

# Zoo Life

Autumn 2001 - Issue 7

CHESTER ZOO'S MAGAZINE FOR MEMBERS AND ADOPTERS



Inside this Issue: Roman Garden Opening • Elephant Enrichment • Sealion Pool

## From the Director's Desk

Professor Gordon McGregor Reid



### MARKETING ZOOS FOR CONSERVATION

IN the 1950's and 60's, there was not much competition for family days out. The choice was a visit to the zoo, cinema or football match and not much else. Today, of course, there are theme parks, aquaria, keep fit centres, diverse sporting events, car boot sales, county fairs, DIY stores, Sunday shopping – all competing for the family leisure time and budget! The pressure is now on zoos to compete with these new attractions and maintain their share of the 'leisure spend'. Hence marketing is now a vital function for modern zoos.

In June this year, as Chairman of the Marketing & PR Committee of the World Association of Zoos and Aquariums (WAZA) I helped to organise the third International Conference on Marketing in Zoos together with a team from Chester Zoo. It was hosted by Loro Parque Zoo and held in Puerto de la Cruz, Tenerife. There were 73 delegates from 23 different countries including South Africa, Russia, Latvia and Singapore. Mr Wolfgang Kiessling, Director of Loro Parque, kindly gave a welcoming address. This outstanding zoo has managed to successfully combine conservation with commerce, setting standards within the zoo community. Loro Parque has been awarded many prizes for its contributions to tourism and the environment.

The main theme of the conference was **Conservation Through Commerce**. Mr Willie Labuschagne, President of WAZA, stressed the importance of the role of zoos in global conservation and how WAZA hopes to unify zoos in working towards this common goal. The first day of the conference focused on the *Theme of Visitor Attraction or Conservation Organisation?*

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### FOCUS

The keynote address was by Professor Victor Middleton, Oxford Brookes University, who spoke on the shift from local to global markets, mass markets versus a new focus on the individual, and the implications for zoo marketing. Other subjects covered included the importance of the European Association of Zoos and Aquaria (EAZA) as a common body for uniting European zoos, which must now adhere to strict ethical and welfare standards. We heard of the changes in public expectations and were reminded that zoos should be marketing important emotional experiences. The trend is towards fulfilment of a lifestyle expectation in our visiting public.

The theme for the second day was *Marketing the Conservation Message*. It was important for delegates to understand the difficult topic of the European Union Zoo Directive and its implications for marketers. Zoos have to meet increasingly high statutory standards, but this can be viewed as a 'selling point' rather than a problem. We all agreed that we must support EAZA's conservation campaign against illegal bushmeat trading in Africa and elsewhere (see my earlier article on this in *Zoo Life* Autumn 2000). Zoos can make a big difference by raising public awareness and providing practical *in situ* help. However, particular zoo markets – in Russia for example – may be more focused on local issues; and, in this context, the 'bushmeat crisis' may be seen to be remote or irrelevant to visitors.

### FUND-RAISING, FULFILMENT – AND FISHES!

Chester Zoo's team included Development Manager John Regan, with some practical tips on how to identify and gain access to the key decision maker when fundraising, and how to network successfully. Head of Education Stephen McKeown reminded us of the importance of involving the visitor via interactive experiences that make use of the senses. We remember far more about what we actively 'do' than what we



THE QUEEN'S AWARDS FOR ENTERPRISE 2000

passively receive and this makes for a more fulfilling visit. In my own talk I reviewed the latest information on the emergence of a very large contemporary global market in public aquaria. I noted the difficulty of breeding within these aquaria on a sustainable basis, leading to increased pressure on certain fish and invertebrate species in the wild. Some of the marketing of these major, 'new generation' aquaria is based on sensationalism such as promoting products for 'killer' sharks – fishes which are, in fact, becoming rarer every year from overexploitation. We really do need to have a re-think about the products we promote if we believe in conservation.

### FUTURE

Finally, delegates were introduced to the complexities of the Internet and how we can use our websites to learn more about and target potential customers, and enhance visitor satisfaction. Zoo visitors are changing, with very many now owning mobile phones and computers and 'surfing the net'. Increasingly, our visitors will want the facility to plan their visit to the Zoo on computer and even purchase their tickets on the web. This is the future that we must all adapt to!

After the conference, delegates had an opportunity to visit Loro Parque Zoo and were shown around the excellent Parrot Breeding Centre which is not open to the public. Having heard Yves de Soye, Scientific Director of the Loro Parque Foundation, give a comprehensive account of the *in situ* conservation work carried out by the Foundation, it was a privilege to see the thousands of rare birds in this collection. Of particular interest is the project to rescue the Spix Macaw, which is functionally extinct in the wild, and of which only 60 remain on the planet. The conservation of these and other rare creatures needs to be at the heart of modern zoo marketing.

Front Cover: Great Grey Owl chick; Blue-winged Kookaburra; White Storks with chicks. Photographs by Roger Wilkinson.

## MEMBERS' MEETINGS

**Saturday 13 October - 2.30 pm in the Lecture Theatre -**  
Dr Bryan Carroll: *The Western Indian Ocean Fruit Bats: Flying back from the edge of extinction.*

Dr Carroll is Operations Manager at Bristol Zoo Gardens. During the 18 years he spent at Jersey Zoo, Bryan carried out research on two of the world's rarest bat species - the Rodrigues and the Livingstone's fruitbats.

**Saturday 17 November - 2.30pm in the Lecture Theatre -** Satish Kumar: *Soil, Soul and Society.* Satish Kumar is the Editor of *Resurgence* magazine and the guiding spirit behind a number of ecological, spiritual and educational ventures in Britain. His talk will elaborate on the importance of the three elements in the title for a sustainable future, a healthy planet and a just society.

**Saturday 1 December - 2.30pm in the Lecture Theatre -** Sally Walker: *Zoo Outreach India.* Sally Walker is the Founder/Secretary of Zoo Outreach Organisation. During this meeting, Sally will be awarded with a Fellowship of the North of England Zoological Society in recognition of her work in India and South Asia.

**Saturday 8 December - 2.30pm in the Lecture Theatre -** Professor Brian Gardiner: *Dinosaur Relationships.* A welcome return for Brian who is a Member of Council, Past President of the Linnean Society and Emeritus Professor of Zoology at King's College of the University of London.

The Members' Christmas lunch will be immediately before the 8 December meeting at 12 noon in the Oakfield Restaurant. Pre-booking is essential, as this is always a very popular event. Please return the enclosed booking slip, payment and **SAE FOR TICKET RETURN** to Maureen in the Membership Office. Price is £17.95.

**Saturday 12 January 2002 - 2.30pm in the Lecture Theatre -** Dr Heather Hall: *Tales of Pregnant Fathers and Traditional Medicines: Seahorse Biology and Conservation*  
Dr Hall is Curator of Lower Vertebrates at London Zoo.

She is Associate Director of Project Seahorse, which currently has 40 staff working in seven countries. Together with Chester Zoo Director, Gordon Reid, Heather co-chairs the Fish and Aquatic Invertebrate Taxonomic Advisory Group for Europe.

### MEMORIAL EVENING

In August almost 200 people attended a memorial evening in the Zoo for Richard Hughes. Richard's father, Brian, joined Zoo Director Gordon Reid in planting a tree in Richard's memory on the Oakfield Lawn. A plaque was unveiled on the Elephant Island, and the Director announced that the Society is to award an annual scholarship for conservation studies in Richard's name. Colleagues and family members laid flowers at the plaque. The evening was an uplifting event, giving full tribute to Richard's life and work.

### JUST TWO SEATS LEFT FOR PARADISE

There has been a most encouraging response to the two week Members' expedition to Mauritius and Rodrigues in May 2002. There are just two places left on this unique trip to see fauna and flora conservation and follow the progress of the work that Keeper Anne Morris was involved in (Spring Zoo Life pp12-13). Please contact Simon Lacey - 01825 740262. e-mail: [simon@diplomatic.co.uk](mailto:simon@diplomatic.co.uk) for latest information.

### REVIEW OF MEMBERSHIP RATES

The following rates are applicable as of 1 October  
**Annual Standard: £45; 65 & over: £35; Joint under 65: £72; One under 65: £65; Both over 65: £55**

All members paying by Direct Debit in their second year will still receive a standard across the board discount of £5.00 off the above. Members will be individually notified of the new rate this represents, as they are due to renew.

### Junior Membership £19.50

(Junior Membership has not increased in the last four years. The new rate is a little over two standard child admission prices, and is valid up to the member's 18th birthday, whereas normal child entry ends at 16.)

### Friday 30 November 2001

**SALLY WALKER:**  
**BARRACKPORE MENAGERIE AND THE INDIAN NATURAL HISTORY PROJECT**  
Sally Walker is the Founder/Secretary of the Zoo Outreach Organisation in India and Convenor of the Conservation Breeding and Specialist Group, India and South Asia - and much more! She has dedicated the past 20 years of her life to living in India, working for animal welfare of both captive and wild animals. On the day after this meeting, Sally will be honoured by Chester Zoo (see Members' Meetings above).

**FFI Evenings are held in the Lecture Hall, starting at 7.30 pm. Please contact Penny Rudd at the Zoo, 01244 650215, for further information and to book tickets.**

## Fauna & Flora International

### AUTUMN PROGRAMME 2001

**Friday 14 September 2001**  
**LISE HANSSEN: CHEETAHS, LIONS AND LEOPARDS** - Lise Hanssen, from Africat in Namibia will up-date us on the Kunene Lion and Leopard Study, and tell us about the new three year Cheetah programme being launched with Africat, the Okatumba Wildlife Research team and the Ministry of the Environment and Tourism in Namibia.

### October 2001

We are awaiting confirmation of the date of the October meeting, but details will be available from Penny Rudd at the Zoo on 01244 650215 from early September 2001.



## NEW VICE PRESIDENTS

THE Zoo is delighted that two very significant and appropriate figures have agreed to accept the role of Vice President of the Society.

The Rt Hon Lord Oulton Wade (above left), was for many years our 'next door neighbour' at Chorlton Lodge. He is a 'working' Conservative Life Peer. He was born in Chester and attended Birkenhead School and Queens University, Belfast.

Lord Oulton Wade is a former Cheshire County Councillor and Chairman of Christies NHS Trust fundraising appeal, which is about to successfully reach its £22 million target. He has been Chairman of the Chester Heritage Trust and the Rural Economy Group. In the short time that he has been a member of our 'National Contact Group' he has been very active and has organised a number of events on our behalf in the House of Lords.

The Hon Mrs A Margaret Jane Heber Percy is the daughter of our former Vice President, the late Lord Leverhulme. She is married to Algernon Heber-Percy JP, HM's Lord Lieutenant of Shropshire. We are very pleased that she has agreed to continue the family association with the Zoo.

## HIDDEN PLAQUES

As the Foot and Mouth precautions are lasting longer than we had hoped, arrangements are in hand to resite the adoption plaques for Children's Farm Area, Tigers, Camels, Giraffes, Meerkats and Rhinos. We apologise to those adopters who have not been able to see their plaques in recent months.

## CHESTER ZOO 100 CLUB

The winners of latest monthly prizes are:

### APRIL 2001

£100 Miss Irene M Rigold, Canada  
£100 Mrs Millie Minnis, Little Neston  
£50 Ms Pauline Jones, Africa  
£50 Mrs Kathleen Holding, Ormskirk  
£50 Mr James S McLay, Lymm

### MAY 2001

£100 Mrs Ivy Thompson, Upton by Chester  
£100 Miss Susan V Tissyman, Liverpool  
£50 Mr Stephen Oakes, Ashton-u-Lyne  
£50 Mr Darren Keay, Chester  
£50 Mrs J D Colclough, Stoke on Trent

### JUNE 2001

£1,000 Miss Lisa Summerhill, Sheffield  
£100 Mrs Ivy Thompson, Upton by Chester  
£50 Mrs Julia Patton, Ellesmere Port  
£50 Mr Roy Mugridge, Stevenage  
£50 Mrs Kathleen M Peaker, Chester

All prize winners will be notified by post and will be listed in the next edition of Chester Zoo Life.

