OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY

# Annual Review

## 2012–2013

Museum of
Natural
History

The Oxford University Museum of Natural History Annual Review 2012–2013 was edited from reports supplied by heads of Collections, Sections and Research Units.

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Photographs are by members of the Museum staff unless stated otherwise.



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# Contents

# Director's introduction

Looking back across the year at the Oxford University Museum of Natural History it is always striking just how much activity is undertaken across the Museum. This year is no exception – a rich combination of research, public engagement, events, partnerships, and innovation – although the circumstances were a little unusual.

The period covered by this Annual Review reveals a year of two halves and a break from our normal pattern of activity. During the last few months of 2012 the regular work of the Museum was punctuated with preparations for public closure, a necessary step to allow for essential roof repairs. By the beginning of 2013 the Museum entered a 14-month phase which became known as our 'Darkened, not dormant' period, a sentiment captured on the first Museum-wide blog which launched under that name in February.

Closure presented both challenges and opportunities. Perhaps the most obvious of these was the need to maintain our public presence during a period without visitors. A number of creative responses achieved this remarkably well. We began our first concerted forays into the world of social media, launching the Darkened blog and a Twitter account, @morethanadodo, both of which rapidly received plaudits from within the University and beyond. The Education team took to the road in a specially-branded van, offering outreach sessions to non-visiting rural schools, as well as attending community events and summer festivals. And collections staff across the Museum undertook a series of bookable behind-the-scenes tours, whilst the builders and architects were very cooperative in offering tours of the roof architecture.

Another major initiative saw specimens taking a six month stint in venues across Oxford city centre. The Goes to Town project combined physical displays with a dedicated mobile-friendly website, which together delivered educational interpretation as treasure hunt and competition. With promotional videos and healthy media interest, Goes to Town was an excellent way of maintaining visibility.

It might be easy to overlook one further achievement of the closure period: that despite 14 months without visitors the Museum was able to prevent any redundancies in its vital front-of-house and shop staff. By working with the Pitt Rivers Museum – access to which remained via our main door – front-of-house staff were employed throughout the roof work, with Pitt Rivers visitors leaving the building via our Museum shop.

Along with the roof restoration, other infrastructure improvements were taking place too. A visitor space shared with the Pitt Rivers Museum was completed in November on an adjacent site occupied by the former glassblowing labs. As an extremely useful multifunctional space this Museum Annexe now hosts education sessions, special events, meetings, workshops and many other activities. Meanwhile, landscaping work to the front of the building sharpened up our appearance outside, bringing new railings, an irrigated lawn, plants, trees, gravel, and benched seating.

Back behind the scenes, a notable step forward was the establishment of our new research fellowship positions toward the end of the year. The appointments of Dr Tracy Aze, Dr David Legg, and Dr Allison Daley represent a drive to raise the level and volume of research conducted in the Museum. At the same time we restructured our own collections, rationalising Entomology, Geology, Mineralogy, and Zoology into two principal groupings – Earth Collections and Life Collections, headed by Monica Price and Darren Mann respectively.

Overall, this has been an outstandingly successful year, but we all look forward to having the Museum doors open again in February 2014.

Professor Paul Smith
Director

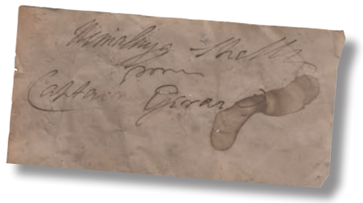
# Highlights

## Himalayan shells from Captain Gerard

Former Museum director Professor Jim Kennedy made a particularly interesting discovery in his ongoing work on the identification of UK Cretaceous material, including many specimens acquired in the 19th and early 20th century.

Amongst the material there was a suite of specimens accompanied by a note from William Buckland, the University's first Reader in Geology, which reads 'Himalayan shells from Captain Gerard'. The collection includes calcareous sandstones, shell limestones and concretions with ammonites and bivalves, all of Jurassic age, from the Sutlej and Spiti valleys in Himachal Pradesh, northern India, on the south flank of the Himalayas. One specimen is labelled as coming from an altitude of 16,000 feet.

'Captain Gerard' turns out to be Alexander Gerard (1792–1839), who explored and mapped in the region between 1817 and 1821, making these some of the earliest geological specimens to be brought back to the UK from the Himalayas. ●



## Darkened, not dormant

At the end of December 2012 the Museum closed to the public to carry out much-needed and long overdue repairs to the 150-year-old roof. The glass tiles in the roof have leaked rainwater into the Museum galleries for many years – visitors may recall seeing carefully positioned buckets atop display cases to catch the worst of it.

After trial repairs to one third of the roof proved successful in 2011–2012 it was decided that the remainder of the roof should be repaired in one go. Unfortunately, the disruption caused by this work would have prevented visitors from enjoying the majority of the displays, so the decision was taken to close the Museum during 2013 while the repairs were completed.

Although public access to the galleries was not possible during this period, much of the operational activity of the Museum continued, with some ingenuity. The Education department embarked on an outreach programme, taking to the road in a special liveried van to deliver sessions at non-visiting rural schools. In Oxford city, specimens popped up in unlikely venues as part of the Goes to Town project, and inside the building collections work and scientific research were ongoing through the period.

In addition, the Museum took the opportunity to start building a presence on social media. The roof restoration project and many other activities were documented on the specially-launched closure blog *Darkened not dormant* and an enthusiastic following was rapidly established on Twitter following the launch of the @morethanadodo account in February. As well as ultimately attracting approximately 3,000 views a month, soon after its launch in January *Darkened not dormant* was being regularly used by the local press to check for stories, serving as an announcement channel alongside the more traditional press release.

The Museum received 253,687 visitors during the period covered by the Review, although was closed for seven months of this time. **www.darkenednotdormant.wordpress.com** ●

Above: William Buckland's hand-written note: "Himalayan shells from Captain Gerard"

Right: Decking and scaffold create a new floor at gallery level during the roof restoration work

## Digitisation projects win funding

In November, the archival collections received exciting news that it had secured its first ever external funding, an award from Arts Council England to digitise the Museum's archive of William Smith, the Oxfordshire-born geologist who researched and published the first geological map of England and Wales.

The £60,000 award will allow the entire Smith collection to be made available online, along with a detailed catalogue and project website. The collection will be catalogued using new Collection Management Software that will later be integrated into the library and archive, and will allow for online access to all our archival listings and digitised material. The project will also include the first use of crowd-sourcing at the Museum, with the collection being transcribed online by users worldwide via an integrated wiki.

Running across the calendar year, the project employed a new member of library staff full-time for eight months. Head of Archives and Library Kate Santry managed the project, along with significant contributions from Mark Dickerson, Paul Smith and Sarah Phibbs.

William Smith Online is one example of a range of activity over the next couple of years at the Museum and around the country which celebrate the bicentenary of the publication of Smith's famous geological map of England and Wales in 1815. The Museum holds one of the best-preserved extant copies of this map.

A second grant award came in April when the Heritage Lottery Fund gave just under £40,000 to digitise and make available online the Jones' *Icones*. The *Icones* is a beautiful and important original manuscript completed in the late 18th century by wine merchant and amateur lepidopterist William Jones. It contains stunning and scientifically accurate paintings of hundreds of butterfly and moth species, along with taxonomic descriptions, and records some of the earliest collections of Lepidoptera in Britain.

The digitisation project will include the conservation of Jones's butterfly specimens in the Museum's collections, and a number of activities related to butterfly and moth identification. It will also permit much-needed re-furbishment of the Library Reading Room to accommodate more readers and host training sessions. **www.williamsmithonline.com** ●

Above: William Smith's famous 1815 map: "A delineation of the strata of England and Wales"

## Goes to Town

A playful and ambitious project to maintain the Museum's presence during the 2013 roof restoration saw twelve specimens exhibited in venues right across Oxford city. The Goes to Town trail combined physical exhibits with a mobile-friendly website and a challenge to find the Danger and Rarity ratings for each specimen in order to enter a competition.

With three-tiered interpretation – light-hearted educational copy on main panels; more detailed text on the website; and audio recordings by scientists for each specimen – Goes to Town aimed to appeal to a wide range of people, from adults to families to tourists. Partners were selected to give the trail a spread of locations and a range of host venue types. They were also chosen to fit with their adopted specimen, so an optician's displayed a fossilised trilobite with huge compound, calcite eyes; a fishmonger's hosted a King Penguin; a bookshop exhibited a bookworm and so on. The Goes to Town specimens remained in place for six months, providing excellent public exposure for the Museum during a time when the displays were under wraps while the roof work was completed. The trail itself was promoted by two short videos online and attracted plenty of local media attention, with multiple articles in the press, an interview on BBC Oxford, and a piece on the local television news. **www.goestotown.com** ●


Left: The 'escaped' specimens on the lawn outside the Museum

## Research fellowships established

During the year the Museum filled the first three of its new research fellowship positions. Dr Tracy Aze and Dr David Legg took up their posts in September 2013, and Dr Allison Daley started her joint appointment with the Museum and the Department of Zoology in July.

Tracy's work is focused on the interface of palaeobiology and palaeoclimatology, using the marine plankton fossil record to investigate evolutionary trends, the interactions between species and the response of organisms to environmental change. David's work examines the impact fossil data have on our understanding of the relationships of modern organisms; and Allison's research looks at the early evolution of arthropods, focusing on morphological innovations unique to this group. ●

## Media stars

Right: Bruno Debattista with his fossil find and horseshoe crab specimens

Despite being closed during 2013, the Museum enjoyed a number of positive stories in the press during the first half of the year. One highlight was the discovery of some 19th-century 'graffiti', left by two of the building's original painters, whose message in the roof rafters reads: "This roof was painted by G. Thicke and J Randall, April 1864".

