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ZOOQUARIA

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ISSUE 79

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Zooboy is taking a well-deserved break this issue, but will return to grace these pages very shortly.

Zooquaria

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John Arthur Ellis 1959-2012

SENIOR CURATOR, HIGHER VERTEBRATES AND HORTICULTURE, ZOOLOGICAL SOCIETY OF LONDON

John Ellis, Chair of the Toucan and Touraco TAG, fell ill while speaking at the EAZA mid-year Bird TAGs meeting in Walsrode in April 2012, a report from which you can find on page 26 of this magazine. Despite the wonderful care he received in a specialist unit in Bremen John sadly died one month later. Below is a personal reflection from EAZA Executive Director Lesley Dickie on her friend and colleague.

John Ellis was a master aviculturalist. He adored birds and had a varied career, starting as a trainee keeper at Chester Zoo. He had jobs in France and the United States but also notably at Jersey, where he shared a flat with two other young keepers, a couple of characters called Simon Tonge and Nick Lindsay. In the year 2000 he moved to London Zoo, and spent the remainder of his career at ZSL, where I had the pleasure of working with him. He was undoubtedly one of the best bird curators in the world. Apart from being a fantastic asset to his own zoo he devoted time, energy and knowledge to helping EAZA meet high standards in bird care. He was for many years the Chair of the Toucan and Touraco TAG – and to note his work for that TAG Johnnie's photograph will remain on the TAG page of the EAZA website. It won't be removed. Yes, we all know about Johnnie's prodigious professional talents.

But actually that is not why I will remember and so miss Johnnie. Many people are skilled and knowledgeable but they wouldn't be mourned so much by so many people. Johnnie was a magical human being. He was someone who brought vitality and energy and huge amounts of warmth and love into many lives. I first met Johnnie at Chessington Zoo 17 years ago and I think I probably adored him from day one.

And that is because Johnnie's truly great skills lay not in horticulture or aviculture (fantastic though they were), but in making other people feel great. It was in the joy and laughter (lots of laughter) that he injected each day with in such abundance. Johnnie revelled in life and, in fact, he may not have known this, but Johnnie was to me something of a guru. And I think I can detail what lessons I learned from Johnnie.

Johnnie saw (and took) great pleasure in the small things of life. Whether it was working on his allotment and the pleasure he saw in the growing plants around him or in the animals he cared for at work or his two little dogs and the chickens at home. He delighted in watching birds, in seeing beautiful nuances of colour in the tiny wings of hummingbirds. He adored eating and drinking (gin & tonics will always remind me of John). He had the skill that some people never master – he recognised true simple happiness and he appreciated it and spread it further. He wasn't waiting for some huge event to make him happy... he found happiness in the everyday.

Johnnie also taught me that work does not need to be dull to be effective. I remember when working at ZSL the manoeuvring that you could actually see at meetings as people tried to ensure they were either sitting next to John or at least opposite him – because then you knew that there would be some moment of hilarity, even in the most boring of meetings!

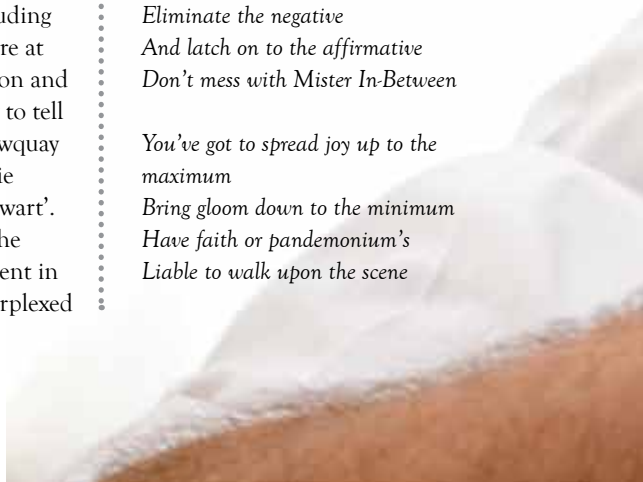
Johnnie also taught me to take pleasure in the joys of others – he was a fantastic friend because he truly enjoyed seeing his friend's triumphs but would also be there to help through the disasters. One very vivid personal memory of mine is when I was appointed to my current job as Director of EAZA – it hadn't actually yet been announced officially but a small group of people knew, including of course John. That night we were at the BIAZA Parliamentary reception and I said to Johnnie that I was going to tell Stewart Muir, the Director of Newquay Zoo, another good friend. Johnnie immediately said: 'Let me tell Stewart'. So we three duly went out onto the balcony of the Houses of Parliament in London, with Stewart looking perplexed at the giggling that John and I were doing. John then very solemnly said: 'Mr Muir, let me introduce you to Dr Dickie – the Executive Director of EAZA'. At that there was a lot of jumping up and down and laughter while several BIAZA Directors, MPs and Lords looked on puzzled from the inside of the reception. I clearly remember, and will always remember, the sheer joy on John's face as he passed on this good news for me. Because that was the kind of friend John was.

Finally, Johnnie taught me to always try and see the best of things, to try and find positive where it sometimes was lacking. To put on your best self and get on out into the world and embrace it. Johnnie's close friends will know that sometimes he suffered a lot of pain due to a pre-existing condition... that sometimes made it almost impossible for him to walk. Yet, for the casual observer, you would not know anything was wrong. Johnnie did not want pity, he just wanted to get on with things in the best way possible.

Johnnie loved music and dancing and I have tried to find a song that summed him up – there are of course many disco or Kylie classics that might do the job – but I have actually turned to another Johnnie: Johnny Mercer who sang and wrote songs in the mid-1940s. His most famous number had these lyrics:

You've got to accentuate the positive
Eliminate the negative
And latch on to the affirmative
Don't mess with Mister In-Between

You've got to spread joy up to the maximum
Bring gloom down to the minimum
Have faith or pandemonium's
Liable to walk upon the scene



There has been a donation page set up in John's memory by his husband John. All funds will be used to assist in the South Asia Vulture Recovery Programme, a project very close to John's heart. If you wish to contribute please go to www.justgiving.com/In-Memory-of-John-Ellis

Now with Johnnie you would still sometimes get the pandemonium, but it would only be because we were all rolling about in laughter.

Although it hurts me greatly that John is gone I am glad that he left us with his life in such a happy place. He was married to his husband John McKenna, the love of his life. And he was loved in return. He had lived to see his two boys grow up to be confident, independent young men making their own way in the world, yet still sharing a close and loving relationship. He was adored by his family and friends and admired by his colleagues. This is a pretty good legacy for any life.

Many of you who will gather in Innsbruck will certainly miss seeing John – he was planning to be at this meeting. But I am sure that many of you will also like to get together to reminisce and raise a glass to a magical and remarkable man, who loved birds, served EAZA, but most of all was a wonderful friend and colleague. Johnnie Ellis – cheers to you, we'll miss you.

NOTICEBOARD

BROWSE ID BOOK NOW AVAILABLE

THE IMPORTANCE OF BROWSE as part of the diet of many zoo species and as a helpful tool for environmental enrichment is now regularly described in zoo nutrition publications, write *Tjalling Huisman, University of Applied Sciences Van Hall Larenstein, and Joeke Nijboer, Diergaarde Blijdorp*. Many zoo workers are not aware of the feeding value of browse, which browse is suitable for which species and the potential unwanted side effects of feeding the wrong browse. Furthermore, most people cannot recognise most browse species.

In order to increase knowledge on browse The Dutch Zookeepers Federation, De Harpij, have produced the Browse Indentification Book, combining the outcomes of several surveys resulting in a list of 42 species.

The book includes a chapter on the use of browse in general. This chapter also gives a list of animal species for which browse is an important feed item. Another chapter focuses on secondary plant components and how to avoid the risks when using browse. Further chapters are on browse quality, browse conservation and the use of browse as enrichment. The last part of the book contains a glossary with explanations of specific browse terms and general nutrition terms. There is also a list with useful books and other publications for further reading and a list of valuable websites.

The Browse Book costs 10 Euro excluding postage, and is available in both Dutch and English. To order a copy, email Dennis Blomjous, treasurer of the Dutch Zoo Keeper Federation, at D. Blomojous@Rotterdamzoo.nl.

WE ARE SAD TO ANNOUNCE that Volker Gatz (1968–2012), team member of Dortmund Zoo, Germany and keeper of the European studbook for the South American fur seal died on 5 July following a severe disease against which he had battled for the past five years, *writes Dr Frank Brandstätter, Director, Dortmund Zoo*. Volker was not only a staff member of Dortmund Zoo but a highly professional zoo biologist who contributed a lot of important work to the international zoo world.

Volker trained at Hannover Zoo and worked there for the first years in his professional life. From 1991 on he was a member of Dortmund Zoo's staff, where he specialised in marine mammals and was responsible for animal training and population management not only for fur seals but also for Californian sea lions and giant otters. The current success with giant otter breeding is one of the results of the work he did with his wife Sheila Sykes-Gatz.

Volker's work for the zoo and animals was everything to him: it was what he was most happy doing and what he had dedicated his life to. Being able to continue to do this work during his fight with cancer was the most important thing for him. We will always remember Volker as such a vital being, and a fine person. Wherever he is now, we wish him happiness and freedom.

TOUCH TABLES WITH BIRDS, FEATHERS, NESTS AND EGGS

EDUCATIONAL POLYGON WITH OBSTACLES

ZOO LABORATORY – DUCK SCHOOL

GOING THE DISTANCE

WORLD MIGRATORY BIRD DAY (WMBD) has been celebrated throughout the world during the second weekend in May since 2006, *write Andrea Bracko, Zoological Director, and Kresimir Kovačec, Educator, both of Zoo Zagreb*, which joins the global initiative each year. Its purpose is to raise awareness of the need for protection of migratory birds and their habitats as they belong to one of the most sensitive of all animal groups. The number of WMBD events is rising every year, and in 2012 over 250 events in 78 countries were organised.

The emphasis on a particular theme or a problem that migratory birds encounter on their lifetime journey varies from year to year: the importance of birds as indicators of the status of biodiversity; obstacles built by man – such as windfarms or powerlines – that birds come across on their flight; Critically Endangered species of migratory birds; human land use and its direct impact on migratory bird populations; or problems that birds face with global warming.

This year's theme reminded us of the interesting life of these world travellers through the amazing relationship that is being developed between migratory birds and the people who have found inspiration from them throughout history.

Different activities were organized at Zagreb Zoo: exhibits, games, workshops, birdwatching – but the educational corner using feathers, nests and eggs drew the most attention. Learning through play isn't difficult for anybody so the most popular activity among children was an educational polygon with obstacles named 'Fly over if you can'. Children could test their skills and learn about obstacles that birds come across on their long journeys.

In addition, experts from the NGO BIOM (Association for Biological Research) participated in the event and organised 'migratory bird research corner' where visitors could learn about ornithology, their camps and research projects while watching storks' youngsters in their nests.

KRESIMIR KOVAČEC

CHESTER ZOO'S SOUTHEAST ASIA SYMPOSIUM

ON 28 APRIL, CHESTER ZOO had the privilege of bringing together international conservation experts working in Southeast Asia for a special event in aid of the EAZA IUCN/SSC Southeast Asia Campaign, *writes Cat Barton, Assistant Conservation Officer, Chester Zoo*. Featuring vet and wildlife presenter Steve Leonard as guest host, the Southeast Asia: Threats, Challenges and Successes symposium explored the amazing biodiversity of the region and highlighted conservation action in progress in the area.

Asian elephant expert Simon Hedges gave an interesting and informative presentation on securing human-elephant coexistence, focusing on his work in Sumatra in partnership with Chester Zoo. Vincent Nijman then gave a thought-provoking, and shocking, insight into the extent of the illegal wildlife trade and the issues behind it following his many years of work in the region. Taking us on a journey through the Bornean rainforest, Nick Garbutt's fantastic use of imagery reminded us why we need to work to protect these beautiful places. Our last speaker was rhino lover and fundraiser Cathy Dean who presented the projects which she, as Director of Save the Rhino International, is proud to be involved in. Cathy updated us on the conservation actions for the two most threatened rhino species – the Sumatran and Javan rhinos.