Membership of the 100 Club is still invited. Please contact Lynsey Jones, Development Officer, if you wish to participate.

# Zoo Review

## AIR MAURITIUS

MANY thanks to all readers who sent in bids for this holiday, so generously donated by Ed Makin. Mr Makin won the holiday as first prize in last year's Photographic Competition, but was unable to travel. The winning bid was £1,333 by Frank Needham of Altrincham.



## Caspar the Camel

*THE biggest of our summer babies was a camel, born to Olga and Nelson on 23 May. Keepers have named him Caspar. Olga is proving a brilliant mother and the youngster is very lively.*

*The camels at Chester are Bactrians – the two humped variety. This is another species in danger of extinction. It is thought that no more than 500 are surviving in the wild and they are found now only in the Gobi Desert.*

*Our photograph shows Keeper Glyn Hayes with Caspar.*

Picture by Andrew Price

## More Pledges

THE Legacy Pledge Club has had five new members since the last *Zoo Life*. Three are local residents who have long been associated with the Zoo.

Further afield, Steven and Lorraine Groves live in Middlesex but retain close ties with the Zoo. Lorraine was born in Liverpool and remembers visiting often as a child. She has visited many Zoos around the world - and Chester is still her favourite. Steven and Lorraine adopted the Australian Tree Frogs without seeing them and were very surprised at just how ugly they were when they first visited them!

To join the Legacy Pledge Club *all* you have to do is write confirming that you have made provision for the Zoo in your will. We will then enrol you, and in return you will receive a certificate, a special guided tour and invitations to various special events. All our current 'Pledgers' were invited to the official opening of the 'Millennium Roman Garden' in July.

Please help us to continue our conservation work both here and in-situ across the world by remembering the Zoo when making, or amending your will. The Zoo we know and love today would not be here but for past legacies.

For further information please contact Hazel Russell on 01244 650229 or by email at [h.russell@chesterzoo.co.uk](mailto:h.russell@chesterzoo.co.uk)

## NEW DIRECTOR FOR BRISTOL ZOO GARDENS

DR Jo Gipps OBE, Director of Zoos at the Zoological Society of London, has been appointed the new Director at Bristol Zoo Gardens.

This appointment represents an end to an era. For the past 80 years two generations of the Greed family have directed Bristol Zoo Gardens. The current Director, Geoffrey Greed took over from his father as Director in 1974. After 35 years working in UK Zoos, including Chester, 28 years as Director of Bristol Zoo Gardens, he will retire this autumn.

## Zoos Today

A brand new magazine covering all that's new in British Zoos

If you are interested in developments and news from UK zoos (as well as information from abroad) then *Zoos Today* is for you.

Chester Zoo features significantly in the very first issue with a focus on all the exciting developments of the last few years. Other fascinating articles cover the Aye-ayes at Jersey Zoo, the National Bird Of Prey Centre, Bears, Flamingos and Giant Otters as well as interviews and news from around the world. The very best new zoological books are reviewed and if you want to make your day trips animal orientated -there's a guide to all the country's wildlife attractions.

*Zoos Today* is produced by the Independent Zoo Enthusiasts Society with all profits going towards zoo publications and conservational projects. The first issue is in the Zoo shops priced at £3.95. Don't miss it!

## MANY JOIN THE VET SET!

WE were overwhelmed by the response to our appeal for help to buy equipment for the new Animal Health Centre, to be built later this year. To date we have received over £5,000. People sent money in memory of loved ones; children arranged sponsored walks and all sort of ingenious ways were found to raise money. A big thank you to you all.

This money will enable us to buy some of the essential equipment for the new centre and our Veterinary Officer, Stephanie Sanderson is looking forward to sharing the delights of her shopping trips with you in future editions!

The appeal is, of course, still open, and if anyone would like to help, (receiving in turn a certificate and an invitation to the official opening of the building), please send donations to *Animal Health Centre Appeal, Chester Zoo, Upton by Chester, CH2 1LH.*

## ZOO TAILS

*Zoo Tails* by Oliver Graham-Jones. Bantam Press. **12.99.** Available in the Zoo shops.

*Retired Chester Zoo Director Dr Michael Brambell reviews this delightful little hardback.*

OLIVER Graham-Jones is one of those veterinary surgeons who has had a profound effect on zoo medicine, being a major pioneer in the techniques of diagnosis and treatment of wild animals in zoos. I remember as a student visiting 'O G-J' in the then old and most unsatisfactory sanatorium at London Zoo and listening spellbound as he talked of the problems facing zoo veterinary work. It was O G-J who, despairing of that sanatorium, pushed through the still excellent animal hospital at London; who adapted the dart gun and developed the 'flying syringe' and its cocktails of tranquillising drugs. Only then were zoo vets able to get close enough to make thorough examinations of dangerous animals.

Over the years our paths have continually crossed. He has a warm, rather flamboyant character, whose gift as a most accomplished raconteur permeates the pages of this enjoyable book. In *Zoo Tails* he recounts many of the stories which were legend amongst the staff at London Zoo when I became his successor-but-one (Desmond Morris coming between us) as Curator of Mammals. It has been a great delight to read of these tales from 'the horse's mouth.' I had heard many of them from the rather different angle of the keepers at the time!

## Liz and Phillip!



Phillip Schofield, accompanied by Pig and Parrot, brought the cast of *Dr Doolittle* to the Zoo in July - to present a cheque for £15,000. Because of the hole in the Zoo's finances during the six week closure, the touring company generously pledged £5.00 from each ticket sold in April for the performances in Liverpool and Manchester. Liz Child, Head of Visitor Services, was delighted to accept the cheque.

## The Zoo on Television

THE Zoo's Marketing Department has been turned into a television facility office over recent months. We have never had so many requests for filming in the zoo and the keeping staff have spent so much time in front of the cameras that they barely notice them now!

The excellent half-hour programme *Animal Watch*, filmed exclusively in the Zoo by Multi Media Arts, was shown of five consecutive Tuesday evenings on Granada at 7.30pm. Granada provided a live web-watch, linked to the Zoo's website, and by the time the third programme had been screened, this had received 130,000 'hits!' The photograph (right) shows presenter Jemma Gofton filming on Lemur Island.

Tigress Productions have been filming in the Zoo for six months, making a series called *'The Birthday Zoo'* which will start on *Animal Planet*, on satellite television, this Autumn.

In addition we have had a pre-school programme called *'When I Grow Up'*; a family quiz show called *'A Question of Squawk'*; *'Adopt a Wild Animal'*; a German Schools programme; *'Reds at Five'* (on Manchester United TV!); *'Wish You Were Here'* and a live-from-the zoo half hour on BBC Look Northwest!

We turned down one quiz question request. They wanted to have a line of zoo keepers and invite contestants to sniff them and guess which animals they



worked with! The Public Relations Manager did not feel she could put this suggestion to the keeping staff without risk of an adverse response!

# Elephant Enrichment

*Gill Bailey starts her veterinary training at Liverpool University in September. For the past year, she has been getting some practical hands-on experience working with the Zoo's elephants. Gill, with other members of the elephant team, continues our series on Environmental Enrichment.*

**O**n all sections across the zoo, it is our aim to provide an environment that encourages the animals to behave as naturally as possible. On the elephant section this is enabled through a large enclosure, a naturally behaving social herd and the environmental enrichment techniques that we implement.

Visitors to the zoo will often bear witness to the best enrichment ongoing on the elephant section, mainly by the cacophony of sound erupting from the elephant paddock; this is the social structure brought about from our matriarch, three calves and our bull elephant. The most natural behaviours observed are all focused around one or more of these elephants. The social behaviours are very important but we also need to adapt their feeding regime so it mirrors that of their natural habitat. Elephants will spend a large proportion of their time foraging for food; this will encompass a very large area. To encourage foraging behaviours we do not have a fixed feeding time on the elephant section, and provide lots of smaller feeds scattered randomly throughout the day. The paddock also has a few built-in feeding devices, which include trunk feeders and hay bale distributors built into specially designed concrete logs and walls. The aim of these feeders is to make it much harder to extract the hay, lengthening the feeding time to imitate natural feeding habits.

We have an array of devices and techniques, used mainly in the indoor enclosure, when bad weather keeps the animals inside for longer periods. We use them randomly and only when necessary. In this way we can prevent the elephants from extracting the food too quickly and becoming easily bored – a problem with such an intelligent

species. The devices include a feeding log with drilled holes; tyres with rope spliced round and a shaker feeder. These can be packed with peanuts, vegetables, fruit, hay and bread. The holes and spaces are designed to be small so that extracting the food will be time consuming and the elephants will need to make full use of their trunks. To keep them active, we hide cakes, fruit, vegetables and bread on the bars in the indoor enclosure. Occasionally we will add a few drops of aromatherapy oils on to logs; particular favourites are forest fruits and coconut. There is no food reward behind this but the oils arouse their sense of smell and encourage foraging. We can also enrich the outside paddock when necessary by burying apples at different points around the enclosure and scattering peanuts. All these techniques encourage natural behaviours of foraging, digging, reaching up for food and searching by scents.

On the elephant section we are always careful when it comes to implementing enrichment or carrying out scatter feeds, as often the elephants will be busy. The calves will be playing, the adults will be dusting, and elephants will be in the pool or searching round the enclosure. Therefore giving a scatter feed or introducing an enrichment device at these times would actually be detrimental to them as it breaks up natural behaviours. In these circumstances we leave them alone until they are showing signs of boredom or in need of more food.

Everyday we bear witness to the miracles of elephants, and everyday they will do something new to surprise us. Therefore it is of the utmost importance to us to continue improving their lives and help conserve these impressive animals.



▲ The social structure of the herd encourages natural behaviours.

▼ The new swimming pool and waterfall provide very enjoyable activity for the elephants.



Pictures by Zoo staff.

## 'I Didn't Know the Animals Could Read!'

*That is the standard cry that greets Zoo Librarian Jane Woodward when non-zoo people discover where she works! Jane reminds Zoo Life readers of this substantial but little known facility, housed within the Education Division.*



Zoo Librarian  
Jane Woodward.

**M**ANY people are surprised that a library should be situated in a zoo. I compensate for their disappointment at our non-reading animals, by divulging the fact that our big male Orang-utan, *Sibu*, has literary pretensions – he enjoys looking at the pictures in ladies' underwear catalogues!

Our library houses a wonderful collection of zoological, veterinary and botanical information, held in great esteem by those researching and studying at the Zoo. It is available to staff, students, members, and interested members of the public. University students rave at our collection and have been moved to tears on finding long-sought for publications that they have failed to find elsewhere.

The library is located in the Education Centre adjacent to the new Spirit of the Jaguar.

Over recent years we have invested heavily in new stock and our shelves are overflowing. We are gradually encroaching on other parts of the building- so if something isn't on show, it doesn't mean we don't have it! As the biggest UK zoo library outside London, we provide a collection and service unrivalled in the North of England. We also offer free Internet access on a first-come, first-served basis.

We stock CD-ROMs (including every issue of National Geographic from 1888-1999), periodicals, studbooks, conference proceedings, dissertations and a unique collection of information from zoos around the world. Of particular interest is the 'grey literature' which cannot be readily acquired elsewhere, is difficult to identify and purchase and not available in most public or even academic libraries. This includes individual

zoos' animal husbandry guidelines, newsletters and symposium proceedings.

The library houses the Zoo's main archive, a fascinating collection of documents, photographs and newsletters dating from the earliest days up to the present. Certain archives, such as the Director's and Veterinary collections, are found elsewhere on site and we are working on collating and recording all archive materials. It isn't all paper! We have Chester Zoo ties through the ages, celebratory chocolate coins, and, somewhere, a miniature engraved brick, a relic of a past marketing campaign. A particular favourite of mine is the collection of press cuttings dating back to 1956.