The story featured on the Museum's closure blog, *Darkened not dormant*, and was picked up by the *Oxford Mail* and BBC Oxford. Oxford resident Debbie Moorwood read the item and after consulting the Victorian censuses and tracing back through her family tree, she discovered that painter George Thicke was her husband's great, great, great grandfather. Debbie contacted the Museum and she and her husband Steve were invited to climb the scaffolding to see the graffiti themselves. This generated a subsequent round of press interest for the Museum.

Another media highlight was the international reach of the story of Bruno Debattista, a 10-year-old pupil from Windmill Primary School in Oxford. Bruno had been attending the Museum's Natural History After-School Club and one week brought in a piece of shale that he thought might contain a fossil. Staff at the Museum confirmed that Bruno had in fact found the 320-million year old trace fossil of a pair of mating horseshoe crabs. The story ran as an exclusive on the Mail Online and was subsequently picked up by news outlets all over the world.

Other media coverage included the BBC Radio 4 documentary *The Etymology of Entomology*, presented by honorary associate Dr George McGavin and featuring Darren Mann discussing some of his favourite insect names, and Rachel Parle talking about how the Education team uses scientific language with children.

And finally, a paper co-authored by Professor Derek Siveter describing *Pauline avibella*, a new 425-million-year-old ostracod from Herefordshire with preserved soft parts, hit the news in December with coverage on the BBC and in the *New York Times*. ●

## On the road

To maintain public awareness of the Museum during the closure period, a specially-branded Volkswagen Transporter van and portable gazebos were designed by the University's Design Studio. Both van and gazebos created a strong visual presence at events and outreach sessions around the county. ●




## Swift recovery

Last year, poor weather and a period of gradual decline saw the worst season on record for the swifts in the Museum tower. So it is heartening to report that this year saw an improvement in the birds' fortunes. Signs of that improvement included an early return, with the first nest started before the end of April. The colony built up steadily through May with 21 active nests by early June, although it transpired that only 13 held eggs.

By early July there were 21 chicks in the 13 nests, and five eggs in four nests. All chicks grew rapidly during much improved weather during July, and three of the remaining five eggs hatched.

The first chicks were ringed on 15 July, and all but the youngest ringed over the next two weeks. A few well-grown young were left until 1 August for ringing when BBC Countryfile visited us to film in the tower. The consequent piece was broadcast on 18 August, and attracted welcome interest in the swifts. The last chick was ringed on 15 August and all 24 chicks had fledged at good weights by 28 August.

While the swifts had a much better year, the ageing cameras used to video nests for the museum website and gallery screen all sadly gave up the ghost this year. This offers a fresh opportunity to improve the system since much more advanced purpose-built IR nest-box cameras are now available at affordable prices. New cameras could benefit both the scientific study of the swifts and public viewing of their progress. ●

## Naturally curious

In May the Museum was delighted to host Sir David Attenborough for three days as he filmed his new television series, *Natural Curiosities*. He filmed in the Museum's library, Entomology and Zoology departments and used many specimens from the collections in the process. The series, the second in the strand, explores some of nature's most extraordinary and baffling species, and was produced by Humble Bee Films for the Eden channel. ●

## A level students get Inside Cells

More than 200 A level biologists from ten schools visited the Museum in December for the Inside Cells study day. The event brought together school students and scientists from many different biological fields and included contributions from Paul Smith, Sarah Joomun, Darren Mann and Sammy De Grave in the Museum.

Other speakers included Professor Robert MacLaren from the Nuffield Laboratory of Ophthalmology, whose group has three main areas of research: stem cell and gene therapy for retinal diseases and the development a bionic eye. In preparation for his talk, patients were filmed in the Museum to find out how their treatment affected their perception of a rich and stimulating environment.

After the presentations, a less formal period in the afternoon allowed students to choose from a range of behind the scenes tours, table top science sessions, and self-guided activities. Activities in the afternoon programme were developed and led by 22 scientists from post graduate students through to University professors, representing the work of the Museum and a broad range of University departments. ●

Below left: Swifts nesting in the Museum tower

Below: Sarah Joomun talks to A level biologists at the Inside Cells study day

# Exhibitions

*May – September 2013*

## Natural Histories

A major exhibition project of the year was Natural Histories, a display of some of the natural history treasures of the University's museums and herbaria, which was co-curated by Scott Billings, Stephen Johnston of the Museum of the History of Science (MHS), and Monica Price.

The exhibition was hosted by the MHS, in its special exhibitions gallery. The display of the Museum's specimens in the MHS building in Broad Street represented a return of natural history to its original Oxford home. When the building opened in 1683 as the Ashmolean Museum it housed 'natural and artificial rarities', and the natural historical collections remained there until the 19th century when the University Museum was built in Parks Road.

It was also an opportunity for the Museum to present some very significant material to the public at a time when the building was closed for roof restoration work. Specimens on display included the famous jawbone of the Oxfordshire *Megalosaurus*; volcanic lava from Graham's Island in the Mediterranean; the Rewari meteorite; crabs collected by Charles Darwin; ichthyosaur material from Elizabeth Philpot; insects collected by Alfred Russel Wallace; important specimens drawn from University Herbaria, and material from Wytham Woods.

Education officer Rachel Parle developed a family strand which ran all through the exhibition, presented by a Professor Dodo cartoon character drawn by education officer Chris Jarvis. Volunteers were trained to deliver specimen handling sessions in the MHS Entrance Gallery each Sunday during the exhibition.

Natural Histories also caught the attention of Banbury Museum, one of the University museums' development partners, who approached us asking if the exhibition might tour there, which it did successfully after its run at the MHS. ●


*From March 2013*

## Presenting…

In March, a new changing exhibition case was established next to the Welcome Desk to allow the display of collections material that is not normally on view to the public. Presenting… showcases specimens of topical interest and changes roughly every couple of months.

The first display marked the 150th anniversary of the death of William John Burchell, a 19th century explorer and naturalist. He left a treasure trove of natural history specimens, many of which are now in the Museum, and the Presenting… display proved an excellent way to exhibit some of his material, including a tortoise, the tusk of a hippopotamus, and the molar tooth of an elephant.

Another display showed some of the Mineralogy Collections' fulgurites – sand fused by lightning strikes. The fulgurites had previously been loaned to the BBC for the filming of Dara Ó'Briain's *Science Club*.

Presenting… was organised by Monica Price and Scott Billings, with Sarah Phibbs managing the associated digital content which is added to the Museum website as each new display is installed. **www.bit.ly/oumpresenting** ●


Right: Material belonging to and collected by 19th-century explorer and naturalist William Burchell



# Education and public engagement

## Winnie the Witch

The potent combination of a popular children's book character – Winnie the Witch – and our dinosaurs brought hundreds of families pouring in through the doors in October half-term.

Over 1,000 children took part in activities at Winnie's Dinosaur Day, inspired by the launch of a *Winnie the Witch* book which features a beautiful double-page illustration of the Museum. The illustrator Korky Paul read from the book, signed autographs, and delighted Winnie fans by drawing and painting live on stage.

Children took part in a variety of activities, from making triceratops masks and Winnie hats, to digging up fossils. But the highlight for many was their participation in a dinosaur-drawing competition. This challenge was judged by Museum director Professor Paul Smith, who had a hard task choosing the winner each day as the standard of entries was very high. ●

Left: An illustration of the Museum from one of Korky Paul's Winnie the Witch books

## 'Undergroundologists' in training

During the summer, education officer Chris Jarvis was seconded to The Oxfordshire Museum (TOM) as part of a collaboration facilitated by Oxford ASPIRE, a consortium of Oxford's museums.

Faced with limited resources, TOM was looking for ways to increase use of its galleries by Key Stage 2 school groups, responding to changes in the National Curriculum that were predicted to have a negative impact on the numbers of school visits to social history museums.

To address these challenges Chris developed a session called 'Undergroundology', focusing on celebrated Oxfordshire geologist William Smith and introducing children to the history of materials technology and geology in relation to stratification, rocks, minerals, mining and mapping of the subterranean world. This could help TOM to attract visits from teachers studying science topics as well as local history.

The taught session and gallery trails were trialled with pupils from Windmill School, who first learnt about the 'father of geology', William Smith, before sorting specimens into 'rocks' and 'minerals' and then labelling them more specifically. Having identified the raw materials they then matched them to museum artefacts made from the same material, learning about archaeological stratigraphy and a history of materials technology from the Palaeolithic to the Victorian era at the same time.

With 60 pupils piloting the session it was possible to deliver it four times in four slightly different forms, giving education officers flexibility to personalise the session to suit their styles of delivery. 'Undergroundology' received very positive feedback from both staff and pupils, with teachers saying they would 'definitely' rebook the session and use it at school, and children saying that it was 'epic' and that they 'loved' it.

It is hoped that the APSIRE partnership placement should leave a lasting legacy that will improve educational provision across the county as well as strengthen the links between the two museums. ●

Below: Chris Jarvis teaches pupils how to become 'Underground-ologists'

## Earth Sciences practical classes

For the second year running a series of practical classes for undergraduates of the Department of Earth Sciences took place in February and March. Zoology Collections manager Malgosia Nowak-Kemp, together with the departmental teaching staff, taught the evolution and diversity of the vertebrate animals starting with fish, through amphibians, reptiles and birds, to mammals. Many specimens from the Museum stores were used, including skeletal and spirit preserved specimens.

In March a brand new practical class was delivered by Malgosia for Oxford Brookes University biology undergraduate students. The large group of 68 students was accommodated in the new Museum Annexe (see Running the Museum). The subject was "*Homo* and other primates" and covered an introduction to comparative anatomy, and the different adaptations of primates to their environment, diet and locomotion. ●

## Building Mount Everest

Drawing on the recently-expanded archive of geologist and explorer L.R. Wager, curator of the Mineralogy Collections Dr Dave Waters gave an invited talk to the Oxford Colloquium, held in the Museum in March (see Partnerships). The talk, titled 'Building Mount Everest – the inside story', used the petrographic and analytical studies of Wager's specimen collection from the 1933 British Everest Expedition.

