OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY

Annual Review

2010–2011

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MUSEUM OF
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HISTORY

The Oxford University Museum of Natural History Annual Review 2010–2011 was edited by Georgina Ferry from reports supplied by heads of Collections, Sections and Research Units.

It was designed and produced by Claire Venables at Giraffe Corner Ltd.

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

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Director's introduction

When I agreed to act as interim director while the electors went in search of a permanent successor to Jim Kennedy, I never imagined that I would end up staying the whole year. It has been a remarkable experience, and given me an insight into the workings of this extraordinary institution that would never have been possible otherwise.

Jim bowed out two thirds of the way through the 150th anniversary celebrations that he had planned and brought to fruition. I had the honour of acting as host for the commemorative lecture series in Michaelmas Term 2010, with Sir David Attenborough's talk on birds of paradise as a highlight. I was able to preside as the Vice-Chancellor unveiled the stone memorial of the Huxley-Wilberforce debate outside the front door. And it was instructive to have the story of the Museum's origins laid out in beautifully-reproduced photographs and drawings along the upper Gallery during the final months of the exhibition 'A Wonderland of Natural History'.

There were new exhibits, also planned by Jim, to nurse towards completion: cases on Oliver Lodge's first wireless signal and on the 'Great Debate', and a whole new display on British birds. There was the logistical challenge of arranging for the repair and cleaning of the roof, which should mean that the new Director will eventually have a museum free of strategically-placed plastic buckets.

More prosaically, there was the perennial problem of safe storage for the very large quantity of material in the Museum's care, but not on display. The University continues to consider the development of a permanent shared museum storage and research facility. During the year petrological and geological specimens were removed from the Old Sawmill at Nuneham Courtenay, but the search for suitably dry and secure off-site storage continues. Within the Museum there was a happier story, with funds raised at the Anniversary Dinner in 2010 contributing towards the enormous task of rehousing the insect specimens in the Huxley Room. Meanwhile the staff of the Mineralogical Collections have made good use of the new spaces we have gained in the basement of the old Earth Sciences building next door.

As in any institution, the Museum's character depends as much on the people who work there as on its building and collections. For the entire time I have been occupying the Director's office, our excellent education team has lived under a shadow cast by the abolition in 2010 of the Museums, Libraries and Archives council. The MLA's Renaissance in the Regions programme has funded all the education staff and some curatorial staff for more than a decade. A year after the MLA's abolition was first announced, there was still no certainty that Oxford would continue to receive the funding that has enabled all the museums to win national recognition for their education and outreach work.

At the beginning of the year colleagues funded by Renaissance were facing possible redundancy at the end of March 2011. An interim agreement brought them a year's grace, but we were not to know whether the Oxford museums' joint bid to become a 'hub' under a new funding regime through the Arts Council had been successful until early in 2012. I am delighted to report that we recently heard that Oxford had been successful in achieving 'hub' status. We can now plan and develop further our innovative educational programmes. The refurbishment of the education and visitor centre in the vacated chemistry glass-blowing space is now under way and will be completed by summer 2012. This is a joint facility to be shared with the Pitt Rivers Museum and will offer additional opportunities for our education teams.

Despite living with such long-term uncertainty, the education team showed its mettle by winning the inaugural Clore Museum Education Award, jointly with the Pitt Rivers. This superb achievement testified to the imagination, hard work and dedication that have made the Museum such a magnet for schools and families.

My interim post also coincided with a major strategic review of all the University's museums, carried out during Hilary Term 2011. The aim was to examine the organisation, governance, funding, commercial operation and vision of the Ashmolean Museum, the Museum of the History of Science, the Museum of Natural History, and the Pitt Rivers Museum, and to explore the extent to which they might collaborate and share resources. When the outcome of the review was published in the summer of 2011, small groups began work under the Pro-Vice Chancellor (Research) to come up with proposals for implementing the recommendations of the review. A report of his work continues to be discussed and in due course will be taken to Council for consideration.

By the end of the year covered by this Annual Report the search for a new Director was well under way. At the time of writing I am in the happy position of being able to welcome Professor Paul Smith, Head of School of Geography, Earth and Environmental Sciences and Director of the Lapworth Museum of Geology at the University of Birmingham. He is taking over at a time of considerable challenge, but also of great opportunity for this historic but far from fossilised institution, and I wish him every success in his new position.

Rob Judges

Professor Susan Iversen
CBE, FMedSci, MA, PhD, ScD

Acting Director 2010–2011

Highlights

October 2010

Attenborough in paradise

The doyen of natural history broadcasters, Sir David Attenborough, brought our 150th birthday celebrations to a fine conclusion by launching the anniversary lecture series on 20 October 2010.

Sir David's title was 'Birds of Paradise', but his talk was a hymn to the generosity and sheer hard work of Alfred Russel Wallace. His central message was that Wallace deserves all our admiration for modestly accepting that he would forever be in the shadow of Charles Darwin, despite having reached the same conclusions about evolution by natural selection.

Wallace was the first European to see birds of paradise in their natural habitat in the islands between the Malay archipelago and New Guinea. His observations of their mating displays convinced him that their extravagant plumage had evolved through the process of sexual selection. Just as he does on his TV programmes, Attenborough used arresting footage of birds doing extraordinary things to introduce his audience to the idea that females' choice of mate and competition between males drives the evolution of physical characteristics.

The lecture was the first of a series, attended by enthusiastic audiences, in which the other distinguished speakers were the mathematician Marcus du Sautoy, the palaeontologist Richard Fortey, the geneticist Kay Davies and the entomologist George McGavin. ●

Above: Sir David Attenborough

Work to start on roof

A year of unusually low rainfall did not avoid the need for large, yellow, plastic buckets throughout the court to catch the many leaks in the glass roof. During the year central services staff and others undertook substantial preliminary work to address this problem. With funding finally in place, the repairs have been planned in three phases, over three financial years. The Museum and Estates Directorate agreed on a primary contractor to undertake the refurbishment, which will include cleaning and restoration of the cast iron roof supports as well as the glass.

The plan has been designed to maintain the historical integrity of the roof with minimal disruption to staff and visitors. Collections staff removed specimens from the south side of the court, where work on Phase 1 began in August 2011. ●

April 2011

New regime for swifts

This year saw the retirement of Roy Overall and George Candelin, who between them had climbed the vertiginous ladders into the tower every week during the summer months for over 50 years to monitor the swift colony. The Museum is immensely grateful to them for their dedication and unfailing help and advice.

Andy Gosler and Sandra Bouwhuis of the Edward Grey Institute took over the task of maintaining a record of the swifts' breeding success. The birds had a disappointing season. Swifts arrived in Oxford by 20 April 2011, but they were late in colonising the tower. At the peak of nesting activity in June there were 51 nests, but by 20 July only 37 clutches had been initiated. In all, 42 young swifts flew the nest, with the last leaving the tower on 20 August. Another 9 were taken into care after their parents abandoned them. It is unclear why the swifts had such problems this year. While some pairs apparently struggled, others did very well, suggesting that this might reflect differences in experience of the birds rather than the availability of food.

Chris Burras directed the installation of a new, large LCD screen in a more central position in the main court to display live CCTV images of swifts on their nests, and Juliet Hay created a small display below the screen to illustrate the birds' life cycle. Weekly observations continued to be posted to the online diary at **www.oum.ox.ac.uk/visiting/swifts** ●

Below: The swift, *Apus apus*

Bottom right: Decorated roof girders are to be restored

September 2010

Farewell to Jim

Jim Kennedy retired from his post as Professor of Natural History and Director of the Museum at the end of September 2010.

With the honourable exceptions of the Honorary Associate Curator in Geology Philip Powell and the enumerator of the swifts Roy Overall, there is no one whose unbroken contact with the Museum extends back as far as Jim's. He arrived in Oxford in January 1967 as a Demonstrator in Earth Sciences. After almost a decade collecting ammonites from around the world with a view to clarifying the historical divisions of the Cretaceous, he succeeded James Edmonds as Curator of Geology at the Museum in 1976.

In addition to his curatorial work on both the historic Cretaceous material in the collections and more recent accessions from field research, as Curator Jim began to renew the geology displays and to find new ways of raising money. The discovery of dinosaur trackways at a landfill site near Oxford (casts of which now march across the Museum's front lawn) led to a fruitful partnership with the waste company Viridor: the company paid for new displays, including the dodo case, from its Landfill Communities Fund. Jim went on to find a number of other private and charitable sources that made it possible to renew many of the displays in the court and gallery, as well as to support projects in curation.

In 2003 he succeeded Keith Thomson as the Museum's Director, and raised over £500,000 from external sources to finish the displays. The Museum is transformed from the place it was when he first arrived in the 1970s. In the past five years it has won both a Guardian family friendly award and a Queen's Award, and half a million visitors come through the door each year. 'The Museum has become what I wanted it to be', says Jim, 'the public focus for science in Oxford and the friendliest place for the public in the University.' ●

Rob Judges

Above: Retiring director Jim Kennedy

Below: A selection of Corsi stones, and the man himself

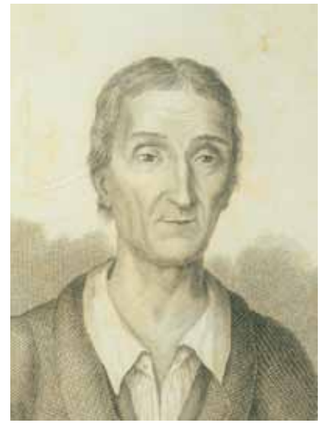
February 2011

Decorative stones to go online

The Museum has received a generous donation of £31,704 from the Esmée Fairbairn Foundation to support the develoment of a website dedicated to the Corsi collection of 1000 blocks of polished stone. Faustino Corsi (1771 – 1845) was an Italian collector of marble and other decorative stones. His collection, now in the Museum, is one of the largest, most historically important and well-researched in the world: it includes a number of stones acquired from ancient Roman sites.

Corsi made a catalogue of his collection which attempted to correlate the names used by ancient authors with those used by Italian stonecutters in his own time. He also gives the locations where the stones were quarried, and examples of their use. Monica Price, Assistant Curator of the Mineralogical Collections, has updated and corrected the data in Corsi's catalogue. Her colleague Lisa Cooke, Honorary Research Associate, has provided a translation of the catalogue.

