

ZOO ZEN is a compendium of previously published but perhaps not so easy to obtain information which is useful to zoo, wildlife and welfare personnel. **ZOO ZEN** is registered with the Registrar of Newspapers, Government of India and printed at Zoo Outreach Organisation by simply xeroxing the pages and binding in a booklet. **ZOO ZEN** has been published regularly for over 16 years and has supplied some of the most pertinent information in zoo management and wildlife science at an affordable price to zoo personnel in India and now South Asia.

Previously **ZOO ZEN** was fully subsidized first by the Department of Environment and then by various foreign zoos and welfare organisations. It is still subsidized for certain zoos to obtain it free of cost due to difficulties of obtaining and exchanging money between countries.

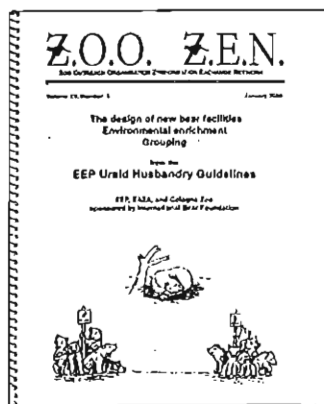
Sometimes people visiting our library for reference material are amazed to find **ZOO ZEN**. They did not know about it. In the interests of **ZOOS' PRINT** readers we are publishing here a summary of information and contents of the year 2000 **ZOO ZEN**. **ZOO ZEN** is available on subscription basis for zoos, forest and wildlife personnel and Zoo Outreach Organisation members for Rs. 1000/- per annum but also by individual issue if copies are available for Rs. 100 - 200 each depending on the number of pages in the issue. The subscription price does not cover the cost of production. The per copy cost just covers the cost of production and postage. A booklet listing back issues and subjects for the last 16 years may be obtained for Rs. 25.00

ZOO ZEN is valuable, not just because of its subscribers, but because it provides a monthly discipline of going through literature and finding subject matter and articles which are both new and appropriate for India and the other countries zoos' in South Asia. While not every zoo or wildlife agency would be a subscriber, the list of back issues is always there when a special problem or project comes up for an individual to look through and find relevant literature.

If any of this material would be useful to you, please order what you require. Of the 2000 issues we may not have them in stock and it will take time to reproduce. Of the 2001 issues, we may not have produced them yet and will produce additional issues only if they are ordered in advance. **ZOO ZEN** is time-consuming and costly to produce and we may not find it possible to continue unless we get a clear mandate of interest, orders and funding this year.

ZOO ZEN 2000

The design of new bear facilities: Environmental enrichment Grouping from the EEP Ursid Husbandry Guidelines Zoo Zen Volume XV, Number 6 January 2000 (Pp. 51. Rs: 100/-)



The EEP Ursid Husbandry Guidelines are a product of the EEP Bear Taxon Advisory Group which advises the zoos of Europe that are involved in cooperative breeding of bears about all aspects of bear husbandry which relate to the success of bear breeding. The EEP Bear Taxon Advisory Group has donated a copy of the Guidelines for use by South Asia Zoos. We sent it in user friendly bits to all zoos that keep bears in addition to our regular subscribers. The free distribution of these volumes

to zoos in five countries is funded by the International Bear Foundation.

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The EEP Ursid Husbandry Guidelines were produced by the EEP TAG under the auspices of EAZA, the European Association of Zoos and Aquaria and published by the Cologne Zoological Garden.

The Design of new Bear Facilities: Environmental Enrichment Grouping from the EEP Ursid Husbandry Guidelines, Zoo Zen Volume XV, Number 7 February 2000. (Pp. 54. Rs. 100/-)

Chapter 6. 6.3.1 Housing and management; 6.3.2 Thermal characteristics of the maternity den; 6.3.3 Size of the cubbing boxes; 6.4 Recommendations; 6.4.1 Housing of females during late pregnancy and early lactation; 6.4.2 Management of females during late pregnancy and early lactation; 6.4.3 Management of females