Both Dave and Monica Price, assistant curator, ran a handling table of Wager's Everest rocks, discussing their principal mineral constituents. A scanned set of prints from Wager's Greenland Expedition in 1935–36 was also presented as a rolling slideshow in the Lecture Theatre as part of the Christmas Light Night event in November. ●

Below: East Greenland, sledging on frozen fjord, spring 1936, by L.R. Wager

## Students, families and volunteers

Like many areas of Museum activity during the course of the year, the reach of the Education department's schools programme was impacted by the closure during the roof restoration work, which accounted for seven months of this period. Schools sessions reached 13,679 UK students, and there were also 134 public events, including the continually successful Family Friendly strand of activities.

Volunteers remain a vitally important component of our provision, with 119 volunteers contributing 1,049 hours to public events and outreach sessions, and 130 volunteers giving 4,684 hours to work in the collections. ●

## Christmas Lectures

More than 1,000 secondary school students from Oxfordshire and the surrounding counties attended a series of four Christmas science lectures organised by the University Maths, Physical and Life Sciences Division. The 'Accelerate!' show was developed by the University's Department of Physics to introduce students to the world of particle and accelerator physics. They found out how particle accelerators can do everything from recreating conditions just after the Big Bang to finding new ways to treat cancer. The Departments of Earth Science and Chemistry also presented lectures during the week.

The aim of the lectures was to inspire and encourage students of all abilities towards science. After each lecture there was a science quiz and the opportunity for students to handle specimens around the Museum. ●



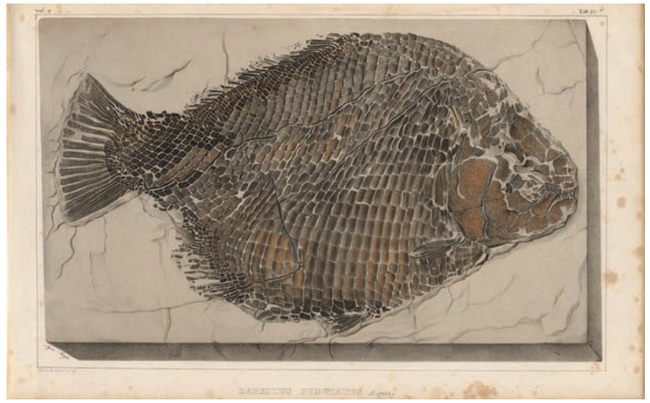
## Hidden Treasures

As the Museum was closed to the public for over half the year, the focus shifted to our behind the scenes activity. A series of tours offered the public a chance to see hidden specimens and spaces, as well as ask our staff about their work and the history of the Museum.

Mineralogy Collections assistant curator Monica Price revealed the 'The curious and beautiful world of crystals', while Mineralogy curator Dr Dave Waters gave a tour on the theme of 'Rocks from Earth and space'. Assistant curator Paul Jeffery gave two behind-the-scenes tours of the Geology Collections, titled 'Of mice and *Megalosaurs*' and 'Temple of creation or where god died?'. Other Geology staff also gave tours of the geology lab and new imaging facilities as part of the Collections Trust's 'Hidden Treasures' weekend in August.

An Entomology Collections highlights tour uncovered the history of the Museum's five million specimen-strong insect collections and allowed visitors to get up close to the oldest pinned insect in the world and David Livingstone's tsetse fly. The 100th anniversary of Alfred Russel Wallace (1823–1913), one of the 19th century's most remarkable intellectuals, was celebrated with special access to his insect specimens and archives. One attendee wrote in their Trip Advisor review that the tour left them feeling so 'rejuvenated – it beats going to the spa!'

The Library and Archive also presented some of its treasures and the Zoology Collections offered a look at specimens from the oldest British collection of natural history objects – the 'naturalia' and 'artificialia' gathered in the 17th century by father and son John Tradescant. ●

Above: The oldest pinned insect in the world: Bath White butterfly (*Pontia daplidice*)

Left: Drawing of a fossil fish (*Dapedius punctatus*) by Louis Agassiz

Far left: Opening up the Entomology Collections

Below: Schools, families and volunteers helped decorate this giant globe for the collaborative Globe Makers project

## Globe Makers

Along with the Museum of the History of Science, the Ashmolean Museum and the Museum of Oxford, the Museum took part in a joint venture to celebrate the 500th anniversary of the cosmographer and map-maker Gerard Mercator, perhaps best known for the map projection that bears his name. Led by the Museum of the History of Science, the Heritage Lottery-funded Globe Makers project gave families, schools and visitors the opportunity to contribute to the gradual creation of large, metre-diameter globes in each museum.

HLF trainee Lea Kloeppinger led events at the Museum and, with the help of a team of regular volunteers, worked with participants to create a globe which drew inspiration from the natural world, containing homely habitats, fantastical creatures and imagined postcards from Charles Darwin. The Globe Makers programme also included workshops and events celebrating the invention of the printed globe and the original craft of globe-making.
**www.mhs.ox.ac.uk/globes** ●

## Students extract their own DNA

Following a successful pilot in 2011, the Museum has embedded a DNA workshop for A level biologists into its schools programme. In October 2012 more than 150 students attended the Question of Taste workshops where they explored an unusual human trait, the ability of some individuals to taste the bitter chemical phenylthiocarbamide, by extracting and analysing DNA from their own cheek cells.

The workshop was originally developed in a collaboration between the Association for Science and Discovery Centres, At-Bristol, Nowgen in Manchester and the Centre for Life in Newcastle, and was supported by the Wellcome Trust. ●

Right: A level students extract their own DNA

Below left: Professor Paul Smith speaks at the Geological history of the Cotswolds day school

Below right: The Varied Carpet Beetle (*Anthrenus verbasci*) can cause damage to collections

## Lifelong learning

In collaboration with the University of Oxford's Department of Continuing Education the Museum developed and hosted a number of adult day schools.

In the first of these, *The evolutionary origin of animals*, Professor Paul Smith explained to an audience of keen amateur geologists how complex cells and multicellular animals first evolved by presenting the key milestones in this history, such as the snowball earth events in the Precambrian, diversification in the Ordovician and the mass extinction event of the Permian. Staff were on hand to discuss the significance of the fossil evidence which was shown using a range of specimens from the Museum collection.

The other day schools were *The early history of mammals – plate tectonics meets evolution* and *The geological history of the Cotswolds*, a field-based day school. ●

## The Elephant in the Room

One of the biggest issues facing natural history collections in the UK at present is the loss of specialist curators in museums and the associated threat of the loss of well managed materials for taxonomic research, environmental monitoring, and education.

At the Museums Association annual Conference and Exhibition in November, Entomology Collections assistant curator Darren Mann gave a presentation which addressed some of these questions. Titled 'The Elephant in the Room', Darren asked how we can prevent the loss of 'orphaned' collections in museums around the country. As more and more collections are put away into storage, and natural history curators are lost through redundancy or down-sizing, a great deal of material is left without anyone to care for it, interpret it or to make specimens available for research, he told the conference.

The biggest threat is to the collections themselves, which may become damaged or lost altogether through poor storage and lack of care. In a round-up of the problems associated with deciding the future of these collections, Darren pointed out that despite their huge popularity with the general public there has been a movement in the museums sector away from natural history and towards the arts and social sciences. ●



## In the summertime…

Wintry weather helped to keep the Museum very busy during the summer holidays, with numbers considerably higher than the previous year. The Education department ran 31 family events in six weeks, including the Museums Games trail – capitalising on Olympic fever with eight animal-related physical challenges. Bags of Fun returned each Tuesday and Wednesday during the holidays, with families borrowing Dinosaur Adventure and Dressing Up bags to explore the Museum and the Pitt Rivers.

Every Thursday afternoon, volunteers, Education and Entomology staff ran drop-in bug-handling sessions. Visitors had the chance to observe, touch or hold cockroaches, millipedes, stick insects, mantids and even a well-behaved scorpion. Around 100 children took part each week and feedback was extremely positive.

Regular Family Friendly Sundays continued to be popular. Every Sunday for the last 12 years, volunteers have manned backpack loans and craft activities for both the Museum and the Pitt Rivers. The reliability and regularity of these events mean that families return time and again. ●

## All about Alice

As part of the annual Alice's Day festival in Oxford, the Education team joined forces with Christ Church Cathedral, Blackwell's book shop and the Story Museum to develop a new partnership project called Dodo Loco, which followed the Alice's Day theme of nonsense. Around 120 children from local Oxford schools took part in a day of exciting behind-the-scenes Alice tours at Christ Church and a nonsense poetry workshop with author Michael Rosen. An outreach visit followed, with children handling Museum specimens like those that inspired Lewis Carroll to create his wonderland world. Afterwards, they created their own artworks with artist Liz Ritchie. The finale was an exhibition of the children's poetry and art in Christ Church library, which was visited by over 500 people on Alice's Day. ●

Left: Creepy-crawly cockroaches do the rounds during regular bug-handling sessions

Below: Pitching up at the Oxfordshire Goes Wild event at Earth Trust in Little Wittenham

## Out and about

Throughout the year staff and volunteers attend many events to take the Museum's collections to a wider and more varied audience. Often arriving in style in the specially decorated Museum van, and pitching up with a mini-Museum gazebo, this year's outreach activities included trips to Combe Mill, the Stanton Harcourt Village Gala, the Oxfordshire Goes Wild event at Earth Trust in Little Wittenham, and the Oxford Festival of Nature in Botley Park, in collaboration with West Oxford Fun Day.

Alongside these special events, our specimens and Education staff also took to the road to deliver a series of outreach schools sessions to non-visiting rural primary schools. This programme was developed as a response to the closure of the Museum from January 2013 for the roof restoration work, taking it as an opportunity to reach out to schools which might not ordinarily be able to visit the Museum.