Monica is now working with Sarah Phibbs, IT Officer, and the University's Web Design Consultancy to present the collection, its catalogue and the fruits of modern research as a highly illustrated, online research and identification tool for users worldwide. 'The collection is highly prized because it is a bridge between the arts and the sciences,' says Monica, 'and because it is the first of its kind to be organised according to geological principles. It is an invaluable identification aid for archaeologists and conservators.' ●



July 2011

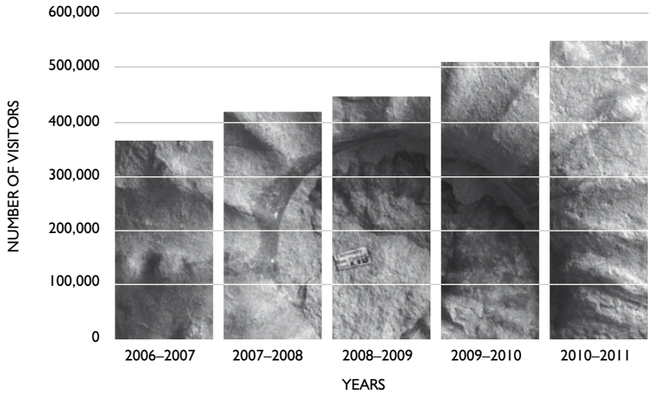
New website design

The redesign of the Museum's website went live in July 2011. The appearance has been completely refashioned to look more up-to-date, cleaner and more appealing. It also has more prominent links to our most popular resources, the educational material in the Learning Zone. IT manager Sarah Phibbs developed the design in collaboration with the OUCS Web Design Consultancy. The number of visits to the Museum website over the past year has risen again, with over 1.4 million visits from August 2010 to July 2011. ●

2010–2011

Visitor numbers

There were 550,537 visitors to the Museum this year, 38,335 more than last year.



Right: The unveiled plinth

Below right: Children enjoy exploring with the new backpacks

September 2010

Plinth marks 1860 debate

Local schoolgirl Poppy Simonson was on hand on 11 September to see the Vice-Chancellor, Andrew Hamilton, unveil her winning design for a plinth to commemorate the 150th anniversary of the Huxley-Wilberforce debate held in the Museum in 1860. The stone plinth outside the Museum's front entrance was carved by sculptor Alex Peever.

Guests from a variety of organisations were in the Museum for the launch of Oxford Open Doors, the annual city-wide event that sees tours and other events in buildings throughout the city that are not normally open to the public. The unveiling was almost washed out by a sudden downpour that impressively illustrated the leaks in the glass roof over the court, but the clouds passed over and the ceremony took place on time. ●

July 2011

New dinosaur backpacks

Education assistant Rachel Smith has worked in partnership with Crawley Creatures, makers of animatronic dinosaurs for TV and film, to create new dinosaur explorer backpacks that are available for families who visit the Museum on Sunday afternoons. Crawley Creatures sponsored, designed and produced bespoke resources for the backpacks, while additional funding from The Robert and Margaret Moss Charitable Trust and the Ammco Trust also supported production of resources.

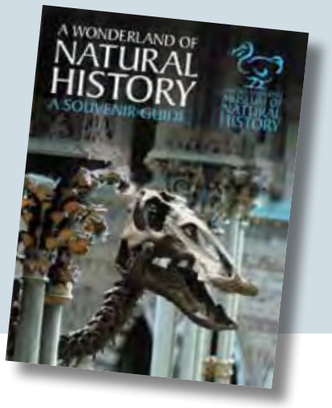
'The backpacks inspire children to explore dinosaur skeletons, compare dinosaur teeth, and measure dinosaurs' says Rachel. 'They've been extremely popular with our young visitors.' ●

July 2011

Words and pictures – new souvenir guide

A new souvenir guide to the Museum, the first to be produced since 1990, went to press in July 2011 and was on sale to visitors from early August.

The guide was conceived and written by Georgina Ferry, whose 2010 role as Writer in Residence was extended by six months to enable her to complete the work. The highly illustrated design is the work of Chris York at the local graphic design studio Richard Boxall Design Associates. The booklet, which sells in the shop and online for £6, covers the origin and history of the Museum, the displays, the curatorial work in the collections, and education and outreach. ●



February – March 2011

Banquet under ghostly trees

The Ghost Forest display of rainforest trees remained on the front lawn throughout the year, having been inaugurated in July 2010. Artist Angela Palmer, who arranged for the transport of the massive tree stumps from a forest in Ghana, has continued to organise events related to the display to promote awareness of deforestation and its effects on climate change.

On 12 February 2011, the Chancellor of Oxford University Lord Patten launched a six-month educational initiative, 'I Touched the Rainforest'. Over six months every school child in Oxfordshire was invited to come and touch the trees.

On 27 March, Angela held a Grand Banquet of Rainforest Insects among the Ghost Forest trees to explore the 'natural capital' of our forests. Former BBC Masterchef champion Thomasina Miers cooked insects, some of them brought along by Mauricio Rodriguez Munera, the Ambassador of Colombia. Distinguished diners from the media, the University and business discussed whether protein-rich insects could offer a viable alternative to beef as the world's increasing population fails to cope with demand for meat. ●

June 2011

First prize for education initiative

The judges for the inaugural Clore Award for Museum Learning had such a hard time deciding between the leading entries that they chose to double the prize money and reward both. 'This is an extraordinary outcome that reflects the incredibly high standard of the short listed entries', they said.

One of those winners was an innovative joint project, Making Museums, developed by the education teams of OUMNH and the Pitt Rivers Museum. The children track what happens to a museum object, from acquisition to display, before finally making a museum in their own classroom.

'We are delighted that Making Museums has been recognised as an example of best practice in museum learning', says Janet Stott, Head of Education.

This sustainable project, which receives no additional funding, began in 2003 and has grown over the past few years. In 2009 and 2010 nearly 1200 Year Six children from 11 primary schools in Blackbird Leys, Greater Leys, Rose Hill, Littlemore, Cowley, Barton, Wood Farm and Headington took part.

The £10,000 award to the joint project was announced in June at the prestigious Art Fund Prize event at Tate Britain, London. ●

Above left: the new Guide

Below: Children dig up mystery objects for 'Making Museums'

Exhibitions

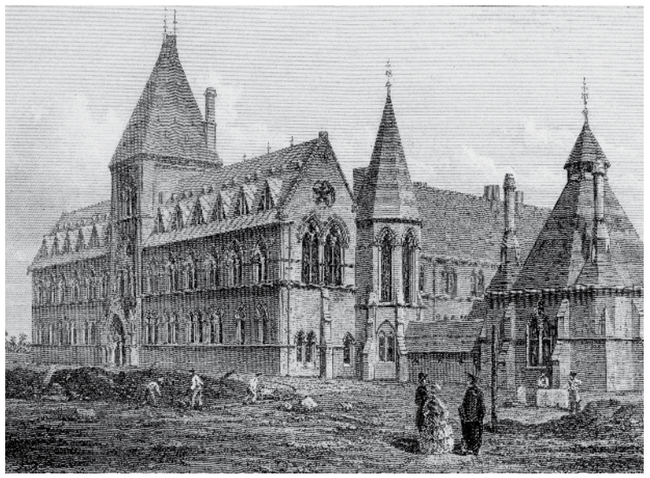
Permanent

See bees

The old observation beehive on the south staircase has been replaced by a handsome new hand-made hive that is now in the lift lobby at the top of the stairs. Visitors can see the bees entering and leaving through a perspex-topped tunnel that takes them out into the open air through the window. Flowering shrubs in planters on the roof outside provide an attractive source of nectar. The queen bee is marked with a distinctive red spot. A new display case nearby explains aspects of bee behaviour, such as the 'waggle dance' bees execute to tell their community about nearby sources of food. ●

A wonderland of natural history:
The Oxford University Museum of Natural History 1860–2010

Exhibition of contemporary documents, photographs and engravings which traced the campaign to build the Museum as a home for Oxford science, the subsequent architectural competition, and construction of the building between 1855 and 1860. ●



May 2010 – December 2010

From the archives

As part of the Museum's anniversary celebrations, some examples of treasures from the Hope Library were mounted and framed for display. This was a rare opportunity to see some beautiful prints and artworks from the archives. ●

18 May 2010 – 14 November 2010

Exceptional fossils from Chengjiang, China: early animal life

The 525-million-year-old fossils in this exhibition have the remains of soft tissues, and whole soft-bodied animals are exquisitely preserved. They provide key evidence for the so-called Cambrian 'explosion', when most of the major animal groups that we know today first appeared in the fossil record. The exhibition featured the earliest known vertebrate fossil, a fish. It was brought to the Museum from China thanks to a grant from the E P A Cephalosporin Fund. ●

Top right: The red spot marks the queen

Right: The Museum close to completion in 1860

Far right: Insects and plants by William Jones of Chelsea

Below: Fossil lobopodian from Chengjiang

August 2010

Remarkable creatures – remarkable finds

Tracy Chevalier's bestselling novel *Remarkable Creatures* brought the 19th century fossil collectors Mary Anning and Elizabeth Philpot into the spotlight. In August 2010, the OUMC Volunteer Service worked with Geology and with the Philpot Museum in Lyme Regis to put together a small exhibition of some of the highlights of the Philpot collection. They also held four days of related family events. In November 2010 Chevalier gave a public reading from her book at the Museum, and talked about the fossils that had inspired her. ●

10 January – 31 March 2011

Rainbow in the darkness

Japanese artist Masashi Kimura exhibited a remarkable collection of highly detailed entomological illustrations. 'Using nothing more than carbon dust and drafting film, Masashi Kimura creates indescribably beautiful images', said Honorary Associate George McGavin. 'Delicate insects come to life and seem to float in three dimensions. The illusion of solid form is contradicted by a fragile beauty – almost as if the slightest breath might reconfigure the skillfully applied dust into an amorphous smudge. Kimura is the undisputed master of this magical technique.' ●

8 April – 31 August 2011

Migrations: Isabel Rawsthorne 1912-1992

The seven large and luminous 'Migrations' landscapes painted by Isabel Rawsthorne towards the end of her career were the focus of this exhibition curated by Biddy Noakes and Carol Jacobi. Rawsthorne is principally remembered for her associations with luminaries such as Pablo Picasso, Alberto Giacometti, Francis Bacon, Constant Lambert and Alan Rawsthorne: this exhibition is a reminder of her own assured work as a painter inspired by and concerned with the natural world. ●

September 2010

Our favourite things online

IT staff worked with Joseph Talbot from the OUCS Web Design Consultancy to design and implement a virtual exhibition based on the anniversary exhibition 'A few of our favourite things'. The new web pages, released online in September 2010, have proved very popular and mean the images and stories that accompany them continue to be accessible to the public: **www.oum.ox.ac.uk/favouritethings** ●

31 March – 6 May

Incurable optimists

Artist Patrick Joyce has motor neurone disease. He has set himself the challenge of painting 100 portraits of incurable optimists – people who are making extraordinary efforts against the odds – before he dies.

One of his subjects is his neurologist, Martin Turner, who is Doll Fellow at Green Templeton College. The Museum's exhibition featured a selection of Patrick's portraits, as well as displays on research into the devastating disease. ●

Top left: Mary Anning at work by Henry de la Beche

Left: Illustration by Masahashi Kimura

Below: Patrick Joyce's portrait of his doctor

Museum and community

Science Week: Award for Wow!How?

The Museum's education team received a 'Highly Commended' award in the the British Science Association's Outstanding Contribution to National Science Week competition for its annual interactive science event Wow!How?

All of the activities for Wow! How? are developed and run by volunteers, who are themselves either real scientists (both students and professionals) or amateur enthusiasts. This year over 140 volunteers ran 37 different demonstrations and hands-on activities, and approximately 3,500 people attended, making for a busy but very enjoyable day.

