

ANNUAL REPORT 1998

The front cover shows an installation by artist in residence Julian Walker. His work examined the nature of museums by exploring collections, their curation and display. He used shark teeth in this piece, which is housed at the Museum.

Types of teeth

Sharks have different types of teeth to catch their food.

The tiger shark has a curved jaw with sharp, yellow, pointed teeth. Adults use them to catch their prey and it is called a 'bite and swallow' prey. They also have a second set of teeth, called the 'tiger' teeth, which are used to catch their prey. The tiger teeth are not as sharp as the first set and they are used to tear the flesh of the prey.

Jaws of tiger shark

Upper jaw (maxilla) and lower jaw (mandible)

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The jaws of a tiger shark. The shark is found in tropical waters worldwide.
This specimen can be found in *Marine invertebrates*
in the Life Galleries.

The Natural History Museum's mission is to maintain and develop its collections and to use them to promote the discovery, understanding, responsible use and enjoyment of the natural world.

The Museum is a multi-faceted institution with:

- more than 68 million specimens from the natural world
- around 350 scientists working on internationally significant research projects
- the world's finest natural history library with 500,000 historically important original drawings, paintings and prints
- 1.8 million visitors a year making it the UK's fourth most popular charging attraction
- 28,000 square metres devoted to public exhibition galleries
- around 200,000 school children visit in organized parties each year

our year



The Rio Tinto atrium at the entrance to the Museum's Earth Galleries.

our year

Welcome to our report of The Natural History Museum's year, 1997–1998.

With the election of a new Government in May, public access to the nation's collections, held by many museums and galleries, deservedly came to the top of the political agenda. We were therefore particularly delighted to attract a record 1.824 million visitors in the year to March 1998. The Museum continued to increase self-generated funds, which this year rose to a record £17 million.

This year's success, which placed the Museum as the United Kingdom's fourth most popular charging visitor attraction, owed much to the popularity of the new Earth Galleries – the first phase of which opened in 1996 – as well as our special summer exhibition *Dinosaurs of the Gobi Desert*. Indeed, we have since been named The London Tourist Board's Major Visitor Attraction of the Year 1998.

The Museum strongly supports this Government's wish to increase access to national museums and has already taken steps to this end in recent years. These steps

have been rooted in our firm belief that, while greater visitor numbers are clearly important, they should not be the only concern of efforts to improve access.

Greater access also means attracting more visitors from those groups of society that are currently under-represented in our audience. It means interpreting the collections in ways that meet visitors' needs and interests.

This year for example, to try to reach new audiences, a promotion was launched with the *Sun* newspaper, producing 10,000 extra visitors for our summer activity, the Dinosaur Dig.

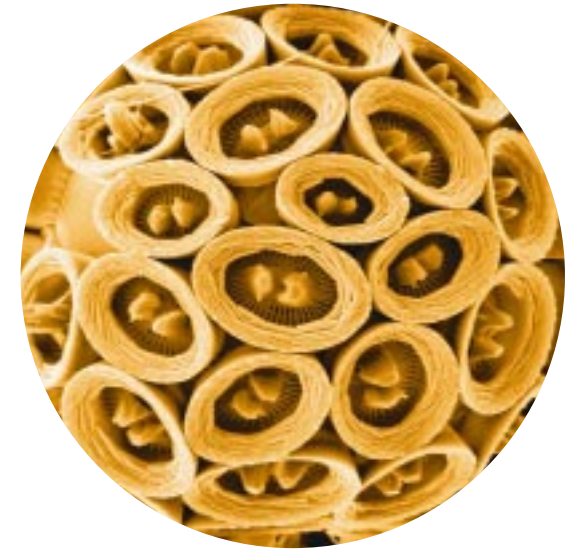
Most fundamentally, the Museum aims to improve access to all aspects of its work; its scientific research, collections, the unrivalled expertise of staff, as well as the high quality exhibitions and education programmes through which people can enjoy learning about the world around them.

For example, much work this year was invested in a massive databasing project that will record information on our scientific specimens to share via the World Wide Web.

We also continued to develop projects that will help us to operate more effectively. Work on an innovative borehole installation was also in progress this year which means that in future the Museum could eventually supply most of its own water needs.

In this report you can find out more about how this wide range of activities – all with their heart in the collections of 68 million natural history specimens, books and drawings – help us to further the understanding and enjoyment of the natural world.

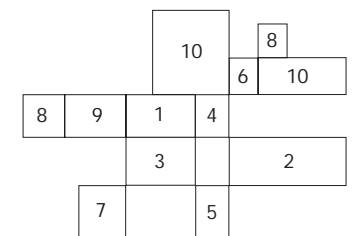
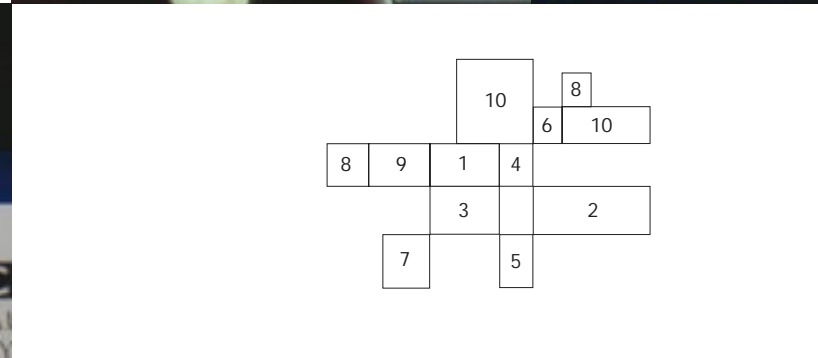
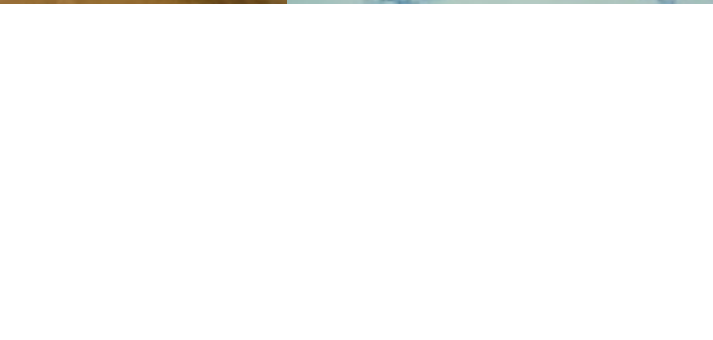
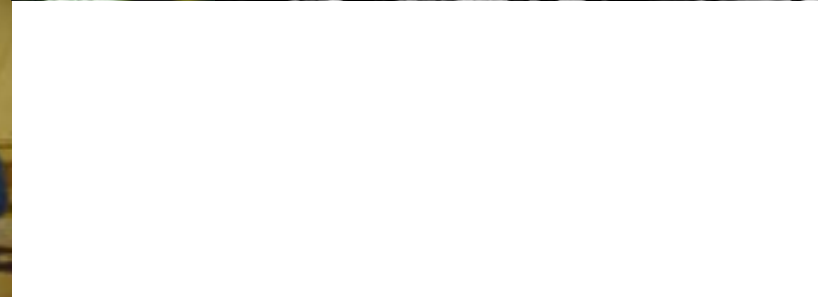
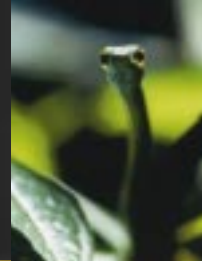
Dr Neil Chalmers
Director



