Oxford University Museum of Natural History

Annual Report 2004-2005

Chairman's Report

The year has been an outstanding one for the Museum. It has been a time of real team effort, and I congratulate all concerned on the successes achieved. Fund raising has brought in £755,000 in external funds, an impressive figure, comparing favourably with the £899,000 core funding to the Museum provided by the AHRC and the University in the same year. This exceptional figure reflects the award of £546,000 by ReDiscover for the renewal of our displays. This has been a major undertaking that has dominated the activities of the Museum since November. The results are visible throughout the public areas and we are well on time for a successful completion of the main elements of the project by the end of 2005.

Success in this area has been matched by the activities of our education, access and outreach team. The award of *The Guardian* newspaper Family Friendly Museum of the Year award jointly to this Museum and our neighbours in Pitt Rivers from a field of around 1,000 entries was a major, and well deserved success. The activities of our staff and volunteers throughout the year, and especially at weekends, have become a feature of life in Oxford for many families. The joint 'In a Different Light' contribution to the European Night of Museums was a spectacular success, short-listed for commendation by the *Museums Journal*.

These visible activities have been complemented by curatorial and conservation activities in all collections behind the scenes. Of particular note is the initiation of a major re-housing exercise in entomology, funded by substantial support from the Strategic Research Infrastructure Fund.

All in all, a busy and fruitful year: my thanks and congratulations to all those involved for their sterling efforts.

Sir John Hanson
Chairman of Board of Visitors

Director's Report

The year covered by this report has seen major team efforts and successes by my colleagues across all areas of our activities. The year began with our awaiting anxiously for the result of our bid to the Millennium Commission and the Wolfson Foundation for support from the ReDiscover Fund for the continuing renewal of our displays. The project, entitled 'Feeling Good!', was planned for 30 months. Changes in the ground rules after our submission meant that the £542,000 which we were eventually awarded had to be spent in half that time. This was a daunting task, but we are on schedule to complete on time, thanks to extraordinary efforts by all involved, for which I am in their debt. By January 2006, we will have new 'Evolution', 'History of Life', and 'Invertebrate Biodiversity' displays, two walls of touchable fossils, and touchable natural history specimens in their own display area, as well as scattered throughout the museum. Furthermore, our new 'Primate/Human' and 'Lower Vertebrate' displays will be complete. The display project will continue, with grants of £46,000 from the Trust for Oxfordshire's Environment and £50,000 from DCMS/The Wolfson Foundation, which will fund new insect and plant displays on the upper galleries.

A second major project during the year was the compilation of our bid to the Arts and Humanities Research Board for recurrent funding, 2006-7 to 2008-9. This again involved a team effort and input from all sections of the museum. We are particularly grateful to Professor David Bruton (Oslo) for acting as our nominated referee.

A third major project was the preparation of our bid for Accreditation. This is the successor scheme to Registration, and is an essential prerequisite for applications to external funding agencies. This involved not merely form filling (challenging enough!), but rapid responses and input from all sections of the Museum, as we revised and updated our Five Year Plan (2005-6 to 2009-10), Acquisition and Disposal Policy, Disaster Recovery Plan, Documentation Policy Statement, and Documentation Procedural Manuals for each of the collections. We are all indebted to Monica Price for coordinating and masterminding this project.

A further substantial project during the year was the preparation of our submission for funding to the South-Eastern Hub under the Renaissance in the Regions project, which, if successful, will place our IT, documentation and educational activities on a firm financial basis. Our Designation Challenge Fund team, afforced by Susan Birch and Menaka Rambukwela, continued a major project to prepare a new DDA-compliant Website for the Museum and continue the expansion of our image archives.

During the year a major refurbishment of the lecture theatre was completed. New seats, lighting, and audiovisual provision were installed to meet DDA requirements.

The first phase of refurbishment of former Inorganic Chemistry Space saw the installation of a lift and release of new office and storage space. This has allowed us to partially clear the southwest stairwell of geological cabinets, which was a prerequisite for bringing the lift into service. It has also allowed us to house our colleagues from Pitt Rivers during their building operations. Discussions on release of further space for a cafeteria and education facility continue. There have also been discussions and the initiation of a feasibility study to develop a much-needed joint museums offsite store.

Our public activities have been an enormous success. Visitor numbers were 296,298 (as compared with 291,758 in 2003-4, a 1.6% increase), with 21,994 pupils visiting us in organised groups. The range and scope of our activities are noted elsewhere, but two of the many special events merit report here. On the 14 May, a joint evening opening with the Pitt Rivers Museum filled both museums with visitors who admired the minerals and insects that glowed in the dark, listened to the gamelan, and watched a showing of the silent movie *The Lost World*.

These and other activities of the two museums were recognised by our winning *The Guardian* newspaper's Family Friendly Museum of the Year Award for 2005. Our outreach and access activities have, again, been a team effort, and all credit is due to our portering and shop staff, aided and abetted by colleagues and volunteers (organised by Joy Todd), all of whom have excelled themselves and contributed much time and effort, especially to our week-end activities.

It is with regret that I record the death of Mr Ernie Taylor, who was Chief Technician in the Hope Entomological Collections for 38 years until his retirement in 1980.

Professor Steve Simpson, Curator of the Entomological Collections since 1986, departed on 31 December 2004 to take up an ARC Fellowship at the University of Sydney. During his time with us, Steve made a truly impressive contribution to our research profile and to the

management of both museum and collections. Chris O'Toole retired from the Hope Entomological Collections after 37 years of service. Dr Erik Seiffert took up the Curatorship of the Geological Collections on 1 October 2004; my thanks go to Dr Derek Siveter for serving as Acting Curator in 2003-4. Joy Todd joined us as Joint Museums Volunteers Coordinator. Mr Bob Green parachuted in from the world of business to take over as acting Administrator with great success, mastering the dark secrets of OSIRIS, ReDiscover and much else. Wendy Shepherd, our Administrator, and Education Officer Janet Stott departed on maternity leave for part of the year; we convey our congratulations on the birth of a son, Archie, to Wendy, and a daughter, Emily, to Janet.

Our activities would not have been possible without the generous support of those individuals and organisations that have aided us both financially and with their time.

Jim Kennedy
Director

Part I. Central Services Report

Exhibitions and Events

The museum continued to hold an interesting range of temporary exhibitions, six in all. Each had some link with the collections of the Museum, but varied greatly in their concept, make up and design. From August we showed 'nanoq: flat out and bluesome' being a selection of photographs of taxidermic polar bears in the UK taken by Bryndis Snaebjornsdottir and Mark Wilson.

From October Rachel Utting's photographic exhibition "Specimens" was displayed. These were of some of our zoological specimens photographed from behind the scenes and not normally on display. This was followed in January by 'Every third mouthful ...', an art/science exhibition of colourful paintings by Chatwin:Martin. This was a collaborative project with entomologist Christopher O'Toole, which highlight the importance of biodiversity for our food supply. A seminar was held on 24 January to discuss the issued raised by the exhibition.

In February Graham Woodall's exhibition of paintings and moving sculptures entitled 'Journey through time and mind' was on show. This was about time and how the human mind conceived its length, its passing and the journey that is made through it. This was followed at the end of March by a popular exhibition of mosaics by Becky Paton entitled 'Fragments of Nature'. Our year was completed in July by Adam White's watercolour paintings entitled 'Divided matter', which pushed 'pretty' watercolour painting beyond its breaking point in giant experimental artworks.

The year has seen much activity in the Court display area and arcades. Many displays have been redesigned, and in some cases completely new exhibits installed. The project has been orchestrated by Kevin Walsh. This has been made possible thanks to the funding of The Millennium Commission and The Wolfson Foundation, through the ReDiscover – 'Feeling Good!' programme. The project is due to be completed by December 2005.

As ever the museum continues to be in demand for filming, both with the BBC and many private film companies, thus giving exposure to the magnificent building and its collections. The filming of the swifts in the tower is becoming an annual event, and this year featured in Bill Oddie's *Spring Watch* series, with valuable assistance from Mr Roy Overall, who regularly visits the tower during the season to monitor their breeding progress. A documentary, *The Story of God*, due out later in the year, features Professors Lord Robert Winston and Richard Dawkins in animated debate. Our rich variety of specimens continue to provide interest for educational film makers.

Professor Simpson's work on locust research and the protein leverage hypothesis for human nutrition received considerable national and international coverage. In addition, his locust swarming research featured in a 60-minute *National Geographic* film that was broadcast worldwide in February. It also featured in *Science* (2004, **306**, 1881).

Dr McGavin was interviewed on radio and television several times about a variety of insect and spider related topics.

The wonderful displays of the Museum court and gallery, together with the refurbished 300 seat lecture theatre, attracted conferences, book launches, dinners, receptions and charity

events, thus continuing to generate much needed revenue with over 65 functions held this year. These included a reception for the UKERC G8 delegates, a dinner on the gallery for the UKOLN (UK Office for Library Networking), a piano trio concert for Flexicare, and the Oxford Promises auction for Oxford's homeless. The Slade Lectures returned to the Museum in Hilary Term with eight lectures by Professor Larry Schaaf entitled 'The pencil of nature - creating the art of photography'. University memorial lectures were held here for Warburg, Bernard Tucker, Rodney Porter and Dorothy Hodgkins, and a symposium, 'A Tribute to W. Stuart McKerrow' was held in January for the Oxford geologist who died in 2004. The Ashmolean Natural History Society held their usual series of children's Christmas lectures. Local bookshops held book launches for Richard Dawkins, Eoin Colfer, Michelle Paver, and Jung Chang, which brought in an interesting variety of visitors. The lecture theatre was also used daily throughout the academic terms for Mathematics and Chemistry undergraduate lectures.

General Education

Schools and Family Education and outreach

The last year has witnessed continued growth and development of the education department and its links with LEAs, teacher training colleges, community education groups, government bodies and other university museums and collections.

Schools
School visitor numbers have continued to rise, with 21,994 pupils visiting us in 473 organised groups, the majority of whom received taught sessions from an education officer.

Secondary Schools
A 'Great Debate' session was offered to secondary schools in the autumn term of 2004. Sixteen school groups took part and evaluation concluded that the themes and activities were popular with both students and teachers. The 'Great Debate' session will be offered again in Autumn 2005. The innovative nature and success of this programme led to the formation of a partnership with The Natural History Museum (London), The Hancock Museum (Newcastle), Manchester Museum, Sheffield Galleries and Museum, and Kings College London. The aim of this group is to develop new activities for secondary students. As part of this group, the Museum's education team will focus on the development and delivery of sessions that bring together scientists and secondary students. We aim to encourage dialogue between scientists and young people and raise the profile of science in schools. It is hoped that the Museum will benefit from other programmes developed within the partnership, enhancing secondary provision.

A 'Rocks and Fossils' session has been developed for 13 and 14 year olds visiting the Museum and has been well received by the first groups to participate. Drawing on the activities developed, a loans box has been assembled for those schools unable to visit. This includes a collection of rocks, suggested lesson activities and links with the Museum's website. The 'Rocks Box' has been used by a number of schools in Oxfordshire and the initial evaluation of its activities has been promising.

Study days for AS and A2 students continue to be well attended and we have expanded this successful format to organise a study day for GCSE students. The first of these was on the

theme of 'Biodiversity' and was jointly organised with the Botanic Garden. Dr McGavin delivered lively and engaging talks for three study days this year, all of which were well received.

Access Officers from the University Admissions Office have incorporated a visit to the museum as part of a 'University Aspiration Day'. Over 1,600 students have taken part in this programme, each receiving a taught session at the Museum.

Primary Schools

The education department continued to run taught sessions on the subjects of 'Dinosaurs and Fossils', 'Bugs', 'Animal Adaptations', 'Rocks and Minerals', 'Animal Skeletons' and 'Materials and their Properties-Dinosaur Trapping', all continue to be popular and heavily booked. As well as the programmed sessions, sessions also ran as part of the 'Imagine' project involving Graham Woodall as the artist-in-residence. All schools in the Wantage area took part and their artwork, inspired by the collections, will be displayed in Modern Art Oxford throughout September 2005.

In March, the Museum also took part in the Oxford Literacy Festival. Year 6 students from Woodfarm School, Headington were inspired by the Museum to create stories and poems over a day long visit to both the OUMNH and Pitt Rivers Museum.

'Making Museums', a primary to secondary transfer project, organised in conjunction with the Pitt Rivers Museum, ran again with the Blackbird Leys partnership of schools. Every year 6 student within the partnership spent a full day in the Museum and received an outreach visit from education staff. Each class subsequently developed their own museum in school.

New sessions are currently being developed in consultation with LEA advisors and teachers. One such session is being developed in conjunction with a teacher from Mabel Pritchard School to address the specific educational needs of children with a range of severe disabilities. This has been made possible with funding from SEMLAC as part of their teacher placement scheme.

Teacher Training

The education department has continued to strengthen its links with teacher training bodies. During November sessions were delivered for the Oxford Brookes University PGCE course. Along with parallel sessions run by the other university museums and collections, sessions were delivered on cross-curricular, creative learning for all 300 students on the course. The feedback from this was overwhelmingly positive and has further raised the Museum's profile within the teaching community. During July inset sessions for teachers on the subject of rocks and minerals were also run, after invitations from the LEA's science advisory body at the Cricket Road Centre. Training days have also been organised for OUDES and the Sutton Trust group. The teacher training programme has been extended to also include a session for newly qualified secondary teachers.

Community Education

As well as schools, the education department have continued to strengthen and develop links with other educational bodies. Groups receiving specially developed sessions include cub-scout groups, Donnington Doorstep family centre, home-school groups, fathers groups, hospital schools and children excluded from school under the young offenders programme. Links with "Open Door" continued; 3 courses were run for adults with learning difficulties. The education team joined forces with the other university museums and collections to take

part in the Cowley Road Festival in June. The theme this year was 'Earth', and an estimated 400 children took part in activities linked to the collections. Links with the LEA's Family Learning Network continued with seminars and events such as the Family Learning Fete at Cutteslowe School. In May the Museum took part in the Oxfordshire Artweeks festival. The illustrator Korky Paul ran workshops for 600 adults and children. The Museum also hosted an exhibition of Korky's illustrations and the Artweeks debate evening.