Four particularly popular new stalls were 'Disaster Zone' (volcanoes, tornadoes, and earthquakes), 'Whizz, Bang, Pop' (chemical elements), 'Make and Break a Lung' (lung function and disease), and 'CSI Oxford' (forensics). Other new stalls covered topics as diverse as Bernoulli and brains, microscopy and malaria, and crystals, forces, and radio.

The Museum participated in a number of other events as part of the Oxfordshire Science Festival, the county's contribution to National Science Week. We challenged members of the public

"Great!! Really enjoyed it, loads of people came to our stall... We got to discuss the science in an informal way, varying in depth accordingly to what the people wanted…"

Volunteer

to identify curious natural history objects at the launch event 'Science in Your World' in Bonn Square; the Museum hosted 'Science in the Kitchen', a hands-on science fair for schools, co-ordinated by the Wellcome Trust Centre for Human Genetics; and education officers made special outreach visits to local schools. ●

Above: Volunteer helps young visitor at Wow!How?

Below right: Fossil shark's tooth

DNA workshops

The Museum has been awarded a 'Hands-on DNA' grant from the Association of Science and Discovery Centres and the Wellcome Trust. This grant will provide us with the equipment and training to run DNA workshops for GCSE and A level students in 2012. The new visitor centre that has been developed from the former chemistry glassblowing workshops will provide a perfect teaching space for these activities.

The workshops will be a valuable extension to the programme for secondary schools, which continues to develop. This year Sarah Lloyd offered a new session focussing on maths and science as well as cross-curricular 'exploration days'. We continued to work with students from targeted schools as part of the University's efforts to encourage candidates from under-represented backgrounds to apply to Oxford. ●

Training hospital teachers

A new initiative organised by Susan Griffiths, Community Education Officer, was a training day for teachers who work for the Oxfordshire Hospital Schools. Education Officers from all the museums helped teachers to think about how we learn from objects. It was also an opportunity for them to learn more about the issues surrounding teaching in a healthcare setting, and how the museums can be of help.

It was a very successful day, and has resulted in a number of positive outcomes. Susan now visits the Highfield Adolescent Unit each month, as well as the Children's Hospital at the John Radcliffe. Susan is now looking at the possibility of using video-conferencing to help us reach the wards at the Children's Hospital, and of working with adults in other healthcare settings. ●

'I thought you would like to know that [one student] enjoyed the session so much (despite not leaving his room for a year) that he persuaded his family to walk to the University Museum and Pitt Rivers... What a success!'

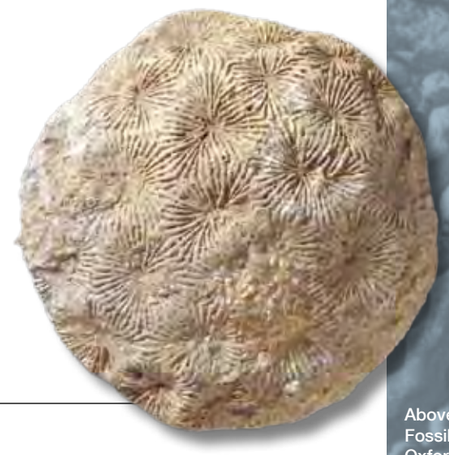
Teacher

Students learn from the collections

While the Museum's 'community' has expanded to include anyone with an interest in the natural world, teaching Oxford students in earth sciences, biological sciences and medicine remains (as the founders intended) at the heart of its activities. Collections continue to support teaching in these subjects, with students visiting to see and handle the material.

As usual, staff across the collections gave lectures, practical classes and tutorials to undergraduates in the Museum, ran field trips, and supervised undergraduate research projects and DPhil students during 2011-2012. For example, the Academic Curator of the Hope Entomology Collections, David Rogers, organised his final field trip to Orielton for the first year Biology undergraduates, before he retires after an unbroken 15-year run. 'The dedication and enthusiasm of Darren Mann and other staff from the Hope collections on this course explains the continuing interest in insects among our undergraduates, and a steady stream of student volunteers to help with maintaining and curating the insect collections in the Museum,' says David.

Meanwhile students of Human Sciences, Archaeology and Anthropology and Zoology benefited from a series of practical classes on the evolution, palaeopathology and diversity of modern and extinct hominids organised and demonstrated by Małgosia Nowak-Kemp using the extensive collection of human and other zoological specimens. ●



Above left: Fossil coral from Oxfordshire

Below left: Young visitors get a closer look at a specimen

Animal, vegetable, mineral...

Every year staff from the collections deal with hundreds of enquiries from members of the public, often relating to objects that are not what they seem.This year the geologists did a double-take when a polite gentleman from the building trade reported to the reception desk and unveiled a perfect, snow-white egg, found in footings for new houses in north-west Berkshire.

Between the size of a swan's and an ostrich's egg, it was perfectly symmetrical, with just the top cracked off to resemble a giant boiled egg. Even the thinness of the walls was egg-like. When assistant curator Paul Jeffery examined it more closely, he found that the interior was filled with a mealy deposit. Under a microscope this proved to be a mass of silica spicules, typical of fossil sponges from the Upper Chalk.

As fossils go, flint sponges are quite a common find, but as a specimen this was exceptional and unique. As such, Paul requested it for the Collections, and hopes it will be donated at some point in the future. ●

The Museum on the small screen

The Museum continues to be in demand as a location and a source of material for educational TV programmes. Staff gave logistical and technical support to a BBC team filming a programme for the series *Coast*, in which Dr Alice Roberts examined the so-called 'Red Lady of Paviland'. They gave similar support to a team from Channel 4, working on an episode of *Inside Nature's Giants* entitled 'The Dinosaur Bird', which featured the dissection of a cassowary. The researchers looked at moa skeletons and an *Archaeopteryx* cast. ●

Netmums' favourite museum

Mothers in Oxfordshire voted OUMNH their favourite museum of 2011 in an online poll carried out by the Oxfordshire Netmums website. We have run 31 days of family events in addition to the regular Family Friendly Sunday activities, making a total of 81 days of family activities throughout the year. 'Dinosaurs and dragon-hunters' in February drew record numbers of families. In addition to the range of trails we have available for visiting families, we have added a family guide to the Museum, available to borrow from the Family Friendly trolley. ●

Top right: Michael Rosen in the Lecture Theatre

Bottom right: Stonesfield Primary School children proudly hold their replica fossil

Bookfeast Schools Festival

Over 2,400 children from 38 local primary schools visited the Museum over four days in a joint project with the Pitt Rivers Museum and Bookfeast, a local literary charity. The children attended talks by children's authors including Michael Rosen and Lauren St John. They then followed a 'Story Trail' round the Museums, using the objects to inspire their own stories. 'It was a complex logistical exercise to teach such large numbers,' said Education Officer Janet Stott, 'but teachers commented that the museums and authors had stimulated some excellent writing.' ●

Helping hands

The work of volunteers is of enormous value in extending the work of the Museum in both educational and curatorial roles. The volunteers themselves also benefit from the experience. This year Darren Mann, Assistant Curator of Entomology, achieved a Crest Mentor Award for his support for young volunteers working in the Hope Collections. The collections employed at least two volunteers from housing projects for homeless people, one of whom has since found a job.

Joy Todd and Caroline Cheeseman drew from a register of 562 volunteers to support tour guiding, handling sessions, front-of-house roles, curatorial and administrative work. Volunteers clocked up 2643 hours in public-facing roles, and at least another 5150 hours working with curatorial staff.

26,830 UK students have visited the Museum in school groups, an increase of 35% on 2009–10.

When international student visits are included, a total of 34,362 school students in booked groups visited the Museum. ●

Megalosaurus goes back to Stonesfield

Children from Stonesfield Primary School who came to the Museum learned that their village had played a very special role in our understanding of the age of the dinosaurs. In 1824 the Rev William Buckland described the jaw bone of the giant animal he called *Megalosaurus*, or 'giant lizard', which he had found in the Stonesfield slate quarries. The specimen, now on display in the Museum, was subsequently identified as the first dinosaur ever to be described.

When the children learned of the significance of the jaw bone, they asked if the school could have a copy. Fortunately the necessary casting skills were on hand in the Geological Collections. Juliet Hay made and painted an extraordinary replica of the fossil jaw, and Chris Jarvis and Rachel Smith spent a day at the school, teaching all the classes in the school about the local fossil finds. It was a rare opportunity to work individually with one of the many local schools that participate in our programme for primary and secondary students. ●

Research

Disease risk mapping

A software product that enables non-experts such as biologists, medics and conservationists to produce risk maps of disease vectors such as mosquitoes was copyrighted this year and almost immediately licensed to several companies.

The software, known as eRisk-Mapper, is the product of decades of work by David Rogers, Curator of Entomology, and has been given a user-friendly interface by his colleague David Morley in the Department of Zoology. 'eRisk-Mapper can describe the distribution and abundance of insects, pests, vectors and diseases', says David, 'and is able to make similar contributions to conservation and food security (through welfare mapping), using remotely-sensed satellite data that are processed in unique and biologically meaningful ways by our team in Oxford.'

A current project is on Rift Valley Fever, an economically important disease of both humans and livestock in Africa. 'Our research is confirming the notion that this disease occurs in ecologically quite different areas at each phase of its periodic outbreaks', says David. His team also received a new tranche of EU funding in January as part of the EDENext project to investigate vector-borne diseases in Europe, focusing on the processing of low-resolution satellite images, and spatial and temporal risk modelling. ●

Conserving British oil beetles

Four species of native oil beetle (Meloidae) are already extinct, and Darren Mann has been working with the national charity Buglife on a project to conserve the remaining four.

These have suffered severe declines in their numbers due to changes in the way the countryside is managed, and have been identified as priorities for conservation action through the UK Biodiversity Action Plan. The beetles rely on solitary bees to complete their life-cycle, and so the health of wild bee populations is essential to their survival.

Buglife has invited members of the public to join in an 'oil beetle hunt' at the times of year when the beetles are most active, asking them to record any sightings. These data can be compared with records in the Museum collections to assess changes in the distribution of these species, an essential prerequisite to effective conservation. ●

Bell's types brought to light

One of the earliest acquisitions of the Zoological Collections was the collection of 250 turtles and tortoises (Chelonia) purchased by the first Hope Professor, John Obadiah Westwood, in 1862. These came from the personal collection of the London zoologist Thomas Bell.

In October 2010 the collections manager Małgosia Nowak-Kemp published a paper with colleague, Professor Uwe Fritz of the Museum of Zoology in Dresden, about the 50 type specimens in Thomas Bell's Chelonia collection. For the past 100 years the existence of these specimens had been largely forgotten. As a result, many of the types were presumed missing, and this paper has brought their survival and availability for study to the scientific community's attention. ●

Gardens under Vesuvius

The Environmental Archaeology Unit, based in the Museum, undertakes studies on plant, insect and molluscan remains from excavations in order to learn more about ancient environments. For the third summer in succession, Professor Mark Robinson led a team of undergraduates excavating the garden at the House of the Gladiators at Pompeii.