High resolution SEM images of Coccospheres collected from seawater off Puerto Rico as part of the Museum's ecological patterns and processes research theme.



highlights



highlights

- April 1997 Artist in residence: the visitor experience
- May 1997 *Dinosaurs of the Gobi Desert* Exhibition 1
- June 1997 *Virtual Endeavour* Exhibition. Pictured left, the interactive website 2
- July 1997 Hands-on Dinosaur Dig activity attended by the American actor Geoff Goldblum 3
Lectures by American palaeontologist Jack Horner 4
- August 1997 *Endangered species* Exhibition
- September 1997 British Association Annual Festival of Science, Leeds
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Staff Communication Survey
Visiting Group: earth materials, minerals and processes research theme
Museum staff accompanied the funeral procession as a mark of respect for the support of Diana, Princess of Wales, the Patron of the Museum between April 1989 and July 1996
- October 1997 *BG Wildlife Photographer of the Year* Exhibition. Jim Stamatos (USA), Highly Commended portrait of a vine snake 6
- November 1997 The Blue Whale Annual Fundraising Ball took place in the Museum's Central Hall 7
- December 1997 Press conference on Neanderthal remains. Pictured left, excavation work 8
- January 1998 Association for Science Education Annual Conference, Liverpool
Ancient Biomolecules Conference in association with the Natural Environment Research Council
- February 1998 *Images from nature* Exhibition at Christies. Pictured left, a chalk illustration of a giant tortoise, by Bryan Kneale 9
Roof maintenance work began
- March 1998 BBC *Fossil Roadshow*, with presenters Peter Snow and Michaela Strachan 10
National Science Week lecture by neuroscientist Professor Colin Blakemore



our unique role

Fossilized 'sea lillies': these animals lived in the Lower Jurassic period and are often mistaken for plants. Their modern equivalents include the echinoderms searurhins, starfishes and seacucumbers. This photograph was taken in the Central Hall.

The Natural History Museum began life with collections that were a founding part of the British Museum, when in 1753 Sir Hans Sloane, a wealthy physician, sold his private collection of objects to the nation. From this beginning, the collections grew extensively and in 1881 were moved to a new purpose-built museum in South Kensington, London.

Today, the Museum is a multi-faceted, complex and active institution. It is not only a world leader in science, but has worked hard to become a leading visitor attraction and educational resource. These achievements are founded on the unique nature of the Museum's collection of more than 68 million specimens of plants, animals, fossils, rocks and minerals from around the world.

our unique role

Museum scientists use these specimens to lead internationally significant research projects in biodiversity, mineralogy, evolution and systematics – the science of describing and classifying organisms, rocks and minerals. Their research takes place in more than 60 countries around the world and addresses issues of concern to society, such as disease, pollution and conservation.

The collections are also the inspiration for the Museum's many celebrated public exhibitions, including the *Dinosaurs* exhibition and the new Earth Galleries. The Museum is also home to the world's finest natural history library and a magnificent collection of natural history art.

One of The Natural History Museum's central responsibilities is to make its information about the natural world accessible to all. This means physical, intellectual and cultural access to the Museum's collections, exhibitions and programmes.

To achieve this, the Museum is working to share information and expertise with new audiences and to increase the number and

variety of its visitors. It not only invests heavily in educational and enjoyable exhibitions but produces publications, funds teaching and outreach programmes and participates in activities which help further the public understanding of science.

Increasingly, the Museum is utilizing the World Wide Web to provide scientific data and information about the natural world to millions of people around the globe.

All this activity is supported by staff, buildings, services and facilities. The Museum employs around 770 people in areas as diverse as taxonomy and visitor services, marketing and curation, estates management, photography, fundraising and schools' programmes. The famous Grade I listed Waterhouse building is located on a 14-acre site in South Kensington, London, and the Museum also incorporates The Walter Rothschild Zoological Museum in Tring, Hertfordshire.



The *Mammals* Gallery, where the skeleton of a blue whale is suspended from the ceiling.

a museum for all

The Natural History Museum is one of the world's leading visitor attractions with a reputation for exciting and informative exhibitions. The Museum is famous for its dinosaurs and other permanent exhibitions but over the years it has also developed a lively programme of innovative temporary exhibitions and events in order to appeal to a broader base of visitors.

Investing in this programme is central to the Museum's mission to promote the

discovery, understanding, responsible use and enjoyment of the natural world to as many people as possible. Most of the Museum's visitors are families and schoolchildren but the Museum is also working to appeal to new audiences, especially adults.

Specialist staff, including educationalists, exhibition designers, writers, scientists and tour guides also help interpret the exhibitions for different types of visitor. They ensure that as many people as possible visit, have access to information and enjoy their experience of the Museum.

POPULAR EXHIBITIONS

In this year the Museum became the UK's fourth most popular charging visitor attraction. Visitor numbers reached 1.824 million – the highest since more accurate recording of numbers began in 1987. This was due in part to the continuing popularity of the first phase of the new £13 million Earth Galleries, which opened in July 1996. This phase included galleries exploring the power of volcanoes, earthquakes and other natural forces that shape the planet. Higher visitor numbers can also be attributed to the programme of temporary exhibitions.