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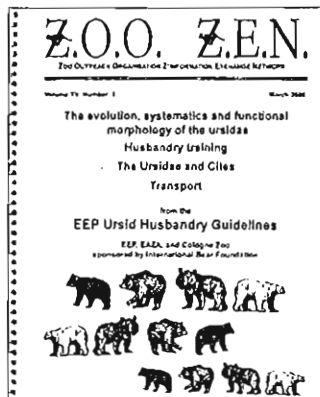
Chapter 7 — Veterinary care by F. Claro-Hergueta, Paris Zoo, R. Goltenboth, Berlin Zoo; B. Matern, Frankfurt Zoo; 7.1 Introduction; 7.2 Pathological conditions; 7.2.1 Parasites and their control; 7.2.2 Infectious diseases and vaccination; 7.2.3 Skin diseases; 7.2.4 Lacerations/bite wounds; 7.2.5 Dental problems; 7.2.6 Tumours; 7.3 Veterinary techniques; 7.3.1 Marking of bears for identification; 7.3.2 Immobilization; 7.3.3 Contraception and population control; 7.4 Data and material to be collected from immobilized or dead bear; 7.5 Post mortem examinations; 7.5.1 Recommended check list of post-mortem examinations by J. Wisser, IZW Berlin; 7.5.2 Cosmetic post mortems for museum specimen by A. Kitchener, Royal Museums of Scotland; 7.6 Research required; 7.7 References; Appendix I: The dentition of the brown bear (*Ursus arctos*) by A. Van Forests, IBF Rhenen

Appendix II: I. Protocol for the collection of basic data for taxonomic research from dead or immobilized bears; II. Protocol for blood and tissuesampling in bears; III. Protocol for a study on the effects of immuno-contraception with PZP; IV. Protocol for a comparative study on the digestive tract of bears; V. Protocol for sampling tissues of brown bears (*Ursus arctos*) for toxicological analysis

The evolution, systematics and functional morphology of the ursidae Husbandry training. The Ursidae and Cites Transport from the EEP Ursid Husbandry Guidelines, Zoo Zen Volume XV, Number 8 March 2000 (Pp. 39. Rs. 75/-)

Chapter 1 -- The evolution, systematics and functional morphology of the ursidae A. Kitchener, Royal Museums of Scotland, Edinburgh. Introduction, Evolution, Taxonomy, Functional morphology. 1.4.1 Basic body plan. Variations of a

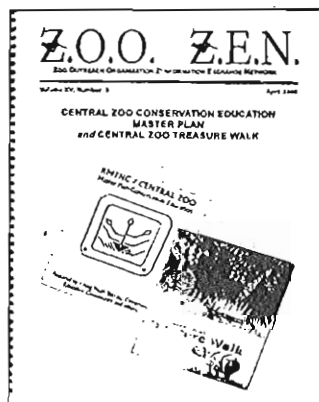
theme. Research required. References Chapter 8 -- Husbandry training by G. Law, Glasgow, A. Reid, Glasgow 8.1 Introduction; 8.2 Listening to and learning from the bears; 8.2.1 The basis of husbandry training; 8.2.2 Application of husbandry training during routines; 8.2.3 Relevant vocalisation and body postures of bears; 8.3 References



Chapter 9 -- The Ursidae and Cites by P. Dollinger, Bundesamt für Veterinärwesen, Bern. 9.1 Introduction; 9.2 The appendices of the convention; 9.3 Species of bears included in CITES regulations; 9.4 European Union regulations

Chapter 10 -- Transport. Appendix I. Copies of IATA regulations 1997: general container requirements (p.251-252). Copies of IATA regulations 1997: container requirement 72 (p.255-256)

Central Zoo Conservation Education Master Plan and Central Zoo Treasure Walk, Zoo Zen Volume XV, Number 9, April 2000 (Pp. 48. Rs. 100/-)



Modern zoos realise the importance of conservation education. The Central Zoo in Nepal, formerly known as the Kathmandu Zoo, had not kept up with the times and was known as one of those zoos which are not "modern zoos". In the last few years the Central Zoo has revised their administrative structure and undertaken a

massive review process with advisors from all over the world. They are in the last stages of creating a Master Plan for zoo layout and design which they will start to implement shortly.

In the intervening years, they have not been idle however. They have created a lively and active education programme including a Friends of the Zoo which involves thousands of members (many of them students), hundreds of businesses in Kathmandu and local NGOs. Although the zoo grounds and collection is still "in process" the zoo has developed an Education Department, Education Staff and a comprehensive Education Master Plan. They are currently engaged in carrying out that plan with a great variety of surveys, programmes and activities. They have produced many booklets and other materials. They have convinced IUCN, Nepal to sponsor educational graphics in the zoo.

