Predators

Information pack

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Exhibition overview

Predators: life and death in the natural world

Predators catch, kill and eat other animals. They have senses to find their prey, strategies to catch it and weapons that kill. They seem invincible, but they're not. Prey can hide, escape and fight back to survive. Attack and defence in the animal kingdom is not always the unequal combat we might think it to be.

Predators contains three crowd-pulling animatronic models and a range of competitive interactives to give the visitor an idea of the terrifying battle between predators and prey.

The exhibition is divided into three themed display areas with one animatronic model as the central display item for each.

- senses
- tools and weapons
- hunting strategy

Gallery plan

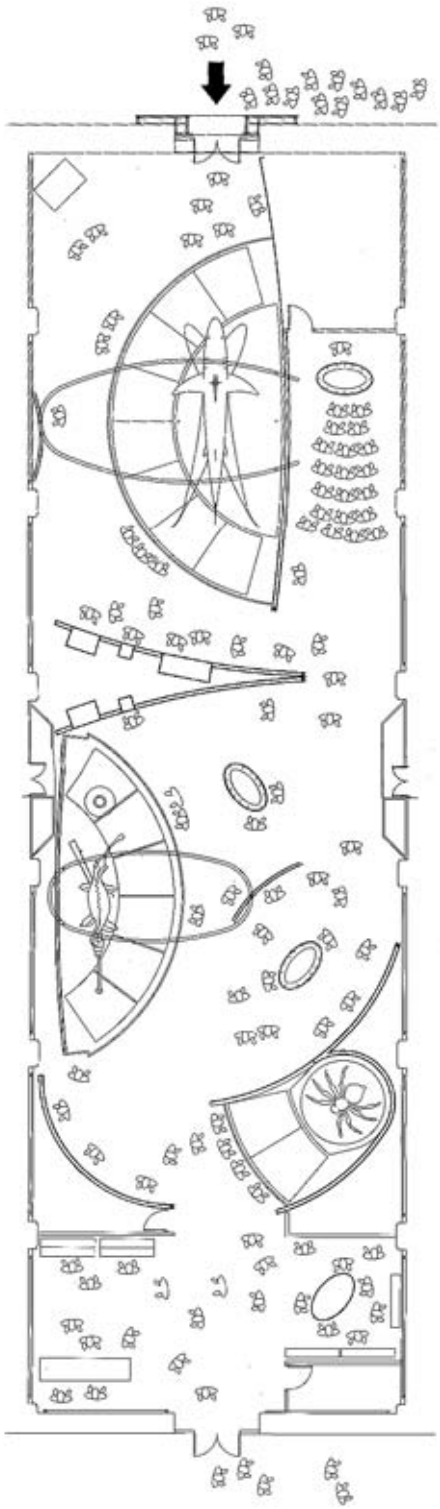
Predators requires approximately 140m^2 indoor gallery space. Minimum gallery height is four metres. Minimum doorway access is 2.51 m high x 1.7 m wide.

Entrance: 7.5m²

Senses scene with animatronic shark

Tools and weapons scene with animatronic chameleon

Hunting strategy scene with animatronic spider



Senses scene

700kg animatronic shark model 1.4 m wide, 5m long, 2.51m high

The five-metre-long model of a great white shark prowls ominously looking for its prey. Here the exhibition explores how predators detect their prey and how prey hide. For prey, each encounter is life or death, but for predators, only a single meal is at stake and their lives rarely depend on it. This 'life/dinner' equation shapes predator and prey evolution. Prey are usually in the lead because 'life' is more important than 'dinner'. Touch, smell, hearing – the senses can all be used to find a meal or to avoid becoming one.

Interactive display

- Sculpted ear in the shape of a bat-eared fennec fox. Visitors can discover how much can be heard with specialist adaptations.

Tools and weapons scene

700kg animatronic chameleon model 1.4 m wide, 3.4m long, 2.25m high

Poison, teeth, and clever armour are all weapons used in the fight for survival. This area of the exhibition looks at such arms and armour in the animal kingdom and is based around an enormous interactive animatronic Jackson's chameleon, *Chamaeleo jacksonii*.. The chameleon interactive challenges visitors to catch its prey.

