Oxford University Museum of Natural History

Annual Report

2009-2010

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Front cover shows the son et lumière at the Museum's 150th Anniversary dinner, surrounded by images from the Museum's temporary display 'Oxford University Museum of Natural History 1860-2010: a wonderland of natural history'

Contents

OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY

Annual Report

Part 1.

Summary of the Year 2009-2010

Chairman's Report

The past year has been another highly successful year for the Museum. The celebratory events for the 150th anniversary, referred to in the Director's Report, have been excellent and attracted many new and old friends to the Museum.

The Museum's Foundation was an integral part of the start of modern science at Oxford. In the first half of the 19th century, science at Oxford was in a parlous state. Sir Henry Acland, Regius Professor of Medicine wrote: 'The Science studies of the University were for various causes almost extinct. The intellect of the University was wholly given to ecclesiastical and theological questions. All physical science was discountenanced'.

In 1850, a Royal Commission of enquiry into Oxford was set up, and in establishing the Commission, the Prime Minister, Lord Russell, wrote to the Chancellor, the Duke of Wellington as follows: 'Discoveries of physical and chemical science have rendered changes in the course of study of our national universities highly expedient'.

It took two Royal Commissions and 36 years for the University to fully respond to this demand, by introducing science degrees that did not require classics beyond the first year. However one of the University's first acts after the first Royal Commission was to plan a building for the natural sciences, with proper laboratories. The proposal was only just voted in, by a margin of six, in Congregation.

The money to fund the building came from surpluses accumulated by Oxford University Press, from sales of the Bible and Book of Common Prayer.

Today, the Museum curates internationally important collections, has a remarkably successful outreach programme and supports research both in Oxford and, through access to its collections, in many other parts of the world. The Museum's success in recent years owes much to the dedication and leadership of its Director, Professor Jim Kennedy, who retires at the end of the academic year. On behalf of the staff of the Museum, the Visitors and the University, I thank him for his enormous contribution and wish him a long and happy retirement.

John Krebs
Chairman, the Visitors of the
Oxford University Museum of Natural History

Director's Report

There was no grand ceremony when, 150 years ago, the Museum first opened its doors to the public, but events at the meeting of the British Association for the Advancement of Science in late June 1860 provided a convenient date to commemorate, and we've had special events to celebrate the anniversary throughout the year.

A temporary exhibition tracing the campaign to build the Museum, and its subsequent construction, provided a rewarding opportunity to search the archives of both Museum and University. There were further temporary exhibitions of material from our archives, and my colleague Derek Siveter brought off a major coup with his exhibition of truly remarkable early Cambrian fossils from Chengjiang, China. 2010 was also the 100th anniversary of the birth of Nobel laureate Dorothy Hodgkin, who carried out much of her early research in the building. It was a long-standing ambition of mine to mark this, and her sister Diana Rowley unveiled a bronze bust by sculptor Anthony Stones on 10 May. This is the first addition to the sculptures of eminent scientists to be added to the Museum in a century, and the first of a woman. The occasion was also marked by the performance of a monologue written by Georgina Ferry, Dorothy's biographer, and our Writer-in-Residence for the year.

In October, the Museum was honoured to host a meeting of the Chancellor's Court of Benefactors, and fundraising focused on the Museum in May when, thanks to the support of the Development Office, the Museum launched a £5.5 million development campaign with a reception, dinner, choral performance, and a spectacular 'son et lumière'. I am especially grateful to Professor Raymond Dwek and his family for their generous support of this event. Staff contributed to the anniversary with a temporary exhibition of posters showing their favourite specimens or features of the Museum, and this will have a permanent online home in the near future.

In July, the Museum lawn was the scene of the launch of 'The Ark', a Children's International Arts Organisation project housed in a 15 metre long Ark constructed of recycled materials. It then moved on to the Edinburgh Festival, and will end up in London for the Olympics. It was succeeded by the appearance of the 'Ghost Forest' after visits to Trafalgar Square and the Climate Summit in Copenhagen. This group of huge tree stumps and root systems from a renewable hardwood forest in Ghana is the inspiration of local artist Angela Palmer, and will be with us for a year. The Forest, flood-lit at night, has attracted enormous attention. It provided, for me, one of the high points of our celebrations, with more to come, and to be reported on in next year's Annual Report.

We continue to live in interesting financial times. The good news is that we will have level funding of £330,000 from the Higher Education Funding Council for 2010-11, but reductions seem inevitable beyond that. In contrast we have had to absorb a 10% cut of £75,000 from our core funding from the University by 2012-13. The future of *Renaissance in the Regions* funding, which supports virtually all of our education, access, and outreach activities and much else, remains uncertain beyond March 2011. The impact of the Chancellor's Comprehensive Spending Review, due to be announced on 20 October 2010, will undoubtedly lead to a further tightening of the purse strings. With all this in mind, fund-raising continues to be a high priority, at a time when many charities have their own problems. Over £636,000 was raised during the year, and we are indebted to our Advisory Board, chaired by Lady Heseltine, for their active support and advice, which has opened doors, and given us invaluable new contacts. To them, and our many supporters, our thanks.

The Museums Libraries and Archives Council's Accreditation scheme recognises high standards in the management of UK museums and their collections, and I'm pleased to say that our first formal Accreditation inspection by the MLA, held in March this year, resulted in the Museum retaining its Full Accreditation status.

We had expected some reduction in visitor numbers with the reopening of the Ashmolean, but they continue to rise, to 512,202 this year. Our education team continues to provide an extraordinarily diverse and attractive programme of formal and informal events;

19,878 UK students visited the Museum in school groups, and of these, 77% received a taught session from our staff.

The final phase of display renewal moves to completion. Local geology and gemstone displays are complete. New cases for displays on the Huxley Wilberforce debate, Oliver Lodge and the first public radio transmission, and birds, are in course of installation.

The Museum roof, magnificent as it is, has leaked from shortly after day one. After more than a decade of discussion and research, a comprehensive solution has been agreed, and work will begin in March 2011. This will provide the opportunity to clean the iron, wood, brick, and stonework of 150 years of grime, and restore the interior to its former glory

The year saw the departure of a number of colleagues who have given the Museum their loyal support. Dr Tom Kemp retired from the Curatorship of the Zoological Collections, a post he held from 1972, combined with a lectureship in the Department of Zoology, and a Fellowship at St John's College. During his time, Tom acted as Principal Curator on a number of occasions in our pre-director days, including the critical period when the establishment of the post of Director was under consideration. He combined his teaching and curatorial duties with a number of key posts at St John's College. We thank him for his substantial contributions to the collegiate University, and wish him well with his continuing researches on mammal-like reptiles as an Emeritus Research Fellow in Zoology at St John's. Thanks also go to Stella Brecknell, our Librarian/Archivist, for her care of our priceless books and documents, and to Joy Irving and Lisa Conyers for their work in Mineralogical and Zoological Collections respectively.

I note with sadness the deaths of two great friends, both benefactors of the Museum, C.W. Wright (1917-2010), and John Callomon (1929-2010). Details of their high achievements and gifts to the Museum are set out in the Geological Collections report below.

This is my last Director's Report before retirement, after more than 43 years in the service of the University, first as a lecturer in the Department of Geology and Mineralogy, then as lecturer and Curator of the Geological Collections from 1976 (and Acting Curator of the Mineralogical Collections, and of the Entomological Collections on occasion!), and as Director from 2003. In 1976 the Museum received a few tens of thousands of visitors a year. In 2009-10 the annual figure exceed half a million. This extraordinary renaissance of the Museum, particularly in the last decade, has been in part a reflection of the availability of new government funding streams, and the rise of fund raising as a major directoral preoccupation. But none of this would have been possible without the sheer devotion and loyalty of my colleagues, with whom it has been an honour and privilege to work within our beautiful cathedral to science. To them, my thanks.

Jim Kennedy
Director

The Museum and the community

The Museum is open to the public from 10 am to 5 pm daily and attracts a growing number of visitors both individually and in organised parties. It also reaches audiences worldwide through its website. We are committed to increasing access to our collections to a wide range of audiences.

Our visitors

This year the number of visitors during our normal opening hours rose by 63,498, to 512,202. They enjoyed a variety of special exhibitions and installations both inside and outside the Museum. Education and Outreach staff ran a total of 77 days of family activities throughout the year, and themed trails provided additional activities during school holidays.

Our website usage has also continued to grow, with over 1.3 million visits. The Exhibits and Features page now includes short recordings in which the 'Dodo' introduces various aspects of the Museum from the swifts in the tower to the live insect displays.

Displays, activities and events

The Darwin bicentenary celebrations continued through 2009 with our temporary exhibition on the upper gallery called 'In his own words: a celebration of the life of Charles Darwin (1809-1882)'. In the court, 'Darwin's Leftovers' was a remarkable installation of animals, fossils and other items created by a team of 60 knitters from across Gloucestershire.

Education and family activities linked to the Darwin bicentenary in 2009 gave way in 2010 to those marking the Museum's 150th anniversary. In April, we opened a temporary exhibition in the upper gallery commemorating the construction of the Museum, which featured more than 150 items from the Museum and University archives. A highlight of the year was a spectacular 'son et lumière', enjoyed first at a special dinner to launch the Museum's fundraising appeal, and then at a special late night opening for members of the public.

Dismantling of the old bird cases created a temporary exhibition space which was filled with 'A few of our favourite things', a poster display of specimens and features of the building chosen by the staff. Nearby, newly built table cases showed beautiful, rarely seen, illustrated works from the Hope Library.

The Museum's birthday was not the only anniversary celebrated this year. The centenary of the birth of Nobel laureate Dorothy Hodgkin was celebrated with the unveiling of bronze bust by Anthony Stones, and a performance of a monologue by our Writer-in-Residence, Georgina Ferry.

Our other major temporary exhibition of the year was the first large showing outside China of the globally significant Chengjiang fossils. These remarkable Cambrian invertebrate fossils have exceptional preservation of their soft parts.

Work on permanent displays progressed well. Local geology displays were completed and have been well received by members of the public. The gemstone displays are nearly finished, and a new series of cases on 'Amazing minerals, curious crystals' were installed in the upper west gallery. New cases on birds, mammals, Charles Darwin, and on Oliver Lodge and the first radio transmission are all under development.

Events on the Museum lawn began in June with the launch of the 'CIAO! Ark'. Constructed from recycled materials, and entirely powered by green energy, it was the culmination of an innovative project bringing scientists, artists, architects and primary children together to 'imagine' a low carbon future and its potential benefits to the environment and to society. The Ark hosted a five day festival of activities, exhibitions and concerts for schools, businesses and the public. It was a collaboration between education staff from the University's museums and Botanic Gardens, and the Oxford-based Children's International Arts Organisation (CIAO!).

It was followed in July by the 'Ghost Forest', an art installation consisting of 10 huge tree stumps brought to Europe from a commercially logged forest in Western Africa by the artist Angela Palmer. The work highlights the alarming depletion of the world's natural resources, and the continued rate of deforestation. It was first shown in Trafalgar Square, and then at the UN Climate Change conference in Copenhagen, and stays at the Museum until July 2011.

150th Anniversary celebrations

150 years ago, in 1860, the new Oxford Museum opened its doors, and for the first time, the University had a home for all its scientific collections, teaching and research. Anniversary celebrations started with the opening in April of a year-long exhibition 'Oxford University Museum of Natural History 1860-2010: a wonderland of natural history'. It shows documents, photographs and engravings that trace 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. It was supported by a grant from the University's Van Houten Fund. On the north gallery, we showed 'A few of our favourite things', a poster display in which staff chose their favourite specimen or feature of the Museum and explained why they had made their choice.

In May, we hosted a 150th Anniversary fundraising dinner for more than 120 people, which was followed by a short concert by the Schola Cantorum, and concluded with a spectacular 'son et lumière'. The commentary spoke of the history of the Museum, what it means to staff and visitors today, and how it might change in future centuries. The event was hosted by the Chancellor of the University, Lord Patten of Barnes, and Professor Jim Kennedy, and the son et lumière was generously sponsored by Professor Raymond Dwek. Further showings took place during a free public late night opening the following evening.

The spectacular son et lumière which followed our 150th Anniversary dinner.

Our Writer-in-Residence this year, Georgina Ferry, contributed to the commentary, and also worked on a number of other projects publicising the Museum. She wrote a series of scripts for BBC Radio Oxford's 'Night at the Museum' feature in June, and a blog, Dodology, in which she comments on activities in the Museum. A special anniversary Museum logo features on our publications and web pages, and the *Oxford Times* contributed to the celebrations by running a series of articles in its *Limited Edition* magazine.

The anniversary was the overriding theme for family events, which included stories from the history of the Museum during 'Museum Memories'; activities focussing on architecture in 'Brilliant Buildings', and a look at how the Museum is organised in 'Museum All Sorts'. New school activities also had a Victorian theme. The Museum published *Acland's amazing edifice*, a book of poems and cartoon illustrations by Education Officer Mr Chris Jarvis, which was funded by a Royal Society's 'Local Heroes' grant, and recounts Sir Henry Wentworth Acland's contribution to the founding of the Museum.

Remarkable fossils from China

In just a few places around the world, ancient fossils are found that show remarkable preservation of their soft parts. Professor Derek Siveter, Acting Curator of the Geological Collections, has been researching those from the Herefordshire Konservat-Lagerstätte, and the Cambrian fossils of Chengjiang, in Yunnan Province, Western China. He has curated a remarkable temporary display of the Chengjiang fossils, the first time they have been shown outside China.

The lobopodian *Microdictyon sinicum* Chen, Hou & Lu, 1989 (the body is about 2.0 cm long)

The exhibition 'Exceptional fossils from Chengjiang, China: early animal life' was opened in May by Professor Richard Dawkins. Other guests at the opening included their discoverer, Professor Hou Xianguang of Yunnan University, Kunming, and the President of Yunnan University, Professor He Tianchun, part of a five-man delegation from Kunming.

The 525 million year old fossils have the remains of soft-tissues, and whole soft-bodied animals are exquisitely preserved. They are particularly significant because they provide key evidence for one of the most important benchmarks in the history of life, the so-called Cambrian 'explosion' event, a period of time when most of the major animal groups that we know today first appeared in the fossil record.

The exhibition opening, from left to right: Professor He Tianchun, Mr Yang Jie, Professor Hou Xianguang, Professor Richard Dawkins and Professor Derek Siveter.

The exhibition featured some 140 specimens with eyes, gills, delicate appendages, digestive tracts and other soft tissues clearly visible. It also features the earliest vertebrate fossil, a fish. The exhibition was brought to the Museum from China thanks to a grant from the E.P.A. Cephalosporin Fund, and continues until 14 November 2010.

Once again the Museum participated in city-wide events, including a 'Bugs Day' as part of Oxford Open Doors in September, a 'White Nights' evening opening in November, and an 'Alice Day' in July. Our own regular special events included 'Oxfordshire goes wild', a showcase for local wildlife charities, and the volunteer run family science festival 'Wow!How?' All were extremely popular and very well attended.

Community outreach

The community outreach service took activities to the Oxfordshire Science Festival in Broad Street and the Cowley Road Carnival. Through the year it provided 117 outreach sessions and facilitated tours of the Museum to a wide range of community groups including the Banbury Young Homeless Project, Oxford Night Shelter, Oxford Centre for Enablement, libraries and family centres, and the Oxfordshire Hospital School. Some 1,593 people took part in these sessions. Work was extended with Mind mental health support groups. Collections staff also contributed to outreach work, for example talking to schools and amateur natural history groups.

Schools education

The Education Department has seen continued growth and development in all areas despite the uncertainty that surrounds future funding. 19,878 UK students visited the Museum in school groups, an increase of 5% on the previous year. 77% of these students were taught by Education Officers, sessions that were often fully booked more than half a term in advance. When international student visits are included, a total of 34,362 school students visited the Museum in booked groups.

The most popular primary school teaching sessions were on dinosaurs and fossils, with 59 sessions booked for Early Years classes this year, accounting for 1,929 children. A total of 6,891 primary students in 218 visits received taught sessions in the Museum. Staff are in the process of compiling detailed teacher information sheets for all the facilitated or taught sessions.

The CIAO! Ark was the main primary school project of the year. Collaboration with the Entomology Department resulted in 'Making Museums' , now in its seventh year, and special insect celebration days which included performances in the Court of *The Bug and the Butterfly* (based on Lorca's poems) by the theatre group Peut-être Theatre.

The numbers of primary and secondary school pupils visiting are similar, although the secondary students generally come in much larger groups, making their visits more complex to organise.

Eight 'Dinosaur Days' were held over the last year involving 652 students, and all were fully booked. A level sessions on evolution and biodiversity continued to be popular. A sixth form study day in December entitled 'Life after Darwin' brought more than 250 students to hear lectures from academic staff of the Department of Zoology. After, they enjoyed informal chats with scientists from postgraduate students to professors as they carried out individual tasks in the galleries.

In a collaboration with the Museum of the History of Science, a new programme was developed for Year 8 students at The Langley Academy in Slough on the theme of 'time'. It provided opportunities for a sustained museum learning experience in which the students considered how evidence is collected, evaluated and utilised to develop ideas about science and the real world. It was funded by 'Learning Links', part of the MLA's *Strategic Commissioning* initiative. The project provided an excellent opportunity to work in depth with a school to develop and trial new learning activities, which are now being adapted for use with other schools.

Art introductions during the year were given to 72 groups, comprising 3,309 students. As part of the Darwin bicentenary year celebrations the Museum organized an art competition to design a plinth commemorating the Great Debate. Ninety pupils from schools in Oxfordshire entered and the winner was Poppy Simondson. Alec Peever was commissioned as the sculptor for the plinth, which will be unveiled at a ceremony in September 2010. As part of the Museum's 150th anniversary, artist Jeanette Barnes ran a sixth form drawing workshop with state and private schools in Abingdon.

Over the past year, Education staff taught over 350 student teachers from Oxford University Department of Educational Studies and Oxford Brookes University.

Media and publications

The Museum was again the focus for a number of television and radio programmes featuring the building, its contents and our swift colony. Notable programmes include *Deadly 6* and *Nina and the Neurons* for BBC children's television, and BBC's *History of Ancient Britain* which featured the Red Lady of Paviland.

Honorary Research Associate Dr George Mc Gavin continued his media appearances, including *What in the world*, *It's only a theory*, *Ready Steady Cook*, and *Celebrity Eggheads*, as well as reporting on natural history items for *The One Show*. He was co-presenter and led the science team on BBC1's *Lost Land of the Volcano,* broadcast in September, and gave numerous interviews on the making of the series. He spent seven weeks filming in Bhutan and India for the next of these series, *Lost Land of the Tiger*.

The Museum's lecture theatre was the venue for a 'Big Drink Debate' held by Forsters and the NHS in November, and a debate held by

The Independent before the General Election in May.

Recognising that common names better capture the public imagination than Latin names, the Museum joined forces with *The Guardian* and Natural England to run a competition to give popular names to ten threatened British species which included insects, jellyfish and lichen. Posters displaying the short-listed entries were displayed in the Museum. The overall winning entry gave a beetle *Megapenthes lugens* the name 'Queen's executioner'.