Developing a Master Plan for education in your zoos is the first step to creating an Education Programme. Having a Master Plan is a commitment and therefore subtle incentive or push to get out there and do something! Also having a Master Plan helps in fundraising, getting students to the zoo at the right time and creating better quality educational activities and the tools that are required for them. Every zoo needs to develop its own Master Plan for Education so the one developed by Central Zoo is being circulated to provide a model to get started.

Contents include : 1. Introduction; 2. Background; 3. Philosophy, Goals and Objectives; 4. Identification of Target groups; 5. Conservation Themes and Topics; 6. Strategies and Techniques; 7. Implementation; 7.1 Staff, Equipment and Material Budgets; 7.2 Time Table (Short and Long Term); 7.3 Coordination with other Zoo Departments and other Conservation Organizations; 8. Ongoing Evaluations and Adjustments to Programs; 9. References; 10. Appendices: Zoo Education Excerpt from World Zoo Conservation Strategy; Sample Zoo Enclosures Labels, Signs and Graphics Sample Pilot Project: Zoo/School Education Program; Sample Visitors Survey (Bilingual); Central Zoo Slide Show Script (Bilingual); Educational Sites on Architectural Design of Masterplan

Fruit Bat Husbandry Manual AZA Chiropteran Advisory Group, Zoo Zen Volume XV, Number 10, May 2000 (Pp. 42. Rs. 75/-)

Keeping Bats in Captivity -- Fruit Bat Husbandry Manual. Many bat researchers also keep bats but it seems they experience a rather high death rate in captivity. A husbandry manual with some basic information on keeping bat is available from ZOO, courtesy of the American Zoo

Association (AZA). While researchers will not require all the chapters, some of which deal with exhibition techniques for zoos. The manual is mostly based on the collective experiences of the AZA's Bat Taxon Advisory Group (TAG) Husbandry Meeting held at the Lubee Foundation in 1994. TAG members and advisors who were unable to attend the meetings were able to review and comment on several drafts of the manual. An enormous amount of time was put into creating this document which is intended to serve as general husbandry guidelines for managers of frugivorous bat species.

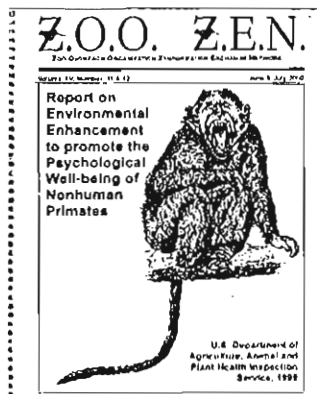


Contents

I. Housing-- Containment; Furnishings; Shelter Requirements; Minimal Acceptable & Optimal Size of Enclosures; Capture & Handling Facilities; Substrate; Temperature, Humidity, and Ventilation Requirements; Lighting
 II. Management: Water Sources; Feeding Schedule; Individual Identification Methods; Methods of Capture, Handling & Restraint; Crating & Transporting Procedures; Pest Control; Sanitation; Handrearing; Record Keeping
 III. Behaviour & Social Organization: Optimal Social Groupings; Age of Dispersal/ Removal of Young; Introductions and Removals; Seasonal Changes in Social Behavior; Mating System, Courtship, Copulation and Parturition; Behavioral Ontogeny; Parental Care; Mixed Species Exhibits; Behavioral Indicators of Social Stress or Social Changes; Environmental Enrichment; Notes on Individual Species and Unusual Behaviors
 IV. Reproduction: Age-Specific Fecundity; Breeding Seasons, Behavior; Gestation; Parturition; Infant Development; Neonatal/ Infant Mortality; Contraception
 V. Nutrition: Foraging Ecology; Nutritional Requirements; Nutrient Content of Three Working Diets; Working Diet Composition; Information Needed
 VI. Health: Inoculations; Neonatal Examinations; Parasites; Behavioral Signs of Illness
 VII. Major Disease Problems and Their Treatments: Common Injuries and Their treatment; Physiological Reference Values;

Immobilization and Anesthesia;
 Recommended Routine Medical Procedures; Life Span ; Necropsy Protocol; Zoonotic Diseases; Quarantine; Sanitation;
 VIII. References

Report on Environmental Enhancement to promote the Psychological Well-being of Nonhuman Primates.
 U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 1999, Zoo Zen Volume XV, Number 11 & 12, June & July 2000 (Pp. 86. Rs. 150/-)