Interactive display: interactive animatronic chameleon

Visitors must correctly focus the chameleon's independent eyes on a fly in order to activate the tongue to catch it.

Hunting strategy scene

550kg animatronic spider model
2 m wide, 2m long, 1.8m high

You need more than senses and weapons to catch prey – you need technique. This area of the exhibition is not for arachnophobes. Waiting in ambush for unsuspecting visitors is a giant animatronic Sydney funnel web spider, *Atrax robusta*, with a three-metre leg span. From the lone ambush of the alligator to packs of hunting lions, this area shows how predators and prey put their senses and weapons into action.

Interactive displays: interactive animatronic Sydney funnel web spider

The spider rears up with its legs to sink its fags into its prey. Visitors can provoke the attack by triggering a trip-wire thread from its web.

High-speed interactive game

The Hunting Strategy table is designed for one to three players. It's divided into three territories with different-sized lights that represent prey moving over the landscape. The visitor must find the best strategy to maximise his or her score.

Specifications

The Natural History Museum's responsibilities

* three impressive robotic models with synchronised lighting, sound effects and integral barrier system

* three interactive displays – one for three-players

* exhibition graphics and text for translation

* promotional images

* educational events

* full installation and dismantling service of robotic models

* technical support services

* instructions for day-to-day supervision of robotic models

Host venue's responsibilities

* an indoor display area of approximately 140m^2

* minimum doorway access 1.7m wide x 2.51m high

* transport costs from previous venue in two 13.5m trailers

* air compressor and pipework to power the animatronic models

* electrical supply

* translation and production of text

* skilled installation and dismantling staff

* forklift, crane or other equipment, as required for access

* promotion and publicity

* transit and exhibition insurance

Transport information
Two 13.5m tilt trailers

Air compressor
Ingersoll Rand ML11

Average installation/dismantling period
Four days

Target audience
7–12 age group

Unloading/loading
The exhibition will be transported in wooden packing cases on heavy-duty castors. Maximum packing case size is 3m x 1.2m x 1m. The hirer for off loading will provide a forklift truck with 1.5m blade extensions and driver, from the lorries to ground level. Six skilled exhibition staff/professional removal personnel will be required to unload/load.

Ideal hire period
Three months

Software required for text production
Adobe Illustrator (version 8) on a Macintosh computer. Production costs approximately £8,000–£10,000

Educational events and activities

Here is a list from the educational programme that was developed by the Natural History Museum's Learning team when *Predators* was shown at the Museum.

Workshops

Musical Food Chains

For families with children under 7

A fun-filled, musical journey to discover the 'how and why of who eats who'. Plenty of opportunities for everyone to stretch and twist their vocal chords, clap hands and move to the munchy-crunchy rhythm of the food chain.

What Big Teeth You Have

For families with children under 7

What is it about some animals that make them such good hunters? Get involved in some really dramatic storytelling with lively puppets as they weave traditional stories with tales of science.

The Cutting Edge

For families with children aged 7–14

Who is eating who in the wild? Explore our razorsharp workshop and you'll get the point. Investigate how different animal teeth and beaks are suited for the food they eat.

Now You See Me, Now You Don't

For families with children aged 7–14

Even sharp-eyed hunters sometimes struggle to spot their next meal. Hunting prey, avoiding predators and blending in with the crowd or landscape... this workshop explores how vision and camouflage help animals survive in the wild.

Mask Your Intentions

For families with children aged 6–11

Join this art-based workshop using specimens from the Museum's collections and art from different cultures for inspiration. Make masks of predatory proportions using all kinds of creative collage materials.

Predator perspectives

For families with children aged 6–11

Watch out... there are predators in the Wildlife Garden! Come and look for them in their habitats, then search around for their prey. Get down with the creepy crawlies and check out what they might see. Using natural materials you find in the garden, create your own wild and untamed artwork to take home.

Beast Feasting

For families with children aged 7-14

Better warm up your hunting instincts, look sharp, and get ready to pounce... or to run for your life! Be part of an interactive workshop where movement, sound and light all help to explore the amazing ways predators catch their prey... unless of course the prey have an escape plan!

Theatre

Beast Feast

For families with children aged 7–14

In our deepest, darkest theatre some hungry creatures are cooking up plans for dinner. Enter, if you dare, for a roaring performance. Explore the natural world through masks, music and drama to learn some attack and escape tactics from the 'animals' themselves.

