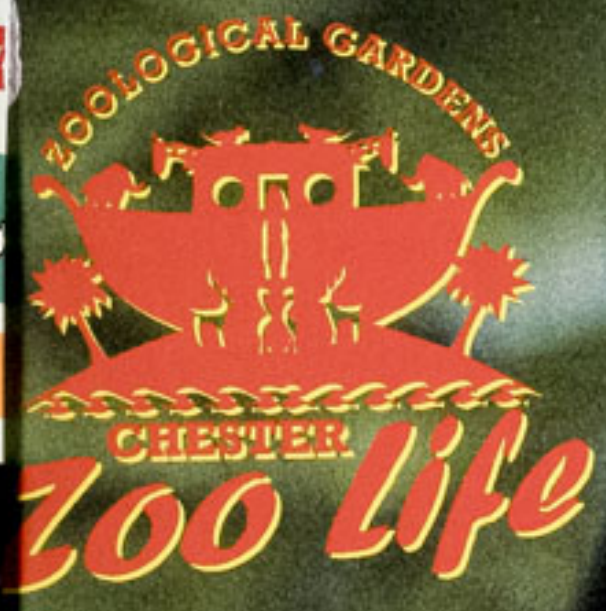


Summer 1998



ZOOLOGICAL GARDENS
CHESTER
Zoo Life

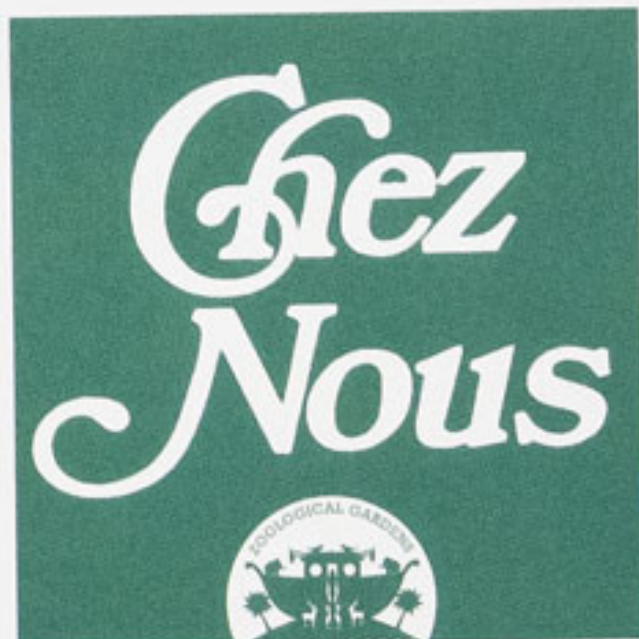
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Chester Zoo Life is published by the North of England Zoological Society, Upton-by-Chester, Cheshire CH2 1LH Telephone: (01244) 380280
 Director: Dr Gordon McGregor Reid
 Editor: Pat Cade

Sadness of a still-born calf

It was a very sad day indeed when Jangoli, the pregnant Asiatic elephant, gave birth to a still-born male calf on 25th April.

Our dedicated team of elephant keepers were devastated at such an unhappy outcome of so many months of care and expectation. Once again, we are grateful for the help and expertise of Noel Walker from the Gatehouse Veterinary Hospital and the team at Leahurst Hospital. We are working with them to learn all we can from this experience to share with others and to help us in the future.

This set-back will not prevent us from continuing our efforts to breed and conserve the Asiatic elephant. The wild population continues to decline at an alarming rate.

Zoo Springtime

It is some consolation to the elephant staff to see baby Sithami flourishing under the tender care of mother Thi and 'aunt' Sheba. It is a joy to see such a healthy, happy baby gambolling around with the herd and basking in the sunshine. Other exciting births have followed, including a baby camel, 'Natalia' born to Nadia and baby gazelles, blackbuck, kangaroo and bongo. Granada Television filmed a series of 'Zoo Watch' reports which generated a lot of public interest. This coupled with an unusually mild beginning to the year has boosted our visitor figures.



Weather chaos

However, because of the mild weather we, like everyone else, were caught off guard at Easter when severe blizzards of snow swamped the zoo, damaged trees and wrecked several aviaries. As ever, the entire zoo staff worked tirelessly as a team to clear up the snow and make the zoo safe for people and animals. The animal supplies electric cart, piloted by the noble Mervyn, bravely battled through the drifts ensuring that the animals got their grub!

Mexican Spring

I had the pleasure of recently delivering a paper on fish conservation to a zoological conference in Mexico. I also managed to squeeze in a bit of fieldwork which took me to warm springs where rare fishes once flourished. I was rather taken aback to find that one spring had been converted into a swimming pool complex complete with water chutes and several Mexicans enjoying a soapy bath! However, patient diving revealed that a tiny yellow-tailed fish called *Ameca*, which gives birth to live young rather than laying eggs, still survives in the heart of the spring.

This was very good news, because it was commonly believed to be extinct or near extinct in nature. As a safeguard against this, we have successfully bred *Ameca* in our Aquarium and distributed them to other zoos.

Another fish conservation initiative is being developed in Nigeria between the zoo, the Nigerian Conservation Foundation and the World Wide Fund for Nature. At the time of writing,

Justin Bell of our Aquarium was on an expedition to survey the fishes of the northern part of Gashaka Gumti National Park, a key remaining centre of biodiversity in Nigeria. We look forward to receiving his report.

Masters of Science

Education and training at all levels is very much a feature of the zoo's dynamic Education Division. Steve McKeown, Head of Education, has been active in organising for Manchester Metropolitan University a section of a Master of Science or MSc course on Ecology and Conservation.

From this, a group of eager students turned up at the zoo for an exciting series of lectures by curatorial staff on conservation breeding and zoo conservation strategies.

Library services are an integral part of the new Education Division and the present excellent collection of books on animals is a tribute to many years of outstanding service from Librarian Lynn Wilkinson. Lynn has now moved to head up a far larger general library in Cheshire and we wish her good luck in the new post and thank her warmly for all of her dedicated input.

Farewell to Eric

After 31 years working for the zoo, Head Gardener Eric Rudman has retired. Under Eric's skill and direction, the zoo has rightly become famous for spectacular, brightly coloured floral displays. We have been honoured more than sixteen times since 1985 for the quality of our gardens, including two Silver Medals at the Chelsea Flower Show and six times winner of 'Britain in Bloom' for the North West.

Eric has given outstanding service and we are all sad to see him go, while wishing him every happiness in his retirement. We understand that he now hopes to be wielding a golf club more often than a garden fork! (See photograph on page 4).

■ Front cover:
 Ferruginous Pygmy Owl.
 Photograph by: Dr Roger Wilkinson.

MEMBERS' MEETINGS

Saturday 12 September, 1998
2.30pm in Lecture Hall

Douglas Adams, science fiction writer and conservationist, to speak on a subject of his choice.

This date is provisional, and we ask members interested in attending to ring the switchboard (01244 380280) after the beginning of July for confirmation.

Saturday 10th October, 1998
2.30pm in Lecture Hall

Professor Jack Cohen: 'What people get wrong about animals.'

Saturday 14 November, 1998
2.30pm in the Lecture Hall

Graham Pollard:
'One Return to Adventure'

December 1998

Date and speaker to be confirmed in the next issue.

DATES FOR YOUR DIARY

The following dates have been arranged for 1999, and details of speakers and subjects will be included in the Autumn issue of Zoo Life.

9 January; 13 February; 13 March.

TWO MORE SCOOTERS!

We are very grateful to the Chester Branch of the Arthritis Care Organisation for the generous donation of two electric scooters for use by disabled visitors. The offer came as a most welcome surprise, and brings our 'fleet' up to five vehicles. We know how much appreciated these scooters are from the numerous letters we receive, and now we will be able to help many more people who would otherwise be unable to visit, or would have to rely on someone to push a wheelchair. If you know anyone who would like to use a scooter, it is advisable to book a few days in advance, and the scooters need to be collected at the staff entrance to the zoo.