Family Friendly Events

The education team were overjoyed to receive *The Guardian* newspaper's Family Friendly Museum Award, jointly with the Pitt Rivers Museum, in July. The Award recognised the quality of free family activities offered, particularly those for families on Sunday afternoons. This was a marvellous achievement that was made possible, not only by the work of the education department, but also by the efforts of all the Museum staff and volunteers, and their willingness to welcome visitors of all ages and encourage their enthusiasm for natural history.

Half-term events continue to attract a large number of families, and the format of family friendly lectures, handling specimens, trails and art and craft activities continue to be well received. Activities and family friendly events held during the year included 'The Big Draw' with landscapes as a theme, 'Wild Tales for Wild Children', 'Creature Colours', 'The Real Easter Bunny', 'Terrific Turtles' and the Christmas and Easter Trails.

Events that deserve particular mention included the following;

The October half-term event was 'Marvellous Minerals', which attracted over 5500 visitors over 2 days. The event included family talks, art and craft activities, mineral trails, nomenclature quizzes and specimen sorting activities. One of the main successes of the occasion was the ability of the public to talk to our mineralogists, Miss Price and Mrs Irving. They made a vast array of specimens available and willingly shared their time, knowledge and enthusiasm with visitors.

November's event was 'Oxon Goes Wild', organised with Oxfordshire Nature Conservation Forum and the BBC, timed to coincide with the series *'The British Isles - A Natural History'*. This event gave the public a chance to meet and find out about 20 of Oxfordshire's zoological, geological and botanical conservation and landscape management groups, as well as to attend lectures by Steve Head of the Ponds Conservation Trust, Jane Worral of the Oxfordshire Geology Trust, see a special screening of the BBC programme, and take part in a Q+A session with wildlife presenter, Chris Packham.

The Museum also hosted 'Batty About Birds', with the RSPB. This event included owl pellet dissection, making bird feeders, quizzes, talks, trails, and craft activities and also gave the public a chance to join the RSPB and find out more about its conservation and recording work.

February's half-term event was 'Weapons, Armour and Hunting', run in conjunction with the Pitt Rivers Museum, for which Mrs Nowak-Kemp provided many interesting specimens from Zoological Collections for the public to investigate. Over 5,000 people attended the event to explore the theme through both museums. During February Bethia Thomas of the IT department organised 'What a Picture', a photography competition, which successfully linked our website to visiting the museum and investigating our displays. The competition was very popular with a diverse range of visitors and resulted in some excellent entries. These were displayed in the museum and on the website. March saw the return of 'Wow! How?' organised by Joy Todd, our Volunteers Coordinator, in which many of our student and academic volunteers developed and delivered their own talks and family friendly activities to encourage

an interest in the sciences. These ranged from lively talks and demonstrations on the chemistry of fireworks and the behaviour of tool making crows, to hands-on activities involving magnets and the effects of dry ice. This was an extremely popular event, which excited much interest among volunteers, members of staff and the public alike.

On 14 May the Museum and the Pitt Rivers Museum staged 'In a Different Light' as part of The European Night of Museums. Over 1,300 people took part in a range of exiting and innovative activities. The event received very good feedback due to the excellent input from members of all the departments within the museum. Mr Mann explained the mechanics of the bioluminescence of scorpions and other arthropods over a 3 hour handling session, Miss Price and Mrs Irving demonstrated and explained the properties of glowing minerals, there were special screenings of Arthur Conan Doyle's *The Lost World,* courtesy of Mr Ashington and parts of David Attenborough's *The Blue Planet*. The atmosphere of the event was enlivened by fantastic lighting organised by Mr Burras, and the sounds of the gamelan being played in the central court. The event was successfully organised and supported by Mrs Todd, Miss Birch, Mr Green, Ms Andrews-Speed and Mr Archer and has been shortlisted with 5 other museums for a commendation from the *Museums Journal*.

After the success of 'Oxon Goes Wild', particularly with older children, 'Oxon Goes Wild Again' was run in July in conjunction with ONCF. 20 groups attended and ran stalls with activities and information for families. 2,000 visitors took part.

Staffing

In October the University Museums and Collections were glad to welcome Mrs Joy Todd to the post of Volunteers Coordinator, who has proved an invaluable addition to all the museums and enabled our Museum to continue to run successful large-scale events.

In the same month the Museum was sorry to temporarily lose Janet Stott as she began her maternity leave, delivering a beautiful baby girl in November. Susan Birch stepped in to cover Mrs Stott's maternity leave, also working part time for the IT department and providing valuable skills and links between the departments. The education department is pleased to report that Miss Birch has recently accepted the post of Community Outreach Officer across the University Museums, which she takes up on the 1 August. In January the post of Art Education Officer across the University Museums was taken up by Simon Packard, who has worked hard on a number of projects designed to open up access to the collections to secondary art students through web based and other media.

Volunteers

Volunteers have contributed 718 hours of help for family and educational events alone. Entomology, geology, zoology and conservation departments have also benefited from regular volunteer help this year, many of whom were introduced to volunteering through the new volunteering section of the OUMNH website.

In the spring term the Oxford HUB museums' education departments collaborated with the Volunteer Coordinator to provide three 'Museum Education for Volunteers' training sessions. These were over subscribed and very well received by those who attended; they fed back that the sessions had helped them feel more valued as volunteers, more confident in dealing with visitors, and also that the sessions would be valued by future employers.

Public Education and Outreach

Dr McGavin gave a lecture and ran a workshop for a sixth form study day: Molecules, Cells and Systems. He also gave a Science Week lecture as Dr Dung and a lecture for the sixth form ecology study day.

Mr Mann ran a beetle identification day workshop for the Hillend Camp Education Centre, and 'bug hunts' for Longcot Churchyard Conservation Group and Hinksey Heights Nature Park.

Dr McGavin gave talks and tours around the museum to the Oxford Guild of Guides, members of the Property Litigation Association, the Oxford Rotarians, delegates of the SPNHC conference and students from the School of History at the University of Liverpool. He gave the opening address at the Abingdon Primary Schools Science Fair and, during Science Week, visited St Albans RC Primary School, Chancery Lane, London to give four classes on insects. Dr McGavin again attended the Abingdon School Careers Convention where he represented the biological sciences.

Dr Seiffert and his research colleagues described fossils of the early toothcombed prosimian *Wadilemur* in the *Proceedings of the National Academy of Sciences, U.S.A.* These fossils have provided important new clues for our understanding of the origin of lemurs, lorises and bushbabies that were covered by the websites *ScienceNow* and *Discovery News*, among others.

Dr Siveter, together with others of his Oxford-based research group studying the soft-bodied fossils from the Herefordshire (Silurian) Konservat-Lagerstätte, gave talks on this topic to the East Midlands and Cheltenham and Gloucester geological societies, and to the Brighton branch of the Geologists' Association. One of the papers from this research work, which discussed an exceptionally preserved 425 million years old sea spider (pycnogonid) and was published in *Nature*, gained widespread media publicity. This research featured in newspapers and magazines in the US and Germany, and was reported on-line in the United States, France, Germany, Japan, China, Greece, Korea, and Iran, including the websites of the BBC, the American Association for the Advancement of Science, and *Der Spiegel.* He gave a lecture to the Edinburgh Geological Society on the Cambrian fossils of the Chengjiang area, Yunnan Province, China, and he was interviewed for Chinese television in connection with this work. He also gave a lecture on the Chengjiang and Herefordshire lagerstätten to the party from the Society for the Preservation of Natural History Collections that visited the Museum.

Mr Jeffery hosted a visit by members of the Society for the Preservation of Natural History Collections, involving talks and demonstrations by staff from all four collections.

Mr Powell gave talks to the Kennington History Society, the Oxfordshire Architectural and Historical Society, and the West Oxford branch of the University of the Third Age, and led field excursions for the Oxford Geology Group, the Oxford Civic Society and the Oxford University Department of Continuing Education. He also led a trip during the Memorial Meeting for Stuart McKerrow in January.

Miss Price hosted a visit by the Brighton and Hove Geological Society in January.

Dr Kemp gave an invited public lecture to the Science Museum of Barcelona, celebrating the life and work of Stephen Jay Gould. He also gave an invited lecture to the Ian Ramsey Centre in Oxford, on the philosophy of palaeontological interpretation.

Mrs Nowak-Kemp gave a talk to the Friends of the Pitt Rivers Museum about animal architecture.

Shop Report

Till sales reached £123,952 this year, 11% up on the previous financial year, despite the Museum being closed for an extra two days at Christmas. October half term was very busy bringing in an extra £2,000 and our April takings were up by nearly £5,000, possibly due to the change in the local school holidays at Easter. Summer sales are still rising yearly with June and July combined taking nearly £25,500, an increase of nearly £4,000 on last summer.

The Museum's giftwrap, postcards and new children's dinosaur T-shirts are still selling well, and highlight the need to further the shop's bespoke range. Ms Susan Birch and Ms Bethia Thomas from IT introduced a popular museum colouring book and framed prints of the museum. They are also keen to help with the new museum mug range.

Ms Jane Maskell and Ms Odette Christie visited Minerapole 2005 in June. This is a yearly fossil, mineral and gem fair in France and gives them a chance to buy new stock for the shop that is unavailable in the UK. Unusual amber jewellery, malachite, large ammonites and fossil horsetails were among the items bought which are proving to be very popular.

Mr James Currie has now left the shop and is thanked for his help over the years. Mr Trevor Hambidge continues to work three days a week and has been joined at weekends by Mr Simon Wiltshire, Miss Susana Silva Catanho and Miss Hannah Donaldson.

Many thanks to all on the sales committee, especially Miss Monica Price for her help with our Minerapole visit and continued support for the shop. Bethia Thomas is also thanked for her continued help with shop images and updating of the shop website.

Information Technology

General IT activities have continued steadily throughout the year. The Museum's Novell file server has been running for the last four years and has now been overtaken in both power and capacity by the desktop computers. It was therefore decided in May 2005 that the time had come to replace it. A Windows server is now being set up by Ms Phibbs and Dr Painter.

In April 2004 the funding began for the third phase of the Designation Challenge project (DCF3). The purpose of this phase is to continue to develop and extend the Museum's online educational presence. DCF3 runs from March 2004 to March 2006, and provides funding for Ms Thomas to continue as Programme Development Officer, Dr Painter to continue her IT support, and for Ms Phibbs to continue to manage the DCF project. The funding also allows for the appointment of a part time Image Technician to catalogue the Museum's extensive photographic archives. The image database that will be created will assist IT staff in the development of online resources, administrative and education staff with publicity, and curatorial staff in the care of collections.

In November 2004 Ms Susan Birch was appointed as part-time Image Database Technician for the DCF3 project. Ms Birch worked three days a week in the IT section cataloguing the

Museum's photographic collections. By the end of July 2005 Ms Birch had catalogued over 5,000 images.

In February 2005 Menaka Rambukwella was also appointed to work on the DCF3 project. Ms Rambukwella, a zoology graduate, had previously contributed some material on a voluntary basis for the 'Learning Zone' section of the Museum's website. Ms Rambukwella has continued to write and research text for the educational sections of the website.

The Disability Discrimination Act states that by October 2004 organisations providing a public service are responsible for complying with DDA guidelines regarding accessibility. It was therefore decided that as part of the DCF3 project the Museum's website would be re-designed to incorporate these requirements. The new site will also have a more up-to-date appearance, and will need to accommodate the significant quantity of new educational material created as part of the DCF3 project. Ms Thomas began work on the new website design in October 2004, and the new site is due to be launched in autumn 2005.

IT staff again worked alongside Education staff in presenting opportunities the Museum provides for science teacher trainees. One session took place in January 2005 with 35 trainee teachers from the Oxford University Department of Continuing Education, and another took place in April 2005 with trainee teachers from Brookes University.

The year from August 2004 to July 2005 has seen a steady increase in web traffic: the total number of visits to the Museum's website over the period was 696,848. This compares with the figure of 414,312 for the previous 12 months. Ms Phibbs has set up a system for monitoring the most popular web pages, and material from the 'Learning Zone' has consistently figured in the top ten most visited pages.

Over the summer another very popular web page has been the webcam on the swifts in the Museum tower. Many enthusiastic emails have also been received from swift watchers around the world.

As part of the outreach remit of the DCF3 project Ms Thomas ran a very successful photographic competition - 'What a picture!'. Participants were invited to visit the Museum and take pictures in several categories including specimens on display and the Museum architecture. The competition was open to everyone from professional photographers to visitors taking snaps with mobile phones. Prizes were available for different age groups. The competition culminated in an evening opening for prize giving in May 2004. The winning photographs from all categories were then on display in the Museum for a few weeks. These photographs are now available for viewing on the Museum website.

The electronic cataloguing of specimens continues throughout the Museum, and IT staff convert the specimen databases for online access. The Cretaceous database was released online in August 2004, and is the largest in the Geological Collections to date, covering some 90,000 specimens. In addition, a further 350 images of type and figured specimens have been added to the 'Geotypes' database, bringing the total number of online images to approximately 1,200.

Part II. Reports from the Collections, Libraries, Environmental Archaeology Unit, Henry Wellcome Ancient Biomolecules Centre, and Simonyi Professor for the Understanding of Science

The Hope Entomological Collections

We are very sad to report the death of Mr Ernie Taylor, who had been chief technician in the Hope Entomological Collections. Ernie worked in the 'The Hope' for 38 years and retired in 1980. Even after his retirement Ernie was a regular visitor and was always happy to share his extensive knowledge of the Collection.

After serving as Curator of Entomology since 1986, Professor Simpson left in December to take up an ARC Federation Fellowship at the University of Sydney. Happily his connections with Oxford have not been completely severed as he holds a Visiting Professorship at the University of Oxford and a Senior Research Fellowship at Jesus College. He will be greatly missed and we wish him all the very best for his new life in Australia.