Gallery activities

Predators: Face –to Face

For all visitors

Visit *Predators*, for a hands-on opportunity to come face –to face with some of nature's weaponry and explore some fascinating clues that can help explain how different animals are suited for survival.

Meet the Scientist

For families with children aged 7–11 and adults

Come to meet a Museum scientist and examine a range of impressive specimens from different predators. Here's your chance to ask the experts about the things they love to study.

Talks

A series of lively, illustrated talks.

Las Cuevas ... Our Furthest Outpost, with Chris Minty

From the bush of Belize comes Chris Minty. Chris is station manager of Las Cuevas, the Museum's research field station in Belize. Here Chris outlines the operations of Las Cuevas and reflects on his experiences with both scientists and artists alike.

Survival Techniques in Extreme Environments, with Lofty Wiseman

Lofty Wiseman served 27 years as an SAS survival instructor, is the author of the SAS survival guide that has sold millions and has made several appearances on TV. If you need to find out how to survive in remote and hostile environments, Lofty is your man...

Snake Sight! With Garth Underwood

Garth Underwood is an expert in the evolutionary history of snakes and how they see the world. This fascinating talk covers some of his work on snakes and what makes them such effective predators. The specimens may be dead or alive, so be warned.

Perceptions of Dangerous Fish, with Ollie Crimmen

As curator of the fish collections, Ollie Crimmen knows a great deal about human perceptions of fish. This is a chance to hear about and see some of the world's most dangerous and predatory fish species.

Courses

Understanding Predators, Past and Present with Mike Howgate

What makes a predator? Power, speed, acute senses, a ferocious bite and sharp claws? These are vital adaptations, but no killer has them all. Every predator trades off speed for strength, sharp teeth for a crushing bite. This will be the basis for looking at a range of specialist and generalist predators – both past and present.

On the Web

Micro Monsters

Lethal weapons, amazing hunting strategies and killer instincts are not restricted to the largest carnivores. Take a much closer look at a microcosmic world of predation. Zooming in with a combination of photomicrographs and electron microscope images, here's your chance to compare a spider's fangs with an ant's mandibles and many other tiny terrors.

Press release

Predators: eat or be eaten?

Open to visitors from 18 July 2001 to 6 May 2002

Witness the intriguing, exciting and sometimes terrifying battle between predators and prey in this dynamic new family exhibition at the Natural History Museum. Featuring huge, moving models of a great white shark, a toxic spider and an interactive chameleon, as well as real specimens such as a Harris's hawk swooping to kill, *Predators* allows you to see first hand the skill and cunning that decides whether an animal gets a meal or escapes being one!

* The senses: the first area of the exhibition explores how predators find their prey and how prey try to hide. As you enter, a five-metre great white shark sways to sniff you out. Try on the ear of a bat-eared fox and discover how a keen sense of hearing can improve your chance of searching out prey.

* Tools and weapons: from predator jaws and claws to the armoured prey, this area includes a massive lion's skull, reveals how predators such as spiders and snakes use poisons, and explains how prey employ some powerful defence mechanisms – such as the unappetising spiny hedgehog. Test your own predatory skills operating the eyes and long sticky tongue of a three-metre robotic chameleon!

* Hunting strategy: from the lone ambush of the alligator to teams of flesh-ripping wolves, this final area shows how predators put their sense and weapons into action. Play a high-speed interactive game and beat your friends to the quarry. But watch out for a toxic spider, 2.5 metres in length – dare you touch its sprung steel web?

Predators is ideal for families with children aged 7–12 years, and explores many fascinating scientific issues, such as the evolutionary 'arms race' – as predators get better at hunting, prey find new ways to hide and fight back, so the predators need better strategies again!

Predators is the centrepiece of *The Year of the Predator* at the Natural History Museum, following the launch of *T. rex* in February 2001 and alongside the major new art installation *Olly & Suzi Untamed*.