They have shown that the garden had two phases, the first between about 5BC and AD55 when the house was occupied by a team of gladiators, the second lasting until the eruption of Vesuvius which buried the town in AD79. At the time of the eruption, half the garden had large trees and shrubs from the original planting while the other half had been replanted in the second phase and had only small shrubs. ●

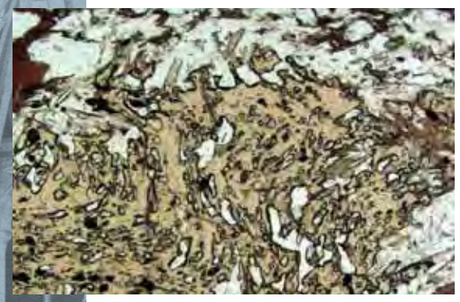
Left: Rugged oil beetle

Below left: Some of Bell's collection of tortoise types

The evolving Earth

The history of the vast pressures and temperatures under which the Earth's crust has formed over geological time is recorded in the rocks. Dave Waters, Curator of Mineralogy and Petrology, examines the microstructure of rocks, using tools such as the polarising microscope and the electron probe microanalyser, for evidence of the pressure and temperature at which they were formed. This information, together with the location from which the samples were recovered, makes it possible to reconstruct the history of the ceaseless movement that has produced the mountain ranges and other surface features that we see today.

This year Dave and colleagues from other institutions reported findings on metamorphism in the region of Mount Everest, and on the evolution of subduction zones in the Western Alps. Further work on the South Tibetan Detachment fault system, which sits between the relatively unmetamorphosed sediments of the Tibetan plateau and the metamorphic rocks of the Great Himalayan series, made use of the samples collected by Lawrence Wager in 1933 during an ascent of Everest. These reveal the mechanisms involved squeezing out a vast, hot slice of the deep crust during the building of the Himalayan range. ●



Above right: Section through one of Wager's Himalayan specimens

Below right: Hemichordate fossil from Chengjiang

Blood-sucking flies in Armenia

In July Honorary Associate Curator in entomology Adrian Pont made the second of three projected visits to Armenia to collect Diptera, supported by the Natural History Museum in London. The fieldwork was carried out in association with the project, 'Molecular genetic monitoring of blood-sucking flies (Diptera) as a basis for the biological control of vectors of dangerous infectious diseases and precautions against the acts of biological terrorism', under the auspices of the Moscow-based International Science and Technology Center.

Adrian collected some 1350 specimens at 52 sites, ranging from the polluted River Hrazdan that runs through the centre of Yerevan, to cowsheds in remote villages. Fieldwork focussed on the collection of Diptera predators of biting black flies (Simuliidae) and mosquitoes (Culicidae). ●

Early life in China

A beautifully-preserved, 525 million-year-old fossil of a marine invertebrate has been discovered in samples from Chengjiang in Yunnan, China.

Working with Chinese colleagues, Derek Siveter described the animal, named *Galeaplumosus abilus*, in a recent issue of *Current Biology*. It is a hemichordate, an animal related to starfish and sea urchins that lives inside a hard, protective tube and uses tentacles to feed on plankton. Fossil hemichordate tubes turn up commonly, but this example is unique for the exceptional preservation of its tentacles and other soft parts. Hemichordates are of great interest for the light they shed on the early evolution of the chordates and thus the vertebrates.

The fossil comes from the same deposits that featured in the Museum's exhibition 'Exceptional fossils from Chengjiang, China', which closed on 14 November 2010. Derek, who curated this exhibition, was also part of an Anglo-Chinese team that submitted a proposal to UNESCO to declare the fossil-rich Cambrian shales of Chengjiang a World Heritage Site. This proposal has now passed the first assessment stage, which saw some 40 proposals from countries around the world reduced to 25. ●

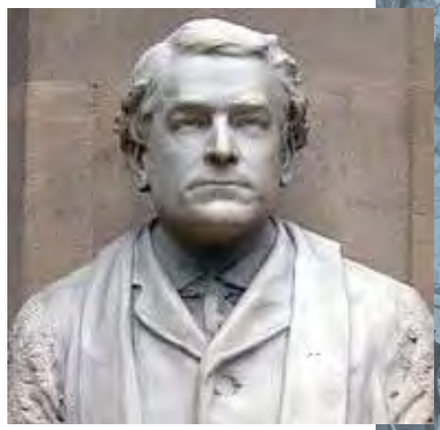
Biodiversity in reedbeds

Honorary associate curator in entomology John Ismay and his wife Barbara Ismay contributed to a major report by the Royal Society for the Protection of Birds (RSPB) as part of the charity's project 'Bringing reedbeds to life'. This programme of scientific research and habitat monitoring, coupled with practical habitat management advice and training, represents one of the largest coordinated programmes on reedbed wetlands for over a decade. The Ismays contributed a study of Diptera of reedbeds and their distribution within the reedbed. ●

Skulls from ancient Greece

George Rolleston, the first Linacre Professor of Physiology (1860 – 1881), made a substantial collection of human skulls and bones, including a number that emerged from excavations of Ancient Greek sites. Correspondence detailing his purchases from Athanasios Rhousopoulos, a dealer and professor at the University of Athens, is in the archives of the Ashmolean Museum.

Working in collaboration with Yannis Galanakis and Alison Roberts of the Department of Antiquities at the Ashmolean, Małgosia Nowak-Kemp made the first study of this correspondence, relating it to the crania collected by Rolleston and now housed in this and other museums. The authors were able to show how Rolleston brought archaeology and physical anthropology together in a systematic and scientific way, and to shed light on the 19th century trade in both artefacts and skeletal remains. ●



Above left: Bust of George Rolleston

'Red Lady' on 'her' toes

Researchers Louise Humphrey and Isabelle De Groote from London's Natural History Museum came to OUMNH with a very specific request: to make highly accurate measurements of one of the bones from the 'Red Lady of Paviland's' foot.

The length and circumference of the thigh bone or femur give a good estimate of the height and body mass of its owner. However, long bones from human skeletons of prehistoric and more recent times are often damaged or missing, while bones from the hands and feet may be better preserved.

The NHM researchers have established that there is a close correlation between measurements of the first metatarsal, one of the five long bones of the foot, and those of the femur, suggesting that it is possible to make accurate height estimates from metatarsal measurements alone.

So that Louise and Isabelle could test their equation on the oldest known fossil of an anatomically-modern human, the Museum allowed them to make a 3-D scan of a metatarsal from the 29,000-year-old skeleton, now known to belong to a young man. ●

Herefordshire highlights

Remarkably detailed images of the soft parts, including appendages, of 425 million-year-old Silurian invertebrates continue to emerge from the fossils of the Herefordshire sediments collected by Acting Curator of the Geological Collections Derek Siveter and his colleagues.

These fossils are impossible to extract from the rock in one piece. The team uses the technique of grinding away the fossil-bearing rock one thin layer at a time, photographing each layer, and digitally reconstructing the whole fossil in three dimensions. Highlights from this year have included the reconstruction and interpretation of a rather primitive arthropod, a primitive crustacean, a myodocopid ostracod crustacean, a primitive chelicerate, and a dalmanitid trilobite. All show exceptionally preserved soft-part anatomy, and they provide significant information on the evolution of the arthropods and their major groups.

An aplacophoran (chiton-related) mollusc and various brachiopod species have also been investigated, the former yielding important phylogenetic data. The research is funded by a three-year, £336,000 grant from the Natural Environment Research Council, which is now approaching completion ●

Our collections

Finding what's there

A very large proportion of the specimens in the Museum were collected in the 19th century or even earlier. Much curatorial work involves reconstructing the trail of documentation that makes it possible uniquely to distinguish each item and record its identification, provenance and history. The continuing process of examining the objects in the historic collections to document them properly often brings rewards in the form of surprising rediscoveries.

This year was no exception, turning up a fossil fish bearing the handwriting of one of the earliest dinosaur hunters; a collection of beetle and other insect types from the collection of an important 19th century American naturalist; a new kind of pterosaur from Oxfordshire; and a 19th century collection of birds' windpipes from the Far East.

Historic fossils

In April 2011, the recently-retired former Director of the Museum, Jim Kennedy and began a twelve-month project with André Ashington and Eliza Howlett, funded by the E P A Cephalosporin Fund, to document the historic Cretaceous collections. A small proportion of the specimens were originally entered in the manuscript catalogues prepared by John Phillips (1800–1874), Oxford's first Professor of Geology, and the first Curator of the Museum. This includes material from the collection of William Buckland (1784–1856), recognised as such by labels in the hand of his wife, Mary Morland.

'The documentation associated with specimens is not always what it seems,' says Jim, 'and knowledge of lithologies and fossil preservation give clues as to where specimens are actually from, rather than where they are said to be from.' By the end of July, some 1,978 specimens had been catalogued. The most exciting find to date: a fish from Lewes sent by Gideon Algernon Mantell (1790–1852), the discoverer of *Iguanodon*, to William Buckland, recognised as such from the faint writing (in Mantell's hand) on the back of the specimen.

Meanwhile Assistant Curator Paul Jeffrey took a second look at a fossil collected in the 19th century from the Middle Jurassic Stonesfield Slate. It has long been assumed to be a small species of crocodile. Working with Professor Eric Buffetaut of the CNRS in Paris, Paul recognised it as a new taxon of pterosaur, the dominant flying creature of the Jurassic period. The specimen is one of the earliest known pterodactyloids.

Huxley Room

The Huxley Room Project is a ten-year undertaking aimed at preserving the unique and internationally important Hope-Westwood Collections of insects, housed in the picturesque Huxley Room with its beamed ceiling. Assistant curator Darren Mann and his colleagues have made significant progress in re-housing a number of small collections from old Victorian cabinets, which are sensitive to attack by pests and fluctuations in temperature and humidity. To date over 40,000 specimens have been re-curated and re-housed in new, pest-proof metal cabinets, thanks to financial assistance from a number of generous contributors.

Not only has the project safeguarded some of the historical collections, it has also brought to light a large number of previously unrecognised type specimens. The most notable among them were those of the American entomologist, J L LeConte (1825–1883), from whom the Revd Frederick William Hope acquired a number of American Coleoptera and other insects in the 1830s and 1840s. On the other hand, diligent searching has turned up only one type specimen of the four species of 'glow worm' or bioluminescent beetle, published by Hope himself.

Birds' windpipes

In the vertebrate zoology collections, Małgosia Nowak-Kemp rediscovered a unique collection of birds' tracheas made by the 19th century naturalist, Robert Swinhoe. Swinhoe was born in Calcutta in 1838, and in 1860 was named as the first European consular representative to Formosa. During his life in China, he had described many species of animals, but most of his discoveries were connected with birds. Several new species were named after him. ●

Below right: collection of bird's tracheas made by Robert Swinhoe in the 19th century

New support for student interns

The Trustees of the E P A Cephalosporin Fund have agreed to extend their funding of the successful undergraduate internship scheme, providing a grant of almost £30,000 for a further two years. E P A interns have provided welcome curatorial support across all four of the collections during 2010–11, and have themselves gained valuable skills and experience.

