of £20 (or £15 concessional) for UK subscriptions. I will be contacting all offenders soon.

Cindy Howells - membership@geocurator.org

Committee news

Ordinary Committee Member: There is still a vacancy for an ordinary committee member, particularly someone who has an interest in communications and outreach events. If you are interested contact the Chairman: Matthew Parkes e-mail: chairman@geocurator.org. You can arrange to attend one of the committee meetings and find out more. Positions are normally filled at the AGM each year.

Coprolite Editor: I will be standing down at the AGM. Anyone wishing to know more about editing the newsletter please contact me as soon as possible so that I can share information when the next edition is due in November.

Project Airless

The first year of this large-scale, 3 year project at the Natural History Museum (London) has now been completed. Airless is solely concerned with the treatment and prevention of pyrite oxidation within the Earth Science collections at the museum. The majority of the collections have been surveyed to identify the most at-risk specimens which are then evaluated for remedial conservation (such as ammonia gas treatment to stabilise the decay products.). The specimens are placed in bespoke reduced-oxygen environments: barrier-film bags that will be heat-sealed with the specimen and oxygen scavengers inside.



More than 2,600 specimens have so far been protected from further deterioration. Images and condition reports generated will improve our collections database, whilst specimens are also being assigned a unique barcode number to increase digital access which compensates for the slight decrease in physical access.

The core team: Kieran Miles, Amy Trafford, Matthew Porter and Nicola Crompton

The team has also set up an email address dedicated to addressing problems within the museum (and beyond!) pyrite@nhm.ac.uk

The project has already featured as a NatSCA blog entry <https://natscablog.info/2016/03/18/project-airless/> and at SPNHC and SVP 2016 conferences.

A guide for making this style of reduced oxygen microenvironments can be found at:

<http://stashc.com/the-publication/environment/construction-of-anoxic-microenvironments-project-airless/>

Exhibitions

Dinosaurs of China: Ground Shakers to Feathered Flyers at Nottingham Natural History Museum, Wollaton Hall.

Spectacular fossil discoveries in China over the last 20 years have drastically changed our understanding of dinosaur appearance, evolution and behaviour. Although many dinosaurs were large and scaly, this view has become part of a more diverse picture. Many dinosaurs were tiny, some had feathers, and certain feathered flyers evolved into birds. A world exclusive exhibition of 26 dinosaur skeletons and real fossils from China, coming to Nottingham in 2017, will provide visitors with the opportunity to see the fossil evidence with their own eyes.

Why Nottingham? Dinosaurs of China has been developed and curated over several years by Dr Wang Qi, Assistant Professor of Architecture in the Department of Architecture and Built Environment at the University of Nottingham, and myself as Curator of Natural Sciences at the Nottingham Natural History Museum, Wollaton Hall. Dr Wang Qi began developing links in 2011 with the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP) in China, through his research on spatial exhibition narrative as a means to enhance visitor experience. This connection, together with Wang Qi's passion to bring an exhibition of Chinese feathered dinosaurs to Nottingham, got the project off to a flying start. I began working closely with Wang Qi when it was agreed that the exhibition would be co-hosted by Wollaton Hall and Nottingham Lakeside Arts. The museum's 750,000 specimens include many taxidermy birds and fossil reptiles, so Wollaton Hall is a fitting venue for the main Dinosaurs of China exhibition, which tells the story of how dinosaurs evolved into birds. The University of Nottingham's Lakeside Arts delivers an annual programme of exhibitions and events across the visual, performing and participatory arts. This is why the theme of the Dinosaurs of China exhibition at Lakeside is on the science of bringing dinosaurs to life in palaeo-art, a story heavily impacted by the discovery of feathered dinosaurs in China.

Where are the dinosaurs coming from? Most of the specimens in the Dinosaurs of China exhibition are on loan from IVPP, including two real holotype specimens. An additional star of the exhibition (*Gigantoraptor*) is on loan from the Longhao Institute of Geology and Paleontology Inner Mongolia. This will be the first time many of these specimens have been displayed outside of Asia. The exhibition contains nine mounted dinosaur skeletons (casts), eight real fossils including feathered dinosaurs and birds, and nine detailed fossil replicas. Here are a few of the dinosaurs you can expect to see...

Ground shakers. The long-necked plant-eating *Mamenchisaurus* was a true ground shaker. At 23 metres long from head to tail, its skeleton was too large to fit inside the museum in a typical four-legged walking pose. Therefore, it was specially constructed in a dramatic rearing posture to fit inside the building. At 13.5 metres high it is the tallest dinosaur skeleton ever displayed in the UK, higher than three double-decker buses. Although *Mamenchisaurus* was scaly, many dinosaurs had plumage...