Mr O'Toole took early retirement from the Hope Entomological Collections after 37 year's service in order to spend more time as Science Director of the Oxford Bee Company working on the use of *Osmia* bees as managed pollinators and on the taxonomy of Mediterranean anthophorid bees. The Oxford Bee Co Ltd carried out successful pollination trials in 2005 on the following crops: blueberries, strawberries, apples (UK), apples (Poland) and almonds (Spain). As an Honorary Research Associate of the Museum he will continue cataloguing the Hymenoptera Types.

In December 2004, Dr McGavin took over as Acting Curator of Entomology.

Professor Simpson was the guest speaker at a meeting of The Linnean Society in Sydney and gave an invited departmental seminar at the Department of Mathematics, University of Sydney. He was the plenary speaker at the *9th International Conference of the Orthopterists' Society*, Canmore, Alberta, Canada and keynote lecturer at the *Combined Australian Entomological Society, Society of Australian Systematic Biologists and Invertebrate Biodiversity and Conservation Conference* in Canberra.

Professor Simpson continued as Editor for *Advances in Insect Physiology*, Subject Editor for *Ecology*, Associate Editor for *Entomologia Experimentalis et Applicata* and member of the editorial boards of *Journal of Insect Physiology*, *Physiological Entomology*, *Chemoecology* and *Insect Science*. Professor Simpson also served as a council member of the International Federation of Comparative Endocrinology.

Dr McGavin gave a lecture to the Oxford University Exploration Club and three masterclasses to school pupils for the Oxford University Admissions Office under the HEFCE Aim Higher scheme. He also gave two lectures to students on the Ecological Entomology course at the University of Derby and hosted them during a visit to the Museum. Dr McGavin continued to serve as external examiner for the Certificate in Field Biology at the University of Sussex.

Mr Mann gave talks on the Hope Entomological Collections and dung beetle ecology in Bolivia at the *VI Latin American Scarabaeoidological Meeting* and the inaugural ScarabNet meeting, Earth University, Costa Rica. He also spoke on cockroaches in the Hope Entomological Collections: the Shelford & Hanitsch Legacies, at the Blattodea Culture Group Meting, Deiltzsch, Germany.

Mr Mann hosted the 21st Anniversary and members' day of the British Dragonfly Society where he and Mr Hogan presented a poster on Odonata in The Hope Entomological Collections.

Mr Mann served on the library committee of the Royal Entomological Society and the committee of the British Entomology and Natural History Society and continued as a member of the editorial committee for *The Coleopterist*.

Dr Pont continues to serve on the editorial board of *Zoology in the Middle East*, *Fauna of Arabia* and *Studia Dipterologica* as Secretary/Treasurer of the Council for International Congresses of Dipterology, Scientific Associate of the Natural History Museum, London, and an Associate in Science at the B.P. Bishop Museum, Honolulu. Dr Pont served on the judging panel for the Thomas Say Award, a prestigious award given annually by the Entomological Foundation of the Entomological Society of America.

Dr Ismay attended field meetings in Northamptonshire and Durham, both arranged by Dipterists Forum. He participated in a workshop on Tipulidae in Preston Montford and led a joint BENHS and Dipterists Forum Field Meeting at Aston Rowant. Dr Ismay continued to serve on the editorial board of the *Entomologist's Monthly Magazine* and has been elected as a Committee member of the *Dipterists Forum*.

Dr Pont attended an *International Simuliidae Symposium* at the Humboldt University of Berlin, where he and Dr Doreen Werner (Humboldt University) presented a talk on field investigations into the natural enemies of black flies. He also visited Halle, and attended part of the bi-annual meeting of the *Deutsche Gesellschaft für allgemeine und angewandte Entomologie* in Dresden. Dr Pont was invited to visit the Institut National de la Recherche Agronomique, Montpellier, France, to work on the Diptera collections and also visited the European Laboratory of CSIRO, Australia, and the European Biological Control Laboratory of the USDA, USA to established contact with colleagues involved with biological control of weeds. He also visited the Muséum National d'Histoire Naturelle and the Institut Pasteur, Paris, France.

Dr Kathirithamby served as Associate editor of *Zootaxa* and as Editor of *Tijdschrift voor Entomologie* and held the position of Associate Professional Scientist at the Illinois Natural History Survey, Center for Biodiversity, Illinois, USA.

Much preparation work has been done to facilitate the arrival of new storage cabinets to rehouse all drawers currently stored on open racking. The design of the new metal cabinets, which are to be made by Metal Office, and feature an efficient seal and door locking mechanism, are the result of collaboration between the manufacturer and HEC staff. The rehousing operation, which will take 15 months to complete, has been funded by a large grant from SRIF2.

Mr Mann continued his research into un-recognised types in the collections, with around 50, mainly Coleoptera and Hymenoptera coming to light in the last 12 months.

Mr O'Toole completed the research necessary to establish the status of type series of aculeate Hymenoptera (except bees) that are split between the OUMNH and NHM (London). A similar study of bee types formed the basis of the late Donald Baker's D.Phil. thesis, but the bee types treated by Baker are still to be catalogued and this will be part of Mr O'Toole's work as a Research Associate of the OUMNH

Dr Pont continued re-curating the Palaearctic Diptera Collection (Verrall-Collin Palaearctic Diptera). Cataloguing the types in the Verrall-Collin Palaearctic Diptera (part of the Designation Challenge Project) was completed. Work continued on the re-identification and re-arrangement of the collection of Palaearctic Muscidae (Diptera), and this project is almost completed.

Mr Cooter completed the bulk of the work to re-curate and transfer the historic Dale Collection to better accommodation. The British Hymenoptera, Diptera and Siphonaptera plus the foreign material remain to be transferred. This work was supported by a grant from PRISM (PReservation of Industrial and Scientific Material) fund.

The pest problems suffered last year are now under control, but a considerable investment of time was still needed to deal with further infestations in the Swinhoe and Shelford rooms. These problems will be completely resolved as a result of the new cabinets and freezing of collections before they are rehoused.

Ms Simmons has begun re-curating and updating the arrangement of the Erotylidae. She also sorted, labelled and set specimens to be added to the Collections and maintained the spirit collection and the gallery vivaria.

Mr Ismay has added a quantity of Diptera collected in surveys and other fieldwork to the British Collection.

Mr Ackland continued to identifiy British Anthomyiidae amongst the unidentified material, and incorporate them into the Reference and General collections as well as staging and labelling the remaining Collin-Verrall duplicate Anthomyiidae.

Mr Henshaw has continued to curate the Agromyzidae and identify accession material.

We are most grateful to all who have volunteered their time to work in the Collections or undertaken work experience.

Geological Collections

Dr Erik Seiffert was appointed Lecturer in Earth Sciences and Curator of Geological Collections from the start of Michaelmas term 2004. He was formerly a graduate student at Duke University, North Carolina, and his research interests are focussed on the evolution and palaeobiology of mammals and primates, especially from Africa. Dr Seiffert gave invited presentations on the early tooth-combed prosimian *Wadilemur* and other new primate fossils at University College, London, in a symposium at the *Annual Meeting of the American Association of Physical Anthropologists*, and at the University of Oxford. He has provided advice and support for the new 'Primate' displays, and has been working with Dr Kemp and

Professor Kennedy to create new displays on the evolution of mammals and birds. He has also taught four courses in the Department of Earth Sciences, and acted as an examiner for prelims.

Dr Siveter gave an invited, plenary lecture at the *Taphos 05 Conference* in Barcelona. He gave further research presentations on the soft-bodied animals from the Herefordshire (Silurian) Konservat-Lagerstätte, at the annual *Conference of the Palaeontological Association* in the University of Lille, and the Geological Society of America Meeting in Denver, Colorado. Presentations by others of the research team working on this exceptional preservation horizon were given at the University of Michigan and Imperial College, London. Dr Siveter visited the University of Yunnan (Kunming) for two weeks, as part of a project funded by the Royal Society, to study the Cambrian fossils of the Chengjiang area, SW China. He also put in place many of the arrangements for the Annual Conference of the Palaeontological Association, which is to be held in the University Museum in December 2005, and which he is organising. He has spent considerable time working on the Palaeozoic panels of the new 'History of Life' displays, and on some of the panels for the new 'Biodiversity' displays. Dr Siveter also gave lectures and acted as an Assessor for examinations in the Department of Earth Sciences.

The project to put on-line, as part of the Oxford Digital Library, some 100 benchmark publications on early geological literature was completed. Dr Siveter managed the project, and Ms Brecknell (Librarian) was responsible for the large amount of data handling and assessment.

Mr Jeffery has continued researching, identifying and curating the Museum's holdings of Wealden and Purbeck fossils, and has begun work on the Cenozoic collections, prompted by the data-checking needed for the digitisation programme. A large tranche of time has been devoted to re-identifying and revising the taxonomy and stratigraphic assignation of the Cenozoic material featured in the new 'History of Life' displays, and to dismantling the original displays and providing additional and alternative specimens. The need to comply with the MLA's Accreditation scheme saw Miss Howlett and Mr Jeffery compiling an extensive suite of documents detailing all aspects of sectional policy and procedure in curation, subsequently condensed into a Museum-wide policy document by the heroic efforts of Miss Price. Mr Jeffery negotiated access and provided specimens, advice and on-site support for a production by German TV detailing new ideas about the history and life of pliosaurs and plesiosaurs, and further support to a BBC crew filming a televised evolution-versus-creation debate. He has continued his research on Cenozoic invertebrates, and continues in post as acting editor of the scientific journal *Tertiary Research*.

Professor Kennedy has been heavily involved in the new display programme throughout the year. He has also provided preliminary identifications for some 3,000 specimens from the Cretaceous of North Africa (presented by J.M. Hancock) and south India (presented by A.S. Gale), prior to their curation by Mr Ashington.

Ms Hay completed her work on the conservation of *Temonodontosaurus*, and oversaw the carpenters from Steve Grafton's company as they designed and constructed an oak surround for the exhibit. She mounted specimens in four of the twelve 'Lower Vertebrate' cases, and most of the specimens in the ten 'Primate' cases. She has now moved on to the 'History of Life' displays, which are currently going up at a rate of almost two cases a week. She also made and painted a cast of the Buckland megalosaur jaw for a travelling exhibition in Japan, organised by Dr Makota Manabe (National Science Museum, Tokyo), which will visit a number of venues across the country, including Tokyo, Nasoya, Osaka and Fukuoka.

Ms Howlett catalogued all remaining casts of type, figured and cited material in the Cretaceous collections (approximately 600 specimens) and prepared another 350 images of type and figured specimens to be added to the Geotypes database. She attended two GCG seminars, *Planning for disaster and specimen relocation* at the Hancock Museum, Newcastle, and *Standards for Geological Collections* at the Natural History Museum, London. She also attended a meeting of the Oxford University Collections and Museums History Group. She formed part of a working group looking at the Museum Disaster Plan, and another focussed on Museum Accreditation. The majority of her time, however, has been taken up by the new 'History of Life' displays, dismantling existing displays, returning material to the collections, updating catalogue information, and so on.

Mrs Irving has divided her time in Geological Collections between the maintenance of specimens treated for pyrite decay, and the registration, conservation and research on localities, of foreign, mainly North American, Carboniferous plant specimens.

Mr Ashington has completed the data entry for the Cenozoic collections and is now fine-tuning the databases prior to their going online, hopefully in December 2005. He has catalogued some 4,000 specimens, including important historical material from Kirkdale Cave, Yorkshire, and a wide variety of material for the new displays, as well as large collections from the Cretaceous of India and Tunisia. He was also responsible for a rare screening of the 1925 version of *The Lost World*, as part of the Museum's Festival of Light on 14 May.

Mr Powell has continued, as an Honorary Associate Curator, to curate parts of the Mesozoic collections, and to answer enquiries on building stones. His book on the geology of Oxfordshire is in press, and due to be published in November 2005.

Mr Francis has begun a postgraduate course in Museum Studies, based at Leicester University, but continues to work on the Palaeozoic collections 2-3 days a week. The Precambrian, Cambrian, Ordovician and Silurian are now fully catalogued, and work on the Devonian is well under way.

Mr Clasby, Honorary Associate Curator, completed his drawer-by-drawer listing of the contents of the Tertiary Room, and is now preparing the material for cataloguing.

Mineralogical Collections

The Curator, Dr David Waters, has been involved this year in safeguarding and consolidating a number of petrological research collections, some of which would otherwise have been discarded, including those in space being given up by the Department of Earth Sciences, and others from the University of Portsmouth and Oxford Brookes University. The enlarged petrological collections will have areas of focus determined by the Museum's existing collections and by the Curator's own interests in Precambrian and metamorphic geology. In particular we are consolidating important collections from the basement rocks and igneous intrusions of Greenland, from the Himalaya and Karakoram, from the Andes, from parts of southern and western Africa, and of eclogites from Norway and Oman. However, cataloguing these new collections will have to await the provision of more appropriate storage space to work on the material.

Dr Waters' project, the Oxford Earth Science Image Store (OESIS), a database of digital images for teaching and research in all aspects of Earth Science, is now running in test mode on a server in the Department of Earth Sciences. The database was developed in collaboration with the Academic Computing Team of the Learning Technologies Group, OU Computing Services. Dr Waters gave a presentation on the project at an Oxford-hosted 2-day Digital Image Workshop in early July 2005. A number of photomicrograph images, acquired as part of Dr Waters' parallel project to illustrate typical rocks and minerals from the Museum and Departmental collections, were published in the Dorling Kindersley reference book *Rock and Gem*.

Miss Price continued as a member of the British Geological Survey Collections Advisory Committee, attending meetings in Keyworth and Edinburgh. She worked on the Museum Libraries and Archives Council's subcommittee revising the MLA's *Standards in the Museum Care of Geological Collections.* She attended the *Mineralogy & Museums 5 International Conference* in Paris in September, and presented a poster written jointly with Mr Seymour James on web sources for checking locality data for mineral specimens. Miss Price and Mrs Irving attended the January meeting of the Oxford University Museums and Collections History Group at the History of Science Museum.

Miss Price completed work on the Dorling Kindersley book *Pocket Nature: Rocks and Minerals,* which she co-authored with Mr Walsh. A substantial amount of her time this year was spent on administrative projects, assisting the Director with the application for AHRC core funding, and preparing the Museum's 5 year Forward Plan and other documentation for the Museum's application for MLA Accreditation.