This issue of ZOO ZEN covers two months with an extensive Report on Environmental Enhancement to promote the Psychological well-being of Nonhuman Primates, U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 1999. It is an extensive discussion based on scientific research findings conducted and compiled for the establishment of a Draft Policy under U. S. law. Because the document is too long for one issue but seems uniformly useful, it is being brought out as a double issue of ZOO ZEN. This document will be useful for zoos, animal welfare centres, animal rescue centres and biological laboratories which keep primates in captivity. The Contents speak for themselves :

Contents

1. Introduction and Project History
 A. Background on Evaluation of the Performance-based standard for Nonhuman primate; B. Team Methods; C. Results of Surveys and Interviews
2. Promoting Psychological Well-being
 A. Intent and Language of the Animal Welfare Act; B. Community Response; C. Other nations and societies; D. Difficulties inherent in measuring psychological well-being; E. species-typical behaviour (STB)
3. Critical Element Concept
4. Literature review and discussion : A. Social Grouping; B. Social Needs of Infants; C. Structure and Substrate ; D. Foraging Opportunities; E. Manipulanda ; F. Consideration of Sensory Stimulation; G. Consideration of Novelty and Control

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Management Guidelines for the Welfare of Zoo Animals -- Falconiformes, Zoo Zen Volume XVI, Number 1, August 2000 (Pp. 48. Rs. 100/-)



Federation of Zoological Gardens of Great Britain and Ireland, Jemima Parry-Jones. We are indebted to the Federation of Zoological Gardens of Great Britain and Ireland for providing an excellent document on animal management. In years past the "Zoo Fed" has brought out many such volumes on a variety of animals which we have shared with zoos in India.

This volume on Falconiformes, written and compiled by Jemima Parry-Jones of the National Bird of Prey Centre and Edited by Gordon T. Mellor, De Montfort University, Bedford, is full of useful information for caring for birds of prey. It carries to seal of approval of the Zoo Fed Falconiformes Taxon Advisory Group, a group of falconiformes specialists within the Zoo Federation which periodically meet and frequently communicate to compile and disseminate to Great Britain and Ireland's zoos the best possible information on falconiformes and to make recommendations on their management within Great Britain and Ireland. Birds of prey are one of the most fascinating birds behaviourally and -- like all carnivores -- attract much attention of visitors if displayed appropriately. They are not at all easy to keep and breed, requiring very personal attention and facilities which many zoos are unable to provide. We thank the Zoo Federation of Great Britain and Ireland for sharing this volume with us and permitting us to pass it on to you.

Contents:

Introduction -- Section 1: Biology and field data. Suborder - Cathartae : 1.1 Morphology/description; 1.2 Distribution/habitat ; 1.3 General Behaviour ; 1.4 Diet and feeding behaviour; 1.5 Reproduction; 1.6 Survival; 1.7 Conservation Status

Suborder - Accipitres (family - Pandionidae): 1.1 Morphology/ description; 1.2 Distribution/habitat; 1.3 General Behaviour; 1.4 Diet and feeding behaviour; 1.5 Reproduction; 1.6 Survival; 1.7 Conservation Status

Suborder - Accipitres (family - Accipitridae): 1.1 Morphology/description; 1.2 Distribution/habitat; 1.3 General Behaviour ; 1.4 Diet and feeding behaviour; 1.5 Reproduction; 1.6 Survival; 1.7 Conservation Status

Suborder - Sagittarii. 1.1 Morphology/ description; 1.2 Distribution/ habitat; 1.3 General Behaviour; 1.4 Diet and feeding behaviour; 1.5 Reproduction; 1.6 Survival; 1.7 Conservation Status

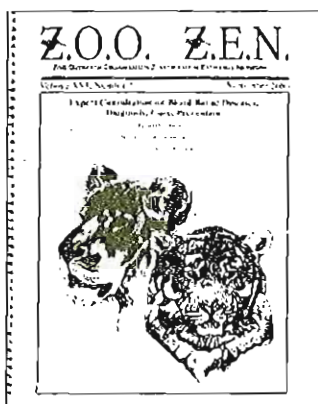
Suborder - Falcones. 1.1 Morphology/ description; 1.2 Distribution/habitat; 1.3 General Behaviour; 1.4 Diet and feeding behaviour; 1.5 Reproduction; 1.6 Survival; 1.7 Conservation status