CHESTER ZOO

The winners of the monthly draws since the last issue are:

FEBRUARY '98

- £100 Dr P. McDuppelby
- £100 G. W. Newton
- £50 Mrs A. Bostock
- £50 Miss B. Lee

MARCH '98

- £100 Mrs Brenda Jones
- £100 Mr S. P. Ryder
- £50 Mrs D. Allen
- £50 Mrs E. Livingstone
- £50 Miss J. Haines Adams

APRIL '98

- £100 Mrs E. Livingstone
- £100 Mrs M. Minnis
- £50 Mr J. Gatlow
- £50 Miss C. Burrows
- £50 Mr W. Wardrop

All prize winners have been notified by post. Membership of the '100 Club' costs just £5.00 each month, and half the proceeds go towards the zoo's conservation work and the other half provides the prize money. If you would like to join, please contact Alan Sykes at the zoo on 01244 650210.

Forthcoming Events in the Zoo

Saturday 13th June:

The Cheshire Mothers' Union are holding a family day in the zoo, and the Bishop of Chester will be holding a 20 minute open air service on the Jubilee lawn at 12 noon.

Thursday 18th June:

Barnardos Sponsored Toddle - Pre school age youngsters will be raising funds for Barnardos by toddling around the zoo!

Saturday 4th July:

Monkey Islands Tour, followed by French themed menu in the Oakfield Restaurant - £18.50.

Saturday 18th July:

Evening picnic in the zoo grounds. This is an additional theme evening, not included in those listed in the last issue. Collect your picnic box from the Oakfield, find your favourite spot to enjoy it, and return to the Oakfield for dessert! Cost is £17.50 per person, including a bottle of wine for each couple.

Saturday 1st and Sunday 2nd August: HM Customs and Excise will be holding an exhibition on the Jubilee lawn.

Saturday 19th and Sunday 20th September: 'Jamboree Days' - special days for all the youth groups such as scouts, guides, cadets, brownies and cubs etc. Everyone in a recognised uniform, including adult leaders, admitted for £4.00.

For more details of any of these events, ring the Group Sales Office on 01244 650 209.

THE TWILIGHT ZONE



Chester Zoo had planned to open this exciting new development at the end of May. However, shortly before the planned date, we became aware of concerns in Europe that Egyptian Fruit Bats - not a species we keep - may be vulnerable to a virus which theoretically could be passed to humans.

The bats at Chester are of different species. We have the tiny Seba's Bats and the larger Rodrigues Fruit Bats. It is extremely unlikely that this virus could have got into our group and we have no reason at all to believe that there is any real health risk.

After taking further veterinary and scientific advice, we have decided to go ahead with the opening.

Switchboard (01244 380280) will advise you of the likely date.



A sure sign of Spring. When the first Joey pops its head out of Mum's pocket, we know that warmer weather is on the way!



AN ELEPHANT CALLED HOPE

LIVERPOOL Hope University College now has a jumbo sized mascot - quite literally! They have adopted the zoo's elephant calf, Sithami, who was born on New Year's Eve. Her name is Sinhalese for Hope.

The idea to adopt the baby elephant came from College Catering Manager, Colin Littler, who said: 'We are delighted to support the valuable work of Chester Zoo. Adopting Sithami certainly makes it impossible for anyone to forget Hope.'



COMING SOON TO YOUR COMPUTER SCREEN . . .



EDUCATION staff have been working for several months on the production of the Chester Zoo CD ROM. It is now in the final stages of production, and we expect that the first edition will be in the zoo shops by late summer.

It's called 'Wild Animal Planet - a

Zoofari by Monorail'. It invites users to take a ride on the monorail,

visiting their favourite animals in the zoo, as they learn more about their way of life and the need for conservation.

There will be more information in the Autumn issue of Zoo Life.



A GARDENER'S GOOD-BYE

HEAD Gardener, Eric Rudman, has retired after spending a staggering 31 years working in the zoo. Eric took over the top gardens job when his predecessor, Walter Worth retired in 1986. Under his leadership the zoo has won many awards for the gardens, and the prestigious trophy for the North West's Best Large Tourist Attraction has been won so many times it is almost a permanent feature in the Oakfield House boardroom!

'I've been in gardening for a total of 46 years, and it's time to stand down,' said Eric. 'I've got my own small garden to tend, and I'll be spending a lot more time on the golf course!'

Zoo staff presented Eric with a painting - of flowers, of course!

Johnny Johnson has been made Acting Head Gardener until a replacement for Eric is appointed.

RAILTRACK SPONSORSHIP

DISABLED users of our education facilities will soon have reason to thank the generosity of Railtrack plc. Through their 'Partners in Giving' initiative, Railtrack have made a grant of £7,500 towards improving disabled access throughout the Education Block.

Neil Holbrooke, one of our active education volunteers, works as a movements supervisor for Railtrack and provided the initial link.

When Operations Manager Chris Leah presented the cheque, the highlight of his visit was meeting Sithami. As a consequence, Railtrack are now considering taking out a corporate adoption of the elephants.

NEW DIRECTOR FOR ZOO FEDERATION

THE Federation of Zoological Gardens of Great Britain and Ireland has appointed Mrs Mary Talbot Rosevear as its new Director.

Mary has extensive experience of the zoo world, and for the past few years has been acting as the Federation's Public Relations consultant. Read her article on the conservation work of the Federation on page 16.

NIGERIAN FISH SURVEY

AQUARIST Justin Bell has recently been on a trip to Gashaka Gumti to continue the investigative survey on freshwater fishes that was started by Director Gordon McGregor Reid some years ago.

This is part of a joint research project with WWF and the Nigerian Conservation Foundation. The aim is to establish what species and numbers of fish live in the different water systems of the region. Justin almost scuppered his trip when he injured his foot shortly before leaving but, after several changes of flight arrangements, he finally made it!

CHESHIRE SHOW

IF you are planning a trip to the Cheshire Show this year - 23rd and 24th June - at Tabley, please come and say hello to the zoo team! The Marketing Department will be in the South Cheshire marquee, with the Ark on display outside. The Education Division will be in the 'Education Out of School' marquee.

NEW POST FOR LIBRARIAN LYNN



IT was sad to say goodbye to Lynn Wilkinson, the zoo's resident librarian, when she took up a full time job with Cheshire Library Services in the Spring.

Lynn took on the task of cataloguing all the zoo's archive materials and reference books, and setting up our first library facility available to everyone. Thanks to her, we now have a well established library, with easy access to information. Our team of education volunteers have taken over the task of manning the library desk.

Lynn received a presentation from Director Gordon Reid on behalf of the staff. And as she is married to our Curator of Birds, Dr Roger Wilkinson, we know she will be keeping in touch!

ELEPHANT VIDEO

A VIDEO film made in the elephant house especially for our elephant experience evenings, is now available in the zoo shops. It shows the day to day work of caring for our nine Asiatic elephants, with lots of footage of baby Sithami. Cost is £9.99 - and the usual Members' discount is available.



FIRST BIRTH FOR MONKEY ISLANDS

THIS tiny Sulawesi Macaque getting lots of admiration from the adults, is the first new arrival in the Monkey Islands complex.

The baby was called Boo, as a result of a newspaper competition run by Capital Bank, who made a generous gift towards this project last year.

Picture by: Andrew Price, Viewfinder Pictures.

CAN YOU HELP

WE recently managed to track down just two second hand copies of 'Zoo Without Bars' the history of the zoo up to the 1960's, written by June Johns.

The zoo would very much like to obtain further copies. If anyone has a copy and is willing to donate it, or sell it a reasonable second hand price, please contact John Regan, our Development Manager on 01244 650230.



■ *The Dinosaur Experience backdrop in the Education Office.*

NEW PROGRAMMES . . . NEW TEACHERS



THE Education Division's new schools' teaching programme is now up and running with over three and a half thousand pupils booked in so far! Our two flagship topics are Life Stories sex education for Key Stages 1 and 2 and The Chester Zoo Dinosaur Experience.