Routine curatorial work has continued through the year, with good progress made on the accessioning of Peel Collection minerals, and the sorting of unregistered specimens. New enquiry logging and specimen entry procedures have been established in the collections during a review of the way curatorial procedures are documented. This will assist data gathering for AHRC, MLA and other statistical returns.

There have been a number of important new acquisitions in addition to the rock collections reported above. A collection of minerals numbering some thousands of specimens is being transferred from the University of Reading where it is no longer required for teaching or research. It includes the 19th century Accrington Museum collection. While a substantial number of the specimens will greatly improve the Oxford holdings, others that are too poorly documented for permanent retention will be set aside for handling collections and destructive research. We are grateful to Dr Hazel McGoff for organising the transfer of this collection. In January, Mr Bernie Peel generously presented 154 gemstones to add to his mineral collection which he gave the Museum in 2001. These are all good-sized stones in excellent condition, many of which will be displayed in a new permanent gemstone display planned for 2006. Miss Price attended the Oxford Mineral and Gem Show in March, and the Ste Marie-aux-Mines Mineral Show in June, buying a small number of specimens, and further specimens were purchased by Mr Walsh on his visit to the Tucson show in February to buy specimens for the 'Feeling Good!' display.

Mrs Irving has continued the imaging of dealer and collector labels, particularly those from the Müller collection and associated with the Cornish mineral dealer Richard Talling. She has carried out maintenance of the pyrite treatment programme and prepared condition reports for specimens showing evidence of possible deterioration, and those requiring anoxic storage. In

doing this, she has investigated previous treatments and familiarised herself with a range of sulphide minerals.

Mr Seymour James has continued to work on a voluntary basis on the mineral locality database and the Mineralogy and Museums 5 poster presentation. From May until the end of the year he was employed on a contract basis to number Daubeny specimens and enter data on computer. Vacation worker Mr Oliver White was also employed towards the end of the year to number Daubeny specimens.

Mr Ted Smith has continued to sort, clean, label and check locality data for historic rocks collections including those of Professor William Buckland. Professor Vincent and Miss Phipps have completed transfer of information about original labels to the mineral database. Professor Vincent has made very good progress cataloguing the Museum Collection archives, while Miss Phipps has transferred Dr Mary Porter's research data on the Corsi Collection to the electronic Corsi catalogue. Mrs Cooke has continued her research for a publication on the Corsi Collection catalogue.

Laura Cotton, a first year undergraduate in Earth Sciences at Oxford has assisted with curatorial and outreach activities on a regular basis since November, under the joint museums volunteer programme. Ben Heaney, a pupil at Magdalen College School, spent a week on work experience in the Mineralogical Collections in August, and Rachel Utting carried out work experience in February.

We would like to thank all the volunteers who have assisted with Collections work during the past year.

Zoological Collections

Dr Kemp gave invited research talks to the Science Museum of Barcelona, and the Ian Ramsey Centre in Oxford, and to the 52nd SVPCA in Leicester and the University Museum's Palaeobiology Seminar series. He continued his duties as University Lecturer, and as Tutorial Fellow and Senior Dean of St John's College.

Dr De Grave continued work on the mollusc holdings, supported by a grant from the PRISM fund to curate the Helicidae. Considerable emphasis this year was on the acquisition of new specimens for the new Invertebrate displays, through fieldwork in Cornwall, Millport (Scotland) and Panama, as well as purchases.

The collections of marine invertebrates were enriched through local and international fieldwork, the latter at the invitation of the Smithsonian Tropical Research Institute, when he spent two weeks in the STRI-operated Bocas del Toro research station to carry out a decapod biodiversity assessment.

Mrs Nowak-Kemp continued her archival research of the human material collaborating with colleagues in the other Oxford University museums and the Natural History Museum in London. Thanks to a PRISM grant she finished the curation and conservation of the human skulls and human pathological collections, including the Van der Kolk Collection. The work continues on the post-cranial material and it is planned to start creating a human remains

database during the next year. She gave a talk to the Friends of the Pitt Rivers Museum about animal architecture, and attended a two day international conference in London on moral and ethical issues surrounding human remains collections in museums.

She collated and recorded all the specimens for the 12 new lower vertebrate display cases, and organised comprehensive revision of conservation of mammal skins which was completed thanks to student volunteers.

Work is progressing on the conservation of reptilian spirit collections with the help of a volunteer Mrs Sue Benenson, and on the reorganization of dry ichthyological material with help given by Mrs Joanna Gilmour.

As in previous years, a number (19) of practical classes, held in the Zoological Collections laboratory, were prepared and organised by Mrs Nowak-Kemp for undergraduates of Oxford and Brookes Universities and she organised and co-demonstrated a new practical class for Brookes University – Animal Form and Function. Altogether over 150 students used the Zoological Collections specimens in the course of these classes.

In the annual technicians review exercise, Mrs Nowak-Kemp's job was evaluated, and as a result she was transferred to the Academic Related scale.

Miss Conyers continued to work on the Mollusc holdings, completing work on the Gardiner and Wollaston Collections. She was involved in the work carried out on the Helicid holdings, plus sorting Whiteley specimens to family level. Work has now commenced on the family sorting of the huge Elliott Collection. Conservation work has continued in the invertebrate spirit store, and on newly acquired specimens obtained through expeditions by the Collections staff and project students. This also includes a large collection of Antarctic invertebrate specimens obtained from the British Antarctic Survey headquarters in Cambridge.

Miss Conyers has also assisted in the search for suitable display specimens from the current holdings, was involved in the Accreditation Documentation process, assisted a BBC film crew working in the Zoological Collections and input the data from the PRM/OUMNH Visitor Survey for analysis. She attended the undergraduate Invertebrate Biology OB1.3 module lectures and practical sessions during Michaelmas Term.

Mr John Davies has continued his invaluable work on the mollusc collections. He has established a valuable collaboration with the mollusc section of the Vienna Naturhistorisches Museum.

The Zoological Collections are very grateful to the small army of people who over the last few years have volunteered their time to work on the curation and conservation of various parts of vertebrate collection, and especially to: Robert Davies for his work on spirit primate and fish holdings and on Dr Kemp's fossil preparations; Laura Ashton on bird and mammal osteological specimens and with Sam Hoggarth on mammal skins; Sally Keith on bird osteological material; Emily Levitt, Liv van der Ende, Dalia Iskander and Victoria for their work on human remains; Mark Mcgranaghan for checking the bird skin collection for the presence of *Anthrenus*; Sophie Aldridge for her work on hominin cast material; and Kirsty Nelson for work on human remains and spirit collections.

The Hope and Arkell Libraries

The retrospective cataloguing of books from the Geological and Zoological Collections on to OLIS was completed. However, some substantial monographs are to be found among the entomology offprint collection and cataloguing of these on to OLIS commenced in July.

The Professor M.R. House bequest of Palaeozoic geology and palaeontology books was catalogued on to OLIS. Much of this material was found not to replicate existing holdings - neither for the Museum nor for Oxford.

The review and reboxing (into archival storage boxes) of the entomology reprint and pamphlet collection was completed.

Some additional shelving for books, etc. was acquired on the walls of the Phillips' Room and certain reprint collections from the Compactor Room were moved in there.

The Museum's projects for the Andrew Mellon Foundation-funded Oxford Digital Library (ODL): *Key 17th to early 19th century geological literature related to the collections of the Oxford University Museum of Natural History and the early development of the English School of Geology* and *Key 19th century entomological literature related to the Hope Entomological Collections of the Oxford University Museum of Natural History, and the early development of entomology as an academic subject, with special reference to J.O Westwood, 1805-1893* were completed in July, Mr André Ashington having completed the metadata entry earlier in the year. Many hours of the librarian's time was spent checking that each image matched its metadata entry and rectifying any errors or mismatches. Some errors in the data for the ODL bibliographic records, particularly in the entry of names and in the coding of the data, for both projects, appeared after loading to the end-user system, *Greenstone*. This was partly because of corruption during migration. These errors are to be corrected.
A number of entomology books were damaged during the imaging process. Repairs to them were carried out by Mr Rennison Hall.

As usual a proportion of the Librarian's time was occupied in working with library users: discussing their needs, explaining the layout of the library and the use of the catalogues, assisting with finding bibliographic information, fetching books and manuscripts, and occasionally borrowing materials, from the Radcliffe Science Library and elsewhere. The day-to-day management of the library involved wide-ranging tasks and occupied a variable proportion of each week.

The Librarian continued her membership the Entomology Libraries and Information Network (ELIN) and the History of Geology Group (HOGG). She continued chairing the Cataloguing of Electronic Resources Special Interest Group (ERSIG), which meets each term with occasional additional meetings for the exposition of particular projects.

The Librarian put out a representative display of manuscripts and rare printed books in the Archive Room, on 13 June, for a visit by the Society for the Preservation of Natural History Collections, as part of their annual meeting, which in 2004 was held in London.

Mr Rennison Hall reports that he has continued with the conservation of the Museum's archives, mainly the large illustrations and lecture diagrams of William Buckland which due to previous inadequate storage were in poor condition and required comprehensive conservation

treatment. Several books from the Hope Library were repaired after being damaged when they were away for digital imaging.

Photographic services were carried out for all the Collections, both digital and film, and images were taken for gift-wrap paper and postcards to be sold in the Museum Shop. He has liaised with several artists and co-ordinated the hanging and display of their temporary exhibitions of pictures in the upper gallery.

He has continued with the environmental monitoring throughout the Museum's display and storage areas and at the Museum's off-site store at Nuneham Courtenay.
He has carried out COSHH assessments for the chemicals used in the Conservation Studio and continued as Deputy Chemical Officer for the Museum.

Environmental Archaeology Unit

Fieldwork continues at Pompeii. A new project was begun with Dr M Staub Gierow and the Svenska Institutet i Rom to excavate the peristyle garden of the House of the Greek Epigrams. A group of Oxford students was taken to work alongside Swedish students and to train the Swedes in field techniques of environmental archaeology. Further investigations were made of the geological deposits underlying the town. A most exciting discovery was made of remains of a Neolithic settlement which had been buried beneath ash from a prehistoric eruption of Vesuvius. Students have begun processing samples from the site.

Monument management support for English Heritage has included the analysis of snail sequences from a group of Bronze Age barrows in Wiltshire to evaluate damage done by badgers. Further cores have been analysed through Silbury Hill. Lectures and demonstrations have been given for five English Heritage Archaeological Training Days.

First year practical classes and third year archaeological science option classes for the Archaeology and Anthropology degree were given in the Museum, making use of the collections. Practical classes were also given as part of an environmental option for the M.Stud. in World Archaeology. Six students gained additional experience in environmental archaeology by working as assistants in the Unit. Events for potential Archaeology and Anthropology candidates were held in the Museum.

Henry Wellcome Ancient Biomolecules Centre

The ABC saw the departure of its previous director, Professor Alan Cooper, for a Fellowship at the University of Adelaide, Australia. Despite this loss, research in the ABC continues to move rapidly, with several new staff members due to join in the new academic year, and a number of new projects set to begin.

The Museum continues to play an important role in ongoing research at the Ancient Biomolecules Centre (ABC). Although much of the research involving permafrost specimens and humans has moved to the purpose-built facility on Museum Road, the Museum lab is in daily use, mostly for the preparation of and extraction of DNA from specimens that are younger than several thousand years, and therefore do not require many of the specific precautions against contamination that are in place at the other facility. In particular, the

Museum lab is being used to investigate the molecular and evolutionary processes behind animal domestication. This research, which is led by ABC member Greger Larsen, involves the analysis of hundreds of specimens of domesticated and wild animals, mostly pigs and cattle collected from museums around the world. The first results from this project were recently published in the journal *Science* and received significant attention from the popular media.

Apart from the domestication work, the ABC has been involved with several high-profile publications during the last year, all stemming from work that was carried out in the Museum. This includes Dr Beth Shapiro's research into ancient permafrost bison, in which she and colleagues from around the world showed that climate change, rather than over-hunting by humans, is likely to have been responsible for the decline of the Pleistocene megafauna at the Pleistocene/Holocene boundary. Another project recently completed in the Museum found that New Zealand's extinct giant eagle, *Harpargornis*, was surprisingly closely related to a very small eagle from Australia. Dr Jaco Weinstock led the publication of a detailed report discussing the origins of and dispersal patterns in New World Horses based on genetic information, and Ross Barnett published the mitochondrial DNA sequence for the extinct Sabre-toothed lion.

Simonyi Professor for the Understanding of Science

The Simonyi Professorship has commanded a high profile in all areas promoting the public understanding of science. Professor Dawkins has addressed a wide audience including the Edinburgh International Book and Science Festivals, The Alpbach Technology Forum, Darwin Day in Milan, The Faculty of Biology and Medicine at The University of Lausanne, as well as many University and science conferences. He continues to give interviews for television, radio and the press. Articles have been published in the major broadsheets including *The Guardian*, *The Scotsman* and the *Sunday Herald*, whilst radio broadcasts have included *Devout Sceptics* on Radio Four.
Forthcoming will be a series for Channel Four entitled *The Root of all Evil w*hich will stimulate and promote the understanding of evolution to a wide audience. This year saw *The Ancestor's Tale* short-listed for the Aventis Book Prize Award and its publication in paperback. Professor Dawkins has been made an Honorary D.Sc. at both The University of Sussex and forthcoming at The University of Durham and now sits on the David Attenborough Committee. The annual Simonyi lecture, with the first female speaker, continues to enjoy success and is now a popular and well-attended event in the Oxford calendar.