The archives are still growing of course. We add to the archives on a daily basis. For instance, information on how we responded to the threat of Foot and Mouth disease may be of value in the future so all documentation relating to this is being carefully stored and indexed.

Our big project for 2002 is to scan all paper and photographic documentation into an electronic database with all materials eventually indexed on CD-ROM or Zip discs. The implications for space-saving and accessibility are enormous. Whereas one year's worth of Scientific Committee minutes might take up a couple of box files, 30 or 40 years worth could be fitted onto one indexed Zip disc that would slip comfortably into a shirt pocket!

As Librarian, I purchase, organise and index all the stock and send out a monthly bulletin to all our staff. If our library cannot provide the information required I have a wide network of

help available and regularly use the services of the Zoological Society of London Library, Cheshire County Libraries and the British Library.

We have diverse enquiries ranging from staff needing information quickly on hand-rearing giraffes to helping provide correct facts and figures for the interpretive signage around the Zoo. We are bombarded on a daily basis with appeals for help with school projects ('I am doing a project on animals, please can you send me as much informashun as you have.'). degree dissertations and PhD theses. What colour are a polar bear's eyes? How does a giraffe clean its ears? Where does the name kangaroo come from? These are just some of the questions and they generate a lot of interest in the Division and indeed, around the Zoo where we frequently have to contact Animal Division staff for advice. We often have a surge of enquiries around lunchtime, when office workers are obviously trying to complete crossword puzzles with a difficult animal clue!

Linked to the 2002 archive scanning project, we intend publishing much of our written animal information on the Zoo website. Watch this space!

The library is normally open Monday to Friday 11am-3pm but these hours sometimes vary, especially during school holidays, so please telephone before making a special trip. Only registered members of Zoo staff may borrow books but photocopying facilities are available should you need to take information away.

If you have any questions about the library, please contact me on 01244 650205, or Email: J.Woodward@chesterzoo.co.uk



# SEALION BEACH

*One of this year's developments has been to upgrade the accommodation for the sealions. The Carnivore Team, under the leadership of Alan Woodward, describe how this was achieved.*

## *Why did we need to change our enclosure?*

THE Sealion exhibit at Chester Zoo has always been very popular with visitors and keepers alike. In fact it is one of our oldest exhibits, and our first sealion, *Oscar*, arrived in 1971. Since then little has changed, except for the addition of a house and waterfall in 1984.

This new area provided a safe location for pupping, and soon resulted in our first healthy offspring, *Berkley*, in 1985. *Berkley's* full sister *Fergie* (15), is still a resident at Chester along with her mum, *Trudy* (26), and two young female sealions *Phoebe* (3), and *Rio* (2), who came from Chessington Zoo in March 2000. Following the death of our big male *Nemo* last year, who lived to a very respectable age of 17, we brought in a new young male, *Fernandez*, from Blackpool Zoo. He is only three, but we hope that he will breed with *Phoebe* and *Rio* when he matures, roughly at the age of four or five.

With an increase of young, active Sealions, and possibly more on the way, we felt that it was an ideal time to re-vamp the enclosure to facilitate enhanced keeper safety, behavioural enrichment, and above all, animal welfare. A plan for an extension of the enclosure was put together by keeping staff and the Estates Division and we feel the result is a great success. We

hope our description of the new areas and their purposes will give you an insight to several aspects of keeping marine mammals.

### THE BEACH

The new 'Sealion Beach' is a very large area, with safe keeper access and plenty of room for the sealions to bask in the sun. The public can no longer view them from all sides, and this added privacy improves their welfare. We carry out the three daily feeds from here, and perform routine health checks on the young sealions. The extra space enables each sealion to have its own 'station' to sit on, and the public have a great view. We think that the palm trees and ferns give a decidedly tropical feel! Although this was the main area to be renovated, we were able to include two new off-show spaces behind the pool.

### MEDICAL TRAINING AND TREATMENT AREA

This is a quiet space in which we can train the sealions individually, with minimum stress, and an ideal place for the veterinary team to treat any injured or sick animals.

The health checks that the keepers carry out on the beach are designed to alert us to any medical problems. We check their eyes, teeth, flippers and body for wounds or signs of infection. They allow us to do this because they have undergone 'medical training'. This is a process of teaching the animals to

allow contact and respond to basic hand and voice signals such as 'open your mouth' and 'lie down'. A relationship is established between keeper and Sealion, built on trust and mutual respect. This also enables the vets to treat the sealions for any conditions they may develop, or for health care during pregnancy.

We find this type of training very beneficial to us as well as the Sealions, as it reduces the stress to an animal needing treatment when unused to close contact. It also enables us to catch any ailments quickly before they become a real problem.

When training the Sealions, we use only positive re-enforcement - i.e. to reward the animal with a treat of fish when they do something correctly, but not to reprimand them if they don't. This way we hope that the training can also be fun for the Sealions, and form part of our environmental enrichment programme. We do not advocate the use of animals for performing 'tricks' in a show.

### PUPPING POOL

The addition of a separate pupping pool is a real bonus. It provides a safe quiet area for the mother to give birth and begin to raise her pup, until it is old enough to swim in the main pool. The cow will still have access to the main pool via a special gate that only she can negotiate. This allows her to be mated a few days after parturition, as it would occur in the wild. The keeping

staff and the vets will be able to check on the cow and her pup, without the interference of other Sealions. The pool can also be used as a recuperation area for any sick animals, and can be filled with saline or other aqueous drugs, as it is entirely separate from the main pool. If we receive an animal from another country, it is the perfect place to quarantine them in comfort.

### AND FINALLY...

All the carnivore staff are extremely pleased with the changes made to the enclosure, and would like to thank everyone involved. The exhibit has progressed from being adequate for the sealions' needs, to a standard in keeping with rest of the Zoo and its mission statement. This is also reflected in an improvement in the new interpretation around the enclosure, educating the public about these fascinating creatures. We hope that in the future we will have plenty of use for our pupping pool, and that the medical training rarely needs to be put into practice.

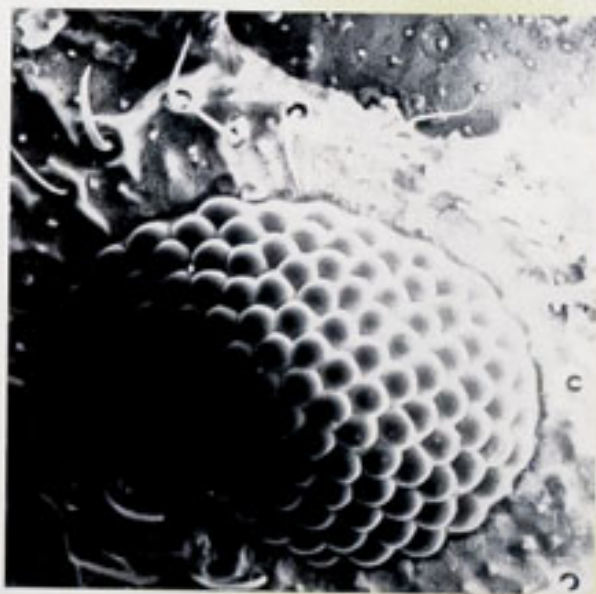


## Education Matters

### Magnified Magic!

MAKING interpretation panels for tiny creatures like the Leafcutter ants in *Spirit of the Jaguar* needs a very specialised form of photography. Liz Howard, Head Technician at Manchester Metropolitan University generously offered free training to Education staff on the use of the electron microscope – with stunning results. This amazing technology can produce a photograph of an ant's eye in sharp detail!

Liz Howard brought her team of technicians on a visit to the Zoo, to progress other ways of working together. She met the Zoo's Aquarist, Mike Crumpler and hopes to set up a Seahorse colony at the University. James Andrewes gave the visitors a tour of the *Spirit of the Jaguar*, and picked up some



▲ Ant Eye

advice on how MMU keep their Leafcutter ants and other interesting invertebrates. As a result, James may be trying them on *Cheerios* – and suggests

that the Zoo's Business Development team approach Kellogs for funding!

### Quiz Masters

Yet another great success for the Education Division and the Zoo! In June Matt Lewis, Lead Presenter, and Zoo Teacher Jason Sheridan delivered a hefty part of the Institute of Biology's Annual 6th Form Quiz. This year 120 students, from 30 schools and colleges took part. It was an excellent opportunity for Matt and Jason to market the Zoo to customers old and new. They took along one or two insects and artefacts for pupils to ponder over. The Chief Executive of the Institute, Professor Alan Malcolm, presided over the awards ceremony, and our two educators were presented with china mugs to mark the occasion.

This spring and summer have seen a lot of 'firsts' for the birds at Chester Zoo. Some species have been reared for the first time at the Zoo; these include European Spoonbills, Vietnamese Pheasant, Fischer's Turaco, Taretic Hornbills, Blue-winged Kookaburras and Great Grey Owls. Other birds, including a newly received pair of Red-tailed Amazons, have bred for the first time since their arrival at Chester.

## FIRST CLASS CHICKS!

By Curator  
Roger Wilkinson



▲ European Spoonbills

**W**E have held European Spoonbills at Chester since 1995. Both of our males escaped following a storm in December 1999 when the aviary netting was torn open by the gale force winds. One of the Spoonbills was retrieved in January 2000 but the other, a male, disappeared leaving us with only one male and two females.

Previously the Spoonbills have laid eggs but no chicks have been hatched. This summer the pair nested and as safety measure we took their first clutch of eggs for artificial incubation. Two chicks, the first to be hatched at Chester Zoo, were hatched in the incubator and are currently being hand-reared. The female then laid a second clutch and three eggs hatched under them. The chicks are being reared by their parents, with some supplementary feeding by their keepers.

Stork in nest ▼



▲ Great Grey Owl

**A** PAIR of Great Grey Owls was received from Helsinki Zoo in 1994. After several years without breeding we decided to check if they were a true pair and had them sexed by laparoscopy. It was then discovered they were in fact two females! In 1998 one female was exchanged for a male with a private owl enthusiast.

Last year the female laid eggs but the chicks disappeared shortly after hatching, assumed to perhaps having been eaten by their parents. This year the parents hatched three chicks and have successfully reared two of these. Great Grey Owls are rarely bred in zoos and this is the first time they have been bred at Chester.

**T**HE White Storks living in Europe on the Edge took advantage of the removal of one of the European Black Vultures whilst an exchange was arranged with Amsterdam Zoo and commandeered the nest that the vultures had previously built. Three chicks were hatched and are being cared for by both attentive parents. This is the first time these storks have bred in this enclosure.



# Hornbills in Thailand

*Dr Roger Wilkinson reports on the third International Hornbill Workshop in Phuket, Thailand in May.*

The Third International Hornbill Workshop was held in Phuket, Thailand in May 2001. The conference was superbly organised and hosted by Pilai Poonswad and her team of helpers and attended by more than 70 delegates from some 20 countries. Topics ranged from studies of the distribution and conservation of hornbills in the wild to the breeding of hornbills in zoos. One of the main areas of field research is the role of forest hornbills in seed dispersal and this was reflected in a number of presentations on this and on hornbill feeding ecology and nutrition.

Zoos supporting hornbill research and conservation was the theme of my paper and I was able to give examples from Chester Zoo's current and continuing support of hornbill conservation in the Philippines, as well as earlier support of hornbill research on Sumba and in Sulawesi. Contributions from other zoo workers included presentations on the breeding of Papuan Wreathed Hornbills at Jurong Bird Park and on the husbandry of hornbills at Zoo Negara, Malaysia.

The post workshop programme included a visit to the Khok Mai Rua Wildlife Breeding Centre where hornbills held included Great, Rhinoceros, Bushy-crested, and Oriental Pied. The centre had recorded success in breeding Great Hornbill.