Working with Monica Price in Mineralogy, Sophie Hibbin (St Anne's College) and Helen Ashcroft (Hertford College) completed projects to identify specimens that had either been mislabelled or not yet labelled at all. Peter Spooner (University College) began a six-week internship to organise, scan and prepare geological descriptions for decorative stones that are not part of the Corsi collection, with the longer-term plan that this collection should also go on-line.

In the Entomological Collections, Tom Bishop (Lady Margaret Hall) sorted insect samples recently collected from Honduras, and completed the identification and mounting of a good proportion of the dung beetles in those samples. Alysa Hulbert (Brasenose College) worked on historical material from the collection of the 19th century naturalist Alfred Russel Wallace. Both worked under the guidance of Darren Mann.

Eliza Howlett, Collections Manager in Geology, supervised Jacqueline Machin (St Hugh's College) and Moya Woolley (St Edmund Hall), both working on the Palaeozoic collections. Jacqui curated 997 specimens from the J Huxtable Collection, while Moya curated 927 from the J Parker Collection, bringing the total number of Palaeozoic specimens catalogued to an impressive 5,865. Meanwhile Thomas Hawker (University College) worked with Assistant Curator Paul Jeffrey on a survey of Bartonian and Lutetian (Middle Eocene) holdings, looking for trace fossils (marks left by organisms living in or on the shells) indicating that gastropod shells had been occupied by hermit crabs.

Under the supervision of Sammy de Grave in the Zoological collections Louisa Wood (St Anne's College) accessioned a large number of shrimps recently collected from the Red Sea, Atlantic and Indian Oceans. She also carried out an electron microscopy study of tegumental scales in caridean shrimps, which has been submitted for publication, and sorted, identified and measured specimens of native and invasive shrimp species collected from the Thames estuary.

Three student interns from St John's College helped Małgosia Nowak-Kemp with vertebrate material. Klara Wanelik sorted, reboxed and in many cases identified the 150 birds' nests in the collection; Stewart Jennings sorted, checked and rehoused osteological specimens transferred to the Museum from the teaching collections of the Zoology Department; and Philip Chapman sorted, labelled and reboxed a large number of mostly disarticulated and incomplete bird skeletons. ●

Above: Interns Stewart Jennings, Klara Wanelik and Philip Chapman

Spiders go online

In order to improve access to the collections for researchers, the Museum is working to increase the number of collections databases that are available online. In October 2010 the Pickard-Cambridge arachnid database was released for public use.

This is a considerable addition to the Museum's accessible entomological data. The collection donated by the Revd Octavius Pickard-Cambridge in 1917 includes an almost complete British collection, and a very large number of exotic spiders from every part of the world. It contains many hundreds of type specimens, not only those described by him but also those described by other collectors. Altogether the database contains entries on over 4,500 specimens.

Sarah Phibbs, IT Officer, worked on the project with Zoë Simmons of the Hope Entomological Collections, checking the material and designing the online interface. ●

Left: An impressive specimen from the Pickard-Cambridge database

Butterflies captured

A long-term project to create digital images and database records of Lepidoptera types in the Hope Entomological Collections was threatened by the ending of the Designated Development Fund grant from the Museums, Libraries and Archives Council, abolished during 2011. 'Fortunately we managed to secure further funding through the generosity of the contributors to the 150th Anniversary Dinner event in June 2010,' says Darren Mann, 'and with this we not only continued the contract of the photographer, but also employed a database clerk.'

So far the team has now captured over 4,000 images of type specimens, and has checked and improved the data of over 5,000 type specimens held on the electronic catalogue. The culmination of this work will be online, searchable databases of the type holdings, and in the case of the Lepidoptera this will be complemented with images (dorsal, ventral and type labels) of each species. ●

Right: One of the butterfly types now in the database

Bottom right: Examples of hand-written labels, including one of the 'Sir WT' items

Taking over Earth Sciences

The move of the University's Earth Sciences Department to its new building had a number of impacts on collections work. Curator of the Mineralogical Collections Dave Waters was responsible for dividing the Earth Sciences teaching specimens into those for transfer to the new building, those to be catalogued and incorporated in the Museum's collections, and those for disposal. Dave and Assistant Curator Monica Price also selected books that would usefully augment the working library of the Museum from those being discarded by the Departmental library.

The Museum has acquired and refurbished extra space in the old building's basement, providing an opportunity to reorganise the petrological collections housed there. Jo Corp, Curatorial Assistant, has started sorting around 7,000 specimens from the East Greenland collection of Lawrence Wager (Professor of Geology 1950–1965) into numeric order, decanting the samples into Museum boxes. Earlier in the year Jo cleaned and reorganised around 5000 of Wager's thin sections, and checked and upgraded the documentation for the Wager collections. ●

Who is Sir WT?

Deciphering ancient labels, mostly handwritten, is essential to documenting the provenance of specimens as well as their taxonomic identity. The Geological Collections have established a database of labels and handwriting to assist with this process. In 2011 former student intern Lucy Gotham (Lincoln College) returned to continue her work on this project. To date, Lucy has researched and entered profiles for a further 100 individuals, and added another 560 images, mostly items associated with these new individuals but also extra items for collectors already on the database.

A particular success was the unravelling of the material associated with two different Sir WTs: Sir W C Trevelyan and Sir C Wyville Thomson. Many of the specimens associated with the Old OUM Collection catalogued by John Phillips have labels marked 'Sir WT', which was interpreted by W J Sollas, Professor of Geology from 1907, as Sir Charles Wyville Thomson. Lucy's painstaking work has revealed that the only specimens actually donated by Wyville Thomson are five Ordovician trilobites from Girvan, Scotland; all other 'Sir WT' specimens should in fact be attributed to Sir W C Trevelyan. ●

New British birds display nears completion

A major new permanent display on British birds is scheduled to open in the upper gallery in 2012. In preparation for this display, Małgosia Nowak-Kemp selected approximately 600 stuffed specimens from the zoological collections, which Kate Pocklington has frozen and conserved. Most have undergone remedial treatment, including remodelling of beaks and feet, or reattachment of heads and legs, while others were in need of preventative conservation such as treatment of corroding wire armatures and general dry cleaning of feathers.

Making use of the expertise of Dr Andy Gosler of the Edward Grey Institute of Ornithology and his students, the new display will focus on changes in the populations of different species in relation to changes in habitat. One example is the recent dramatic rise in red kite numbers in Oxfordshire. As there was no suitable specimen in the collection, Małgosia set out to acquire one. As it is a protected species, every dead kite must be forwarded to the Zoological Society for a compulsory post-mortem. The resulting post-mortem carcasses are in most cases too damaged to be suitable for taxidermy.

'Fortunately, the goodwill of the vets in the Zoological Society and our freelance taxidermist, Mr Derek Frampton, made it possible to overcome this problem', says Małgosia. One Tuesday in April the Zoological Society informed her that a red kite had been found dead in Wales and would be delivered to its veterinary services sometime on Friday. As Derek had been on standby for some time, he was able to arrive early on that Friday to skin the bird before the post mortem. ●

Left and above: Black swan and red kite prepared for display

Below left: The Thomson collection will join British minerals such as these Cumbrian specimens

Acquisitions: new collection of Lake District minerals

All the collections have continued to grow, new accessions arriving mostly through fieldwork or by donation (see Appendix, p 27, for details). Monica Price, Assistant Curator in the Mineralogical Collections, was especially delighted to be offered Mr Norman Thomson's collection of minerals. They come mainly from the Lake District and other locations in northern England, and have been collected since the 1950s when many of the mines were still working.

Monica visited Norman in Cumbria to meet him and bring back part of the collection. 'We are very grateful to Dr David Green, formerly of Manchester Museum,' says Monica, 'who not only facilitated our acquisition of the collection, but has checked the identities of many of the specimens and compiled detailed documentation including specimen labels, plans of mine workings, and copies of publications which often refer to specimens in Norman's collection.' There are many rare species and fine specimens, and the collection complements both the Museum's holding of old Lake District specimens and the research archive for Michael P. Cooper and Chris Stanley's 1990 book on the Minerals of the Caldbeck Fells. ●

Partnerships

Advice to others

Staff in the Collections continue to offer their expertise as advisers to other British and overseas museums. Juliet Hay, Philip Powell and Eliza Howlett visited Abingdon Museum in September 2010 to advise curators on the conservation and display of a near-complete skeleton of an ichthyosaur from the Upper Jurassic Kimmeridge Clay of Curtis's Gravel Pit, Abingdon. Juliet was subsequently commissioned to take on the conservation of the specimen, which is due to be completed by October 2011.

Eliza Howlett and Monica Price advised Clare Jones from Torquay Museum on the documentation of different types of geological material. Eliza also worked with David Berry of consultancy firm Tim Gardom Associates and Ian Cartwright of the Institute of Archaeology on the selection and imaging of fossil specimens for a series of digital interactive displays for the new Sheik Zayed Desert Learning Centre in Abu Dhabi.

Similarly, Paul Jeffery worked with curators at The Oxfordshire Museum, and the design company SolidArt, providing specialist input on the selection of specimens and the stratigraphy of Oxfordshire sites for their new interactive dinosaur gallery. The exhibit also includes a video loop showing honorary associate curator Philip Powell talking to Phil Manning about the dinosaur footprint site at Ardley, which he helped to document. ●

Right: Museum staff advised on the new dinosaur display at the Oxfordshire Museum

Below right: Education staff teach across the curriculum

The Oxfordshire Museum

Science in the real world

Real World Science is a collaborative partnership between five UK museums including OUMNH that uses museum learning to help secondary school students to understand how science affects everyday life. It also introduces them to working scientists, and helps to inspire them to think about undertaking work or further study in scientific fields.

Launched in 2005 with funding from the Department of Culture, Media and Sport for national and regional strategic commissioning projects, the project no longer receives any central government support. However, the established science partnership with the Natural History Museum, The Manchester Museum, The Great North Museum, and Stoke-on-Trent Musems has continued to thrive. The individual institutions are funding their own Education staff, and the Natural History Museum is funding the project co-ordinator and a national programme developer. For the first time in 2011–12 we will be developing a national programme to be delivered by all partners. ●

Across Oxford

Education staff work closely with the other Oxford University collections to share resources, expertise and best practice, and to offer co-ordinated programmes to schools. This year Janet Stott and her colleagues in the other museums have trialled cross-curricular days with Cherwell and Marlborough schools, both state comprehensives.

These days involve OUMNH, the Pitt Rivers Museum, The Ashmolean, the Museum of the History of Science and the Botanic Garden, and allow schools to bring up to 300 students on one day to receive taught sessions. These days were cited in the recent museums review: 'The recent joint initiative to accommodate large groups of school pupils is a good example of collaboration producing an end product that is greater than the museums could achieve individually.'