Speaking about one of these outreach sessions on evolution, a teacher from Fir Tree Primary School in Dorchester said: 'They (and I think I speak for all of lower school) had the most brilliant time - thank you all so very much. Fun, interactive and totally captivating - you made the learning so interesting and accessible for all children, despite quite large ability ranges within the classes.' ●

# Research

## Museum hosts Annual Symposium of Vertebrate Palaeontology

The 60th Annual Symposium of Vertebrate Palaeontology and Comparative Anatomy / 21st Symposium of Palaeontological Preparation and Conservation was held in the Museum in September. More than 40 palaeontologists visited the collections, from the UK, Spain, Finland, France, Germany, Australia and the USA, and several new research projects were initiated, including one on the recently donated collection of 130 Jurassic mammal teeth from Kirtlington, Oxfordshire.

As part of a collaborative project funded by Leslie Noè's set-up grant from the Universidad de los Andes, Juliet Hay, Eliza Howlett and Paul Jeffery presented a poster with Judyth Sassoon and Leslie Noè at the Symposium, on the 'Preparation of the holotype of *Pliosaurus*'. The poster related to Juliet's work on the acid preparation of the skull of the Museum's holotype of *Pliosaurus brachydeirus* – the specimen used when the species was first scientifically named and described. By gently air-abrading the lower jaw to clear it of surface grime finer structures were revealed, including suture lines critical to a systematic reassessment of the holotype. ●

Above: Preparation of the *Pliosaurus brachydeirus* holotype revealed finer structures than previously visible

## Neolithic grazers create 'Vera cycles'

A major piece of work by the Museum's Environmental Archaeology Unit, led by Professor Mark Robinson, was the completion of an investigation into the archaeology of so-called Vera cycles. Franz Vera showed that in modern temperate deciduous woodland in the lowlands of Europe, heavy grazing prevents the establishment of a stable climax woodland vegetation. Instead it causes cycles of the invasion of grassland by thorn scrub, the succession of the scrub to a woodland of trees such as oak, which in turn shade out the scrub, followed by grazing which leads to the eventual disintegration of the woodland back to grassland.

This hypothesis has attracted considerable attention from conservationists although pollen analysis has shown it to be invalid for natural woodland in the earlier Holocene. However, it was found that the episodic nature of Neolithic agriculture in Britain, with frequent woodland regeneration, was related to the use of Vera cycles by the grazing of domestic animals in woodland as a means of gaining new open areas for agriculture. The results of this study were presented at a conference on Neolithic agriculture at Reading University. ●

## 'Snowball Earth' investigations in Greenland

At the end of July 2012, Museum director Paul Smith joined a multinational team of six scientists travelling to Greenland to study the geology of Ella Ø, an island about two-thirds of the way up the east coast. The main aim was to examine the sedimentary environments associated with 'Snowball Earth', a period 750–635 million years ago when the Earth was at times glaciated from poles to equator. The multidisciplinary team included sedimentologists, glaciologists, geochemists and palaeomagneticians from UK, US and Australian universities.

Excellent weather throughout and long days allowed all of the main scientific objectives to be achieved. The rock samples returned to the UK from the trip offer lots of opportunity for following up the field observations.

Ella Ø yielded some surprises, presenting a seamless but extremely rapid change from tropical limestone environments, akin to the modern Bahamas, through to full glaciation and evidence of ice sheets at what was then the equator. Meanwhile, modern Greenland seemed to be experiencing the opposite, with temperatures in the 20s and barely a cloud to be seen during the five week season. ●

## High-pressure rocks…

Three thesis collections held by the Museum were used in a five-month research project at Masters level on the stability of amphibole minerals in subduction zones. The theses were selected for their inclusion of high-pressure metamorphic rocks from west Norway.

The research was carried out by Laura Airaghi from the Département des Géosciences of the École Normale Supérieure, Paris, and supervised by Mineralogy Collections curator Dr Dave Waters. During the year Dave also contributed to a number of papers by colleagues and students that are currently in review or in press. ●

## …and exquisitely-preserved fossils

Derek Siveter continued to work on the Herefordshire (Silurian) and the Chengjiang (Cambrian) fossil Lagerstätten. Papers were published on a Silurian horseshoe crab and the evolution of arthropod limbs; Cambrian lobopodian eyes; and an exceptionally preserved Silurian ostracod (crustacean).

Money paid to Geological Collections by the Universidad de los Andes for the preparation of the skull of *Pliosaurus brachydeirus*, supplemented by a little central funding, has enabled us to employ Carolyn Lewis for a further year to continue the digital reconstruction of the Herefordshire Lagerstätten specimens. ●

## On a warthog's trail

Prompted by an enquiry about the Museum's suid (pig) specimens, Vertebrate Collections manager Malgosia Nowak-Kemp set out to uncover the history of one of the specimens of an African warthog that is kept in the collections. The specimen – a cranium and a mandible – arrived in Oxford in the late 16th century as part of the Tradescant collection that Elias Ashmole presented to the University. Since 1683 the skull has been entered in a succession of different hand-written catalogues under various names. Once it was even named as a babyrousa, an animal that does not and never did live in Africa, but in Indonesia.

From the close association with the Royal Society and its collections of the first Keeper of the Ashmolean Museum, to the first half of the 19th century, the cranium with its mandible was given various names, identification numbers, its own metal tag, various paper labels, and in the 20th century was entered in the accession catalogue and electronic database.

The biggest surprise was the fact that as the warthog - *Phacochoerus africanus* - was described as a species in the 1788 catalogue it was presumed that was the time it was first brought to Europe; but the Oxford warthog specimen was in the Museum since 1683, nearly one hundred years earlier, making it the oldest specimen of a warthog in Europe.

These findings were reported in a paper in the *Archives of Natural History* titled *A seventeenth-century warthog skull in Oxford, England*. The specimen itself also went on public display during the year, in the Natural Histories exhibition which was co-developed by, and hosted at, the Museum of the History of Science in Oxford (see Exhibitions). It featured as a centrepiece in a display all about the tricky business of naming and classifying plants and animals. ●

Below: The Tradescant warthog (*Phacochoerus africanus*)

# Collections

## Gené type specimen found

Sometimes, apparently long-lost type specimens emerge or are hunted down in the collections. One such type came to light during the year, prompted by a paper looking at the specimens collected by 19th-century Italian naturalist Carlo Giuseppe Gené.

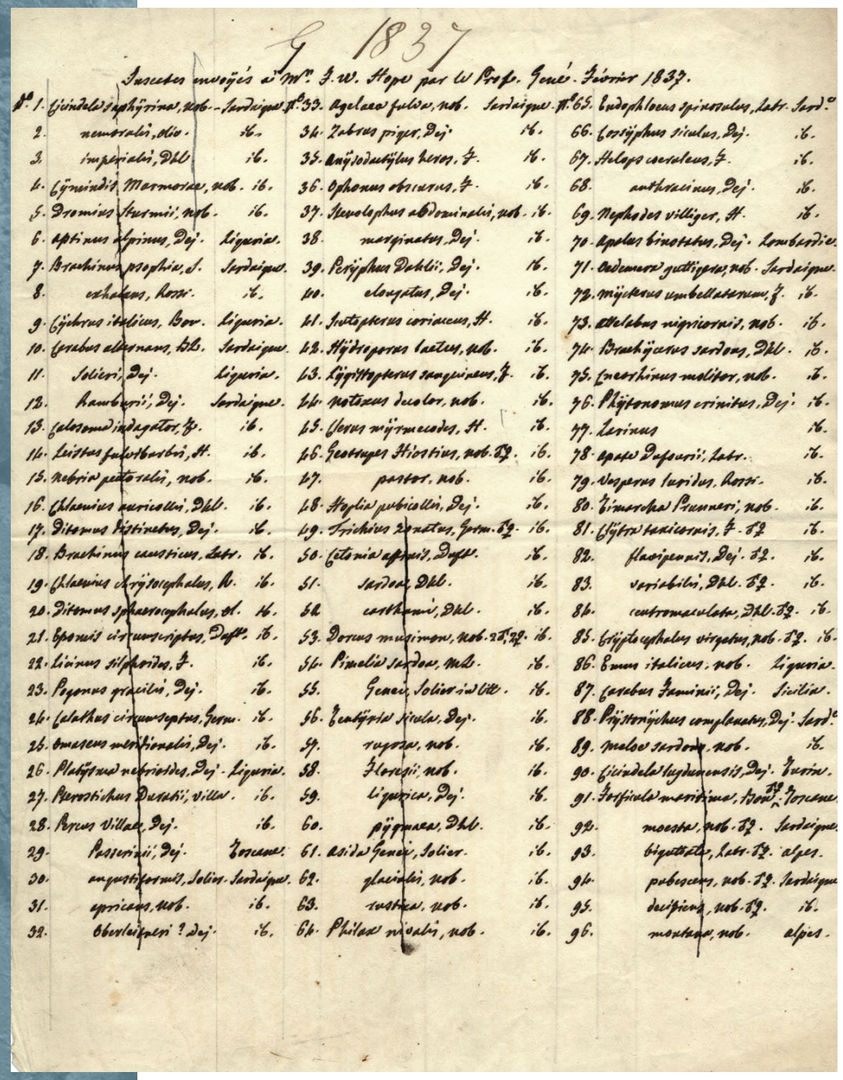
Between 1833 and 1838 Gené made four trips to Sardinia to collect insects and he described many species new to science. Most of Gené's insect collection is held in the Museo Regionale di Scienze Naturali di Torino, but some of his insect specimens are believed to be lost or destroyed. For example, in the recent revisions of the genus *Chelotrupes* (a dor beetle) by Dellacasa and Dellacasa (2008) the authors were unable to find the original specimen(s) Gené used to describe *Chelotrupes hiostius* and so they designated a neotype – a new type to replace one that is lost or destroyed. Hillert et. al. (2012) followed this in their review of the genus *Chelotrupes*.