Feathered dinosaurs. Bones and eggs become fossils relatively easily because they are hard. Soft parts like skin and muscles are only preserved under special conditions. For example, in Liaoning Province in north-eastern China during the Cretaceous Period, ~125 million years ago, volcanic activity preserved an entire ecosystem (the Jehol biota) in fine ash. The description of the first feathered dinosaur from these deposits in 1996, *Sinosauropteryx*, began a revolution in dinosaur studies. The *Sinosauropteryx* fossil in the exhibition preserves the remains of soft tissues and the consensus is that these are the remains of downy feathers. It may have used these for thermoregulation or display.

Four winged flyer. In addition to 'fuzzy' dinosaurs, some of the species from Liaoning have definitive bird-like feathers. The stunning *Microraptor gui* fossil in the exhibition is the holotype of its species, named in 2003. It has claws on its hands and feet, a long bony tail, and teeth, all dinosaur characteristics. However, the fossil also has long feathers on its arms, legs, and tail, so *Microraptor* had four wings and could fly. As a member of the Dromaeosauridae or 'raptor' family, or it is a close relative of the famous *Velociraptor*.

Largest bird-like dinosaur in the world. *Gigantoraptor* is from the Late Cretaceous of Inner Mongolia, northern China, and was about as tall as a giraffe. Described in 2007, this is the first time it has been displayed outside of Asia. *Gigantoraptor* had a relatively short tail, long neck, long arms and legs, and was covered with bird-like feathers. Only the bones of *Gigantoraptor* are known, but bird-like feathers are preserved in other oviraptorosaurs. A real feathered fossil of *Caudipteryx* – the type specimen of *C. dongi* – reinforces this message in the exhibition. *Gigantoraptor* was too heavy to fly and may have used its feathers for courtship displays.

Dinosaurs of China: Ground Shakers to Feathered Flyers, runs from **1 July to 29 October 2017**. The main exhibition is being hosted by the Nottingham Natural History Museum at Wollaton Hall, while a complementary exhibition about palaeo-art is based at Nottingham Lakeside Arts on the University of Nottingham campus. For details visit dinosaursofchina.co.uk

Adam S. Smith, Curator of Natural Sciences, Nottingham Natural History Museum, Wollaton Hall.

Dinosaur Babies at National Museum Wales

The National Museum, Cardiff is hosting 'Dinosaur Babies' for the whole of the summer period. Opening on May 27th, this hands-on exhibition will give visitors the opportunity to experience the world of dinosaur family life through their eggs, nests and embryos. Replica dinosaur eggs and nests collected from all over the world, from major plant and meat-eating dinosaur groups, will be on display alongside a life size *Tarbosaurus* skeleton, and many other skeletal remains. There is a small charge to enter the exhibition.

Events / Courses

9 - 22 of July: CultTech Summer School - Cultural Heritage Materials and Technologies

Hosted by the University of the Peloponnese which is to take place in Kalamata, Greece.

The program operates within the Peloponnese, an advanced natural and cultural environment that hosts a plethora of historical and archaeological sites and monuments. Studies on the interdisciplinary field of Cultural Heritage and Science/Technology offer the great potential of a modern and balanced educational syllabus; they also produce an ideal platform for holistic approaches that are guaranteed by the creative mixing of up-to-date methodologies through archaeological science, archaeometry and Cultural Heritage technologies.

CultTech Summer School is oriented from the *Department of History, Archaeology and Cultural Resources Management, University of the Peloponnese* and operates in collaboration with the *Demokritos National Center for Scientific Research*, the *National Observatory of Athens* and key lecturers from other academic institutes in Greece. The official language of the program is English and the duration is 2 full weeks from 9 - 22 of July 2017, consisting of lectures, a 3-day field-trip practice to Pylos and guided educational tours to historical sites, museums and monuments.

Students or graduates from all related fields, e.g. archaeology, cultural heritage management, conservation, materials science and engineering are welcome to apply!

Applications now open. For more information regarding the curriculum, fees and procedures, please visit culttech.uop.gr or contact culttech@uop.gr

MSc in Cultural Heritage Materials and Technologies 2017-'18 **Applications deadline: 30 June 2017**

Organized by the University of the Peloponnese and hosted at Kalamata, Greece. Studies on the interdisciplinary field of Cultural Heritage and Science/Technology offer the great potential of a modern and balanced educational syllabus; they also produce an ideal platform for holistic approaches that are guaranteed by the creative mixing of up-to-date methodologies with archaeological science, archaeometry and cultural heritage technologies. CultTech operates within the Peloponnese, an advanced natural and cultural environment that hosts plethora of historical, archaeological sites and monuments. A key issue for CultTech is its orientation towards hands-on research thus offering post-graduate research training and the potential of the implementation of a diploma dissertation closely related or within ongoing research projects. The program is oriented from the Department of History, Archaeology and Cultural Resources Management, University of the Peloponnese and operates in collaboration with the National Center for Scientific Research Demokritos, the Navarino Environmental Observatory (through the National Observatory of Athens) and key lecturers from other academic institutions in Greece. The official language of the program is English. The duration is one full year (3 semesters: two

semesters of taught courses and one for the implementation of the dissertation thesis). Students from the fields of archaeology, cultural heritage management, conservation, materials science and engineering are welcome to apply.