We hope to make the Dinosaur Experience available to our members and visitors later in the year, as it is far too exciting to restrict to school parties!

Helping us to deliver all of our new topics will be our two new Education Officers, Dominic Briffa and Paul Kitching, both of whom joined us in April.

Dominic is a recently qualified biology teacher and hails from Suffolk originally though he studied for his Zoology degree in Manchester. Drama and music are among Dominic's spare time activities. He enjoys acting and directing and plays the violin, piano and guitar!

Paul worked as a biology teacher in a Manchester secondary school before joining the zoo. He has always been interested in animals and says that the zoo is the best teaching environment a teacher could wish for. Paul likes to go hiking and climbing in the Lake District on his days off and is also a keen badminton player.

Given that we had around 520 applications for these two posts, both Dominic and Paul did very well to be selected. We hope they both enjoy working as part of the Education team.



■ *Dominic Briffa*



■ *Paul Kitching*

New Cross Stitch Designs for 1998



With the great popularity of all her previous designs, Education Division's Sara Ruks has come up with five new designs this year. The animals featured are elephant, flamingo, lion, penguin and tiger.

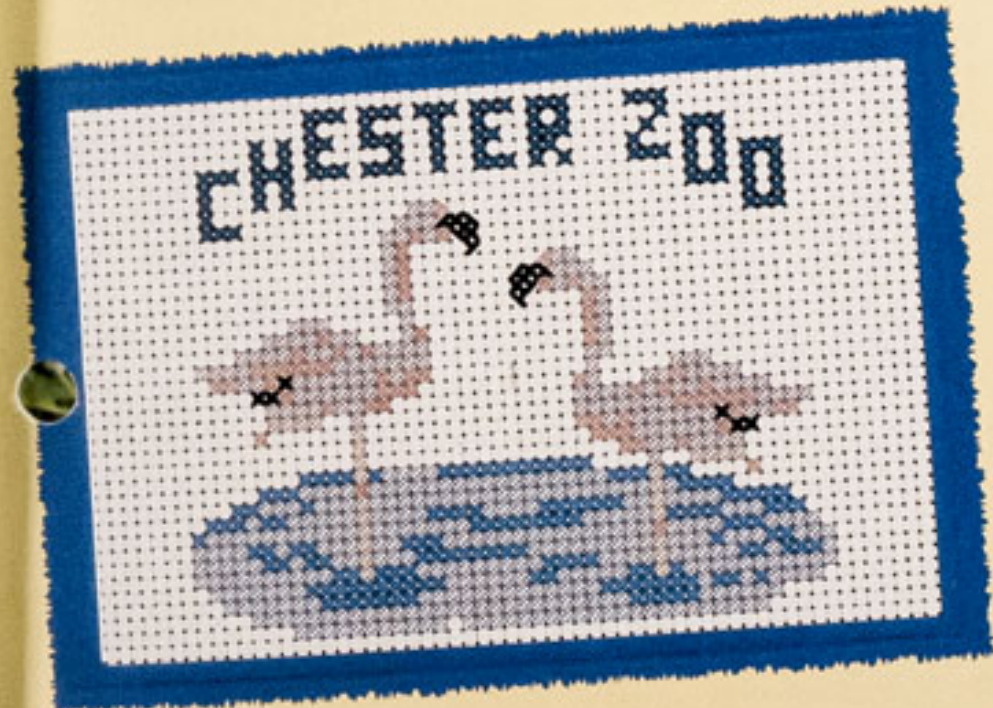
They are all worked using three strands of thread on 11 count cream Aida. Each kit comes complete with a card on which to mount the finished work.

The packs contain full stitching and mounting instructions, chart, Aida, thread, needle, card and envelope, wadding for mounting and animal notes.

They are available in the 'Things To Do' and the 'Let's Make' centre for £2.75.

To order by mail, send a cheque for £3.50 for each kit required to:

*The Education Division,
Chester Zoo,
Chester CH2 1LH.*





BATMAN AND ROBERT

Working in zoo education is very different from working in schools. You get landed with some very unusual tasks, as Steve McKeown, Chester Zoo's Head of Education, found out when he met Robert the Bat.



ONE very striking feature of our new Twilight Zone will be the fruit bat hologram embedded in the rock pillar at the cave entrance. This was specially commissioned by Chester Zoo and this is the story of how it was created!

First find your hologram maker. Martin Richardson is a rare combination of artist and scientist. Having trained as a sculptor, he then turned his hand to making holograms of his work and became fascinated by this new medium. His artistic interest soon developed into a scientific one and Martin ended up completing a PhD in Optical Physics! His studio in London has hosted such luminaries as Sara Stockbridge (the Vivienne Westwood model), Martin Scorsese and David Bowie, all of whom have been successfully 'hologramed.' His corporate customers include Tiffany's, Kodak, BMW and British Rail.

Next find your bat. I was put in touch with Penny Boyd who runs a large animal sanctuary near Gatwick and by chance she had a group of tame Egyptian fruit bats which she agreed to bring to the studio for us.

So the big day arrived and Martin, Penny and myself met in Martin's studio. Penny obviously has a busy life as besides four bats, she had brought a baby Goeldi's monkey and baby Meerkat with her. Both of them were being hand reared and set up a chorus of squeaks at regular intervals when they felt hungry. Neither of them were much bigger than a hamster and while they spent most of their time cuddling into a shared blanket, the monkey periodically decided it needed something more lively to cling to and so attached himself firmly to the back of the little Meerkat who protested vigorously and rolled about, trying to shake him off. Luckily the two babies quickly went to sleep and left us to carry on with our work.

A hologram might be described as a



Easter and May Day visitors were able to have a preview of the Twilight Zone Bat Cave.