The Oxford Times has contributed to the Museum's 150th Anniversary celebrations by publishing in its *Limited Edition* magazine each month an article about a different specimen from the Museum's displays. There have also been a number of articles about the Director, in *Limited Edition*, *Blue Print* and elsewhere.

Mr Philip Powell, Honorary Associate Curator in the Geological Collections, contributed a chapter on geology and building stones to a new edition of the Pevsner guide to Berkshire, which came out in May to very positive reviews.

Acland's amazing edifice, written and illustrated by Education Officer Mr Chris Jarvis, celebrated both the Museum's anniversary and the 350th anniversary of the Royal Society. The latter was also commemorated by the Bodleian Library with a temporary exhibition about one of the founders, John Aubrey (1626-1697). Four fossils collected by his contemporary, the Ashmolean Museum curator Edward Lhwyd, were loaned for this exhibition.

Celebrating Dorothy Hodgkin

The new bust of Dorothy Hodgkin.

In early May the Museum celebrated the centenary of Dorothy Hodgkin (1910-1994), Britain's only female Nobel prizewinning scientist. Writer-in-Residence Georgina Ferry, whose biography *Dorothy Hodgkin: A Life*, was first published in 1998, wrote a one-woman play, *Hidden Glory: Dorothy Hodgkin in her own words*. It was performed by actress Miranda Cook, and recreated Dorothy's love of chemistry and zest for life with the help of projected images and recorded sounds.

Afterwards, a bronze bust of Dorothy by the sculptor Anthony Stones was unveiled by her 92 year old sister Diana Rowley, who had flown over from Canada especially for the occasion. Dorothy's daughter and other members of her family were present.

Dorothy Hodgkin had devoted much of her scientific career to discovering the structures of complex organic molecules, most famously insulin, penicillin, and vitamin B12. She received the Nobel Prize for Chemistry in 1964. Her permanent place among the sculptures of famous scientists in the Museum, the first female scientist to be so-honoured, is especially appropriate because much of her early research was carried out in our building. The bust was purchased with a grant from the E.P.A. Cephalosporin Fund.

Miranda Cook playing Dorothy Hodgkin in *Hidden Glory: Dorothy Hodgkin in her own words.*

Running the Museum

The Museum is a department of the University but receives a substantial part of its funding from external grants, trading and donations. It has 53 members of staff, and is supported by a large and dedicated team of volunteers.

Funding and fundraising

The Museum's core funding from the University's General Board was augmented by funding from AHRC of £327,000, and we greatly appreciate the donation of $65,000 from the Negaunee Foundation to help with our core activities. The MLA's *Renaissance in the Regions* programme has also continued to pay for a significant part of the Museum's activities, enabling most of our education and outreach services as well as supporting curatorial work and IT provision.

Donations from the public came to over £66,000, and the shop made a very welcome trading profit of £46,526.

The Museum once again attracted many conferences, company recruitment evenings, receptions, dinners on the gallery, and charity events, which generated £76,810 revenue, an increase of 13.8%, with some 72 functions held this year. The lecture theatre was the venue for the 2010 Slade Lecture series given by Professor Dawn Ades, and six Lyell Lectures given by Professor Ian Maclean. We also hosted a meeting of the Chancellor's Court of Benefactors.

The Museum's Advisory Board, chaired by Lady Heseltine, met for the first time in September and has met twice more since then. It helped with fundraising and events for the 150th anniversary year, and the help, support and enthusiasm of its members has been much appreciated.

May's 150th Anniversary dinner was the official launch of a campaign to raise £5.5m for the Museum for several important projects. They include the fitting out of the new visitor centre adjacent to the Museum, for which all necessary planning permissions have now been obtained; the re-storage of historic insect collections in the Huxley Room; the refurbishment of the interior of the Museum roof; and further digitisation projects that will make the collections accessible to a wider audience. At the time of the launch £1.9m had already been raised, and a further £54,000 has been added in the two months since the launch.

That sum includes a donation of £15,000 towards the roof refurbishment from The 29th May 1961 Charitable Trust, for which we are very grateful. The Estates Directorate completed their research and costings for repairs to the roof, and work will commence in March 2011. Although the repairs are to be funded by the University, concurrent cleaning and restoration of the interior roof decoration has required external funding.

In March we received a formal Accreditation visit by the MLA, who inspected all the Museum's policies and procedures. This resulted in renewal of the Museum's Accredited status. Accreditation enables us to access a range of grants, for example the PRISM fund for the purchase and conservation of scientific specimens, and the MLA's new Designation Development Fund.

Staffing

We lost – and gained – a number of members of staff during the year. Dr Tom Kemp, who had been Curator of the Zoological Collections since 1972, took early retirement. He continues his research as Emeritus Research Fellow in Zoology at St John's College. Others leaving this year include Ms Stella Brecknell, the Museum librarian for the past 28 years, Mrs Joy Irving, who has provided technical support for Mineral and Geological Collections since 1991, and Miss Lisa Conyers, who was Zoological Collections technician for nearly seven years. We thank all the staff members who have left during the year for their many and varied contributions to the work of the Museum.

Later in the year the University started the search for a new director to replace Professor Jim Kennedy who retires at the end of September 2010. Professor Susan Iversen was appointed Acting Director, to ensure continuity in the management of the Museum and its various projects.

Times of uncertainty

At the very end of the academic year, the Government announced the abolition of the Museums, Libraries and Archives Council (MLA) by 2012. The MLA and its predecessor the Museums and Galleries Commission have made a very large impact on the Museum. Most obviously, they have channelled Government funding into provincial museums, one of the few sources of external funding for stewardship of the collections. They encouraged excellence first by establishing a scheme 'Designating' non-national museums which have collections of national and international significance. Our Museum was Designated on 24 June 1997, and has received more than £743,000 funding to document and improve access to our collections. Designation Development Funding in 2010-11 is supporting the Entomological Collection's re-housing programme.

The MLA also introduced an Accreditation Scheme which required museums to meet minimum standards of management, visitor care, and care of the collections. The Museum's first formal business plan, its acquisition and disposal policy, and its emergency response planning were all formulated as part of the Museum's successful bid for Accreditation in 2005, which was renewed following a successful inspection in March this year. Accreditation status has in turn opened doors to other funding streams, notably the PRISM fund for the purchase and conservation of scientific specimens, and DCMS Wolfson funding. Grants in excess of £350,000 from these sources have enabled major displays and conservation projects to proceed.

Sam Hayes re-curates historic specimens as part of the Huxley Room project grant-aided this year by the MLA's Designation Development Fund.

Some £884,000 funding from the MLA's *Renaissance in the Regions* and *Strategic Commissioning* programmes has underpinned the Museum's entire education and outreach service, and funds both IT support and collections documentation staff.

We wait to see what provision the Government will make to ensure the progress made by the MLA in raising standards is maintained. Of most immediate concern is the future of *Renaissance in the Regions* funding after March 2011, the effects of the Government's autumn spending review, and how this uncertainty will affect our ability to retain our experienced and skilled MLA-funded staff and plan for the future.

Our volunteers

Over 200 volunteers gave a total of 1,718 hours of support for 88 family, community and school events, and 39 volunteers gave more than 3,400 hours assisting with care of collections behind the scenes. The number of requests to volunteer rose to such high levels that the Service had to close registration to new volunteers during the first three months of 2010. The Volunteer Service continued to arrange CRB checks for those who require it. We are indebted to our dedicated team of volunteers for their hard work in the Museum.

Health and Safety

Emergency response and business continuity procedures were reviewed and upgraded prior to the Accreditation visit. Folders in all our

buildings give clear guidance on what to do in the event of fire, flood, vandalism or terrorist threat, with lists of resources available and other sources of help.

As part of the growing cooperation with the Pitt Rivers Museum, our safety committees held joint termly meetings. In May, the Museum underwent a Health and Safety Management Profile (HASMAP) audit. All collections and sections carried out risk assessments and reviewed their safety procedures in advance of the review. A course on carrying out display screen assessments was taken by a number of staff, and the Senior Radiation Protection Supervisor attended an update course on radiation protection.

Mercury and arsenic levels were checked for staff exposed to these toxic elements in the collections, and a number of staff had face-fitting of masks by the Divisional Safety Officer to ensure their protection from hazardous dusts or vapours.

After a spate of falls by members of the public on the stairs in the entrance porch, the floor was resurfaced and lighting was improved. The old beehive, sited on the southwest stairs, was also considered to be a hazard, and so a new beehive has been installed in the first floor lift lobby. Tubs on the roof outside have been planted with nectar-rich flowers, and the hive has a new webpage devoted to it which includes a 'Bees at lunch' video.

Staying safe

The Museum has to comply with all relevant health and safety legislation and take all steps to minimise risk of injury to both staff and visitors. It was one of the first departments in the University to have a Health and Safety Management Profile (HASMAP) audit. All Collections and Sections reviewed their Health and Safety management procedures, and checked that risk assessments and paperwork were in place and up-to-date. The Museum's Deputy Safety Officer, Mr Chris Burras, assisted by the Division's Safety Officer, Mr Michael Inman provide advice and assistance to ensure continuity across all areas of the Museum. A selection of senior members of staff across all Collections and Sections were interviewed to check their overall awareness of relevant health and safety issues, also to see if this knowledge and good practice was being communicated down the line to all staff under their control.

Areas covered by the audit included controls of chemical hazards, wood dust control measures, handling and storage of toxic or radioactive specimens, slips, trips and fall issues, working at height, manual handling and the safe use of a wide range of equipment.

The response from the auditors was extremely positive. However they indicated some improvements that were needed, mainly relating to how 'health and safety' fits into the management and culture of the Museum, and to the recording of any accidents or 'near miss' incidents.

The findings of this audit will be discussed at the next Museum Safety Meeting, but informal feedback from staff was also generally positive; the risk assessment process did flag up potential hazards, concentrate the mind on the safest practice, and highlight areas for improvement.

Toxic and radioactive minerals have appropriate warning labels.

Caring for the collections

At the heart of all the Museum's work are its renowned collections, which are international in scope and of scientific and historic importance. They are managed by four departments. The Hope Entomological Collections look after insects and other terrestrial arthropods, and the Zoological Collections look after other animal groups. Geological Collections look after fossils, while minerals, rocks, meteorites and gemstones are cared for in the Mineralogical Collections. The Museum also has the Hope and Arkell Libraries and significant archives.

Accessions

All the Collections continued to grow during the year, and cataloguing of new accessions continues to be a routine part of curatorial staff work.

Major new acquisitions include the entire collection of around 5,000 specimens and 6,000 off-prints of the late Professor J.H. Callomon, a world authority on the ammonites and stratigraphy of the Jurassic period. The Director notes with sadness the deaths of Professor Callomon and C.W. Wright, personal friends and generous benefactors to the Museum. Both had been inspired as undergraduates by the Oxford geologist W.J. Arkell, whose fossils and library are also in the Museum.

Some 20,000 insect specimens were transferred from the Oxfordshire County Council Museum Service and their curation occupied a team of staff for some five months. A small grant from the Council supported this work. The Museum's holdings of caridean shrimps were enriched by donated collections from more than ten countries of the world, while further minerals and rocks from worldwide locations were transferred from the University of Reading.

Curation and conservation work

Two major PRISM-funded projects were completed this year. The Hope-Westwood historic Diptera collections of some 25,000 specimens were re-curated and re-housed, and found to include seventy seven previously unrecognised type specimens. Work on the conservation and re-storage of the vertebrate spirit collections was also completed.

The display projects generated associated curatorial work. Much-needed conservation work was carried out on birds taken off display. Fossils removed from the old Geology of Oxfordshire displays were merged back into the collections and location records were made for specimens in the new displays. Gemstones on display and in store were photographed, weighed and their records updated. Those in store were reorganised, re-boxed and re-labelled.

Addressing backlogs in cataloguing of historic specimens has been a major preoccupation of Mineral and Geological Collections. Two important developments have facilitated work on the petrological collections, the appointment of a temporary Hub-funded cataloguing and curatorial assistant, Miss Jo Corp, and the refurbishment of the Abraham Room to provide a suitable working area. The miscellaneous rocks, decorative rocks and thin section collections have been reorganised and in excess of 35,000 rock specimens and thin sections were entered on computer. In anticipation of the move of the Earth Sciences Department to a new building later in 2010, a number of rocks were 'rescued' from the teaching laboratories and either catalogued or reunited with their parent collections. In Geological Collections, several thousand specimens were catalogued by Museum and Hub-funded staff, including 4,400 specimens collected by J. Huxtable from the Upper Cretaceous of south west England. Talks have continued on the provision of a new joint museums' off-site store, which will be of particular benefit in tackling the huge cataloguing backlogs for geological specimens. Sites at Osney are now being favoured, but funding remains a serious problem in the current economic climate.

Hope Entomological Collections staff have commenced a major long-term project to re-house all of the historic insect collections currently stored in the Huxley Room. There are over 6,000 drawers and an estimated 1.5 million specimens, a large proportion of which need some form of curation, from labelling to remedial conservation. Over £153,000 has been raised so far, with major grants from the Idlewild Trust, the E.P.A. Cephalosphorin

Fund, and the MLA's Designation Development Fund paying for new collections furniture and the salaries of three collection assistants until March 2011.

Preventative conservation, notably integrated pest management and the management of pyrite/marcasite-bearing geological specimens, has continued throughout the year.

Once again, the E.P. Abraham Internship Scheme has been a great success, enabling a further eight University undergraduates to be paid to carry out much-needed curatorial work on the collections. Projects ranged from cleaning and re-storage of small mammal skulls and imaging of insect specimens, to re-identification of mis-identified minerals and documentation of label and handwriting styles.

Answering enquiries

Through the year, Collections staff have logged more than 3,000 enquiries from academics, amateur specialists and others, relating to material in their care or to their areas of special expertise. This includes identifying several hundred specimens for members of the public. The publication of Tracy Chevalier's book *Remarkable Creatures*, has resulted in a large number of requests to see specimens collected by 19th century palaeontologists Mary Anning and the Philpott sisters, and a temporary display is in preparation.

The library and archives

Cataloguing in the Library continued full time until the retirement of the librarian. After that, and as an interim measure, the library was opened one day a week by Mr Mark Dickerson, librarian at the Pitt Rivers Museum, who has maintained essential acquisitions of books and journals. In June, a substantial number of books no longer needed in the Earth Sciences Department were transferred to the Museum. Particularly important are those not available in other University and college libraries.

University teaching and research

The Oxford University Museum of Natural History is a department of the University of Oxford and its staff carry out research and teaching as well as assisting with these activities in other departments.

Student teaching

The Museum's education team worked closely with the University's Access and Admissions teams, for example teaching large numbers of 'Access' group students from targeted schools, who visited the Museum with a college access officer as part of their experience of the University. It hosted Christmas science lectures for secondary school students organized by the Schools Liaison Officer for the MPLS Division, and ran evening sessions for the University's summer schools held in July. The Admissions Office continued to use the Museum as the base for the main University-wide Open Days events in September and July.

Museum staff gave a total of 57 lectures to undergraduates and masters degree students, as well as giving tutorials, teaching on fieldtrips, supervising undergraduate research projects, and supervising DPhil students. They also set, invigilated and marked examinations.

The collections continued to be used for undergraduate teaching in the Earth Sciences and Zoology Departments, and the displays were used for tutorials.

The displays again attracted a large number of organised visits by student groups. Forty five groups, a total of 1,439 students on higher education courses made booked visits during the year. They came from Holland and the USA as well as the UK, and their subjects included art and design, education, biological sciences and geology. In addition, there were 49 groups, totalling 1,670 students on further education courses, mainly studying art, design and related subjects.

The Museum's 300 seat lecture theatre continued to be hired daily throughout the academic year for 337 hours of Mathematics and Chemistry undergraduate lectures.

Research

Research projects begun by staff and Honorary Associates this year included a new collaboration with researchers in India and Singapore on dung beetles; research on *Lipara* (Chloropidae) reed gall flies in collaboration

with Hymettus Ltd, and funded by DEFRA; an international project to produce the *Catalogue of Life* Strepsiptera database; a study of the early Eocene mollusc fauna of the now worked-out Southleigh Landfill Site in Hampshire; and a study of the Rolleston/Rhousopulos correspondence concerning the purchase and study of ancient Greek crania in the 19th century. Three new dinosaur trackways were discovered at Ardley Quarry, and are being mapped and GPS readings taken before the quarry is backfilled.

Dr Sammy De Grave, Acting Curator of the Zoological Collections, continued research into crustacean taxonomy and systematics, completing a two-year project to produce *A classification of living and fossil genera of decapod crustaceans*. Research on Silurian fossils of the Herefordshire Konservat-Lagerstätte, and on the Lower Cambrian biota of the Chengjiang Lagerstätte from Yunnan Province, China have resulted in three important publications in Royal Society journals by the Acting Curator of the Geological Collections, Professor Derek Siveter, and his colleagues, as well as an article in the research highlights section of *Nature*. Professor Siveter also assessed important Palaeozoic arthropod sites in Great Britain, and the significance of their faunas, in a book for the Joint Nature Conservation Committee of the UK.

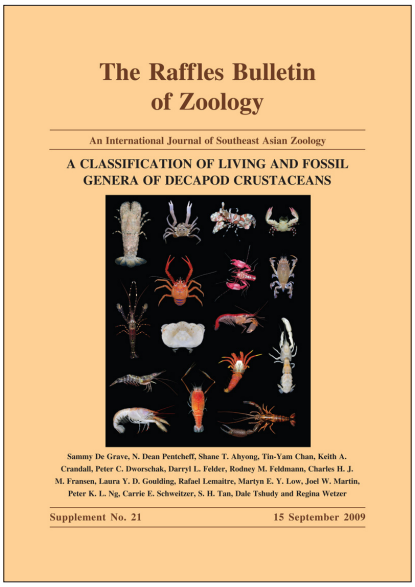
Museum researchers had a total of 62 books and papers published during the year. They gave presentations at many conferences in the UK and overseas. The Head of Education, for example, spoke at the British Council International Darwin Symposium at the National Science Learning Centre in York in October and the MLA cross-curricular conference in Southampton.

The Museum's collections were used as a research resource by members of other University departments and the academic community worldwide. A total of 175 loans were made, supplying approximately 16,700 specimens. A small number of samples were also supplied for destructive analysis.

The Museum hosted 333 individual visits by researchers to study the collections.

Classifying decapod crustaceans

September 2009 saw the completion of a two-year project *A classification of living and fossil genera of decapod crustaceans*. The international consortium of taxonomists responsible for the compendium was led by Dr De Grave for the scientific content and Mr. M.E.Y. Low in Singapore for the bibliographic accuracy and compilation. The compendium details the currently accepted classification of Decapoda, a major group of invertebrates, of both commercial and conservation interest. For each entry the correct bibliographical citation is provided (going back to 1758), as well as a current best estimate at the number of species included, totalling 17,635 species across the Decapoda.