The Museum provided the type specimen of *Chelotrupes momus* for the Hillert et. al. (2012) work on the genus, but when the paper was sent to us along with the returned specimen collections staff noted the 'lost' Gené specimen cited. Staff knew we had some of Gené's specimens in Oxford as Gené corresponded with the Hope Entomological Collections founder Frederick W. Hope, but the value and extent of this collection had not been realised.

In the archive is an 1837 letter, sent from Gené to Hope, containing a list of 96 insects from Sardinia, in which several new species are identified by having 'nob' after their scientific name – shorthand Latin for *nobis*, which translates as 'belonging to me'. In this list was *Geotrupes hiostius* (as Gené had called it).

After the discovery of this archive, staff searched the collections and found the 'lost' type of *Chelotrupes hiostius* in the dor beetle collection. An amazing discovery, as this specimen's scientific importance had not been recognised for over 170 years. A further two specimens from the list were also found, an oil beetle and a stag beetle. ●

Below: A letter sent from Carlo Giuseppe Gené to Frederick W. Hope in 1837 contained a list of Gené's Sardinian specimens



## Geological cataloguing

André Ashington catalogued a number of new acquisitions, including ammonites from the Upper Jurassic of Staffin, presented by J.K. Wright, and mammal teeth from the Middle Jurassic of Kirtlington, presented by Eric Freeman. In all, he catalogued some 3,159 specimens which, with the contribution from other staff, interns and volunteers, leads to a grand total of 8,170 geological specimens catalogued during the year. ●

## To protect and conserve

Care and conservation of the collections is an ongoing task, but especially so towards the end of 2012 when the displays were cleared to make way for scaffolding and decking needed to complete the roof restoration work. Juliet Hay, Bethany Palumbo and many other members of staff wrapped and relocated specimens in the court prior to the commencement of the work.

In the Mineralogy Collections, Joy Irving continued to work one day a week on a voluntary basis to continue the long-term conservation programme for previously ammonia-treated pyritic and related specimens, and associated maintenance and environmental monitoring. Both Joy and Juliet made preliminary work on a programme of anoxic storage of pyrite-bearing geological specimens, documenting progress to date, calculating costs and starting time trials. ●

## More than a Dodo

A painted replica of perhaps our most famous specimen, the Dodo head, was created by Juliet Hay for use in education sessions. ●

## Online atlases for metamorphic rocks

The cataloguing of the metamorphic rocks from the Reading University collections was carried out over the summer with help from E.P. Abraham Fund intern and third year Earth Sciences undergraduate Fiona Walker. Since these collections include many rocks from the Dalradian Series of Scotland, a selection was loaned to the Department of Earth Sciences to make up deficiencies in the teaching collections there. Accompanying this new material are new and enhanced online resources. Experimentation with simple but effective ways of compiling and delivering searchable image banks of metamorphic rocks in outcrop and metamorphic minerals in thin section has led to two new online open-access atlases. These resources offer a collection of digitized photographs of rocks and geological features for use in teaching. **www.earth.ox.ac.uk/~oesis/** ●

## Heads of Collections

A strategic restructure of the management of the collections resulted in the Entomology, Zoology, Geology and Mineralogy Collections being rationalised into two principal groupings – the Life Collections and Earth Collections, headed by Darren Mann and Monica Price respectively. Combined with the third Collection, the Archives and Library, this new robust structure reflects the first stage of the implementation of the Museum's strategic plan. Darren and Monica took up their new posts on 1 August 2013. ●

## Professor E.A. (David) Vincent

It was with great sadness that we heard of the death of Professor E.A. (David) Vincent on Christmas Eve 2012, at the age of 93. David was Professor of Geology from 1967 until his retirement in 1986. He was on the Museum's Committee for the Scientific Collections, and for many years after he retired he was a volunteer in the Museum too, cataloguing instruments, glass plate negatives, archives and historic thin sections, as well as sorting the early 19th-century MacCulloch collection of rocks. David's particular expertise was in the geochemistry of igneous rocks, but he is particularly remembered as a wise and supportive mentor to young academics. His memories of many of the personalities that shaped geology teaching and research at Oxford over the years informed not only his work on our archives, but also his privately-printed book on the history of the Department, 'Geology and Mineralogy at Oxford 1860–1986'. ●

# Partnerships

## Working with the sector

The Museum often provides expertise and support to other museums, and during the year collections staff liaised with the River and Rowing Museum in Henley over the long-term loan of specimens for its new Source gallery. Selected material includes mammoth, woolly rhinoceros and hippopotamus specimens found in the Pleistocene gravels of the Thames valley area, along with a range of touchable specimens to illustrate the geology of the area.

On 8 March, another collaboration concluded when Juliet Hay attended the formal reopening of Abingdon Museum by HRH The Duke of Gloucester. Juliet has worked on the conservation and installation of the ichthyosaur skeleton, thought to be the remains of a young adult, that forms the centrepiece of Abingdon Museum's new geology displays.

Meanwhile, Monica Price was an expert advisor for the Horniman Museum's 'Geoblitz' collections appraisal project. She also gave a presentation on the identification and management of radioactive geological specimens at the Institute of Conservation Conference on Hazardous Materials in November, as part of a collaboration with the National Museum of Wales and the Hunterian Museum, University of Glasgow. ●


Right: The River and Rowing Museum's Source gallery features specimens from this Museum

## The Colour of Nature

The Museum is part of the Real World Science partnership with the Manchester Museum, Natural History Museum, The Great North Museum, Stoke Museums, Leeds Museum and Galleries, Peterborough Museum, and Nottingham Museums and Galleries. In November the partnership launch a new shared secondary education programme called The Colour of Nature at an event at the Natural History Museum in London, attended by head of education Janet Stott, secondary education officer Sarah Lloyd and Dr Marie Pointer from the University's Department of Zoology.

The Colour of Nature is a practical workshop linking Key Stage 3 Biology and Physics and encouraging students to consider what colour is, the different ways that colour is produced and how colour is an adaptation in the natural world.

The launch event also helped to raise the internal and external profile of the partnership and informed key policy makers of Real World Science's contribution to informal science education within the museum sector, as well as recognising the contribution from funders of the project, including the valued support from Arts Council England. ●

Above: Key Stage 3 students take part in The Colour of Nature workshop

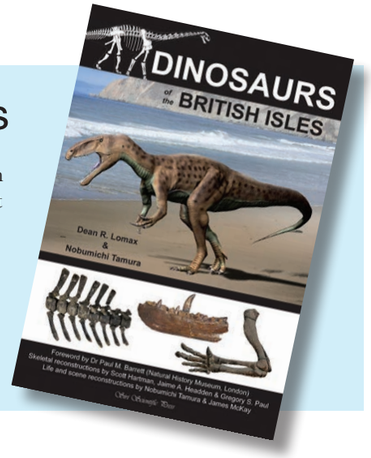
## Oxford Colloquium

In March, the Museum hosted the second annual Oxford Colloquium, organised in partnership with the Oxford Geology Group and the Geologists' Association. The day comprised six talks by eminent speakers on topics from across the earth sciences, along with handling tables and live demonstrations by members of Museum staff. Professor Derek Siveter and Carolyn Lewis also presented their work on the Chengjiang and Herefordshire Lagerstätten fossils at the event.

A total of 220 people attended, from retired geologists to interested amateurs and secondary school groups, and feedback was overwhelmingly positive, with more than 50 tickets sold on the day for an even larger event the following year. ●

## New book on British dinosaurs

Eliza Howlett worked with Dean Lomax of Doncaster Museum on images for his forthcoming book on British dinosaurs, co-authored by palaeoartist Nobumichi Tamura. Aside from the Natural History Museum in London, this Museum contains the most extensive dinosaur collection in the UK, and we anticipate that the book will contain around 50 images of specimens from our collections. ●

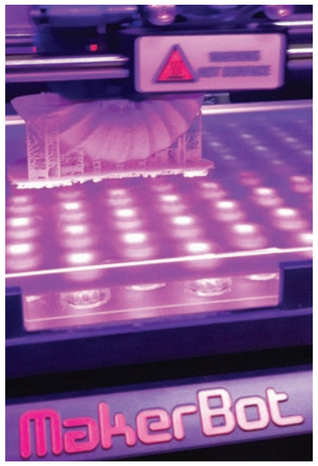


# Running the Museum

## British fossil types heading online

Work continued on GB/3D Fossil Types Online, a major JISC-funded project run in collaboration with the British Geological Survey, the Sedgwick Museum, Cambridge, the National Museum Wales, and the Geological Curators' Group. A prototype database of British fossil type specimens held in UK institutions is now available on the project website. Once fully populated, this database will contain details of around 21,000 specimens, along with high quality images and stereo anaglyphs of each, and a wide selection of rotating 3D models produced by laser scanning.

The Museum side of the project was managed by Eliza Howlett. Lindsay Percival photographed invertebrates, while Sarah Joomun worked on laser scanning before moving over to photograph vertebrates, which she continued until the end of December. In all, Lindsay and Sarah generated 7,231 photographs of 1,715 specimens and 97 laser scans, while a further 888 photographs of 300 specimens were contributed by researchers. André Ashington continued to work on the project until the end of July, reformatting database records prior to the final data migration. **www.3d-fossils.ac.uk** ●




## The Kingdom of Saudi Arabia

In April, Entomology Collections assistant curator Darren Mann and Mike Wilson, Head of Entomology at the National Museum Wales, visited Tabuk in Saudi Arabia to meet lecturers and students of Tabuk University. The visit set up discussions about forming collaborative links to establish an entomology course, a collection of insects, and to undertake a joint faunal survey of the area. ●

## Coleopterists gather

In February the Museum hosted the 10th annual national beetle enthusiasts' day – Coleopterists Day – for the second year running. Over 50 attendees arrived from across the country for a series of talks, a tour of the Entomology department and a dung beetle workshop.