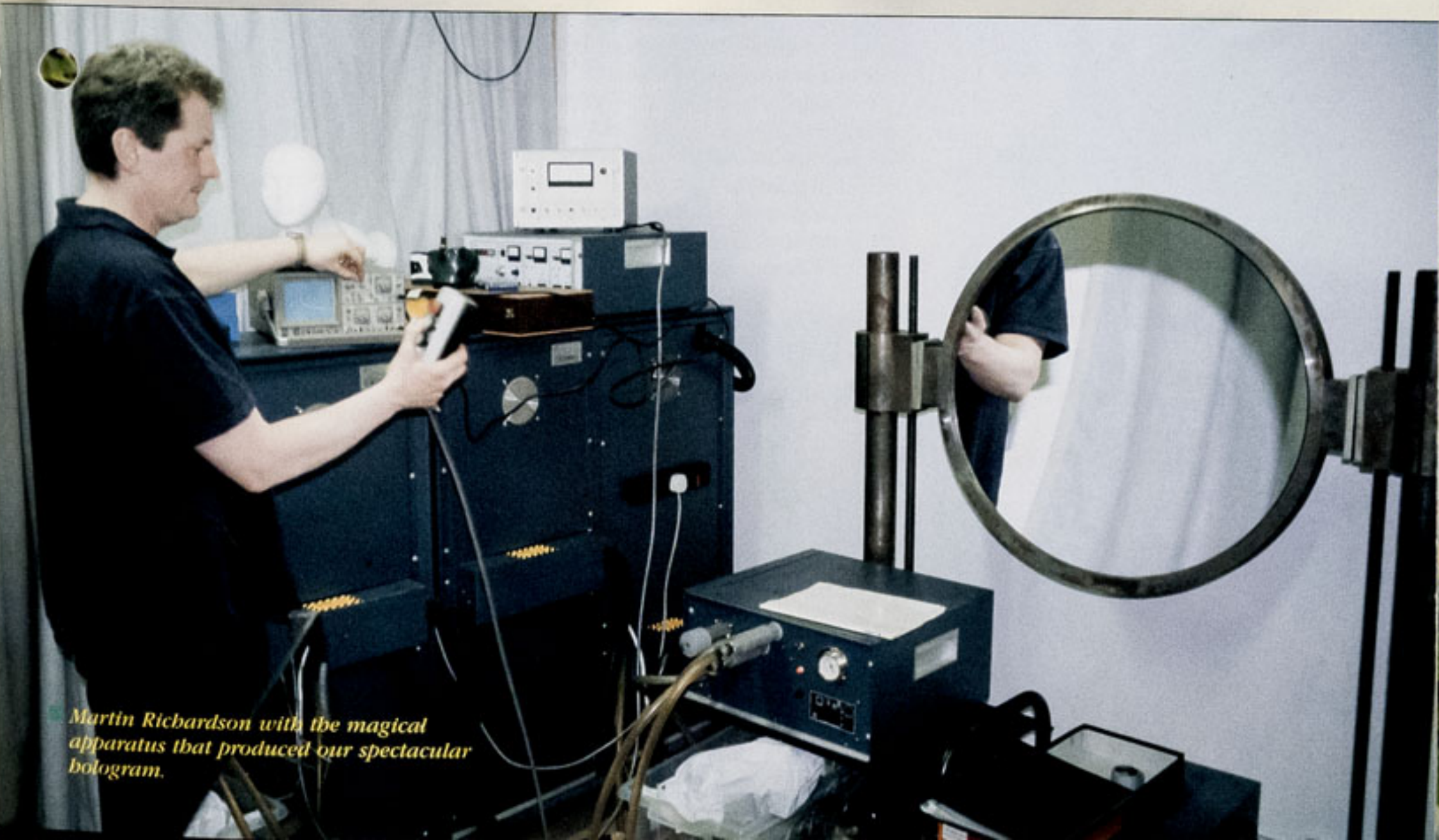
three dimensional sculpture in light. A laser beam is directed at the subject for 20 nanoseconds giving an exposure far briefer than any ordinary camera ever could. This results in an extremely sharp image. The laser bounces off the subject and on to a plastic base plate, leaving an impression of the light waves. When you shine light on to the developed image, the light fills up the hologram in much the same way that jelly fills up a mould. This is what gives the 3-D effect.

Superbat Robert!

This is all quite tricky to do with a static object, never mind a moving one. Our bats proved to be the most difficult subject that Martin had ever dealt with! Their job was to fly in front of a black and white photograph of a forest scene and Martin's job was to click his button to fire the laser at exactly the right time. This proved very hard to do as the bats proved somewhat uncooperative to begin with.

Some flew obstinately above the picture, others flopped below it. Penny was careful to rotate the bats so that none of them was stressed and eventually one individual, Robert, emerged as a star!

This was a relief as each time Martin fired the laser, it cost £60! Robert saved the day though and we got some superb shots, one of which became the final hologram which you will see in the Twilight Zone.



Martin Richardson with the magical apparatus that produced our spectacular hologram.

TIP TOE THROUGH THE TULIPS *in your snow shoes!*

WHEN Easter is late, as it was this year, we hope that the weather will be warm and sunny, and bring thousands of visitors for the first busy weekend of the season.

This year, during the two weeks of the school holidays, we had floods which turned the car park into a perfect mud wallow for hippos; hailstorms that rattled against animal viewing windows and several inches of snow that caused damage and hazardous conditions!

However, thanks to almost perfect weather in February for half-term, we are still ahead of last year's visitor numbers. Marketing Manager Chris Vere took his camera out into the snow-covered zoo to get these extraordinary April pictures.



CHESTER ZOO



Photographic Competition

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GET SNAPPING!

THE entry forms for the 1998 Photographic Competition are now available, and all amateur photographers are invited to send in their six best shots taken in the zoo during 1998.

This year, for the first time, there is a special section for digital photography. As the number of homes with personal computers is growing rapidly, so is the interest in this new way of producing images. Kodak have generously donated a DC200 digital camera, complete with 'Picture Easy' 3.0 software, which, they assure us, will enable even novice users to get outstanding results. This will be the prize for the winning slide in the competition.

For the winner in the new digital section, there will be some exciting software, donated by the leading magazine in this field, 'Digital Photographer.' The programmes are Adobe PhotoDeluxe 2.0 and MGI's Photosuite version 8. Worth over £100, these programmes are an excellent introduction into this new world of digital imaging.

Once again we are indebted to Canon for their generous donation of prizes. The top print photographer will win a high performance UC5000 Camcorder, with built in editing, 20x optical zoom and six AE program modes. The top junior photographer will receive a Canon Sureshot Sleek auto focus camera, with wide angle lens, built in flash and many other features.

Bridgemere Garden World, near Nantwich will be awarding their trophy and £100 gift voucher for the best photograph of the zoo's gardens. Runners up prizes of gift vouchers have been donated by Crewe Camera Exchange, KJP/Hargreaves, Ness Photo Laboratory and the Colour Centre in Ellesmere Port.

The competition runs until the end of October, but each month special merit prizes of film and zoo family tickets will be awarded to the best entries for that month. So enter early — you might win twice!

A selection of the 1997 winners is shown on the centre pages of this magazine.



■ Canon UC 5000 Camcorder



■ Canon Sureshot



■ Kodak DC200 Digital Camera



Winning Pictures

A selection of photographs won the top prizes in 1997 Photographic Competition

Don't forget to put an entry for this year's competition

GARDEN SECTION Best Print

Karen Miller of Rutland, won a voucher to spend at Bridgemere Garden World as her prize for this colourful picture of the gardens.



FIRST PRIZE Slide Section

A lovely mother and baby chimpanzee picture won a £100 Crewe Camera Exchange voucher for Tony Roberts of Nantwich.

Tony will also undoubtedly get to share the prize of dinner, bed and breakfast for two at the Bromborough Village Hotel. This was won by his wife, for the best slide in the gardens section!



FIRST PRIZE – Print Section

This went to one of the very few black and white entries in the competition. The rhino picture was taken by Harry Wagg of Tranmere, who won a Canon camcorder.



Junior Photographer of the Year

Our Junior Photographer of the Year is 10 year old Rowena Berry of Chorley, who chose a baughty pair of camels as her subject.



CORAL in CRISIS

CHESTER Zoo is engaged in activities designed to promote the conservation of coral. The Coral Conservation Group (CCG) was established in December 1996 as a part of the Zoo Federation's Fish and Aquatic Invertebrate Taxon Advisory Group (FAITAG), which was founded by Chester Zoo. The main function of the CCG, under the Chairmanship of John Jarvis, is to raise public awareness about the need to conserve coral reefs worldwide and to organise and develop programmes for the sustainable cultivation of living corals in public aquaria.

To achieve these ends, John Jarvis and Justin Bell kindly organised the seminar *Coral Cultivation: the Way Forward* at Chester Zoo. This served as a worthwhile, practical FAITAG contribution to the *1997 International Year of the Reef*. The *International Year of the Ocean* is this year's follow up initiative and coral conservation programmes in collaboration with others will again feature.

Reefs are key centres for biodiversity which occupy less than 1% of the oceans, yet support at least 4,000 species of fish and many tens of thousands of different kinds of invertebrate. Healthy reefs protect shorelines from erosion, buffer against marine acidification and may even help regulate crucial oceanic salt and trace element concentrations. They are also of great economic importance to local communities for fisheries, building materials and tourism.

It is now very clear that coral reefs everywhere are under threat and that positive action is needed. 'Reefcheck', the first truly global survey of coral reefs was conducted in June and August 1997 at 300 sites. Alarming, this indicates that 95% of the world's coral has already been damaged by human activities. There are general problems with global climate change that are having a

*By Zoo Director,
Dr Gordon
McGregor Reid*

negative impact on corals. The higher temperatures may be causing 'bleaching': the microscopic algae that live in partnership with the corals and feed them sugary substances evidently leave if the water gets too warm.