The museums are also working together on a training programme, the Heritage Lottery Fund 'Skills for the Future' initiative, for which they were awarded a three-year grant in 2010. Four trainees will be recruited in each of three successive years; each will have the opportunity to work alongside the education teams of three museums in the course of his or her placement. Victoria McGuinness was appointed Project Coordinator, and OUMNH's first trainee, Scott Billings, began work in May 2012. ●

Running the Museum

Library and archives

Since the retirement of the Librarian Stella Brecknell in 2010, the Hope and Arkell Libraries have opened only on Wednesdays, under the supervision of Mark Dickerson, Librarian of the Pitt Rivers Museum. Other collections staff have been able to assist by hosting visits to the archives outside these times. Mark has continued the day-to-day work of purchasing and cataloguing journals, cataloguing and shelving donated material and assisting research visitors.

With the aid of a volunteer attached to the Hope Entomological Collections, work began on cataloguing and digitising the A R Wallace archives as part of the The Alfred Russel Wallace Correspondence Project with the Natural History Museum, London. ●

Increased earnings from events

The Museum's 150-year-old court and gallery, with its stunning architecture and displays, together with its large lecture theatre, attracted conferences, company recruitment evenings, receptions, dinners, charity events and even a wedding! Sixty-five functions generated £94,735 in revenue, an increase of 23 per cent over the previous year.

The lecture theatre, with its capacity of almost 300 and recently-updated audiovisual equipment, was particularly in demand. Bookings included the eight 2011 Slade Lectures, given by Professor Zainab al Bahrani on 'The Infinite Image: Art and Ontology in Antiquity'; five Lyell Lectures by Professor David Parker, entitled: 'Describing the New Testament'; and the annual memorial lecture for Dorothy Hodgkin run jointly by Somerville College, AWiSE and the Museum. The lecture theatre continued to be hired daily throughout the academic year for 359 hours of Mathematics and Chemistry undergraduate lectures. ●

The Museum Shop

Yvonne Cawkwell was appointed Retail Manager of both the OUMNH and Pitt Rivers shops, continuing the collaboration between the two Museums and introducing standard retail practice across both. The shop continued to trade profitably despite the cold winter weather and increasingly tough economic conditions, proving a popular destination for visitors to the Museum.

Gross sales of £170,799 represented a 1.2 per cent increase on the year, and while net sales were down on the year primarily due to the VAT increase in January, net margin and trading profit increased. Approximately 8 per cent of all visitors made a purchase in the shop, spending an average of £5.22. New products this year included bottled water, magnetic tumble stones and new jewellery ranges. Best sellers continued to be the Fossils and Minerals range, followed by children's toys.

The shop acquired the Ashmolean's redundant shop fittings in March 2011 and these were due to be installed in October to provide a very welcome shop refit. In preparation for this two new tills have been purchased for the shop. ●

Below: Popular products in the shop

Changing faces

In addition to the former Director Jim Kennedy (see p 7), the Museum said goodbye to some long-standing members of staff this year. One of the most notable was Rennison Hall, whose title 'paper conservator', fell some way short of the contribution he made during his time at the Museum. Rennison played a key role in preparing archival material for display, not least for the exhibition 'A wonderland of natural history' created for the 150th anniversary in 2010, and the exhibition of treasures from the Hope Library that ran in the same year.

Others who left the Museum were: Flora Bain (Education & Outreach), Fi Dunnington (Shop Assistant), Chris Goulbourne (Front of House Assistant), Samantha Hayes (Entomology Technician), Simon James (Front of House Assistant), Kevin Walsh (Executive Officer), Emily Wilson (Education Assistant), and Jennifer Wright (Shop Assistant).

In addition to the interim Director, Professor Sue Iversen, staff who joined during the year were Sarah Barefield (Shop Assistant), Yvonne Cawkwell (Retail Manager), John Chu (Front of House Assistant), Simone Dogherty (Education Assistant), Antonia Edwards (Front of House Assistant), Judith White (Entomology Data Input), and Alexander Woodward (Deputy Front of House Manager). ●

Buildings and maintenance

In January the Museum officially took possession of the old Inorganic Chemistry glassblowing workshop and adjacent rooms. These are due to be converted to a new visitors' reception area. A new WC for visitors with disabilities was completed and commissioned within this area, with funding from the disability fund of the Oxford University Estates Directorate.

Work continued to improve the appearance of the displays. The Museum's own workshop staff replaced the timber surrounds for the bases of the elephant skeletons in the Court, while the University Estates carpentry workshop fitted new cases in the North gallery in the style of the existing Museum cases. These will be occupied during 2012 by the new display of British birds, and new displays on the Huxley-Wilberforce debate and the first transmission of wireless signals by Oliver Lodge.

In January 2011 new audiovisual equipment was installed in the Lecture Theatre including two new screens, projector, microphones, stage rewiring and associated control equipment. This new system is more user-friendly and more reliable than the previous one. ●

Appendices

Appendix 1: Visitors of the Oxford University Museum of Natural History at 31 July 2011

The Vice-Chancellor A D Hamilton, MA, PhD, FRS
Lord Krebs, MA, DPhil, FRS (Chairman)
Pro-Vice Chancellor Professor I A Warmsley, BSc, PhD
The Senior Proctor Professor B J Rogers, MA, PhD
The Junior Proctor Mr L A Whitehead, MA
Professor P C England, MA, DPhil, FRS
Professor R Fortey, BA, MA, PhD, ScD, FRS, FGS, FLS
Professor C Gosden, MA, PhD
Dr L Gilmour, MA, PhD, FSA, AMA
Professor A N Halliday, BSc, PhD
Professor P H Harvey, MA, DPhil, DSc, FRS
Professor P W H Holland, MA, PhD, DSc, FRS
Professor J Michie, M.Sc, MA, DPhil
Dr M O'Hanlon, MA, PhD
Professor S D Iversen, MA, Ph.D, MA, D.Phil (Secretary)
Dr S De Grave, BSc, MSc, PhD (in attendance)
Professor D J Rogers, MA, DPhil (in attendance)
Professor D J Siveter, MA, BSc, PhD, DSc, FGS (in attendance)
Dr D J Waters, MA, DPhil (in attendance)

Appendix 2: People

Staff of the Museum at 31 July 2011

Acting Director: Professor S D Iversen, MA, PhD, MA, DPhil
Administrator: Ms W Shepherd, BSc, MA (status)

The Hope Entomological Collections
Curator: Professor D J Rogers, MA, DPhil
Assistant Curator: Mr D J Mann, BTEC, FLS, FRES
University Support Staff: Ms K Child, BA; Mr J E Hogan, BSc; Ms Z M Simmons, BSc; Ms A Spooner, BSc; Miss J White, BA, MA

Geological Collections
Acting Curator: Professor D J Siveter, MA, BSc, PhD, DSc, FGS
Assistant Curator: Mr P A Jeffery
Collections Manager: Ms E A Howlett, BN
University Support Staff: Mr A P Ashington; Ms J Hay, BA
Research Assistants: Dr S Joomun, BSc, MSc, PhD; Dr C A Lewis, BSc, MSc, PhD
Temporary staff: Lucy Gotham

Mineralogical Collections
Curator: Dr D J Waters, MA, DPhil
Assistant Curator: Miss M T Price, BSc, MSc, MA (status)
University Support Staff: Miss J Corp, BSc

Zoological Collections
Assistant Curator: Dr S De Grave, BSc, MSc, PhD
Collections Manager: Mrs M B Nowak-Kemp, BSc, MSc
University Support Staff: Ms K C Pocklington, BA

Hope and Arkell Libraries
Librarian: Mr M Dickerson, MA, DipInfMan

Information Technology
IT Officer: Ms S Phibbs, BA
IT Assistant: Dr R Painter, BA, MSc, DPhil

Education and Outreach
Head of Education: Mrs J Stott, BA, PGCE
Secondary School Officer: Ms S Lloyd, BSc, PGCE
Primary School and Family Officer: Mr C Jarvis, BA, PGCE, FLS
Community Officer: Mrs S J Griffiths, BA, MA
Volunteers Co-ordinator: Mrs J Todd, MSc
Volunteer and Outreach Assistant: Dr C J Cheeseman, BA, MSc, DPhil
Education Assistants: Ms R Smith, BA, PGCE; Ms S Dogherty, BA, MSt
HLF Skills for the Future Project Co-ordinator: Ms Victoria McGuinness, MA
Trainee Education Officer: Mr Scott Billings, BSc

Central Services
Administrator's Assistant and Director's Secretary: Ms K A Andrews-Speed
Accounts Clerk: Mrs K King
Front of House Manager: Mr A Archer
Deputy Front of House Managers: Mr I Hussain; Mr A Woodward, BA, MA
Front of House Staff: Mr L Kowalski; Ms A Edwards, BA; Mr J Chu, MA
Head of Technical Services: Mr C Burras
Cabinet-maker: Mr W Richey
Workshop and maintenance: Mr P Johnson
Shop Supervisor: Mrs Y Cawkwell
Shop Assistants: Ms F Puspitasari; Miss G Moffa, BA; Ms G M Moretta
Cleaner: Mr G Coates

Honorary Associates (Curation)
Mr M Ackland
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
Dr G C McGavin, MA (status), BSc, DIC, PhD, FLS, FRGS
Mr R Overall
Professor K S Thomson, MA, BSc, PhD

Environmental Archaeology Unit
Director: Professor MA Robinson, MA, PhD, FSA
Temporary assistant: A Morris (Keble)

DPhil students: D Challinor MA, MSc (St Cross), R Hesse BA, MPhil (Merton), L Lodwick BA, MSt (St Cross), E Rowan BSc, BA, MSt (St Cross)

Volunteers, interns and work experience

Hope Entomological Collections

Volunteers

Emily Aldridge, Jessica Atherden (Cardiff University), Laura Bellas, Tom Bishop (Oxford University), Stella Brecknell, Ellen Christmas, Jason Davies, Kat Drayson, Rebecca Evans, John Fitzgerald, David Gormley, Jason Gosling, Brian Harding, Mariel Harrison, Kathryn Harrold (Brookes University), Rosemiranda Hibbert, Peter Hughes, Poppy Lambert (Marlborough School, Woodstock), Annette Lord, Andreas Lösekann, Michael McLeod, Michael Orchard, Wendy Orton, Frank Patterson, Russell Payne, Finn Ryley

E P Abraham Cephalosporin Interns
Tom Bishop (Lady Margaret Hall),
Alysa Hulbert (Brasenose College)

Work experience students
Daisy Richards (Oxford High School), Harriet Scott (King Alfred's College, Wantage), Linus Williams (Matthew Arnold School)

Nuffield Science Bursary students
Finn Ryley (Abingdon School), Hollie Thompson (Henry Box School, Witney)

Geological Collections

Volunteers
Izzy Carr, Mark Ebden, Caroline Halstead-Smith, Paul Sargent, Janet Sherwin

E P Abraham Cephalosporin Interns
Thomas Hawker (University College), Jacqui Machin (St Hugh's College), Moya Woolley (St Edmund Hall)

Work experience students
Russell Barnett (Watford Boys Grammar School, Hertfordshire), Seren Charles (Kendrick School, Reading), Ben Print (Gillotts School, Henley-on-Thames), James Purling (St Birinus School, Didcot)

Mineralogical Collections

Volunteers
Mrs Jean Allen, Miss Sarah Beggs, Mrs Joy Irving, Mrs Jane Randle, Mr Ted Smith

E P Abraham Cephalosporin Intern
Peter Spooner (University College)

Zoological Collections

Volunteers
Jessica Beckman (Brookes University), Imogen Birt (Brookes University), Chloe Chambers (ex Natural History Museum, London), Lucie Cox (Brookes University), Haley Dolton (Brookes University), Eleanor Dobson Gonzales (Brookes University), Sarah Jones (Oxford University), James Kendall (Brookes University), Hannah Keys (Brookes University), Kathryn Krakowka (Oxford University), Hannah Plant (Brookes University), Kristian Purchase (Newcastle University), Maciej Wencel (Oxford University)

E P Abraham Cephalosporin Interns
Louisa Wood (St Anne's), Philip Chapman (St John's), Klara Wanelik (St John's); Stewart Jennings (St John's).