Part III. Appendices

Appendix 1: Visitors of the Oxford University Museum of Natural History at 31 July 2005

The Vice-Chancellor J.A. Hood, BE, M.Phil., Ph.D.
Sir John Hanson, KCMG,CBE,MA (Chairman)
The Assessor F.N. Pieke, MA
The Proctors A. Grafen, MA, M.Phil., D.Phil; W. Daniel, MA
Professor L.R.M. Cocks, OBE, TD, MA, D.Phil., D.Sc., FGS
Professor P.C. England, MA, D.Phil., FRS
Professor P.H. Harvey, MA, D.Phil., D.Sc., FRS
Professor P.W.H. Holland, MA, Ph.D., D.Sc., FRS
Dr M. O'Hanlon, MA, Ph.D.
Mr B.R. Ward-Perkins, MA
Professor J.H. Woodhouse, MA, D.Phil., FRS
Dr T.D. Wyatt, BA, Ph.D.
Professor W.J. Kennedy, MA, B.Sc., Ph.D., D.Sc., FGS (Secretary)
Dr T.S. Kemp, MA, Ph.D. (in attendance)
Dr G.C. McGavin, MA (status), B.Sc., D.I.C., Ph.D. (in attendance)
Dr E.C. Seiffert, BA, Ph.D. (in attendance)
Dr D.J. Waters, MA, D.Phil. (in attendance)

Appendix 2: Staff of the University Museum at 31 July 2005

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

Hope Entomological Collections

Curator (Acting): Dr G.C. McGavin, MA (status), B.Sc., D.I.C., Ph.D.

Geological Collections

Curator : Dr E.J. Seiffert, BA, Ph.D.
Assistant Curator: Dr D.J. Siveter, MA (status), B.Sc., Ph.D., FGS; Mr P.A. Jeffery

Mineralogical Collections

Curator: Dr D.J. Waters, MA, D.Phil.

Assistant Curator: Miss M.T. Price, MA (status), B.Sc., M.Sc., AMA

Zoological Collections

Curator: Dr T.S. Kemp, MA, Ph.D.

Assistant Curator: Dr S. De Grave, B.Sc., M.Sc., Ph.D.

Information Technologists

Officer: Ms S. Phibbs, BA

Assistant: Dr R. Painter, BA, M.Sc., D.Phil.

Programme Development Officer: Ms B. Thomas, B.Sc.

Education Officers

Officer (on leave): Mrs J. Stott, BA, Cert.Ed.

Secondary School Officer: Ms S. Lloyd, B.Sc., PGCE

Primary School Officer: Mr C. Jarvis, BA, PGCE

Assistant: Miss S.J. Birch, BA, MA

Librarian

Ms S.M. Brecknell, BA, ALA

Environmental Archaeology Unit

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

Curatorial Officers

Mr D. Mann, B.Tec.; Mrs M. Nowak-Kemp, B.Sc., M.Sc.

Technical Support Staff

Miss S.J. Birch, BA, MA; Mr C. Burras; Miss L. Conyers; Mr J. Cooter, B.Sc.; Mr R. Hall, NDD, B.Tec.; Ms J. Hay, BA; Miss E.A. Howlett, BN; Mr J. Hogan, B.Sc.; Mrs E.J. Irving, BA, M.Sc.; Mr P. Johnson; Miss M. Rambukwella, BA; Mr W. Richey; Ms Z. Simmons, B.Sc.

Central Services Support Staff

Head Porter: Mr A. Archer

Deputy: Mr H. Thornton; Miss C. Coutinho, Mr D. Torstensson

Administrator's Assistant and Secretary to the Director: Ms K.A. Andrews-Speed

Accounts Clerk: Mrs D. Pelham, BA, B.Tec.

Data Input Clerks: Mr A. Ashington

Shop Supervisor: Ms J. Maskell, BA

Assistant Shop Supervisors: Miss O. Christie, BA

Shop Assistants: Miss S. Silva Catanho, Miss H. Donaldson, Mr T. Hambidge, Mr S. Winchester

Cleaners: Mr C. Abinett, Mr G. Coates; Miss D. Hastings; Mr T. Mahmoudi, Mrs S. Pearson

Honorary Associate Curators

Mr M. Ackland

Fr A.E. Bean, MA

Mr P.S. Clasby, BA

Mr J.B. Davies, MA, M.Sc.

Mr A. DiMauro, BA, MA

Mrs M. Green, D.Phys. Ed.

Mr D. Henshaw

Dr J.W. Ismay, B.Sc., Ph.D.

Mr I. Lansbury, M.Phil

Dr A.C. Pont, MA, D.Sc.

Mr H.P. Powell, MA

Honorary Research Associates

Dr P. Barrett, MA, Ph.D.

Dr J. Kathirithamby, B.Sc., Ph.D.

Dr M. O'Neill, B.Sc., Ph.D., C.En.

Professor K.S. Thomson, MA, B.Sc., Ph.D.

Mrs E.M.H. Cooke, MA

Dr C.A. Norris, MA, D.Phil.

Mr C.A. O'Toole

Appendix 2: Other staff

Entomological Collections:

Pippa Gillingham, Pam Baker, Ian Pindar, Sophie Cate (St Hilda's College), Eleanor Barrie (St Hilda's College), Katherine Drayson (St Hugh's College), Patty Harrison (Oxford Brookes), Julian Thornber (Oxford Brookes), Sinead English (New College), Samantha Burn (New College), Maria Demidova (Hertford College), Helena Maratheftis (St Hilda's College), and Ryan Willingham (Christian University, USA).

Geological Collections:

Nina Morgan, Rachel Utting; Ben Heaney (Magdalen College School), Abigail Hastings (Patchway Community College, Bristol), Jessica Donaldson (St Gregory the Great)

Mineralogical Collections:
Miss Laura Cotton, Ben Heaney (Magdalen College School), Mr Seymour James, Miss Nina Phipps, Mr Ted Smith, Miss R. Utting, Professor E.A. Vincent, and Mr O. White.

Zoological Collections:
Mrs Sue Benenson and Mrs Joanna Gilmour; Robert Davies (Brookes), Laura Ashton (Brookes), Sally Keith (Brookes), Emily Levitt (Oxford), Liv van der Ende (Brookes), Dalia Iskander (Oxford), Sam Hogarth (Brookes) and Victoria Smith (Oxford); Mark Mcgranaghan (Oxford) Sophie Aldridge (Oxford); Kirsty Nelson (Brookes). Work experience student Oliver Kirk (Burford School, Burford).

Environmental Archaeology Unit:
Lucy Cramp (Reading University), Seren Griffiths (Keble), Mari Lowe (St John's), Lizzie Quarini (Hertford), Mariangela Vitolo (Universitá Federico Secondo, Naples), Darryl Wilkinson (Hertford).

Henry Wellcome Ancient Biomolecules Centre:
Director: Dr B. Shapiro, B.Sc, M.Sc, MA, D.Phil.
J. Hailes, BA, MA; G. Larson, BA, M.Sc.; H. Weinstock, BA, MA, Ph.D.;
R. Barnett, B.Sc., P. Endicott, B.Sc., M.Sc.

Simonyi Professor of the Public Understanding of Science:
Professor R. Dawkins, MA, D.Sc., FRS, FRSI
Personal Assistant: Mrs C. DeBlase-Ballstadt, BA

Appendix 3: Finance

General

The University's General Board made a grant towards recurrent costs totalling £555,684 with an additional amount of £17,864 from the HR Strategy Fund for the financial year ending 31 July 2005.
In addition we received a fourth year's instalment towards recurrent costs from AHRC amounting to £325,756.

The OSIRIS finance system has not been without its teething problems throughout this financial year, with the ability to find reliable reports often time consuming. The OSIRIS Support team working with Central Finance and the Auditors have made some major improvements which have led to a more efficient year end routine and reliable reports through the ADI (Advanced Data Information) system which also enables "drilling down " to information about the source data.

Grants awarded and Donations received

The Museum has had another successful year in bidding for additional external and internal funding totalling £755,053. The most exciting news was the successful bid jointly to The Millennium Commission, The Wellcome Trust, and The Wolfson Foundation for funds under

their ReDiscover 'Feeling Good!' programme. This totalled £546,072 (MC-£296,072, WF-£250,000). The University's Van Houten Fund awarded us further funding of £35,000 towards staffing and external sourcing of work to cover those staff working on the ReDiscover project. The PRISM Fund awarded three grants; two to Zoology Collections, £3,785 towards Mollusc curation and £9,935 for the conservation of the Osteological Collection, and a sum of £13,667 to Entomology for conservation and re-housing of the Wollaston and Donisthorpe Collections. DCMS (Department for Culture, Media and Sport) jointly with The Wolfson Foundation have awarded £50,000, supplemented by a grant from TOE (Trust for Oxfordshire's Environment) of £46,000 for refurbishment of the upper galleries, purchase of new display cases, and installation of new insect and plant displays. SEMLAC awarded £5,000 for the completion of computerised databases, and cataloguing of geological collections. In support of our education programme and initiatives we have been awarded two grants, EPA Cephalosporin Fund £30,594 and DCMS-Real World Science £15,000 for a joint NHM/OUMNH/Hancock Museum collaboration.

Travel and Research Grants

Entomological Collections

Professor Simpson received £220,000 for the period 2004-2007 from the Biotechnology and Biological Sciences Research Council, UK for his work on foraging for multiple nutrients: a study between and within feeding guilds and an A.R.C. Federation Fellowship ($A 1,500,000 with matching funding from the University of Sydney, 2005-2010).

Mr Mann received a grant of £1,000 from NASA to travel to Costa Rica.

Ms Simmons was awarded a grant of £1,500 from British Ecological Society to travel to Bolivia to study Erotylidae.

Geological Collections

Dr Seiffert received a £700 grant from Oxford's Oppenheimer Fund to undertake palaeontological research in the late Cretaceous of South Africa. His $273,000 grant from the U.S. National Science Foundation (co-Principal Investigator with Dr Elwyn Simons of Duke University) for palaeontological research in the later Palaeogene of Egypt continues until the end of 2006.

Dr Siveter received £1,000 from the Royal Society for a research visit to China, to examine Cambrian invertebrates. His Leverhulme Trust research grant (£156, 000) to investigate the exceptionally preserved Silurian fossils from Herefordshire Lagerstatte is still current.

Mineralogical Collections

A grant of £350 from the Lockey Fund to enable Miss Price to attend the *Mineralogy and Museums 5* conference in Paris.

Zoological Collections

A grant of £10,000 from the Preservation of Industrial and Scientific Material (PRISM) for the purchase of conservation grade materials for the curation and conservation of the Human Remains Collection.

Dr Kemp received a Fellows Research Grant from St John's College to employ part-time Denise Blagden and Robert Davies on preparation of therapsid fossils from Zambia.

Dr De Grave received £800 from the Lockey bequest to attend the 3rd Brazilian Crustacean Congress.

Environmental Archaeology Unit

Professor Robinson received a grant of £2,663 from the Svenska Institutet Rom towards the cost of fieldwork at Pompeii.

Appendix 4: Research Projects

The Hope Entomological Collections

Mr Mann spent two months in Bolivia doing research on dung beetles and one week in Tunisia collecting specimens for the Collections.

Mr Hogan continued his part-time Ph.D. research on the systematics of ground beetles.

Ms Simmons visited Bolivia to collect and study Erotylidae.

Dr Pont continued his research on the Diptera described by Ferdinand Kowarz (1838-1914) as well as cataloguing the types of Fanniidae and Muscidae in the Museum für Naturkunde of the Humboldt University in Berlin, the single most important resource for these families in Europe. He has also prepared a list of the Muscidae from Armenia and revised the Neotropical genus *Cordiluroides* from Costa Rica. Dr Pont was part of a team investigating biting black flies, that visited Armenia at the invitation of the Armenian Academy of Sciences in Yerevan, which was funded by the Natural History Museum, London.

Mr Ismay continues his collaborative research on Palaearctic, Australian and African Chloropidae as well as his surveys, with Ms B. Schulten, of Diptera in Burnham Beeches NNR and Epping Forest. Dr Ismay, together with Ms Schulten continued his six-year study of insects at Saltram, a National Trust property in Devon. Dr Ismay has continued final editing of his Species Account of Acalyptrate Diptera for the Joint Nature Conservation Committee.

Mr Ackland continued to work on Anthomyiidae collected by A.C. Pont in the Caucasus in 1983 and to identify the Anthomyiidae collected in Pakistan in 2000 by Dr McGavin and Mr Mann. He also prepared test keys for the identification of British Anthomyiidae, which are now available on a CD.

Dr Kathirithamby visited Texas and Florida to carry out research into the biodiversity of Strepsiptera from Southeastern USA and was supported by the St Hugh's College Higher Studies Fund to visit Italy in connection with her work on the development of eyes in endoparasitic Strepsiptera.

Mr Lansbury continues to conduct research on water bugs and is working on a revision of the Australian species of *Paraplea* (Pleidae).

Mr Henshaw continues to maintain the Database of World Agromyzidae and has collaborated with Professor M. Sasakawa of Kyoto University on a study of the female genitalia of the Agromyzidae.

Geological Collections

Dr Seiffert spent just over a month, in October and November of 2004, collecting late Eocene and early Oligocene vertebrate fossils in Egypt's Fayum Depression, as part of a project that he is now co-leading with Elwyn Simons of Duke University. This expedition recovered a number of important new specimens of early anthropoid and prosimian primates, as well as early elephant relatives, hyraxes, and other mammals. Dr Seiffert's analysis of early anthropoid and prosimian primates from Egypt continues, and required visits to the Natural History Museum, the Carnegie Museum of Natural History, and the Musee National d'Histoire Naturelle. He also worked in South Africa in the summer of 2005, searching for late Cretaceous vertebrates in sediments of the Malonga Formation exposed in the Makuleke Reserve area of the Pafuri Triangle, near the borders with Mozambique and Zimbabwe.

Dr Siveter continues to research the Silurian fossils of the Herefordshire Konservat-Lagerstätte from the Welsh Borderland. This Leverhulme Trust funded research is being carried out with Postdoctoral Research Associate Kate Saunders (Oxford) and colleagues from the universities of Leicester and Yale and Imperial College. Research published this year from this special preservation horizon includes that on a pycnogonid (published in *Nature*) and a starfish. Dr Siveter's work on the exceptionally preserved Lower Cambrian fossils from the Chengjiang Lagerstätte, in collaboration with colleagues from Kunming, Leicester and Stockholm, and funded by the Royal Society, also continues.