The cover of Dr De Grave's book.

As the compendium integrates both neontological and paleontological classification schemes, this work is expected to see much usage in future decades. As such, it not only forms the classification by which our own Decapod collections are arranged in the store rooms, but also those of the Raffles Museum of Biodiversity Research in Singapore, the Museum national d'Histoire naturelle in Paris, Naturalis in Leiden, and the Smithsonian Museum in Washington.

OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY

150 YEARS

Annual Report

Part 2.

Full reports from the Collections, Sections and Research Units

2009-2010

The Hope Entomological Collections

Once again the Hope Collections staff have had a busy and fruitful year, with an increase in overall productivity from last year. Seventy four donations of over 50,000 specimens were received, 92 loans of 16,323 specimens were made, and over 2,000 enquiries answered, taking an estimated 800 hours of staff time. Staff hosted a large number of visiting researchers and gave tours to both local and national natural history societies and students from school age to post graduate level. They continued to support the Education Department in several outreach and education activities, such as 'Making Museums', as well as running events of their own.

The re-curation, re-housing and systematic arrangement of the collections remains the core activity. The PReservation of Industrial and Scientific Material (PRISM) Grant Fund for the re-curation of the Hope-Westwood historic Diptera collections was completed by Dr Pont and Ms Hayes, with 25,000 specimens re-curated and re-housed, of which seventy seven were previously unrecognised types.

This year has seen the start of the Huxley Room Project, one of the largest projects the department has undertaken. This long term and large scale project aims to re-house all of the historic insect collections currently stored in the Huxley Room. There are over 6,000 drawers and an estimated 1.5 million specimens, all of which are in need of re-housing and a large proportion are in need of some form of curation, from labelling to remedial conservation. The department has had a particularly successful year of fund-raising for this project, and with the help and support of Mrs Amy Trotter (Senior Development Officer) and the Museum's Director, over £153,000 has been raised through grants received from the Idlewild Trust, E.P.A. Cephalosporin Fund and the MLA's Designation Development Fund. This has enabled the purchase of new collections furniture and will cover the salaries of three collection assistants until March 2011.

Stella Brecknell, the Museum's Librarian, took early retirement after many years of loyal service and especially to Entomological Collections staff, regular users of the Hope Library.

Professor Rogers gave a presentation on poverty mapping at the International Fund for Agricultural Development (IFAD) in Rome, with a view to extending to West Africa previous work on this topic in both Uganda and the Horn of Africa. This followed on from a trip to Ethiopia supported by the Department for International Development, to discuss the problems of scaling-up bio-farming practices to other parts of Ethiopia and to other countries within Africa. He gave the annual Sawicki lecture at the Rothamsted Research headquarters, a Linacre Series lecture on environmental change and vector-borne diseases, a presentation on risk mapping yellow fever at a WHO-sponsored session at the Annual American Society for Tropical Medicine and Hygiene in Washington DC, and two talks on dengue risk mapping and modelling at the Duke University/National University of Singapore campus in Singapore. Much energy was spent in the closing stages of the EU FP6 EDEN project which came to a successful conclusion with a final meeting in Montpellier in May. This international

project – on the impacts of environmental change on vector-borne diseases – has been a model for collaboration, involving more than 80 partner teams in more than 40 institutes across 24 countries in Europe and beyond. These collaborations have produced more than 250 publications over the five years of the project's life. A different association, involving a number of EDEN partners, was successful in bidding for FP7 funding to extend into the control and public health sectors some of the lessons learned during EDEN. Finally Professor Rogers contributed to a book covering the many research projects run in Wytham over previous decades, and gave a short talk on the ground-breaking work of Professor George Varley (appointed Hope Professor in 1948) and Mr George Gradwell on the development of the technique of life-table analysis using as subject material the winter-moths of Wytham Woods. A stint as Chair of the Final Honours School of Biology was a major distraction in Trinity Term.

The management of the Huxley Room Project has been the priority of Mr Mann during the last year, though he also continued to re-curate and re-house the world Scarabaeidae collections.

He remains on the editorial panel for the journals *The Coleopterist* and *Cockroach Studies*, and on the library committee of the Royal Entomological Society, and the committees of the Blattodea Culture Group and the British Entomological and Natural History Society, for which he is the current President. Mr Mann attended the NERC funded UK Taxonomy and Systematics Review: Community Consultation Workshop at University College London, and the Taxonomy and Systematics Review: Community Consultation Workshop at the Linnean Society. He also attended the GB Non Native Species Information Portal workshop at the NERC Centre for Ecology and Hydrology, Wallingford, the International Inseckten Börse, Prague, the annual exhibitions of the British Entomological and Natural History Society and the Amateur Entomologists' Society (AES), the UK Coleopterists' Day and the Insect Collections Manager Group meeting held at the National Museum and Galleries of Wales, Cardiff. Mr Mann, Professor Richard Wall (University of Bristol) and Sarah Beynon (DPhil Student, University of Oxford) organised a one-day conference on the *Ecology of Livestock Dung* at Oxford University.

Two AES Bug Club events were organised by Mr Mann. The first in September on insect collecting was also a drop-in live bug handling session and included an exhibition of some of the department's British insect collections for the general public as part of the Oxford Open Doors. The second event in February marked the 75th anniversary of the Amateur Entomological Society. The 'Young Entomologists' Day' where presentations by young entomologists aged between 5 and 18 years of age were given, was attended by AES members and local school groups. Mr Mann ran a workshop on an 'Introduction to the Coleoptera' at the Hill End Residential and Field Study Centre, Oxford. He hosted the AGM of the British Entomological and Natural History Society at the Museum.

Four undergraduate Final Honours Projects were supervised by Mr Mann, who also taught on the field course and the entomology module practical for the second year Biological Sciences undergraduates. He advised undergraduate and postgraduate students from universities at home and abroad on entomological field techniques and dung beetle ecology and taxonomy. Enoka Kudavidanage (National University of Singapore) was sponsored by the Angus McCrae bursary for two months' training in dung beetle ecology and taxonomy with Mr Mann.

Mr Mann with Mr G. Hancock (Hunterian Museum, Glasgow), Ms J. Robinson (Kelvingrove Museum, Glasgow) and Dr G. Foster (The Aquatic Coleoptera Conservation Trust) visited the Hebridean islands of Coll and Tiree to survey for the short-necked oil beetle (*Meloe brevicollis*). The week long trip appeared as a blog by Ms J. Robinson on the Royal Entomological Society's National Insect Week pages and was picked up by the press, with articles appearing in *The Daily Mail*, *Oban Times*, *The Scotsman* and *Metro*. Mr Mann also gave a radio interview for BBC Radio Oxford. He gave talks to several local and national groups on various topics from oil beetles and dung beetles to insect collections and their value.

Mr Hogan continued to make significant improvements to the areas of the collection which are his responsibility, the Coleoptera, Hymenoptera and Lepidoptera. He carried out accessioning of newly acquired material and the retrospective accessioning of backlogs which included the extensive world Hymenoptera collection. His curatorial projects working with volunteers included the curation of the oriental Lyceanidae collection of Fr Alan Bean (with Mr Shaun Waters), accessioning and labelling of the G.C. Roche collection of world bees (with Dr William Stevens) and sorting of the world sawfly collection (with Dr Neil Springate). He visited the Cardiff Museum to attend the annual Insect Collection Management Meeting and attended a one day seminar at the Natural History Museum entitled 'Unlocking and developing collections for Genomic research'.

The Collection's integrated pest management (IPM) procedures were formalised by Mr Hogan. Ms Simmons and Ms Pocklington carried out a condition survey of the collections and, together with Ms Spooner, assisted Mr Hogan with the running of the IPM programme. Mr Hogan and Ms Simmons attended a pest control seminar at the Natural History Museum.

Curation and loans in the Diptera, Hemiptera, small orders and wet collections are the responsibility of Ms Simmons and she made significant improvements in their organisation. With the help of volunteers, she has completed the re-curation and re-housing of the Rognes and Chvala Diptera collections. She co-ordinated the decanting of the collections from the Upper Poulton Room in readiness for the installation of new storage furniture.

Ms Simmons continued to manage the volunteers, and worked on several education and outreach projects. She supervised a Nuffield Science Bursary Student, E.P. Abraham internship student, a work experience student, and during the re-curation and re-housing of the British spider reference collection, a temporary member of staff, Mr Russell Payne. She also gave curatorial training for MSc students from Leicester University and a PhD student from the University of Hull. Ms Simmons and Mr D. Gormley completed databasing the spider collection card index. The database is now being checked and finalised for on-line access via the Museum's website.

As well as completing a catalogue of contents of the current displays, Ms Simmons started work on four new public displays. She attended the NatSca seminar at Leicester City Museum on CITIES legislation and a seminar at the Natural History Museum on collections management, and also visited the Museum to discuss spirit collections management and curation with staff there.

Ms Katherine Child joined the Collections in June, funded by a MLA Designation Development Fund grant, to photograph the Lepidoptera types. Plates consisting of a dorsal and ventral image of each specimen, and associated labels, are being assembled, and will be made available via the Museum's website at the end of the project. Ms Child also assisted other members of staff by providing technical support with image programmes and images of specimens and collections for enquiries.

After completing the PRISM funded project on the historic collections of Diptera, Ms Hayes joined the Huxley Room Project as a collections assistant and re-curated over 6,000 specimens from the Cerambycidae and Scarabaeidae collections.

Following the transfer of Oxfordshire County Council's entomological collections to the Museum, Mr Mann, Mr Hogan, Ms Simmons, Ms Spooner and Mr Gabriel, with the help of several volunteers, spent five months re-curating and amalgamating much of the material into the British collections. Ms Pocklington spent this time re-curating spirit-preserved specimens.

Ms Spooner was funded for two months by a small County Council grant. She then joined the Huxley Room Project as a collections assistant and has re-curated over 4,000 specimens from the Carabidae and Cerambycidae collections. She sorted several thousand miscellaneous Coleoptera to family level and has arranged the re-housed Cerambycidae collection to subfamily level.

Mr Cooter continued to work on the British Coleoptera collections and his Chinese material collected on recent fieldwork. He curated the entomology collections at West Berkshire Museum, Newbury from March to May 2010.

Mr Gabriel continued the re-curation, remedial conservation, re-housing, amalgamation, incorporation and cataloguing of the Theraphosidae collections, and worked on the Rognes Palaearctic Diptera collection, sorting to family and incorporating into the main collection.

Mr Lansbury continued the re-curation and re-housing of the aquatic Hemiptera collection.

Dr McGavin continued his media appearances, including *What in the world*, a TV quiz show (Channel 5), *It's only a theory* (BBC 4), *Ready Steady Cook* (BBC 2) and *Celebrity Eggheads* (BBC 2), as well as reporting on natural history items for *The One Show* (BBC1). He was co-presenter and led the science team on *Lost Land of the Volcano* broadcast on BBC1 in September 2009, and gave numerous interviews on the making of the series. He spent seven weeks filming in Bhutan and India for the next of these series, *Lost Land of the Tiger*.

During the year, he gave numerous talks to schools, university societies, and amateur groups. He spoke at St Birinus School, Didcot, for the Oxford University Science Roadshow, performed the opening ceremony of the school's new science block, gave a children's lecture at the Royal Institution, spoke at the prize-giving for the School Biologist of the Year, and at the *Explore* conference at the Royal Geographical Society. Dr McGavin was the invited speaker at science events

at Nihon University, Tokyo and at The Royal Academy.

He gave the opening lecture at the Schools' Science Conference at Rutherford Appleton Laboratories, debated 'We should let pandas die' at the Economist Sustainability Summit, and gave a lecture at the 50th anniversary of Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT). Dr McGavin was a member of the judging panel for the 'Name a Species' competition organised by the OUMNH, *The Guardian* and Natural England and continues to serve on the Collections Committee and Council of the Linnean Society of London.

Dr Pont attended the annual meeting of the British Simuliid Group and the Dipterists Forum at the Natural History Museum, London. He continued to serve on the editorial boards of *Zoology in the Middle East*, *Fauna of Arabia*, and *Studia Dipterologica*, and was Secretary/Treasurer of the Council for International Congresses of Dipterology. He remains a Scientific Associate of the Natural History Museum, London, an Associate in Science at the B.P. Bishop Museum, Honolulu, and one of the four co-ordinators of the Biosystematic Database of World Diptera, an on-line database of some 250,000 Diptera names (www.diptera.org).

As well as completing the PRISM funded re-curation of historic Diptera collections, Dr Pont spent fifty two days in Oxford, incorporating into the World Muscidae collection specimens from the Palaearctic Collection, the Bigot Exotic Collection, the Verrall-Collin main and duplicate collections and the Rognes Collection.

Mr de Rougemont continued sorting, mounting and identifying the Oriental Staphylinidae collections.

We are sincerely grateful to the continued effort of our volunteers, without whom much of the re-curation and sample sorting work would not happen. The twenty three regular volunteers gave 1,866 hours of their time and we are especially thankful to Shaun Waters, David Gormley and Steven Williams, who volunteered 183, 262 and 334 hours respectively. We would also like to thank Laura Bellas, Rebecca Evans, Brian Harding, Peter Hughes, Michael Orchard (University of Hull), Amoret Spooner, William Stevens, and John Thurloway who each gave over sixty hours of volunteer time.

The department hosted three work experience students and two Nuffield Science Bursary Students. The two E.P.A. Cephalosporin Internship students Roberta Iley (Brasenose College) and Thomas Creedy (Merton College) made significant contributions to the work of the department, with Ms Iley re-curating the Professor Southwood Heteroptera collection and Mr Creedy photographing insect specimens with the auto-montage system.

Geological Collections

Professor Siveter continued his curatorial oversight of the Palaeozoic collections, particularly the Herefordshire (Silurian) soft-bodied material. He acted as Examiner for undergraduate examinations in the Department of Earth Sciences, and co-supervised a D.Phil. student in that department. He again formed part of the UK selection panel for the China Oxford Scholarship Fund, and was on the Collections Advisory Committee of the British Geological Survey.

Research on the Herefordshire (Silurian) Lagerstätte biota continued, and in February 2010 Dr Sarah Joomun took over from Dr Katie Davies as palaeobiological researcher on this NERC funded project. Computer-based reconstructions of the Herefordshire fossils were the subject of two presentations by researchers on this OUMNH-based project at the International Palaeontological Conference (IPC), at Imperial College, London, at which Professor Siveter was invited to co-chair a session on arthropods and exceptionally preserved faunas. Herefordshire material was also presented at the Annual Conference of the Palaeontological Association, at the University of Birmingham.

Professor Siveter was an author on a further contribution to the IPC, on fossils from the Chengjiang (Cambrian) Lagerstätte from China. He spent much time in late Michaelmas and Hilary terms producing, as part of the Museum's 150th anniversary celebrations, the first large exhibition outside China of the globally significant Chengjiang fossils. These exquisitely preserve the remains of soft-tissues and whole soft-bodied animals, and bear witness to the Cambrian Explosion event, a benchmark of the fossil record for the origin of the major animal body plans. Professor Richard Dawkins opened the exhibition on 17 May. Other guests at the opening included the discoverer of the Chengjiang biota, Professor Hou Xianguang of Yunnan University, Kunming,

and the President of Yunnan University, Professor He Tianchun, part of a five-man delegation from Kunming. Professor Siveter also demonstrated both the Herefordshire and Chengjiang fossils to members of the OUMNH Advisory Board, and to friends/benefactors of the Chancellor's Court, as well as to various guests at the son et lumière dinner.

Mr Jeffery continued his curation of the Cenozoic collections, working with volunteer Sean McMahon on a project to clean, identify and catalogue Eocene specimens collected by Napoleonic-era ship's commander Admiral Sir John Harvey and his wife Elizabeth. He compiled the section's contribution to the HASMAP audit in April, updating all sectional risk and COSHH assessments and preparing new ones where necessary, and supervised the installation of the final batch of cabinets in the Lower Phillips Room, completing the fit-out of this key collections management space. Together with Ms Howlett and Mr Ashington, he continued to work with Abingdon Museum, advising staff on the cataloguing and redisplay of their geological collections as part of a major redevelopment project. Enquiries have, as ever, occupied a significant amount of time, with more than 300 received in person, by letter, email and telephone. A recurrent request over the year has come from members of the public wishing to see specimens collected by Mary Anning and the Philpot sisters, following the publication of Tracy Chevalier's book *Remarkable Creatures*; as a result, Mr Jeffery is currently working with Ms Hay, Ms Howlett and members of the Outreach team on a temporary exhibition on this subject, which is due to open in August. He continued as one of the associate editors of *Caenozoic Research*, and acted as referee for a number of papers.

Professor Kennedy provided preliminary identifications for some 5,750 specimens, mainly from the UK Cretaceous, prior to their documentation by Mr Ashington. He was also involved in a day's filming by the BBC of the so-called 'Red Lady' of Paviland, following the return of the skeleton from the National Museum Cardiff in December.

He notes with sadness the deaths of two great friends, both benefactors of the Museum. C.W. Wright (1917-2010) pursued a high level career in the War Office, Ministry of Defence, and Ministry of Arts. Between 1971 and 1973 he chaired the Committee on Provincial Museums and Art Galleries. The resulting 'Wright Report' (as it became known) led to the establishment of the Museums and Galleries Commission, the renaissance of provincial museums, and the vibrant museum community that the UK possesses today. In his spare time Wright became an international authority on Recent and fossil starfish, fossil sea urchins, ammonites, and crabs. For seven years he worked with Professor Kennedy in the Museum, to which he donated his remarkable library. John Callomon (1929-2010) was Professor of Chemistry at University College London, and an international authority on the high-resolution spectroscopy of organic compounds. As an amateur palaeontologist, he was a world authority on the ammonites and stratigraphy of the Jurassic Period in his spare time. The gift of his fossil collection and library to the Museum means it now has probably the best research library on the Mesozoic Era outside the London Natural History Museum. Both Wright and Callomon, the one reading Greats, the other Chemistry, found their geological inspiration as Oxford undergraduates in another Oxford man, W.J. Arkell, whose fossils and library are also in the Museum.

Ms Howlett continued her work on the local geology displays, preparing 'On display' tickets for the 1,000 or so specimens involved in the new exhibit, returning unused material to the collections, updating catalogue information, and so on. She reviewed the documentation of many of the type and figured dinosaur specimens in the collections following the publication of a number of important papers on this material, and has also worked on the Palaeozoic section of the Geotypes database, converting group records into individual records so as to make searching easier. She continued her recording of material relating to the historic collections, upgrading the records of all specimens in Phillips' 'Middle Mesozoic (Lias)' catalogue to include details of old labels; she also supervised two E.P.A. Cephalosporin Internship students, Caroline Halstead-Smith and Lucy Gotham, working on a database of historic collectors/dealers linked to images of their labels. She arranged the loan of four Lhwyd specimens to the Bodleian Library for a temporary exhibition on John Aubrey (1626-1697), one of the founding fellows of the Royal Society, to mark the 350th anniversary of this institution. She has been heavily involved in both the Chengjiang and Lyme Regis displays, and continues to liaise with staff at the Dorset County Museum regarding the loan of Buckland material for an exhibition on 'Mary Anning and the Gentlemen of Science' at the Philpot Museum in Lyme Regis.