It wasn't just the external speakers who got involved in the day. Film clips from Southeast Asian conservation projects were screened including Chester Zoo's active involvement in reconnecting fragmented Bornean forests for orangutans. Chester Zoo keepers also held a lively Q&A session, with open discussions on our Southeast Asian species.

The speakers took us on a rollercoaster day of emotions, and delegates couldn't fail to be inspired by the work being carried out in the region. The event was a huge success, fulfilling its dual purpose of fund- and awareness-raising for the EAZA campaign.

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WELCOME to the new members approved by Council in Munich on Sunday 29 April 2012. Additionally, EAZA would like to welcome Parco Faunistico Le Cornelle in Italy as Temporary Member. EAZA is also pleased to welcome Zoo Garden Bitola from Macedonia, Yereven Zoo from Armenia, Gradina Zoologica Brasov and Tirgu-Mures Zoo from Romania as Candidates for Membership.

MANOR HOUSE

Director: Colin MacDougall and Anna Ryder Richardson
Contact: Catherine Anderson
Tel: +44(0)1646 651 201
Email: info@manorhousewildelifepark.co.uk
Website: www.manorhousewildelifepark.co.uk
Shortname: PEMBROKESHIRE

Built around an 18th century manor estate, Manor House Wildlife Park began in the 1970s as a leisure park for visitors to the nearby Welsh holiday destination, Tenby. However, it was not well managed and quickly fell into disrepair. In 2008 it was purchased by the current owners, Anna Ryder Richardson and Colin MacDougall. From that point to today, Manor House has seen a drastic improvement, with a complete renewal in every part of the facility. Animals have been given as much freedom as possible, and animal-centric design is used throughout the park. The park holds animals from six EEP and three ESB programmes, and has the potential and intention to contribute to EAZA 's commitment to biodiversity by participating in these programmes in the future. A conservation education programme, focusing on IUCN Status and EEP animals, is present throughout, and a commitment to ethically and environmentally friendly trading influences many decisions.

manor house wildlife park

Date of reopening: August 2008
Size: 20ha
Staff: 31
Number of species: 16
Number of visitors: 100,000+ (2011)
Organisational type: Private

ZOO GYOR

Director: György Andréka
Contact: Eszter Ponty
Tél: +36 (0)96 618 367
Email: zoogyor@zoogyor.com
Website: www.zoogyor.com
Shortname: GYOR

ZOO GYOR
XANTUS JÁNOS ÁLLATKERT

After being rebuilt after a flood in 1967 as a zoo focusing on Hungarian species, the zoo created a new plan of renewal in 1996. After showing positive growth, the city offered them even more space to create the modern version of Zoo Gyor. This includes the newly opened 'Fules Bastya' – an education centre – creating a great opportunity to raise awareness for school children/visitors and to promote the zoo. Zoo Gyor also participates in wildlife rehabilitation, and is a member of the Hungarian Zoo Association. The zoo has ambitious plans to continue their renewal, including creating geographically themed areas. With their pro-active approach, the positive spirit, and overall improvement, Zoo Gyor is an example of how the EAZA Candidate for Membership programme can bring about real, positive change in welfare, education, and standards in European zoos.

Date of opening: 1959 (at current location 1967)
Size: 9ha
Staff: 31
Number of visitors: 120,000
Organisational type: Municipal Government

NOTICEBOARD

MEPS' VISITS

IN APRIL A REQUEST WAS SENT out from the EAZA Executive Office for collections to contact their regional Members of the European Parliament (MEPs), *writes Gary Batters, Director of Conservation and Education, Banham Zoo and Africa Alive!* The idea was to ensure that the MEPs were aware of the important work zoos and aquariums are doing, and that when it comes to animal husbandry we are the experts – with more than one billion visits in the past decade we can prove that professional zoos and aquariums are supported by EU citizens.

This is a very brief report which I hope will encourage others to make contact with their MEPs. I had expected it to be a bit of a challenge to get these busy individuals to the zoos but the reality was that it is actually very easy! Using contact details at www.europarl.europa.eu, we sent a brief letter inviting the relevant MEP to visit the zoo or park to discuss our work and then waited for a response. Three out of six MEPs covering the Eastern region of England replied and arranged a visit.

Two MEPs have visited so far, one to Africa Alive! and the other to Banham Zoo. We still need to arrange a date for the third visit. The programme for the days included a presentation on the history of the two collections, our importance to the local economy and local employment, how we fund our work, the size and scope of the animal collections, background on how captive breeding programmes are managed, how many programmes we are involved in and how many conservation important species we hold.

Next we discussed the *in situ* involvement, and how we support conservation in the wild. We also presented a case study on one of those projects. An information pack covered all the topics presented. This was followed by a tour of the site, a look at our education work and a keeper feed talk – followed by a nice lunch!

The first MEP to attend had committed to a 2 hour visit and stayed for over 4 hours! It was obvious that both MEPs had only a basic knowledge of what we are doing in EAZA collections and I was reassured by their absolute interest in what we are trying to achieve. I think the visits have been very, very useful!

GARY BATTERS WITH STUART AGNEW UK MEP ON A VISIT TO AFRICA ALIVE!; VICKI FORD UK MEP ON A VISIT TO BANHAM ZOO

EAZA STRATEGY 2013-2016 This year the EAZA Strategy 2009-2012 will formally come to an end. Earlier this year 100 attendees gathered at a special two-day EAZA Spring Council and Directors' Day 2012 meeting, generously hosted by Münchner Tierpark Hellabrunn in the beautiful surroundings of Lake Chiemsee, with the aim of shaping the focus and direction of EAZA's future strategy for 2013-2016. To this end, attendees participated in a series of facilitated group and plenary discussions addressing key prioroties for the future identified by consultation with EAZA members throughout the previous year.

Topics included structures of governance and the engagement of members; EAZA and the EU; sustainable animal populations; and, EAZA and Education. Detailed notes were taken from each discussion, and all contributions were recorded. These records were then compiled into a rough document which was circulated to all Directors' Day attendees for comments and approval as an accurate record of the outcomes of the conference sessions. A first draft strategy based on the outcomes from the Directors' Day discussions and the preceding strategies was subsquently circulated to attendees and EAZA Council in July for feedback. A final draft will be presented to EAZA Council for approval at the EAZA Annual Conference in Innsbruck in September.

The EAZA Strategy 2009-2012 is available to download from the members area of the EAZA website.

DOUBLE MOOSE

EURASIAN ELK (*Alces alces*), also called moose, do occasionally give birth to twins as was revealed at ZSL Whipsnade Zoo in May, *writes Nick Lindsay, Senior Curator, ZSL Whipsnade Zoo*. After a gestation period of 226 days, Whipsnade's pair had their second birth since their arrival in the spring of 2010. Following a singleton called Chocolate in May 2011, the twins – Caramel and Toffee – were born in the late afternoon and have thrived since. The names, incidentally, relate to the coat colour and not dietary preferences of the keepers.

The 3-year-old sire, Melker, was donated

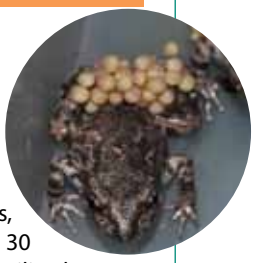
RASHMI IS NEW RAY OF LIGHT

AT THREE DAYS AND RIGHT, AGED 15 MONTHS ©PAVEL VLČEK

by Skansen and the dam at the same age, Minnie, from Bern, and they have proved to be an excellent pair. Since the first birth the pair was only put together for mating late last year as the male is aggressive towards his young male offspring, but he is quite settled within sight and sound of the female and young.

As well as a standard pellet diet the elks at Whipsnade get fresh conifer browse through the winter, switching to deciduous browse in the spring. They are kept on grass paddocks throughout the year and will graze on the paddock grass that is kept short through the year.

BETIC MIDWIFE TOAD: A WORLD FIRST



IN THE FIRST WEEK OF APRIL 2012, 18 Betic midwife toad (*Alytes dickhileni*) tadpoles hatched at BIOPARC Fuengirola, *writes Gonzalo Fernández Hoyo, Director of Animal Collections and Conservation, Bioparc Fuengirola*. It is the first time that captive breeding has ever been recorded for this species. The hatching took place within a captive breeding colony that is part of a comprehensive conservation project for these species carried out by Fundación BIOPARC.

The purpose of the *ex situ* part of the project was to create a captive colony that could be used for reintroduction. An off-exhibit biosecurity room was built, and 20 tadpoles were collected in 2010 from the Sierra de Tejeda natural park, with permission from the regional government of Andalucía. It is worth noting that these tadpoles are huge compared to full-sized adults, a remarkable characteristic of the *Alytes* genus. Another peculiar adaptation is that males care for the eggs, carrying them between their rear legs for a month, and releasing them in the water when they are ready to hatch. This unique adaptation led to *Alytes* being named the 'midwife toad'. Since males cannot carry hundreds of eggs, unlike many other species, the females lay only 20 to 30 eggs, which are then fertilised, collected and carried by the male. The whole process takes place on dry land, another unique adaptation of these amphibians.

The Betic midwife toad is one of five midwife toad species living in the Western Mediterranean region. Recognised as a unique species as recently as 1995, it is also considered by Amphibian Ark to be one of Europe's 10 most endangered amphibians. The species distribution habitat in Southeast Spain is restricted to montane forest, and highly fragmented. Habitat degradation and lack of information about its biology now have a deadly ally which is threatening the existence of the Betic midwife toad: *Batrachochytrium dendrobatidis*, the lethal fungus that is decimating amphibian populations world-wide.

DESPITE KEEPING ELEPHANTS SINCE THE 1930S, none of the Czech (and Slovak) zoos has been successful in breeding elephants so far, *writes Jana Pluháčková, Curator, Ostrava Zoo*. The only successful pregnancy that occurred for 21-year-old cow Delhi in Ústí nad Labem Zoo in 2004 resulted in a stillbirth.

Originally, at Ostrava Zoo, only solitary elephants were kept, in an old unsuitable house (1956-1991). Then, in 2004, a new elephant house following EEP guidelines was opened. In 2009, two Asian elephant cows– Johti (42) and her daughter Vishesh (12) from Belfast Zoo – were mated by 23-year-old bull Calvin (from Hannover Zoo) and became pregnant. Both pregnancies took place without problems and we went ahead with birth preparations in accordance with the guidelines.

Although Vishesh was mated two weeks later than Johti, her labour started first. A male elephant Sethi (meaning 'the first one' in Bodo language) was born on 11 March 2011. He was rather small and barely able to suckle. It is important to say that Vishesh was primiparous, and had never seen any births before. Unfotunately, Vishesh became more nervous and even aggressive towards Sethi. Thus, we had to provide bottle-feeding while the calf was protected but still in contact with his mother.

On 12 April 2011, Johti gave birth to her fourth calf – a female Rashmi ('ray of light' in Hindi). At birth, she was twice as big as Sethi had been at one month old. We hoped that Vishesh would calm down and, seeing her mother Johti taking care of her baby, would learn how to treat her own one. Unfortunately, it was too late for Sethi who sadly died on 6 May.

Rashmi is now a 15-month-old healthy, playful little elephant weighing 680kg. And she is even more – a promise that more baby elephants will come from Ostrava.

BIRTHS AND HATCHINGS

JAMIE CRAIG, COTSWOLD WILDLIFE PARK

A UK WOLVERINE FIRST

COTSWOLD WILDLIFE PARK is delighted to announce the first successful breeding of wolverines (*Gulo gulo*) in the UK, *writes Jamie Craig, Curator, Cotswold Wildlife Park*. Our female, Sharapova, arrived at the Park in 2009 from Moscow Zoo and was joined later in the year by a young male, Sarka, from Nordens Ark in Sweden to form a new pair within the EEP. The introduction was reassuringly uneventful and when the pair was observed mating the following spring, we awaited the results with bated breath.

During January 2012, the female was observed making repeated visits to the den site and on the 26th, she did not come out as usual for her morning feed. We were fairly confident that she had given birth but it seemed an awfully long wait until on 27 March the first head appeared at the den entrance. Over the next few days and weeks, the female began to allow what turned out to be three healthy kits to make short excursions around the outside of the den and they grew rapidly.

At no point during the birth and rearing process did we remove the adult male from the exhibit and he has proved to be an exemplary father – giving up food to the kits when they first emerged from the den and now, as a rather reluctant and harassed playmate. It has also been an extremely useful project for keepers to maintain a detailed record of events to assist us in our knowledge of these animals for the future. We hope that the 3 kits – Niemi, Ensin and Nalka – will go on to be important animals in the EEP population.