Work experience
Harrison Ostridge (Icknield Community College), Jack Wright (Bartholomew School, Eynsham)

Education and Outreach

Volunteers
Ms Mary Bavister-Gould (Leicester University), Ms Kate Joyce (Oxford Brookes University), Ms Rebecca Jones, BEd placement student Oxford Brookes University

Work experience
Ms Emily Jefferies (Wheatley Park School)

Environmental Archaeology Unit

Work experience
Lidia Ng (St Helen and St Katherine, Abingdon)

Appendix 3: Finance

General

The University's General Board made a grant towards recurrent costs totalling £665,000 for the financial year ending 31 July 2011.

In addition we received this year's instalment towards recurrent costs from AHRC amounting to £330,000.

Grants awarded and donations received

This year we again raised considerable amounts through external grants and awards:

The following generous donors responded to our anniversary fundraising appeal:

Mary E Rogers	£1,000
Pharsalia Charitable Trust	£500
Dianne Edwards	£3,500
Squire Charitable Trust	£10,000

Education & collections support

The Ammco Trust	£500	Explorer backpacks
Clore Foundation	£10,000	Prize for education support
Crawley Creatures	in kind	Contents for dinosaur backpacks
EPA Cephalosphorin	£35,767	Secondary science education officer
EPA Cephalophorin	£29,601	Internships 09/10, 10/11
Esmee Fairbairn Foundation	£31,704	Corsi Project
HUB, FY10/11	£350,000	Education, IT, collections support
Pilgrim Trust	£10,000	Bee collections
Real World Science NHM	£5,000	Secondary science budget
Rothschild Foundation	£5,000	Entomology: Huxley Room project
Thriplow Charitable Trust	£2,800	Huxley Room
Wellcome Trust	in kind	Hands-on DNA lab equipment

Roof restoration project

J P Getty Jr Trust	£100,000
Wolfson Foundation	£150,000
Museum core funds	
Negaunee Foundation	$70,000

We are very grateful for the support of all our donors and supporters.

Travel and research grants

Geological Collections

Professor Siveter continued, together with co-investigators from Leicester, London and Yale universities, and OUMNH-based colleagues Drs Sarah Joomun and Carolyn Lewis, on his NERC-funded £336,000 research grant, Reconstruction of the Herefordshire Lagerstätte biota. The project is now in its final year, and will finish at the end of September 2011.

Zoological Collections

Dr De Grave received jointly with M Johnson (University of Hull) a research grant under the EU ASSEMBLE program to visit Eilat (Israel) to conduct a study of decapod biodiversity. In addition he received a subcontract (€35,000) of the EY-FP7-BIOFRESH project to head a global group of freshwater researchers documenting the conservation status of the world's freshwater shrimps.

Environmental Archaeology Unit

Professor Robinson received funding from the Department of Classics, University of Cincinnati to join their excavation in Pompeii.

Appendix 4: New acquisistions

Entomological Collections

A total of 95 accession lots of 35,284 specimens were received by donation to the department. These included:

- 1000 World Leiodidae (from J Cooter)
- 800 World Coleoptera (fron J Cooter)
- 7 Brazilian Orchid bees including one paratype of *Eulema marcii* Nemesio (from A Nemesio)
- 2000 named world Anthomyiidae (from D M Ackland)
- 25 *Euchroa* (Carabidae, Pterostichini) from Mexico including paratypes of 11 species (from G Ball)
- 14 Ukraine Hydrophilidae including 8 paratypes of *Cercyon* (from A Shatrovsky)
- 480 Palaearctic Formicidae (from M Lush)
- 1000 dung beetles from Costa Rica (from D J Mann)
- 10,000 insects from Mozambique (from OU expedition to Mozambique 2010)
- Paratype of *Popillia isabellae* Limbourg, one Paratype of *Popillia robichei* Limbourg (from P Limbourg)
- Paratype of *Neosclerus glaber* Assing, Paratype of *Neosclerus hlavaci* Assing (Coleoptera: Staphylinidae) (from G de Rougemont)
- 4000 insects from Borneo (from D J Mann and E M Slade)
- Paratype of *Amorphoscelis kenyensis* Stiewe (from M Stiewe)

Geological Collections

By purchase
None

By donation
Cast of *Propelodytes wagneri* from the Eocene of Darmstadt, Germany (from A P Ashington)

Cretaceous invertebrates from Melcombe Bingham, Dorset (from J Christian)

Cretaceous invertebrates from St Oswald's Bay, Dorset; Aylesford, Kent; and Johnson County, Texas (from Professor A S Gale)

Red deer antler from the Pleistocene of Radley, Oxfordshire, and other Jurassic and Pleistocene material (Mrs W A A Richardson, via her son, Mr E M Richardson)

By bequest
None

By fieldwork
Silurian soft-bodied invertebrates from the Herefordshire Lagerstätte

Jurassic invertebrates from Oxfordshire, Gloucestershire and Bedfordshire

Eocene invertebrates from Hampshire and Kent

Mineralogical Collections

By donation
Further specimens from a collection of rocks and minerals, completing the collection (from Mrs E Clifford)

Baryte, barytocalcite, brochantite, calcite, fluorite, quartz, serpierite, sphalerite and witherite from Cumbria (from Mr T Bridges)

Stilbite from the Isle of Arran, North Ayrshire, and calcite from Mid Glamorgan (from Dr T Cotterell, through Mrs Jane Randle)

A small collection of semi-precious gemstones (from Mrs K Hegarty)

Paralstonite** from Powys (from Mr N Hubbard)

Four samples of polished stone from France and Italy; 'llanite' rock from USA (from Professor W J Kennedy)

Wolframite with siderite, and various rocks from Portugal (from Mr E C Smith)

Orthoclase from Cornwall; baryte, calcite, chalcopyrite, and sphalerite from Leicestershire; baryte from Yorkshire; garnet rock, stilbite and topaz from the Isle of Arran, North Ayrshire; stibnite from East Ayrshire; and clinochlore, ilmenite and quartz from Tayside (from Mr R Starkey)

A collection of more than 1,000 mineral specimens mainly from the Lake District and other Northern England and Scottish localities (from Mr N Thomson, through Dr D I Green)

Fornacite** and rickturnerite* from Somerset (from Dr R Turner)

Aragonite, botallackite and todorokite from Cornwall; baryte from Devon; strontianite from Somerset; calcite from Leicestershire; synchysite-(Ce) from Gwynnedd; and fluorite from Co. Durham (from Dr D I Green)

* co-type specimen; **species new to the collection

By transfer
Rock and mineral specimens and collections (various) from the Earth Sciences Department, University of Oxford

Zoological Collections

Worldwide collection of Alpheidae (from A Anker, Fortaleza)

Deep water pelagic caridea from the Indian Ocean (from T Letessier, University of Aberdeen)

Numerous smaller donations, including type material and very rare specimens.

The Hope and Arkell Libraries

Over the year 2.22 linear m of new material was added, including 342 periodical parts. In addition a large bequest of books from the library of J H Callomon was received, together with material from Earth Sciences and other OUMNH staff.

By purchase
Australian Journal of entomology **50** (2011)
Crustaceana, **84** (2011)
Inverbebrate systematics **25** (2011)
Journal of systematic palaeontology **9** (2011)
Lethaia **44** (2011)
Palaeontology **54** (2011)
Systematic entomology **36** (2011)

By donation
British Dragonfly Society publications for 2009–10 (from Mr D Mann)
Studia dipterologica **17** (2010), **18** (2011)
Zoology in the Middle East **50, 51** (2010), **52, 53** (2011) (from Dr A Pont)

Appendix 5: Loans, enquiries and visitors

Collections staff spend much of their time responding to requests from researchers or members of the public for loans, for identification of specimens or other information, or for official research visits. About half of such requests come from overseas. The following table gives some idea of the numbers; for more detail on the nature of requests dealt with during the year, see the full departmental reports which are available on request.

	Loans		Enquiries		Research visitors
	Requests	Specimens	Identification	Others	
Entomology	76	2,898	2,450		125
Geology	66	529	283	246	54
Mineralogy	12	102	10	92	18
Zoology	34	72 vertebrate Many invertebrate	137	358	146

Appendix 6: Publications

Entomological Collections
Chandler, P J, **Ismay, J W** and Ismay, B (2010). Marshes and Fens. *In*: Chandler, PJ (Editor) *A Dipterist's Handbook*, *The Amateur Entomologist*, 15, 212–218.

Cooter, J and Svec, Z (2011) *Agathidium* (*Macroceble*) *curtisternum* sp. nov. from Turkey (Coleoptera: Leiodidae: Leiodinae) *Klapalekiana*, 47, 13–16.

Couri, M S, **Pont, A C** and Daugeron, C (2010). The Muscidae (Diptera) of Vanuatu. *Zootaxa*, **2503**, 1–39.

Culot, L, **Mann, D J**, Muñoz-Lazo, F J J, Huynen, M-C, and Heymann, E W (2011). Tamarins and dung beetles: an efficient diplochorous dispersal system in the Peruvian Amazonia. *Biotropica*, **43**(1), 84–92.

Dellacasa, G, Dellacasa, M and **Mann, D J** (2010). The morphology of the labrum (epipharynx, ikrioma and aboral surface) of adult Aphodiini (Coleoptera: Scarabaeidae: Aphodiinae), and its implications for systematics. *Insecta Mundi*, **0132**, 1–21.

Gabriel, R (2011). A New Species of *Hapalopus* Ausserer, 1875 from Guyana (Araneae: Theraphosidae). *Journal of the British Tarantula Society*, **26**(2), 76–80.

Gabriel, R (2011). Beispiele von zusammengewachsenen Spermatheken bei Vogelspinnen (Araneae, Mygalomorphae, Theraphosidae), *ARACHNE*, **16**(2), 24–27.

Gabriel, R (2011). *Poecilotheria formosa*, *P metallica*, *P miranda and P tigrinawesseli*, Notes and Observations on Their Captive Breeding, Maturity Rate and Sociability. *Journal of the British Tarantula Society*, **26**(3), 101–110.

Gabriel, R (2011). Daytime Activity, Unusual Habitation and Appendage Regeneration in an Unidentified Species of *Sericopelma* Ausserer, 1875 (Araneae: Theraphosidae). *Newsletter of the British Arachnological Society*, **121**, 9–11.