Hours: open daily Monday–Saturday 10.00–17.50, Sunday 11.00–17.50

Admission: £4.50, £3 concessions, free to Members and under 5s

Media coverage

Television

17/07/01	BBC1 Breakfast News 7.58 am
17/07/01	ITV London Today I/v with Paul Bowers B/cast 12.50pm
17/07/01	BBC1 One O'clock News I/v with Paul Bowers B/cast 1.40pm
17/07/01	BBC1, Newsround I/v with children in the gallery
17/07/01	ITV London Tonight I/v with Paul Bowers B/cast 6.25pm
17/07/01	BBC1 Newsroom Southeast I/v with Paul Bowers B/cast 9.20pm
17/07/01	Channel 5 News I/v with Paul Bowers

Radio

17/07/01	Radio 4, Today Programme
17/07/01	Radio 5, News B/cast throughout the day
17/07/01	LBC, Julia Somerville Show I/v with Paul Bowers
17/07/01	Heart 106.2 I/v with Paul Bowers
18/07/01	BBC World Service, Radio Spain I/v with Paul Bowers
18/07/01	Gulf Radio Services QBS Radio B/cast 4pm repeated 19/08/01
18/07/01	British Forces Radio I/v with Paul Bowers Live at 12.15pm
19/07/01	BBC Asian Network I/v with Paul Bowers B/cast 19 July, 10.35pm

National press (selection)

18/07/01	The Times, circulation: 1,172160
18/07/01	The Independent, circulation: 224,921
22/07/01	Mail on Sunday, circulation: 2,362,011
22/06/01	The Observer, circulation: 404,859
28/07/01	Daily Express, circulation: 1,086,760
03/08/01	The Mirror, circulation: 2,270,545
08/08/01	The Daily Telegraph, circulation: 1,043,848
Total:	**12 articles in national press**

Regional press (selection)

13/07/01	Evening Standard
18/07/01	Express & Star
18/07/01	Metro
19/07/01	The Irish News
24/07/01	South Wales Evening Post
Aug 2001	South London Press, circulation
02/08/01	Cambridge Evening News
Total:	**28 articles in regional press**

Technical and trade publications

May 2001	Britain Calling
/May 2001	London in Focus
May 2001	The Teacher
July 2001	Child Education
July 2001	Junior Education
July 2001	TES Primary
13/07/01	Times Educational Supplement
25/07/01	Professional Engineering
26/07/01	Design Week
30/07/01	Electronics Times
02/08/01	Nursery World
Total:	**11 articles**

Total print audience reach in excess of 17,766,556

Worldwide web

BBC News Online, robot jaws to woo summer crowds

Now Network of the World, Animatronics Looks to Future

Webcast interviews with John Philips and Bob Bloomfield

THE TIMES

WEDNESDAY JULY 18 2001 4M 40p

Seven-year-old Hannah Gilbert found herself too close for comfort to a giant funnel web spider at the Natural History Museum in London yesterday (Robin Young writes). Hannah was among children, mainly from Somerset and Hertfordshire, who watched Tessa Jowell, the Culture Secretary, open an exhibition that features natural predators. Three robotic models of nature's killers are sealed so that a child aged eight feels the same size as their typical prey. A shark is lifesize but a chameleon, whose eyes and darting tongue the children can operate by remote control, is ten feet long. The children were delighted to see how brave they could be, tweaking the web of the even more oversized animatronic spider, once they realised that it could not leap off its stand and get them. "The spider rears up and strikes downward with its fangs because its mouth parts do not move," said Paul Bowers, the exhibition researcher, as the £80,000 model, sculptured in urethane foam on an aluminium and steel skeleton, went through its repertoire. "But its fangs also inject poison that can easily kill a child or elderly person." Its qualities did not prevent the model becoming the star of the museum's fatal attractions. The exhibition also features classical 19th-century comparative anatomy displays: a lion's skull, spiny defence mechanisms and different hunting birds' widely various beaks. To test the children's imagination, they are asked to suggest what the saw on the snout of the deep ocean sawfish could be for. The exhibition continues until May.