The talks were presented by a mix of professionals, students and enthusiasts on a range of topics, including 'Using traits to evaluate ladybird distributions' by Richard Comont, Centre for Ecology and Hydrology; 'Suckers & sexual conflict in diving beetles' by Dave Bilton, Plymouth University; '*Prionus coriarius* [a longhorn beetle] in Richmond Park' by John Lock; 'Studying the ecology of British Oil Beetles' by John Walters; and 'New initiatives to support beetle recording in Britain' by Helen Roy of the Biological Records Centre.

The collections and Library were accessible throughout the afternoon, and many took advantage of both to confirm identifications against our reference material, or to see some of the more unusual species and extract data. ●

Above right: Printing fossils in 3D with the MakerBot

Below: Darren Mann travels in style in Saudi Arabia

## Excuse the mess

The area outside the front of the Museum building was messy for much of the year as landscaping work slowly took shape. To accommodate visitors and students whilst the construction was taking place a temporary path was created across the lawn. The project included the installation of new railings, an irrigated lawn, plants, trees, gravel, and benched seating around the edges of the grass. ●

## A lovely cup of tea

A pilot café on the upper gallery began in August and ran until November half-term. The pilot gathered feedback from visitor surveys ahead of plans to open with a permanent café after the completion of the roof work in 2014. ●

Above left: Turf is laid as part of the external landscaping work

Above right: Branded mugs make for an extra special cup of tea in the new café

Below: André Ashington gives the *T. rex* a bit of a spring clean

## Staff changes

André Ashington left the Museum at the end of July, after 14 years of dedicated service. In his time André has worked in the Zoology, Geology and Mineralogy Collections, as well as in the Library, giving him a breadth of experience that is probably unmatched by anyone else in the Museum.

Alongside his collections work, André always contributed greatly to the work of the Education and Outreach departments, running a school session on dinosaurs as part of the Museum's 'Dinosaur Days'; providing themed handling tables for a huge variety of events, as well as engaging in more esoteric activities, including the re-creation of a Victorian photographic studio in which members of the public were photographed in contemporary costume surrounded by Museum specimens. His contribution to the work of the Museum has been quite outstanding.

Lindsay Percival left the Museum at the end of September to work on specimen photography at the Sedgwick Museum, Cambridge, as part of the JISC-funded British fossil types project (see Partnerships). Sarah Joomun's contract on the JISC project finished at the end of December, and she moved to the Museum Archives to work on the William Smith digitisation project (see Highlights).

Anthony Archer retired as Front of House Manager at the beginning of January after 12 years at the Museum. Eschewing a party, his excellent work was instead acknowledged with a Jack Daniels send-off just before Christmas.

The Museum appointed its first communications officer, Scott Billings. Working part-time, Scott helped to develop the Museum's online activity, press relations and marketing, and worked on the Goes to Town trail in Oxford city.

Kathleen Santry was appointed head of Archival Collections and increased her hours to full time from January. Collections conservator Bethany Palumbo also increased her hours to full time.

Head of technical services Chris Burras, and accountant Kay King, both took early retirement in the summer. Chris has been associated with the University all his life. As a teenager at Cherwell School, he completed a week's work experience placement in the Department of Human Anatomy and joined the staff as a workshop technician shortly after. He moved to the Inorganic Chemistry Laboratory where he spent 17 years before joining the Museum, 16 years ago.●

# Running the Museum

## Arts Council consultation

Starting in July, the board of Oxford ASPIRE – the consortium of Oxford University Museums and Oxford County Council Museums Service – began consulting with colleagues across the museums to shape the next Arts Council England (ACE) Major Partner Museums funding bid. ACE funding underpins many staff positions and supports special projects across the museums.

Preparations for a funding bid came against a backdrop of cuts and restructures at ACE, as it attempted to halve its administration costs by 2015, including making cuts to the funding available for Major Partner Museums. Although the bid relates to funding for a three-year period, 2015-2018, only the first year of funding is initially guaranteed, with the remainder dependant on future Government funding rounds.

The restructure also saw the current regional boundaries replaced in July by five new areas: London, the South East, the South West, the Midlands and the North. The large South East region, of which the Museum is part, includes as Major Partner Museums the Cambridge University Museums, Norfolk Museums and Archaeology Service, and the Royal Pavilion and Museums in Brighton and Hove. ●

## A new home

For many years the Museum Lodge has provided a home for the Front of House managers and their families. During 2013 the lodge was fully refurbished, with new heating, wiring, kitchen and shower room and complete redecoration throughout. The Lodge is now used as a temporary residential space for visiting students, academics, researchers and visitors. ●

## Glassblowing labs become Museum Annexe

Work on the creation of a new visitor space shared between the Museum and the Pitt Rivers Museum was completed in November. A conversion of the old glassblowing labs adjacent to the Museum created a clean, light, multiuse space with mini kitchen and toilet facilities.

The Museum Annexe, as it was subsequently named, is the first joint facility for the two museums. As well as providing much-needed additional visitor toilets, the Annexe is used for education sessions, special events, meetings, workshops and many other activities across the museums. ●

## Preventing pests

The Museum introduced a new Integrated Pest Management (IPM) programme, overseen by collections conservator Bethany Palumbo. High risk areas were identified and monitoring systems and traps were installed. The traps catch pests including Silverfish (*Lepisma saccharina*), which are known to eat cellulose materials such as paper, and are indicators of damp conditions, and Webbing Clothes Moths (*Tineloa bisselliella*) which eat protein-based materials such as fur and feathers. ●

Above: Illustration of the Museum Lodge

Right: The Museum Annexe is a new multi-functional space shared with the Pitt Rivers Museum

Below: A taxidermy Grouse, with feathers irreversibly damaged by the Webbing Clothes Moth



# Appendices

## Appendix 1: Visitors of the Oxford University Museum of Natural History at 31 July 2013

The Vice-Chancellor: Professor Andrew Hamilton FRS
Pro-Vice-Chancellor (Research and ASUC): Professor Ian Walmsley FRS
Assessor: Dr Penny Probert Smith
Lord Krebs FRS (Chairman)
Jana Bennett
Robert Campbell
Professor Philip England FRS
Professor Richard Fortey FRS
Professor Paul Harvey FRS
Professor Gideon Henderson FRS
Professor Peter Holland FRS
Professor Jonathan Michie
Dr Michael O'Hanlon
Professor Alice Roberts
Professor Iain Stewart
Professor Paul Smith (Secretary to the Board)

## Appendix 2: People

### Staff of the Museum 2012–2013

Director: Professor Paul Smith
Administrator: Wendy Shepherd

**The Hope Entomological Collections**
Assistant Curator: Darren Mann
University Support Staff: Katherine Child, Dr James Hogan, Zoë Simmons, Amoret Spooner

**Geological Collections**
Assistant Curator: Paul Jeffery
Senior Research Fellow: Professor Derek Siveter
Collections Manager: Eliza Howlett
University Support Staff: Andre Ashington, Juliet Hay
Research Assistant: Dr Carolyn Lewis

**Mineralogical Collections**
Curator: Dr David Waters
Assistant Curator: Monica Price

**Zoological Collections**
Assistant Curator: Dr Sammy De Grave
Collections Manager: Malgosia Nowak-Kemp

**Conservation**
Conservation Officer: Kate Pocklington (left 31/8/12)
Head of Conservation: Bethany Palumbo
Conservation Assistant: Gemma Aboe
Conservation Assistant: Nicola Crompton

**Hope and Arkell Libraries**
Librarian: Kate Santry
Digitization Officer: Dr Sarah Joomun

**Information Technology**
IT Officer: Sarah Phibbs
IT Assistant: Dr Rosemary Painter

**Education and Outreach**
Head of Education: Janet Stott
Secondary School Officer: Sarah Lloyd
Primary School and Family Officer: Chris Jarvis
Community Officer: Susan Griffiths
Volunteers Co-ordinator: Joy Todd
Volunteer and Outreach Assistant: Dr Caroline Cheeseman
Education Assistants: Rachel Parle, Simone Dogherty
HLF Skills for the Future Project Co-ordinator: Neil Stevenson
Trainee Education Officers: Scott Billings, Lea Kloeppinger

**Central Services**
Administrator's Assistant and Director's Secretary: Kristin Andrews-Speed
Accounts: Kay King (retired 14/6/13), Beverly Judd
Communications Officer: Scott Billings
Front of House Manager: Anthony Archer (retired 1/1/2013)
Deputy Front of House Managers: Israr Hussain, Alex Woodward
Front of House Staff: Antonia Edwards, John Chu, Steven Williams
Facilities Manager: Christopher Burras
Cabinet-maker: William Richey
Workshop and Maintenance: Peter Johnson
Shop Supervisor: Yvonne Cawkwell
Shop Assistants: Fitri Puspitasari, Genevieve Moffa
Cleaner: Gary Coates

**Oxford ASPIRE**
Programme Manager: Lucy Shaw
Programme Officer: Jessica Suess
Programme Assistant: Ellena Smith

**Honorary Associates (Curation)**
Mr M. Ackland, BA
Mr J.B. Davies, MA, MSc
Mr R. Gabriel
Dr J.W. Ismay, BSc, PhD
Mr I. Lansbury, MPhil
Dr A.C. Pont, MA, DSc
Mr H.P. Powell, MA

**Honorary Associates (Research)**
Mrs E.M.H. Cooke, MA
Mr J. Cooter, BSc
Mr G. de Rougemont, BA
Dr J. Kathirithamby, BSc, PhD
Dr T.S. Kemp, MA, PhD
Professor W.J. Kennedy, MA, BSc, PhD, DSc, FGS
Dr G.C. McGavin, BSc, DIC, PhD
Mr C. O'Toole
Mr R. Overall
Professor K.S. Thomson, MA, BSc, PhD

## Research Units

**Environmental Archaeology Unit**

Director: Professor Mark Robinson

DPhil students: Dana Challinor (St Cross), Rachel Hesse (Merton), Lisa Lodwick (St Cross), Erica Rowan (St Cross)

# Appendix 3: Finance

## Grants Awarded and Donations Received

£5000 Joint Information Systematics Committee
GB/3D Fossil Types Online

## Travel and Research Grants

Derek Siveter received a grant of £350 from the Lockey Fund to attend the Geological Society of America meeting in Denver, USA, but because of the timing of the award was unable to take this up.