The Hala Bala Wildlife Sanctuary still holds good numbers of hornbills. Elsewhere in Thailand, and throughout Asia, the larger hornbills are under increasing threat from forest clearance, selective logging of the large trees they

require for nesting and direct persecution through nest robbing.

Zoos holding hornbills can contribute to their conservation by financially supporting the work of the Hornbill Research Foundation. This foundation was established by Dr Pilai Poonswad and is involved in conducting research and in disseminating knowledge to the general public, especially focussing on engaging the enthusiasm of school children, and in involving local communities in hornbill conservation.

Delegates to the conference had the opportunity to visit Budo-Sangai Padi reserve in Peninsular Thailand. Here Dr Poonswad and her team study hornbills in co-operation with local villagers. These villagers previously earned extra income by selling hornbill chicks stolen from their nests but are now paid to protect the nests and to gather research data. This is financed through the Hornbill Family Adoption scheme.

Chester Zoo holds both Great Hornbills and Rhinoceros Hornbills and it is most appropriate that we have adopted a family of each species in Thailand. I was very fortunate to be able to meet the villagers involved in this scheme and to visit active nests of both Great and Rhinoceros Hornbills. The large forest hornbills nest at low density in tall trees on the steepest slopes of Budo Mountain and several hours trekking in hot humid conditions up very steep tracks was needed to reach some of these nests. Feeding visits were also infrequent but the reward for my first morning's trekking and waiting was excellent views of a handsome Great Hornbill flying in to feed his mate. We remained inside the hide until early afternoon and recorded six visits by the male. On the first four visits he brought a large stick insect or praying mantis, on the fifth visit he

regurgitated 13 large red figs and on the sixth visit carried a large flying lizard.

The following day I visited a Rhinoceros Hornbill nest. This nest was located at a height of only 9 metres in a 40 metre high tree. The bird had also been seen well the previous day. I arrived with three other people to find no sign of the male in a wait of over 2 hours. This gave rise to concern that perhaps he had been shot. However our worries were unfounded when the male eventually arrived and then returned frequently to the nest carrying large insects.

I returned to Chester to learn that although we had three Tarric Hornbill chicks our Great Hornbills had again been unsuccessful in hatching chicks. We will continue to work hard to encourage these to breed successfully. However these birds play a very important role at Chester in enthusing young visitors to learn more about these magnificent birds and through the income generated by zoo visits support hornbill conservation and research in the wild.

*Rhinoceros Hornbill at night* ▼



Photo by Roger Wilkinson

## Who says money doesn't grow on trees?

An insight into the plight of nature's friendliest ape – the Orang utan!

As a final year zoology undergraduate, I was keen to extend my experience in tropical fieldwork. The data resulting from the habitat assessment would have important implications – they would be used to assess the area for suitable rehabilitation sites.

Tanjung Putting is on the southern coast of Central Kalimantan, and is Indonesia's most important protected habitat for Orang utans. It is also a sanctuary for a variety of threatened species. Unfortunately, Indonesia is plagued by political unrest. Steps may have been taken toward social justice and democracy but the environment has suffered as the grip of authoritarian regime has loosened.

Already familiar with these problems from previous work in Sulawesi, I was a little prepared when I first entered Kalimantan to be told that the assessment had been cancelled. The reason was simple; the forest was plagued with illegal logging and, like an increasing amount of the park, was unsafe for people as well as for the Orang utans.

As an alternative, I involved myself with a number of conservation projects. One of these was the introduction of a waste management system in the village of Tanjung Harapan. This was once located on the 'park' side of the Sekonyer River. However, with Tanjung Putting becoming a National Park in 1984, a ranger post and release site replaced it, and the inhabitants were

relocated to the opposite side of the river. Much animosity has been felt between villagers and the park authorities because, until recently, no compensation payments had been made. Any actions that could increase co-operation and communication would benefit both parties. This is especially important since some village members have been recruited into illegal logging.

With over 15 years of rubbish in the village, cleaning up was far from easy. It took two full weeks, despite a large team of staff and enthusiastic children. A plastic carpet had formed in some areas and hazardous items, such as syringes from the makeshift clinic, had to be disposed of carefully. Work continued in land clearing and the construction of a waste collection point with the assistance of the *kepala desa* (head of the village) and a local carpenter. The villagers were consulted, and the management of the new system was eventually left to two villagers to collect and sort all waste and take it down river for safe disposal or for use as compost.

The most harrowing aspect of the region is the huge problem of illegal logging. My work in the village had clear benefits for its people and the ecosystem surrounding it, but nothing could be done about this timber theft. Every day rafts of illegal wood were towed down river. Sometimes this would happen at night, when we were woken by the loud *klotok* boat engines, but more often it would occur in daylight in full view of the

Matthew Struebig received a Chester Zoo Studentship Award last year to help conduct a habitat assessment in tropical forest outside Tanjung Putting National Park in Kalimantan, Indonesia. But plans had to be changed.

authorities. The police remain helpless because of the violent threat from some loggers and their sheer numbers. Most police are proud of their work, but are in fear of retaliation.

Illegal logging is big business and currently outstrips legal sources. Laws for protecting parks and reserves are frequently ignored or waived in favour of growing business interests. People are increasingly claiming back resources from a weakening government, but as law enforcement relaxes, it is the logging bosses who profit at the expense of everyday people. While labourers can expect to be paid about £2 a day for hard and dangerous work, the logging boss profits about £185 for each cubic metre of commercial wood.

Tanjung Putting is a sparkling gem amidst fading beauty. Unfortunately, even this gem is waning. Amongst threats from fires, agriculture and human encroachment, illegal logging is quickly destroying the park's forest. For the Orang utan this means less food and shelter and a greater threat from the illegal bushmeat and pet trade. Without support from Chester Zoo, I could not have made a contribution to change. I am also indebted to the Orang utan Foundation for giving me this unique opportunity. For more information about how you can help Indonesia's fading rainforest and the Orang utans, or to take part in a volunteer programme, contact the Foundation on 020 7724 2912.



▲ Davida and David – mother and son. Rehabilitant orang utans become a more frequent sight at feeding stations – a sign of depleting food in the forest.



▲ The building of a waste collection point with the villagers of Tanjung Harapan

# Magical Santa Trail



**SORRY** to mention Christmas as early as September! But it does give *Zoo Life* readers the opportunity of booking for our Christmas events before the press advertising begins for the general public.

Christmas at Chester Zoo this year is destined to be even more magical and memorable than ever before!

On our exciting *Magical Santa Trail* evenings, children and parents will be invited to board Santa's illuminated monorail, which will take them across fairy-lit paddocks to Santa's very own

workshop and grotto, where elves will be busy preparing toys for all the girls and boys.

Once the children have received a gift from Santa, they will be able to warm up in our Ark Restaurant with a complimentary mince pie and fruit juice, with mulled wine for the adults. The restaurant will also have a tempting menu of hot dishes available for purchase. The walk back through the Zoo will be guided by a breathtaking display of fairy lights.

And, just in case they haven't experienced enough Christmas

magic, the children will love following the fairy-light trail to our ever popular *Twilight Zone* and *Monkey Islands*, where they have an exclusive viewing of our bats and monkeys.

These special evenings will be held over a choice of dates in December, from 4pm until 9pm, and must be pre-booked. Please refer to the booking form supplied with this magazine.

**BOOK EARLY TO AVOID DISAPPOINTMENT.**

## Christmas Lunch and Dinner and Disco Evenings

IN THE OAKFIELD RESTAURANT

From Saturday 1st December, Oakfield House will be decked with holly and ready to welcome Christmas lunch guests with an exceptional, value for money menu.

Our dinner and disco evenings are always in high demand so it is recommended that you book early. Apart from the specified dates we are able to cater for private functions – these are ideal for office parties with 40 guests or more.

If you fancy a change on Boxing Day why not treat the family to our delicious lunch - this combined with a leisurely stroll around the grounds is an ideal way to round off the Christmas festivities.

Lunch: £17.95 per adult - £10.95 per child (includes admission)

Dinner and Disco: £23.95 per person (please telephone for available dates)

Boxing Day: £24.95 per adult  
£15.95 per child

For further information and booking details please telephone:

The Events Office  
**01244 650209**

(Monday - Friday)



## Christmas Shopping in the Ark

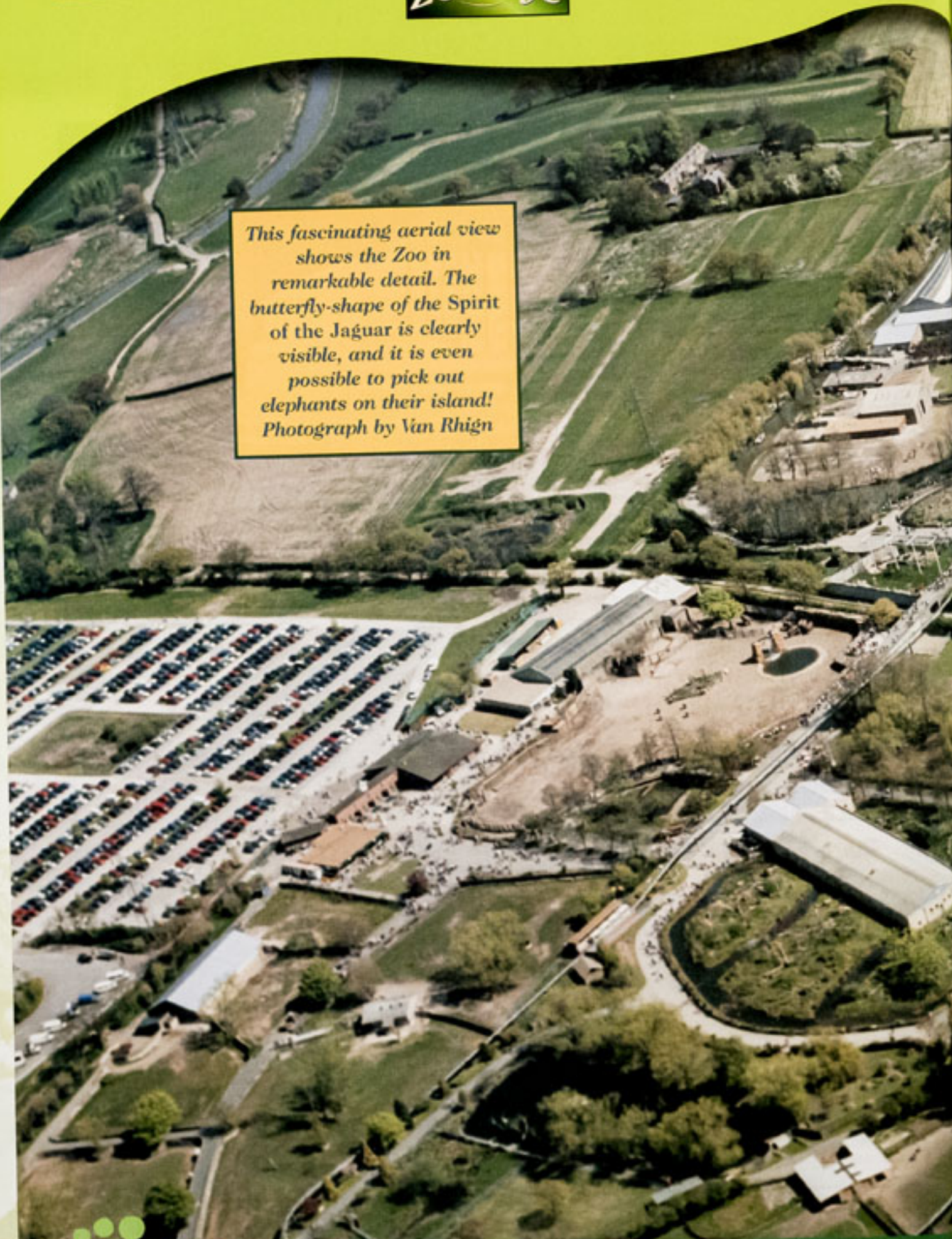
The well-stocked Ark gift shop will remain open on each of the *Santa Trail* evenings for leisurely shopping – and at a discount! Members, of course, have a year-round 10% discount on purchases, and we are happy to extend this to all *Zoo Life* readers from receipt of this magazine until the end of December 2001.