Mr Jeffery has completed work describing a new genus of bivalve from the Early Eocene of western Europe, and continues with a first record of marine bivalves in terrestrial amber from the Miocene of Mexico. He has commenced work on a life-long ambition – to document the mollusc fauna of the Eocene Barton Group of southern England. No such work has ever been completed, and the last document that included so much as a listing of the fauna first saw light in 1891.

Professor Kennedy completed final drafts of two biographical essays of colleagues (J.M. Hancock and C.W. Wright), both of which were accepted for publication in the *Proceedings of the Geologists' Association*. A review paper on the Cenomanian Stage was completed (with A.S. Gale, Greenwich), as was a monograph on the Campanian ammonite faunas of the Münster Basin (with U. Kaplan, Guterslöh). The year also saw the appearance and correction of proofs of more than 90 entries for the révision critique of Alcide d'Orbigny's *Paléontologie Française, Terrains Crétacés, 1, Céphalopodes*, the first drafts for which were submitted over 20 years ago.

Mineralogical Collections

Dr Waters continued his collaborative research with Dr M.P. Searle and others on the metamorphism and tectonics of the Himalayan chain. This research received additional impetus during the year from the visits by Professor Rick Law, of Virginia Tech, USA, who has been making structural-petrological measurements on samples collected by Lawrence Wager on the 1933 Everest Expedition (see http://www.oum.ox.ac.uk/onlinedb/accrocks/everest.htm). Wager's samples from the upper parts of Mt Everest are proving to be of unique and crucial importance to understanding Himalayan tectonics, and research on this material will continue with Professor Law and his student Micah Jessup in the coming year. John Cottle, a postgraduate student supervised by Dr

Waters and Dr Searle, started work in Autumn 2004 on the geology and tectonics of the Kharta Valley, just east of Mt Everest, carrying out his initial field expedition together with Mr Jessup. Another new postgraduate student, Gavin Chan, is working partly under Dr Waters' supervision on an ophiolite complex in southern Tibet.

Final-year undergraduate student Michael Streule successfully completed his research project on the pressure-temperature evolution of samples adjacent to the Karakoram fault zone, and has been accepted for a DPhil studentship to work in eastern Tibet under the supervision of Dr Waters and Dr Searle.

Dr Waters presented a summary of his earlier collaborative research in the Zanskar Himalaya, entitled *Pressure-Temperature-Time paths from the Zanskar Himalaya: constraints on the timing of metamorphism, melting, exhumation and channel flow*, at an international conference on *Channel flow, ductile extrusion and exhumation of lower-mid crust in continental collision zones*, held at the Geological Society, London, on 6-7 December 2004.

Postgraduate student Clare Warren completed her project on the eclogites beneath the Semail ophiolite of Oman, and some of the petrological modelling she undertook with Dr Waters was presented at the American Geophysical Union in December 2004.

Miss Price and Mrs Cooke continued research on the Corsi collection and catalogue.
Miss Price and Mr James have continued research on web sources for checking locality data for mineral specimens.

Zoological Collections

Dr Kemp has returned to a lab-based research programme centred on therapsid fossils and macroevolutionary interpretation of their fossil record.

Dr De Grave continued his research in taxonomy of caridean shrimps, as well as marine biogeography and macroecology.

Mrs Nowak-Kemp continued her research into the history of comparative anatomy and human remains in Oxford University.

Environmental Archaeology Unit

Professor Robinson completed the analysis of biological remains from the excavation of the House of the Postumii, Pompeii and a report has been prepared for the project monograph. With the discoveries of prehistoric archaeology interstratified with pyroclastic deposits at the Houses of the Postumii and the Greek Epigrams, research is being undertaken on the earlier environmental history of Pompeii.

Work has been completed on the environmental archaeology of the late Roman phase of Silchester and a report prepared for publication. A preliminary investigation of samples from the early Roman phase of the town shows it has good potential.

Research for English Heritage has included the analysis of food plant remains from the earlier Saxon settlements at Sutton Courtenay and Taplow. It has shown the replacement of spelt wheat, the main wheat of the Roman period, with bread wheat.

Appendix 5: New Acquisitions

The Hope Entomological Collections

In addition to numerous smaller donations and accessions, major new accession include:
600 specimens of world Blattodea (D. Mann).
Type series of *Ptilomera novabrittanica* Polhemus & Polhemus (Hemiptera: Gerridae), Holotype and 10 Paratypes (I. Lansbury).
3 paratypes of *Aphodius wilsonae* Mate & Angus (Coleoptera: Scarabaeidae) (J. Mate).
37 Coleoptera from Bahrain and 500 specimens of named British Coleoptera (C. Turner).
450 specimens representing 165 species (including 18 Paratypes of Coleoptera) mainly from China and Central Asia as well as some species recently added to the British List and hitherto not represented in the British collections (eg *Ixapion variegatum, Luperomorpha xanthodera*) (J. Cooter).
Holotype of *Agromyza audcenti* Gibbs (Diptera: Agromyzidae) (D. Gibbs).
Collection of 2000 specimens of Coleoptera, Diptera, Hymenoptera and Hemiptera from Argentina (C. Vardy).
Several thousand specimens of Scarabaeoidea from Malaysian Sabah (E. Slade).

Geological Collections

By purchase
Stromatolites from Canada, U.S.A., Bolivia and Australia
Eldonia, Ordovician, Morocco
Selenopeltis, Ordovician, Morocco
Selenopeltis and starfish, Ordovician, Morocco
Carpoids, Ordovician, Morocco
Eurypteridus remipes, Silurian, New York State
Various trilobites, Devonian, Morocco
Cephalaspis, Devonian, Ukraine
Dipterus valenciennesi, Devonian, Scotland
Woodworthia, Triassic, Zimbabwe
Titanites giganteus, Jurassic, Isle of Portland
Teredo sphere, Cretaceous, South Dakota
Various ammonites, Cretaceous, South Dakota
Pseudastacus, Cretaceous, Lebanon
Pseudopenaeus, Cretaceous, Lebanon
Polychaete, Cretaceous, Lebanon
Mosasaur jaw, Cretaceous, Morocco
Dinosaur eggs, Cretaceous, China
Subhyracodon, cast of foetal skeleton, Oligocene, Wyoming
Palaeobatrachus, Oligocene, Czech Republic
Testudo, Oligocene, South Dakota
Palaeocastor, skull, Oligocene, South Dakota
Ischyromys, skull, Oligocene, South Dakota

Paleolagus, skull, Oligocene, South Dakota
Daphoenus, skull, Oligocene, South Dakota
Hyaenodon horridus, skull, Oligocene, South Dakota
Hyaeodon crucians, skull, Oligocene, South Dakota
Hoplophoneus, partial skull, Oligocene, South Dakota
Hoplophoneus, cast of skull, Oligocene, South Dakota
Mesohippus, partial skeleton with scavenger marks, Oligocene, South Dakota
Dinictis, cast of skull with healed injury, Oligocene, South Dakota
Hoplophoneus, cast of skull with fatal injury, Oligocene, South Dakota
Rodent-gnawed bones, Oligocene, South Dakota
Coprolites, Oligocene, South Dakota
Hackberry seeds, Oligocene, South Dakota
Pectens, Miocene, France
Neptunus granulatus, Miocene, Italy
Eriphia brochii, Pliocene, Italy
Rhino vertebra, Pleistocene, Poland
Mammoth scapula, Pleistocene, North Sea

By donation
Devonian corals from Poland (Dr Tomasz Wrzolek)
Caturus skull, Jurassic, Wiltshire (Mr Simon Carpenter)
Cretaceous ammonites from Kazakhstan and Uzbekistan (Dr Christopher King, Dr Noel Morris, Dr David Ward)
By bequest
None

By fieldwork
Silurian soft-bodied invertebrates from the Herefordshire Lagerstätte
Jurassic invertebrates from Oxfordshire and Gloucestershire

Mineralogical Collections

(Minerals marked * are new to the collections)

By donation

Minerals
Aragonite from Yorkshire and ankerite, calcite, fluorite, galena, goethite, quartz and sphalerite from Cumbria (Mr T.F. Bridges)
Rhodochrosite or an unidentified species with malachite from Somerset (Mr C. Finch)
Diopside, epidote and garnet from Greenland (Dr C.R.L. Friend)
Malayite from Devon and wroewolfeite from Ceredigion (Mr P. Hay)
Agardite, conichacite, gordaite* with ktenasite, lavendulan, parnauite* and serpierite, all from Greece (Mr N. Hubbard)
4 samples of decorative rocks from Italy, Sardinia, Croatia and India (Mr I. MacDonald (McMarmilloyd))
A fine collections of 154 gemstones, and remaining specimens from his collection of minerals presented in 2001 (Mr B. Peel)
Goethite dendrites, unlocalised (Mr H.P. Powell)

Celestine from Somerset; calcite, chalcopyrite, hematite and malachite from Shropshire; ullmanite from Ceredigion; fluorite and pyrrhotite from Perth & Kinross; garnet from Tayside; and beryl, feldspar, garnet, mica and quartz from Grampian (Mr R. Starkey)
Fine large marcasite nodule, unlocalised (Dr E.J.W. Whittaker)

By exchange of surplus unregistered specimens
Kyanite (Miss L. Cotton)

By purchase
Charoite, clinochlore, eudialyte and glendonite (calcite pseudomorphous after ikaite) from Russia; gypsum var. desert rose, murdochite*, talmessite* and wendwilsonite from Morocco; carrollite and malachite from the Democratic Republic of Congo; graphic granite from Madagascar; kosmochlor* from Burma, hsianghualite* and hubeite from China, apatite, gittinsite, meionite, mosandrite, and vlasovite* from Canada; opal var hyalite from the U.S.A.; pectolite var. larimar from the Dominican Republic; quartz var. amethyst from Brazil, and a 14.2kg Campo del Cielo iron meteorite from Argentina.

By Transfer
Calcite var. oriental alabaster from Egypt, and marble from Rome (from the Education section, OUMNH)
Former Accrington Museum and other reserve mineral collections numbering several thousand specimens (from the University of Reading)
Rocks from Karakoram, the research collection of Dr C. Pudsey (from the University of Leicester).
Rocks from Greenland and Scotland, the research collection of Dr C.R.L. Friend (from Oxford Brookes University)
Rocks from Greenland, the research collection of Dr R.P. Hall (from University of Portsmouth)

Zoological Collections

By donation
Worldwide collection of Caridea (Dr A. Anker, Uiversity of Alberta, Canada)
British Decapoda (Mr C. Ashelby, Unicomarine)
Palaemon species from souther Spain (Dr J. Cuesta, Instituto de Ciencias Marinas de Andalucia, Spain)
Palaemon species from Belgium (Dr N. Fockedey, University of Ghent, Belgium)
Freshwater shrimps from USA (Dr R. Knowlton, George Washington University, USA)
Freshwater shrimps from Brazil (Dr C. Magelhaes, INPA, Brazil)
Freshwater shrimps from Tobago (Dr. M. Johnson, University of Hull)
Decapoda from Costa Rica (Dr I. Werhtmann, University of Costa Rica)
Freshwater shrimps from Peru (Dr M. Ortega, Museum of Natural History, Peru)
Freshwater shrimps from Vietnam (I. Marin, Severstov Institute of Evolution and Ecology, Russia)
Freshwater shrimps from USA (Dr V. Barko, Missouri Department of Conservation)
Irish Decapoda (Aquatic Services Unit, Ireland)
South African *Palaemon* species (Dr. P. Teske, Rhodes University)
Marine invertebrates from Antarctica (C. Waller, BAS, Cambridge)

Database of data and photographs of all *Thylacinus cynocephalus* specimens in public and private collections worldwide, collated and donated by Dr Stephen Sleightholme,

Various small individual collections of palearctic bird eggs.
Instruments for preparing eggs intended for collection.
Wytham Woods Collection of mammal skulls (Hope Entomological Collection).

By Fieldwork
Decapoda from various UK locations, and Panama

The Hope and Arkell Libraries

Library accessions, by purchase and donation, totalled: 628 books, 504 pamphlets, 30 periodical volumes, and 340 periodical parts. There are 114 current journal titles. On 31 July 2005 there were 16,762 'piece' records for the OUMNH on OLIS.

The following were significant donations made to the library during the course of the year:

Bellamy, C.L. (2003) An illustrated summary of the higher classification of the superfamily Buprestoidea (Coleoptera). (*Folia Heyrovskyana*, suppl. 10). Vit Kabourek, Zlín, Czech Republic (by Ms A. Courtenay)
Bellmann, H. (1985) A field guide to the grasshoppers and crickets of Britain and Northern Europe. Collins, London (by Mr D.J. Mann)
Carvalho, C.J.B. de and Pont, A.C. [et al.] (2005) A catalogue of the Muscidae (Diptera) of the Neotropical Region. (*Zootaxa*, 860). Magnolia Press, Auckland, NZ.
(by Dr A.C. Pont)
Coca-Abia, M. (1998) Revisión taxonómica del género Rhizotrogus Berthold, 1827 (Coleoptera: Scarabaeidae, Melolonthinae). (*Coleopterological monographs*, 2). Asociación Europea de Coleopterología, Barcelona (by Mr D.J. Mann)
Edwards, R. (ed.) Provisional atlas of the aculeate Hymenoptera of Britain and Ireland. Part 5. Centre for Ecology and Hydrology, Abbots Ripton, Cambs (by BWARS)
Furth, D.G. (ed.) (2003) Special topics in leaf beetle biology. Pensoft, Sofia (by Mr D.J. Mann)
Lelei, A.S. (2005) Catalogue of the Mutillidae (Hymenoptera) of the Oriental Region. Dalnauka, Vladivostok (by Mr A.S. Lelei)
Peigler, R.S. (2003) A revision of the silkmoth genus *Samia*. University of the Incarnate Word, San Antonio, Texas (by Mr R.S. Peigler)
Polskie towarzystwo entomologiczne (2004) Klucze do oznaczania owadów Polski. Cz. 18(6b); 24(63). Polskie towarzystwo entomologiczne, Toruń, Poland (2 items) (by Mr J. Cooter)
Rookmaaker, L.C. (2004) Calendar of the historical correspondence of the University Museum of Zoology, Cambridge, 1819-1911. University Museum of Zoology, Cambridge (by Professor M. Akam, Director)
Roubik, D.W. [et al.] (2004*)* Orchid bees of tropical America. Instituto Nacional de Biodiversidad, (INBio), Santo Domingo de Heredia, Costa Rica. (by Mr D.J. Mann)
Russia (Federation). Ministry of Nature Resources of Russian Federation. Sokhondo Biosphere Nature Reserve [&c.] (2004) Bioraznoobrazie Sokhondinskogo zapovednika. Chlenistonogie = Biodiversity of the Sokhondo Nature Reserve. Arthropoda. Chita, Novosibirsk (from Mr D. Logunov)
Solís, A. (2004) Escarabajos fruteros de Costa Rica (Cetoniinae*)*. Instituto Nacional de Biodiversidad, (INBio), Santo Domingo de Heredia, Costa Rica (by Mr D.J. Mann)
Studia dipterologica, **10** (1-2); Suppl. 12, 2003 (by Dr A.C. Pont)
Zoology in the Middle East, **32, 33, 34,** 2004-2005 (by Dr A.C. Pont)

Appendix 6: Loans

The Hope Entomological Collections:

A total of 77 loans were issued during the year to researchers worldwide. The loans comprised 9749 specimens of which 105 were arachnids (60 types) and 9644 were insects (167 types).