In the Florida Keys area and throughout the Caribbean, the rapid development of roads, holiday homes and tourism (with 'limestone' mining, diving and ships anchoring) has increased damage, erosion and sedimentation which is negatively impacting on corals. In the eastern Caribbean, terrestrial run off (with sewage and pesticides) and turbidity (causing light deprivation) have been suggested as possible factors in widespread coral reef diseases (including fungal infections of soft corals). Closer to home, Scottish temperate, deepwater corals may be endangered from oil company exploration.

Deleterious fishing techniques, including explosives and cyanide compounds are rapidly eliminating many reefs. For example, dynamite fishing, while illegal, is a common method used to harvest fishes off the coast of Tanzania, Africa: with shallow coral reefs completely obliterated and deeper reefs badly affected. Collections of marine life made for the curio trade and ornamental aquarium trade are also having an effect. At least 1,500 tonnes of dead coral from the Philippines is exported annually to the USA, much of it illegally (this point is highlighted in a dry display of customs confiscated corals organised in the zoo Aquarium by Mike Crumpler and Justin Bell in productive collaboration with the University of Liverpool). Also in the

Philippines, which supplies perhaps as much as 80% of the ornamental aquarium trade, the Manila market alone sells upwards of 650kg of live corals per week (100-150 pieces). Issues of legality and sustainability aside, the high mortality rate among exported live corals is a cause for concern.

Some reassurance for the future can be derived from the fact that large international agencies such as the World Wide Fund for Nature, the Global Environment Facility and the World Bank are now focussing on coral reefs. Regional reef resources management programmes are being developed. Encouragingly, Cabo Pulmo in the Gulf of California has become the first officially protected coral reef on the continental Pacific coast of Mexico. There have also been solid inputs from, among others, Fauna and Flora International, Ocean Voice International, the Marine Conservation Society and the recently established Marine Aquarium Fish Council.

The latter organisation has the goal of ensuring that the collection, handling and sale of marine organisms from coral reefs conforms to best management practices and is ecologically sustainable, socially beneficial and economically viable.

Hobbyists and professional aquarists are also making their contribution, particularly in the development of captive propagation techniques for corals in closed systems. Following a meeting this year at Chester with European colleagues, the FAITAG, and with it the Coral Conservation Group, has since been incorporated in the larger framework of the European Union of Aquarium Curators (EUAC). Hopefully, all of this combined effort and a 'twintrack' (*in situ* and *ex situ*) approach will help secure the survival of at least some of the world's corals both in nature and in aquaria.

We must all do what we can to help.

BEQUESTS and BENEFACTORS



■ *The Russell Allen Lecture Theatre*

GLANCING recently at the zoo archives, I was struck by how much Chester Zoo has owed over its sixty five year history to the generosity of just a handful of individuals.

In fact, George Mottershead's original vision might never have come into being at all back in the early 1930's without the generosity of individuals such as Miss Esther Holt. Miss Holt, a great enthusiast for birds, was a member of the famous Liverpool shipping family, whose charitable trust continues to have a strong tradition of philanthropy to this day. Miss Geraldine Russell Allen, a founder member of our society, was the benefactress who made the original aquarium possible, then situated in the basement of the Oakfield building. Her continuing support also allowed the eventual addition of our lecture hall, named in her honour.

Another great friend of Chester Zoo in those early days was Lord Leverhulme, who laid the original foundation stone at the existing Lion enclosure. The present Lord Leverhulme continues to be a stalwart supporter and I was delighted to welcome him recently when he visited to renew his acquaintance.

One remarkable story of philanthropy began with a telephone call to Mr Mottershead at the outbreak of the war. An elderly lady was enquiring whether she might visit the zoo on her way back from Wales to her home in the Lake District. 'Mott' was able to take Miss Catherine Jane Tompkins-Grafton on a personal guided tour, during which she was especially taken by the polar bears. Five years later she made an enormous gift to Chester Zoo that allowed a radical upgrading of our polar bear facility. Sadly she died the same year. Miss Tompkins-Grafton had, however, chosen to remember Chester Zoo in her will. The bequest was so substantial, that for the first time in its history the zoo was able to get 'out of the red', and embark on an exciting new charitable course, the

same one we still pursue today, of continual improvement and expansion for welfare and conservation. Forty acres of the current zoo estate were purchased with Miss Tompkins-Grafton's legacy. It is worth stopping to consider that so much of the zoo that members enjoy today is all due to a single individual taking the time and trouble to remember our cause in her will.

*By Gordon McGregor Reid
— a Director with gratitude!*

In more recent times, council members Ronald and Kathleen Pryor were extremely generous donors. Ronnie Pryor's involvement was cut short by his tragic death, but the charitable trust he set up continues to make extremely helpful donations year after year. Perhaps you have noticed the 'Ronald Pryor Walk' on the south side of the Bird House, and many of you will have enjoyed the Ronald Pryor Bird Hide complete with commemorative plaque erected last year with help from the Trust.

Another plaque acknowledges the contribution of the late Sally, Duchess of Westminster, whose generous bequest made possible the Condor Aviary, with its splendid landscaped waterfalls.

Bringing this tradition of giving right up to date, Mr John Blewett, a very active and committed member of the Society, approached us just last year to say that he had decided to remember the zoo in his will. John is a great elephant enthusiast, and has also made some very substantial gifts to the zoo by covenant in support of our work with Asiatic Elephants.

Committed support such as John's is a huge encouragement and inspiration in the often difficult work of wildlife conservation.

Other gifts arrive out of the blue. A lady whose aunt had left a sizeable bequest to charities without specifying a particular

organisation contacted us in 1997. She explained that as her aunt, Bella, had always loved big cats, she would like the sum involved to come to Chester Zoo. One of our Asiatic Lion cubs has been named 'Bella' in her honour.

One thing that has changed over the years is that we no longer encourage anyone to actually 'donate' animals. As we have taken an increasingly professional approach to the mix of endangered species we keep, it would be really irresponsible of us to cater for unplanned additions. We are also bringing to a close the practice of establishing seating in memory of loved ones, or other commemorations that are not actually associated with an animal development.

There have been, of course, very many gifts and bequests made over the years (including the flood of donations in memory of Karha) and so I can only mention a fraction. All, large and small, are however greatly appreciated.

As we continue to embark on exciting projects, including the development of the greater zoo estate, such support will become increasingly important to us. The actual funds that bequests and other gifts bring us make an enormous difference to our conservation mission.

However, the knowledge that so many of you feel strongly enough about wildlife conservation and the future of 'your' zoo to part with your hard earned cash is almost as important. It is a huge boost to the animals and to the morale of everyone who works at the zoo.

The zoo is really very grateful indeed to all of you who, over so many years, have made gifts or pledged to remember us in your wills.

In return, please be assured that we will continue to work hard to ensure that your children and grandchildren will be able to stand astounded at the very fact of an Asiatic Elephant, or appreciate the beauty and majesty of an Amur Tiger.

How Wildlife is saved by Britain's Zoos



The Federation of Zoological Gardens of Great Britain and Ireland is a conservation, education, and scientific wildlife charity, founded in 1966 out of a mutual desire within the zoo community to see sound principles and practices of animal management widely adopted in the British Isles. To day, the Federation is the principal professional zoo body representing the responsible zoo community in the country.

THE Federation believes the best place to save animals is in the wild, but for many species this may not be an option. If animals are to be exhibited it is important that both the reasons and objectives for so doing are clearly defined.

Therefore, in addition to the provisions laid down by the *Zoo Licensing Act 1981*, which set mandatory standards that are unique in the world and which the Federation helped to formulate, Federation member collections must undertake work in the fields of conservation, education and non invasive biological research under the terms of the *Constitution* and the *Codes of Practice*.

Thus, the Federation and its members participate in cooperative conservation and education work, particularly through coordinated conservation breeding programmes for endangered and threatened species of animal known as *ex-situ* conservation and through the provision of valuable support for habitat and species conservation in the wild, known as *in-situ* conservation.