Section 2: Management in captivity. 2.1 Enclosure; 2.1.1 Boundary 2.1.2 Substrate; 2.1.3 Furnishings and Maintenance; 2.1.4 Environment; 2.1.5 Dimensions; 2.2 Feeding; 2.2.1 Basic Diet; 2.2.2 Special Dietary Requirements; 2.2.3 Method of feeding; 2.2.4 Water 2.3 Social Structure; 2.3.1 Basic Social Structure; 2.3.2 Changing Group Structure; 2.3.3 Sharing Enclosure with other species 2.4 Breeding; 2.4.1 Mating; 2.4.2 Egg Laying and Incubation; 2.4.3 Hatching; 2.4.4. Development and Care of Young; 2.5 Population Management; 2.5.1 Population status; 2.5.2 Species Management Programmes; 2.5.3 Individual Identification and sexing; 2.6 Handling 2.6.1 General Handling; 2.6.2 Catching/ Restraining; 2.6.3 Trans-portion; 2.6.4 Safety; 2.7 Legislation; 2.7.1 Conservation; 2.7.2 Health and Welfare; 2.7.3 General; 2.8 Specific Problems; 2.9 Additional Research. Section 3: References

Expert Consultation : Report of Meeting on Tiger Tragedy at Nandankanan Zoo, Zoo Zen Volume XVI, Number 2, September 2000 (Pp. 47. Rs. 75.00)

In June of this year a tiger expired at Nandankanan Zoo. Tests revealed that the death was Trypanosomiasis. Considering it an isolated incident, zoo authorities were shocked when on July another tiger sickened and died, followed by a spate of illness and death which shocked the entire

country. Zoo authorities attempted to prevent more deaths by injecting tigers in the same area with the most available and acceptable drug, Berenil but their efforts were in vain. Several Central Zoo Authority members and biologists rushed to the Nandankanan Zoo to help with expertise and moral support. The Central Zoo Authority, Ministry of Environment called an Expert Consultation on Blood Borne Diseases, Diagnosis, cure and Prevention to pool their expertise and experience and come out with a consensual opinion of what happened and what should be done to prevent such things from happening in future. Therefore on 19 July 2000 delegates from all parts of India and a visitor from the Antwerp Zoo and Institute of Tropical Medicine gathered to evolve a explanation and strategy.



Contents

Programme; Inaugural Remarks Presented papers

- *Trypanosoma evansi* in some zoo animals, Dr.F. Vercammen
- Trypanosomiasis - Incidences in Zoological Garden, Thrissur, Kerala Dr. S. Abdul Salam
- Occurrence of Trypanosomiasis in Alipore Zoo, Calcuta, Dr. Avijit Biswas
- Incidence of Protozoan Parasitic infection in captive wild animals in Assam, A. Chakraborty
- Blood Borne Diseases in Zoo Animals, Dr. P. Dhanapalan
- In Vitro Study on Movements of *Trypanosoma* In a Wild Dog (*Cuon alpinus*), Dr. M.G. Jayathangaraj, M. Raman, M.C. John, L. John, N.S. Manoharan
- Synopsis of Trypanosomiasis in Royal Bengal Tiger "Arjun" at Sri Chamarajendra Zoological Gardens, Mysore, Dr. S.S.M.S.Khadri and N. Rajasekhar
- Diagnosis, Treatment, Prevention and Control of Blood Borne Disease Lt. Col. R.S. Rawat
- Trypanosomiasis in Elephants: A Case Study of Different Strains of *Trypanosoma evansi* (Bovine strain, buffalo strain, canine strain) in Experimental animals, Dogs and Calves, Dr. C. Mathew C. John, Ph.D
- Spontaneous cases of Meningo Encephalomyelitis due to *Trypanosoma*

evansi in Horses, Dr. B. Murali Manoharan and Dr. A. Sundaraj (Retd.)

-Mortalities in Van Vihar National Park, Madhya Pradesh , Dr. A.B. Srivatsava

- A note on Haemoprotozoan Diseases of Animals recorded at Nehru Zoological Park: Hyderabad, A.P., Sri.B. Trinadha Rao, I.F.S. Dr. Mir. Gowhar Ali Khan and Dr. M. Navin Kumar.