Leading article, page 18

Giant spider is a fatal attraction

A FEAST OF BEASTS

Pounce on the chance to see this new show

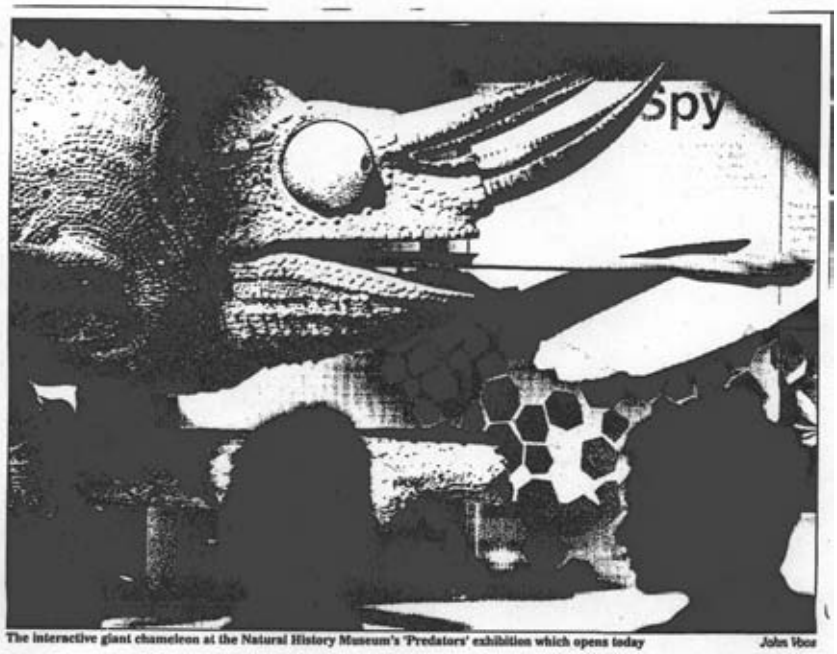
Eat or be eaten? A child thrills to the power and fear of this question. You only have to watch the kids out in the garden. Under the guise of gameplaying, the hunter's arts are honed. "What's the time, Mr Wolf?" they chant in delighted trepidation, excitedly terrified at the prospect of becoming lunch. When Mr Wolf pounces they squeal and scramble like piglets. This may be a game, but it is also a manifestation of primitive, inbuilt proclivities. Like the cute little kitten which rehearses the kill when it leaps so sweetly upon a twitched end of twine, children playing hide-and-seek or grandma's footsteps, knock-down-ginger or schoolyard tag, are practising the predatory skills of lurking and stalking and creeping and catching, the prey's tricks of concealment and camouflage and flight.

The Natural History Museum looks set to hit the bullseye with its new exhibition Predators which opens to the public today. Intended to prey upon the imaginations of children between the ages of about 7 and 12, its principal aim is to teach them about the extraordinary variety of wiles and techniques which wild creatures use in their never-ending battle to eat rather than end up being eaten. The drama of the "survival of the fittest" unfurls at the stab of a button or the flip of a display panel, at the trying on of the trumpeted auricle of a bat-eared fox. A console controls a robotic chameleon with cameras located in each swivel-eyed orb. Line them up on a target beetle and out shoots a long tongue. At the tug of a sprung-steel tripwire, a huge animatronic spider rears up from its lair, hairy pedipalps and shiny fangs threatening. Red lights glow and improbable sound-effects roar.

Such horror-movie style spectacles are certain to lure excitable audiences. But the real strength of this exhibition is more subtle. Once the kids have hit every control panel, bashed every button, shrieked at every scorpion and finally calmed down, concise but informative labels encourage them to engage in a more discerning inquiry, to examine, compare and make connections for themselves. This is backed by a summer programme of workshops.

It has been some time since the Natural History Museum was dismissed as a musty repository of stuffed and squashed animals. But this latest exhibition combines with numerous other displays — not most the dinosaurs, not least the bugs — to prove just how effectively the museum itself has adapted and survived. It has evolved into one of the most vibrant and valuable educational resources in London. Children should pounce on the opportunity to visit it this summer.

THE INDEPENDENT
*** (1835p) 50p
WEDNESDAY 18 JULY 2001
www.independent.co.uk
No 4 057



The interactive giant chameleon at the Natural History Museum's 'Predators' exhibition which opens today — John Voos

Robot dinosaur gets giant reinforcements in museum's hi-tech hunt for a million visitors

By Jaine Garrett
Arts and Media Correspondent

A funnel-web spider proves a catch for museum visitors — John Voos

WHEN THE Natural History Museum in London introduced the world's most advanced robotic *Tyrannosaurus Rex* in February this year, 15,000 visitors a day queued for up to 90 minutes to see it.