TERRA NATURA PARK IN BENIDORM has reasons to celebrate, *writes Elisa Gozalbes, Curator, Terra Natura*, with the birth of Spain's first Indian rhino calf on 8 February. In August 2007, Nico, a bull from Rotterdam, arrived at Terra Natura to share the enclosure with the two females already there. It was in October 2010 when, at last, a coupling between Nico and Shiwa succeeded. It was something we had been looking forward to, and Susto, as we named the baby, came with a lot of work for the team of keepers, vets and technical staff.

There was initially cause for concern when he tried to stand up but couldn't, so the team milked Shiwa to give the baby the best milk, and to get the mother to continue producing milk in case the baby started suckling by itself.

It worked! Thanks to the great rapport we have with the female rhinos, trained to lie down on command and to be calm when we examine them, we could stay with her and with the baby, and we milked her without any problem.

In the end, he learned to stay on his feet, and some hours later, could stand by himself. By day two he weighed only 45.5 kg. This explains why he was a little weak as calves are usually 60kg at birth.

We bottle-fed him with his mother's milk most of the time, and used foal powder milk when it was not enough. We noticed he sometimes looked at and even held his mother's teats, but without suckling. Step by step he spent more time under his mother, and finally, two weeks after birth, he suckled by himself. We kept bottle-feeding him for a while, to make sure that he was getting enough nourishment, and slowly reduced the frequency and number of bottles, to zero.

MULTIPLE MONGOOSES

DURRELL WILDLIFE CONSERVATION TRUST has recently celebrated the birth of not one but two narrow-striped mongoose (*Mungotictis decemlineata*) infants, born just two weeks apart to separate pairs, *writes Mark Brayshaw, Head of Animal Collection, Durrell Wildlife Conservation Trust*. Both mothers have been caring for their infants since their arrival.

Durrell has held this species since 2003, when the first individuals arrived from Berlin Zoo, but until now, breeding success has been limited – only one female has previously had a surviving offspring, and this infant had to be hand-reared and reintroduced to her mother once older. None of the other female's earlier offspring survived, so these successful rearings are particularly significant.

Little is known about breeding the species in captivity and only very sparse information is available about their behaviour and ecology in the wild. Two large, extensively planted enclosures have recently been constructed at Durrell Wildlife Park that provide the animals with natural foraging opportunities.

Durrell keepers are implementing a 'hands-off' approach to reduce stress to the mothers, so as yet the sex and weights of the babies are unknown. As narrow-striped mongooses, endemic to Madagascar, are under threat in the wild from loss of habitat and are only kept in a handful of institutions, Durrell is taking no chances with these two! Now that the elusive goal of getting mother narrow-striped mongooses to rear their own offspring has at last been achieved at the park, Durrell hopes to continue this success in the future.

Saving the Mekong giant catfish

THIS ARTICLE IS PART OF OUR SERIES ON THE SIX FIELD CONSERVATION PROJECTS THAT PROVIDE AN EXAMPLE OF THE KIND OF WORK THAT WILL BE SUPPORTED BY THE EAZA IUCN/SSC SOUTHEAST ASIA CONSERVATION FUND

Victor Cowling, Landscape Manager, WWF Lao PDR & Mirko Marseille, Executive Coordinator Communications and Membership, EAZA

At over 300kg and 3m in length, the Mekong giant catfish (*Pangasianodon gigas*) is one of the largest freshwater fish in the world, yet it is listed as Critically Endangered on the IUCN Red List of Threatened Species. Little is known about its ecology and migratory behaviour, and even the actual spawning sites have yet to be discovered, although many believe the section of Mekong River between Chiang Rai (Thailand) and Bokeo (Lao PDR) Provinces is a critical area. This stretch of the Mekong River also supports a range of other vital riverine habitats beneficial to other important fish species of the Mekong, such as the Mekong stingray and the giant dog-eating catfish.

The wild populations of the catfish and hundreds of other animals are threatened due to a number of factors such as increasing fishing pressure, destructive fishing gear, loss of critical habitats from navigation improvements, and hydropower dams planned for the Mekong mainstream. With 11 dams planned on the lower mainstream of the river, the work to conserve this species becomes more challenging than ever.

The giant catfish may grow rapidly as a juvenile fish, but it takes several years to become mature enough to spawn in the wild. During this period it is extremely vulnerable to unsustainable fishing pressure which threatens the annual recruitment of this critically endangered freshwater fish. In this sense the Mekong giant catfish is an indicator for the health of the ecosystem of the Mekong. A period of unsustainable and increasing levels of targeted fishing pressure began in the late 1980s up to the late 1990s near the spawning habitat of giant catfish in the upper Mekong of Lao PDR and Thailand. During this period the landings of giant catfish peaked and then crashed. For three consecutive years from 2001 to 2003, no Mekong giant catfish were caught in this area. Since the drastic decline in annual catch from a record high of 71 landings in 1990 to zero catch a decade later there has been increasing interest in conservation efforts by local communities and government agencies.

ZEB HOGAN

JOINT APPROACH

The project applies (over five years) the Fisheries Co-management Guidelines developed by WWF and the government agencies. Fisheries co-management is a collaborative approach that establishes power-sharing arrangements between communities and government authorities. The fisheries co-management process relies upon the understanding, support and participation of the local communities. The steps outlined in the guidelines emphasise the importance of consensus-building within and between communities to ensure ownership of results and sustainability beyond the lifetime of the project.

One challenge is the institutional arrangements and legal framework needed to support the rights of communities in Thailand and Lao PDR to implement this form of fisheries co-management in the river along the border between the two countries. The plan is to encourage four pairs of villages, one from each side, to join together in fishery conservation work. WWF will support this through providing technical and managerial expertise, essential capacity-building, guidance in monitoring and evaluation and support for any management that is needed. All this will be undertaken with community participation and in close collaboration with appropriate fisheries authorities. Another important objective of the project includes the establishment of a moratorium in catch of the Mekong giant catfish for scientific purposes in Thailand and Lao PDR Laos.

WWF, with a grant from the US Embassy, is also undertaking a new study to determine the viability of tagging and satellite tracking the Mekong giant catfish, and other migratory species found in the Mekong River. It is hoped that a successful tagging programme will reveal how far the catfish travels during its migration, and what it consumes to reach such massive proportions. The six-month study will determine whether pop-up satellite archival tags (PSATs) can be used to track Mekong giant catfish. PSATs are mainly used to track the movements of large, migratory marine animals, and have never before been used in rivers. Location, depth, and temperature data held in the PSAT can be used to answer questions about migratory patterns, seasonal feeding movements and daily habits.

LEARN MORE

EAZA IUCN SSC Southeast Asia Campaign: www.southeastasiacampaign.org

Save the Mekong Coalition: www.savethemekong.org

WWF Greater Mekong programme: http://wwf.panda.org/what_we_do/where_we_work/greatermekong/

The difficult life of a shy giant

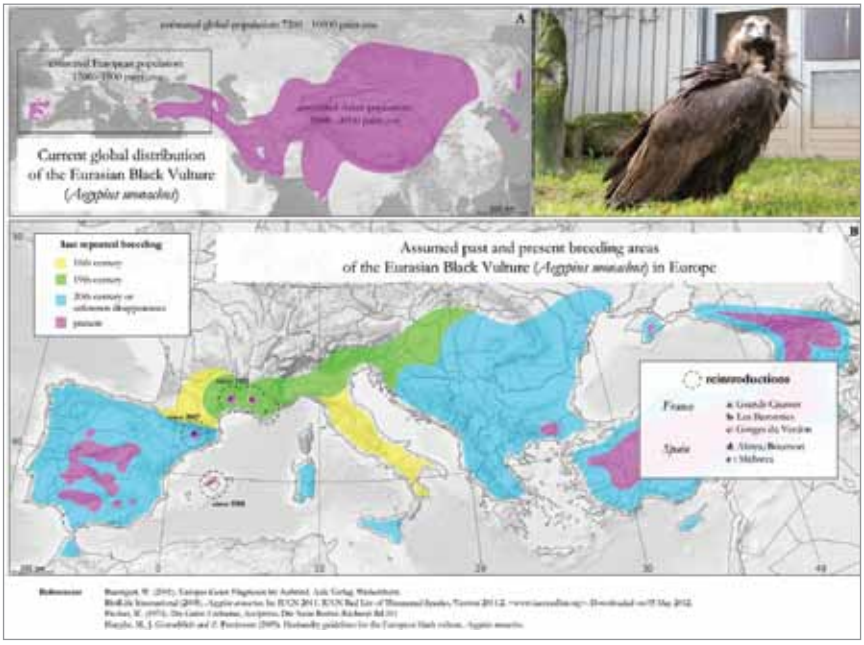
A REVIEW OF THE CAPTIVE CARE AND REINTRODUCTION OF THE EURASIAN BLACK VULTURE

Katja Wolfram, PhD candidate on mate choice in Eurasian black vultures, Centre for Research and Conservation/Antwerp Zoo; Marleen Huyghe, bird curator Wild Animal Park Planckendael and Antwerp Zoo, EEP coordinator and studbook keeper for the Eurasian black vulture

With a wingspan up to 2.95m and a weight of 12.5kg, the Eurasian black vulture (*Aegypius monachus*) is the largest and one of Europe's most impressive raptor species. Its current wild distribution extends from Southern Europe to Central Asia, yet former breeding sites in Northern Africa and most of Central and Eastern Europe have been lost in recent centuries, leaving fewer than 2,000 pairs in two major wild populations in Europe. Given this serious status, the Eurasian black vulture is considered Near Threatened at global and Vulnerable at European level by the IUCN's Red List.

Alarmed by the dramatic loss of wild European populations, international forces joined in an ambitious breeding and reintroduction programme for the Eurasian black vulture (which is also known as the cinereous vulture in reference to its plumage colour) in 1987. This EEP aims to generate captive-born young by concentrated and coordinated captive breeding, ideally to sustain a genetically healthy and diverse captive population that does not require supplementation from the wild, and to produce a surplus of young vultures in captivity. These young can then supply reintroduction programmes overseen by the Black Vulture Conservation Foundation (BCVF) which campaigns for the species' return to former habitats, especially in Southern Europe. The EEP for the Eurasian black vulture is coordinated by Marleen Huyghe at Wild Animal Park Planckendael, Mechelen/Belgium.

Reintroductions to the bird's former natural habitats have been very successfully carried out by the BVCF in cooperation with the EEP on Mallorca since 1988, in France since 1992 and on mainland Spain since 2007. For example, Jean and Julia, two young hatched at Planckendael in 2008,



WILD DISTRIBUTION OF THE EURASIAN BLACK VULTURE. FOR DETAILS SEE TEXT. PHOTO: K. WOLFRAM

were released in the Verdon Gorge in Southern France as nestlings, and have thrived. Being released at an early age, weeks before their first flying attempts, young vultures become familiar with the well monitored release sites, which aims to encourage their future return, or even their permanent presence. Ideally, this so-called 'release by hacking' attracts further wild vultures into the region and accelerates repopulation. Jean and Julia, both turning four years of age in 2012, are at the onset of sexual maturity now, and hopefully will soon contribute to repopulating Southern France with their partners. Since spring 2011 the rumour is that Jean has found a girlfriend: he was repeatedly seen accompanied by an unknown wild exogenous female with nesting material at various sites – a great success!

TRIALS OF CAPTIVE BREEDING

The Eurasian black vulture has been bred in captivity in European zoos since the early 1980s, with initial successes at Berlin Tierpark, Germany; Zoo La Garenne, Switzerland; and Antwerp Zoo, Belgium. In Belgium, the first young hatched in May 1981, to be followed by eight further chicks over the years at Antwerp and the associated Wild Animal Park Planckendael. Four were subsequently released as youngsters to the wild. Within the EEP adoptions have also been successfully made, allowing reliable parents in breeding mood but without their own chick to adopt and foster orphan chicks. Up until now, 12 adoptions have been arranged among EEP institutions with three failing due to nestling loss in the initial weeks, three contributing to the captive population and six greatly succeeding and even leading to reintroduction of young to the wild.