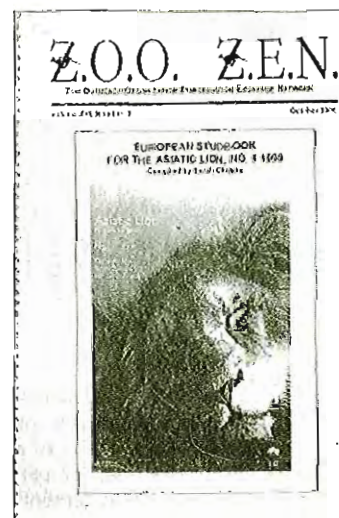
* Appendix: Recommendations of Working Groups and Questions and Answers

EUROPEAN STUDBOOK FOR THE

ASIATIC LION, NO. 1 1999

Compiled by Sarah Christle

Zoo Zen, Volume XVI, Number 3, October (Pp. 38. Rs. 75/-)



The European Studbook for the Asiatic Lion has been compiled for the first time, although the programme was initiated some seven years ago. By "the programme" is meant the coordinated breeding plan and activity in the European Zoo community. There are such programmes for quite a number of threatened species.

American, European and Australian zoos take these coordinated breeding programmes very seriously. When a zoo signs up for a programme, it effectively signs over control of the animal to the species committee. The committee meets and decides the movements and activities which provide the best options for survival and fitness (note particularly "and fitness") of the species in captivity. This is because these zoos believe that these animals may indeed be used for some genuine conservation purpose someday. Animals are exchanged according to committee decision. At the same time there are no government or administrative officers with control over the zoos who, if they misunderstand or fail to understand the goal of the programme, could put obstacles in the way of the animals moving. On the

like it might be the most detailed and systematic means of tracking down urgently needed information for zoo vets and curators. It requires a password to enter the deeper layers but check it out and be ready to get hooked.

ZooLex

Zoo Lex is an incredible zoo design site which is getting better all the time. It is for zoo professionals, zoo suppliers, zoo friends and volunteers, sponsors, journalists, students researching zoos and particularly zoo design. The ZooLex Zoo Design Organisation was founded by Monika Fiby, Hans Fiby and Nadja Ziegler who are landscape architects. Pictures of zoo enclosures, site plans, information about plants, education, etc. A great place to visit and stay for awhile.

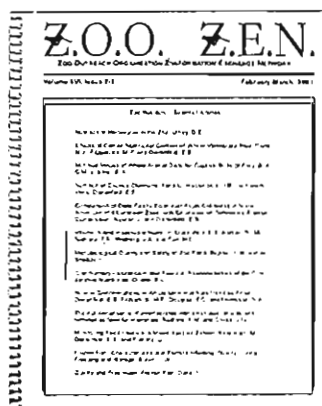
Zoos of the World

This is probably the most comprehensive zoo site on the web today. It links with International Zoo News and includes many articles from this well known publication. It also links with the ZooNewsDigest to which many of you subscribe. There is an Animal Exchange section, a section of Global Zoo Websites and a Management section. There are sites just on turtles and tortoises, and other animal groups.

Zoo sites of the world

This section is a print out of the Zoos of the World Global Zoo Website section to show you what you can get by visiting the site. You can just click on any of hundreds of sites about individual zoos.

Zoo Nutrition -- Selected Articles, Volume XVI, Issue 7-8, February-March 2001 (Pp. 100. Rs. 150/-)



Nutrition of Herbivores in the Zoo, Ullrey, D.E.

Effects of Diet on Nutritional Content of Whole Vertebrate Prey, Clum, N.J., Fitzpatrick, M.P. and Dierenfeld, E.S., Nutritive Values of Whole Animal Diets for Captive Birds of Prey, Bird, D.M. and Ho, S. K.

Nutrition of Captive Cheetahs: Food Composition and Blood Parameters, Dierenfeld, E.S.

Comparison of Diets Fed to Southeast Asian Colobines in North American and European Zoos, with Emphasis on Temperate Browse Composition, Nijboer, J. and Dierenfeld, E.S. - Vitamin A And Insectivore Nutrition, Dierenfeld, E.S. Barker, D., Mc Namara, T.S., Walberg, J.A. and Furr, H.C.

- Microbiological Quality and Safety of Zoo Food, Richter, E.R. and Al-Sheddy, I.

- Commentary - Skepticism and Science: Responsibilites of the Comparative

Nutritionist, Duane, E.U.

- Mineral Concentrations in Whole Mice and Rats Used as Food, Dierenfeld, E.S, Fitzpatrick, M.P., Douglas, T.C. & Dennison, S.A.

- The nutritional value of invertebrates with emphasis on ants and termites as food for Mammals, Redford, K.H. and Dorea, J.G.

- Monitoring Food Intake in a Mixed Species Exhibit, Kaprielian, M., Dierenfeld, E.S. and Piekarz, D.