Now the museum is hoping to capitalise on that success with the introduction of three new beasts. From today visitors to the museum's *Predators* exhibition will be greeted by three new animatronic models – a 5-metre great white shark, a 3-metre chameleon and a Sydney funnel-web spider.

The museum has invested £500,000 in the exhibition, most of which has been spent on the three animals, with the aim of attracting a million visitors over its 10-month stay.

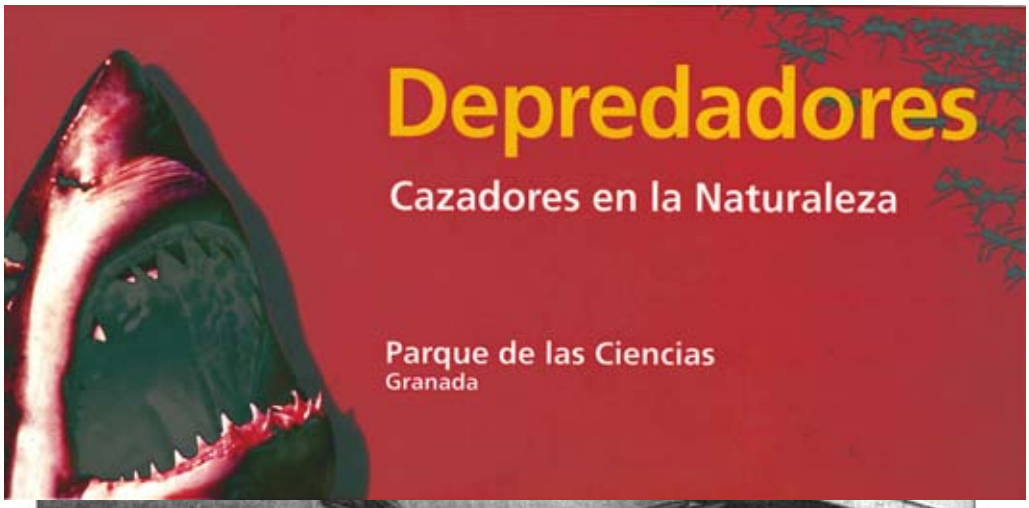
To interest children both the spider and the chameleon are fitted with interactive elements which allow visitors to control their movements. In front of the spider lies a series of steel cables which act as its web. If these are touched a signal is sent to the spider which then rears up ready to strike. Visitors can also operate the eyes and tongue of the giant chameleon. Each of its independently moving eyes is fitted with a miniature television camera and the view is projected on two monitors.

Tessa Jowell, the Culture Secretary, said at a preview yesterday: "It's really encouraging to see that you don't have to dumb down to get children interested. It's not all about cartoons; this will really engage their interests."

Each animal was handmade by the Kokoro Company in Tokyo, which has vastly improved the speed and smoothness of their movements. Beneath each model's silicon skin lies sculptured foam, glued to an aluminium and steel skeleton which moves in a similar way to the living animal. Everything is controlled by a small computer which acts as the creature's brain with a memory card storing its sequence of movements.

Children at the exhibition can also try on a replica ear of a bat-eared fox to discover how its keen sense of hearing enables it to seek out prey. A giant lion's skull will also be displayed, along with illustrations showing how predators such as spiders and snakes use poison to disarm their prey.

Paul Bowers, the exhibition researcher, said: "It will get children searching for facts, questioning and thinking about things and it's all been done with the most advanced technology available."



Un cetrero muestra un águila en la exposición sobre depredadores inaugurada ayer en el Parque de las Ciencias de Granada. / MARÍA DE LA CRUZ

El Parque de las Ciencias muestra el horror y la grandeza de los depredadores en una exposición

Animales vivos, disecados y robots gigantescos podrán ser visitados hasta mayo de 2003

A. V. G. **Granada**

El Parque de las Ciencias de Granada exhibe desde ayer, y hasta mayo de 2003, una gran exposición concebida para modificar la reputación asesina que la simbología atribuye a los depredadores y resaltar su contribución al equilibrio ecológico. Dos consejeras, la de Educación y la de Medio Ambiente, más el alcalde de la ciudad, tuvieron la oportunidad de contemplar en vivo un ejemplar de tortuga mordedora que no rechazaría el pie de un bañista y una pitón albina capaz de digerir un cerdo. No faltó una broma común sobre una ausencia, la del hombre.