Ms Hay completed her work on the local geology displays, installing specimens in the two Pleistocene cases, and making mounts and installing specimens in the 'Geology of

Oxfordshire' and 'Oxford Geologists' cases. The new display, which opened in November, is enjoying excellent levels of use, and feedback from members of the public, including interested amateurs, has been very good. Together with Mr Jeffery, she went to Wales to collect the 'Red Lady' of Paviland from the National Museum Cardiff, where it has been on loan for the past two years as part of the 'Origins' exhibition. She dismantled the Great Debate and radio display cases on the upper north gallery to make room for new bird cases and, together with Ms Pocklington, also liaised with Victoria McGuiness and mountmakers at the Ashmolean Museum about mounts for these new displays. She made and painted 5 casts of trace fossils to be used in schools handling sessions, and produced 12 moulds of 6 different fossils from Lyme Regis to be used in casting sessions as part of the summer holiday activities, which had a seaside theme. She also made black silicone rubber casts of two crinoids from the Silurian of Herefordshire for Dr S.K. Donovan (Leiden). She has recently begun cataloguing Carboniferous material from the United States, transferred from the University of Greenwich in 2008.

Mrs Irving has completed the registration of Carboniferous plants from Radstock, Somerset, part of the J. Huxtable Collection. She has also registered the William Buckland Collection of silicified stem fragments from Allesley, near Coventry, which were originally stored amongst the Triassic specimens. From her reading of memoirs, both historic and modern, geological maps, old museum catalogues and accompanying old letters written to Buckland, she determined that they were, in fact, from the Carboniferous. More recently, she has started the registration of Triassic plants, mainly from the Lorraine region, in northeast France, having first translated the old labels from French. In addition, she has continued with the long-term conservation programme for previously ammonia-treated pyritic specimens, including associated environmental monitoring.

Mrs Irving retired at the end of July, having joined the Museum in September 1991. The records of our Palaeozoic plant collections, especially, have been considerably upgraded by her efforts, having benefited from her meticulous attention to detail. She has also had particular input over many years into the important work of environmental monitoring and the conservation of those fossils susceptible to pyrite decay. We are indebted for her almost two decades of contribution to Geological Collections.

Mr Ashington has catalogued nearly 6,400 specimens, including some 4,400 specimens collected by J. Huxtable from the Upper Cretaceous of southwest England. Other cataloguing projects have included an extensive collection of vertebrate specimens and casts, recently transferred from the Zoological Collections, and a small collection of historically important specimens, given by Gideon Mantell to William Buckland in the first half of the 19th century, and containing the remains of the Lower Cretaceous dinosaurs *Iguanodon*, *Hylaeosaurus*, and *Valdosaurus* from the Tilgate Forest in Sussex. Mr Ashington worked with Professor Siveter, Mr Walsh and Ms Howlett on the temporary exhibition of Chengjiang fossils, and continues to monitor and maintain the display. He also worked with Ms Howlett on an inventory of all specimens on display, in preparation for the MLA inspection in March. He provided a handling table of specimens and other objects for a 'Museum Memories' event, part of the Museum's 150th anniversary celebrations, and also contributed to the series of 'Dinosaur Days', giving talks to groups of school children on dinosaurs and the plants and animals that lived alongside them.

Dr Lewis continued her work on the curation, serial grinding, and digital imaging of material from the Herefordshire Lagerstätte. Dr Davis and, latterly, Dr Joomun then undertook the detailed alignment, editing, and 3-dimensional rendering necessary to create the computer-generated virtual fossils.

Mr Powell contributed a chapter on geology and building stones to a new edition of the Pevsner guide to Berkshire, which came out in May to very positive reviews. Together with Mr Jeffery, he discovered three new dinosaur trackways in the northernmost excavations at Ardley Quarry (now an SSSI). These are now being mapped and GPS readings taken before the quarry is backfilled. He continued to curate parts of the Jurassic collections, and to work on material he collected during the construction of the M40 through Oxfordshire. He continued to run the Oxford Geology Group, arranging 8 indoor meetings and 3 field meetings. He was also responsible for arranging and labelling the geology teaching collections at Matthew Arnold School, Cumnor.

Dr Mark Ebden continued with the cleaning and re-traying the Baden-Powell collection of Pleistocene and Holocene material, gradually improving its conservation state and data security.

Izzy Carr began voluntary work in the collections in September and is currently cataloguing material transferred from the University of Hull in 1992.

For medical reasons, Mr Clasby has been unable to spend much time on the collections this year, but we very much hope that we will see him again in the future.

Mineralogical Collections

Dr Waters' work on metamorphism and tectonics continued on material from the South Tibetan Detachment System in the Mount Everest area. One strand involved more precise location of the sampling sites for LR Wager's Everest samples, another is the preparation for publication of a study with former student John Cottle on the movement history of the detachment in an area just NE of Mount Everest.

Further progress was made in thermodynamic modelling of mineral equilibria in Himalayan metamorphic rocks, which has become the specialisation of DPhil student Richard Palin. A similar approach is being taken on the host rocks of the Damang gold mineralisation, Ghana, under study by Alistair White.

Another continuing research topic is metamorphism in subduction zones: Ryan Langdon pursued a fourth-year undergraduate project as part of the Alpine collaboration with Philippe Agard and Samuel Angiboust of the University of Paris VI, working on the petrology of eclogites collected from Monviso in the Italian Alps during and subsequent to the field excursion reported on last year. Dr Waters was a co-supervisor on two other fourth-year projects: one by Jonathan Pownall on the petrology of the hornfelses of the Land's End granite generated a stunning new map and a fine collection of material, especially of the classic cordierite-anthophyllite rocks; the other by Hannah Hughes was a geochemical comparison of Cornish and Himalayan granite evolution.

During the year Dr Waters served as a member of the organising committee for the 2010 EURISPET (European Intensive Seminars of Petrology) session on *High-Temperature Metamorphism and Crustal Melting*. The seminar itself, an enthusiastic gathering of about 40 young researchers, was held over six days in June at a 15th century former convent in the Euganean Hills near Padua, Italy, where Dr Waters contributed two extended lectures, on microstructures and phase relationships. Dr Waters also accepted three conference invitations in the first half of 2010: as the keynote speaker for the Metamorphic Studies Group annual meeting in Cambridge in March, then as an invited speaker at GeoCanada 2010 (Calgary, May) in the session *Interplay between Thermodynamics, Kinetics and Deformation in Metamorphism*, contributing a talk on the relationship between thermodynamic prediction and real reaction processes that drew in part on evidence from Wager's Everest material in the Museum collections. The third invitation was to contribute to a special meeting in honour of Professor Bruce Yardley at the GeoForschungsZentrum in Potsdam, Germany on 2 July on the topic of *Processes, Rates and the Role of Water in Metamorphism*.

Through the year, Miss Price assisted the Director with various matters, including the application for HEFCE funding, the MLA's Accreditation inspection, planning for off-site storage and, working with Mr Burras, updating the Museum's Emergency Plan. She again edited the Museum's Annual Report, preparing an illustrated summary of the year section. She attended the Museum's fundraising dinner in May, showing guests a selection of fine specimens from the Mineral Collections.

Miss Price attended two meetings of the Collections Advisory Committee of the British Geological Survey, and visited Edinburgh as part of a working party to advise on curatorial and conservation issues relating to the transfer of core collections from Gilmerton to Keyworth. She is on the Editorial Board of the *Journal of the Russell Society*. She gave lectures on the decorative stones of Cheltenham to the Cheltenham Geological Society, and on natural history museums to second and third year students from Oxford Brookes University studying for a module 'Cultural geographies of nature'. She also hosted visits by the Southern Branch of the Russell Society to view the mineral collections, and by the London branch of the Open University Geology Society to see the Corsi collection of decorative rocks. Miss Price continued her research on decorative stones, particularly those used in Derbyshire and Devon inlaid ware.

Mrs Irving took advantage of the OMIS scheme and at the end of the year took early retirement after working in Mineralogical and Geological Collections for nineteen years. She is thanked warmly for her work, which in particular has resulted in the establishment of both remedial and preventative conservation procedures for iron sulphide-bearing specimens across both collections. During the year she has continued with the long-term conservation programme for previously ammonia-treated pyritic and

related specimens and associated environmental monitoring. She has prepared a spreadsheet to enable quick calculation of the size of laminate barrier film bags, and started constructing double bags for storage of selected pyritic specimens in oxygen-free micro-environments. She has identified associated species for most of these specimens, with final checking and identifications carried out by Miss Price.

As part of the identification process, Mrs Irving has been researching old methods of pyrite treatment used in the Collections, for example the application of Savlon. She has also been investigating whether it will be possible to extend the storage life of conditioned silica gel in Stewart boxes by the use of aluminised barrier tape to reduce air changes. She plans to complete these projects on a voluntary basis in the coming year. Before leaving, she wrote reports and instructions for the conservation database to enable a smooth transition of this work to other collection staff.

Her work on the pyrite treatment programme, and her maintenance of the dessicants in the infrared spectrometer will be carried out by Miss Jo Corp, who joined the Collections staff in August for a year's contract as Curatorial and Documentation Assistant, funded by the *Renaissance in the Regions* programme, now extended until the end of March 2011.

Miss Corp has made very considerable inroads into the documentation backlog for the petrological collections. All rock specimens meriting cataloguing are now assigned to one of four 'active' collections, the Accessions Series, Miscellaneous Rocks, Historic Rocks and Decorative Rocks. With assistance from Dr Waters and Dr David Bell, she has sorted out and catalogued or returned to store as necessary, unused rocks from the Department of Earth Sciences teaching labs. She has also started cataloguing staff/student research rocks into the Accessions Series; completely reorganised and entered onto the electronic database some 26,000 thin sections, and set up a database of 'orphan' sections. She has entered onto computer the Wager rock collections and T-series rocks totalling 8,867 specimens, and brought the MUG database up-to-date for batches of material in the Earth Sciences Department basement.

The Abraham Room was refurbished and new storage furniture was constructed to accommodate existing spare drawers, making it a much more effective workspace for curatorial work on rocks. Miss Corp has reorganised into this space the non-Corsi Decorative Rocks and the Krantz collections of Historic Rocks. This has in turn released space in the Lower Phillips Room for Geological Collections use, and allowed her to carry out a complete reorganisation of the Miscellaneous Rock collection in the Court, re-boxing, labelling, and updating databases with storage details as necessary. Other tasks completed by Miss Corp include databasing the rock collections archives, and making an annotated photographic record of the Rock Cycle displays before part of these were dismantled to make space for the Chinese fossils display. In July, she was filmed by the BBC showing Nina (of *Nina and the Neurons*) and young performers the fluorescent minerals.

Mr Ted Smith has continued to research the localities of historic rocks through the year, working from the data supplied on specimen labels, and that from maps and geological literature. As a break from her work cataloguing the Daubeny collection, Mrs Jane Randle has started to re-store and catalogue the research papers of the late Michael P. Cooper, beginning with those relating to his research on British mineral dealers. This collection is already attracting research enquiries from around the world. Miss Sarah Beggs, who had carried out school work experience in Mineral Collections in 2009, returned in August as a volunteer to assist with documentation work on the Mick Cooper and museum label collections during the school holidays.

Miss Price has worked with Mrs Jean Allen through the year on the gemstone collections. An audit has been carried out, and all specimens have now been weighed accurately, computer records updated, re-labelled, photographed, and where appropriate, re-stored in new containers. Lighting, specimens and technology to improve security have been installed in the gemstone display.

In April, Collections staff prepared a new temporary display 'Amazing minerals, curious crystals' about the physical and optical characteristics of minerals. These occupy 27 small wedge cases on the upper western gallery and enable the display of many of the fine specimens that had been on show in the crystal properties displays produced in the 1990s.

Mr Walsh carried out research, partly in Nyanga district, Zimbabwe, with David Love of Water Net, University of Zimbabwe to test a hypothesis that archaeological structures were connected with ancient mining. Papers were published in local archaeological and geological literature. He was a member of the Organising Committee and attended a conference on the preservation

of mineral diversity in Sofia, Bulgaria. In May, he attended a large scientific conference to celebrate 90 years of the V.I. Lenin State Mineralogical Reserve at Miass, in the Ilmen mountains of the southern Urals, organised by the Russian Academy of Science. He was made a member of the Organising Committee and presented a plenary paper on the history of geological education at the Oxford University Museum of Natural History.

Miss Price and Mr Walsh's 2005 book *Pocket Nature: Rocks and Minerals* has now been published in fourteen languages. Italian and Spanish editions of Miss Price's 2007 book *Decorative stone: the complete sourcebook* have also been published.

Miss Price (Senior Radiation Protection Supervisor for the Museum) attended a training day for University RPS/SRPS in January run by the University Safety Office. The Miers Room was monitored for arsenic and mercury hazards, and collections staff had personal levels of these elements checked. Procedures for accessing mercury-bearing minerals were established and drawers labelled accordingly. All minerals are presumed toxic by inhalation of dust or by ingestion, but those which also present hazards if handled were given toxic warning labels and drawers were labelled accordingly. Face-fitting sessions for wearing of masks were held by Mr Inman. Miss Price prepared risk assessments for all rooms in Mineral Collections and she was interviewed as part of the University's Departmental Safety Audit.

Further mineral specimens were transferred from the University of Reading during the year and Miss Price has continued unpacking, sorting and evaluating the specimens, and re-storing minerals from the lower Miers Room to generate the necessary space. A number of other specimens were presented, and we would like to thank all the donors.

Miss Price compiled the report on the 2008-9 Internship scheme for the E.P.A Cephalosporin fund trustees, which was well received by the Trustees. In August she supervised undergraduate earth science student Miss Helen Ashcroft, who spent a 4 week internship identifying specimens and cataloguing the C.J. Catch collection of minerals. Miss Ashcroft returned in January to start a second 4 week internship completing cataloguing of the Catch collection, and identifying recent acquisitions. Heavy snow resulted in an alternative web-based project, researching online infrared data for minerals. The 2009-10 year's second intern was first year earth science student Sophie Hibbin who started a six-week internship in June, re-identifying mis-identified minerals from the reference collection.

We would again like to thank all our volunteers for their hard work and huge enthusiasm, helping us progress our various cataloguing projects.

Zoological Collections

This year saw a number of significant staff departures. Dr T.S. Kemp, the Curator since May 1972, retired at the end of September. Ms L. Goulding left at the end of January after working for two years on the crustacean collections, and will enjoy some much deserved world travel before starting a MSc degree at King's College, London. Ms L. Conyers, who worked in the Invertebrate Section for nearly seven years, took early retirement at the end of April to pursue other interests.

Curatorial work by Dr De Grave continued to be focused on the ever-growing collection of caridean shrimps. He continued research into crustacean taxonomy and systematics, with much emphasis this year placed on completing several large-scale projects. As usual various projects were also pursued with colleagues worldwide on biogeography and phylogenetics. In December 2010 he was an invited speaker at the First IUCN Crustacean Committee meeting in Academia Sinica, Taipei, Taiwan. In February 2010 he was invited to identify part of the collections at the Florida Museum of Natural History, under the CoML umbrella.

Mrs Nowak-Kemp concentrated on the identification of type specimens in the Chelonia collection of Thomas Bell. In the last year over 50 type specimens were identified. She attended a SVPCA conference in Bristol in September 2009 specifically to gain the most up to date knowledge on various aspects of Chelonia. In December 2009, Mrs Nowak-Kemp was invited to attend a workshop on 'Legal Medicine and Expertise in History' organised by the Oxford Brookes University. She has continued her research into the history of the Human Remains Collection, with a focus on the specimens that are subject of repatriation requests, and made frequent visits to the Wellcome Archives in London to aid her in this task.

Mrs Nowak-Kemp continued to serve on the Council of the Natural History Society and

attended the Society's meetings in London and its AGM in Torquay in May. She supervised four E.P. Abraham Internship projects. These were on the curation and conservation of the Tradescant specimens (Klara Wanelik, July to August 2009); of the plaster casts and busts of various human races (Felix Day, July to August 2009); of small mammal skulls (Emily Sturgess, June to July 2010); and of mammal skins (Stewart Jennings, June to July 2010).

The vertebrate collections continued to be used for University teaching, and Mrs Nowak-Kemp organized and managed fourteen practical classes for undergraduate and MSc students in the Zoological Collections Laboratory on 'Animal bones for archaeologists', 'Human ecology and human evolution' and 'Origin and evolution of mammals' for Oxford University, and 'Primates and Primate conservation' for Oxford Brookes University. The number of students in each session ranged from 9 to 50.

Ms Conyers continued databasing our mollusc holdings, and assisted Dr De Grave with compiling an electronic database of publications on Decapoda. She also carried out routine but essential tasks in the section, such as environmental monitoring, pest checking and specimens auditing.

Ms Pocklington completed the Vertebrate Spirit re-housing project. Although some work remains to be done, due to her hard work over the previous year, this part of the Collection is in excellent condition. After a short stint in Entomology, she returned to work in the Zoological Collections, concentrating on the cleaning and curation of the bird display specimens. After Ms Conyers left, Ms Pocklington took over the monitoring of the Invertebrate holdings. She restored the leatherback turtle on display to its former glory and carried out remedial conservation on skeletal material and other display specimens. She taught Bethany Palumbo spirit conservation techniques during a one week work experience placement. Ms Pocklington attended various Natural History Museum and Natural Sciences Collections Association seminars to further her knowledge of taxidermy, pest monitoring and the use of collections.

Mr John Davies has continued working on the Mollusc collections, mainly preparing specimens for entry on the database, specifically for families Camaenidae, Bradybaenidae, Helixarionidae and Ovulidae. We are most grateful for his continued contribution.

The Hope and Arkell Libraries

Ms Brecknell continued to catalogue core pamphlet holdings onto OLIS, and to process incoming offprints, books and periodical parts until her retirement in May after 28 years as the Museum's librarian. It was arranged that Mr Mark Dickersen, Librarian at the Pitt Rivers Museum, would open the Museum of Natural History's Library one day a week until a new librarian was appointed. In order to ensure a smooth transition of staff cover, Ms Brecknell provided training on library procedures over a number of weeks, and Mr Dickerson also received training in using Oracle software and the OLIS Serials module.

From May, Mr Dickerson continued the day-to-day tasks of acquiring and cataloguing books and periodicals, while supervising readers. Access to open shelf material by staff and visiting researchers, however limited, continued to be appreciated, particularly during major library moves elsewhere in Oxford.

Several exhibitions were laid out in the archive room. On 1 October members of the Chancellor's Court of Benefactors were shown a selection of Buckland, Smith and other archival material and rare books. On 15 December a party from the Friends of the National Libraries (FNL) toured the library and were shown a selection of archival holdings including William Smith's *Norfolk*, the purchase of which was partly funded by an FNL grant.