The temporary exhibition *Dinosaurs of the Gobi Desert* – sponsored by Discovery Channel – opened in May. Over the summer it brought more than 100,000 people into contact with some of the most remarkable fossils to be seen anywhere, including 80 million-year-old dinosaur eggs – some containing embryos. Staff from the Mongolian Academy of Sciences at Ulan Bator had pieced together the skeletons in the gallery and specially trained Museum guides led visitors through a desert setting, which explained how the fossils had been discovered and reconstructed.

a museum for all

The ever-popular BG Wildlife Photographer of the Year Competition ran for its 14th year – the eighth with sponsorship from BG plc – and attracted more than 20,000 entries from photographers in 68 countries. All 150 winning and commended images were displayed in a special exhibition at the Museum between October and February.

Supporting these exhibitions and the permanent Museum galleries, Visitor Services staff maintained a high uptake of guided tours for the year. They also shared their professional skills with the new National Museum of Scotland through a Good Guiding programme.

REACHING NEW AUDIENCES

A promotion was launched with the *Sun* newspaper producing an additional 10,000 visitors for the summer Dinosaur Dig.

The dig was part of a range of hands-on activities linked to the *Dinosaurs of the Gobi Desert* summer exhibition.

The Museum also aims to stimulate public interest through its membership scheme, which has a programme of events for young and old alike. The scheme provides access to

behind-the-scenes work at the Museum. This year there were 72 members' events, including stone carving workshops using designs inspired by the Waterhouse building architecture and children's workshops in the Wildlife Garden. Most events were free of charge for the record 8,298 members this year. Members also enjoyed a new look to their lively and informative magazine.



People with an interest in art and the history of science can now access the Museum's unique art collections thanks to a publishing agreement achieved this year. The Museum's publishing division signed an agreement with Merrell Holberton, the fine art publishers, to produce a new series of books based on the Museum's scientifically and historically

important art collections. Many of the paintings and drawings included have rarely been seen in public. The *Art of Nature* series will be published over the next five years.

REGIONAL ACTIVITY

Although based in London, as a national resource the Museum invests in an active programme of regional activities.

During the year, the Education Unit took the Travelling Discovery Centre – a hands on activity for younger children – to eight regional museums in the UK, helping to boost visitor numbers at each one. A small scale Dinosaur Dig proved a success when staff took it to the British Association Annual Festival of Science in Leeds during September.

In January, Education and Public Relations staff also supported the Association for Science Education's annual meeting in Liverpool. The event was attended by 4,000 science teachers from across the country.

To contribute to National Science Week in March, a team of scientists and education officers took part in lectures and activities, involving schools and members of the



National Federation of Women's Institutes, at four regional centres across the country: Cardiff, Shrewsbury, Leeds and Norwich.

The *BG Wildlife Photographer of the Year* Touring Exhibition visited The Ulster Museum in Belfast, The Royal Museum of Scotland in Edinburgh, Plymouth City Museum and the Jersey Wildlife Preservation Trust.

Pictured opposite, *Lasting impressions*, a gallery that illustrates the passage of time by displaying natural objects that have recorded growth or change.

Left, the popular hands-on activity Dinosaur Dig.

Above, a dinosaur specimen on display in the temporary summer exhibition *Dinosaurs of the Gobi Desert*.

science in action

The Museum is a world-renowned scientific institution and a world leader in systematics – the science of describing, classifying, and uncovering the relationships of the components of the natural world; including rocks, minerals, living and fossilized organisms.

Around 350 scientists work behind-the-scenes at the Museum, carrying out work which furthers human knowledge about the variety and nature of life on Earth. They provide an invaluable contribution to many of today's issues – such as conservation and biodiversity, global warming, pollution, disease and pest control – as well as to fundamental aspects of science, such as the study of evolutionary relationships.

At the heart of this science are the national collections of specimens, maintained at the Museum and used actively in research. Science at the Museum is based in five departments; Botany (plants), Entomology (insects), Mineralogy (rocks and minerals), Palaeontology (fossils) and Zoology (animals).

The Museum's research is organized in six themes; biomedical sciences; environmental quality; earth materials, history and processes; ecological patterns and processes; faunas and floras, and systematics and evolution.

The Museum also houses one of the world's largest natural history libraries. It is an invaluable source of information on natural history, scientific research and academic papers – for scientists and for the general public.

1998 saw the completion of new chemical laboratories, a major resource for the science departments and the Museum.



research news

INVERTEBRATE DEVELOPMENT AND GENETICS

This year Museum scientists in the Zoology Department clarified a theory that has profound implications for the study of the evolution of the arthropod body. The traditional view has been that some arthropods, such as chelicerates (spiders and horseshoe crabs), appear to be missing a whole body segment, bearing antennae, when compared to other arthropods. By looking at the genetics of the mite *Archegozetes longisetosus* Museum scientists discovered that the segment is present but simply does not have the antennae. This suggests that the arthropod groups do share the same basic body structure and previous assumptions about the nature of their evolution are now questionable. The scientists' experimental system, which will be important in future studies, looked at the patterns of Hox genes, the genes which determine the overall body plan in all animals.

Museum research carried out this year could also benefit scientists around the world by providing a new tool for the study of arthropod genetics and evolution.



The research took place using copepods, tiny crustaceans that live in oceans and freshwater in immense numbers and which function as an essential link in aquatic food chains. Professor Geoff Boxshall FRS and Dr Rony Huys compared the development of six groups of copepod crustaceans, each belonging to a separate order. The study identified patterns in the development of their long sensory antennules – specialized limbs – which can help scientists trace ancestral relationships back hundreds of millions of years.

EUKARYOTE EVOLUTION

Research challenged an accepted theory of eukaryote evolution that may redefine scientific understanding in this area. Eukaryotes are one of the two fundamental groupings of life on Earth, which includes

amoeba as well as higher plants and animals. The Museum study concluded that Microsporidia, a basic form of life, are not an early evolutionary off-shoot from primitive eukaryotes, as scientists had previously assumed them to be. Instead, the simplicity of Microsporidia appears to be characteristic of later stages of their evolution, when they may have split from fungi.

The research has prompted more questions about what we understand of the evolution and relationships of the major groups of living organisms. The findings are to be published in the *Proceedings of the National Academy of Sciences of the USA*.

ECOLOGY AND DISTRIBUTION OF SPINOSAURS

This year, a definitive publication was produced on the Cretaceous dinosaur *Baryonyx walkeri*, the result of long-term research carried out by Dr Angela Milner, Head of Vertebrate Palaeontology, with Dr Alan Charig. A *Baryonyx* fossil found near Dorking in Surrey was essential to the understanding of the ecology and distribution of a group of dinosaurs called spinosaurs – to which *Baryonyx* belongs.