A survey conducted in 1994 amongst Federation collections revealed that during the previous six years, members had supported 69 projects in 36 different countries by providing not only financial support in excess of £5 million but, as importantly, by supplying husbandry and management skills, staff and equipment for habitat and species conservation and essential materials for local education and awareness programmes in developing countries.

The UK's major zoos are best known for their pioneering conservation work; however, all members contribute to the Federation's conservation objectives by raising awareness and essential funds at home and abroad.

Also, as part of its conservation remit, the Federation organises annual

campaigns which focus on specific conservation issues and projects. These campaigns are supported by member collections and raise significant funds, awareness and support for *in-situ* conservation. For example, the focus of the 1996 campaign was the tiger, when Tiger Week Appeal raised over £75,000 on

Mary Talbot-Rosevear, the newly appointed Director of the Federation, describes its work

behalf of three of the remaining sub species of tiger.

Globally there are fewer than 5,000 tigers left in the wild, and the funds raised helped to support wild tiger conservation projects in Siberia, India and Sumatra in partnership with Tusk Force, Global Tiger Patrol and Sumatran Tiger Project in Way Kambas, Sumatra.

Conservation projects are not exclusively targeted at exotic species in foreign countries. Federation members also support British native wildlife by working in partnership with statutory conservation bodies such as English Nature under the auspices of the Species Recovery Programme, which is an important part of the government's *UK Biodiversity Action Plan (1994)*, working to halt or reverse the decline of many of our threatened native species.

This collaboration encompasses the development of breeding and animal management techniques and public awareness programmes for, currently, over 29 native species including the dormouse, red squirrel, sand lizard, smooth snake, wart biter, two species of moth, the tadpole shrimp and Britain's rarest spider - the Ladybird Spider.

This year's Federation campaign, entitled *'It's Your Wildlife . . . Save It'* is focussing on British native species and aims to raise awareness about the wealth of British wildlife and to point out that it's not just tigers or giant pandas that are threatened with extinction; in the UK a whole range of species are under threat from habitat

destruction, environmental pollution, human encroachment and changes in farming practices. With the help of Mars Confectionary UK and other initiatives, such as the sale of *Personal Wildlife Pledges* and events and activities in Federation Zoos and Wildlife Parks across the UK, the campaign hopes to raise £60,000 to support six wild conservation projects for the capercaillie, red squirrel, basking shark, medicinal leech, natterjack toad and the chough.

Education Role

Education, of which environmental education is a major element, is also a primary function for Federation zoos, with 80% of member collections employing full time or part time staff, though relatively few receive financial assistance from local authorities. In recent times, this role has broadened to encompass not only formal education to nearly a million school children who visit Federation collections annually, but also public awareness programmes.

In the British Isles, an estimated 13 million people visit zoos annually. Research indicates that many diverse groups make up the visitor profile, spanning all ages, educational abilities, social, ethnic and cultural backgrounds, thus giving an extra dimension to the education potential of zoos.

Zoos play a major role in raising people's curiosity in, and awareness of, the natural world, thereby inspiring them to appreciate and support the wider conservation issues.

Standards in UK Zoos

The Federation welcomes the government's recent review of the *Zoo Licensing Act (ZLA)* and the publication, in November 1997 of a consultation paper by Angela Eagle MP, the Under Secretary of State for the Environment at the Department of the Environment, Transport and the Regions, which is responsible for administering the ZLA.

The Federation agrees with the government that whilst the present system is fundamentally sound and generally working well, it recognises the need for a review to update the system and ensure that consistently high standards are maintained in British zoos. The Federation also asserts that, within the Act, greater recognition and support ought to be given to the conservation and educational roles of zoos.



■ *The Amur or Siberian Tiger - one of the critically endangered species helped by a Zoo Federation awareness campaign.*

EU Zoo Directive

The Federation also welcomes the government's support for a proposed EU Zoo Directive which seeks to lay down minimum standards for zoos across the European Union and is likely to be based on the UK ZLA. The Federation has consistently supported a strong Directive on zoos, and has independently, as well as collectively, been actively lobbying for its acceptance since it was first proposed in the early 1900's, as it believes only effective legislation will ensure that

standards of husbandry and welfare will be raised and maintained in European zoos where necessary.

The Federation will continue to offer its expertise, advice and experience to the on-going debate and formulation of zoo policies and, along with the vast majority of the British public, shares a vision of all zoos being centres of excellence, thus making a valuable contribution to the conservation of the natural world.

This article appeared in the March issue of 'Parliamentary Brief'.

Summer Activities for

This summer, the Education Division is offering a range of wildlife related activities in the zoo aimed at children aged 8-11 years. We anticipate a heavy demand for these and numbers are limited, so please book early by telephoning the Education Division on 01244 650205.

ALL SESSIONS COST £5.00 PER PERSON AND PAYMENT MUST BE MADE IN ADVANCE.

DINOSAUR DIG

Tuesday 28th July 10.30am – 1pm for 8 & 9 year olds

Wednesday 29th July 10.30am – 1pm for 10 & 11 year olds.

Join us on a journey to the Jurassic as we explore the fascinating world of the biggest animals ever to roam the Earth. Examine real dinosaur eggs, take part in a 'dinosaur dig', hear about the latest dinosaur research and make your own plaster cast fossil.



Activity tickets will be valid only for the time booked, and are not general zoo admission tickets. A special concession of £4.00 will apply for children wishing to spend time in the zoo before or after the activity.

The sessions will be fully supervised, but children spending free time in the zoo must be accompanied by a paying adult. (Entrance fee does not apply, of course, to Junior Members, who will only need to pay the session fee.)

WORLD OF BATS

Wednesday 5th August
1.30 – 4pm for 8 & 9
year olds.

Thursday 6th August
10.30am – 1pm for 10 & 11
year olds.

Everything you always wanted to know about bats! Find out the secrets of vampire bats; take a close look at bat skeletons. A special bat craft activity rounds this session off.

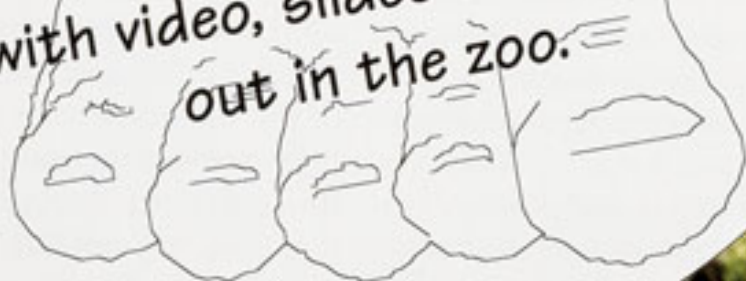
Workshops for Children in the Zoo

FEET FIRST

Tuesday 11 August 1.30 – 4.00pm for 8 & 9 year olds.

Feet can be used for all sorts of things – walking, swimming, running, climbing, parachuting, catching food, fighting, attracting a mate, warning of danger . . .

We explore the wonderful world of animal feet with video, slides and a foot quiz out in the zoo.



These sessions are not part of the Junior Members' programme, and are open to everyone.

MADAGASCAR MORNING

Wednesday 12 August
10.30am – 1pm
for 8 & 9 year olds.

Thursday 13 August
10.30am – 1pm
for 10 & 11 year olds

Madagascar is famous as the home of the lemur, but lots of other interesting things live there too. We embark on an expedition from one end of 'red island' to the other with the help of video footage never seen before in public, a treasure trove of mystery objects collected in Madagascar and a chance to make your own Malagasy paper to take home.



MONKEYS, APES AND MAN

Wednesday 19th August 1.30 – 4.00pm

In this workshop we explore the behaviour and biology of our closest relatives. As well as studying the living primates in our collection, we examine a range of primate skulls, measuring brain sizes, comparing the teeth and looking at the close connections between humans and apes.

SEAL SPORTS!