Derek Siveter was awarded £800 from Wiley-Blackwell to fund travel to China in order to conduct research for the second edition of the Chengjiang book.

# Appendix 4: New Acquisitions

**Entomological Collections**

A total of 70 accession lots of 13,596 specimens were received by donation to the department.

Notable donations include:

500 insects from Mr DR Congo (Mr Z. Mehrabi)

5000 insects from Cusuco National Park, Honduras (Mr T. Creedy)

300 insects from Afghanistan (Mr A. Harvey)

2000 insects from the Ecuadorean Andes (Mr P. Smithers)

2000 British and Irish butterflies (Mr M. Colvin)

20 named *Delias* butterflies from New Guinea, including 4 paratypes (Mr D. Mannering)

649 named Eastern Palearctic Coleoptera (Mr J. Cooter)

1150 World Coleoptera (Mr G. de Rougemont)

**Geological Collections**

Jurassic ammonites from the Staffin Shale of Staffin, Scotland (131 specimens, from Dr J.K. Wright)

Miscellaneous fossils (20 specimens, from Mr S. and Mrs P. Freeman)

Jurassic invertebrates from the Lower Calcareous Grit of Besselsleigh, Oxfordshire (c. 50 specimens, collected by Mr H.P. Powell)

**Mineralogical Collections**

Volcanic rocks from the Santiago volcano in Guatemala; DPhil collection presented by Dr J. Scott

A large collection of sands, together with microscope and lamp, presented by Mrs D. Lampard

A suite of minerals from the Shetland Islands, presented by Mr R. Starkey

**Zoological Collections**

730 lots new additions to Caridea

191 specimens into Vertebrate

**The Hope and Arkell Libraries**

3.1 linear metres of new material was added, comprising over 30 books and 60 periodicals.

Significant donations were received from:

Dr A. Pont

Mr D. Mann

Dr D. Logunov

Ms A. Hale

A new content management system, KE Emu, was also obtained for the Archive Collections, funded by the Designation Development Fund of Arts Council England. This system will be used to catalogue the archive collections, beginning with a pilot project this year.

# Appendix 5: Loans

**Entomological Collections**

Total of 82 loans of 5305 specimens, which breakdown to 34 UK; 34 EU (1 Austria, 2 Belgium, 14 Czech Republic, 1 Denmark, 1 Finland, 5 Germany, 2 Hungary, 6 Italy, 2 Spain); 14 non-EU (1 Australia, 4 Brazil, 1 Canada, 1 Japan, 1 Norway, 2 South Africa, 2 Switzerland, 2 USA).

**Geological Collections**

7 loans of 231 specimens were sent out, all to the UK.

**Mineralogical Collections**

9 loans totalling 95 specimens supplied, all to UK institutions; in addition, 9 samples were supplied for destructive testing.

**Zoological Collections**

A total of 33 loans, which break down to 7 Singapore, 11 UK, 2 Taiwan, 1 Ireland, 2 Japan, 2 PR China, 1 Greece, 1 Austria, 4 The Netherlands, 1 USA, 1 Spain.

# Appendix 6: Enquiries

**Entomological Collections**

In total there were over 2700 enquires requiring an estimated 1100 hours of staff time.

**Geological Collections**

Staff dealt with 297 enquiries, of which 94 were identification enquiries and 203 were other enquiries.

**Mineralogical Collections**

18 specimens identified for 10 members of the public; in addition, 73 other enquiries answered by email.

**Zoological Collections**

There were 289 invertebrate enquiries and 261 vertebrate enquiries, plus 35 requests for the identification of 41 specimens submitted by the general public and other museums.

**Hope and Arkell Libraries**

There were over 253 enquiries to the library and archive this year. Approximately 20 were Inter-Library loan copy requests made from other institutions, the rest were from researchers, students and members of the public. The majority of enquiries were made via email.



# Appendix 7: Official Visitors

**Entomological Collections**

There were 100 collection based visitors comprising 81 from the UK, 9 from the EU (France, Denmark, Ireland, Switzerland) and 10 non-EU (Brazil, Canada, Finland, Japan, Singapore, Sri Lanka, USA).

**Geological Collections**

There were 91 scientific visitors, comprising 75 from the UK, 7 from the EU (Denmark, Finland, France, Germany, Spain) and 9 non-EU (Australia, Canada, Colombia, USA).

There were 111 other visitors, including 72 individuals in organized parties and 39 other individuals.

**Mineralogical Collections**

There were 14 official visitors to the Mineral Collections from the UK, and 5 from non-EU (4 from Switzerland, 1 from USA).

**Zoological Collections**

There were 70 visitors to invertebrate collection from the UK, 1 from EU (Holland) 2 from non-EU (Austria), 6 international visitors (Australia, Brazil, Mexico).

There were 112 visitors to the vertebrate collection.

**Hope and Arkell Libraries**

There were 39 visitors to the library and archive this year, totalling over 100 visits to the collection. The majority of visitors were from the UK and EU.

Notable collections consulted were the archives of William Smith, William Buckland, William Burchell, and James Marmaduke Edmonds. The majority of library material consulted was from the entomology section, particularly in Coleoptera and Lepidoptera.

# Appendix 8: Publications

**Entomological Collections**

**Ackland, D.M.** (2013). *Egle suwai* Michelsen (Diptera, Anthomyiidae) new to Britain, with notes on other *Egle* species and a key to British males. *Dipterists Digest*, **20**, 73-78.

Beynon, S.A., **Mann, D.J.**, Slade, E.M. and Lewis, O.T. (2012). Species-rich dung beetle communities buffer ecosystem services in perturbed agro-ecosystems. *Journal of Applied Ecology*, **49**(6), 1365-1372.

Beynon, S.A., Peck, M., **Mann, D.J.** and Lewis, O.T. (2012). Consequences of alternative and conventional endoparasite control in cattle for dung-associated invertebrates and ecosystem functioning. *Agriculture, Ecosystems & Environment*, **162**, 36-44.

Braack, L. and **Pont, A.C.** (2012). Rediscovery of *Haematobosca zuluensis* (Zumpt), (Diptera, Stomoxyinae): re-description and amended keys for the genus. *Parasites & Vectors*, **5**(267), 7 pp.

DeGrave, S. and **Mann, D.J.** (2012). The first record of *Exopalaemon modestus* (Heller, 1862) (Decapoda, Palaemonidae) in Kazakhstan. *Crustaceana*, **85**(12-13), 1665-1667.

Evenhuis, N.L. and **Pont, A.C.** (2013). Nomenclatural studies toward a world list of Diptera genus-group names. III. Christian Rudolph Wilhelm Wiedemann. *Zootaxa*, **3638**, 1-75.

**Gabriel, R.** (2012). Some notes and observations on the breeding of *Poecilotheria ornata* and *P. rufilata*. *Journal of the British Tarantula Society*, **28**(1), 18-28.

**Gabriel, R.** (2013). Notes and observations regarding unusual feeding behaviour of a *Sericopelma* Ausserer, 1875 with comments on carrion feeding and spiders leaving their burrows after heavy rains (Araneae: Theraphosidae). *Newsletter of the British Arachnological Society*, 126, 8-9.

**Gabriel, R.** (2013). *Aphonopelma belindae* Gabriel, 2011 (Araneae: Theraphosidae). *L'Aracnologiste*, 4, 18-24.

**Gabriel, R.** (2013). Revised taxonomic placement of the South American species of *Aphonopelma* Pocock, 1901 (Araneae: Theraphosidae). *Arachnology*, **16**(2), 33-36.

**Gabriel, R.** and Davis, J. (2013). Some notes and observations on the breeding of *Heteroscodra maculata* Pocock, 1899 (Araneae: Theraphosidae). *Journal of the British Tarantula Society*, **28**(2), 79-80.

**Gabriel, R.** and Jordan, S. (2013). Hybridisation of *Psalmopoeus cambridgei* Pocock, 1895 and *P. irminia* Saager, 1994 (Araneae: Theraphosidae). *Journal of the British Tarantula Society*, **28**(2), 82-84.

**Gallon, R.** (2013). The identification of *Centromerita bicolor* (Blackwall, 1833) and *Centromerita concinna* (Thorell, 1875). *Newsletter of the British Arachnological Society*, **125**, 26-28.

**Gallon, R.C.**, **Gabriel R.** and Tansley, G. (2013). A new *Chaetopelma* species from the eastern Mediterranean (Araneae, Theraphosidae, Ischnocolinae). *Journal of the British Tarantula Society* **27**, 128-139.

Hamel-Leigue, A.C., Herzog, S.K., Larsen, T.H., **Mann, D.J.**, Gill, B.D., Edmonds, W.D. and Spector, S. (2013). Biogeographic patterns and conservation priorities for the dung beetle tribe Phanaeini (Coleoptera: Scarabaeidae: Scarabaeinae) in Bolivia. *Insect Conservation and Diversity*, **6**, 276-289.

Herzog, S.K., Hamel-Leigue, A.C., Larsen, T.H., **Mann, D.J.** and Soria-Auza, R.W. (2013). Elevational distribution and conservation biogeography of phanaeine dung beetles (Coleoptera: Scarabaeinae) in Bolivia. *PLoS ONE*, **8**(5), e64963.

**Mann, D.J.** (2012). Scarabaeoidae. Pages 55-58. In: Duff, A.G. (ed.) *Checklist of Beetles of the British Isles*. 2nd edition. Pemberley Books. 171 pp.

Øvstedal, D.O., **Pont, A.C.**, Nielsen, T.R. and Søli, G. (2013). Gene flow in Svalbard flower plants – the role of pollen-carrying Diptera. University of Bergen, 11 (unnumbered) pp.