We believe the Ark is the best animal-themed gift shop in the region, and you will find something for even those difficult people on your list!

No parking problems, no hassle, and lots of choice!

Present this voucher with your purchases in the *Ark* or *Fountain* gift shops in Chester Zoo for a 10% discount on all shopping

*This fascinating aerial view shows the Zoo in remarkable detail. The butterfly-shape of the Spirit of the Jaguar is clearly visible, and it is even possible to pick out elephants on their island!*  
Photograph by Van Rhign



# THE ROMAN GARDEN

**W**E tried to officially open the Roman Garden a year ago. But the petrol strike last September meant that many of our guests were unable to travel. So it was postponed until the Spring - when Foot and Mouth disease risks flared up and the Zoo was temporarily closed.

But on a warm, dry July evening, we finally managed it! The advantage, of course, was that the 'new' garden now has a full year's growth, and is looking

more established than it did last September.

David Rudkin, Director of Fishbourne Roman Palace, unveiled the commemorative plaque, and praised the authenticity of the garden. He said he was particularly envious of the central water feature, as it was so much larger than the one at the Fishbourne!

Guests of Honour for the evening were Joan Springett and Linda Farrar. Joan is a local historian and her original

manuscript, *Romans in Chester*, was the catalyst for the idea of a Roman Garden. The historical accuracy of the garden is largely due to Joan's painstaking research. Linda Farrar is a classicist and archaeologist with special interest in gardening history and she provided expert advice on all aspects of the project, from original design to the major elements of construction. Her book, *Ancient Roman Gardens*, was a major source of information for the Zoo garden. Both ladies received bouquets from Zoo Director Gordon Reid.

Appreciation was also shown to Peter Swift, Director of



▲ Mr David Rudkin, Roman Soldier, Prof. Gordon Reid, Mrs Linda Farrar and Mr Farrar.



Soldiers of the VIII Roman Legion! ▲

Officially  
open one  
year late!

*Curamus,  
Conservamus,  
Eradimus.*

*(We Care, Conserve, Educate)*



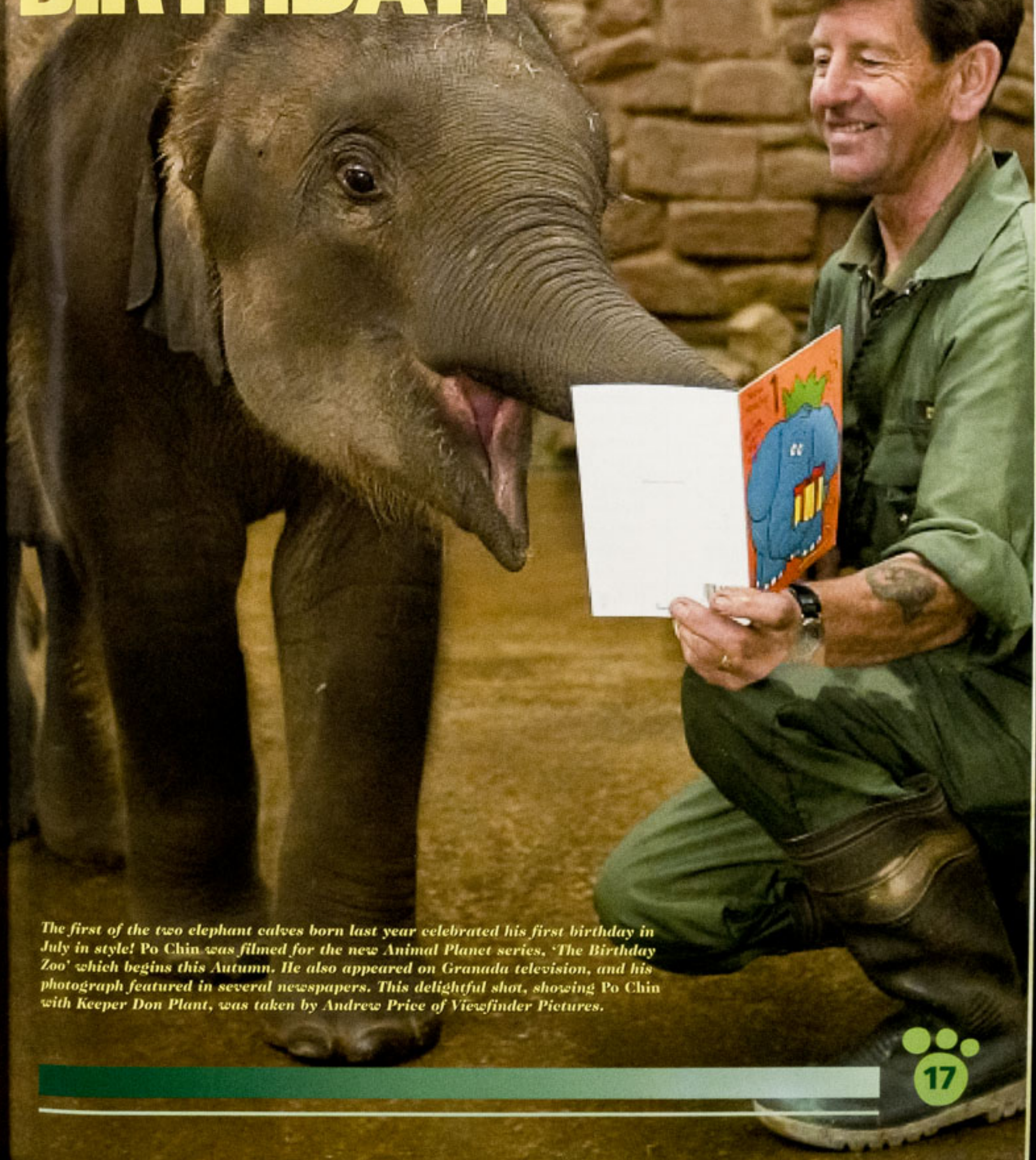
Planit Design and Build - the main contractor on the project.

The VIII Roman Legion (on loan from Chester Tourism!) was in attendance, adding a touch of historical colour to the proceedings. Guests enjoyed an open-air buffet - but the rumour that this included the traditional Roman fare of flamingo tongues and swans' necks was strongly denied by the bird keeping staff!



Joan Springett, whose painstaking research made the Millennium Garden so authentic. ▶

# PO CHIN'S FIRST BIRTHDAY!



*The first of the two elephant calves born last year celebrated his first birthday in July in style! Po Chin was filmed for the new Animal Planet series, 'The Birthday Zoo' which begins this Autumn. He also appeared on Granada television, and his photograph featured in several newspapers. This delightful shot, showing Po Chin with Keeper Don Plant, was taken by Andrew Price of Viewfinder Pictures.*



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*Are you are one of the 100,000 plus people who logged on to one of these two web sites during the run of the Chester Zoo based programme 'Animal Watch?' The Zoo's IT Manager, Philip Morris, explains how that very apt 'tv' suffix came about – and predicts the future!*

### What is a (dot).tv –?

WE in the UK have a (dot).uk Internet suffix; Japan has (dot).jp .

Tuvalu, a tiny island in the South Pacific, has the suffix (dot).tv – and it has made them a great deal of money!

The island measuring under 30 square kilometres, sold the use of its domain name (dot).tv – for \$50 million over the next 11 years; the contract will be renegotiated in 2012. The Tuvalu island's annual budget is \$14 million per year. The 10,600 residents are on their way to having one of the highest per-capita revenues on the planet, up from an average of \$400. It's a bit like the Beverly Hillbillies but without Granny's cooking!

TV is the most widely recognised 2-letter combination in the world. Our address is instantly recognisable and will have a global meaning. Multimedia sites are the future of the Internet. As high-speed access becomes more available, quality will improve and use will be simplified. Cable, DSL, satellite and wireless access increase will make the Internet more 'television-like' every day. True

interactive television is on the way!

A combination Internet TV is due out this summer – Sylvania Computer Products will introduce the first Internet digital TV this summer, combining the functions of a television with those of an Internet appliance. The 27-inch TV features a single chip PC inside, with 64MB RAM, a solid state Flash memory 'hard disk', and will run the free Linux operating system.

Users can surf the Internet at 800 by 600 resolution using a wireless keyboard remote control. This is great news for a (dot) .tv domain!

The Internet should not only be viewed as an information source but as a gateway to a potentially unlimited audience. We will soon be able to communicate with our customers in a way that was not possible even five years ago. We are in a situation where all the restrictive components are in our favour. Data bandwidth into our homes can only improve, delivery technology will become more efficient and the latest MPEG 4 system will deliver 30% more images for the same bandwidth. When the Internet is as easy to use

as Teletext, the boundaries between watching television on the Internet or watching Internet on television will diffuse. It is this inflection point that will allow us to fully capitalise on the new Internet technologies.

The *Animal Watch* web site has received over 100,000 hits and the web chat has proved popular with keepers and the public alike. Camera 2 is now showing a 34kb web video stream. You will need to install Real Player Basic to view the stream. It's a big download but worth it I think. You can right click the image to select full screen view. If you stand back from the monitor you will fully appreciate the picture. Keep in mind that the image is a low quality, one frame per second, 34kb stream of data. ISDN would double the frame rate and DSL or satellite download offer the potential for fast high quality images and sound. We can only guess how long it will be before Web TV is a mature product. When the technology has advanced I think this is something that will become popular with mass markets!

# PRESENTING the PRESENTERS!

*Our Presenters are used to answering questions - but they are not normally personal ones. Matt Lewis, Liz Marrs and Myfanwy Griffiths reveal a little more about their personalities!*



▲ Liz



▲ Matt



▲ Miffy

What animal in the zoo is the same age as you?	Sheba, the elephant, and I are both in our 40's - Sheba is a few years younger	A penguin called <i>Pretty</i> is the about same age	<i>Halfpenny</i> the chimpanzee
What's the best bit about being a Presenter?	Being able to watch the animals at different times and in different weather	Helping people who are scared of bats to enjoy the <i>Twilight Zone</i>	Finding out about all the animals in the zoo
What's your favourite animal?	Sealions	Killer whales	Spider monkeys
What music would that animal listen to?	Handel's 'Water Music'	James Brown	Cheesy pop
What has been your most memorable animal-watching experience?	Looking into a pond and seeing two horse leeches swimming. Wonderful!	Diving with Great White Sharks in South Africa (OK, I was in a cage!)	Seeing my first wild lion (from the safety of a jeep) while on safari in Africa
What's your favourite smell in the zoo?	The Dwarf Congo Buffalo	Donuts at the main entrance!	Fresh cut grass
What's your best animal fact?	You can recognise an Asian elephant by looking at the trunk!	To escape a lion, walk away at an angle without looking away	Lions can sleep for 18 hours a day!
What's your favourite animal book or web-site?	What's a web-site? I don't like spiders! Book: ' <i>Cousins</i> ' by Dunbar and Barrett	<i>My Family and Other Animals</i> , by Gerald Durrell - the book that made me study animals	<i>The Duncton Wood trilogy</i> by William Herwood
Do you have a Top Tip for visitors?	Take your time and watch the animals	Bring a pair of close-focussing binoculars	Make time to see some of the less popular, but still interesting, animals in the zoo

\*Miffy Griffiths has now left the Zoo, and we wish her well in her new job.

**T**HE PhD. research that I had been planning for the last year finally became reality when I set off to Rodrigues Island at the end of February. Having worked with the Rodrigues fruit bats at Chester for three years, I jumped at the chance to become involved in hands-on conservation of the species. With the support of the Zoo and the generous offer of flights from Air Mauritius, I left for one of the most remote islands in the world for three months of research.