Gabriel, R (2011). *Nhandu carapoensis* Lucas 1983 the senior synonym of *Nhandu tripartitis* Schmidt 1997, (Araneae: Theraphosidae), *Newsletter of the British Arachnological Society* **121**, 11–13.

Gabriel, R and Longhorn, S J (2011). Resurrection of the generic status for *Mygalarachnae* Ausserer, 1871 and *Harpaxictis* Simon,1892 (Araneae: Theraphosidae) with rebuttal of their synonymy with *Sericopelma Ausserer* 1875 *Revista Iberica de Arachnologia*, 19, 157–165.

Hartemink, N, Vanwambmeke, S O, Heesterbeek, H, **Rogers, D**, Morley, D, Pesson, B, Davies, C, Mahamdallie, S, Ready, P (2011). Integrated mapping of establishment risk for emerging vector-borne infections: a case study of canine leishmaniasis in Southwest France. *PLoS One* 101371/journalpone0020817.

Hayward, A, McMahon, D P and **Kathirithamby, J** (2011). Cryptic diversity and female host specificity in a parasitoid where the sexes utilize hosts from separate orders. *Molecular Ecology*, **20**, 1508–1528.

Ismay, J W and Ismay, B (2010). Lowland Grassland. In: Chandler, P J (Editor) *A Dipterist's Handbook (2nd edition): The Amateur Entomologist*, **15**, 207–212.

Ismay, J W and Ismay, B (2010). Associations with Fungi, Mycetozoa and Plants – Higher Plants: Chloropidae In: Chandler, P J (Editor) *A Dipterist's Handbook (2nd edition): The Amateur Entomologist*, **15**, 463–465.

Lane, R P, Blackman, R L, Cogan, B H, Cogan, C, Cranston, P S, Crosskey, R W, Hammond, P M, Hollis, D, Hutson, A M, Mound, L **A, Pont, A C**, Sattler, K S O, Tremewan, W G and Vane-Wright, R I (2011). An appreciation of Paul Freeman DSc, ARCS, Hon FRES (26.v.1916 – 31.vii.2010), with a bibliography of his published entomological works. *Antenna*, **35**, 5–15.

McMahon, D P, Hayward, A and **Kathirithamby, J** (2011). Strepsiptera. *Current Biology*, **21**, K271–272.

McMahon, D P, Hayward, A and **Kathirithamby, A** (2011). The first molecular phylogeny of Strepsiptera (Insecta) reveals an early burst of molecular evolution correlated with the transition to endoparasitism. *PLoS*, **6**, 1–7.

Mann, D J, Hancock, G, Robinson, J and Foster, G (2010). Short-necked oil beetle on Coll. *Scottish Invertebrate News*, **1**(2), 6–7.

Mann, D J (2011) Some notes on the Hope-Westwood Lampyridae types in the Hope Entomological Collections, Oxford University Museum of Natural History. *Lampyrid*, **1**, 65–69.

Pont, A C and Vikhrev, N E (2010). A second species of the genus *Huckettomyia* Pont & Shinonaga (Diptera: Muscidae). *Studia dipterologica*, 16, 101–105.

Pont, A C, Vikhrev, N and Werner, D (2011). The hunter-flies of Armenia I. Some species of the genus *Limnophora* Robineau-Desvoidy, with the description of a new species (Insecta, Diptera: Muscidae). *Zoology in the Middle East*, **52**, 89–103.

Pont, A C (2011). The Muscidae described by J W Zetterstedt (Insecta: Diptera). With an appendix by Christer Bergström and Adrian C Pont. *Zootaxa*, **2852**, 83 pp.

Sedda, L, Guerrini, L, Bouyer, J, Koné and **Rogers, D J** (2010). Spatio-temporal modelling of *Glossina palpalis gambiensis* and *Glossina tachinoides* apparent densities in fragmented ecosystems of Burkina Faso. *Ecography*, **33**, 772–783.

Slade, EM, **Mann, D J** and Lewis, O T (2011). Biodiversity and ecosystem function of tropical forest dung beetles under contrasting logging regimes. *Biological Conservation*, **144**, 166–174.

Sorokina, V S and **Pont, A C** (2010). An annotated catalogue of the Muscidae (Diptera) of Siberia. *Zootaxa*, **2597**, 87 pp.

Ziegler, J, **Pont, A C**, Nawai, S, Wendt, H, and Werner, D (2011). In memoriam Hubert Schumann 07.05.1930 – 10.04.2010. *Deutsche entomologische Zeitschrift*, **58**, 13–14.

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Hou, X-G, Aldridge, R J, Siveter, David J, **Siveter, Derek J**, Williams, M, Zalasiewicz, J and Ma, X-Y (2011). An early Cambrian hemichordate zooid. *Current Biology*, 21, 612–616.

Kemp, TS (2010). New perspectives on the evolution of Late Palaeozoic and Mesozoic terrestrial tetrapods. In: Bandyopadhyay, S *New aspects of Mesozoic biodiversity: Lecture Notes in Earth Science*, **132**, Springer-Verlag, Berlin and Heidelberg, 1–26.

Powell, P (2010). Geology. *In*: Tiller, K and Darkes, G *An historical atlas of Oxfordshire*. Oxfordshire Record Society Series 67, Oxfordshire Record Society, Chipping Norton, pp 10 + map.

Siveter, Derek J, Selden P A and Palmer, D (2010). Pre-Carboniferous fossil arthropods. In: Jarzembowski, E, **Siveter, Derek J,** Palmer, D and Selden, P A *Fossil arthropods of Great Britain*, Joint Nature Conservation Committee, Peterborough, 47–110.

Mineralogical Collections
Angiboust, S, Langdon, R, Agard, P, **Waters, D** and Chopin, C (2011). Multi-approach thermobarometry for eclogitization of the Monviso (W Alps) and implications for subduction dynamics. *Journal of Metamorphic Geology*, **29** doi:101111/j1525-1314201100951x.

Cottle, J M, **Waters, D J,** Riley, D, Beyssac, O and Jessup, M J (2011). Metamorphic history of the South Tibetan Detachment System, Mt Everest region, revealed by RSCM thermometry and phase equilibria modeling. *Journal of Metamorphic Geology*, **29**(5), 561–582. doi: 101111/j1525-1314201100930x.

Price, M T (2011). The Corsi colection of decorative stones: how Corsi brought geology to the arts. *History of Geology Group Conference on Geological Collectors and Collecting, Natural History Museum, London* 4-5 April, 2011, abstracts volume p 14.

Price, M T (2011). Polished windows on an ancient world: Decorative stone collections in the Oxford University Museum of Natural History. *History of Geology Group Conference on Geological Collectors and Collecting, Natural History Museum, London* 4-5 April, 2011, abstracts volume p 27.

Streule, M J, Searle, M P, **Waters, D J** and Horstwood, M S A (2010). Metamorphism, melting, and channel flow in the Greater Himalayan Sequence and Makalu leucogranite: Constraints from thermobarometry, metamorphic modeling, and U-Pb geochronology. *Tectonics*, **29**, TC5011. doi:101029/2009TC002533.

Zoological Collections
Anker, A and **De Grave, S** (2010). Holthuisaeus, a new genus to accommodate Periclimenaeus bermudensis Armstrong (Decapoda: Pontoniinae). In Fransen, C H J M, **De Grave, S** and Ng, P K L (eds) *Studies on Malacostraca: Lipke Bijdeley Holthuis Memorial Volume. Crustaceana Monographs*, **14**, 115–132.

De Grave, S (2010). A new species of Typton (Decapoda: Pontoniinae) from Ascension Island. In Fransen, C H J M, **De Grave, S** and Ng, P K L (eds) *Studies on Malacostraca: Lipke Bijdeley Holthuis Memorial Volume. Crustaceana Monographs*, **14**, 209–218.

De Grave, S and Anker, A (2010). Designation of *Synalpheus pectiniger* Coutiere, 1907 as a *nomen protectum* and its senior synonym *Alpheus praecox* Herrick, 1888 as a *nomen oblitum* (Crustacea, Decapoda, Alpheidae). *Zootaxa*, **2642**: 53–58.

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Fransen, C H J M, **De Grave, S** and Ng, P K L (2010). In memoriam Lipke Bijdeley Holthuis. In Fransen, C H J M, **De Grave, S** and Ng, P K L (eds) *Studies on Malacostraca: Lipke Bijdeley Holthuis Memorial Volume. Crustaceana Monographs*, **14**, 1–77.

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Nowak-Kemp, M and Fritz, U (2010). Chelonian type specimens at the Oxford University Museum, *Zootaxa*, **2604**, 1–19.

Nowak-Kemp, M and Galanakis, Y, (2011). Ancient Greek skulls in the Oxford University Museum, Part I – George Rolleston, Oxford and the formation of the human skulls collection. *Journal of the History of Collections*, doi: 101093/jhc/fhq039.

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Thomson, K S (2010). Darwin's Literary Models. *American Scientist*, **98**, 196–199.

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Thomson, K S, Yu, X and Thomas, B (2010). New information on the ethmosphenoid of *Eusthenopteron foordi* (Devonian: Sarcopterygii, Osteolepiformes, Tristicopteridae), with special reference to the choana. In: Elliot, D K, Maisey, J G, Yu, X and Miao, D (eds) *Morphology, Phylogeny and Paleobiogeography of Fossil Fishes*. Pfeil Verlag, München, 381–390.

Thomson, K S (2011) Review of *Darwin's Pictures* by Julia Voss. *Reports of the National Centre for Science Education*, **31**(2), 11. Online at reportsncsecom/indexphp/rncse/article/view/30/21

Thomson, K S (2011). Thomas Jefferson's Old Bones. *American Scientist*, **99**, 200–203.

Environmental Archaeology Unit

Campbell, G and **Robinson, M** (2010). The environmental evidence. *In*: Chapman, A *West Cotton, Raunds: A study of medieval settlement dynamics AD450–1450. Excavation of a deserted medieval hamlet in Northamptonshire, 1985–89*. Oxbow, 427–515.

Hey, G, Garwood, **P, Robinson, M**, Barclay, A and Bradley, P (2011). The Mesolithic, Neolithic and early Bronze Age. *In* Morigi, A et al, *The Thames through time: The archaeology of the gravel terraces of the Upper and Middle Thames. Early prehistory: to 1500 BC*. Oxford Archaeology Unit, Thames Valley Landscapes Monograph **32**, 151-463.

Robinson, M (2011). The macroscopic plant and invertebrate remains from mid-Roman Silchester. *In* Fulford, M and Clarke, A, *Silchester: city in transition. The mid-Roman occupation of Insula IX c.AD 125–250/300. A report on excavations undertaken since 1997*. Britannia Monograph Series **25**, 281–93, 485–96.

Robinson, M A (2011). The prehistoric and protohistoric archaeology of Pompeii and the Sarno Valley. In Ellis, S J R (ed) *The making of Pompeii. Journal of Roman Archaeology* Supplementary Series **85**, 19–36.

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Front and back cover:
Mortoniceras rostratum, a fossil ammonite from the Cretaceous period collected in Oxfordshire