Perry, I. and **Ackland, D.M.** (2013). *Egle concomitans* (Pandellé) (Diptera, Anthomyiidae) new to Britain. *Dipterists Digest*, **20**, 69-72.

**Pont, A.C.** (2012). Distribution records of *Helina* Robineau-Desvoidy, 1830 (Diptera: Muscidae) from the Caucasus Mountains, with the descriptions of three new species. *Zootaxa*, **3409**, 30-46.

**Pont, A.C.** (2013). The first records of the genus *Spilogona* Schnabl (Diptera: Muscidae) from Armenia, with the description of a new species. *Studia dipterologica*, **18** [2011], 3-9.

**Pont, A.C.** (2013). The Fanniidae and Muscidae (Diptera) described by Paul Stein (1852-1921). *Zoosystematics and Evolution*, **89**, 31-166.

**Pont, A.C.** and Falk, S. (2013). *Polietes meridionalis* Peris & Llorente (Diptera, Muscidae) new to Britain. *Dipterists Digest*, (2), **20**, 45-51.

**Pont, A.C.**, Harutyunova, K., Harutyunova, M. and Werner, D. (2012). The hunter-flies of Armenia. III. New records of the genus *Limnophora* Robineau-Desvoidy, 1830, with the description of a new species (Insecta: Diptera: Muscidae). *Zoology in the Middle East*, **57**, 127-136.

**Pont, A.C.** and Ivković, M. (2013). The hunter-flies of Croatia (Diptera: Muscidae: genus *Limnophora* Robineau-Desvoidy). *Journal of Natural History*, **47**, 1069-1082.

**Pont, A.C.** and Vikhrev, N. E. (2012). A new species of *Hennigmyia* Peris, 1967 (Diptera: Muscidae) from the Oriental region. *Russian Entomological Journal*, **21**, 327-330.

Vanhove, M.P.M, Jocque, M., **Mann, D.J.**, Waters, S., Creedy, T.J., Nunez-Mino, J.M., Samayoa, A.C., Vaglia, T. and Casteels, J. (2012). Small sample, substantial contribution: additions to the Honduran hawkmoth (Lepidoptera: Sphingidae) fauna based on collections from a mountainous protected area (Cusuco National Park). *Journal of Insect Conservation*, **16**(4), 629-633.

### Geological Collections

*Publications by OUMNH staff*

Briggs, D.E.G., **Siveter, Derek J.**, Siveter, David J., Sutton, M.D., Garwood, R.J. and Legg, D. (2012). Silurian horseshoe crab illuminates the evolution of arthropod limbs. *Proceedings of the National Academy of Sciences*, **109**(39), 15702-15705.

**Kennedy, W.J.** and Klinger, H.C. (2012). Cretaceous faunas from Zululand and Natal, South Africa. The ammonite genera Mojsisovicsia Steinmann, 1881, *Dipoloceroides* Breistroffer, 1947, and *Falloticeras* Parona & Bonarelli, 1897. *African Natural History*, **8**, 1-15, 8 figs.

**Kennedy, W.J.** and Klinger, H.C. (2012). Cretaceous faunas from Zululand and Natal, South Africa. The Santonian-Campanian ammonite genus *Eulophoceras* Hyatt, 1903. *African Natural History*, **8**, 30-54, 19 figs.

**Kennedy, W.J.** and Klinger, H.C. (2012). Cretaceous faunas from Zululand and Natal, South Africa. The desmoceratoid ammonite genera *Moretella* Collignon, 1963, *Beaudanticeras* Hitzel, 1902, and *Aioloceras* Whitehouse, 1926. *African Natural History*, **8**, 55-75, 14 figs.

**Kennedy, W.J.** and Klinger, H.C. (2012). Cretaceous faunas from Zululand and Natal. The ammonite genus *Codazziceras* Etayo-Serna, 1979. *Palaeontologica Africana*, **47**, 1-2, 1 fig.

**Kennedy, W.J.** and Klinger, H.C. (2012). The ammonite *Diaziceras* Spath, 1921, from KwaZulu-Natal, South Africa, and Madagascar. *Palaeontologica Africana*, **47**, 3-23, 9 figs.

**Kennedy, W.J.** and Klinger, H.C. (2012). Cretaceous faunas from Zululand and Natal. A new species of the ammonite genus *Salaziceras* Breistroffer, 1936, from the Lower Cenomanian Mzinene Formation. *Palaeontologica Africana*, **47**, 15-17, 1 fig.

Ma, X., Hou, X., Aldridge, R.J., Siveter, David J., **Siveter, Derek J.**, Gabbott, S.J., Purnell, M.A., Parker, A.R. and Edgecombe, G.D. (2012). Morphology of Cambrian lobopodian eyes from the Chengjiang Lagerstätte and their evolutionary significance. *Arthropod structure & development*, **41**, 495-504.

**Powell, P.** (December-January 2012-2013) Stories in stone: The geology of gravestones (part two). *Cumnor Parish News*, p. 36-37.

Sutton, M.D., Briggs, D.E.G., Siveter, David J., **Siveter, Derek J.** and Sigwart, J.D. (2012). A Silurian armoured aplacophoran and implications for molluscan phylogeny. *Nature*, **490**, 94-97.

Siveter, David J., Briggs, D.E.G., **Siveter, Derek J.**, Sutton, M.D. and **Joomun, S.C.** (2013). A Silurian myodocope with preserved soft parts: cautioning the interpretation of the shell-based ostracod record. *Proceedings of the Royal Society of London B*, **280**, 1471-2954.

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Brasier, M.D., Antcliffe, J.B. and Liu, A. (2012). The architecture of Ediacaran fronds. *Palaeontology*, **55**(5), 1105-1124.

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Liu, A.G., McIlroy, D. Matthews, J.J. and Brasier, M.D. (2013). Exploring an Ediacaran 'nursery': growth, ecology and evolution in a rangeomorph palaeocommunity. *Geology Today*, **29**(1), 23-26.

Puymerail, L., Ruff, C.B., Bondioli, L., Widianto, H., Trinkaus, E., Macchiarelli, R. (2012). Structural analysis of the Kresna 11 Homo erectus femoral shaft (Sangiran, Java). *Journal of Human Evolution*, **63**, 741-749.

Rauhaut, O.W.M. (2012). A reappraisal of a putative record of abelisauroid theropod dinosaur from the Middle Jurassic of England. *Proceedings of the Geologists' Association*, **123**, 779-786.

Schreve, D., Howard, A., Currant, A., Brooks, S., Buteux, S., Coope, R., Crocker, B., Field, Greenwood, M., Greig, J. and Toms, P. (2013). A Middle Devensian woolly rhinoceros (*Coelodonta antiquitatis*) from Whitemoor Haye Quarry, Staffordshire (UK): palaeoenvironmental context and significance. *Journal of Quaternary Science*, **28**(2), 118-130.

Siveter, David J., Briggs, D.E.G., **Siveter, Derek J.**, Sutton, M.D. and **Joomun, S.C.** (2013). A Silurian myodocope with preserved soft parts: cautioning the interpretation of the shell-based ostracod record. *Proceedings of the Royal Society of London B*, **280**(1752), 1-6.

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Trinkaus, E. and Ruff, C.B. (2012). Femoral and tibial diaphyseal cross-sectional geometry in Pleistocene Homo. *PaleoAnthropology*, **2012**, 13-62.

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**Price, M.T.** (2013). Designing a website for a university museum collection. *Museum-ID* http://www.museum-id.com/idea-detail.asp?id=345

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### Zoological Collections

Anker, A. and **De Grave, S.** (2012). Rediscovery and range extension of the rare Caribbean alpheid shrimp, Prionalpheus gomezi (Crustacea: Decapoda; Alpheidae). *Marine Biodiversity Records*, **5**, e107.

Anker, A., Pachelle, P.P.G, **De Grave, S.** and Hultgren, K.M. (2012). Taxonomic and biological notes on some Atlantic species of the snapping shrimp genus Synalpheus Spence Bate, 1888 (Decapoda, Alpheidae). *Zootaxa*, **3598**, 1-96.

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Ashelby, C.W., **De Grave, S.** and Johnson, M.J. (2013). The global invader Palaemon macrodactylus: an interrogation of records and a synthesis of data. *Crustaceana*, **86**, 594-624.

**De Grave, S.** and Anker, A. (2013). Recent records of Processidae from the Indo-West and East Pacific (Crustacea: Decapoda). *Zootaxa*, **3640**, 224-241.

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d'Huart, J.P., **Nowak-Kemp, M.** and Butynski, T.M. (2013). A seventeenth-century French painting of a warthog. *Archives of Natural History*, **40,** 360-362.

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**Robinson, M.** (2013). The relative abundance of Onthophagus species in British assemblages of dung beetles as evidence for Holocene climate change. *Journal of Environmental Archaeology*, **18**, 132-143.

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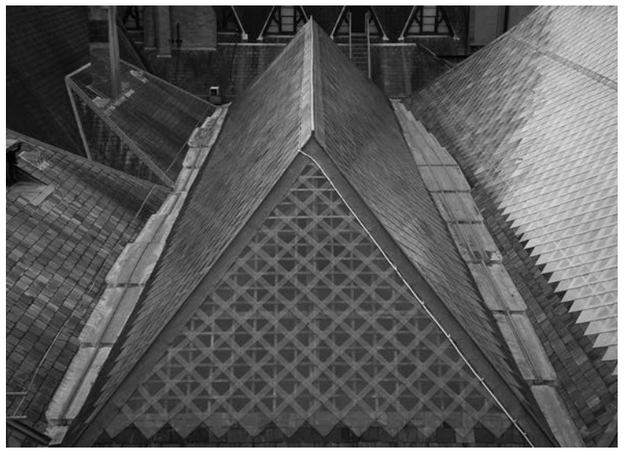

Front and back cover:
Tiles on the Museum roof after the restoration work