Rodrigues Island is the smallest of the Mascarene Islands - approximately the size of Jersey. The Rodrigues Fruit bat is one of three endemic vertebrates and the only endemic mammal that remains on the island today. Less than 100 bats were left on the island by the mid 1970s after many years of hunting, forest clearance, drought and cyclones. At this point the naturalists Gerald Durrell and John Hartley stepped in and 25 bats were taken for zoo breeding as a safety net for the wild population. The numbers of wild bats have been steadily increasing.

Zoos throughout Europe, North America and Africa have been successfully breeding the species, but there are still many deficiencies in our knowledge of the wild bats. The purpose of my research is to gain more information on their status so that we can build up a framework for future conservation. The first three-month field season was a preliminary study to assess and make plans for future trips.

I had spoken about this place to so many visitors in the *Twilight Zone* and it was very exciting to finally have the chance to see it! My first impression was the lack of forest. Many years of

## Research on Rodrigues

By Vicki Powell



### AIR MAURITIUS

*Two members of Chester Zoo staff have recently been working in Mauritius, with the Mauritian Wildlife Foundation. Bird Keeper Anne Morris began her account of her work with Echo Parakeets in the last issue of the magazine; in this issue she describes her work with other native species. Vicki Powell from The Twilight Zone, travelled to Rodrigues Island.*

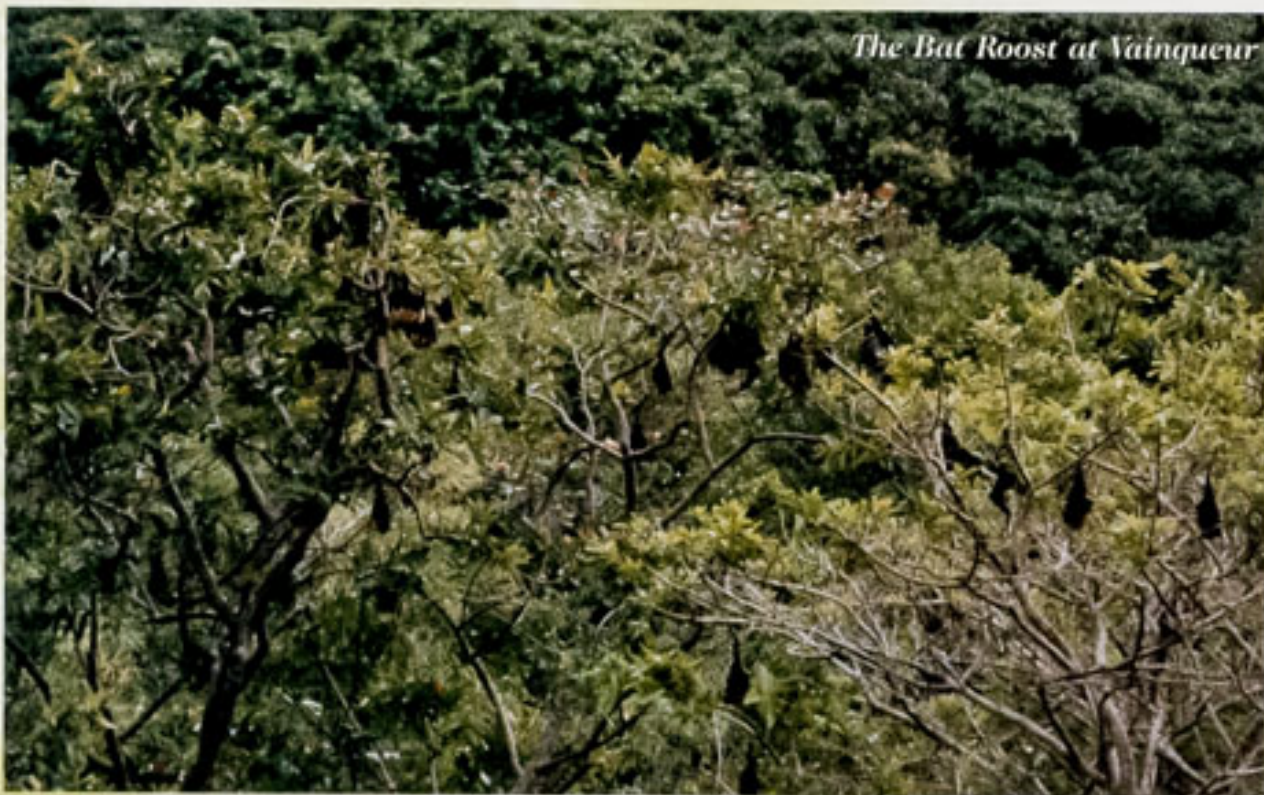
deforestation had left the western region of the island almost barren. I was taken to the MWF research station in a place called Solitude (very apt!). As we drove along the bumpy roads I desperately searched the twilight sky to catch a glimpse of the bat I had come all this way to see. But the bats had already left their roosts and were off foraging in the valleys. On my first day I was introduced to the wildlife team, a group of 15 Rodriguans, who spent their days clearing forested areas of invasive exotic species and planting the endemic ones they had

grown from seed. They made me feel at home immediately and showed such incredible enthusiasm in the work I had planned. Everywhere I went people stopped to say hello and ask me the reason for my visit. That evening I joined a couple of the team to count the main colony of bats as they flew out of the main roost at Cascade Pigeon. The experience bordered on surreal, watching them fly above my head with the dusk sky as a backdrop. It was a sight I will never forget and even three months later the excitement of seeing the bats leave their roosts in the evening was never lost.

I spent the first couple of weeks identifying all possible roost sites. This involved monitoring every valley for any emerging bats at dusk. I spent each day accompanied by one of the MWF team in a forest patch where bats had been previously located. Transect lines were mapped in order to make a comparison of tree density, diversity, measurements and fruiting/flowering times in each patch. Flying foxes remain quite active throughout the day and there was always a constant sound of squabbling and vocalisations during matings going on in the background. My observations of their behaviour, reassuringly confirmed it was very similar to the bats at Chester. During the evenings I counted bats at one of the colonies as they flew out of their roost area to forage. From approx. 4 pm. onwards they slowly emerge from the top of their roost trees and start spiralling up between the valley sides using the thermals for lift.

The number of bats on Rodrigues Island appears much higher than expected. A re-forestation effort by the forestry commission and MWF has resulted in one third of the island now being covered in mixed forest. A Rodriguan educator, Mary-Jane Raboude, is funded by Philadelphia Zoo to teach the islanders about the environment and in particular about their endemic bat. A big cyclone hasn't hit the island in over ten years and hunting is now down to a minimum.

Next year I will be continuing my research with the backing of Chester Zoo, Air Mauritius and Bat Conservation International and will be focusing on distribution, dispersal, habitat and feeding ecology at different times of the year. On my next field season, I will attach radio transmitters to some of the wild bats to gain more insight into their movements and decision-making processes. Hopefully my work will provide the information needed to assess the status of the species and ensure that they remain safe in the future.



*The Bat Roost at Vainqueur*

# BIRDS & BATS

*Anne Morris concludes her report on her trip to Mauritius.*

**I**n the Zoo I don't normally have the opportunity of working with bats in the wonderful *Twilight Zone*. So it was great to have the chance of rearing two tiny Mauritius fruit bats. *Reefie* came to me at 5 days old, his because his mother had been shot. The bats are considered a nuisance as they raid fruit crops. A week later I acquired another bat, *Ganges*, whose mother had collided with a power line.

The bats were fed every two hours on lactogen baby milk powder and kept in a makeshift incubator box, where they slept hanging onto a suspended blanket. As they got older, baby cereal and soft fruit was introduced into their diet. They especially loved mango and papaya. Giving them their last feed at midnight was interesting as they could hear the wild bats feeding and squabbling on the Eucalyptus trees outside our house and their little ears were swivelling around like radar dishes!

When they were placed in a large cage in the bat aviary, three adult bats came to investigate them. The Mauritius fruit bats at the Black River aviaries are all casualties. Due to a squabble between my two infants, *Reefie* sustained a large hole in his wing. I took him home to recover as he was in deep shock, but an injection of Batriol ensured a rapid recovery and the hole healed well. He was soon flying around camp. He had not quite perfected his flight and once landed on a most perilous spot - a jeep wheel!

We also became involved in rearing Mauritius Kestrel chicks. One was brought in at 14 days old, very dehydrated. It recovered well and was fostered under a wild female who had three chicks of similar age. Later in the season, when they were near fledging, I went with two colleagues to weigh, measure and ring them. When I climbed the ladder to fetch the chicks from the



▲ 'Who couldn't love a face like this?' Reefie at 3 months old.

rock hollow, they all knew what to do automatically. All went on their backs and lashed out with their gangly little feet and sharp talons, making a chittery little call. We caught them, put them into a cloth bag and brought them down to be weighed and have their wings, beak and tail measured. Finally the rings were fitted. It was a satisfying feeling to ring a chick that we had helped to rear. They were returned to the cavity and a few days later all had fledged successfully.

During my stay I also had a chance to visit Round Island - an uninhabited island famous for its reptiles. The erosion here was very obvious, with only a small area with palms on it to provide any shelter from the heat. I was told there was a seabird colony on the top, and was expecting a kind of South Stack. Instead, we were walking through a flat area of lava boulders in which Shearwaters and Red-tailed Tropicbirds were nesting around our feet! In the distance, we could see Serpent Island like an upturned pudding bowl covered with white seabird guano. Around the palm tree area there were lizards everywhere, sunbathing and hunting in the foliage. A Telfair's skink attached itself to my shoelace as I stopped to pick some prickly seeds from my trousers. Where the rocks meet the sea, there were plenty of Mudskippers and brightly coloured orange crabs. During this coming year a field station

will be built on the island and the conservation work already being done there will be easier to monitor.

I also visited Ile Aux Aigrettes, which has been managed by the Mauritius Wildlife Foundation since 1985. This island was much shadier than Round Island and a couple of minutes boat ride from the mainland. There is a small ebony forest there where orchids grow on the trees, Pink Pigeons are flying around and gorgeous Phalouma lizards are stunningly marked with bright colours.

We had frequent visits from authors writing books on the fauna and flora of the Indian Ocean, and journalists writing wildlife articles. Conservation minded tourists were shown around, and the last people I met were the President of WWF Africa and her husband. They took an instant liking to *Reefie* the bat! Many of these people were impressed with the work we were doing and some left us donations to help with the projects.

**In the breeding season 2000 - 01, the world population of approximately 120 Echo Parakeets was boosted by 17 birds - 11 hand-reared and six parent reared. They need to reach 500 individuals before they can be considered safe.**

**In the three and a half months that I worked on Mauritius I learnt a lot and was able to put my 16 years experience of hand-rearing to good use. It was good to work in an environment full of enthusiasm and where everyone had a part to play in conserving native wildlife.**

## In search of the **BENGAL TIGER**

*Keith Dentith, and his son Danny joined the Chester Zoo trip to South Africa to see the work of the Save the Rhino organisation.*

*Keen to see more of the more of the world's wildlife, they have made two trips to see Bengal Tigers.*

**I**n April last year I organised my first trip to the Indian sub continent in search of the Bengal tiger. I visited the national parks of Corbett, situated in the foothills of the Himalayas and the Royal Chitwan national park in southern Nepal. Unfortunately all I saw of the tiger was one quick glimpse in Corbett's. However, many friends and useful contacts were made. I promised to return this year, with the aim not only to see the tiger but also to record on camcorder all sightings.

After several e-mails between Capt Padam Singh and myself, a final itinerary was decided. Kanna, Bhandavgarh and Ranthambore national parks were all to be visited in April this year and my son Daniel was to accompany me again.