Mr Hall hung the big 150th Anniversary exhibition 'Oxford University Museum of Natural History 1860-2010: a wonderland of natural history'. He made a further 73 frames for the exhibition, to add to those made for the Darwin exhibition. They can be reused in the future.

Conservation work focused mainly on Donovan drawings and items from the archive relating to the history of the building of the Museum. Mr Hall also repaired various books. He again acted as the Museum's photographer, carrying out work both for Museum staff and to fulfil external requests. He continued to monitor environmental conditions throughout the Museum's display and storage areas and at the off-site store at Nuneham Courtenay, supplying a monthly report to each of the Collections. He also continued to carry out COSHH assessments for the chemicals used in the Conservation Studio and continued as Deputy Chemical Officer for the Museum.

Information Technology

The usual work of installing and upgrading hardware and software took place. This year we began using the Windows 7 operating system on newly purchased computers. In December 2009 Ms Phibbs undertook an overhaul of the use of the central OUCS hierarchical file server for backing up Museum computers. This was prompted by the need to install a compulsory upgrade to the backup software, but it proved very useful as several staff had not been availing themselves of the excellent offsite backup facilities provided by the University.

The support of staff, visitors and volunteers in their use of IT equipment and facilities constituted the other major part of IT work. There have been exceptionally high numbers of new staff and volunteers this year, especially in Entomology and Education departments, and Dr Painter has spent a considerable proportion of her time working to accommodate their needs. She has also set up wifi connections for a number of visitors to the Museum.

In autumn 2009 the University introduced a new central email system for staff and students, Nexus, to replace Herald webmail. Ms Phibbs and Dr Painter organised a seminar for Museum staff to explain how the new system would work before everyone was 'migrated' to Nexus in early October. There were a few 'teething' problems, but on the whole the transfer was a smooth one.

The Museum intranet continued to grow, and IT staff update it on a regular basis. They provided some of the content, for example email lists, and instructions for the use of wireless computing. The remaining content was provided by other Museum staff; health and safety regulations from Mr Burras, purchasing information from Mrs King etc. The intranet is proving to be a useful resource for all Museum staff.

Throughout the year IT staff continued to update and maintain the Museum website. There have been some significant additions to the website this year. A new beehive page that features a 'Bees at lunch' video complements the installation of the new beehive in the Museum. The Exhibits and Features page now includes short recordings in which the 'Dodo' introduces various aspects of the Museum from the swifts in the tower to the insects on display in the upper gallery. These stories were written by Ms Georgina Ferry, and were first recorded by Radio Oxford for a programme called *Night in the Museum*. The number of visits to the Museum website continued to rise with over 1.3 million visits for the year from August 2009 to July 2010.

Work has continued with collections staff on electronic cataloguing projects. Ms Phibbs has worked with Mr Mann in Entomology on the Lepidoptera and Odonata databases. A new version of the latter with research-quality images was released online in March 2010. In Zoological collections a new enquiries database was devised for use by Dr De Grave and Mrs Nowak-Kemp.

Ms Phibbs continued to represent the University museums' IT staff on the Committee for the Museums and Scientific Collections. This entailed co-ordinating the termly IT reports from the four university museums, presenting IT issues at committee meetings, and reporting back to other museum IT staff.

Education and Outreach Department

Over the last year the Education Department has seen continued growth and development in all areas despite the uncertainty that surrounds future funding.

Ms Crook left in February and Ms Emily Wilson was appointed as Education Assistant. Ms Guthrie left in May to become the Family Education Officer at the Ashmolean Museum and Ms Rachel Smith was appointed in June. Mrs Todd returned from maternity leave in November. Ms Bain provided cover during Mrs Griffiths' maternity leave, which began in October.

This year the education team have attended and given presentations at a variety of conferences.

Mr Jarvis attended the European Children's Universities Network meeting in Liverpool on behalf of the University to find out about extending Children's Universities in Europe. He also gave a presentation on Biodiversity at the CIAO! Children's Climate Change Conference held at the Sheldonian Theatre, Oxford in January.

Mrs Stott spoke about engaging a wide audience with evolution in an informal learning environment at the British Council International

Darwin Symposium at the National Science Learning Centre in York in October. She also spoke at an MLA cross-curricular conference in Southampton on strategies for managing behaviour in large secondary school groups.

Ms Lloyd spoke at the Oxfordshire Science Teachers Day about using evidence from museum specimens to inspire students.

Mr Brooks attended a conference at Cardiff University on artists working with museum collections in September and an MLA course on developing new media in June.

Ms Wilson attended a NIACE family learning training day in May.

In May Mrs Todd spoke at the Museums Association meeting on 'Event programming and late Night Opening', about using volunteers at large-scale events such as 'Wow!How?' and late night openings. She was asked by the Museums Association to contribute 100 words to the *Museums Journal* regarding the potential call for increased use of volunteers in the face of cut-backs.

Mrs Todd has attended two meetings of the National Heritage Volunteer Manager's Forum, and in June she and Dr Cheeseman attended the first meeting of a new local Volunteers Manager's Forum, encompassing Berkshire, Oxfordshire and Buckinghamshire.

The recent publication of the best-selling book *Remarkable Creatures* by Tracy Chevalier has brought Mary Anning and Elizabeth Philpot into the spotlight and prompted increased interest in the Philpot Collection. In July Ms Howlett from the Geological Collections accompanied Mrs Todd and Dr Cheeseman to Lyme Regis Museum, as a precursor to a joint project between the Geological Collections and the Volunteer Office to temporarily display some of the highlights of the Philpot material.

As part of the South East Hub, members of the Education Department continued to support the SLIME (Science Links in Museum Education) network, which aims to support and encourage museums in the South East to promote science. Mrs Sharon Bristow (SE Hub Learning Manager) co-ordinates the network and worked closely with the education team. In order to try to ensure sustainability of the network, a SLIME committee has been formed onto which Mrs Stott has been co-opted. Ms Lloyd contributed to 'Rock Band' a group of 'SLIME' Museums involved in developing Earth Sciences resources.

As part on our ongoing commitment to Langley Academy in Slough, Mrs Stott joined the Academy's Museum Advisory Group and attended three meetings. She served again on the steering committee of the Oxfordshire Science Festival, which continued to expand to include over 100 different events.

The Education Department continued to work very closely with the other University Collections, with weekly meetings of the Lead Education Officers in order to fulfil our requirements as part of the SE Hub and to ensure best practice. In May the education departments of the University's museums were awarded an HLF Skills for the Future grant of £410,500. Under this grant we will offer trainee education officer placements across the museums. The HLF's grant will fund 18-month work-based training placements for 12 trainees. The first cohort will start their placements in spring 2011.

Schools Education

The schools programme continued to be extremely popular and Education Officer facilitated or taught sessions were frequently fully booked more than half a term in advance. New detailed teacher information sheets for all of the Key Stage 2 sessions were produced, and staff are in the process of compiling sets for all of the facilitated or taught sessions that the Museum offers.

19,878 UK students have visited the Museum in school groups, an increase of 5% on 2008-9; 77% of these students were taught by Education Officers. When international student visits are included, a total of 34,362 school students in booked groups visited the Museum.

The most popular primary school teaching sessions have been on dinosaurs and fossils, with 59 sessions booked for Early Years classes accounting for 1,929 children. A total of 6,891 primary students in 218 visits received taught sessions in the Museum.

The 'Making Museums' project was run jointly with the Pitt Rivers Museum for the seventh year. It took place first in October with primary schools in Headington, and then in January with the Blackbird Leys primary schools. We are very grateful to the Entomology department for their support with this project; all of the groups went 'behind the scenes' to learn from Mr Mann about the work of curatorial staff.

A major primary school project for the year was the CIAO! Ark Climate Change Project. This was a six month project with 10 Oxfordshire

primary schools, looking at a positive vision of a low carbon future. It started in January with a children's climate change conference held at the Sheldonian Theatre at which Mr Jarvis gave a presentation. The schools each worked with scientists and artists to examine different aspects of climate science. Mr Jarvis worked with Dashwood Primary School in Banbury in partnership with Ms Emma Williams from the University of Oxford Botanic Garden to explore biodiversity and habitats. The children monitored changes in biodiversity of 'habitats' in their school grounds and at home during the year and reported back their findings. The project culminated in June with the installation of an Ark on the Museum lawn, entirely powered by green energy, and a five day programme of events for schools, businesses and the public. These included a 'reverse conference' when the school children issued challenges to businesses to make changes such as cutting their energy consumption.

Mr Jarvis ran outreach sessions at Rose Hill and Church Cowley Primary Schools, and groups then visited the Museum for a special insect celebration day which included a performance of the 'Bug and the Butterfly' by the theatre group Peut-être Theatre, imaginatively staged in the centre court.

As part of World Book Day Mr Jarvis worked with OUP to design dinosaur resources for schools, and the Museum and OUP jointly hosted a special Dinosaur Book day for 100 local primary school children. This included a lively talk, dinosaur challenges, and an opportunity to meet the illustrator of OUP's Dinosaur Cove reading book series.

The Museum continued to have a fairly even split between the numbers of primary and secondary school pupils visiting, although the secondary students typically come in much larger groups, making the logistics of their visits more complicated to organise.

The extended Dinosaur Days have continued to be fully booked, wth 8 days held over the last year, involving 652 students. Mr Ashington and Ms Pocklington have delivered workshops as part of these days and we are grateful for their involvement.

A-level sessions on evolution and biodiversity continued to be popular. In December Ms Lloyd organised the final event celebrating Darwin's bicentenary; a sixth form study day entitled 'Life after Darwin'. More than 250 students heard lectures from Professor Peter Holland and Professor Sunetra Gupta before informal talks with a range of scientists from postgraduate students to professors as they carried out self-guided tasks in the galleries. A number of scientists brought their own objects to display and talk about, for example DPhil student Mr Alex Liu brought a cast of an Ediacaran fossil in order to show students examples of organisms that lived 600 million years ago and have no living ancestors. He discussed mass extinctions and their effects on evolution and the reasons why certain organisms become extinct. Mr Mann brought live cockroaches and discussed insect evolution. Professor Holland brought embryo models in order to discuss evidence for evolution in embryology. This opportunity to engage with scientists was very much appreciated by students and teachers.

Although the vast majority of our work with secondary school students is with those in mainstream education, we do regularly run sessions for those in special schools. For the first time this year Ms Lloyd worked with excluded students from Meadowbrook College together with the community education officer, Ms Bain.

Ms Lloyd worked with Mr Chris Parkin from the Museum of the History of Science to develop a new programme for Year 8 students from The Langley Academy in Slough, with funding from 'Learning Links', part of the MLA's *Strategic Commissioning* programme. The aim was to develop a sustained museum learning experience focusing on the theme of 'time'. The project provided opportunities for the students to consider how scientific evidence is collected, evaluated and utilised to develop ideas about science and the real world. The historical context of the museums also provided an opportunity to promote an understanding of how scientific ideas change over time and how scientific developments are influenced by social and historical factors.

The activities undertaken by students included a classroom-based outreach session working with microfossils, followed by trial museum-based sessions for groups of students. These gave the museums opportunities to test various activities and determine how the students responded to them. The most successful were then used for other groups from the Year 8 cohort. The project provided an excellent opportunity to work in depth with a school to develop and trial new learning activities, which are now being adapted to use with other schools.

The education team continued to work closely with the University's Access and Admissions

teams. During the year they taught large numbers of 'Access' group students, most coming from targeted schools and visiting the Museum with a college access officer as part of their experience of the University. We continued to host Christmas science lectures for secondary school students which were organized by Dr Zareen Ahmed-Stewart (Schools Liaison Officer for the MPLS Division). Ms Lloyd ran evening sessions for the University's summer schools held in July. The Admissions Office again used the Museum as the base for the main University wide Open Days events in September and July.

Ms Lloyd and Mr Brooks worked together to develop a Science-Art day for Year 9 students based around the 'Ghost Forest' exhibition, and exploring issues of biodiversity and evolution, with particular reference to the geological and entomological displays. They use print making and digital photography to create a 'Tree of Life' which can be documented for use back at school. These sessions were trialed in July and will be offered throughout the 'Ghost Forest' exhibition.

In November Mr Brooks organised workshops based on the textile exhibition 'Darwin's Leftovers'. Three schools with KS3/5 students and one adult group attended the workshops run by textiles artist Liz Lancashire. They used examples from Darwin's personal collection as inspiration for their work.

As part of the Darwin bicentenary celebrations, the Museum organized an art competition to design a plinth commemorating the Great Debate. Ninety pupils from schools in Oxfordshire entered and the winner was Poppy Simondson. Alec Peever was commissioned as the sculptor for the plinth, which will be unveiled at a ceremony in September 2010.

In February Mr Brooks ran sourcing days, half term drop-in activities to help students prepare for their GCSE and A Level art exams using resources from the handling collection and displays.

The Museum continued to attract large numbers of art students, and during the year art introductions were given to 72 groups, comprising 3,309 students. As part of the 150th anniversary celebrations, artist Jeanette Barnes RA ran a sixth form drawing workshop with state and private schools in Abingdon, and an exhibition will follow in September 2010.

The Education Department continued to work with initial teacher training courses, both at Oxford University Department of Educational Studies and Oxford Brookes University and has taught over 350 student teachers over the last year.

Families

The family programme continued to be well attended. Education and Outreach staff ran 27 days of specific family events in addition to the regular Family Friendly Sunday activities, making a total of 77 days of family activities throughout the year.

Michaelmas term began with a 'Bug Day' run with the Hope Entomology Collections for Oxford Open Doors, followed by an afternoon of 'Slugs, snails and puppy dog tails' as part of the Alumni weekend. In October the half term activity was 'World Exploration' as the final family event of the Darwin bicentenary.

The overriding theme for family events during 2010 has been the 150th Anniversary celebrations. In January families discovered stories from the history of the Museum in 'Museum Memories' and in February, 'Brilliant Buildings' focused on the Architecture. In April 'Museum All Sorts' looked at how the museum is organised.

June was a busy month. As part of Oxfordshire Artweeks, visitors were asked to 'Take a Line for a Walk'; in National Insect Week, 'Beautiful Bugs' were celebrated with plenty of opportunity for live insect handling; and to complement the climate change theme of the CIAO! Ark, an afternoon was spent creating 'junk' animals from recycled materials.

The third city-wide 'Alice Day' was held in July and the Museum was a focus of activity, with drama performances in the lecture theatre and on the lawn, and a series of lectures.

During each of the school holidays, special themed trails have been available at all times. The summer safari trail was augmented by four days of 'safari' activities. A trail inspired by J.R.R. Tolkien's *Father Christmas Letters* was available over Christmas, and an egg trail at Easter.

The regular Family Friendly Sunday afternoons are still an important part of the Museum's family provision and new resources continued to be developed for these. Ms Guthrie designed an excellent new explorer backpack investigating the skeleton displays named 'Bag O'Bones'. Sandra Brent is especially thanked for carrying out the weekly maintenance of the Sunday activities throughout the year.

The Education team ran family outreach activities as part of the Oxfordshire Science Festival in Broad Street, and at the Cowley Road Carnival. In May they supported the Oxfordshire Museum at Woodstock for their dinosaur 'Birthday Party' by running a plaster casting activity.

The RSPB have run eight days of activities during the year at the Museum in addition to the Museum's own family activities.

We remain indebted to our dedicated team of volunteers whose work allows the Museum to run such a large number of excellent family activities.

Community Outreach

Over the year, Mrs Griffiths and Ms Bain delivered 117 outreach sessions and facilitated guided tours at all of the University museums (OUMC) to a wide range of adult and family community groups. These groups included: ESOL and Basic Skills groups, MIND groups across the county, family learning, Banbury Young Homeless Project, Oxford Night Shelter, Oxford Centre for Enablement, libraries and family centres, Oxfordshire Hospital School and adults with learning difficulties. In total 1,593 people took part in these sessions, comprising 1,042 adults and 551 children.

Work was extended with Mind mental health support groups. A series of sessions were run with groups in Wallingford, Abingdon and Mind at the Mill in Oxford. Sessions at the Mill focused on the history and collections of the Museum in celebration of the anniversary year.

Mrs Lloyd and Ms Bain visited Meadowbrook Pupil Referral Units in Marston and Banbury as part of a Creative Partnerships Project with artist Dionne Barber. The groups then made return visits to the Museum and their subsequent art work was displayed in the Museum in a special exhibition in July.

Mr Jarvis and Ms Guthrie ran two bespoke workshops for adults with learning disabilities.

Volunteers

The majority of volunteers at the museums assisted with family activities and public events. Across the University collections, volunteers contributed over 3,230 hours this year on 294 separate family, community and school events. Over 200 volunteers gave a total of 1,718 hours of support for 88 events in the Museum of Natural History.

This amounted to 261 volunteering opportunities, which ranged from assisting at the big half-term events like 'Brilliant Buildings' to volunteering at Sunday Family Friendly sessions and other special events such as 'son et lumière'. Volunteers also enjoyed assisting the Museum's education team on 9 of the secondary school science days organized by Ms Lloyd.

The team of Sunday volunteers continued to run Family Friendly events throughout the year. Their commitment and enthusiasm make these days so popular and bring families back time and time again to enjoy them.

A significant and increased number of volunteers found placements helping curatorial and education staff in work behind-the-scenes. Over this year, a total of 39 volunteers gave more than 3,400 hours supporting the work of collection management and conservation in the University Museum of Natural History.

Volunteer recruitment was very high in the last year, with 517 active volunteers by the end of July. The Volunteer service registered, processed and interviewed at least 219 volunteers for work across the Museums and Collections. Indeed the rate of enquiry was so high that the Volunteer Service closed registration to new volunteers from January to March 2010, in order to maintain a high quality of service to existing volunteers.

Of the 517 active volunteers, 241 were Oxford University students and staff. The others came from the local population and included young professionals, other students, people seeking work, and retired people. They liked the opportunity to get involved with the local community. Those considering working in museums, in science communication, or with children and young people, gained relevant experience in this field. Many also found it helped them build confidence and develop communication skills.

The Volunteers service provided a number of one-off training sessions this year, alongside more specialised training for volunteers who wished to do tour-guiding at the Museum of the History of Science, coin-handling with the public at the Ashmolean, and run the Sunday Family Friendly activities at the Oxford University Museum of Natural History. The service continued to process CRB forms for those volunteers who require it, and also processed applications for people who wished to volunteer at the Ashmolean Information desk.

Central Services

Public services

There were 512,202 visitors to the Museum this year, 63,498 more than last year. The Museum staff continue to give the visitors the warmest welcome but it should be noted that the management of visitors at peak times is a highly pressurised job for the Front of House team and procedures for booking large groups are being reviewed. The floor of the Museum is also suffering from the increased footfall and this is being closely monitored.

The Museum received a formal visit by the MLA in March, to review its Accreditation status. Miss Price and Professor Kennedy appreciate the assistance of all Collections and Sections in ensuring that paperwork was up-to-date, and in assisting with the visit, which required among other things that the documentation could be found for three specimens selected at random, and conversely, that three specimens could be found from catalogue records randomly selected. All areas of the Museum's activities were reviewed, from its business planning and financial records to its public services, staffing and care of the collections. The MLA confirmed that full Accreditation status had been retained by the Museum.