Their remains have so far been discovered as far away as North Africa and South America. Dr Milner's research suggested that these specialized long-snouted fish-eating dinosaurs may have originated in Europe, spreading to the southern continents via temporary land bridges.



Pictured above left, a planktonic copepod (calanoid) showing its long sensory antennules.

Above, Museum palaeontologists preparing a skeleton of the dinosaur *Baryonyx* prior to mounting on exhibition panelling.

developments

NEW CHEMICAL LABORATORIES

1998 saw the completion of a new £2.5 million chemical laboratory and electron microscopy suite at the Museum. The laboratories are a major new resource for all scientific departments in the Museum and will support the quality of internal research projects and attract increased commercial consultancy. The unit houses electron microscopes and electron microprobes, an electronics workshop and mineral preparation laboratories. For the first time all these facilities have been brought together, with a suite of office facilities and a seminar room.

EUROPEAN COLLABORATION

The Museum was awarded Large-Scale Facility status by the European Union, with a grant of 628,000 ECU (approximately £436,000), over two years, in recognition of the unique nature and international scientific importance of its collections and associated research. This support enables European scientists to pay short visits to the Museum in order to use its research facilities and collections.



NEW BIOMEDICAL CENTRE

Funding was secured towards the development of major new molecular biology laboratories – which will be a centre for researching the causes of widespread parasitic diseases, such as bilharzia (schistosomiasis). The biomedical sciences theme secured the grant of £552,000 from the Wellcome Trust. A new appointment was also made, to run the Museum's rapidly expanding DNA sequencing facility, which will relocate to the new premises.

THE DISCOVERY COLLECTIONS

Also in this year, the Zoology Department started receiving the Discovery Collections from the Institute of Oceanographic Sciences in Southampton. The Collections contain specimens obtained during pioneering voyages at the turn of the

century. These voyages were the first to explore Antarctic marine ecosystems and their discoveries helped clarify the food chain of whales. The collections also provide a unique reference for studies examining the impact of global change on oceans.

ENVIRONMENTAL MANAGEMENT

A new research method was developed by the Mineralogy Department that has great relevance for industrial and environmental issues – such as the effectiveness of clay liners in containing pollutants which could, over time, seep from landfill sites to contaminate soil and water. This new technique uses advanced X-ray equipment to rapidly identify the complex mixtures of minerals in clay. A visiting group of external experts recognized the pioneering nature of this work.

Left, children wait to be tested for bilharzia, a debilitating disease which affects 200 million people worldwide. A new molecular biology centre at the Museum will aid research into the causes of such parasitic diseases.





major grants

Income from science activities amounted to £2,878,000 during the period. This figure was achieved through successful bids for research grants and funding from charities, as well as income generated through commercial consultancy.

MEASURING GLOBAL ENVIRONMENTAL CHANGES

An international project received 1.4 million ECU (approximately £972,600) from the European Union for research into the ecology and evolution of coccolithophorids – a group of planktonic algae that indicate changes in the global environment. Museum staff are key members of the project – a European network of eight research groups, from seven countries – called CODENET. The scientists involved are geologists, marine biologists, molecular geneticists and organic geochemists.

MAPPING LAND MASS MOVEMENT

A Museum team launched a project to build computer-generated maps and models that recreate the movements of ancient land masses over geological time. The Natural Environment Research Council provided £45,000 to fund the two-year project

looking at the movement of the Earth's crust, using as indicators 400 – 500 million-year-old brachiopods and trilobites – important groups of fossil invertebrates. The project team developed a database of information on the distribution of the fossils in order to build the maps.

EVIDENCE OF NEANDERTHAL HABITATION

Pioneering work on what is one of the last known sites to be inhabited by Neanderthals received £10,000 from the British Academy this year. Since 1994 an international team, led by Dr Chris Stringer of the Museum, has been excavating the area in Gibraltar and noting evidence of habitation. The team of palaeontologists is looking for evidence that could explain why these prehistoric people disappeared and what role modern humans may have played in their demise.



Centre, Darwin Initiative project members collecting plants in the threatened Atlantic forests of the Mbaracayú Forest Nature Reserve, Paraguay.

Below, a team of palaeontologists search for evidence of Neanderthal habitation.

So far, evidence has shown that Neanderthals in the area collected and processed shellfish and manufactured their own stone tools. 1998 marked the 150th anniversary of the first discovery of the Neanderthal remains in the region – which date from about 115,000 to 30,000 years ago – and a temporary exhibition of two of the Museum's Neanderthal fossils was mounted at the Gibraltar Museum to mark the event.

UNDERSTANDING BIODIVERSITY IN PARAGUAY

Museum experts are helping to improve knowledge about the biodiversity of one of the most threatened habitats on Earth with financial support received this year from the UK Government's Darwin Initiative. Scientists will examine and record the biodiversity of the Mbaracayú Natural Forest Reserve in Paraguay, aiding conservation in the area by contributing to an inventory of Paraguay's biodiversity and training local taxonomists. Working collaboratively with Paraguayan scientists, the project will also produce field guides and record information on more than 13,000 Museum specimens for a computer database.

access to information

The Museum aims to share scientific information and expertise with more and more people around the world. All departments produce publications and are involved in a massive project to database information for access via the World Wide Web.

This year, the science departments produced 436 peer-reviewed publications and recorded 200,000 specimens for the Museum's database initiative.

In Entomology, for example, during the year the HOSTS Lepidoptera database of moth and butterfly food plants passed 100,000 records. This database is available to the public at:

<http://www/nhm.ac.uk/entomology/hostplants>

Time was also invested in adding 22,415 records to computerized collection indexes and another 20,262 species were added to a specimen-level database.

Entomology's Insect Information Service handled more than 4,700 enquiries this year. The majority came from members of the public but £32,000 was generated by

charging commercial interests for consultations – a 15 per cent increase on the previous year's total. Such services, providing access to expertise, are common to all the Museum's science departments.



Pictured right, a collection of the beetle *Manticora gruti*, housed in the Entomology Department. It was one of these beetles that was photographed by Nick Knight to illustrate a new album cover for the group Massive Attack. The album, shown above, reached number one in the UK and was a best-seller worldwide.

innovation and technology

The Natural History Museum looks to play a dynamic role in the future of the United Kingdom and the world. In order to achieve this, it utilizes various technologies, such as the World Wide Web and interactive visitor activities, in order to improve access to information and appreciation of the Museum, its people and its work.