Contrary to the successful reintroductions, the EEP's captive breeding programme suffers from a very limited success rate – a mere 21% of captive laid eggs successfully developed into young in the study period 1984 to 2004. The majority of captive breeding failures resulted from unfertilised

or damaged eggs, both indicative of a poor pair bond. Management changes implemented to account for the sensitive and nervous nature of this highly disturbance-intolerant species aim to reduce the fraction of damaged eggs, but captive breeding success remains low. In contrast, wild populations in Europe demonstrate that the very low breeding success in captivity is not a typical feature of the Eurasian black vulture: breeding success for a population in Spanish Extremadura is reported at up to 70%, and even up to 90% for secluded Spanish populations.

Several biological features of the species compound problems with breeding in a captive programme: no clear morphological differences between sexes, immense life span with late sexual maturity, long reproductive cycles with only one small clutch of just a single egg and monogamy with extensive bi-parental care for nest, egg and young. Accordingly, low quality of pair bonding behaviour appears to correlate with breeding failure in first analyses. After all, whether or not chemistry is good between two Eurasian black vultures in the EEP cannot (yet) be inferred from the studbook.

To help in making the 'right' choice of partner, dating aviaries were introduced at Planckendael in the mid 1990s. The idea behind this type of husbandry is to house several young unattached vultures of both sex together, and leave all mate choices to occur spontaneously. Instead of a human matchmaker deciding for them, chemistry between two individuals will tell whether they pair off and can be moved to a more private breeding enclosure. The concept has repeatedly proven successful, for example, with young male Franc whose parents found each other in Planckendael's dating aviary in 2006 and soon moved to Ostrava Zoo, Czech Republic, as a pair. Franc hatched in 2009 in Ostrava and was released in the French Verdon Gorge the same year. Standardised observations, initially established for individuals in Planckendael's dating aviary, are now carried out during breeding seasons in various EEP zoos by scientific staff, keepers and students to better understand development and quality of pair bonding behaviour in Eurasian black vultures.

GENDER CONFUSION

With apparently inaccurate data on individuals' sex and origin in the studbook, the EEP is facing a problem of unexpected extent. Wrong information on sex is mainly a consequence of the nearly indistinguishable morphology of the male and the marginally larger female, but is also due to their immense life span in captivity (around 40 years), and the only comparatively recent availability of DNA-based sexing. Genetic sexing nowadays allows reliable sex determination, can be done without much effort from shed feathers, and is an ideal method for this highly nervous species. At Antwerp Zoo, genetic sexing is done free of cost for any Eurasian black vultures on a

RELEASE OF PLANCKENDAEL'S YOUNG EURASIAN BLACK VULTURES JEAN AND JULIA IN FRENCH VERDON GORGE BY HACKING METHOD IN 2008. TRANSFER OF YOUNG AT AGE 80 TO 85 DAYS WHEN ABLE TO EAT INDEPENDENTLY, BUT UNABLE TO FLY YET (A AND C). MICROCHIPPING (B) AT HOME, BLEACHING OF FLIGHT FEATHERS ACCORDING TO A UNIQUE PATTERN (E AND I) AND TAGGING WITH CODED PROJECT RINGS AND OFFICIAL RINGS (F) AT RELEASE SITE. PLACING JEAN AND JULIA ON A NATURAL ROCKY PLATFORM (D AND G), BOTH TIGHTLY MONITORED AND CATERED BY FRENCH BIRD CONSERVATION ORGANIZATION LPO UNTIL AIRBORNE. FIRST FLIGHT ATTEMPT OF JEAN AND DEPARTURE FROM PLATFORM AT AGE 112 DAYS (H) FOLLOWED BY JULIA AT AGE 117 DAYS. PHOTOS A-H: WILD ANIMAL PARK PLANCKENDAEL; PHOTO I: LPO PACA

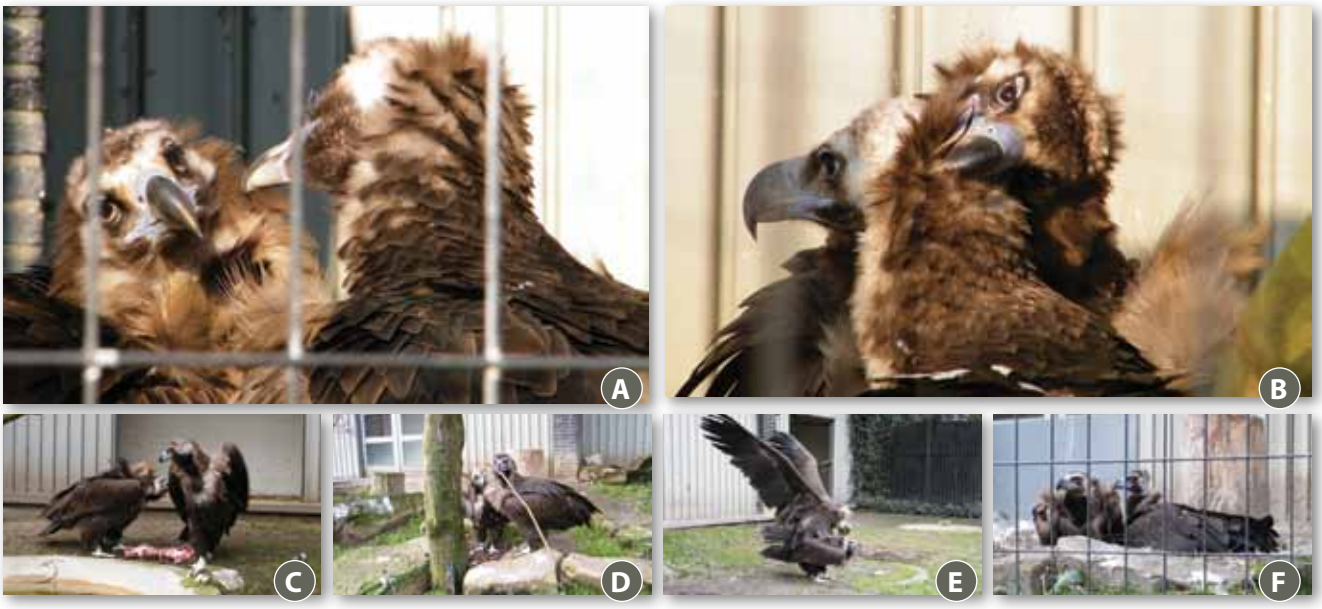
routine basis using either feathers or blood. Previous results have revealed cases of supposed long-term pairs in the EEP studbook that are actually same-sex alliances, mostly two females. Without male contribution, obviously, eggs from same-sex pairs are bound to remain unfertilised. For the EEP breeding programme incorrect data on sex is devastating. Furthermore, current studies suggest that information on the origin of EEP individuals and their ancestors are sometimes also questionable, and indicate that a large fraction may not have European roots but rather an Asian background, thereby contradicting studbook data. Accurate knowledge of origin is not only crucial for captive population management by the studbook manager, but also highly relevant for European reintroduction campaigns. After all, one would like to know who is released from captivity back into nature for the sake of the reintroduced bird and the local populations.

(A) NEW DATING AVIARY (870 M^2) INTRODUCED IN 2012 AT WILD ANIMAL PARK PLANCKENDAEL, MECHELEN/BELGIUM. (B) ARRIVAL OF THE FIRST FOUR DATING CANDIDATES.

GENETICS TO THE RESCUE

The key focus of scientific research on genetics underlying mate choice in the Eurasian black vulture is the major histocompatibility complex (MHC). MHC, most popular for playing a central role in the immune system, is involved in numerous biological processes. Its relevance in mate choice has been addressed across a diverse range of species, including rodents, primates and birds. Criteria driving mate-choice in Eurasian black vultures are being studied by the CRC at the Zoo of Antwerp in captive and wild pairs. In addition, EEP studbook data on sex and origin are being genetically verified and general relationships of EEP individuals assessed. Data on physical health and on chemical communication between partners is also being collected. Along with behavioural observations, these concentrated efforts will eventually tell what shapes pair bonding and hopefully provide guidance for future matchmaking in the Eurasian black vulture. Scientific research will furthermore benefit wild populations with an improved understanding of their structure and necessary conservation actions.

The work of Antwerp Zoo's Centre for Research and Conservation on the Eurasian black vulture will be presented by Peter Galbusera at the meeting of the EAZA Research Committee at the EAZA Annual Conference 2012 taking place in Innsbruck in September. If readers of this article have access to Eurasian black vultures and would like to support our research with feather samples or request our help in free genetic sexing, please contact the authors.



SOME PAIR BONDING BEHAVIOURS RECORDED DURING BREEDING SEASON PER STANDARDISED OBSERVATION PROTOCOLS AT ANTWERP ZOO. MAIN FOCUS IS SET ON GREETING (A) AND MUTUAL PREENING BEHAVIOURS (B), ON AGGRESSION (C), NEST BUILDING (D), COPULATION (E) AND INCUBATION ACTIVITIES (F). PHOTOS: K. WOLFRAM.

It's good to talk

IN JUNE THIS YEAR, EAZA EXECUTIVE DIRECTOR LESLEY DICKIE ATTENDED THE ANNUAL DIRECTORS' MEETING OF THE CHINESE ZOO ASSOCIATION IN SHANGHAI AT THE REQUEST OF THE ASSOCIATION AND ANIMALS ASIA. ANIMALS ASIA SPECIALISES IN IMPROVING WELFARE THROUGHOUT ASIA WITH BOTH DOMESTIC AND WILD ANIMALS. HERE, DIRECTOR DAVID NEALE -PRESENTS A REPORT ON THEIR WORK WITH ZOOS IN CHINA

David Neale, Animal Welfare Director, Animals Asia

Over the last 18 months or so, the government body that regulates zoos in China has engaged with Animals Asia to improve animal management practices and welfare standards. The China Association of Zoological Gardens (CAZG) has established a dialogue that has seen a programme of workshops set up to develop new skills and practices.

In zoos and safari parks across China, many animals are housed in barren concrete enclosures with little or no enrichment. In many cases, animals show behavioural problems due to inappropriate management and a lack of knowledge of species-specific needs. For over a decade, therefore, members of the Animals Asia team have been conducting investigations at Chinese zoos and safari parks to identify animal welfare concerns. These have been reported to the management of the zoos, and to government authorities. We've also organised a series of animal management and veterinary skills workshops for zoo animal management staff and veterinarians across China, held at our moon bear rescue centre in Chengdu.

Then, in 2011, CAZG expressed a desire to collaborate on a series of events that would explore animal management practices to improve the welfare of captive animals, and introduce these concepts to Chinese zoos. Animals Asia therefore arranged for a number of senior CAZG figures to meet with the directors and staff of London, Chester and Bristol zoos and the British & Irish, European and World Zoo associations, and discuss international exchange programmes to build further welfare capacity within the Chinese zoo industry.

ANIMALS ASIA ANIMAL MANAGEMENT TEAM DEMONSTRATING CONSTRUCTION TECHNIQUES TO ENRICH BEAR ENCLOSURES WITH WOODEN CLIMBING STRUCTURES.

These meetings involved a number of influential figures in China's zoo industry including the Secretary-General of the CAZG, Vice-Director of Beijing Zoo and the Director of Shanghai Zoo.

The meetings discussed issues that affect the welfare of animals in captivity, including improved enclosure design, encouraging the exhibition of natural behaviours, enrichment, conservation education, marketing, and research programmes. The role of zoo associations in developing management standards and monitoring welfare at member zoos was also discussed. The CAZG are currently developing management standards, which will be shaped in light of this information exchange.

WHAT NEXT?

We're now seeing increased commitment not only from China's zoo authority, but also its member zoos, to improve animal welfare. At the June workshop [see box], the CAZG called on those present to explore the techniques presented and improve welfare standards by further developing these skills in their zoos. And Chinese zoo directors expressed the need to assess and ultimately improve the welfare of animals.

Animals Asia continues to work with the CAZG and the international zoo community to encourage the development of management standards that provide for the physical and behavioural needs of captive animals, and to bring animal welfare concepts that have been developed and implemented in zoos globally into the Chinese zoo management system. We're seeing this very positive dialogue turn into a real chance for increased welfare for animals at zoos across China.