Staff

Staff leaving and retiring during the year were: (in chronological order): Rowan Boughton (Shop Assistant), Katie Davis (Geology Research Officer), Laura Goulding (Zoology Collections Support), Colin Abinett (Cleaner and Shop Assistant), Lisa Lodwick (Shop Assistant), Anna Crook (Education Assistant), Rowan Guthrie (Education Assistant), Lisa Conyers (Zoology Collections Support), Stella Brecknell (Librarian), and Joy Irving (Mineral and Geological Collections Support).

Staff joining during the year were (again in chronological order): Joanne Corp (Mineralogy Collections Support), Lisa Lodwick (Shop Assistant), Amoret Spooner (Entomology Collections Support), Sarah Joomun (Geology Research Officer), Emily Wilson (Education Assistant), Guiseppina Moretta (Shop Assistant), Katherine Child (Entomology Image Technician), Rachel Smith (Education Assistant), and Fi Dunnington (Shop Assistant).

Exhibitions and events

The replacement of the permanent exhibtions nears completion. The Geology of Oxfordshire cases were completed, and a series of new cases on 'Amazing minerals, curious crystals' was installed in the upper west gallery. The bird displays were dismantled, and good progress was made in the preparation of displays on birds, mammals, Charles Darwin, and on Oliver Lodge and the first radio transmission.

The year has been by far the busiest so far with respect to special events and installations. In the latter part of 2009, the Darwin exhibition, 'In his own words: a celebration of the life of Charles Darwin (1809-1882)' was joined by the very original installation of knitted items illustrating 'Darwin's Leftovers'. This was a walk-in peek at Darwin's Victorian world and included a stuffed tortoise, a life-size iguana, hummingbirds, mysterious pickled things in jars, carefully itemised fossils and strange tribal souvenirs, created by a team of 60 knitters from across Gloucestershire, to celebrate the bi-centenary of Charles Darwin's birth.

2010 marked the 150th Anniversary of the Museum and a series of events were programmed to celebrate and highlight the Museum and its collections. Two exhibitions opened in the upper gallery for the year. 'Oxford University Museum of Natural History 1860-2010: a wonderland of natural history' showed contemporary documents, photographs and engravings traced the campaign to build the Museum as a home for Oxford science, the subsequent architectural competition, and the construction of the building between 1855 and 1860. The exhibition featured sculptures, carvings, stone and metalwork, explored through the drawings and words of John Ruskin, Henry Acland and others. Images recorded the evolution of the art, architecture and displays throughout the history of this remarkable cathedral to science. Alongside this ran 'From the Archives', showing beautiful, rarely seen, illustrated works from the Hope Library.

The temporary clearance of the upper east gallery provided another temporary exhibition space for 'A few of our favourite things', in which staff chose their favourite object, space or feature of the Museum and explained why they made their choice. These three major temporary displays were a beautiful additional backdrop to the 150th

Anniversary fundraising dinner and a spectacular 'son et lumière'. The son et lumière, which was shown again the following evening at a free public opening, was generously sponsored by Professor Raymond Dwek.

In early May the Museum celebrated the life of Dorothy Hodgkin with a performance of the play *Hidden Glory: Dorothy Hodgkin in her own words*, a one-woman show starring Miranda Cook, written by Georgina Ferry, our Writer-in-Residence. To mark the 100th anniversary of the birth of Dorothy Hodgkin a bust was unveiled in the centre court of the Museum.

Later in May the Museum was very fortunate to be able to present an exhibition displaying some Cambrian fossils from Chengjiang, 'Exceptional fossils from Chengjiang, China: early animal life'. The 525 million year old marine fauna from Yunnan Province is exceptionally preserved and shows the remains of soft tissues as well as entirely soft-bodied animals.

Focus changed in July when the Museum hosted 'The Ark', a large scale science and arts installation coordinated by the Children's International Arts Organisation (CIAO!) and supported by a broad range of partners. The installation was the culmination of an innovative project, bringing scientists, artists, architects and primary children together to 'imagine' a low carbon future and its potential benefits to the environment and to society. After a week of hectic activity including jazz and storytelling the Ark moved up to the Edinburgh Festival and the lawn was cleared for the installation of the 'Ghost Forest', a major art installation consisting of 10 primary rainforest tree stumps which were brought to Europe from a commercially logged forest in Western Africa by the artist Angela Palmer. The work highlights the alarming depletion of the world's natural resources, and in particular the continued rate of deforestation. The trees in 'Ghost Forest' - most of which fell naturally in storms - are intended to represent rainforest trees worldwide; the absence of their trunks is presented as a metaphor for the removal of the world's lungs caused through the loss of our forests. The 'Ghost Forest' will remain on the lawn until July 2011.

These special events ran alongside the Museum's usual programme of special activities. For the city-wide late night opening 'White Nights' in November, the Museum hosted local musicians, craft activities, and refreshments, and attracted over 2,000 people. It was the starting point for a lantern procession which moved to the city centre. 'Oxfordshire goes Wild', a showcase for local conservation and wildlife charities, was co-ordinated by Mr Jarvis and involved over 20 different organisations, not to mention live fish, bats and owls. The ever popular 'Wow!How?' family science fair was organised by Dr Cheeseman and Mrs Todd, and attracted almost 2,600 visitors. Over ninety volunteer scientists and science enthusiasts filled the Museum with live experiments to educate and entertain children and their families. A report was written by volunteer Dr Sarah McKim in *Phentotype*. Alice Day, held in July, celebrated *Alice's Adventures in Wonderland*, and also proved very popular.

Writer-in-Residence

From January 2010, the science writer Georgina Ferry visited the Museum regularly as Writer-in-Residence, an appointment created for the anniversary year. On her weekly visits she has interviewed many members of staff, seeking to understand the work of the Museum in both its public activities and its curatorial and research roles. She has also contributed directly to the Museum's communications.

She wrote and produced a play, *Hidden Glory*, to mark the centenary of the Nobel prizewinner Dorothy Hodgkin whose first laboratory was in the Museum. It received its first performance on 10 May in the Museum lecture theatre to a largely invited audience, before the unveiling of a bust of Hodgkin in the Court.

For the 150th Anniversary celebrations, Ms Ferry contributed to the commentary for the anniversary son et lumière presented on 27 and 28 May, and also wrote a series of scripts for BBC Radio Oxford's *Night at the Museum* feature in the week of 21 June.

Ms Ferry has been working to complete two long-standing projects, the editing of a new booklet on the Oxford Dodo, and the planning for a new visitors' guide to the Museum.

She has commented on activities in the Museum and related matters through the year in her blog, *Dodology* (http://dodology.wordpress.com).

Finance

The University General Board made a grant towards recurrent costs totalling £769,800, and additional support was received from ASUC Strategy Funding for the feasibility study for the planned schools group reception facility. The feasibility study and detailed planning for the centre is now complete and the project has been highlighted as a key project within the fundraising appeal.

We are again very grateful for the Minor Works allocation of £7,446, which allowed us, amongst other things, to refurbish the disabled toilet, make alterations and new furniture for Geological and Mineral Collections' rooms, and convert office space to a meeting room for Zoological Collections. External support for core activities was provided by the AHRC amounting to £327,000. Core running costs were again supplemented by trading activity from the shop, lettings and filming fees. This vital income was boosted for the second year by revenue from student lectures, maths and chemistry occupying the lecture theatre during term time. The gross trading activity for the year amounted to £279,000. For the ninth year the Museum received support from the Negaunee Foundation for our core activities. The year's donation of $65,000 brings their total support to £218,336.

The Museums, Libraries and Archives Council's *Renaissance in the Regions* funding for the Education and Outreach activity was extended in March 2009 for a further two years, providing £340,000. The new funding stream, which ends in March 2011, enabled the Museum to extend the contracts of staff and maintain the current opening hours of the Museum. The uncertainty over the funding beyond March 2011 remains, and the Museum is acutely aware of the anxiety this causes staff and the difficulty it imposes on the planning process. A further grant was also received under the *Strategic Commissioning* programme, coordinated by the Natural History Museum in London, to fund the secondary schools' programme. This money pays for both the part time salary and the running costs of the post.

The Museum's Advisory Board, chaired by Lady Heseltine, met for the first time in September and has met twice more since then. It helped with fundraising and events for the 150th anniversary year, and the help, support and enthusiasm of its members has been much appreciated. May's 150th Anniversary dinner was the official launch of a campaign to raise £5.5m for the Museum for several important projects. At the time of the launch £1.9m had already been raised, and a further £54,000 has since been added. It includes a generous donation of £15,000 towards the roof refurbishment from The 29th May 1961 Charitable Trust, for which we are very grateful. Appendix 3 includes a list of major donations.

As a result of the success of the internship programme for 2007/2009 the E.P.A. Cephalosporin Fund Trustees agreed in 2009 to provide a total £27,635 to run the programme for a further two years. It enables the Collections to employ Oxford University students on short term contracts for specific collections based projects. The annual report to the Fund Trustees, written by interns and their Museum supervisors, clearly demonstrates the mutual benefit of this initiative. The E.P.A. Cephalosporin Fund also awarded funding for the new Darwin and bird displays on the upper north gallery which will complete the permanent display programme initiated in 1998. The Fund supported the display of Chengjiang Fossils curated by Dr Siveter, with £5,250 to transport and display the fossils for the first time outside China. In addition a further £10,000 was allocated during the year to pay the stonemason Alec Peever, who sculptured the plinth to commemorate the Great Debate of 1860.

The Van Houten Fund, who generously supported the exhibition in 2009 on the upper galley 'Darwin, in his own words', also supported the 2010 exhibition to commemorate the 150th Anniversary of the Museum.

Focusing on the collections, the E.P.A. Cephalosporin Fund provided £35,000 for one year's curatorial support from March 2011 for Geological Collection's Mesozoic material. A grant from the MLA's Designation Development Fund has provided £75,000 for Entomological Collection's Huxley Room project.

The University of Oxford's Museums and Botanic Gardens were jointly awarded a grant of £410,500 from The Heritage Lottery Fund (HLF) to fund placements for people seeking training as education officers in the heritage sector. The grant is administered by the Ashmolean Museum. Professor Kennedy, Miss Price and Ms Shepherd prepared a bid for funding from HEFCE following the abolition of AHRC funding in the coming year. The bid was based on the work carried out by the Museum for the wider HE sector, and HEFCE subsequently confirmed that the Museum was eligible for funding under all three of its criteria, and that it will receive level funding of £330,000 for 2010-11.

Trading activities

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 on the gallery, and charity events, which generated £76,810 revenue, an increase of 13.8%, with some 72 functions held this year. Most bookings came directly to the Museum, involving numerous emails and phone calls with Ms Andrews-Speed, wonderfully

supported on the day by technical and front of house staff.

The facilities were used for a variety of new ventures. It was an honour to have the Chancellor's Court held in the Museum in October. Forsters and the NHS held a 'Big Drink Debate' in November and *The Independent* hired the lecture theatre for a debate before the General Election in May. The annual Oxford Kumon Maths and English awards ceremony was held in November and the Artweeks Forum again in May. Regular receptions were held with Keble College for Biomet, and two concerts were held for local charity Flexicare. Other events were lectures, receptions, and some five dinners on the gallery, including an especially large one run by the Development Office to launch the Museum's 150th Anniversary fund raising appeal.

The eight 2010 Slade Lectures, given by Professor Dawn Ades on 'Surrealism and the avant-guard in Europe and the Americas', were held in the Hilary Term, and in Trinity Term six Lyell Lectures were given by Professor Ian Maclean. The annual memorial lecture for Dorothy Hodgkin, which also commemorated her 100th birthday, was held in March, followed in May by the unveiling by her sister of her bust and the performance of a play written by Georgina Ferry. The lecture theatre continued to be hired throughout the academic year for 337 hours of mathematics and chemistry undergraduate lectures.

The Museum was again were the focus for a number of television and radio programmes featuring the building, its contents and our swift colony. Notable programmes utilising the venue include *Deadly 60,* and *Nina and the Neurons* for BBC children's television and *History of Ancient Britain* featuring the Red Lady of Paviland. Filming in the Museum raised nearly £4,500 of income.

The Museum's shop continued to provide a very welcome unrestricted revenue stream as well as being a very popular visitor facility. In November Ms Puspitasari went on maternity leave and Ms Genevieve Moffa was appointed to provide cover. Mr Abinett and Ms Boughton both left during the year, but Ms Guiseppina Moretta returned, and Ms Fi Dunnington was appointed shop assistant jointly with the Pitt Rivers Museum. This is part of a growing collaboration between the Museums which has also seen sharing of staff at busy periods.

The shop continued to maintain a strong trading pattern with gross sales of £173,684. The net profit for the year was a very healthy £46,526. The busiest months of the year were August and October 2009, with gross sales of £20,347 and £15,901 respectively.

It was noted that the trading pattern was moving toward a lower spend per transaction, smaller soft animal toys proving particularly popular, but more expensive educational toys selling less well.

To commemorate the 150th anniversary of the Museum a reprint of the Phaidon book from the Architecture in Detail series was reprinted. The book *Oxford Museum* by Trevor Garnham was given to every guest at the 150th Anniversary Appeal Launch Dinner. In addition a silver jewellery set was commissioned which makes reference to the palm finials of the Museum.

Many thanks go to all the staff connected to the success of the shop.

Health and Safety

As part of the growing cooperation with the Pitt Rivers Museum, the two museums' safety committees held joint termly meetings.

Miss Price and Mr Burras reviewed and upgraded the emergency response and business continuity procedure prior to the Accreditation visit. Folders in the Museum and off-site stores give clear instructions on what to do in the event of fire, flood, vandalism or terrorist threat, with lists of resources available and other sources of help. All staff were informed.

In May, the Museum underwent a Health and Safety Management Profile (HASMAP) audit. All Collections and Sections reviewed their Health and Safety management procedures, and checked that risk assessments and paperwork were in place and up-to-date. The Museum's Deputy Safety Officer, Mr Burras, assisted by the Division's Safety Officer, Mr Inman, provided advice and assistance to ensure continuity across all areas of the Museum. A number of senior members of staff across all Collections and Sections were interviewed to check their overall awareness of relevant Health safety issues, also to see if this knowledge and good practice was being communicated down the line to all staff under their control. Areas covered by the audit included controls of chemical hazards, wood dust control measures, handling and storage of toxic or radioactive specimens, slips, trips and fall issues, working at height, manual handling and the safe use of a wide range of equipment. The response from the auditors was extremely positive.

However they indicated some improvements were needed, and the findings of this audit will be discussed at the next Museum Safety Meeting.

A course on carrying out display screen assessments was taken by a number of staff.

Miss Price, the Museum's Senior Radiation Protection Supervisor attended an update course on radiation protection organised by the University Radiation Protection Officer.

Mercury and arsenic levels were checked for staff exposed to these toxic elements in the collection, and a number of staff had face-fitting of masks by Mr Inman to ensure their protection from hazardous dusts or vapours.

The Estates Directorate carried out resurfacing of the main entrance steps and improvements to the lighting in the porch following a number of falls by museum visitors that took place over one weekend in June 2009. The steps were then treated with cold tea, to match the colour with that of surrounding stonework.

The Entomology Collection purchased a replacement beehive which was sited in the first floor lift lobby, the former location on the south stairs being considered a fall hazard. Mr Richey adapted the observation beehive to include a new base and access steps, and constructed a matching display case for the bee behaviour information board. Mr Richey also designed and made a new swift display case to house the flat screen monitor, much improving the visitors' viewing experience.

Buildings, workshop and maintenance

As in previous years this has been a busy period for the Museum's workshops.

In July 2009 the museum took control of the Inorganic Chemistry Laboratory's glassblowing space and the adjoining laboratory. Both areas required extensive decontamination work involving the removal of all the fixtures and fittings, drainage pipe-work, woodblock flooring and LEV systems. Mr Burras worked closely with the University Estates Directorate and external contractors to minimise disruption to both the Chemistry Department and the Museum. The areas are now ready for conversion to an education classroom/reception area.

After the University Estates Directorate dismantled the bird display cases in the upper north gallery, Mr Burras organised lowering of the electrical supplies and preparation of the walls ready for installation of fifteen new display cases. These were manufactured by the Directorate, and replicate cases on the east gallery. A final seven cases will be completed by the end of October 2010.

A substantial quantity of lead and tiles were replaced on the east roof that adjoins the Pitt Rivers Museum. This followed a major leak during an unusually heavy and prolonged rainstorm. The water ran down the internal walls and into the display cases on the gallery below and then over the Mesozoic reptile casts on the lower floor. The situation continues to be monitored and the roof repairs seem to have been successful.

Mr Richey and Mr Johnson removed a case containing an old archaeological display from the southeast corner of the upper gallery. This exposed an original ornate museum window which, unfortunately revealed a concrete floor of the adjacent new Pitt Rivers Museum annex. Mr Burras arranged for the stone surround to be cleaned, and reflective film to be applied to the glass to mask the concrete floor.

The display was about an ancient burial in the University Parks and included a human skeleton. Mr Richey constructed a new low level display case to accommodate the specimens. In other areas of the court, he refurbished seven of the zoological skeleton bases and made five additional bases in the same style.

Mr Burras supervised refurbishment of the Abraham Room for Mineral Collections, which included narrowing the door to the corridor, altering the electrical supply, and partial interior redecoration. Mr Richey installed new storage cupboards and book cases constructed by contractors, and fitted new benches. In Zoological Collections, Mr Burras supervised work on the conversion of the curator's office to a visitors' room. Mr Johnson refurbished the existing bookcase and table, and made two new work-stations.

In addition to these major projects, workshop staff carried out daily repair and maintenance of equipment, furniture and fittings around the Museum.

Environmental Archaeology Unit

Fieldwork continued with students on the House of the Gladiators at Pompeii. Further evidence for the plants growing in the garden in AD 79 when it was buried by Vesuvius was found in the form of holes filled with pumice where the stems of plants had decayed. More Bronze Age remains were found beneath ash from an earlier eruption of Vesuvius and it is possible that the town was founded not long after the stabilization of the region following this eruption. A second visit was made to the University of Cincinnati excavations at the Porta Stabia, Pompeii, to study the prehistoric topography of this part of the town.

First year practical classes and MSt Archaeology classes were given in the Museum, making use of the collections. Two DPhil students have begun their research in the Unit, one whose study of Roman diet is based around the contents of a Roman sewer at Herculaneum and the other who is investigating animal bones from sacrifices buried in Roman gardens. Students were employed in the Museum during the vacations to sort samples from Silchester and Silbury. Laboratory work has been completed by Professor Robinson on the insects from Silbury Hill and a report prepared for English Heritage. Further research is being done on assemblages of scarabaeid dung beetles from England of Neolithic to Roman date. Evidence is emerging for a warm climatic episode during the Bronze Age. Land snails have been analysed from the ditch of a major late Neolithic henge monument, which was discovered during the construction of a new quad by St John's College at Elizabeth House. They showed the area was partly wooded. The first paper has been published arising from the investigation with the Research Laboratory for Archaeology and the History of Art of stable isotopes of carbon and nitrogen in domestic animal bones from the Thames Valley.