AN INTERACTIVE MUSEUM

A pioneering interactive exhibition *Virtual Endeavour* was presented at the Museum from June to August. This temporary exhibition enabled visitors to travel on a virtual voyage, using a joystick to navigate their way around Captain James Cook's famous ship HMS *Endeavour*. Visitors could move freely around the ship and examine botanical and zoological material collected on the epic voyage of 1771 and now preserved in the Museum's collections. *Virtual Endeavour* was developed by 11 European partners and was funded by the European Commission. The idea was to experiment with the possibilities of virtual museums and test people's responses. *Virtual Endeavour* is also available on the Museum's website at:
<http://www.nhm.ac.uk/VRendeavour>

This year, the Entomology Department produced the first interactive electronic key to mosquitoes – the CD-ROM *Mosquito Genera of the World* (1997). Despite more than a century of research into diseases transmitted by mosquitoes, malaria still kills up to three million people every year. The CD-ROM – produced in collaboration with CABI Bioscience – provides global access to the information needed to correctly classify the insects, which is essential for implementing effective pest control programmes.

ACCESS VIA THE INTERNET

The Museum's website enjoyed a successful year, with the average number of visits to the Home Page jumping from 28,000 per month in March 1997 to 40,000 per month by March 1998. A new science casebook was also introduced to the site. *The cosmic football* shows visitors how Museum scientists discovered the origin and identity of a meteorite. The casebook is located at:
<http://www.nhm.ac.uk/science/cosmicfootball>

In August, extensive web pages allowing access to Museum information on measuring biodiversity went live.

These Biogeography and Conservation Laboratory pages were produced by the Botany and Entomology departments. By March 1998 the site had received more than 14,000 visitors looking at 45,000 pages between them.

<http://www.nhm.ac.uk/science/projects/worldmap>



The Museum's website enjoyed a successful year, recording an average 40,000 visits per month to the Home Page by March 1998.

life-long learning

Inspiring people of all ages to learn about, or develop their knowledge of the natural world is an important part of The Natural History Museum's work. The Museum plays a unique role in science education for schools, students, professionals, mature learners, amateur enthusiasts and natural history groups. During the year, the Museum developed a revised education policy which aims to strengthen the Museum-wide commitment to educational activities at all levels and in all departments.

life-long learning

From primary school to PhD: the Museum plays an important role in science education and life-long learning.

SERVING SCHOOLS

The Museum's Education Unit promotes the understanding of natural history by helping teachers to plan visits, by providing advice on the exhibitions and by relating the Museum's work to the National Curriculum.

This year the Museum received 198,161 visitors in organized school parties. Sales of educational activity sheets rose from 105,000 to 138,000 during the period. New sheets were introduced, including one based on biodiversity, another on the life of whales and a new series dedicated to the Tring Zoological Museum.

The highlight of the year's programme was the Dinosaur Dig. Installed in a marquee on the Museum lawns, this ran for the six weeks of the school summer holidays and was enjoyed by 21,000 visitors. Also linked to the *Dinosaurs of the Gobi Desert* exhibition, a daily programme of activities for children took place, including workshops and a specially-written play entitled *Legends of the Flaming Cliffs*. The piece compared and contrasted the exploits of an Indiana Jones-type dinosaur seeker of the 1920s with the methods of his modern counterpart.

SCIENCE EDUCATION

The Museum utilizes its expertise in order to run its own courses for professional qualifications in systematics and collections management. The science departments run an MSc in Advanced Methods in Taxonomy and Biodiversity to meet a global need for such expertise – 20 UK and overseas students participated in the course during this year. Students can also complete distance-learning modules greatly aided by information accessible on the Museum's own website.

Science departments provide supervision for PhDs and lecturers for Masters and undergraduate degree courses. They also give seminars at universities, present to schools and organize public lectures.

During the year, more than 100 PhD and Masters research students benefitted from the supervision and expertise of Museum staff. In addition to courses organized in conjunction with Birkbeck College, the Museum also ran 11 adult education courses (each ten weeks in duration) for 187 students. A programme of 26 one-day field study activities was enjoyed by 550

students, and was enhanced by a series of special field study tours.

REACHING A BROADER AUDIENCE

The Museum's science education is also of interest to a broad range of people outside formal education. To meet their needs the Museum is committed to developing new ways of reaching out to a wider audience.

In February, QUEST, an exciting educational Internet project, went on-line via the Museum's website and attracted thousands of visitors during the period. Users can access the interactive program to explore and investigate natural objects, such as a butterfly or brain coral, in the manner of a Museum scientist. QUEST was developed as part of a collaborative project involving museums across Europe.

New Saturday workshops for members and natural history enthusiasts took place during the year. They proved highly popular, and several were repeated. In all, 15 workshops were held attracting 274 people.



working with the world



The Natural History Museum is a highly collaborative institution. In the United Kingdom it plays a central role, working with Government departments and agencies, other museums and visitor attractions, universities, research institutions, schools, individual scientists and many others.

It supports the public understanding of science through participating in events such as National Science Week, the British Association Annual Festival of Science and Science Line – a telephone information service for the public.

Increasingly, the Museum also represents British excellence abroad, sharing its knowledge and expertise with millions of people. Museum scientists work in 60 countries and many exhibitions tour around the globe.

The Museum's scientists work in 60 countries around the world.



In collaboration with Christies, the art auctioneers, the Museum mounted its own art exhibition, *Images from Nature*, in February. It provided people with a unique glimpse of 70 images from the Museum's art collection of some 500,000 items.

UK COLLABORATION

In September, more than 600 members of the public attended the Museum's Annual Science Lecture to hear Sir David Attenborough give a fascinating insight into the development of natural history programmes. The lecture was part of the BBC Natural History Unit's 40th birthday celebrations and the 75th anniversary of the BBC.

Staff from the Palaeontology, Mineralogy and Public Relations departments collaborated with the BBC to produce the *Fossil Roadshow*, televised on BBC 2 between 27–29 March. The three 30-minute programmes featured Museum scientists identifying fossil specimens brought in by members of the public. The programmes reached more than 8.8 million viewers across the country.

SHARING EXPERTISE

Between July and August, an exhibition entitled *Save our species* was mounted at the Museum in conjunction with HM Customs and Excise. The Museum plays an important role in identifying animal specimens, which helps to fight the illegal trade in endangered species.