Geological Collections

Seven loans were made, to researchers in the UK, Eire, and Poland. These loans comprised some 116 specimens, and included Ordovician gastropods and cephalopods, Silurian cephalopods, Devonian corals, Jurassic ammonites, plus some plesiosaur material.

Mineralogical Collections

The course on Ore-forming Processes, given by Professor L.J. Robb and Dr D.J. Waters to third-year undergraduates in the Department of Earth Sciences, ran in the same successful format as in 2004, making use of a selection of the excellent examples in the Stanton Ore Collection (part of the Accession Series). There were 16 other loans of minerals and meteorites administered in the past year, supplying a total of 102 specimens for purposes including research, University tutorials, educational activities, school display and for an art installation at the London School of Economics by Abigail Reynolds, the Oxford University Press's artist-in-residence. Eighteen samples were supplied for destructive research.

Zoological Collections

Vertebrate Collections issued 11 loans consisting of 73 specimens.
As a new facility, the Zoological Collections can now offer the extraction of samples for DNA testing to researchers who are not able to come personally to Oxford and whose proposals have been approved by the Curator. In the last year, seven samples of *Aquila chrysaetos*, one of *Hieraaetus fasciatus*, one of *Turnix sylvatica dussumier*, six of *Struthio camelus* and one of *Cuora trifasciata* were extracted and sent to different researchers abroad.

A total of 6 loans of invertebrate material were made.

Appendix 7: Enquiry and Identification Services

The Hope Entomological Collections

Staff and Honorary Associate Curators have, as usual, provided Oxford staff and students, as well as amateur and professional entomologists around the world with identifications. Dr McGavin continued to provide pest advice for various Oxford libraries and museums. An enquiries database was set up in November 2004 and to date, entomology staff have dealt with 191 enquiries from researchers and members of the public.

Dr Pont provided identifications of Muscidae for two Ph.D. students from Edinburgh University working on *Acacia* pollination in Kenya, discovering two new species in the process.

Mr Henshaw has continued to maintain a connection with South Korea by providing identifications of Agromyzidae and advice for members of the National Institute of Agriculture and Technology, University of Suwon and has also continued to advise members of the South Korean Quarantine Service.

Geological Collections

There were 60 specimen identification enquiries, mostly from the general public, and 196 other enquiries, by telephone, by email or by post. Professional enquiries included questions on Devonian corals, Carboniferous ammonoids, Jurassic vertebrates and invertebrates, Tertiary molluscs, gastropod classification, the Buckland archive, and trends in the display of natural history collections.

Mineralogical Collections

There were 24 requests for identifications from academics and members of the public, a total of 196 specimens. In addition there were well in excess of 40 non-identification enquiries. A new enquiry logging system will enable accurate figures to be recorded in future annual reports.

Zoological Collections

The Vertebrate Collections received 149 enquiries covering topics ranging through the history of individual collectors or collections, individual species and specimens, and requests for information about the vertebrate holdings generally and their care in museums.
27 vertebrate specimens were identified.

Appendix 8: Official Visitors

The Hope Entomological Collections

Visitors: 111 visits were made to the Collections by entomological researchers, students and artists from the United Kingdom and a number of other countries including China, Japan, USA, Russia, Spain, Germany and Slovenia.

Dr A.G. Kirejtshuk from the Russian Academy of Sciences spent 2 days working on the Coleoptera collections. Ms Eileen Reilly from Trinity College, Dublin spent several days using the Coleoptera reference collection to identify fragments extracted from sediments

Dr Maria-Dolores Rodriguez (CIFA, Almeria, Spain) visited Dr Pont to discuss collaborative work on *Coenosia* species (Muscidae), which are being used increasingly as effective biocontrol agents of glasshouse pests.

Dr Niki Whitehouse of the Department of Archaeology and Palaeoecology, Queen's University, Belfast made two visits to consult the British Coleoptera collections.

Geological Collections

There were 54 scientific visits, involving researchers from the UK, France, Spain, Belgium, Canada, the USA, and China. Material examined included Cambrian, Ordovician, Silurian, Jurassic and Cretaceous invertebrates; Triassic, Jurassic and Pleistocene vertebrates; the Red Lady of Paviland; and building stones.

Mineralogical Collections

Professor R.D. Law of the Department of Geological Sciences, Virginia Tech., Blacksburg, Virginia, USA, paid two visits during the review period to study the Himalayan petrological collection of L.R. Wager and to consult with Dr Waters. There were 23 official visitors to the mineral and decorative rock collections. In addition, there were a number of short visits 'behind the scenes' by members of the public wishing to see specific specimens, and a day visit by a party from the Brighton & Hove Geological Society.

Zoological Collections

A total of 101 pre-arranged visits were made to the Vertebrate Collections by researchers from a number of countries including Japan, Tasmania, USA, Israel, New Zealand and Australia. Additionally there were organised group visits, like the participants of an international conference of museum professionals, staff from the Cotswold Wildlife Park, administrators of Science Area departments, students from Oxford and Brookes Universities and numerous visits by scientists who did not book their visits in advance. Amongst the researchers the biggest group was made up by ornithologists, followed by primatologists, mammalogists, paleontologists, writers and artists.

Appendix 9

Statistics of (non-staff) libraries' use.

There were 204 visits made to the libraries. These break down as follows: 12 by undergraduates, 32 by postgraduates, 20 by senior members of OU or research fellows, 43 by Honorary Associate Curators/Honorary Research Associates and 97 by visitors. 69 visits involved use of archives. There were 76 recorded queries from external 'users', some involving an exchange of correspondence or e-mail, relating to arrangements for visits, or requests for bibliographic or archival information, or supply of photocopies. There were three requests for photographs.

(*N.B.* As usual staff usage this year accounted for more than half of the total usage and staff made extensive use of archives)

Inter-library loan requests for staff, honorary curators and postgraduates made to the British Library, etc., totalled 19. Of these 15 were successful. Loans made by the RSL to the Librarian for staff numbered 18 items.

Loan/photocopy requests by other libraries totalled 48. Where possible these were fulfilled. 17 photocopies were supplied.

Appendix 10: Publications

The Hope Entomological Collections

Angus, R.B., Wilson, C.J. and **Mann, D.J.** (2004). Chromosomal and aedeagal distinction between *Aphodius* (*Labarrus*) *lividus* Olivier, 1789 and *A.* (*L.*) *pseudolividus* Blathasar, 1941 (Col., Scarabaeidae, Aphodiinae). *Entomologist's Monthly Magazine*, **140**, 255-261.

Beani, L., Hughes, D.P., Turallazzi, S. and **Kathirithamby, J**. (2004). Parasitic castration does not promote social behaviour in paper wasps. Proceedings of the 10th Conference of the Italian Section of the International Union for the Study of Social Insects, Rome 11th -13th June. *Insects Social Life*, **5**:17-21.

Carvalho, C.J.B. de, Couri, M.S., **Pont, A.C**., Pamplona, D. and Lopes, S.M. (2005). A Catalogue of the Muscidae (Diptera) of the Neotropical Region. *Zootaxa*, **860**, 282 pp.

Cooter, J. (2004). *Agathidium pisanum* Brisout (Col., Leiodidae) in Britain. *Entomologist's Monthly Magazine*, **140**, 59-64.

Cooter, J. (2004). Obituary – Guido Nonveiller. *Entomologist's Monthly Magazine*, **140**, 64-67.

Cooter, J. (2004). Records of some Herefordshire Coleoptera. *Entomologist's Monthly Magazine*, **140**, 265-266.

Cooter, J. (2004). Some records (Col., Dipt., Diplopoda) from French caves. *Entomologist's Monthly Magazine,* **140**, 312.

Henshaw, D.J. de C. (2005). A Simple system of pin sizing. *Entomologist's Monthly Magazine* **141**, 174.

Despland, E. and **Simpson, S.J.** (2005). Surviving the change to warning colouration: density-dependent polyphenism suggests a route for the evolution of aposematism. *Chemoecology*, **15**, 69-75.

Despland, E. and **Simpson, S.J.** (2005). Food choices of solitarious and gregarious locusts reflect cryptic and aposematic antipredator strategies. *Animal Behaviour*, **69**, 471-479.

Evenhuis, N.L. and **Pont, A.C.** (2004). The Diptera genera of Jacques-Marie-Frangile Bigot. *Zootaxa*, **751**, 94 pp.

Grimaldi, D., **Kathirithamby, J.** and Schawaroch, V. (2005). Strepsiptera and Triungula in Cretaceous amber. *Insect Systematics and Evolution* **36**, 1-20.

Hughes, D.P., **Kathirithamby, J.** and Beani, L. (2004). Prevalence of the parasite Strepsiptera in adult *Polistes* wasps: field collections and literature overview. *Ethology, Ecology and Evolution* **16**, 363-375.

Hughes, D.P. and **Kathirithamby, J.** (2005). Cost of strepsipteran macroparasitism for immature wasps: Does sociality modulate virulence? *Oikos* **110**, 428-434.
Johnston, J.S., Ross, L.D., Beani, L., Hughes, D.P. and **Kathirithamby, J.** (2004). Tiny genomes and endoreduplication in Strepsiptera. *Insect Molecular Biology*, **13**, 581-585.

Lansbury, I. (2005). Review: *Australian Water Bugs: their biology and identification (Hemiptera-Heteroptera, Gerromorpha and Nepomorpha)* by Anderson, N.M. and Weir, T.A. *Entomonograph* **14.** CSIRO Publishing. *The Quarterly Review of Biology* **80**, (1), 128.

Lee, K.P., **Simpson, S.J.** and Raubenheimer, D. (2004). A comparison of nutrient regulation between solitarious and gregarious phases of the specialist caterpillar, *Spodoptera exempta* (Walker). *Journal of Insect Physiology*, **50**, 1171-1180.

Mann, D.J. (2004). A further locality for *Tuponia brevisrostris* Reuter, 1883 (Hemiptera: Miridae) in Middlesex (VC 21). *Entomologist's Monthly Magazine*, **140**, 272.

Mann, D.J. and **O'Toole, C.O.** (2004). *Garden Beetles*. Osmia Publications, Banbury, 41pp.

Mann, D.J. (2005). *Ladybugs, Pest control the natural way*. Osmia Publications, Banbury 36pp.

Mayntz, D., Raubenheimer, D., Salomon, M., Toft, S. and **Simpson, S.J.** (2005). Nutrient-specific foraging in invertebrate predators. *Science*, **307**, 111-113.

McGavin, G.C. (2005). *Dorling Kindersley Pocket Nature: Insects and spiders*. Dorling Kindersley, 224pp.

Negrobov, O.P. and **Pont, A.C.** (2005). Some lectotype designations in the family Dolichopodidae (Diptera) from the collections of Ferdinand Kowarz and Hermann Loew. *Dipterists Digest,* **12**, 13-20.

O'Connor, J.P. and **Ismay, J.W.** (2005). *Calamoncosis glyceriae* Nartshuk (Dipt., Chloropidae), new to Ireland. *Entomologist's Monthly Magazine*, **141**, 138.

Pont, A.C. (2004). Notes on Fanniidae and Muscidae (Diptera) in the von Röder collection, Martin-Luther-University, Halle-an-der-Saale. *Studia dipterologica*, **11**, 327-332.

Pont, A.C. and Werner, D. (2005). *Coenosia styriaca* Hennig, 1961, neu für Deutschland. *Entomologische Nachrichten und Berichte*, **49**, 63-64.

Potts, S.G., Vulliamy, B., Roberts, S., **O'Toole, C**., Dafni, A., Ne'eman, G. and Willmer, P.G. (2004). Nectar resource diversity organises flower-visitor community structure. *Entomologia Experimentalis et Applicata*, **113**, 103-107.

Potts, S.G., Vulliamy, B., Roberts, S., **O'Toole, C**., Dafni, A., Ne'eman, G. and Willmer, P.G. (2005). Role of nesting resources in organising diverse bee communities in a Mediterranean landscape. *Ecological Entomology*, **30**, 78-85.

Raubenheimer, D. and **Simpson, S.J.** (2004). Unravelling the tangle of nutritional complexity. *Jahrbuch, Wissenschaftskolleg zu Berlin* 2002/3, 275-294.

Simpson, S.J., Sibly, R.M., Lee, K.P., Behmer, S.T. and Raubenheimer, D. (2004). Optimal foraging when regulating intake of multiple nutrients. *Animal Behaviour*, **68**, 1299-1311.
Simpson, S.J. and Raubenheimer, D. (2004). The geometry of human nutrition. *Jahrbuch, Wissenschaftskolleg zu Berlin* 2002/3, 295-316.

Simpson, S.J. and Raubenheimer, D. (2005). Obesity: the protein leverage hypothesis. *Obesity Reviews*, **6**, 133-142.