ONGOING WORKSHOPS

In April 2012, Animals Asia and the Shape of Enrichment worked with the CAZG to organise a four-day enrichment workshop for animal managers from 25 Chinese zoos and safari parks. Shape instructors, Valerie Hare and Jackson Zee gave lectures on environmental enrichment that enabled attendees to implement enrichment plans in their institutions.

In June 2012, Animals Asia worked closely with the CAZG to provide experts from overseas to attend and speak at the annual zoo director's conference. Dr Stephanie Sanderson, Director of the Living Collection, Chester Zoo spoke about assessing animal welfare and building this into staff training. Dr Lesley Dickie, Executive Director, EAZA spoke on conservation breeding programmes, while Dave Naish, Education Manager, Bristol Zoo spoke on conservation education programmes.

Shai Doron

Position: Director General of the Tisch Family Zoological Gardens in Jerusalem, Israel; Co-Chairman of Israel Association of Zoos; Vice-Chair of EAZA
Hobbies: Late night swimming five times per week; Watching NBA and NFL on TV; fanatical supporter of my local Jerusalem basketball team (HaPoel Yerushalayim)
Last book read: *Between Friends* by Amos Oz about the unique Israeli institution of the kibbutz
Last film watched: *Footnote* – an Israeli film nominated for an Academy Award in the category of Best Foreign Film
Last concert attended: For the last 25 years I have been trying to attend a Bruce Springsteen concert but somehow Bruce and I have never managed to co-ordinate our schedules, so I settled for Barry Sakharov – an Israeli rock singer
Last trip you made abroad: I travel abroad often in connection with my work, but my last private vacation was a long weekend in Berlin, an amazing city despite its disturbing past for the Jewish people

QUESTIONS:

The Biblical Zoo is famous for including species from the Bible in its collection. Are there other ways in which the Bible influences the content and vision of the Zoo?

The main focus of the zoological collection at the Biblical Zoo is displaying animals that are mentioned in the Bible and that used to live in the land of Israel at some point in our history. Sadly, most of them are extinct or facing extinction in the wild. It is hard to believe that only 80 years ago Israel was home to the cheetah, leopard, Syrian brown bear, Persian fallow deer, Nile crocodiles, white Oryx, and a variety of birds of prey. If we go back to Biblical times, this land was home also to the Asian lion and the hippopotamus. The fauna in this country was very rich because this small area was the nexus between three continents – Europe, Asia and Africa. We use the Bible as a basis, not for religious reasons, but as a tool to raise the public's awareness of the need for wildlife conservation. In fact, the first ever account of a wildlife conservation project can be found in the story of Noah's Ark – Noah being in effect the first zookeeper. So, it is no accident that the visitors' centre at the Biblical Zoo is designed to look like Noah's Ark. Because the Bible is meaningful to so many people around the world from different nationalities and religions, it inspires people to want to recreate what used to be found in the wild here. For many, the Bible stories and accounts are magical – the stuff of legends – and this provides us with invaluable leverage for our wildlife conservation and education message. I myself am an atheist but I can appreciate the importance of the Bible to so many people and that it acts as a point of connection in relation to conservation issues. Today, the Biblical Zoo is involved in some of the most important conservation projects relating to local species such as the griffon vulture, the Persian fallow deer, and the white oryx – all of which are mentioned in the Bible and provide the local people with a living link to the history of this area. *NB: in accordance with EAZA Education Standards, The Biblical Zoo does not promote the bible as a factual document.*

The Zoo offers support to both Israeli and Palestinian zoological institutions. Tell us more about this unique approach

At the Biblical Zoo we believe that the interests of wildlife conservation are best served by co-operation between various nature conservation organisations and authorities, both in this region and throughout the world. The Biblical Zoo is a partner in some of the most prestigious conservation projects in Israel like the reintroduction project for Persian fallow deer, and the National Center for Artificial Incubation of Raptor Eggs (including the establishment of an artificial breeding centre and hatchery at the zoo). The Biblical Zoo acts as a support mechanism for conservation projects, breeding and reintroduction projects and research by organisations like the Israel Nature and Parks Authority and the Society for the Protection of Nature in Israel. Examples of such projects include the blind shrimp (a rare crustacean found in only one location in the world – a particular underground spring in the Galilee), and the red kestrel (a small species of falcon). Unfortunately, because of the political circumstances in this region, wildlife conservation is a low priority within the Palestinian Authority. Nevertheless, the Biblical Zoo is making every possible effort to help and support the development and

improvement of the only small zoo that exists in the West Bank (in the city of Kalkilyeh). This includes professional support, hosting their staff members for training programmes, veterinary assistance and forwarding surplus animals (within regulation limits) to new and improved facilities at their zoo. But most of all it is manifested in our warm and friendly day-to-day relationship. The Biblical Zoo is probably the only attraction in Israel that thousands of Palestinians regularly visit every year. For many of them, this is their only opportunity to be exposed to wildlife conservation issues. This is why we place such a high priority on education.

The site is indeed famous for people from all backgrounds rubbing shoulders – but how do you create this special environment?

The Biblical Zoo has become famous as a unique meeting place for all population groups that live in and visit the city of Jerusalem. This is the only site in Jerusalem where people of all religions, nationalities and backgrounds feel welcome because it is the only attraction without any historical background that could cause tensions. It is so strikingly uncontroversial that it has been described as an island of sanity in a complicated city full of conflict. It is no accident that the Biblical Zoo consistently tops the rankings as the most popular tourist attraction in Israel.

The Zoo's biggest assets are its visitors. We cultivate the loyalty of our visitors by paying attention to the small things – like the fact that all the zoo signage is in three languages (Hebrew, Arabic and English). Of course this poses a challenge for our graphic design staff! Our brochure and map are also available in three languages, tour guides are multi-lingual and the permanent and senior staff of the Zoo is made up of an assortment of Jews and Arabs – both secular and religious. We strive to be sensitive to everyone's beliefs and we try to avoid controversial subjects. Nature conservation knows no political boundaries and the message that conservation is our shared responsibility regardless of religion or nationality serves to unite us in a common goal.

What role can an animal collection play internationally in education?

The predominant role of a modern zoo is education and a zoo's right to exist derives only from the benefit it provides to its visitors. The zoological collection serves as the basis for educational activities, research and conservation initiatives because it raises the public's awareness of the plight of our environment and the animals with which we share our planet.

Next year the zoo will celebrate 20 years in its new location. Do you have plans to commemorate this milestone?

It is hard to believe that the Biblical Zoo will celebrate such an important milestone next year. Many can testify that the Biblical Zoo became a success story during this period. I personally feel a great sense of satisfaction and achievement because I have been privileged to serve as Director since its opening 20 years ago. Of course we plan to celebrate this birthday in various ways, but the biggest gift for this anniversary is the fact that we have been able to start construction of the first ever aquarium in Israel. There is an abundant need for such a facility in Israel and the fact that we can do something so meaningful in a new direction after 20 years is a testament to our success – this in itself is a reason to celebrate.

ACCREDIT TO THE PROFESSION

Accreditation has been a requirement for institutions applying for membership of EAZA for over a decade, now. In 2011, EAZA Council approved the EAZA Accreditation Programme (EAP) for existing members, and the first accreditations of existing members took place in early 2012. The accreditation process for both new and existing members includes a screening visit to the institution, giving the screening team an opportunity to explore the facility and assess it according to EAZA's minimum standards. For this issue of *Zooquaria* we asked two of our members, one a long-standing existing member and one new to EAZA, both of whom have recently undergone accreditation, for their reflections on the experience.

Glenda Wilkinson, Manor House Wildlife Park

When Anna Ryder Richardson and Colin MacDougall bought Manor House Wildlife Park in early 2008 they knew from day one that EAZA Membership was a major target. And although both were then very new to the zoo world, their mentor Dr Jake Veasey's support helped them see clearly what their mission was.

Four and a half years later, as a date was set for EAZA screening, the park has been transformed – stage one of the regeneration project has just been reached with the completion of the new Rhino House, and the first AI rhino in the UK, three year old Zamba born at Colchester Zoo, is arriving imminently.

The long and at times rocky road to screening has been a huge collaborative effort from a dedicated and hard-working team. And, sometimes against the odds, the progress they have made is impressive, including freer, richer lives for animals who had been displaying stereotypical behaviour, new enclosures, well thought through houses, a radical change to diets and animal management which have produced some exciting new results, a unique interpretation programme for visitors, socially inclusive entry prices, the formalisation of a whole raft of documents, plans, policies and statements and a focus on endangered species.

However, not sure quite what to expect from EAZA, the team decided

KEEPERS ROSS, PAUL AND AMY WITH ANNA (CENTRE) WITH A REMARKABLY

to treat their three-yearly national zoo inspection in October 2011 as a 'dry-run' for the screening visit planned for late spring 2012. The Inspectors were supportive and practical, and it made for an interesting and a usefully insightful day for the whole team. Soooo… the big and looming question, the elephant in the room if you like, was 'is the park ready for EAZA?'

Following the October inspection the whole team walked the park and all comments were considered. Headed up by top management, the keeping and education departments worked on the final stages of the park's preparation for screening. Worklists were drawn up, priorities identified, and Anna personally co-ordinated workloads and led the maintenance team through weeks of next-stage improvements.

The keeping team, with Ross Brown at the helm, played their part. They are a determined and driven bunch – people say they are so good they should be bottled. Colin's role has perhaps been the most difficult, to keep progress on track, co-ordinate contractors, produce on-time installations while maximising the income stream to ensure that conservation goals were not undermined by the regeneration works. There were last minute decorating jobs, too.

LIFELIKE MODEL RHINO AT THE NEW RHINO HOUSE

Overall the screening felt like a very collaborative and positive experience. Everyone at Manor House felt they'd learnt much over the process, gaining insights, picking up ideas, as the EAZA team offered informative feedback. Working towards EAZA accreditation has been important for the whole team at Manor House. They know that they have joined a supportive professional organisation. Their achievements and goals have been recognised, and they very much look forward to working together towards a sustainable future for us all in collaboration with zoos across Europe.

Dr Hans Schmid, Animal Keeping Operation, Zurich Zoo

Zurich Zoo was privileged to be the first European Zoo to undergo the newly developed EAZA Accreditation Programme (EAP) for existing members. After completing the EAZA accreditation questionnaire our director Dr Alex Rübel applied for reaccreditation on 30 January 2012. Subsequently the EAZA Accreditation Coordinator April Adams assembled the screening team with a Swiss zoo expert familiar with local laws, language and customs and an international representative of an EAZA institution that has familiarity with wide-ranging zoo operations. The screening team visited Zurich Zoo between 10-11 April 2012 and conducted the screening process which is based on the questionnaire. Following the recommendation of the EAZA Membership & Ethics Committee, EAZA Council approved Zurich Zoo for Full Accreditation status on 29 April 2012.

The accreditation system is an instrument for EAZA to systematically survey their members, and to assess whether they comply with the minimum standards set by EAZA. This helps to maintain and improve the quality of EAZA members. Additionally, it is of great importance as it allows EAZA members to be seen by the public as competent partners in conservation. These high standards also require members to frequently evaluate their strategies and arrangements, and to accordingly improve their operations resulting in zoos with optimal effectiveness in education and conservation.

The process of accreditation was well prepared by the EAZA Accreditation Coordinator April Adams. At the beginning clear instructions were provided online for the Accreditation Questionnaire. The questionnaire was self-explanatory. In the case of an inconvenience with the online system I was professionally supported by the coordinator. As expected the screening team arrived well prepared at Zurich Zoo and the screening was detailed, all-inclusive and competent. The cooperation was honest, transparent and at all times pleasant. The team also brought an outside view to the zoo, which is helpful for our future development. The screening members as well as the staff of Zurich Zoo were very interested in discussing several aspects of zoo operations and gathering new ideas. The EAP has had several positive effects on the operation of Zurich Zoo. It challenged the management to smooth out all aspects of the operation within one project and it lead to a good overview. As a consequence we improved some of our processes. We took the chance to repetitively challenge all our employees to keep the conservation goal of Zurich Zoo in mind and to illustrate our system of operation to reach this goal. We evaluated ourselves on the basis of 'The World Zoo and Aquarium Conservation Strategy' and we looked forward to comparing our evaluation with the evaluation of the EAZA screeners. We were glad to find that we were aware of the concerns mentioned in the final EAZA screening report and that the corresponding improvements are already included in the master plan as well as in the business plan.