Professor Robinson continues to serve as Dean of St Cross College.

The Swifts

George Candelin reported that there were 65 nest boxes occupied in 2010. These produced at total of 78 fledged young; an additional 15 young died from starvation and 6 were taken into care at a sanctuary. In addition 19 adults were ringed and 25 adults were re-identified as regular breeders in the colony. It should be noted that all the young that died were from nests on the lower rows of boxes on the west side of the tower. The reason for these unexpected deaths is thought to be predation of the parent birds by sparrowhawks. Mr Overall reported seeing a sparrowhawk on the stonework at the base of the roof tiles of the tower, spring up to snatch an adult swift as it flew up to enter the lowest ventilator on the west side of the tower. Museum staff and others have seen sparrowhawks and other raptors flying over the Science Area.

In a significant change, the breeding cycle ended surprisingly early this year. The bulk of the birds had gone by 31 July when only 6 young remained, and all birds had departed by 21 August, two weeks earlier than normal.

Appendices

Appendix 1: Visitors of the Oxford University Museum of Natural History at 31 July 2010

The Vice-Chancellor A.D. Hamilton, MA, Ph.D., FRS
Lord Krebs, MA, D.Phil., FRS (Chairman)
Pro-Vice Chancellor Professor E.G. McKendrick, LLB, MA
The Proctor Rev C.P. Thompson, MA, D.Phil.
Professor P.C. England, MA, D.Phil., FRS
Professor R. Fortey, BA, MA, Ph.D, ScD, FRS, FGS, FLS
Professor C. Gosden, MA, Ph.D.
Dr L. Gilmour, MA, Ph.D., FSA, AMA
Professor A.N. Halliday, B.Sc., Ph.D.
Professor P.H. Harvey, MA, D.Phil., D.Sc., FRS
Professor P.W.H. Holland, MA, Ph.D., D.Sc., FRS
Professor J. Michie, M.Sc, MA, D.Phil.
Dr M. O'Hanlon, MA, Ph.D.

Professor W.J. Kennedy, MA, B.Sc., Ph.D., D.Sc., FGS (Secretary)
Dr S. De Grave, B.Sc., M.Sc., Ph.D. (in attendance)
Professor D.J. Rogers, MA, D.Phil. (in attendance)
Professor D.J. Siveter, MA, B.Sc., Ph.D., FGS (in attendance)
Dr D.J. Waters, MA, D.Phil. (in attendance)

Appendix 2: Staff of the Museum at 31 July 2010

Director: Professor W.J. Kennedy, MA, B.Sc., Ph.D., D.Sc., FGS
Administrator: Ms W. Shepherd, MA (status), B.Sc.
Assistant to the Director: Mr K.L. Walsh, MA, PGCE, FGS

The Hope Entomological Collections

Curator: Professor D.J. Rogers, MA, D.Phil.
Assistant Curator: Mr D.J. Mann, BTEC, FLS, FRES
University Support Staff: Ms K. Child, BA; Ms S.B. Hayes, B.Sc.; Mr J.E. Hogan, B.Sc.; Ms Z.M. Simmons, B.Sc.; Ms A. Spooner, BSc

Geological Collections

Acting Curator: Professor D.J. Siveter, MA, B.Sc., Ph.D., FGS
Assistant Curator: Mr P.A. Jeffery
Curatorial Officer: Ms E.A. Howlett, BN
University Support Staff: Mr A.P. Ashington; Ms J. Hay, BA; Mrs E.J. Irving, BA, M.Sc.
Research Assistants: Dr S. Joomun, B.Sc., M.Sc., Ph.D.; Dr C.A. Lewis, B.Sc., M.Sc., Ph.D.

Mineralogical Collections

Curator: Dr D.J. Waters, MA, D.Phil.
Assistant Curator: Miss M.T. Price, MA (status), B.Sc., M.Sc.
University Support Staff: Miss J. Corp BSc; Mrs E.J. Irving, BA, M.Sc.

Zoological Collections

Acting Curator: Dr S. De Grave, B.Sc., M.Sc., Ph.D.
Curatorial Officer: Mrs M.B. Nowak-Kemp, B.Sc., M.Sc.
University Support Staff: Ms K.C. Pocklington, BA

Hope and Arkell Libraries

Acting Librarian: Mr M. Dickerson, MA (Oxon.); Dip.Inf.Man. (TVU)
Conservator: Mr R. Hall, NDD, B.Tec.

Information Technology

IT Officer: Ms S. Phibbs, BA
IT Assistant: Dr R. Painter, BA, M.Sc., D.Phil.

Education and Outreach

Head of Education: Mrs J. Stott, BA, PGCE
Secondary School Officer: Ms S. Lloyd, B.Sc., PGCE
Primary School and Family Officer: Mr C. Jarvis, BA, PGCE, FLS
Community Officer: Mrs S.J. Griffiths, BA, MA (maternity leave)
Community Officer: Ms F. Bain, BA (maternity cover)
Volunteers Co-ordinator: Mrs J. Todd, M.Sc.
Volunteer and Outreach Assistant: Ms C.J. Cheesman, MA, Ph.D.
Education Assistant: Ms R. Smith, BA, PGCE; Ms E. Wilson, BA

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 Manager: Mr I. Hussain
Front of House Staff: Mr S. James, MA; Mr L. Kowalski; Mr C. Goulbourne, B.Sc.
Head of Technical Services: Mr C. Burras
Cabinet-maker: Mr W. Richey
Workshop and maintenance: Mr P. Johnson
Shop Supervisors: Mrs J. Wright; Ms F. Puspitasari (maternity leave);
Shop Assistants: Miss F. Dunnington; Miss G. Moffa, BA; Ms G.M. Moretta
Cleaners: Mr C. Abinett; Mr G. Coates

Honorary Associates (Curation)

Mr M. Ackland
Mr J.B. Davies, MA, M.Sc.
Dr J.W. Ismay, B.Sc., Ph.D.
Dr A.C. Pont, MA, D.Sc.
Mr P.S. Clasby, BA
Mr R. Gabriel
Mr I. Lansbury, M.Phil.
Mr H.P. Powell, MA

Honorary Associates (Research)

Mrs E.M.H. Cooke, MA
Mr G. de Rougemont, BA
Mr J. Cooter, B.Sc.
Dr J. Kathirithamby, B.Sc., Ph.D.
Dr G.C. McGavin, MA (status), B.Sc., D.I.C., Ph.D, FLS, FRGS
Mr R. Overall
Professor K.S. Thomson, MA, B.Sc., Ph.D.

Research Units

Environmental Archaeology Unit

Director: Professor M.A. Robinson, MA, Ph.D., FSA

Volunteers and temporary staff

E.P. Abraham Interns

Entomology: Thomas Creedy (Merton College); Roberta Iley (Brasenose College)
Geology: Lucy Gotham (Lincoln College); Caroline Halstead-Smith (Trinity College)
Mineralogy: Helen Ashcroft (Hertford College); Sophie Hibbins (St Anne's College)
Zoology: Stewart Jennings (St John's College); Emily Sturgess (Jesus College)

The Hope Entomological Collections

Nuffield Science Bursary Students: Laura Harle (4 weeks); Dominic Harrison (3 weeks)

Work Experience students: Poppy Lambert, (Marlborough School, Woodstock), Helen Waters, (Cherwell School, Oxford), Joseph Bell (Queen Elizabeth Community College, Crediton)

Temporary staff: Mr R. Payne

Volunteers: Laura Bellas, Laura Bovenzier, Duncan Coston, Jason Davies, Kat Drayson, Rebecca Evans, John Fitzgerald, Miranda Gardener, Lloyd Garvey, David Gormley, Brian Harding, Dominic Harrison, Kathryn Harrold, Peter Hughes, Andreas Losekann, Micheal Orchard (University of Hull), Charlotte Owen, Russell Payne, Tatiana Solovieva (Wychwood School), Amoret Spooner, Neil Springate, William Stevens, John Thurloway, Shaun Waters, Kirsty Wheeler, Steven Williams.

Geological Collections

Work experience students: Megan Bates (The Cherwell School), Robbie Davis (Faringdon Community College), Alice Halstead (King Edward VI High School for Girls, Birmingham)

Volunteers: Izzy Carr, Mark Ebden, Samantha Titchell, Daniel Collins (University of Oxford), Charlotte Elston (University of Southampton), Sean McMahon (University of Oxford), Etienne Stockland (University of Oxford), Lynsey Swift (University of Leicester), Georgina Treanor (Oxford Brookes).

Mineralogical Collections

Volunteers: Mrs J. Allen, Miss S. Beggs, Mrs J. Randle, Mr E.C. Smith

Zoological Collections

Work Experience: Sophie Scoter (St. Peter's Independent School, York)
Volunteers: Emily Sturgess (Oxford University), Stewart Jennings (Oxford University), Louisa Wood (Oxford University), Bethany Palumbo (University of Lincoln)

Education and outreach

Teacher placement/MA Student: Rowan Fuggle (University of Oxford); Lindsey Swift (University of Leicester).

Work experience: Jane MacDonald (St Helen and St Katharine School); Gina Macfarlane (Cheney School).

Other education and outreach volunteers are too many to name here individually. We are grateful to them all for giving so much time and unfailing enthusiasm to the Museum over the past year. Both the family programme and collections have benefited greatly from their support. Thank you especially to the Sunday Volunteer Team who has enabled our popular weekly activities for families to continue throughout the year.

Environmental Archaeology Unit

Volunteers: Afra Morris (Keble), Chris Turner (St Hugh's).

Appendix 3: Finance

General

The University's General Board made a grant towards recurrent costs totalling £769,800 for the financial year ending 31 July 2010. In addition we received this year's instalment towards recurrent costs from AHRC amounting to £327,000.

Grants awarded and Donations received

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

Fundraising Appeal launched on 27 May 2010

£15,000	The 29th May 1961 Charitable Trust	£5,000	Mr Philip & Mrs Jude Pullman
£5,000	The Sants Charitable Trust	£2,500	Lord Faringdon Charitable Trust
£2,500	The Laing Family Trust	£1,000	Mr Simon Keswick
£500	The Hon Mr Matt Ridley	£500	Mr Tim Stevenson
£500	Lady Yardley	£250	Sir David Yardley
£100	Mr Richard Hardman		
Sponsorship of the Museum's 'son et lumière'	Professor Raymond Dwek		

Education & Collections Support

£340,000	MLA Renaissance in the Regions	Education, IT, Collections Support
£75,000	E.P.A. Cephalosporin Fund	Entomology (Huxley Room Project)
£75,000	MLA Designation Development Fund	Entomology (Huxley Room Project)
£35,000	E.P.A. Cephalosporin Fund	Geology
£20,000	MLA Strategic Commissioning	Education (Secondary School salary support)
£9,466	E.P.A. Cephalosporin Fund	Zoology
£3,000	Idlewild Trust	Entomology (Huxley Room Project)
£2,000	Oxfordshire County Council	Entomology
Joint Museums & Botanic Gardens Grant (administered by the Ashmolean Musem):		
£410,500	Heritage Lottery Fund	Education (Trainee placements)

Museum Core Funds

$65,000	Negaunee Foundation

Individual support

Entomological Collections

Mr Mann along with Geoff Hancock (Hunterian Museum, Glasgow), Jeanne Robinson (Kelvingove Museum, Glasgow) and Garth Foster (The Aquatic Coleoptera Conservation Trust) received funds from the Glasgow Natural History Society Lloyd Binns Bequest and from Scottish Natural Heritage for fieldwork on the Hebridean islands of Coll and Tiree.

Dr Pont was supported by the EU Synthesys programme to visit the Muséum national d'Histoire naturelle, Paris, France, 28 March to 2 April 2010, to study the Muscoidea (Diptera) species described by the 19th century French dipterist Justin Macquart.

Dr Pont also received funds to visit Armenia, 11-28 June 2010, to collect Diptera for the Natural History Museum, London, supported by the NHM Acquisitions Fund. The fieldwork was carried out in association with the ISTC 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 direction of Drs Maria and Karina Harutyunova of the Institute of Molecular Biology, National Academy of Sciences, Republic of Armenia.

Fieldwork focussed on the collection of Diptera predators of biting black flies (Simuliidae) and mosquitoes (Culicidae). The Oxford University Museum of Natural History received some of the specimens collected.

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 second year.

Zoological Collections

Dr De Grave received various small travel grants to attend conferences (IUCN/Academia Sinica) and museum visits (CoML/FMNH).

Environmental Archaeology Unit

Professor Robinson received a grant of £275 from the Department of Classics, University of Cincinnati to visit their excavation in Pompeii and a grant of £5,050 from the British Academy for the excavation of a Roman garden and the underlying prehistoric deposits at Pompeii.

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

Appendix 4: Research Projects

The Hope Entomological Collections

Professor Rogers continued his research on infectious disease risk mapping.

Mr Mann continued his work on the historic types housed in the collection. He continued his work on the British oil beetles (Meloidae) and Scarabaeoidea and on the taxonomy and ecology of world dung beetles (Scarabaeidae: Scarabaeinae). Mr Mann started collaborative projects with Dr Sabu Thomas (St. Joseph's College, Devagiri, India) and Enoka Kudavidanage (National University of Singapore) on dung beetles. He visited the Natural History Museum, London; the British Entomological and Natural History Society collections; Hunterian Museum, Glasgow; the Czech National Museum, Prague; InBio, Costa Rica as part of his research on the Scarabaeinae.

Mr Hogan continues his part time PhD studies on the systematics and biogeography of ground beetles. Mr Hogan worked with Dr Anita Malhotra, University of Bangor, on the non-destructive DNA sampling of historic Hymenoptera specimens and he researched the Micro-Lepidoptera types of Haworth in collaboration with Jon Lewis, University of Maryland.

Ms Simmons continues her studies on world Erotylidae and on the Asa Fitch (1809-1879) types in the historic Hemiptera collections.

Mr Ackland continued the identification of the Anthomyiidae collected by Dr Pont, Dr Vera Sorakina and Dr Anatoly Barkalov in the Altai Mountains of Russia; by Dr Pont in Armenia and South Africa. He has continued to collaborate with Dr Verner Michelsen (Copenhagen) of the revision of the European Anthomyiidae, resulting in several papers and some additional British species.

Mr Cooter continues his research on the taxonomy of the Palaearctic Leiodinae.

Dr Ismay continues his collaborative research on Palaearctic, Australian and African Chloropidae. Dr Ismay collaborated with Dr J. Deeming (National Museum and Galleries of Wales, Cardiff) and Dr M. von Tschirnhaus (Bielefeld, Germany) in the study of African Chloropidae. Dr Ismay began research on *Lipara* (Chloropidae) reed gall flies in collaboration with Hymettus Ltd funded by DEFRA.

Mr Gabriel continues working on the taxonomy of Central and South American Theraphosidae. He visited the Natural History Museum in London, the American Museum of Natural History in New York, Harvard Museum of Comparative Biology in Boston, and the Fairchild Museum, University of Panama, Panama City, to study material and catalogue the theraphosid collections.

Dr Kathirithamby in collaboration with an international team began the *Catalogue of Life* Strepsiptera database.

Mr Lansbury continues his research on water bugs (Hemiptera), with his manuscript on the Australian Pleidae nearing completion.

Dr Pont in addition to a number of solo projects on the taxonomy of world Muscidae, has been working on several collaborative projects, including the Diptera genera described by A.J.B. Robineau-Desvoidy with Dr Neal Evenhuis (Honolulu), Dr Jim O'Hara (Ottawa) and Dr

Thomas Pape (Copenhagen); the Muscidae of Fiji, New Caledonia and Vanuatu with Dr Marcia Couri (Rio de Janeiro); the Russian Muscidae, with a catalogue of Siberian Muscidae (in press) with Dr Vera Sorokina (Novosibirsk) and Nikita Vikhrev (Moscow); the molecular classification of the dipterous family Muscidae with Dr Rudolf Meier (Singapore).

Mr de Rougemont continues his research on the taxonomy of rove beetles (Coleoptera: Staphylinidae).

Geological Collections

Professor Siveter and colleagues continued their research on the Silurian fossils of the Herefordshire Konservat-Lagerstätte, with another two papers published in Royal Society journals, one on crustaceans, the other on a lophophorate, the latter also briefly featuring under the title 'Small, soft, Silurian' in the research highlights section of *Nature*. Discoveries that will warrant detailed investigation over the next twelve months include a variety of new arthropods, including several specimens of a calymenid trilobite species with appendages preserved, as well as brachiopod species, and several enigmatic forms. The Herefordshire material is providing significant new data on the soft-bodied morphology on a range of invertebrate groups. A third paper, also published through the Royal Society, on the soft-part anatomy of Cambrian crustaceans, represents a further contribution, together with colleagues from Yunnan and Leicester universities, on the Lower Cambrian biota of the Chengjiang Lagerstätte from Yunnan Province, China. Professor Siveter also assessed important Palaeozoic arthropod sites in Great Britain, and the significance of their faunas, in a book for the Joint Nature Conservation Committee of the UK.

Mr Jeffery began work with Dr S. Tracey (NHM/ ICZN) on the Early Eocene mollusc fauna of the now worked-out Southleigh Landfill Site in Hampshire. He did further research on gastropod shell pagurisation, the new bivalve genus *Axinaearcopsis*, and bivalves in amber, and continued on his long-term project of identifying and describing the British Bartonian mollusc fauna.

Professor Kennedy completed a revision of the ammonites of the subfamily Acanthoceratinae from KwaZulu, South Africa, with Dr H.C. Klinger (Cape Town), described a new species of the Albian ammonite *Lyelliceras* from southeast France, and revised the Cenomanian ammonites of Belgium with Dr J.W.M. Jagt (Maastricht).

Mineralogical Collections

Dr Waters was engaged in a number of continuing research projects with local and external collaborators:

Metamorphic and microstructural history of the South Tibetan Detachment system in the Everest area, with M.P. Searle (Oxford), J.M. Cottle (UC Santa Barbara), R.D. Law (Virginia Tech), and M.J. Jessup (Knoxville, Tennessee).

Pressure-temperature-time paths in the Karakoram Metamorphic Complex, with M.P. Searle, M.J. Streule, R. Palin (Oxford) and R.J. Phillips (Edinburgh).

The Red River – Ailo Shan shear zone system in South-east Asia, with M.P. Searle , R. Palin (Oxford), J.M. Cottle (UC Santa Barbara), M.S.A. Horstwood (NIGL, Keyworth).

Nature and origin of the gold deposits at Damang Mine, Ghana, with L.J. Robb and A.J. White (Oxford), a D.Phil project funded by Gold Fields Ltd.