On arrival at Kanna we booked into the Royal Tiger Resort. We learnt that during the morning game drive a large male tiger had killed a Sambar deer. So on our first drive we made our way to the area where the kill was. After a short wait the tiger appeared from the cover of the undergrowth to feed on the deer's remains. What an excellent start! The first journey had resulted in a sighting. Other species spotted were Gaur, Barasingha and Chital.

Next morning we entered the park in an



▲ Tigress at Kanna National Park.

open top jeep and we came across several mahouts with their elephants. They had found a tiger kill with the male tiger close by. The mahouts arranged a trip on elephant back to view the tiger at close range. We both climbed onto the back of the elephant and after moving a few metres through the undergrowth, we saw the remains of a Sambar deer (main prey species of the tiger). Less than 10 metres away was a male tiger resting under the shade of a tree.

Evening time again saw us driving to the kill we had seen that morning. The tiger had moved away from the kill during the heat of the day and was resting in a nearby waterhole. Our guides informed us that if we waited, the tiger would return as the sun began to fade. Sure enough as the sun was setting, the huge animal emerged from the jungle returning to his kill. Less than 20 metres away, he crossed the dirt track road directly in front of us.

From Kanna we drove to Bhandavgarh. This time we were staying in tented accommodation. On arrival we were introduced to Dr Helmut Pechaner, Director of Schonbrunn Zoo in Vienna. He and his party were making a documentary on the tiger. This indeed proved to be fortuitous, because extra guides and mahouts were now in operation within the park.

On the evening drive we stopped near to a waterhole, where earlier in the day a tiger had been seen. As we waited, langurs in a tree nearby were becoming very agitated - a sure sign that the tiger was about. Minutes later the

male tiger emerged from the tall grass heading towards the water. There he stopped, drank and then slowly moved away.

Next morning Dr Pechaner was our travelling companion in the jeep. The previous day a female tiger with two cubs had been spotted, so we headed off in that direction. With the aid of the mahouts, the three tigers were found. What happened next can only be described as magical! For over two hours we were able to watch and film the tigers either from the jeep or on elephant back.

The next leg of our journey was to Agra for some sight seeing - namely the Taj Mahal. On route we were informed that we could stay at Panna National Park, but only one game drive could be arranged. On this drive we spotted Nilgai and Chinkara - an Indian gazelle. Again the mahouts had found a tiger kill; a female tiger had killed a Sambar.

On to our last destination, Ranthombore, and the Tiger Den Resort. Two jeep rides proved unsuccessful in spotting tigers, although numerous prey species, which abound within the park, were spotted.

On our last morning, as we entered the park, one of the guides reported that a tiger kill had been spotted at Lakarda, not far from the park entrance. Before long a male and female tiger were spotted. The male was 'guarding' a Sambar kill; in the background, 80 metres away, was a smaller female.

What a fitting finale to a truly fantastic trip. Four national parks visited and a total of 10 tigers spotted!

## NO HONEYMOON FOR THE ARUBA ISLAND RATTLESNAKE *an endangered species with no place to go!*

*Chester Zoo has been very successful in breeding the critically endangered Aruba Island Rattle Snake. But, as Herpetologist Isolde McGeorge explains, sometimes breeding endangered species has to stop - for very good reasons.*

ARUBA Island – a small oceanic island of 182 square km, north of Venezuela - is a popular destination for honeymoon couples. But a dense human population of over 75,000 occupying mainly the coastal areas, means that the Aruba Island Rattlesnake is now restricted to a 45 square km territory of mostly undeveloped land in the interior, also known as the 'cunucu'.

This inhospitable landscape, characterised by hilly terrain and deep gorges, includes thorny deciduous and evergreen forest, brushy thickets and cactus. The climate is hot and dry from February through to September, with 22cm of rainfall from September to January, giving a distinct wet and dry season. Because of its close proximity to the

equator, temperatures are fairly constant year round.

Major factors attributed to the decline of this species are habitat destruction for a sustainable tourist industry, uncontrolled grazing of ungulate species and negative incidental contact with the human population. Although difficult to estimate numbers in wild snake populations, field studies indicate that there are probably around 225 adults left on Aruba. With the continued loss of habitat, this species is now in serious trouble and is listed as a critically endangered species by the 2000 IUCN Red List of Threatened Species.

Chester Zoo's involvement with the Aruba Island Rattlesnake began in 1996 when we were asked by Gerard Visser, Curator of Reptiles at the Royal Rotterdam Zoo, to co-ordinate the species in the UK Zoo bred animals from all over the USA were being brought together and shipped to Europe with the Royal Rotterdam Zoo acting as co-ordinator and dispersal agent. Twenty of

when ten neonates were produced in 1998 and eleven in 1999.

However, we were not to be given the opportunity to continue with this hugely successful breeding programme. Shortly after the 1999 births, we were issued with a moratorium on the breeding of this species at European level, already in place in the U.S. There was a question mark over the future

housing within Europe, as those institutions already involved were filled to capacity.

A long-term management programme, Species Survival Plan, was established in the USA in 1983 and a Species Co-ordinator and Stud-book keeper enlisted to manage it. Today, a Master Plan has been formulated to protect the Aruba Island Rattlesnake's future.

The agreed objectives

include the maintenance and management of a captive population, dependent on the global carrying capacity of animals; the incorporation of founder blood-lines into future generations, to maintain 95% of expected genetic diversity; and to initiate new field research projects to ascertain the effects of translocation of this species on Aruba.

On Aruba Island, the government prohibits the exportation, taking or molesting of any Aruba Wildlife and the expansion of Arikok National Park on Aruba to 30 square km has been proposed as another measure to protect this species.



*Aruba Rattlesnake*

these animals were destined for Chester Zoo and we were to be responsible for sending out unrelated animals to two other institutions, so that a genetically viable breeding programme could begin. Fifteen of the snakes went out, leaving Chester with two males and three females.

Despite the trauma of transportation and a new environment, the rattlesnakes settled in well. By the end of January the following year, regular matings were being observed and on June 15th 1997 a female originally from the Woodland Park Zoo in Seattle, gave birth to six healthy youngsters. The same pattern continued for the next two years

## GROWING CONCERNS

THE weather in early summer proved to be very agreeable, with a series of hot sunny days in June. In July and August we experienced a mixture of sun, rain and humid weather. Great conditions for plants but the Marketing team would have preferred more sun! The bedding plants were all out by the third week of June and were growing very


well in the hot conditions. Our only concern was keeping them watered. The Roman Garden, now in its second year, is maturing nicely and was at its best during July/August. The plants in the *Spirit of the Jaguar* seem to be standing up very well to the attentions of the cats. In July the third Jaguar was introduced into his outdoor enclosure. He

## PLANT OF THE MONTH

**SEPTEMBER:** Butterfly bush *Buddleja davidii*

**Look out for:** A large shrub with long spikes of small purple, pink or white flowers, which smell of honey, and are very attractive to butterflies. This very familiar garden shrub originally came from China and Japan but now grows wild in Britain, especially along railway lines. There are many examples around the Zoo.

**OCTOBER:** Walnut *Juglans nigra*

**Look out for:** Two medium sized trees, one on either side of the entrance to the Monkey Islands building. They have 'pinnate' leaves that look like this:  If you look carefully you should be able to see smooth green nuts on the smaller branches and there maybe some on the ground under the trees too.

**NOVEMBER:** Ginkgo *Ginkgo biloba*

**Look out for:** Tall narrow trees with strange triangular leaves that turn a very beautiful yellow in the autumn. The best specimens in the Zoo are in the Forest Zone, between the Chimpanzee Forest and the Sand Lizard display, behind the Tropical Realm. This species is very ancient; there are fossils of Ginkgo leaves that are 200 million years old!



▲ *Buddleja*



▲ *Walnut*



▲ *Ginkgo*

*Mark Sparrow, Curator of Horticulture and Botany, together with his Deputy, Sarah Bird, present their quarterly report on the Zoo's gardens.*

was initially shy of exploring his new territory, so it was still too early to tell what he would make of his lush green surroundings. By the time this magazine is published, the *Grow Zone* will be open. This is where we welcome visitors to come behind the scenes and view some of the plants in our Nursery. We look forward to seeing you in there.

## CONSERVATION

CORNER

SOME of the plants in the Zoo gardens are important because the species is rare or threatened in the wild. This is the case with the Monkey

Puzzle tree, *Araucaria araucana*. Monkey Puzzle trees come from forests on the slopes of volcanoes in Chile. These forests are now threatened by logging operations.

When natural populations become endangered, plants in cultivation can become valuable as safe reserves of genetic material for that species. Such plants are even more useful if they are grown from seed collected in the wild. At Chester Zoo we are increasing the number of plants grown from wild collected seed by obtaining seeds from Botanic Gardens all over the world.



▲ *Monkey Puzzle Tree*





**Zoo Life**

# JUNIOR MEMBERS



**Meetings and Field Trips**

**Saturday 29 September 2001 –  
Knowsley Safari Park**

*Please note that this is a change of date and venue for September 2001 since the last magazine was issued.*

Owing to the restrictions imposed by the Foot & Mouth crisis earlier this year, we missed our chance to visit Knowsley in April, so 'swopped' events and went to the excellent Greenwood Centre instead. Knowsley is re-scheduled for September.

Things have changed a lot since our last visit several years ago. We hope to have a guided tour which will make this a special event.

Over 8s are invited to join us and we will leave the staff entrance at 10.30 am, returning at 4.30 pm. You will need to bring a picnic.

**Saturday 20 October 2001 –  
Lower Moss Wood Reserve & Wildlife Hospital**

This compact but very interesting nature reserve near Knutsford in Cheshire, also serves as a rescue centre for injured British wildlife. We will be shown behind the scenes of the wildlife hospital too, and this will be a chance to see hedgehogs, foxes, lots of birds, possibly bats and probably some surprises too.

The bus will leave the staff car park at 10.30 am and return at 4.00 pm. Over 8s are invited along with a picnic.

**Saturday 17 November 2001 –  
Electric Mountain & The Welsh Slate Museum**

A new venue for Juniors will be our visit to the Electric Mountain and Welsh Slate Museum in Llanberis, Snowdonia. Find out more about how electricity is generated and about geology. The bus will leave the staff car park at 9.30 am, returning at 5.00 pm.

Suitable for over 8s. Remember to bring a picnic with you, and be prepared to dress warmly.

**Friday 7 December 2001 –  
Junior Members' Christmas Party**

All Juniors of eight and over are invited to the ever popular Christmas Party. Enjoy a night of games, disco music and a great

hot dog/hamburger supper. You will need to bring a cushion to sit on and a torch!

The venue for this event will be confirmed at the time you book your place, but we hoping to use the new Indoor Picnic Area, with access via the old main entrance, 400 metres past the staff entrance on Caughall Road. Time of arrival will be 7.00 pm, and parents should arrange collection from the Indoor Picnic area at 9.45 pm.

**Saturday 26 January 2002 –  
The Contact Session**

A rare chance to meet some of the Zoo's friendlier residents at close quarters! These are likely to include snakes, spiders, tortoises, rats, guinea pigs, ducks and perhaps a few more.

Over 8s should meet outside Oakfield House near the Lions at 2.15 pm and we will walk to our venue. We will back at the Oakfield for 4.00 pm for collection by parents.

**Saturday 23 February 2002 –  
Manchester Science Museum**

When we visited the Science Museum a few years ago, lots of Juniors asked if we could go again soon because there was so much to see and do. So this is your chance to see what is new there now.

Over 8s are welcome to join us and the bus will leave the staff car park at 10.30 am, returning at 4.30 pm. Bring a picnic.

**Saturday 23 March 2002 –  
Tracks and Signs**

A popular return for this event after we had to miss it last year. This is the Juniors' opportunity to go into animal enclosures and make plaster casts of animal footprints. We choose March as it is usually muddy then, but this does not put off hardy Juniors who enjoy this unusual day, and most of you will have a 'souvenir' to take home with you!