This year, collaboration continued between The Natural History Museum, the Australian Museum in Sydney, the British Council and Rio Tinto plc in order to mount an exhibition on biodiversity and, in particular, its study by European and Aboriginal people in Australia. *Kaleidoscope of life* formed the centrepiece of a UK Government programme which celebrated relations between Britain and Australia.

In June, Dr Neil Chalmers, Museum Director, and the Prime Minister of Belize, the Rt Hon Manuel Esquivel, signed a formal agreement strengthening scientific and educational co-operation. The Museum has already made a long-term investment in the country through the construction of a field research station. The station provides a base for Museum scientists and others for a range of collaborative projects. A new manager, Chris Minty, was appointed at the Las Cuevas research station in the Chiquibul Reserve. He joined the station from the Department of Geography at the University of Edinburgh.

This year, Museum palaeontologists and mineralogists worked with international

research groups from Russia, Spain and France conducting studies on well-preserved fossil and modern hydrothermal vent communities. These communities of organisms consist of unique and diverse forms of life. They develop around vents in the deep ocean, which produce hot, mineral-rich water. Scientists believed that the organisms living around the vents today would be similar to those living there millions of years ago, in the Palaeozoic and Mesozoic eras. However, the group's research showed that other organisms, such as molluscs and brachiopods, have actually adapted well to life in this usually hostile environment in relatively recent times.

More than 170 professionals benefited from the Museum's participation in the Sharing Our Skills programme. The organizations concerned were local museums, including Lancaster, Bath and Norfolk and specialist museums, concerned with everything from beer to castles, archaeology and football. Courses took place on topics including exhibition development, storytelling, publicity, the school curriculum and website design.

EXCELLENCE ABROAD

The Museum's touring exhibitions had a record year, achieving sales revenue of £843,000 and the highest level of profit since the programme began in 1990. A successful collaboration with the Kokoro Company of Japan – the Museum's partner in producing robotic exhibitions – also secured the production of five animatronic mythical creatures for inclusion in the Museum's 1998 temporary exhibition *Myths and monsters*.

An improved awareness of the Museum's library collections, art holdings and colour plate books resulted in a record number of requests from abroad to borrow material for exhibitions. Contributions were made to five exhibitions in the UK and four major exhibitions abroad – in Australia, Belgium, Germany and Japan.

paying for it all



This year a range of commercial activities helped raise a record £17 million in self-generated income for the Museum.

The Museum received £27,660,000 grant-in-aid from the Government during the year. This represented 62 per cent of the Museum's total income and was an increase, in cash terms, of £211,000 on the previous year. In order to continue to provide high quality visitor attractions, new temporary exhibitions, educational facilities for schools, excellence in collections care and leading edge scientific research, the Museum had to increase the amount of income it generated itself.

During the year gross self-generated income reached £17 million. This was achieved through a broad range of activities – including fundraising from private sector sponsors and charitable foundations, an increase in revenue from admission charges and commercial activities, including catering, retail, evening functions, picture library, licensing and touring exhibitions. There were also many successful bids for external funding for scientific research and the Museum raised valuable funds from its commercial scientific consultancy.

ADMISSIONS

A record 1.824 million people visited the Museum during 1997–1998. Of these people 41 per cent visited free of charge and 24 per cent paid a concessionary price only. Even so, £4.2 million was raised from ticket sales. This figure represents an important source of income for the Museum, which operates a sensitive charging policy aiming to balance the need to raise revenue with maintaining access for all.

To help boost visitor numbers further the Museum launched a new advertising campaign. Four well-known nursery rhymes with a humorous twist were displayed on the London Underground and shown on film at cinemas during the year. These promoted a range of exhibitions, including *Dinosaurs of the Gobi Desert*.

SUPPORTERS AND PATRONS

The Natural History Museum Development Trust was established in 1987 to promote and encourage private sector support for the Museum. This year the Trust raised total revenue of £785,207, it secured BG plc's renewed sponsorship of the Wildlife Photographer of the Year Competition for

the eighth successive year and British Airways plc's continued support of the Museum's scientific research through the Assisting Conservation Programme, which provides free flights for scientists working abroad.

New donors also joined the Museum. De Beers and the Quarry Products Association supported the new Earth Galleries and the Museum is also grateful to the BOC Foundation, The Total Foundation, The Ernest Kleinwort Charitable Trust and The Pilgrim Trust for their contribution to important scientific research and conservation work.

The Museum was also delighted to receive its first award from The Pairing Scheme, a Government initiative, managed by ABSA (the Association for Business Sponsorship of the Arts). The award recognized Discovery Channel's sponsorship of *Dinosaurs of the Gobi Desert*.

The Annual Fundraising Ball was attended by some 600 guests and raised £80,000 for the Museum. The Corporate Patrons programme, which included 41 patrons during the year, generated £85,000.



paying for it all

COMMERCIAL ENTERPRISE

The Museum aims to increase self-generated income in many ways. Selected examples are listed here.

Development of the licensed products programme saw the Museum launch new candleholders, lamp stands and other interior decoration products based on the carvings of the Waterhouse building. New ranges in the Museum's most successful licence, with J Arthur Dixon cards, were also introduced during this year.

Income from catering and evening functions – including balls, award ceremonies and corporate entertainment in the Museum's ornate galleries – accounted for £1,536,000 revenue.

The Museum's scientific consultancy also generated £424,6000 revenue over the year.

BG Wildlife Photographer of the Year 1997 was Tapini Räsänen from Finland. His picture of a common tern diving to catch its prey was displayed in the annual exhibition at the Museum between October and February.

EFFICIENCY

The Museum signed the Government's Declaration of Commitment to Energy Conservation in March. As a result, new automatically controlled gallery lighting produced up to 30 per cent savings in energy and maintenance costs over the year.