- Frozen Fish: Characteristics and Factors Affecting Quality During Freezing and Storage, Slavin, J.W.

- Quality and Freshness--Frozen Fish, Dane,

Butterfly Houses, Volume XVI, Issue 9.

From the 1996, 1997 & 1998 AZA

Regional Conference Proceedings

(Pp. 47. Rs. 100)



- Times Flies When You're Having Fun: The First Year At The Butterfly Pavilion and Insect Center

- You Have Just Entered the Butterfly Zone

- Economics or Extravagance?: The

Butterfly Rearing Program at the Cockrell

Butterfly Center

- Butterfly Display Design: A Paradoxical

Paradigm

- Choosing the Right Beautiful Butterflies for

your Tropical Exhibit

- The Rise of Butterfly Houses and the

Future of Invertebrate Exhibits

- Using Native Butterflies as An Exhibit

Alternative

- The Complex Journey of An Exotic

Butterfly Chrysalis from the Farm to the

Exhibit

- Captive Husbandry of Smooth Butterfly

Rays (Gymnura micrura)

- Methods of Mating Native Butterflies

- The Significance of Butterfly Breeding in

Java

- Bronx Zoo's Butterfly Experience

Disease Risk. Disease Risk Workshop, Briefing Book Vol. 1, Vol.2, Vol. 3 & Report, 30 March - April 1, 2000, Henry Doorly Zoo, Omaha, Nebraska, USA Vol. XVI, No. 10-12 (Pp. 119. Rs. 175/-)

- The Impact of Infection and Disease on Animal Populations: Implications for Conservation Biology

- Emerging Infectious Diseases of Wildlife -

Threats to Biodiversity and Human Health

- Population Biology, Evolution and Infectious

- Disease: Convergence and Synthesis

Infectious Disease Risk Assessment in

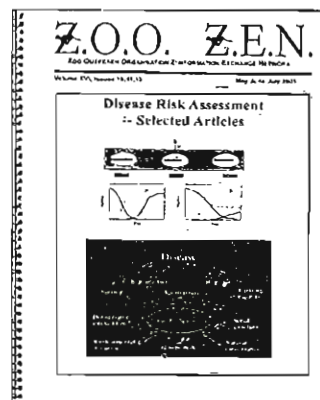
Captive Propagation, Reintroduction and

Wildlife Conservation

- Infectious Disease and Intensive

Management: Population Dynamics,

Threatened Hosts, and their Parasites



- Risk Assessment in Conservation Programs

- Conservation and Disease

- Are We Guilty of Neocolonialism in our

Work on Wildlife Diseases?

- Primate Conservation: The Prevention of

Disease Transmission

- Tuberculosis in Wildlife in the Ruwenzori

National Park Uganda (Part I)

- Tuberculosis Takes Severe toll on Lions

- Integrating Considerations of Disease into

Population Viability Analysis with Vortex

- Modeling Disease Risk in PVA: Preliminary

Ideas Using the Simulation Modeling Package

Vortex

Exhibit Design -- Selected articles from the 1997 AZA Annual Conference Proceedings and the 1996 AZA Regl. Conference Proceedings, Vol. XVII, No. 1-3 (Pp. 115. Rs. 175)

-Connecting the Pieces: A Multi-Disciplinary Approach to Exhibitory

-The Special Exhibit Development Process at

the Monterey Bay Aquarium: A Husbandry

Perspective

-Architects and Program Managers on your

Exhibit Development Team

-A New Exhibit? OH Joy.. OH Rapture... OH

NO!