Emma Goldsworthy was the recipient of one of the zoo's Studentship Awards for 1997. The award enabled her to spend the summer studying Grey Seals, and the effect that various forms of environmental enrichment can have on their behaviour.

THE Grey Seal is Britain's largest resident mammal and is one of just two seal species that breed on British shores, the other being the common seal. The adult males are generally darker in colour than the adult females and various shades of grey, black or silver may be found. Although seals appear cumbersome on land as the hind-limbs are directed backwards, and are therefore non functional in the terrestrial environment, in the water these animals are transformed into elegant torpedos, specifically adapted to diving. Grey seals belong to the family known as the true seals, and are related to walruses and sea lions.

True seals may be distinguished from sea lions as they do not possess visible external ears and are not as agile on land. The Latin name for grey seal (*Halichoerus grypus*) means 'hook nosed sea pig' and refers to the long snout giving the grey seal its distinctive profile. Grey seals eat the most abundant fish in coastal waters, which may include cod, herring, skate and mackerel along with crustaceans and squid, if available.

Almost half the world's grey seal population inhabits British coastal waters, with many sightings around, for example, the Isles of Scilly and Cornwall - my own home county. As I have a keen interest in marine mammals, and because I have been lucky enough to spot Grey Seals on many occasions in the wild, I was delighted to have the opportunity to carry out my third year biology project at the National Seal Sanctuary at Gweek



■ The seals are more interested in basking than in playing with the fish ball!

in Cornwall. The main aim of the Seal Sanctuary is to rescue and provide medical treatment for sick, injured or distressed marine animals found around the coast. Many seal pups are rescued each season, 30 - 38 from September to March.

They are rehabilitated and then returned to the sea. As well as providing a rescue service, the sanctuary also provides a home for many resident adult Grey Seals, which due to the severity of the injuries when brought to the sanctuary, were believed to be unable to cope back out in the wild. It was on these individuals, ten in all, that my attention was focussed. I spent seven weeks of last summer and a couple of sessions before this time, observing the resident animals. I found that nine of the ten seals had a fixed swimming pattern which occurred in the same pool location and was repeated many times a day. This is known as stereotypic behaviour. The main aim of my project was to see if the addition of various feeding devices would act to disrupt this behaviour, which may be an indication of stress due to some element of their environment.

Thanks to the studentship from Chester Zoo, I was able to set up pulley devices onto which mackerel could be attached and dragged across the pool for the seals to chase. A giant red ball with fish inside was also added to the pools for the animals to manipulate in order to obtain a fish reward. The seals were also provided with giant fish ice lollies - ice blocks with fish inside -

with which to amuse themselves. They differed widely in their response to this feeding enrichment, and three or four individuals were rather reluctant to join in the fun! This is likely to be because of the long time that the seals have been at the sanctuary. One or two of them were extremely good at obtaining fish from the red ball. They would sink the object, using their body weight so that it re-surfaced, water would rush through the holes, bringing one or two fish out at the same time.

Unfortunately, they got rather too good at winning fish from the various devices and their routine swimming patterns were found to return within only a few minutes. If the feeding devices could be improved so that it takes the seals longer to obtain fish, then I believe that this would be valuable in reducing stereotypic behaviour.

In years to come, it is hoped that the pool designs will also be improved, giving the seals more opportunities to explore their environment. The Grey Seal population is not endangered at present, but is frequently in conflict with the fishing industry and there are often requests for a cull. Marine pollution, however, could have a major affect on seals in years to come and in the inner Baltic has already resulted in the sterility of many females. I believe that it is important to understand these animals while there is still time to do so, and provide them with the best captive conditions possible prior to release. One day, as for so many other species, it may be too late.

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The Wolves of Ethiopia



*With a mere 400 animals surviving, the Ethiopian wolf (*Canis simensis*) is now the rarest canid in the world. Jane Dyson, another of our Studentship Award winners, spent three months last Summer on a field trip to the Bale Mountains National Park, where the largest of the half dozen remaining populations can be found.*



■ *Ethiopian Wolf.*
Picture courtesy
Sillero & Gottelli.

THE Ethiopian wolf is restricted to the Highlands, living in Afro-alpine habitats above 3,000m, preying upon the rodents of the grasslands and heathlands. However, these available habitats are steadily shrinking, posing it with further threat of extinction.

Since the 1980's, studies in the Bale Mountains have shown the steady decline of the wolf, also known as the Simian jackal. From 1988 to 1992, the estimated 440 adults was reduced to around 250, and by '95 numbers had slumped to roughly 140 adults.

Regardless of the causes of these declines, the small size and isolation of these populations carries new threats, such as inbreeding and the loss of genetic diversity.

Human pressure for agriculture and grazing has been largely responsible for the loss of Afro-alpine habitat. Many villagers enter the national park on a seasonal basis to take advantage of the rainy season grazing or the high altitude mineral springs. The Oromo settlers bring other problems; with their livestock come domestic dogs to guard them from predators, such as the spotted hyena. These dogs are rarely fed, so they act as direct hunting competitors to the Ethiopian wolves. These dogs are also vectors for diseases such as rabies and canine distemper, which have practically halved the wolf populations. Now there's evidence that the wolves have begun to hybridise with the dogs, posing even greater extinction risks.

Conservation

A field based programme to help the recovery of the Ethiopian wolf is now in place. It aims to monitor the wolf populations, to assess the threat of disease and to improve protection of Afro-alpine habitat throughout Ethiopia. The problems of competition with humans and domestic animals are being investigated, whilst an environmental education programme seeks to resolve them. If the decline of wolves is to be

prevented, the Oromo community must be informed of the causes and solutions and should be involved in the recovery operations.

Field Trip

Thanks to great help from Chester Zoo, I was able to make a field trip to the Bale Mountains during July to September last year to help initiate the community education campaign. Together with Zegaye, (a local primary teacher) and Hussein (an experienced guide), we visited many Oromo villages in and around the national park to discuss these conservation issues, and to try to encourage a responsible attitude to dog ownership. We suggested ownership of no more than two dogs per household; dogs must be fed and contained; they should be prevented from going to the market, where disease is rife and transmission likely. A programme of dog inoculation is also being carried out. Some villagers were sceptical about this, believing that it would kill the dog or impair its ability to guard livestock. Others felt that their traditional herbal medicines sufficed, whilst admitting that they were ineffective. All these understandable fears need to be quelled for the vaccination programme to succeed. Attitudes of the Oromo towards the wolf varied from indifferent to negative. Some Oromo had apparently lost livestock to wolves, but dismissed these in comparison to other predators. Others claimed that eating the livestock's

afterbirth benefited the wolves hence the wolf's Oromo name of 'Jedalla farda' or 'horse's jackal.' Whilst they were aware of the declines in size and the whereabouts of particular packs, nobody realised that the wolf was endemic or endangered. On learning this, some villagers appeared to show genuine concern, whilst others shrugged their shoulders.

Education for the future

With the insight gained, I have produced a small book that tackles the essential issues. With basic language (translated into Oromo) and simple illustrations, it will serve as a focus for future team visits to these communities.

We are currently trying to extend the educational campaign to the nearby towns on the outskirts of the national park. I am now working on a second educational book addressing the general conservation issues of the area, which will be used widely in local primary schools. Meanwhile the educational team will continue its visits throughout the Ethiopian wolf range.

We hope that these efforts will in time help to raise awareness of the plight of the Ethiopian wolf and will assist the Ethiopian people to conserve their unique Afro-alpine ecosystem and its wildlife. Adopting the Ethiopian wolf as a flagship species may boost wildlife conservation throughout the Afro-alpine ecosystem, home to the vast majority of Ethiopia's endemic plant and animal species.



■ *Jane Dyson with Zegaye and Hussein.*



There are **20** differences in the two pictures of Noah's Ark.

How many can you spot?

Draw a circle around as many as you can find, and send your answer to:

Junior Puzzle
Marketing Office
Chester Zoo
Upton by Chester CH2 1LH

Closing date is 30th June, '98.