Work also continued on an innovative borehole installation, which will eventually provide for most of the Museum's water needs. It will pump water from a chalk aquifer 150 metres below the Museum and supply an estimated 63,000 cubic metres of water annually.

accounts

INCOME	1997/98	1996/97	EXPENDITURE	1997/98	1996/97
	£k	£k		£k	£k
Trading income			Current		
Admissions	4,177.6	4,124.9	Buildings and Rates	4,784.0	3,912.2
Membership	160.7	94.3	Development and Marketing	988.7	869.0
Brand Management / Picture Library	369.6	252.0	Visitor Services	3,888.1	3,698.4
Retail	1,837.9	1,721.5	Exhibitions and Education	3,789.8	3,282.5
Catering and Functions	1,536.0	1,514.3	Curation and Research	10,421.4	10,178.7
Exhibitions and Education	466.6	328.0	Libraries and Information Systems	2,029.3	1,838.5
Curation and Research	2,878.6	2,832.8	Directorate	345.9	184.8
Touring Exhibitions	842.8	524.8	Corporate Services	2,411.8	2,567.9
Total	12,269.8	11,392.6	Restructuring Costs	410.6	340.6
			Total	29,069.6	26,872.6
Costs	6,263.9	5,532.2	Capital		
Profit	6,005.9	5,860.4	Buildings	4,403.8	3,001.0
			New Exhibitions	1,538.4	6,917.3
Sponsorship and other income			Equipment	661.1	1,049.7
Income	4,672.6	4,113.0	Total	6,603.3	10,968.0
Related Expenditure	2,561.0	2,787.8	Total expenditure	35,672.9	37,840.6
Contribution	2,111.6	1,325.2			
Heritage Lottery funding	62.5	4,064.4			
Total profit and contribution	8,180.0	11,250.0			
Grant-in-aid	27,660.0	27,449.0			

The information here is a financial overview. For a complete set of the Museum's audited annual accounts contact: The Stationery Office, PO Box 276, London SW8 5DT. Telephone 0171 873 0011

accounts



KEY PERFORMANCE TARGETS

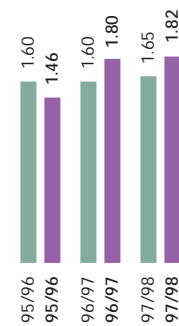
As part of the Museum's funding agreement, a number of performance indicators are agreed with the Government, through the Department for Culture, Media and Sport. These charts illustrate the Museum's performance against the targets.



VISITORS

Total admission numbers

millions



SCHOOL PARTIES

Number of school children in organized school parties

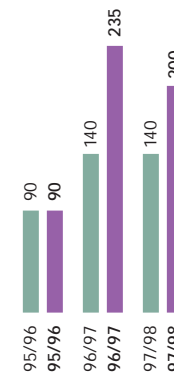
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DATABASING

Number of specimens computer databased

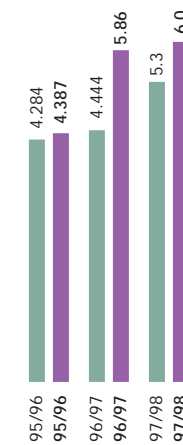
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INCOME GENERATION

Profit from income generation activities

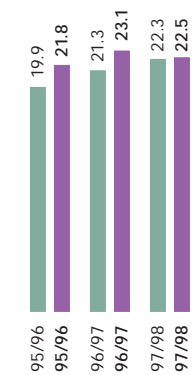
£ millions



FUNDED RESEARCH

Total income for scientific research and curation funded through research grants, contracts and Commissions

%



people and performance

The Natural History Museum monitors its operational performance and levels of customer satisfaction. It relies on more than 770 staff to help it achieve higher standards in all aspects of its work.

CHECKING OUR PERFORMANCE

In May, an external review group, chaired by the Director, examined the organization and management of the Personnel, Finance, Audit and Review and Safety Services sections of the Museum. The review group recommended a number of changes to strengthen and better integrate the work of the sections.

In June, the Museum achieved full registration under the Museum and Galleries Commission scheme, which measures performance against accepted professional standards. The Department of Visitor Services also achieved the Investors in People accreditation this year.

Internally, other assessments of performance were made. During the year, the Public Relations team organized a second staff survey which recognized that improvements had been made in internal communications since the previous study in 1994. 61 per cent of staff responded to the survey.

Marketing began a benchmarking programme in association with ALVA (the Association of Leading Visitor Attractions).

The programme covered both financial and qualitative measures of the Museum's effectiveness in comparison to other leading organizations in the heritage and tourism sector.

A new computerised library management system was introduced by the Department of Library and Information Services. Data was transferred from the old system during February and March. As a result, the Museum Library catalogue is now easier to use and is available on the Internet.

During the year, the Museum began what is probably one of the largest ever preservation management surveys carried out in a UK library. The project will examine all the book, serial, manuscript and art collections in the Museum libraries. The results will be used to inform a conservation programme for the next decade.

The Museum's Information Strategy Group carried out a fundamental review of the Museum's information technology infrastructure. It was agreed to replace the data network, upgrade desktop computers and server capabilities and to launch an Intranet – an internal Museum Internet site

linking Museum employees – in order to help improve staff communication and access to information.

In 1997 the Museum also introduced revised recruitment and other procedures in response to Section 1 of the Disability Discrimination Act 1996.

KEY APPOINTMENTS

The Museum made several key appointments during the year:

Dick Vane-Wright was appointed Keeper of Entomology in February, succeeding Dr Richard Lane. Mr Vane-Wright had already contributed 36 years' service to the Museum. He is a specialist on the classification and evolution of butterflies, with wider interests in biological diversity, conservation evaluation and bioinformatics.

Professor Philip Rainbow succeeded Dr Colin Curds as Keeper of Zoology in September. Professor Rainbow was previously Head of the School of Biological Sciences at Queen Mary and Westfield College, University of London. His interest lies in the biology of marine and estuarine crustaceans.

people and performance

The Botany Department appointed a new Associate Keeper, Dr Mary Gibby. Previously Head of the Cryptogamic Plant Research Division within the Botany Department at the Museum, her research interests lie in evolution and speciation in plants, particularly ferns.

Jane Rowe was appointed Director of Human Resources in March 1998. She was previously Head of Human Resources at LGC (Teddington) Ltd.

TRAINING AND DEVELOPMENT

The Museum invests in training and professional development for staff at all levels. This year there were 250 training days and 156 courses offered.

Two pilot disability awareness training courses were run this year. In addition, scientific staff were offered the opportunity to develop skills in proposal writing to enable them to write more effective funding applications for their research projects. Courses were also held for evening Housekeeping staff and this year Visitor Services and Security staff were provided with a new, more practical, style of uniform.

Membership ran training sessions for front-of-house staff to develop their sales skills. The sessions aimed to show how staff could be instrumental in promoting the membership scheme to visitors. Sales rose by 30 per cent.

In September, the Estates Management Department produced a *Contractors' Safety Booklet*, intended to improve communication to all contractors working on site.

STAFF ACHIEVEMENTS

Many Museum staff received national and international awards and recognition for their achievements.

Professor William T Stearn, who retired from the Museum in 1976, was awarded a CBE in the Queen's Birthday Honours List for his contribution to Botany. His history of the Museum was also re-published this year.