'Deep into the Subduction Channel', an *Alliance* project (British Council Franco-British Research Partnership Programme) between Oxford University and Université Pierre et Marie Curie (Paris VI) on high-pressure metamorphism in the Alps and elsewhere, involving P. Agard, E. Burov and S. Angiboust (Paris), C.-J. De Hoog (Edinburgh), D.J. Waters, M.P. Searle, R.G. Langdon and A.B. Watts (Oxford).

Miss Price continued research on decorative stones.

Mr Walsh carried out research, partly in Nyanga district, Zimbabwe, with David Love of Water Net, University of Zimbabwe to test a hypothesis that archaeological structures were connected with ancient mining.

Zoological Collections

Dr De Grave continued research into crustacean taxonomy and systematics, with much emphasis this year placed on completing several large-scale projects. As usual various projects were also pursued with colleagues worldwide on biogeography and phylogenetics.

Mrs Nowak-Kemp continued her research into the history of the University's zoological specimens in general and the Chelonia material of Thomas Bell in particular. She worked with Professor Uwe

Fritz from Germany on the identification of the many type specimens of this group of animals. She also continued her research into the history of the Human Remains Collection. She worked on a project with Yannis Galanakis, a colleague from the Ashmolean Museum, on the Rolleston/ Rhousopulos correspondence concerning the purchase and study of ancient Greek crania in the 19th century, and with a colleague from Qatar on the extinct Bali tiger.

Ms Pocklington continued research into the use of bitumen as a traditional sealant for fluid specimens. She also continued to work with Mrs Simmons (Entomology) and specialist sealant manufacturers Mantek, researching the suitability and longevity of rubber seals on jars used in the invertebrate spirit collection.

Before her departure in February, Ms Goulding completed her biogeographical analysis of pontoniine shrimps, demonstrating that the collecting localities of taxonomists are of equal, if not of more importance, than their historical distribution patterns.

Environmental Archaeology Unit

Laboratory work has been completed on the insects from Silbury Hill and a report prepared for English Heritage. Further research is being done on assemblages of scarabaeid dung beetles from England of Neolithic to Roman date. The first paper has been published arising from the investigation with the Research Laboratory for Archaeology and the History of Art of stable isotopes of carbon and nitrogen in domestic animal bones from the Thames Valley.

Appendix 5: New Acquisitions

The Hope Entomological Collections

By donation

This academic year we received a total of 74 donations, totalling some 50,000 specimens. Notable donations included:

Two paratypes *Harpactirella overdijki* and two paratypes *Pterinochilus lapalala*. (from R. Gallon)

408 Identified World Anthomyidae (from M. Ackland)

One paratype *Nanophthalmus bulgaricus*, two paratypes *Neocephennium hlavaci* and two paratypes *Cephennium wunderlei* (from J. Cooter)

500 Arachnids from the Altai, Russia, the majority are identified and are new to the collection (from D.V. Logunov)

10,000 UK Coleoptera, including a collection of identified Phalacridae (from E. Lewis)

c. 20,000 specimens of UK arthropods (from Oxford County Council Museum).

Geological Collections

By donation

Microbial filaments from the Precambrian of Church Stretton, Shropshire (from Dr R.H.T. Callow)

Triassic bivalves from Italy (from Dr H.C. Jenkyns)

Crinoid 'life assemblages' from the Lias of Eype, Dorset (from Mr A. Holmes)

Large pliosaur vertebra from the Kimmeridgian of the Abingdon area (from Mr J. Butterworth)

Jurassic ammonites from Dorset and North Lincolnshire (from Dr J.K. Wright – c. 100 specimens)

Cretaceous invertebrates from Holywell, Sussex (from Professor A.S. Gale)

By bequest

Entire collection of specimens (c. 5,000) and offprints (c. 6,000) (from Professor J.H. Callomon).

By fieldwork

Silurian soft-bodied invertebrates from the Herefordshire Lagerstätte.

Samples of rough-prepared Inferior Oolite building stones from the 19th century mines at Whittington, Gloucestershire (obtained with the assistance of Mr A.J. Price).

Jurassic invertebrates from Oxfordshire, Gloucestershire, Buckinghamshire, Bedfordshire and Dorset.
Eocene invertebrates from Hampshire and Surrey.

Mineralogical Collections

By donation

Silicified sandstone 'sarsen stone' from Oxfordshire (from Mr N. Allen)

Baryte from Cumbria (from Dr J.R. Barrett, through Mrs J. Randle)

A collection of rocks and minerals (from Mrs E. Clifford)

Gabbro 'verde Siena' from Italy (from Mr I. MacDonald, McMarmilloyd Ltd)

Dendritic hematite from Somerset (from Mr H.P. Powell)

Gold from Highland (from Mrs J. Randle)

Limestone breccia samples of polished columns (from The Royal Society, through Ms S. Fischer of Burrell Foley Fischer LLP)

Copper from Devon (from Mr B.P.C. Smith)

Quartz var. chalcedony from Co. Antrim; marble, gabbro and schist from Spain (from Mr E.C. Smith)

Hematite from Somerset; spessartine from Gwynedd, sphalerite from Isle of Anglesey; fluorite from Co. Durham; schorl and staurolite from Angus; andalusite, cryptomelane, diopside, garnet, grossular, hematite, schorl and staurolite from Grampian; silimanite and laumontite from Highland (from Mr R. Starkey)

Azurite, bornite, chalcopyrite, copper, cuprite, galena, libethenite, malachite, pseudomalachite, sphalerite, tarbuttite, and vanadinite from Zambia; colemanite from USA (from Mr I. Thompson)

Quartz var. morion from Cornwall (from Mr N. Tovey)

Potomac marble from USA (from Mr J.S. White)

By fieldwork

Rhodochrosite from Bulgaria (from Mr K.L. Walsh)

By transfer

Minerals, and a large collection of well-localised metamorphic rocks and thin sections (from the University of Reading)

Zoological Collections

The caridean shrimp collections were significantly enriched this year by donated collections (both small and large) from Taiwan, Greece, Australia, Mexico, Indonesia, Senegal, Malta, Easter Island, Moorea, Hawaii, as well as larger collections spanning worldwide locations.

The Hope and Arkell Libraries

Over the year 5.46 linear metres of new material were added, including 194 books, 109 pamphlets and 340 periodical parts. 1,417 items were retrospectively converted onto OLIS and 209 offprints added to the intranet databases.

By purchase

The most significant journal purchase by price were:
Australian Journal of entomology **49** (2010); *Crustaceana*, 2010;
Insect systematics and evolution **41** (2010);
Journal of systematic palaeontology, **8** (2010);
Palaeontographical Society monographs [for 2009](2010);
Palaeontology, **53**(2010); *Systematic entomology,* **35** (2010)

By donation

The following were significant donations of journals made to the library during the course of the year:
British Dragonfly publications for 2009-10 (from Mr D. Mann)
Studia dipterologica **15(1-2)** (2008); *Zoology in the Middle East* **47, 48** (2009), **49** (2010) (from Dr A. Pont)

Appendix 6: Loans

Entomological Loans

In total 92 loans of 16,323 specimens, of which 32 loans of 112 specimens were types. This breaks down to 78 loans of 16,221 insect specimens, and 14 loans of 102 specimens of arachnids. Loans were sent worldwide, with 36 (10,773 specimens) loans to England; 1 (6 specimens) loan to Wales; 1 (133 specimens) loan to Scotland; 1 (10 specimens) to Ireland; 29 (4,678 specimens) to Europe; 24 (723 specimens) loans outside Europe.

Geological Collections

10 loans were sent out (9 to the UK, 1 to the Netherlands). A total of 78 specimens were sent, including Ordovician and Silurian trilobites, Silurian crinoids, material from the Herefordshire Lagerstätte, a Devonian fish, and the femur of an ornithopod dinosaur. Also, 4 specimens from the Lhwyd Collection,were loaned for a Bodleian exhibition on John Aubrey (1626-1697), one of Lhwyd's contemporaries in Oxford.

Mineralogical Collections

There were 9 loans of rocks, minerals and meteorites administered in the past year, supplying a total of 51 specimens for research and teaching. One sample was supplied for destructive research. Regular use was also made of material from Stanton and South African collections in a taught undergraduate course given by Professor Laurence Robb and Dr Waters (Earth Resources 2: Ore-forming processes).

Zoological Collections

Seventy two collection transactions were recorded this year, including 64 loans to various institutions, both in the UK and abroad, totalling around 250 specimens. Six of these loan requests were for specimens for destructive analysis, mainly DNA analysis.

Appendix 7: Enquiry and Identification Services

Hope Entomological Collections

Staff and Honorary Curators have, as usual provided a free identification and entomological information service to University Staff and students, as well other university students and academics, entomologists and the general public. In total there were over 2,000 enquires requiring an estimated 800 hours of staff time. Mr Mann joined as an invertebrate specialist on the internet identification service Ispot (http://ispot.org.uk/).

Geological Collections

This year, staff dealt with 620 enquiries, of which 335 were identification enquiries and 285 were other enquiries.

Mineralogical Collections

The Assistant Curator dealt with 17 requests for identifications of specimens by academic researchers and members of the public, in excess of 111 specimens. Eighty five non-identification enquiries were counted.

Zoological Collections

The Collections received over 320 official enquiries covering topics ranging from the history of individual collectors or collections, individual species and specimens, requests for information about holdings and their care.

In excess of 2,500 specimens were identified by members of staff, the majority in connection with overseas biodiversity studies, but including 118 vertebrate specimens. Additionally 89 identifications were for the general public, mainly osteological material, but also of photographed specimens.

Appendix 8: Official Visitors

The Hope Entomological Collections

Over 150 scientific visits were made to the collections by entomological researchers, students and artists. Notable visitors included Silvio Nihei and Carlos Lamas (MZUSP, Brazil), Tomás Lackner (Hakkaido, Japan) and Caroline Fukushima (Universidade de São Paulo, Brazil). Professor Brett Ratcliffe and Dr Mary Liz Jameson (University of Nebraska State Museum) visited the department to study Scarabaeidae types, Jan Rùžièka (University of Life Sciences, Czech Republic) to study Silphidae, Dr Frank Menzel (Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany) and Dr Jane Smith (Warwick HRI, The University of Warwick, Wellesbourne, UK) visited, and Dr Smith presented her collection of British Sciaridae slides which form the basis of a new identification handbook for the British Sciaridae. Jean Philippe Legrand (Paris) visited to study the *Acraea* (Lepidoptera: Nymphalidae) types. Dr Vera Sorokina from the Institute for Systematics and Ecology of Animals, Russian Academy of Sciences, Novosibirsk, began a second visit to the Department of Entomology on 21 July 2010 (until 28 August), to study Russian Muscidae with Dr Pont. This visit was supported by an International Travel Grant from the Royal Society. Sergey Tarasov (Institute of Natural Science, Kaluga State University, Russia) visited Mr Mann to study oriental *Onthophagus*. The Collections hosted Sheila Wille (Department of History, University of Chicago) to study the Hope-Westwood archives. Enoka Kudavidanage (National University of Singapore) visited for two month training period, funded by the Angus McCrae bursary to work with Mr Mann on Sri Lankan dung beetles.

Geological Collections

There were 45 scientific visitors, from the UK, Spain, France, Germany, the Czech Republic, Norway, Argentina, and the USA. Material examined included a variety of Palaeozoic invertebrates; Jurassic oysters; Jurassic turtles and plesiosaurs; dinosaurs; fish; and coprolites. There were 41 other visitors, including 11 in organised parties.

Geological Collections also welcomed, in connection with the Chengjiang exhibition, a delegation of five from Yunnan University, Kunming, China, including the President of the University, Professor He Tianchun, and the discoverer of the Chengjiang biota, Professor Hou Xianguang.

Mineralogical Collections

There were eighteen official visitors to the collections. They included the Head of Natural History for the Qatar Museums Authority, Khalid Hassan Al-Jabeer. In addition Collections staff hosted visits by staff and students from the Department of Museum Studies, University of Leicester, members of the Southern Branch of the Russell Society, the London branch of the Open University Geological Society, and by natural history illustration students and their tutors Rosemary Wise and Barbara McLean.

Zoological Collections

A total of 104 individual visits were made to the Zoological Collections by visitors from a number of countries, both in Europe and further afield.

Additionally, there were a number of organised group visits, including the annual visit of Harvard University students and their teachers, French students studying glass and glass blowing art, a Chinese delegation, the Frewen Club, an American Christ Church summer school studying the 17th century collections and collectors, and the AUA branch of Oxford University.

Longer term visitors were Ms S.-C. Chang (National Taiwan Ocean University) who worked in the collection for a month in connection with her MSc thesis on Taiwanese shrimp, and Dr M. Johnson (University of Hull) who was here on the first leg of his St John's funded Fellowship to work on the eyes of shrimps.

Education and Outreach

The Education Department had sixteen official visitors. These included education staff from Basing House, Museum of Oxford, the Natural History Museum, the Northmoor Trust, Oxfordshire Museum, Stoke Museums, and the Victoria and Albert Museum.

Research visits included museum studies students from University of Oxford, Leicester University and Harvard University.

The department also hosted vistors from Germany, Oman and USA.

Appendix 9: Publications

The Hope Entomological Collections

Ackland, D.M. (2010). Additions and changes to the British List of Anthomyiidae (Diptera). *Dipterists Digest,* **17**, 79-82.

Cooter, J. (2009). *Diaonus coerulescens* Gyllenhal (Col., Staphylinidae) in Kazakhstan. *Entomologist's Monthly Magazine*, **145**, 106.

Couri, M.S., **Pont, A.C.** and Daugeron, C. (2010). The Muscidae (Diptera) of New Caledonia. *Zootaxa*, **2503**, 61 pp.

Evenhuis, N.L., O'Hara, J.E., Pape, T. and **Pont, A.C.** (2010). Nomenclatural studies toward a world list of Diptera genus-group names. Part I. André-Jean-Baptiste Robineau-Desvoidy. *Zootaxa*, **2373**, 1-265.

Evenhuis, N.L., Pape, T., **Pont, A.C.** and Thompson, F.C. (2010) Flying after Linnaeus: Diptera names since *Systema Naturae* (1758). *In*: Polaszek, A. *Systema Naturae 250 - The Linnaean Ark*. CRC Press, Boca Raton, London, New York, 75-82.

Gabriel, R. (2009). New spider species named for Ruben Blades. *Bocas Breeze Newspaper*, **6**(10), 1-4.

Gabriel, R. (2010). *Poecilotheria nallamalaiensis* Rao *et al*. 2006 a junior synonym of *Poecilotheria formosa* Pocock, 1899. *Newsletter of the British Arachnological Society*, **118**, 12-15.

Kathirithamby, J. (2009). Host- parasitoid associations in Strepsiptera. *Annual Review of Entomology,* **54,** 227-249.

Kathirithamby, **J.**, Hayward, A., McMahon, D. P., Andreazze, R., Tadeu de Almeida Andrade, H., Ferreira, R. S., and Fresneau, D. (2009). Conspecifics of a sexually dimorphic, heterotrophic heteronomous species of Strepsiptera (Insecta) are matched by molecular characterization. *Systematic Entomology* DOI: 10.1111/j.1365-3113.2009.00507.x

Kathirithamby, J., Taylor, S.J. and Longion, J.T. (2009). New host record for *Caenocholax fenyesi* sensu lato (Strepsiptera: Myrmecolacidae) from Costa Rica. *Pan Pacific Entomologis,* **85,** 22-24.

Hamel-Leigue, A.C., Herzog, S.K., **Mann, D.J**., Larsen, T.H., Gill, B.D., Edmonds, W.D. and Spector, S. (2009). Distribución e historia natural de escarabajos coprófagos de la tribu Phanaeini (Coleoptera: Scarabaeidae: Scarabaeinae) en Bolivia. *Kempffiana*, **5**(2), 43-95.

Hartemink, N.A., Purse, B.V., Meiswinkel, R., Brown, H.E., de Koeijer, A., Elbers, A.R.W., Boender, G.-J., **Rogers, D.J.** and Heesterbeek, J.A.P. (2009). Mapping the basic reproduction number (R_0) for vector-borne diseases: a case study on bluetongue virus. *Epidemic*, **1**, 153-161.

McMahon, D.P., Hayward, A. and **Kathirithamby, J**. (2009). Mitochondrial genome of *Mengenilla australiensis* (Strepsiptera). *BMC Genomics* **10**, 603. DOI.10.1186/1471-2164-10-603 http://www.biomedcentral.com/1471-2164/10/603

Mann, D.J. (2010). Notes on the nomenclature of the forms and varieties of *Cryptocephalus bipunctatus* (Linnaeus, 1758) (Col., Chrysomelidae). *Entomologist's Monthly Magazine,* **146**, 113-116.

Mann, D.J. and Barclay, M.V.L. (2009). The identification and distribution of *Cryptocephalus biguttatus* (Scopoli, 1763) and *Cryptocephalus bipunctatus* (Linnaeus, 1758) var. *thomsoni* Weise, 1881 in Britain. *The Coleopterist*, **18**(3), 166-181.

Michelsen, V. and **Ackland, D.M.** (2009). The *Pegomya maculata* species group (Diptera Anthomyiidae) in Europe, with description of a new species. *Zootaxa*, **2315**, 51-65.

Pont, A.C. (2009). A new species of *Coenosia* Meigen, 1826 from the Seychelles Islands (Insecta, Diptera: Muscidae). *Phelsuma*, **17**, 9-11.

Pont, A.C. and Dsouli, N. (2009). A new species of *Haematobosca* Bezzi from Gabon (Diptera, Muscidae). *Studia dipterologica*, **15**, 259-266.

Purse, B.V., Brown, L., Harrup, M.P.P., and **Rogers, D.J.** (2008). Invasion of bluetongue and other orbivirus infections into Europe: the role of biological and climatic processes. *Revue scientifique et technique (International Office of Epizootics)* **27**, 427-442.

Purse, B.V., and **Rogers, D.J.** (2009). Bluetongue virus and climate change. *In*: Mellor, P.S., Baylis, M. and Mertens, P.P.C. (Eds), *Bluetongue*. Elsevier, London, 343-358.

Randolph, S.E. and **Rogers, D.J.** (2010). The arrival, establishment and spread of exotic diseases: patterns and predictions. *Nature Reviews Microbiology* **8**, 361-371.

Švec, Z. and **Cooter, J.** (2010). A new species of *Leiodes* (Col., Leiodidae) from China, with new geographical records of *Leiodes* species. *Entomologist's Monthly Magazine*, **146**, 101-104.

Geological Collections

Hou X.-G., Williams, M., Siveter, David J., **Siveter, Derek J.**, Aldridge, R.J. and Sansom, R.S. (2010). Soft-part anatomy of the Early Cambrian bivalved arthropods *Kunyangella* and *Kunmingella*: significance for the phylogenetic relationships of Bradoriida. *Proceedings of the Royal Society of London B*, **277**, 1835-1841.

Jarzembowski, E.A., **Siveter, Derek J.**, Palmer, D. and Selden, P.A. (2010). *Fossil arthropods of Great Britain*. Joint Nature Conservation Committee, Peterborough, 299 pp.

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