

from the editor's desk

Andy Lodge called on 5 July following his return from Kenya. He reported that using the truck purchased with funds from the 1990 "Bowling for Rhinos" event, they had moved 150 giraffe from the Ngare Sergoi Rhino Sanctuary to Lewa Downs. The giraffe population within the boundaries of the Sanctuary is so large that they are doing extensive damage to the foliage and ecosystem. Of these 150 animals, 56 have been moved from Lewa Downs to other national parks in Kenya. Fifty-two have been translocated to Samburu National Park and four to Meru National Park. The plan is to eventually move at least 500 giraffe out of both the Rhino Sanctuary and Lewa Downs to Samburu and Meru National Parks. This will both restock the parks where poaching has been heavy and also relieve the pressure this large number of giraffe put on Ngare Sergoi. The translocation of these giraffe was only possible because of the truck which AAZK purchased for the Sanctuary last year---Andy said many giraffe would have had to have been shot if the translocation had not been possible.

Andy also reported that four Black rhino on the Sanctuary are pregnant. One White rhino has been dehorned and released in the wild where it is under constant surveillance by trackers. Andy also reported that 13km out of the total of 56km of the solar-powered fence has been completed at Ngare Ndare Forest Reserve. This is the first and largest effort of its kind to be undertaken in the country's history. Andy reports that there has been very positive reaction from the local farmers who can now raise their crops successfully without the constant worry of the elephants trampling their efforts or possibly injuring them or their families.

The area now protected includes Ngare Sergoi Rhino Sanctuary and Ngare Ndare Forest Preserve, a total of 110,000 acres. Much of this is old-growth forest areas which are now safe from development or devastation by encroaching agricultural uses.

The light airplane which was also purchased from money raised during last year's "Bowling for Rhinos" event is in constant use for everything from doing elephant population counts to tracking poaching activity. Both the truck and the airplane sport the AAZK rhino logo of their sides (see accompanying photos).

Andy was invited to Nairobi by Richard Leakey, head of the Kenyan Wildlife Service. Leakey wanted to express his thanks to Andy, the Ngare Sergoi Support Group and especially all the AAZK members who have helped raise the money for this important conservation project.

Andy says, and he is certainly correct, that every AAZK member should be justifiably proud of the contribution they have been able to make to this active conservation effort. This effort is paying off in very large ways and will continue to do so for generations to come. From everyone from the local Kenyan farmers to the head of Kenya's Wildlife Service, a big thank you to you all. S.C.

(Andy has a new slide presentation and video which include the giraffe translocations and rhino release. He is always available to visit your zoo and update you on what's been happening at Ngare Sergoi Rhino Sanctuary and Ngare Ndare Forest Reserve. You may contact Andy at NSSG, Inc., P.O. Box 29503, Columbus, OH 43229 or call (614) 885-0458.)

(Editor's note: the following letter was faxed to the AAZK Membership c/o Nanci Pintavalli and forwarded on to our office for publication here.)

7 July 1991

Dear Friends,

On behalf of everyone concerned, we would like to thank your organization for all the help and input that you have provided to assist in the management of the Ngare Sergoi Rhino Sanctuary and Lewa Downs.

From the Editor's Desk, *Continued*

The Super Cub, which now proudly wears your emblem over Kenya, was operational on our return from America in early November. She has now flown nearly 200 hours in the 8 months since she arrived. She was involved in the successful translocation of a group of Sitatunga from a swamp in Western Kenya, where they are threatened, to Lewa, and has also done a considerable amount of Elephant surveillance together with all the general flying involved with the management of the sanctuary and forest.

The lorry arrived in February - we cannot tell you the excitement! We had a special body constructed in Nairobi to carry the Giraffe and the first capture took place in March. The second phase took place in June/July and 56 animals were moved to two nearby National Parks. This was the first capture operation of this scale carried out in the country and to date it has been more successful than can ever have been hoped for. This operation could certainly not have happened without your great generosity and amazing efforts in providing the lorry. It is planned to start capturing again in September and we foresee these captures going on over a period of several years until we have reduced the number of Giraffe to a sustainable level.