The Crustacean Society recognized the research excellence of Dr Geoffrey Boxshall FRS, presenting him with an individual award for his contribution to science's understanding of the evolution of copepod crustaceans.

Two members of Visitor Services staff were awarded Earthwatch Millennium Fellowships. Under an initiative funded by the Millennium Commission, Jennie Neve travelled to Panama to research a new botanical key and Miranda Creed-Miles worked in Spain helping to excavate Neanderthal remains.

Dr Peter Forey was appointed President of the Systematics Association and Professor Robin Cocks became President Designate of the Geological Society.

VOLUNTEERS

The Museum is grateful to volunteer members of the public who donate their time and enthusiasm, working in all areas of the Museum. More than 270 people volunteered for the Museum during the year – either on course placements, in order to assist the Museum, or simply for their own fulfilment. They helped in activities such as maintaining the Wildlife Garden, cataloguing artwork and assisting science departments. Ages of participants ranged from 15 to over 70 years old.

Below, more than 270 people volunteered at the Museum during the year, undertaking a wide range of tasks suited to their skills.



organization

The Museum is organized into 12 departments and the Director reports to the Board of Trustees, who are responsible to Parliament for the governance of the Museum. In addition, the Museum's Development Trust has its own Trustees, some of whom are also members of the Main Board.

MUSEUM DEPARTMENTS

Development and Marketing	x 9365
Estates	x 9060
Exhibitions and Education	x 8994
Finance	x 8733
Human Resources	x 8931
Visitor Services	x 9051
Botany	x 8797
Entomology	x 9475
Library and Information Services	x 9191
Mineralogy	x 9353
Palaeontology	x 9213
Zoology	x 8986

Contact telephone 0171 938 9123.
Extension numbers are listed above.

MUSEUM TRUSTEES

Sir Robert May FRS (Chairman)
Mrs Jennifer d'Abo
Professor Sir Brian Follett FRS
Sir Denys Henderson
Professor Christopher Leaver FRS FRSE
Dr Anne McLaren DBE FRS FRCOG
Professor Keith O'Nions FRS
Sir Ronald Oxburgh KBE FRS
Lord Palumbo
Sir Richard Sykes FRS
Sir Crispin Tickell GCMG KCVO

Retirements during the period

Baroness Tessa Blackstone

The minutes of the meetings of the Board of Trustees may be consulted in the Museum library. To make an appointment please call 0171 938 9191.

The register of Trustees' interests is open to the public. To consult the register please call 0171 938 9399.

organization

DEVELOPMENT TRUST TRUSTEES

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Mr John Duggan
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Ms Ginny Pulbrook
Mr Roland C Shaw CBE
Mrs Norma Smurfit
Mr Harvey Soning
Sir Crispin Tickell GCMG KCVO
Mr Colin Trusler
Mr Charles Williams

Retirements during the period

Mrs Shelly Dee
Mr Anthony Fry

PATRONS

Alliance & Leicester plc
Amerada Hess Ltd
AT&T (UK) Ltd
Bovis Homes Ltd

British Airways plc
BG plc
British Petroleum plc
BTR plc
The Carole Group Ltd
CDH/HOK
Chevron UK Ltd
Ian Chichester-Miles
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Rio Tinto plc
Sir Robert McAlpine Ltd
Valerie Singleton
Slaughter and May
Sunley Holdings plc
Tibbett and Britten Group plc
Unilever plc
Zephyr Flags and Banners

NEW SUPPORTERS & SPONSORS (£10,000 and over during 1997–98)

Earth Galleries

De Beers
Quarry Products Association
Saint-Gobain/Solaglas

Temporary exhibitions

BG Wildlife Photographer of the Year 1997–98
BG plc

Dinosaurs of the Gobi Desert and
Dinosaur Dig
The Pairing Scheme
Wall's Ice Cream

FURTHER CONTRIBUTIONS

Museum publication: *Images from Nature*
Mr and Mrs John Duggan

The Annual Science Lecture 1997
BBC Natural History Unit

Scientific fieldwork and collections

The BOC Foundation
British Airways plc
The Ernest Kleinwort Charitable Trust
Susan Lockhart
The Total Foundation

Banks Archive

The Pilgrim Trust

All information as at March 1998.

looking forward

Heading into the next millennium, the Museum aims to build on all the achievements of this year, to continue to develop an exciting programme of exhibitions, broaden its appeal and to maintain its reputation as a world leader in science. The next Annual Report will contain detail on the following major developments:

NEW EXHIBITIONS

The Earth Galleries redevelopment will be completed in July 1998. It provides three new exhibitions and a research centre, *Earth lab*, where visitors can examine specimens, consult reference works and draw on staff expertise – a major step forward in making the Museum's science more accessible to the public.

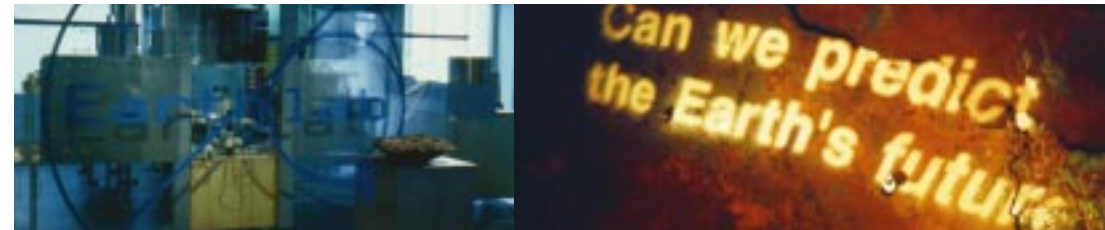
The programme of temporary exhibitions and events will continue with two high profile temporary exhibitions: *Myths and monsters* and *BG Wildlife Photographer of the Year*.

WORLD-LEADING SCIENCE

The Museum will implement its first year of operation as a European Large-Scale Facility, providing 750 days' access for European researchers to the Museum in 1998 – 1999. Construction work will also begin on the new Wolfson Biomedical Centre for systematics research on the causes and control of human parasitic disease.

BROADENING ACCESS

In 1999, the Museum will begin construction of the first phase of the Darwin Centre. The Centre will be designed to provide visitors with unprecedented physical and electronic access to the collections and the Museum's scientific work. It will also provide a new facility to safeguard 12 million zoological specimens kept in alcohol and provide modern laboratory and office facilities for scientific staff.





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