However, the status of Full Accreditation only confirms that we fulfill the EAZA standards of today. It does not guarantee that our actual efforts will also be accepted by the public in 20 years. The public discussion in keeping wild animals in zoos is increasingly connected with emotional interpretations and it is very complex, expensive and time consuming to manage this formation of opinion. Zoo managers have to take this political development into consideration when creating successful conservation strategies for the future.

A pig with attitude

IT MAY NOT HAVE THE MOST ATTRACTIVE NAME IN THE WORLD, BUT THERE'S A SPECIES OF PIG THAT IS NONETHELESS A VERY ATTRACTIVE PROPOSITION

Angela Glatston, EEP Coordinator for the Visayan Warty Pig, Head of Conservation and Research, Diergaarde Blijdorp

OK, let's face it – given the chance, everyone likes pigs. They make fantastic zoo exhibits: always busy, always foraging, snouts snuffling through the leaf litter searching out goodies and, of course, often accompanied by cute, playful piglets. Visitors love them.

So why do we display so few pig species in our collections? Yes they churn up the ground but that is surely not an insurmountable problem. Of course the red river hog is fairly ubiquitous in our collections, so much so that zoo visitors could be forgiven for thinking all wild pigs are chestnut coloured. Sadly, we seem to have forgotten that there are other pigs out there which could also make attractive exhibits given the chance. Therefore, I am taking this opportunity to introduce you to a different pig. The pig I am discussing is very different to the river hog: for a start, it isn't red. It is, however, Critically Endangered and its zoo population has the potential to become genetically viable, both of which should encourage serious zoo professionals to include them in their collections.

The pig in question is the Visayan warty pig (*Sus cebifrons*) and it is special. What it lacks in size it gains in appearance, not only from the protuberances on its face which give it the name 'warty', but also from the luxuriant manes that the males grow during the mating season only to shed later. These manes are most evident on the head and give the adult males the appearance of wearing an exotic toupé. They also develop in length as the pigs grow older, so while young adult males sport punky spikes the more mature individuals look more like renegades from the hippy era.

Today there are more than 80 of these pigs housed in 16 collections around Europe. They are all descended from eight animals which Diergaarde Blijdorp imported back in 2004. They are part of a cooperative captive breeding effort between Europe and the Philippines which is organised along similar lines to that of the Philippine spotted deer conservation programme (see *Zooquaria* 78) with all individuals remaining the property of the Philippine authorities. However, this is not the only parallel between these two very different species. The Visayan pigs, like the deer, are now only found on the islands of Negros and Panay where they also suffer the effects of deforestation and over-hunting. However the pigs have an additional threat: they are hybridising with the local domestic pigs. Unlike the deer, however, there has only been one import of this species from the Philippines and the EEP would very much benefit from a second import to increase the founder base. The pigs are available but sadly the money for transportation costs and the commitment at our end are not.

The Visayan warty pig EEP was initiated at the request of the Pig and Peccary TAG. This species was listed as one 'to obtain' in the first Regional Collection Plan. In the early days of the programme a number of EAZA members seemed to support this recommendation and were very keen to join the warty pig EEP, vying with each other as animals became available. As a result the programme took off well and grew. Sadly the programme now seems to have ground to a halt. In a way it seems as if the EEP has become a victim of its own success: as soon as more pigs became available there were less zoos willing to take them. Had the kudos of getting a unique pig perhaps worn off?

The Visayan warty pig EEP is now at the point of becoming a viable population which could genuinely function as a back-up should this species become extinct in the wild, but to achieve this we need more buy-in from EAZA members. So I am hoping with this article to attract a whole new group of prospective Visayan warty pig holders. Today, zoos are becoming more interested in holding mixed exhibits and Visayan warty pigs could play an important role in filling Asian forest exhibits combined, for example, with sambar, banteng or even Philippine spotted deer.

So I hope these points go some way to convince you to consider taking on the Visayan warty pig so that we in EAZA can play a significant role in ensuring the future of this endangered species.

FIVE GOOD REASONS FOR KEEPING VISAYAN WARTY PIGS

1. The Visayan warty pig (VWP) is one of the world's most endangered pig species and we can contribute to its survival.
2. The VWP is an attractive exhibit animal. The mane makes it special. Although it is physically small this is compensated by the fact that it can be kept in family groups of eight or 10 animals, so there is always activity.
3. VWP males are generally non aggressive and which means they are easy for keepers to manage. They also make good fathers and can usually be left in the enclosure with females and young.
4. VWPs are fairly easy to keep and breed, they don't have any special requirements in their housing, they are fairly hardy and so do not need excessive heating and, as pigs go, they are not very destructive of their enclosure.
5. Finally, of course, they add much needed diversity to the pigs in our collections.

The great elephant migration

A BRAND NEW ASIAN ELEPHANT BREEDING FACILITY SHOWS WHAT CAN BE ACHIEVED WITH AMBITION AND IMAGINATION

Sander Hofman, Curator of Mammals, Royal Zoological Society of Antwerp

The Royal Zoological Society of Antwerp (RZSA) has been housing elephants in the monumental Egyptian Temple in Antwerp Zoo since 1856. When we received a small herd of three Asian elephant cows for breeding purposes to join our last remaining cow in 2006 it became obvious that we had to move the breeding herd to our other location: Wild Animal Park Planckendael in Mechelen. A proper breeding facility with the possibility to permanently house an adult bull and a naturally expanding herd simply does not fit in the rather small city zoo of Antwerp.

The project was finished after six years of planning, designing, and seeking advice from international colleagues and construction. The total site covers about two hectares in which we have tried to create the optimal combination of animal welfare, visitor experience and a conservation message.

The Antwerp herd, counting five cows, moved to the brand new elephant habitat in Planckendael in June 2012. Antwerp Zoo was not without elephants for long though; as of the beginning of July the Egyptian Temple is now dedicated to housing young bulls in transit.

The new facility in Planckendael was designed to be able to house an adult bull and a herd which can expand to 14 individuals of all age classes. We aimed to make the facilities as flexible as possible, with a 750m² sand stable, a 200m² stable with rubber floor, two 50m² stables and a 150m² indoor pool. Outside there is a 600m² pool, a 10,000m² cow area and an area of 2,000m² for the bull. All indoor and outdoor units are connected and bullproof. Gates and fences can withstand 15 tonnes of pressure.

PROTECTED CONTACT

RZSA works with their elephants in a protected contact (PC) situation which means there is always a safety barrier between the animal and the keeper. In the new facility there are PC walls in several of the stables and in the outside enclosure. This outside PC wall was purpose-built for keeper demonstrations to the public and to show there is more to caring for elephants in a zoo setting than meets the eye. A relatively new feature is the design of our training boxes. The main idea behind these training boxes is to have a place as small as possible where the keepers can work with the elephants. The seven training boxes are adjustable in size and take up as little space as possible to devote more space to the areas the elephants use during the majority of the day. In the large configuration the boxes only measure 1.50m x 4.50m, but they can be customised for animals of different sizes. By taking out bars at any given place, there is PC access to every part of the animal: from foot to back and from tail to trunk. Two boxes can be combined to create a space which allows a cow to enter with her calf. Apart from the practical considerations, this set-up also allows us to keep the building as compact as possible, and to reduce construction costs. An elephant restraint chute is also part of our PC policy. The bull and cows can pass the chute on their way to the outside area. Just like the training boxes the chute also has removable bars to allow work on any part of the elephant. It features a scale and a rig that can lift up to 10,000kg – we hope we never have to use it, but it is better to be prepared.

ELEPHANT WELFARE

The knowledge about what is good for elephants in a zoo environment has been growing rapidly in the last decades. Not only could we build on a long history of caring for elephants in Antwerp Zoo, but we also learnt a great deal from other zoological institutions throughout Europe. As well as visiting other institutions, our staff regularly attend workshops.

The welfare of the animals is our highest priority, and it is obviously not only the size of the facility that matters,

JONAS VERHULST





but also the quality. We provide facilities to shower the animals, but they also have access to a pool 24 hours a day. There are scratching posts (concrete, wood, rock) for animals of different sizes, and there are different kinds of substrates such as a hardstand in front of the building to facilitate transports, and a hilly outdoor terrain with soil, sand, grass and mud wallows. We integrated as many existing trees in the design as possible to provide ample shade. Since elephants spend a large proportion of their 24 hours foraging, food is provided throughout the whole enclosure: cargo-net feeders hanging from the rigs on the ceiling and feeding holes in all the stables are timer-controlled and provide day and night foraging opportunities.

The elephant house has four large skylights that provide natural daylight, and there are three air exchanges per day. A heat exchanger extracts the warmth before blowing the air outside. When weather permits the elephants are allowed to go outside during the night. Plastic flaps in the gate openings keep the warmth in. In the design we aimed for sustainability by trying to waste as little water as possible. The water treatment system operates as a closed system. Rain water from the roof is stored in tanks which buffer the wastewater treatment system, which in turn provides clean water for the pools, showers and is used for cleaning purposes.

RESEARCH

The Centre for Research and Conservation, the research department of RZSA, is currently implementing a study on stress and night-time activities in Asian elephants. The primary goal is to measure the impact of stress caused by environmental changes (in this case the move to the new exhibit and the introduction of a bull) on nocturnal behaviour and sleep quality of zoo elephants. Before and after the translocation of the five elephants we used behavioural observations and continuous night-time video recordings to evaluate changes in nocturnal and sleep behaviour. Concurrently, daily salivary and faecal samples were collected to measure nocturnal cortisol levels as a way of monitoring the changes in the animals' physiological wellbeing.

And lastly, we also measured the elephants' subjective well-being by means of visitor perception and keeper staff surveys. At the time of writing all data still need to be analysed in detail, but ultimately the results should allow us to develop guidelines and implement specific nocturnal environmental enrichment fulfilling the needs of Asian elephants, aimed at reducing stress and ameliorating sleep quality, an essential aspect to guarantee their welfare.

THE INDIAN EXPERIENCE

As part of its commitment to nature conservation, the RZSA financially supports the Tirunelli-Brahamgiri elephant corridor project in India; an initiative by the Asian Nature Conservation Foundation (ANCF) established in 1997 by the well-known conservation scientist, Professor Raman Sukumar. The main aim of the project is to preserve the corridor in order to prevent isolation of elephant populations and to reduce animal-human conflict by respectfully relocating people from the site. From a combined education and fundraising perspective, the elephant habitat in Planckendael tells the story of the ongoing struggle between humans and elephants for space and resources an explains about the efforts and successes of the corridor project. The design of the elephant house, which is modeled after the Royal Elephant Stables in Hampi, India, and the outside visitor area are designed to enhance the visitor experience. Before entering the elephant house, for example, the visitor passes a 'Kerala village', a bamboo pole house with views over the elephant pool, and a scene of the corridor area where visitors can experience the local farmer-elephant conflict.


RICHARD HEWITT PROPOGATION TRAIINING

Planting the seed

THE RESTORATION AND REFORESTATION OF THE GRANDE MONTAGNE NATURE RESERVE, RODRIGUES

Mark Sparrow, Curator of Horticulture and Botany; and Yvette Foulds, Conservation Assistant, Chester Zoo

The Grande Montagne Nature Reserve is a 25.5ha fenced area of montane evergreen forest, estimated to represent 45% of the remaining native forest found on Rodrigues. It is recognised as a National Nature Reserve and Conservation Management Area and is one of only two protected reserves on the island.

The Mascarene Islands form part of the Madagascar and Indian Ocean Islands Biodiversity Hotspot. This region is noted for its high levels of species endemism; 65% of plant species found on these islands are endemic. More specifically, Rodrigues is estimated to have the highest rate of plant extinctions of the three Mascarene Islands with 21% of its 47 endemic species already considered extinct. Over 70% of all remaining endemic plants on Rodrigues are threatened with extinction.