Over 8s are invited to join us when we meet outside Oakfield House at 11.00 am, returning there for collection at 4.00 pm. You will need a picnic lunch, and it is important that you wear very old clothes and wellies.



**Saturday 27 April 2002 –  
Shugborough House and Home Farm**

Shugborough is a beautiful stately home in Staffordshire, and the Spring is a perfect time to visit the Home Farm, to see the wide range of rare breeds of cattle, goats, chickens, pigs and sheep. Juniors will also have the opportunity to meet the Shire Horses and to have a ride on the horse drawn trailer. Traditional cheese making and bakery skills will also be demonstrated. A day not to be missed!

Over 8s are invited and we will leave the staff car park at 10.00 am, returning at 5.00 pm. Bring a picnic.

**Saturday 18 May 2002 –  
The Middlewood Way**

As we had to miss this event last year this will be a new experience. We will travel to Macclesfield and walk along a few miles of the well known Middlewood Way, which was once a railway line and which is now a nature reserve. We will be accompanied by a Ranger.

Over 8s are welcome to join us, bringing a picnic, when we leave the staff car park at 9.30 am. We should be back at 5.30 pm.

**Saturday 22 June 2002 –  
Anglesey Sea Zoo and Pili Palace**

It is always an enjoyable day when we visit the Isle of Anglesey, and both the Sea Zoo and the Butterfly Farm (Pili Palace) have proved very well worth a visit in the past.

The bus will leave the staff car park at 9.00 am, returning at 5.30 pm. Over 8s are invited to come along and bring a good picnic because it is quite a long day.

**Wednesday 24 July 2002 –  
Day With A Keeper**

Undoubtedly our most popular event of the year, when Juniors of twelve and over have the opportunity to spend a day working alongside a Zoo Keeper. The work can be tough so we have to strictly limit this event to over 12s. We try to match

Juniors to their favourite sections, but places are very limited so this cannot be guaranteed. Please come prepared to work hard, with wellies and a good picnic.

We will meet outside the Oakfield at 10.30 am and the day will finish for Juniors at 4.00 pm. Please note that bookings for this event will not be taken before Wednesday 10 July 2002 from 8.30 am, and will be strictly on a first come first served basis.

**Friday 16 August 2002 –  
Summer Barbeque**

What finer way to spend a summer evening than having a barbeque at the Zoo after all our visitors have left! There may be a surprise speaker or a tour of the Zoo, but you can be sure to have a relaxing evening.

Over 8s are invited to join us starting at 7.00 pm when you should arrive at the staff entrance and walk over to the Ark Restaurant. Parents are requested to collect Juniors from there at 9.45 pm.

**Saturday 21 September 2002 –  
Twycross Zoo**

This is likely to be a fascinating day visiting Twycross Zoo, which houses one of the finest primate collections in England, and will be an excellent opportunity to learn a lot about another Zoo and how they do things. It will also be a long day so please come well prepared, with a good picnic.

The bus will leave the staff car park at 9.00 am, returning at 6.00 pm. Over 10s are invited to join us.

**Saturday 21 September 2002 –  
Risley Moss Nature Reserve**

Risley is not far from Warrington and this visit will be an excellent opportunity to visit a real 'moss' and learn about some of the animals and plants that live in these wetland areas when we are shown around by one of the Moss Wardens.

Over 8s are invited to join us for the trip and should meet at the staff car park at 10.00 am, and we will return to there at 4.30 pm.

*Bookings must be made for all events. Please ring Penny Rudd at the Zoo on 01244 650215, not more than two weeks before the event you would like to attend. Places are offered on a 'first-come-first served' basis and may be limited.*

*This list is provisional, and in exceptional circumstances we may have to alter dates and venues.*

*You will be informed of any such changes in Zoo Life – not by individual letter – so please keep up-to-date by reading the Junior Page in each issue.*

*A small charge will be made to cover the cost of those events which involve transport, materials or the provision of food and you will be informed of this at the time of booking.*

# Arrivals, Births and Hatchings

May, June and July 2001

## BIRDS

* Humboldt's Penguin	<i>Spheniscus humboldti</i>	0.0.10 Hatch
* Dalmatian Pelican	<i>Pelecanus crispus</i>	1.1.0 Arrival
White Stork	<i>Ciconia ciconia</i>	0.0.2 Hatch
* Waldrapp Ibis	<i>Geronticus eremita</i>	0.0.3 Hatch
Eurasian Spoonbill	<i>Platalea leucorodia</i>	0.0.1 Hatch
Black-necked Swan	<i>Cygnus melanocoryphus</i>	0.0.2 Hatch
* Mandarin Duck	<i>Aix galericulata</i>	0.0.8 Hatch
Common Shoveler	<i>Anas chrypeata</i>	0.0.11 Hatch
Falcated Duck	<i>Anas falcata</i>	0.0.4 Hatch
* Laysan Teal	<i>Anas platyrhynchos</i>	2.2.0 Hatch
Garganey	<i>Anas querquedula</i>	1.1.0 Hatch
* Baer's Pochard	<i>Aythya baeri</i>	0.0.1 Hatch
* Ferruginous Duck	<i>Aythya nyroca</i>	0.0.2 Hatch
* Marbled Teal	<i>Marmaronetta angustirostris</i>	0.0.5 Hatch
Smew	<i>Mergus albellus</i>	2.1.0 Hatch
Hooded Merganser	<i>Mergus cucullatus</i>	1.0.0 Hatch
Red-crested Pochard	<i>Netta rufina</i>	0.0.7 Hatch
* White-headed Duck	<i>Oxyura leucocephala</i>	0.0.3 Hatch
Eider	<i>Somateria mollissima</i>	0.0.1 Hatch
European Black Vulture	<i>Aegypius monachus</i>	1.0.0 Arrival
* Congo Peafowl	<i>Afropavo congensis</i>	0.0.1 Hatch
* Vietnamese Pheasant	<i>Lophura hatinhensis</i>	0.0.1 Hatch
Common Peafowl	<i>Pavo cristatus</i>	0.0.3 Hatch
* Green Peafowl	<i>Pavo muticus</i>	0.0.2 Hatch
* Mountain Peacock Pheasant	<i>Polyplectron inopinatum</i>	0.0.2 Arrival
* Roulroul Partridge	<i>Rollulus roulroul</i>	0.0.6 Hatch
* Satyr Tragopan	<i>Tragopan satyra</i>	0.0.2 Hatch
Emerald Dove	<i>Chalcophaps indica</i>	1.0.0 Arrival
* Pink Pigeon	<i>Columba mayeri</i>	0.0.1 Hatch
White-naped Pheasant Pigeon	<i>Otidiphaps nobilis aruensis</i>	1.1.0 Arrival
Duyvenbode's Lory	<i>Chalcopsitta duyvenbodei</i>	0.0.1 Hatch
* Yellow-backed Chattering Lory	<i>Lorius garrulus flavopalliatius</i>	0.0.2 Hatch
* Mount Apo Lorikeet	<i>Trichoglossus johnstoniae</i>	0.0.2 Hatch
Red-vented Cockatoo	<i>Cacatua haematuropygia</i>	0.1.0 Arrival
* Red-tailed Amazon	<i>Amazona brasiliensis</i>	0.0.3 Hatch
Yellow-collared Macaw	<i>Ara auricollis</i>	0.0.2 Hatch
* Fischer's Turaco	<i>Tauraco fischeri</i>	0.0.1 Hatch
Schalow's Turaco	<i>Tauraco corythaix schalowi</i>	0.0.1 Hatch
* White-faced Scops Owl	<i>Otus leucotis</i>	0.0.1 Hatch
* Spectacled Owl	<i>Pulsatrix perspicillata</i>	0.0.1 Hatch
* Great Grey Owl	<i>Strix nebulosa</i>	0.0.2 Hatch
Tawny Frogmouth	<i>Podargus strigoides</i>	0.0.1 Hatch
Blue-winged Kookaburra	<i>Dacelo leachii</i>	0.0.2 Hatch
* Tarric Hornbill	<i>Penelopides panini</i>	0.0.3 Hatch
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	0.0.3 Hatch
White-rumped Shama	<i>Copsychus malabaricus</i>	0.0.7 Hatch
Chestnut-capped Thrush	<i>Zoothera interpres</i>	1.2.0 Arrival
* Yellow-throated Laughing Thrush	<i>Garrulax galbanus</i>	0.0.1 Hatch
* Red-tailed Laughing Thrush	<i>Garrulax milnei</i>	0.0.2 Hatch
Red-billed Leiothrix	<i>Leiothrix lutea</i>	0.0.5 Hatch
Zebra Finch	<i>Peophila guttata</i>	0.0.2 Hatch
Glossy Starling	<i>Aplonis panayensis</i>	0.0.1 Hatch
* Emerald Starling	<i>Lamprotornis iris</i>	0.0.1 Hatch
African Pied Starling	<i>Spreo bicolor</i>	0.0.2 Hatch
Azure-winged Magpie	<i>Cyanopica cyana</i>	0.0.2 Hatch

## MAMMALS

Bennett's Wallaby	<i>Macropus rufogriseus fruticosa</i>	0.1.0 Birth
* Ring-tailed Lemur	<i>Lemur catta</i>	0.0.3 Birth
* Mara	<i>Dolichotis patagona</i>	0.0.1 Birth
* Jaguar	<i>Panthera onca</i>	1.0.0 Arrival
Bactrian Camel	<i>Camelus bactrianus</i>	1.0.0 Birth
* American Bison	<i>Bison bison</i>	1.1.1 Birth
* Scimitar-horned Oryx	<i>Oryx dammah</i>	0.0.1 Birth
* Blackbuck	<i>Antelope cervicapra</i>	0.1.1 Birth
* Arabian Gazelle	<i>Gazella gazella arabica</i>	2.1.0 Birth

## AMPHIBIANS

* Axolotl	<i>Amblystoma mexicanum</i>	0.0.2 Arrival
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## REPTILES

Yellow-headed Day Gecko	<i>Phelsuma klemmeri</i>	1.1.0 Arrival
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## FISH

* Barombi Mbo Cichlids	<i>Stomatepia mariae</i>	0.0.7 Bred
* Barombi Mbo Cichlids	<i>Sarotherodon lohbergeri</i>	0.0.17 Bred
* Knysna Seahorses	<i>Hippocampus capensis</i>	0.0.250 Bred
Fresh-water Stingray	<i>Potamotrygon motoro</i>	0.0.7 Bred
Emperor Angelfish	<i>Pomacanthus imperator</i>	0.0.1 Arrival
Common Clownfish	<i>Amphiprion ocellaris</i>	0.0.3 Arrival
Skunk Clownfish	<i>Amphiprion akallopisos</i>	0.0.4 Arrival
Orange Striped Prawn Goby	<i>Amblyeleotris randalli</i>	0.0.3 Arrival
Orange Fan Sponges		0.0.3 Arrival
* White Bubble Coral	<i>Plerogyra sinuosa</i>	0.0.2 Arrival
* Green Bubble Coral	<i>Plerogyra sinuosa</i>	0.0.1 Arrival
* Daisy Coral	<i>Gonioporia stokesi</i>	0.0.3 Arrival
* Brain Coral	<i>Trachyphyllia geofroyi</i>	0.0.7 Arrival
* Beaker Coral	<i>Acanthophyllia sp</i>	0.0.10 Arrival
* Clam	<i>Tridacna sp</i>	0.0.1 Arrival
* Wonder Coral	<i>Catalaphyllia plicata</i>	0.0.2 Arrival
* Bouquet Coral	<i>Euphyllia fimbriata</i>	0.0.2 Arrival
Sand Anemone		0.0.2 Arrival
Peppermint Shrimps	<i>Rhynchocinetes uritai</i>	0.0.12 Arrival



▲ Jaguar Salvador, who arrived in July from Poland.