El visitante recibe pronto una lección: el depredador no es siempre es un animal de proporciones gigantescas, sino que también los hay de menor tamaño y en apariencia fáciles de doblegar, incluso a base de un zapatazo, como las garrapatas o el piojo masticador.

Sin embargo, a lo largo del recorrido por los mil metros cuadrados que ocupa la exposición, las mayores impresiones proceden no sólo de los animales que sestean apaciblemente en los terrarios, pero cuya capacidad para devorar o inocular venenos mortales está claramente certificada, sino también de los robots que permiten, por ejemplo, comprender el aspecto sobrenatural de un camaleón de dos metros de alzada o los movimientos de una araña de otros tantos de circunferencia.

Así pues, aunque tanto el director del parque, Ernesto Páramo, y la consejera de Medio Ambiente, Fuensanta Coves, abogaron antes de entrar al recinto por defender el crédito de los depredadores la comitiva no pudo contener las exclamaciones y las risas nerviosas a lo largo del recorrido por esta exposición organizada conjuntamente por el Museo de Historia Natural de Londres y que recorrerá, tras su paso por Granada, varios países europeos.

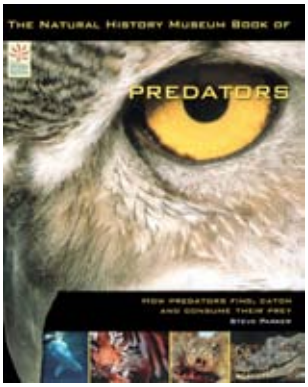
El recorrido por las dos plantas del pabellón de exposiciones requiere del visitante diversos estados de ánimo, desde la serenidad al asombro. La primera parte es más tranquilizadora y el manso aspecto de las rayas deslizándose por el acuario compensa la impresión del robot del tiburón blanco. La consejera de Educación, Cándida Martínez, no tuvo inconveniente en estrenar un simulador de caza y a base de manotazos sobre un bastidor circular donde fulguran círculos luminosos cobró 24 en pocos segundos.

Lo que espera en el piso superior pertenece a un orden menos tranquilizador pues, además de un magnífica colección de animales disecados (desde un oso hormiguero a un caimán) y de insectos depredadores, en las urnas de los terrarios, medio dormidos, pero acechantes, aguardan tarántulas devoradoras de reptiles y pequeños mamíferos o un caimán enano capaz de engullir a otros caimanes vecinos. Ante aquel catálogo de amenazas a la comitiva le entró la risa floja y entonces algunos preguntaron dónde estaba el terrario del hombre. No lo vieron En esta exposición al hombre sólo lo pueden observar, con un cristal protector de por medio, los animales y ellos, discretos, no opinan.

Book tie-in opportunities

The Natural History Museum Book of Predators

A fantastic introduction to the world of predators. Beautifully illustrated, it reveals the myriad ways animals hunt, from wasps to polar bears. £12.00, hardback with jacket, 239 x 286 mm.

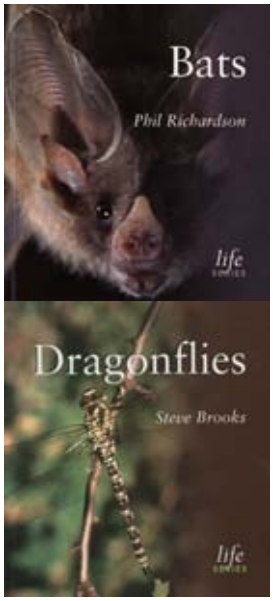


Related titles

The highly respected Life Series includes four predator titles. Each one is a fully illustrated glossy paperback, providing an accessible introduction to a single topic written by an expert in the field.

Specifications for all Life Series titles: £9.95, paperback, 210 x 235 mm.

Life Series predator titles



For all book queries and sales, please contact our Publishing Department on +44 (0)20 7942 5336. Visit the full online catalogue at www.nhm.ac.uk/publishing.

Enquiries

For enquiries, please contact

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