-The Kilimanjaro Safari Exhibit At Disney's

Animal Kingdom An Immersion Exhibit

-More than Animals: The Role of Contextual

Environments and Stories in Zoos

-Exhibit Planning - A Synergistic Approach

Designing for a Philosophy, Not a Personality

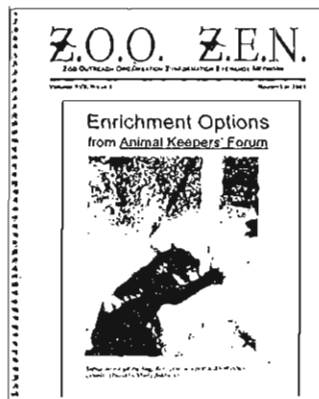


- Aquarium and Zoo Exhibit Design: Redefining the Exhibit Experience in Revitalization Projects
- Exhibit Planning: A Synergistic Approach Designing for a Philosophy, Not a Personality
- The Design: A 20-Year Vision for its Planned Growth and Change
- The Phoenix Reborn: Renovation of the Aquatic and Reptile Center (ARC) at the Milwaukee County Zoo
- Exhibit Design Workshop Piano/Harp Wire Enclosures
- Guidelines to Follow in Managing a Successful Design and Construction Project
- Collaborative Planning Process for New Exhibits at the Cheyenne Mountain Zoo
- Mexican Wolf Exhibit at the Houston Zoological Gardens
- Construction Monitoring: Documenting Environmental Compliance
- Quest for Wire: New Cable Barrier Key to Landscape Immersion at ASDM's Javelina Exhibit
- The Marco Polo Trail - A New Approach in Zoo Exhibitory
- The Design & Construction of a Mixed-Species Reptile Exhibit
- Think Globally - Experience Locally Successful Exhibits with a Regional Focus
- A Parking Lot, An Exhibit and a Research Station
- Developing Large Zoo Exhibits with a Small Staff
- We Don't Need An Exhibit Coordinator!
- Historical Perspectives in Design from the Cincinnati Zoo
- Exhibit Artistry - Its Effect on the Zoo Visitor

Enrichment Options from Animal Keepers Forum 1999-2000:
American Association of Zoo Keepers, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614, USA. Vol. XVII, No. 4 (Pp. 38, Rs. 75/-)

- Primates, New Guinea Singing Dog, Coatis, Parrots, Seed Shaker for Primates, PVC
- Elbow Feeder for Primates or Squirrels Carnivores, Construction, Response, Precautions
- Primates: Termite Log
- Felids, Enrichment websites to check out, Guidelines for enrichment available from

- ABWAK**
- Cats, Descriptions
 - Giraffe
 - Bundle Toys and Food Puzzles, Materials for possible Enrichment Items, Found objects
 - Creating Artificial Vines for Natural Zoo Displays, Creating a Vine, Flexible Vines, Rigid Vines, Creating a Naturalistic Look, Materials to Use for Particular Species, Supplier List
 - Mop Heads, Natural Hair Wigs for Primates, Response, Presentation
 - Snake Enrichment
 - Condors, Cranes, Parrots, Ground Hornbill, Waterfowl, Pheasants, Corvids, Ostrich, Ground Hornbills, Storks, Cranes, Parrots
 - Enrichment Graphics
 - Enrichment Presentations



- Carcass Feeding, More time spent eating, Use of entire mouth and claws, Control over where to eat, Excitement, Grooming behaviors, Oral health, Teaching visitors a more realistic picture of natural behavior, Anticipated negative visitor perception, Fear of health threats, Impracticality
- Rhino Enrichment, Additional Enrichment Websites to check out
- Using Graphics to Promote Enrichment
- The Power of Scent
- Feeding Devices

Reactions--Crisis Management.
Animal Keepers Forum 1999-2000,
American Assn of Zoo Keepers, Inc.,
3601 S.W. 29th St., Suite 133, Topeka, KS
66614, USA. Vol. XVII, No. 5 (Pp. 38, Rs. 75)

This issue consists of questions and answers about Crisis Management - how to prevent and handle crisis situations

How does exhibit design effect zoological safety?

Are there any general guidelines on what could set an animal off and how do primary signs of aggression fit into this kind of situation?

Is crisis training really necessary and does it aid in the resolution?

What options are available for crisis and safety training?

How do you prepare for a crisis management drill?

When is it time to stop and reevaluate during a crisis management situation?

Are there different types of tactics and equipment that can be utilized for different animals in a crisis? -- Five part series

What happens when crisis management fails? Two parts

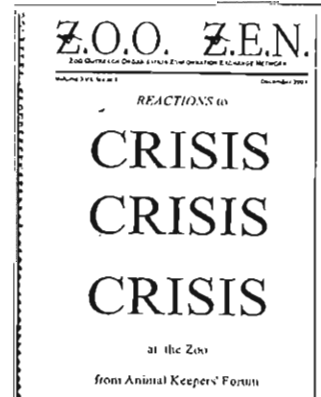
What should I expect when a crisis occurs?

What do you look for in a shipping crate and what precautions should staff members take in advance of a dangerous animal transfer or shipment?

What technical aspects should you look for in a cat management facility?

What options are available for emergency or temporary housing for animals?

How can staff members contact each other in an emergency?



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