If you don't want to cut up your magazine, then a photo-copy will be quite acceptable. The prize for the first all-correct entry is a £10 gift voucher to spend in the zoo shops.

SPOT THE DIFFERENCE



ANIMAL JUMBLE COMPETITION Zoo Life, Spring issue

This proved to be the most successful competition ever! We have never had so many entries. The answers are: sea horse; kangaroo; giraffe; zebra; barn owl; elephant; ostrich; cheetah; flamingo and lion.

We put all the correct entries in a box and the first one picked out was from Olivia Potts, who is 9 years old and lives in Blacon. Well done, Olivia!

JUNIOR MEMBERS

MEETINGS AND FIELD TRIPS

TREE GUARDIAN DAY

Saturday 27th June '98

A day in a woodland in Vale Royal, learning about trees and woodland habitat conservation. A fun day, with quizzes and discovery games. Bus leaves staff car park at 10.30am, returning at 5.00pm. Bring a picnic and wear your wellies! (Over 8's)

WITH A KEEPER

Wednesday 22 July '98

A strenuous day for over 12's only. Come prepared for hard work, wearing wellies and equipped with an energy-packed picnic! Meet outside the Oakfield at 10.30 am, finishing at 4.00pm.

SUMMER BARBEQUE

Friday 21st August '98

Lots of fun, food and a few surprises! Arrive at the staff entrance at 7.00pm, and walk through the zoo to the Jubilee Restaurant. Parents are asked to collect Juniors at 9.45 pm.

LOGGERHEADS NATURE TRAIL

Saturday 26th September '98

Trip to Loggerheads Country Park in North Wales. The bus will leave the staff car park at 11.00am, returning at 4.00pm. Bring a picnic. (Over 8's)

MANCHESTER NATURAL HISTORY MUSEUM

Saturday 24th October '98

A fascinating day at this excellent museum. The bus will leave the staff car park at 10.30am, returning at 4.00pm. Picnic needed. (Over 8's)

LEIGHTON MOSS - SILVERDALE

Saturday 21st November '98

A journey to the RSPB Reserve near Carnforth in Lancashire for a very special day. The bus will leave the staff car park at 9.00am returning around 5.00pm. Warm clothes, waterproofs and wellies needed, together with a picnic. Over 10's only for this trip, as it is a long day.



■ Many Junior Members made some good finds at Wenlock Edge, on our Fossil Hunting day, including snails, corals and sponges.



■ Feeding time for the sea lions at the Welsb Mountain Zoo in Colwyn Bay.

Bookings must be made for all events. Please ring 01244 650215 not more than two weeks before the event. It's 'first come first served' and places may be limited. A small charge will be made to cover costs for events involving transport, materials or food. This list is provisional and in exceptional circumstances we may have to alter dates and venues. These changes will be printed in Zoo Life not by individual letters so keep up to date by reading your pages in each issue!

Arrivals ● Births ● and ● Hatchings ● ●

FEBRUARY, MARCH and APRIL 1998



■ Ring-tailed Lemur



■ Congo Buffalo

MAMMALS			
*Ring-tailed Lemur	<i>Lemur catta</i>	0.0.4	Birth
*Black & White Ruffed Lemur	<i>Varecia variegata variegata</i>	2.0.0	Birth
Pygmy Marmoset	<i>Callithrix pygmaea</i>	0.0.1	Birth
*Cotton Top Tamarin	<i>Saguinus oedipus</i>	0.0.2	Birth
*Sulawesi Crested Macaque	<i>Macaca niger</i>	0.2.0	Birth
Campbell's Guenon	<i>Cercopithecus campbelli</i>	0.2.0	Arrival
Meerkat	<i>Suricata suricatta</i>	1.2.0	Arrival
Common Genet	<i>Genetta genetta</i>	0.0.4	Birth
*Père David's Deer	<i>Elaphurus davidianus</i>	0.1.1	Birth
*Lowland Anoa	<i>Bubalus depressicornis</i>	0.1.0	Arrival
Congo Buffalo	<i>Syncerus caffer nanus</i>	0.1.0	Birth
*Bongo	<i>Tragelaphus eurycerus</i>	0.1.0	Birth
*Blackbuck	<i>Antelope cervicapra</i>	0.0.3	Birth

BIRDS			
*Meller's Duck	<i>Anas melleri</i>	0.0.2	Hatched
Rosy-billed Pochard	<i>Netta peposaca</i>	0.1.0	Arrival
*White-headed Duck	<i>Oxyura leucocephala</i>	0.0.2	Hatched
White Eared-pheasant	<i>Crossoptilon crossoptilon</i>	0.1.0	Arrival
Northern Lapwing	<i>Vanellus vanellus</i>	0.0.1	Arrival
Rock Dove	<i>Columba livia</i>	0.0.1	Hatched
Speckled Pigeon	<i>Columba guinea</i>	0.0.2	Hatched
Crested Bronzewing Pigeon	<i>Ocyphaps lophotes</i>	0.0.1	Hatched
Diamond Dove	<i>Geopelia cuneata</i>	0.0.1	Hatched
Pied Imperial Pigeon	<i>Ducula bicolor</i>	0.0.3	Arrival
Golden Heart Pigeon	<i>Gallinolumba rufigula</i>	0.0.2	Arrival
*Luzon Bleeding Heart Pigeon	<i>Gallinolumba luzonica</i>	0.0.2	Hatched
*Palm Cockatoo	<i>Probosciger aterrimus</i>	2.0.0	Arrival
*Blue-eyed Cockatoo	<i>Cacatua opibthalmica</i>	0.0.1	Hatched

BIRDS—continued			
*Derbyan Parakeet	<i>Psittacula derbiana</i>	0.0.3	Hatched
Red crested Turaco	<i>Tauraco erythrolophus</i>	0.0.2	Hatched
*Schalow's Turaco	<i>Tauraco schalowi</i>	0.0.2	Hatched
*Schalow's Turaco	<i>Tauraco schalowi</i>	1.0.0	Arrival
*Fischer's Turaco	<i>Tauraco fischeri</i>	0.0.2	Arrival
*Spectacled Owl	<i>Pulsatrix perspicillata</i>	0.0.1	Hatched
*Great Grey Owl	<i>Strix nebulosa</i>	1.0.0	Arrival
Tawny Frogmouth	<i>Podargus strigoides</i>	0.0.3	Hatched
Green Wood Hoopoe	<i>Phoeniculus purpureus</i>	0.0.1	Hatched
*Writhe-billed Hornbill	<i>Aceros leucocephalus</i>	1.1.0	Arrival
*Red-eared Bulbul	<i>Pycnonotus jocosus</i>	0.0.2	Arrival
*Red-winged Laughing Thrush	<i>Garrulax formosus</i>	0.0.1	Arrival
*Yellow-throated Laughing Thrush	<i>Garrulax galbanus</i>	0.0.3	Hatched

REPTILES			
Tokay Gecko	<i>Gekko gekko</i>	0.0.2	Hatched
Leopard Gecko	<i>Eublephans macularius</i>	0.0.3	Hatched
Plumed Basilisk	<i>Basiliscus plumifrons</i>	0.0.3	Birth

INVERTEBRATES			
Long-spined Sea Urchin	<i>Diadema antillarum</i>	0.0.3	Arrival

FISH			
South American Arowana	<i>Osteoglossum bicirrhosum</i>	0.01	Arrival
Goldfish various	<i>Carassius auratus</i>	0.0.13	Arrival
Mexican Blind Cave Fish	<i>Astyanax jordani</i>	0.0.60	Arrival
Shovel-nosed Catfish	<i>Soribim lima</i>	0.0.1	Arrival
Banded Pipefish	<i>Doryrbampus dactyliophoras</i>	0.0.6	Arrival
Fumanchu Lionfish	<i>Dendrochirus biocellatus</i>	0.0.2	Arrival
Banggai Cardinal Fish	<i>Pterapogon kauderni</i>	0.0.56	Arrival