Turner, C.R. and **Mann, D.J.** (2005). Recent observations of *Hippobosca equina* L. (Diptera: Hipoboscidae) in South Devon. *British Journal of Entomology and Natural History*, **18**, 37-40.

Werner, D. and **Pont, A.C.** (2004). Black flies and their natural predators: new results on Diptera. Abstract of a talk at the International Simuliidae Symposium, Berlin, Germany, 15-18 September 2004. *Deutsche Gesellschaft für allgemeine und angewandte Entomologie, Nachrichten*, **18**, 124. [Also published in 2005, *British Simuliid Group Bulletin*, **23**, 15-16.]

Woodcock, B.A. and **Mann, D.J.** (2004). The occurrence of the micropterus fly *Crumomyia pedestris* (Meigen) (Diptera: Sphaeroceridae) in conservation field margins, with comments on its collection and distribution in Britain. *Dipterists Digest*, **11**, 103-106.

Woodcock, B.A., McCausland, K.A., **Mann, D.J.** and **McGavin, G.C.** (2004). Management of Irish blanket bog and its effect on ground beetles: implications for the conservation of the threatened *Carabus clathratus* L. (Coleoptera: Carabidae). *Bulletin of the Irish Biogeographical Society*, **28**, 63-84.

Geological Collections

Bulot, L.G., **Kennedy, W.J.**, Jaillard, E., and Robert, E. (2004). Late Middle-early Late Albian ammonites from Ecuador. *Cretaceous Research*, **26**, 450-459.

Gale, A.S., **Kennedy, W.J**., Voigt, S. and Walaszczyk, I. (2005). Stratigraphy of the Upper Cenomanian-Lower Turonian Chalk sucession at Eastbourne, Sussex, U.K.: ammonites, inoceramid bivalves and stable carbon isotopes. *Cretaceous Research*, **26**, 460-487.

Kennedy, W.J. (2004). Jake Hancock, an appreciation. *Cretaceous Research*, **25**, 435-437.

Kennedy, W.J. (2004). Ammonites from the Papaw Shale (Upper Albian) in northeast Texas. *Cretaceous Research*, **25**, 865-905, 34 figs.

Kennedy, W.J. (2005). Keith Young, an appreciation. *Cretaceous Research*, **26**, 347-348.

Kennedy,W.J. (2005). Upper Albian and Lower Cenomanian ammonites from the Main Street Limestone, Grayson Marl and Del Rio Clay in northeast Texas. *Cretaceous Research*, **26**, 349-428.

Kennedy,W.J., and Jolkichev, N. (2004). Middle Cenomanian ammonites from the type section of the Sanandinovo Formation of northern Bulgaria. *Acta Geolgica Polonica*, **54**, 369-380, 6 pls.

Kennedy, W.J., Hancock, J.M., Cobban,W.A. and Landman,N.L. (2004). A revision of the ammonite types described in C.F. Roemer's Die Kreidebildung von Texas und ihre organischen einschlusse (1852). *Acta Geologica. Polonica*, **54**, 433-445, 4 pls.

Kennedy, W.J., Cobban, W.A. and Walaszczyk, I. (2005). The Global boundary Stratotype Section and Point for the base of the Turonian Stage of the Cretaceous: Pueblo, Colorado. *Episodes*, **28**, 93-104.

Machalski, M., **Kennedy, W. J.**, and Kin, A. (2004). Early Late Campanian ammonites from Busko Zdrój (Nida Trough,Southern Poland). *Acta Geologica Polonica*, **54**, 447-471, 8 pls.

Robinson T. and **Seiffert, E.R.** (2004). Afrotherian origins and interrelationships: new views and future prospects. *Current Topics in Developmental Biology*, **63**, 37-60, 3 figs.

Sadlier, R., **Barrett, P.** and **Powell, H.P.** (2004). Anatomy and systematics of *Eustreptospondylus oxoniensis* (Dinosauria: Theropoda): evolutionary implications. *Journal of Vertebrate Paleontology,* **24** (3-Suppl.): 107A.

Seiffert, E.R. (2004). Sixty-third meeting of the Society of Vertebrate Paleontology. *Evolutionary Anthropology*, **13**, 43-44, 1 fig.

Seiffert, E.R., Simons, E.L. and Simons, C.V.M. (2004). Phylogenetic, biogeographic, and adaptive implications of new fossil evidence bearing on crown anthropoid origins and early stem catarrhine evolution. *In:* Ross, C.F. and Kay, R.F. (eds) *Anthropoid Origins: New Visions*. Kluwer Academic Press, New York, 147-171, 2 figs.

Seiffert, E.R., Simons, E.L., Ryan, T.M., and Attia, Y. (2005). Additional remains of *Wadilemur elegans*, a primitive stem galagid from the late Eocene of Egypt. *Proceedings of the National Academy of Sciences, U.S.A.*, **102**, 11396-11401, 3 figs.

Siveter, Derek J., Sutton, Mark D., Briggs, Derek E. G. and Siveter, David J. (2004). A Silurian sea spider. *Nature*, **431,** 978-980.

Summesberger, H. and **Kennedy, W. J.** (2004). More ammonites (Puzosiinae, Pachydiscidae, Placenticeratidae, Nostoceratidae, Diplomoceratidae) from the Campanian (Late Cretaceous) of the Gschliefgraben (Ultrahelvetic Nappe; Austria). *Annalen der Naturhistorisches Museum Wien,* **106A**, 167-211, 11 pls.

Sutton, M.D., **Siveter, Derek J.**, Briggs, D.E.G. and Siveter, David J. (2004). The Herefordshire Lagerstätte: a fossil deposit of international importance. *Transactions of the Radnorshire Society*, **73**, 148-162.

Sutton, M.D., Briggs, D.E.G., Siveter, David J., **Siveter, Derek J**. and Gladwell, D.J. (2005). A fossil starfish with three-dimensionally preserved soft parts from the Silurian of England. *Proceedings of the Royal Society of London*, **272**, 1001-1006.

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Cooke, L. (2004) Chatsworth, home of the Cavendishes, including eleven Dukes of Devonshire, in the Peak District National Park of England. In: Prikryl, R & Siegl, P. (eds) *Proceedings of the International Conference Lux and Lapis (Light and Stone) 2002. Architectural and sculptural stone in the cultural landscape. Charles University in Prague.* Prague, The Karolinum Press 29-40.

Cooke, L. (2004) The shared passion for stone of William Spencer Cavendish, 6th Duke of Devonshire, and Faustino Corsi, a lawyer in Rome. *In*: Prikryl, R and Siegl, P. (eds) *Proceedings of the International Conference Lux and Lapis (Light and Stone) 2002. Architectural and sculptural stone in the cultural landscape. Charles University in Prague.* Prague, The Karolinum Press 41-51.

Price M.T. and **James, S**. (2004) Worldwide web resources for verifying mineral localities. In: Program and abstract volume, 5th International Conference on Mineralogy and Museums. Paris, France, September 5-8, 2004. *Bulletin de liaison de la Société Francaise de Minéralogie et Cristallographie*, 16.

Price, M.T. and **Walsh K.L.** (2005). *Pocket Nature: Rocks and Minerals* London, Dorling Kindersley, 224 pp.

Searle, M.P., Warren, C.J., **Waters, D.J.** and Parrish, R.R. (2004). Subduction zone polarity in the Oman mountains: Implications for ophiolite emplacement. *Geological Society Special Publication,* **218**, 467-480.

Searle, M.P., Warren, C.J., **Waters, D.J.** and Parrish, R.R. (2005). Reply to: Comment by Gray, Gregory and Miller on 'Structural evolution, metamorphism and restoration of the Arabian continental margin, Saih Hatat region, Oman Mountains'. *Journal of Structural Geology*, **27**, 375-377.

Zoological Collections

De Grave, S. (2004). A new species of *Salmoneus* (Crustacea: Decapoda: Alpheidae) from Palau. *Bulletin de l'Institut Royal des Sciences naturelles de Belgique, Biologie*, **74**, 41-48.

De Grave S. and Moosa, K. (2004). A new species of the enigmatic shrimp genus *Pseudocheles* (Decapoda: Bresiliidae) from Sulawesi, (Indonesia), with the designation of a new family Pseudochelidae. *Crustacean Research*, **33**, 1-9.

De Grave, S. and Dowell, M. (2005). Redescription of the little known shrimp, *Tozeuma cornutum* A. Milne-Edwards, 1881 (Decapoda, Hippolytidae) *Crustaceana*, **77** (11): 1403-107.

Kemp, T.S. (2004). *The origin and evolution of mammals.* Oxford University Press. 331pp.

Tilbrook, K.J. and **De Grave, S.** (2005). A biogeographical analysis of Indo-West Pacific cheilostome bryozoan faunas. *In*: Moyano, Cancino and Wyse-Jackson (eds) *Bryozoan Studies* 2004, Taylor & Francis, London, pp. 341-349.

Robinson, M.A. (2003). Molluscan analysis, 191-202, Charred plant remains, 241 and (with others) The White Horse and its landscape, 243-268. *In:* Miles, D., Palmer, S., Lock, G., Gosden, C. and Cromarty, A.M. *Uffington White Horse and its landscape: investigations at White Horse Hill, Uffington, 1989-95 and Tower Hill, Ashbury, 1993-4*. Oxford: University School of Archaeology.

Robinson, M.A. (2003). Charred plant remains. *In:* Pine, J. Excavation of part of a 3rd century Roman settlement and later Roman road at Stowford Road, Barton, Oxford, *Oxoniensia* **68**, 275.

Robinson, M.A. (2003). Organic materials. *In:* Booth, P. The West Gate of Oxford Castle: excavations at Boreham's Yard, Tidmarsh Lane, Oxford, 1994-1995, *Oxoniensia* **68**, 240.

Robinson, M.A. (2003). Carbonised plant remains. *In:* Pine, J. and Ford, S. Excavation of Neolithic, late Bronze Age, early Iron Age and early Saxon features at St. Helen's Avenue, Benson, Oxfordshire, *Oxoniensia,* **68**, 170.

Robinson, M.A. (2004). Invertebrate and waterlogged macroscopic plant remains from Gravelly Guy and Blackditch. *In:* Lambrick, G. and Allen, T.G. *Gravelly Guy, Stanton Harcourt: the development of a prehistoric and Romano-British community*, 405-17. Oxford: University School of Archaeology.

Robinson, M.A. (2004). Plant macrofossils. *In:* Pine, J. and Preston, S. Early medieval settlement on land adjoining Froman's, Cow Drove Hill, King's Somborne, Hampshire, *Proceedings of the Hampshire Field Club Archaeological Society,* **56**, 157-8.

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Robinson, M.A. (2004). Charred plant remains. *In:* Ford, S. Excavation of late Saxon / early medieval deposits at Mitcham Vicarage, 21 Church Road, Mitcham, *Surrey Archaeological Collections,* **91**, 102-3.

Robinson, M.A. (2004). Carbonised plant remains. *In:* Coles, S. Three Bronze Age barrows at Mockbeggar Lane, Ibsley, Hampshire, *Proceedings of the Hampshire Field Club and Archaeological Society,* **59**, 59-60.

Robinson, M.A. (2004). Charred plant remains. *In:* Taylor, A. and Preston, S. The excavation of a middle Bronze Age settlement at Hodge Ditch, Chard Junction Quarry, Thorncombe, Dorset, *Dorset Proceedings*, **126**, 39.

Robinson, M.A. (2005). Insect remains. *In:* Birbeck, V. *The origins of mid-Saxon Southampton*, 181-3. Salisbury: Wessex Archaeology.

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Ancient Biomolecules Centre

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Drummond, A.J., Rambaut, A., **Shapiro, B**., and Pybus, O.G. (2005). Bayesian coalescent inference of past population dynamics from molecular sequences. *Molecular Biology and Evolution,* **22**, 1185-1192.

Gilbert, M.T.P., **Shapiro, B**., Drummond, A. and Cooper, A. (2005). Post-mortem DNA damage hotspots in Bison (*Bison bison*) provide evidence for both damage and mutational hotspots in human mitochondrial DNA. *Journal of Archaeological Science*, **32**, 1053-1060.

Larson, G., Dobney, K., Albarella, U., Fang, M. Y., Matisoo-Smith, E., Robins, J., Lowden, S., Finlayson, H., Brand, T., Willerslev, E., Rowley-Conwy, P., Andersson, L. and Cooper, A. (2005). Worldwide phylogeography of wild boar reveals multiple centers of pig domestication. *Science,* **307**, 1618-1621.

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Shapiro, B., Drummond, A.J., Rambaut, A., Wilson, M.C., Matheus, P.E., Sher, A.V., Pybus, O.G., Gilbert, M.T.P., Barnes, I., Binladen, J., Willerslev, E., Hansen, A.J., Baryshnikov, G.F., Burns, J.A., Davydov, S., Driver, J. C., Froese, D.G., Harington, C.R., Keddie, G., Kosintsev, P., Kunz, M.L., Martin, L.D., Stephenson, R.O., Storer, J., Tedford, R., Zimov, S. and Cooper, A. (2004). Rise and fall of the Beringian steppe bison. *Science,* **306**, 1561-1565.

Weinstock, J., Willerslev, E., Sher, A.V., Tong, W., Ho, S.Y.W., Rubenstein, D., Storer, J., Burns, J. A., Martin, L.D., Bravi, C., Prieto, A., Froese, D.G., Scott, E., Xulong, L. and Cooper, A. (2005). Evolution, Systematics, and Phylogeography of Pleistocene Horses in the New World: A Molecular Perspective. *PLoS Biology,* **3**, e241.

Simonyi Professor for the Understanding of Science

Dawkins, R. (2004). Extended Phenotype – But Not *Too* Extended. A Reply to Laland, Turner and Jablonka. *Biology and Philosophy,* **19**, 377-396.

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Dawkins, R. (2004). Who Owns the Argument from Improbability. *Free Inquiry,* **24** (6), 11-12.

Dawkins, R. (2004). Dolittle and Darwin in Brockman. *In*: Brockman, John, Ed), *Curious Minds: How a child becomes a scientist.* London: Jonathan Cape, 121-129.

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