The CultTech MSc programme is organized by the Laboratory of Archaeometry of the University of the Peloponnese, Kalamata, Greece. The language of the programme is English and the duration is one full year. Students from the fields of archaeology, cultural heritage management, conservation, materials science and engineering are welcome to apply.

For further information please visit our website (culttech.uop.gr) and our facebook group (CultTech-MSc in Cultural Heritage Materials, UOP) or contact us at culttech@uop.gr and (0030) 27210 65145

Evangelia Kyriazi, MSc, Conservator of Stone, Fossils, Antiquities & Works of Art, PhD Researcher, University of Peloponnese

12th September: 65th Symposium of Vertebrate Palaeontology and Comparative Anatomy and the 26th meeting of the Symposium of Palaeontological Preparation and Conservation (joint GCG meeting).

University of Birmingham on <http://svpca.org/>

21st and 22nd October: the **Geological Association** annual conference will be held at the National Museum Cardiff with a theme of past climates. See the Geological Association website: <https://geologistsassociation.org.uk/conferences.html>

News

Folkestone museum reopens on 27th May at 10am in it's new home at the Town Hall on Guildhall Street. The new displays include a significant geology component including fossils from the local lower Greensand, Gault clay and chalk formations.

Warwick's **Market Hall Museum** reopened in February half-term week, following an eighteen month HLF-funded refurbishment. The newly themed displays feature a range of geological specimens and themes, including a full-size replica of the Wilmcote Plesiosaur skeleton, a full-size reconstructed limb of the Warwickshire theropod dinosaur *Cruxicheiros*, locally collected ichthyosaur remains, and other rocks and fossils illustrating the range of Warwickshire's journey through time. The real specimens are augmented by newly commissioned artwork and interactives and models. Entrance to the museum remains free.

Lapworth Museum nominated for the Art Fund Museum of the Year <http://www.birmingham.ac.uk/news/latest/2017/04/lapworth-museum-shortlisted-for-museum-of-the-year.aspx> Congratulations to the newly developed Lapworth Museum on being shortlisted for this award. The winning museum, which will receive £100,000, will be announced at a ceremony at the British Museum on Wednesday 5 July 2017

More cuts in museums: National Museums Liverpool have announced another round of voluntary redundancy to help NML restructure to enable the organisation to meet its strategic priorities in the current Comprehensive Spending Review period (until 2019/20). NML, like many museums, continues to face financial challenges including: potential for further Government public sector funding cuts; increasing pay and probable rise in pension costs; and increased business rates. Hopefully there will be no loss of current curatorial posts or skills.

Editor's note:

As noted on page 2 I will be stepping down as editor at the end of the year. I no longer work in a museum and am not able to devote any time to them at present. However, intriguingly, the work I do now highlights just how important museum collections are. Nearly every paper I edit for the *Mineralogical Magazine* carefully lists the catalogue numbers and repositories of the specimens used for research. Some papers lament the loss of specimens never deposited, while others celebrate the discovery of long lost items. For one of the most interesting papers on minerals with a structure predicted to be impossible in Nature the author Luca Bindi spent years going through museum collections looking for suspect 'quasicrystals' that might have a crystal structure many believed impossible. He found one in the end that turned out to be from a meteorite in North-Eastern Russia

I started collecting odd shaped things after a trip to the beach in Norfolk as a young child. My mother purchased a spotters guide to rocks, proceeded to read it and announced that I should label anything I found. As my collection of geological (and not so geological) bits and pieces grew I carefully wrote numbers on everything, sometimes a short description 'fossils found in the garden', and added them to my notebook 'stones'. I had no idea what geology was, didn't know about any clubs or societies, but dragged my family round every visitor centre involving a mine or cave near our holiday destination. My favourite day trip was to go to the [old] Geological Museum in London and the mineral room in the NHM, where I once attempted to write down as many of the minerals names and locations as possible in my notebook. I lived in a rural area so spent my time roaming the local boulder clay fields looking for fossils in flint. It was only when I was trying to decide what to do at University that I came across 'geology' as an option and realised that was the subject for me. I browsed the prospectuses and rejected anything that had too much mention of 'petrology' as I didn't want to study petrol. Luckily for me (but bad for some Universities) geology was going through a major overhaul that year and Bristol was having to take in more students to become a super centre. As I finally started to learn something about geology my collection of 'heavy objects taking up my bedroom' was given a more realistic value and many of the items dispatched to the rockery.

After more studying, and a handful of different jobs, I was offered some work at the Camborne School of Mines Geological Museum and the museum jobs started from there. I love working with collections and am sad to leave them behind but I hope that someone with their 'ear to the ground' can provide a new lease of life for Coprolite.

Helen

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