Today, only a few relics of forest remain on Rodrigues and the island is a conservation priority. In some cases, surviving plants have been


VIKASH MWF IN GRANDE MONTAGNE

PROJECT MILESTONES TO DATE:

- 1996 to 2007 – Project initiation by MWF/WWF/Rodrigues Forestry Service supported by the World Bank. A total of 10ha of the reserve were restored.
- 2008 to 2010 – 20 month restoration plan supported by Chester Zoo and the EU. 12 restoration labourers recruited and 6ha of reserves were restored.
- 2008 – Propagation training course held at Chester Zoo for two MWF staff.
- 2009 – One of Chester Zoo's senior horticulturalists ran an advanced propagation techniques workshop in Rodrigues for 11 MWF staff members.
- 2010 to 2011 – Maintenance of 16ha of restored forest and restoration of a further 3ha. Training in advanced propagation provided to two more MWF staff at Chester Zoo.
- 2011 to 2012 – The work of the project continues with the aim of completing a further 1ha of forest restoration by June 2012.

reduced to a single individual or a small isolated population. This has also had a considerable impact on the island's native fauna, with just three endemic vertebrate species surviving today.

The overarching aim of the project is to increase the extent of native forest on Rodrigues to enable viable populations of Critically Endangered endemic species to establish. In total 37 endemic Rodriguan plant species are found in Grande Montagne and this project benefits 29 of those, many of which are classified as Critically Endangered.

The reserve also provides habitat for the future survival of the island's 3 remaining endemic vertebrate species: Rodrigues fruit bat (*Pteropus rodricensis*) – Critically Endangered; Rodrigues fody (*Foudia flavicans*) – Vulnerable; Rodrigues warbler (*Acrocephalus rodericanus*) – Endangered.

The reserve is supported by the Solitude Nursery which was established by the Mauritius Wildlife Foundation (MWF) for the propagation of native plants. Seeds and cuttings are collected from the 29 species for transfer to the nursery for propagation.

Chester Zoo's partnership with the MWF began in the late 1990s, and has since expanded to the provision of annual financial and technical support for various projects. In-kind support has been provided for both *in situ* and *ex situ* training of MWF staff. This has involved the exchange of field staff to Chester Zoo for advanced training in plant propagation and care, thus facilitating the successful propagation of endemic species at Solitude Nursery and other nurseries in the Mascarenes. MWF also works closely with the Rodrigues Forestry Service, with whom they have a long-standing collaborative relationship.

Before any replanting can be carried out there is a need to remove invasive alien species: first, large exotic species, then smaller invasive plants. Although the majority of the large exotics are removed some selected trees are left to provide protection to seedlings and to avoid soil erosion. Once new plants are established the remaining exotic species are removed. Ongoing maintenance of previously restored plots is also carried out by removing invasive re-growth. Exotic species that have been removed include: green aloe (*Furcraea foetida*), mango (*Mangifera indica*), Malabar plum (*Syzyguim jambos*) and roseleaf bramble (*Rubus rosifolius*).

The project also supports a strong education programme. It makes use of an established Interpretation Centre at Grande Montagne and is supported by the MWF Environmental Education Project. Guided tours are provided to primary and secondary schools including visits to the reserve to demonstrate the restoration process. A reserve field guide is provided to the local community and to tourists visiting the centre.


SOLITUDE NURSERY

LONG-TERM PLAN

The project is currently implementing a ten year restoration plan which encompasses a number of objectives to be achieved by 2018.

1. To create a viable, protected and well managed habitat for unique Rodriguan flora and fauna by propagating and reintroducing 29 threatened and native Rodriguan plant species, and fully restoring the full area of the reserve.

2. To develop cost-effective and sustainable forest restoration techniques by providing advanced training in nursery and field propagation and planting techniques for MWF staff and local volunteers, and the trialling of propagation techniques at Solitude Nursery. So far, training of 774 local volunteers has increased native plant production in local gardens and village nurseries. In addition, there has been advanced horticultural training for 15 MWF field staff, while Chester Zoo's Horticultural Department has received specimens of ten threatened plant species from Rodrigues and is carrying out trials of seed propagation techniques aiming to improve germination success.

3. To enhance community involvement, awareness and ecotourism opportunities by recruiting and training restoration labourers from the local workforce, and by implementing an education and volunteer programme within the reserve. To date, there have been over 2,000 participants in education awareness since 2009, and a reserve field guide has been developed with 5,000 copies produced in 2010

OUTCOMES

The increased area of restored forest appears to be having a very positive impact on the numbers of Rodrigues warbler and Rodrigues fody. Studies are currently being undertaken to determine the increase in population size. The higher density of plants has also provided a greater number of potential nest sites and nesting materials for the birds.

Since the 1970s the Rodrigues Fruit Bat population has increased from 130 to over 2,000 individuals. These bats are restricted to forest fragments and are now considered to be at carrying capacity. Overall, since the start of Chester Zoo's support in 2008 there has been a rapid increase in the project development whereby the area of restored forest has almost doubled in the Grande Montagne Nature Reserve from 10ha to 19ha.

PLANTING FOR THE FUTURE:
Some of the flora successes have included:

- *Hibiscus liliiflorus* – from fewer than 5 individuals, to over 500 seedlings planted.
- *Gastonia rodriguesiana* – from 50 isolated individuals, now 120 seedlings planted.
- *Hyophorbe verschaffeltii* – from fewer than 60 individuals, to over 2,000 specimens planted.

Flying high

FEEDBACK ON THE EAZA MID-YEAR BIRD TAGS MEETING 2012

Catherine King, Chair, EAZA Ciconiiformes and Phoenicopteriformes TAG, Weltvogelpark Walsrode

When Weltvogelpark Walsrode first offered to host the 2012 EAZA Mid-year Bird TAGs Meeting as part of its 50 year anniversary celebrations, it was an offer that was enthusiastically accepted, as with around 650 species of birds, Weltvogelpark Walsrode is the largest bird park in the world.

A workshop, generally with a practical theme, is now attached to the EAZA Mid-year Bird TAGs meetings. It was decided that the 2012 topic would be facilitating zoo-based *in situ* conservation for avian species. Because many of the TAGs now have presentations about *in situ* conservation projects for species under their umbrella at the EAZA Annual Conference, we thought it would be most useful to focus on a specific topic with wide application: how zoos can most effectively contribute to species conservation through one of our most basic functions – captive breeding.

A total of 108 participants from 23 countries registered for the 2012 Mid-year Bird TAG meeting – more than double the usual number. Having such a cosmopolitan mix was a great achievement. Participants reported that this led to the forging of much new collaboration, and gave them a better understanding of what their colleagues in other countries are involved in regarding avian conservation. It also provided an excellent opportunity to ponder how bird TAGs can work together across regions to take a more global perspective in increasing our effectiveness. All activities, including evening events, were undertaken as a group, maximising opportunities for participants to become acquainted and build relationships.

CLOCKWISE FROM ABOVE: TOCO TOUCAN (*RAMPHASTOS TOCO*) WITH YOUNG AT WELTVOGELPARK WALSRODE; SIBERIAN CRANE (*GRUS LEUCOGERANUS*); EAZA BIRD TAG MID-YEAR MEETING PARTICIPANTS – ALL © WELTVOGELPARK WALSRODE

WORKSHOP PREPARATIONS

Some problems and needs for developing regional (TAG) level involvement in conservation strategies that include captive breeding as a component were identified. Whether captive breeding is part of the conservation strategy for a species is one of the first questions in all the avian TAG RCP decision trees to determine which species we should work with – yet we have no reliable means to answer that question. Nor do we have TAG level collaborations in place with the relevant organisations serving as catalysts and facilitators for initiation of captive breeding projects. Currently engagement of institutions in captive breeding projects as part of a conservation strategy seems to be piecemeal and largely dependent on individual and/or institutional relationships, rather than on regional capacity. Zoos (collectively) need to know which species could benefit from captive breeding efforts; they need to have the contacts in place to identify and collaborate in potential projects; and, they need to be able to assess what their contribution would require.

With these premises we set about organising the workshop, to be held on the first meeting day, so that the results could be referred to and built on throughout the entire meeting. The workshop was facilitated by Kristin Leus from CBSG Europe and EAZA who formulated the goal: that captive breeding with zoo involvement is used as a more effective conservation tool

whenever this is appropriate within the overall conservation strategy for the taxon and is carried out in a framework of improved cooperation and communication within the zoo community and between the zoo community and other relevant NGOs and organisations.

The workshop started with a series of presentations selected to provide examples of new and ongoing initiatives in building bridges between *in situ* and *ex situ* conservation, existing projects to be learned from, and challenges and opportunities for the future. Following the excellent presentations, participants split into six working groups addressing one of three topics. Each working group identified main problems/obstacles, solutions to help overcome these obstacles and actions and responsibilities to ensure progress towards the objectives after the workshop.

TOPIC 1 – SELECTING SPECIES THAT WOULD BENEFIT FROM CAPTIVE BREEDING FOR CONSERVATION

During his presentation, Nigel Collar from Birdlife International defined six types of intervention in which captive breeding would be part of the conservation strategy for a bird species and suggested some species which would be appropriate for each category. The participants generally seemed enthusiastic about this approach, and the two working groups mostly focussed on the types of questions addressed during the regional collection planning process rather than determining which species are suitable for conservation captive breeding at all.

TOPIC 2 - COLLABORATION BETWEEN ZOOS AND NON-ZOO ORGANISATIONS

The need for better communication and building of trust between zoo and non-zoo organisations that zoos frequently deal with were identified as important problems with clear potential solutions. The need for closer collaboration between the IUCN-SSC Specialist Groups and TAGs was clear. EAZA TAGs can invite the relevant specialist group representatives to be advisors and to attend meetings, and specialist groups might appoint *ex situ* coordinators, as the Flamingos Specialist Group does. A presentation by Ann-Katrine Garn, EAZA, and Rachel Roberts, IUCN-SSC, suggested other useful ways to further cooperation as well. Defining shared goals between *in situ* and *ex situ* and private parties, and appointing representatives to facilitate communication, cross training and so on, could be useful.

TOPIC 3 - INTERREGIONAL (GLOBAL) COLLABORATION AMONG ZOOS

Both working groups agreed that it should be easier to share information generally found on websites of regional organisations (eg studbooks, husbandry guidelines, RCPs, programme contact details) and that more effort could be made to consider RCPs of other regions, and to integrate these into a global strategy.

Following the meeting, about 40 participants visited Hagenbeck Zoo in Hamburg, where we were graciously received, and treated to an awe-inspiring tour of the new Eismeer (Arctic sea) complex by the director Stephan Hering-Hagenbeck. He explained many innovations of the exhibits and supporting facilities – the trip to Hamburg would have been worth it for that alone! We also greatly enjoyed the exceptionally good visitor views of the animals in this new area, as well as visiting the other famous exhibits.

All in all, this face-to-face interaction and exchange of ideas between so many zoo and non-zoo organisations at the 2012 Mid-year Bird TAGs meeting will no doubt prove to be very valuable in developing a strategy for zoos on a regional and global basis to select the species that they can most effectively help conserve through captive breeding. The presentations may be viewed at http://www.eaza.net/member_area/Pages/2012Mid-YearBirdTAG.aspx.

And finally, our thanks to William Van Lint, Ann-Katrine Garn and Kristin Leus for their contributions to the organisation of the meeting, plus all the staff at Weltvegelpark Walsrode, especially Jessica Rumpel, who made this meeting such a success.

JAMES SIMPSON, CRAX BRAZIL

ROB BELTERMAN

EAZA BIRD TAG MID-YEAR MEETING

SOFIA ZOO

БУХАЛ

Eurasian Eagle-owl

Ушато бухало

Сем. Совови
Разред Совоподобни
Клас Птици

IUCN Статус:
СЛАБО ЗАСЕГНАТ

Червена книга на България: **ЗАСТРАШЕН**
Закон за биологичното разнообразие на България: **ЗАЩИТЕН**
Вашингтонска конвенция CITES - Приложение II
Европейска програма за застрашени видове (EEP): Не

IUCN Status:
LEAST CONCERN

Red Data Book of Bulgaria: **ENDANGERED**
Bulgarian Biodiversity Act: **PROTECTED**
Washington Convention CITES – Appendix II
European Endangered Species Programme (EEP): No

живот life span	тегло weight	дължина length	размах на крила wingspan
20 - 60	3.25	0.70	1.80
години years	килограма kilograms	метра metres	метра metres

Местообитание
Скалисти проломи и дефилета, ерозирали терени и полупланински плата.

Habitat
Rocky gorges, eroded terrains and semi-mountainous plateaus

Храна
Месоядeн вид – малки бозайници, птици, жаби и безгръбначни животни.

Diet
Carnivorous – small mammals, birds, frogs and invertebrates.

Размножаване
Размножава се веднъж годишно.
Женската снася 2-4 яйца през март – април.
Мътенето продължава 1 месец (само женската птица мъти).
Малките напускат гнездото на 2,5 месечна възраст.

Reproduction
Breeds once a year.
Lays 2-4 eggs in March-April.
Incubation lasts 1 month (female only).
The young are ready to y in 2.5 months.

Любопитно
Бухала е най-едрата сова в България. Наблюдаван е да ловува едри бозайници като лисици и зайци.

Information
The largest owl in Bulgaria. It has been observed hunting for mammals as large as foxes and hares.

www.zoosofia.eu

The old and the new

TECHNOLOGY AND TRADITION HAVE BEEN COMBINED INTO A RADICAL NEW EDUCATION PROGRAMME AT SOFIA ZOO

Venislava Racheva, Head; Katerina Zareva-Simeonova, Ecologist; Iva Asenova, Ecologist; Velizar Angelov, Technical Support: all of Environmental Education and Research Centre, Sofia Zoo

Bulgaria is a country with a well-preserved biodiversity. However, as the vast majority of the population – about 73% – now live in urban areas, knowledge of native wildlife has declined. Dissemination of this knowledge needs to be conducted in a modern and effective manner that goes beyond traditional school textbooks, and so at Sofia Zoo we seek to raise awareness through a combination of information technology and targeted conservation education.

Sofia Zoo is a Candidate for Membership of EAZA and is consistently working towards achieving the standards of a full EAZA member institution. As a developing zoo we are working towards providing naturalistic enclosures for our entire collection. During this process, our education programmes are our primary tool for informing visitors about the lives of animals and how they interact with their environment.

Our most recent project to persuade visitors to read zoo signage and learn more about our species is a joint project with the Bulgarian Wikipedia editors. Funded by the Wikimedia Foundation, new information panels have been created for exhibited animals. The new panels were designed by Bulgarian graphic designer Tsvetomir Bozhkov, who created the attractive new look after detailed research. The panels contain:

- short informative texts (in Bulgarian and English);
- illustrative content (such as photos and species distribution maps) from Wikimedia Commons and other sources;
- and multilingual QR codes to the full Wikipedia articles.

When scanning the QR codes with a Smartphone, the article in Wikipedia will open in the language the phone is set for. This makes things easier for visitors coming from all over the world who do not speak Bulgarian or English. Each panel contains two images: one showing the animal in its natural environment, and the other presenting a special emphasis on a particular detail of the species, such as eyes, teeth, colouration and so on. The preliminary research showed that young people have taken the innovation on board, and enjoy scanning the codes to show off with their phones. Our hope is that this will result not only in just scanning codes for fun but in more knowledge gained by reading the linked articles. Thanks to our cooperation with Wikipedia, Sofia Zoo now enjoys more attention from media and the private sector, another positive advantage from the project.

In addition, our more traditional zoo education programme offers activities for organised groups. In 2012, we carried out our 15th annual Summer Zoo School Programme. This is an attractive and popular education programme with around 200 children aged 7 to 14 taking part in 2012. We organise it in June and July every year as full-day activities every weekday. We have developed a series of different notebooks for Summer Zoo School which children can then take home at the end of the day. The general framework of the Summer Zoo School remains the same – each day of the week is dedicated to a specific topic: 'Be a zookeeper for a day', 'Zoo Olympics Day', 'Animals and Arts Day', 'Zoo Detective's Day' and 'Biodiversity in Danger'. During each day, lecturers take turns to deliver practical activities including taking care of animals, environmental games, drawing, creation of animal enclosure design, and more. Every second year we change the lectures and games because many children keep visiting the programme again and again. In addition, we try to engage a wider audience by involving volunteers during the Summer Schools – mainly biology students and children who have repeatedly attended the programme and are already out of the target age group. In the last five years, we have also introduced the programme to children from different nations, using the English language.

Children who exhibit a consistent interest in animals are encouraged to join the Zooclub 'Noah', a Sunday afternoon event during the school year with no age limit. This initiative gathers together children, students and adults with an enhanced interest in the animal and zoo world. Every class starts with feeding and taking care of the tame animals inhabiting the Educational Centre, followed by a lecture delivered by either the Education Centre staff, colleagues from Sofia University, the Bulgarian Academy of Sciences or specialised NGOs. Zooclub members are also encouraged to hold lectures on a preferred topic, and practical activities such as bird-feeder creation, environmental enrichment, radio-telemetry exercises, and more are very important parts of these classes. Some of the Zooclub members who started attending the activities as children have progressed to study biology as young adults. Very strong friendships and an atmosphere of understanding create a unique environment in the club.

Using modern technologies such as QR codes in Sofia Zoo educational activities is a big step forward. We hope that the combination of new and traditional zoo education programmes will not only benefit the new techno-friendly generation but also ensure that our messages continue to reach a broader public.

From plant to animal

FEEDBACK FROM THE EAZA ACADEMY FORAGE PRODUCTION AND MANAGEMENT COURSE, PART OF THE GROWING ACADEMY RANGE

Myfanwy Griffith, EAZA Academy Training Officer

The first of three planned courses developed between the EAZA Zoohorticulture group and the EAZA Academy took place at Port Lympne Wild Animal Park, UK. Over a sunny weekend in May, 17 participants from 10 different institutions learnt about how best to manage and harvest appropriate forage to feed to captive animals. Participants came from animal keeping, horticultural and animal supplies backgrounds and this good mix provided lots of useful discussion and exchange of ideas throughout the course. The course ran over two days and involved theoretical sessions backed up by practical training. It was designed to share good practice and provide a complete overview of the potential for forage production within zoos throughout Europe.

Kevin Frediani introduced the principles of fodder production, setting a contextual link between the natural and captive world of animal forage utilisation. Andrew McCoryn then spoke to participants about the main species used for forage in animal collections and highlighted the ZooPlants.net site as an excellent resource where people can find out more information. Participants were also provided with a copy of the Browse Identification book developed by members of the EAZA Nutrition group and published by the Dutch speaking zookeepers organisation Stichting De Harpij (available in both Dutch and English versions, see p6).

Martin Holt gave an interesting and thought provoking presentation about planning for sustainable production and making the best use of plants in and around your site. It is amazing what it seems you can find to use when you start looking! In contrast, David Sutton and Jeremy Edmond from The Howletts Wild Animal Trust showed participants the extensive, long term plantation planning that they are developing. It was inspiring to see the dedication horticultural teams have to integrating their work with that of the animal departments to support supplying appropriate animal diets, reducing feed budgets, as well as providing a high quality and secure food source.

CARRYING CUT BRANCHES

MYFANWY GRIFFITH

When viewing the different plantations at Port Lympne, participants could see how they were established and managed. It was also possible to see the differences between coppicing and pollarding and discuss which technique would be best in different situations. Not only were participants able to see how good pruning supports growth and poor pruning can easily lead to death of the plant, but they were also given the opportunity to try out techniques themselves.

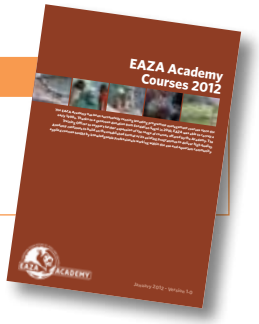
Sven Seiffert gave a comprehensive presentation about the process of ensiling browse to provide forage for animals all year round. He provided a barrel of leaf silage, so course participants could see and smell the finished product, which was fed to appreciative rhinos. The branches which were cut during the coppicing practical were then stripped and prepared for ensiling. This was a great demonstration of the amount of foliage needed as well as time taken to fill one barrel. It produced much discussion about how volunteers could be involved to help make best use of time involved in this useful process.

In addition to earlier presentations about forage use and pruning technique Kevin Frediani also highlighted the relationship between plant growing seasons and impact on nutrition. He stressed that it is always advisable to speak to a vet or nutritionist when making decisions about which plant species to feed to which animal species.

The prevailing message of the course was that with all departments working together, careful choice of species, long term planning and appropriate pruning techniques a wide variety of forage can be efficiently produced no matter the size of your institution. Feedback from participants was excellent and this is a course that can easily be repeated elsewhere in Europe. If you are interested in hosting a similar course please contact Myfanwy.Griffith@eaza.net.

INTERESTED IN OTHER COURSES?

Places are still available on a wide range of courses from Avian Egg Incubation to Visitor Studies to Introduction to Zoo and Aquarium Management. Find out more today by visiting the EAZA Academy pages on the EAZA website: www.eaza.net



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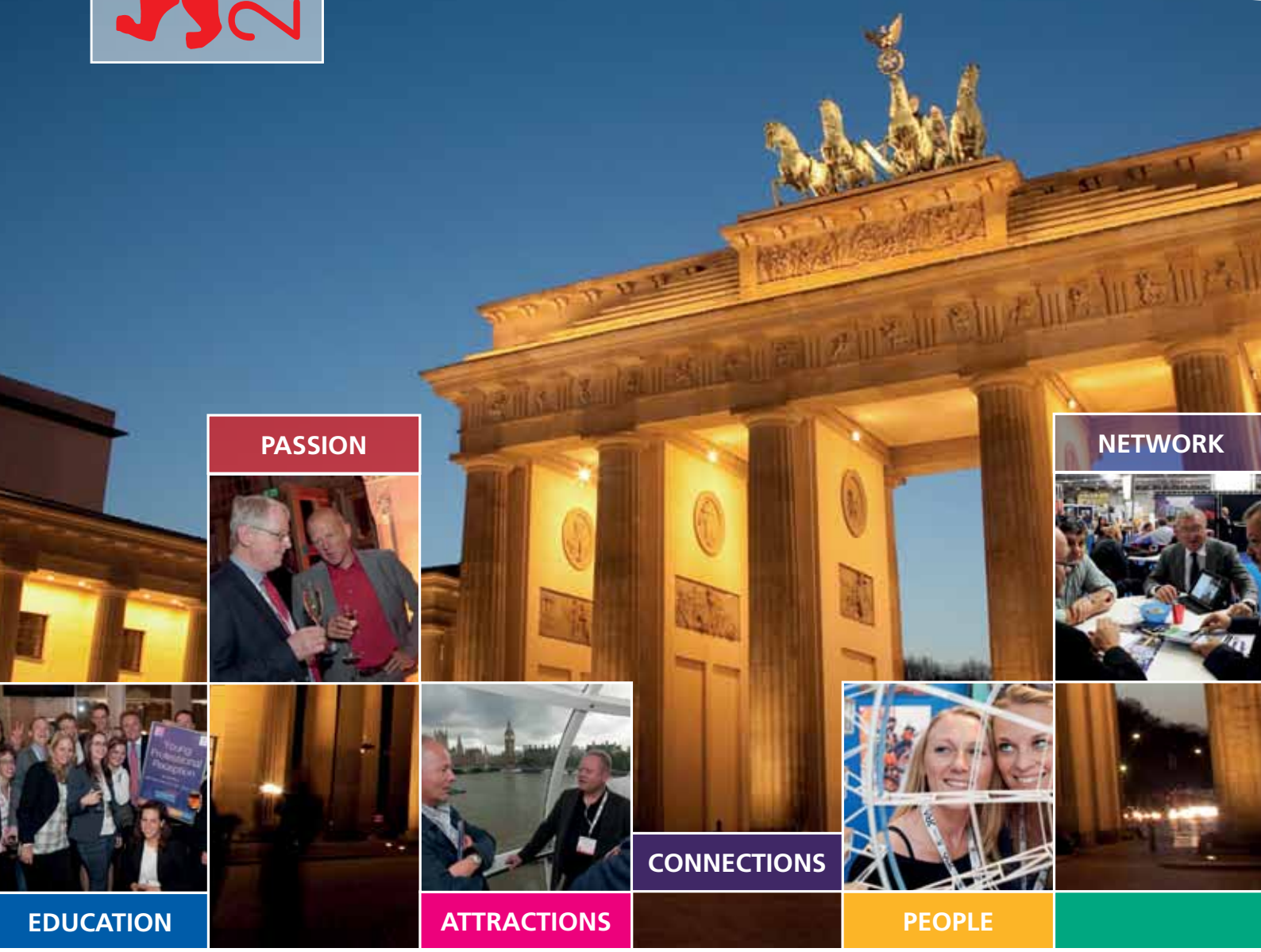

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