The Ngare Ndare Forest fence is progressing well with 18kms finished as of today and a further 10kms expected to be finished by the end of the month. This fence is considered a pilot project by the Kenya Wildlife Service, as was described to Andy Lodge by the Director Dr. Leakey. Since the construction of the fence along the forest there have been no incidents of elephants breaking the fence or raising any of the adjoining farmlands. The enthusiasm and appreciation by the local people from this work was clearly shown to Andy when he visited the project in June. We have already started to receive money from this year's fantastic bowling effort for the forest project and we cannot adequately express in words how grateful we all are, except to say without your help we doubt that we would have even started the fence by now.

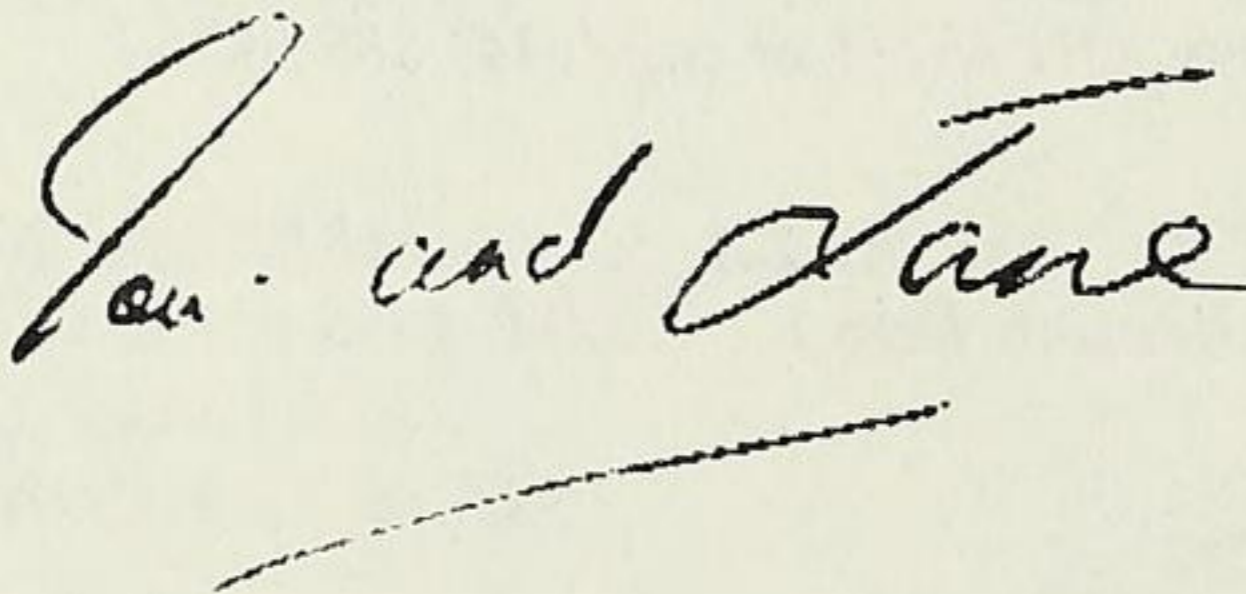
The money that you so kindly raised for Tim Ward Booth, we have never had the opportunity to thank you for. This most generous donation we all warmly appreciate and plan to use for an old peoples' home nearby, where there are many of Tim's old friends, in order to remember and appreciate all that Tim did for the area.

Overall, we and this Country have a great deal to thank you for- this was clearly stated to Andy by Dr. Leakey. Please remember that all concerned out here appreciate fully every individual effort and we also are committed to try to keep the welfare of this ecosystem as close as is humanly possible to its original pristine state.

We really look forward to meeting the two winners of the Bowling for Rhinos out here in Kenya and returning just a little of the amazing hospitality we were shown in New Orleans by so many friendly people.

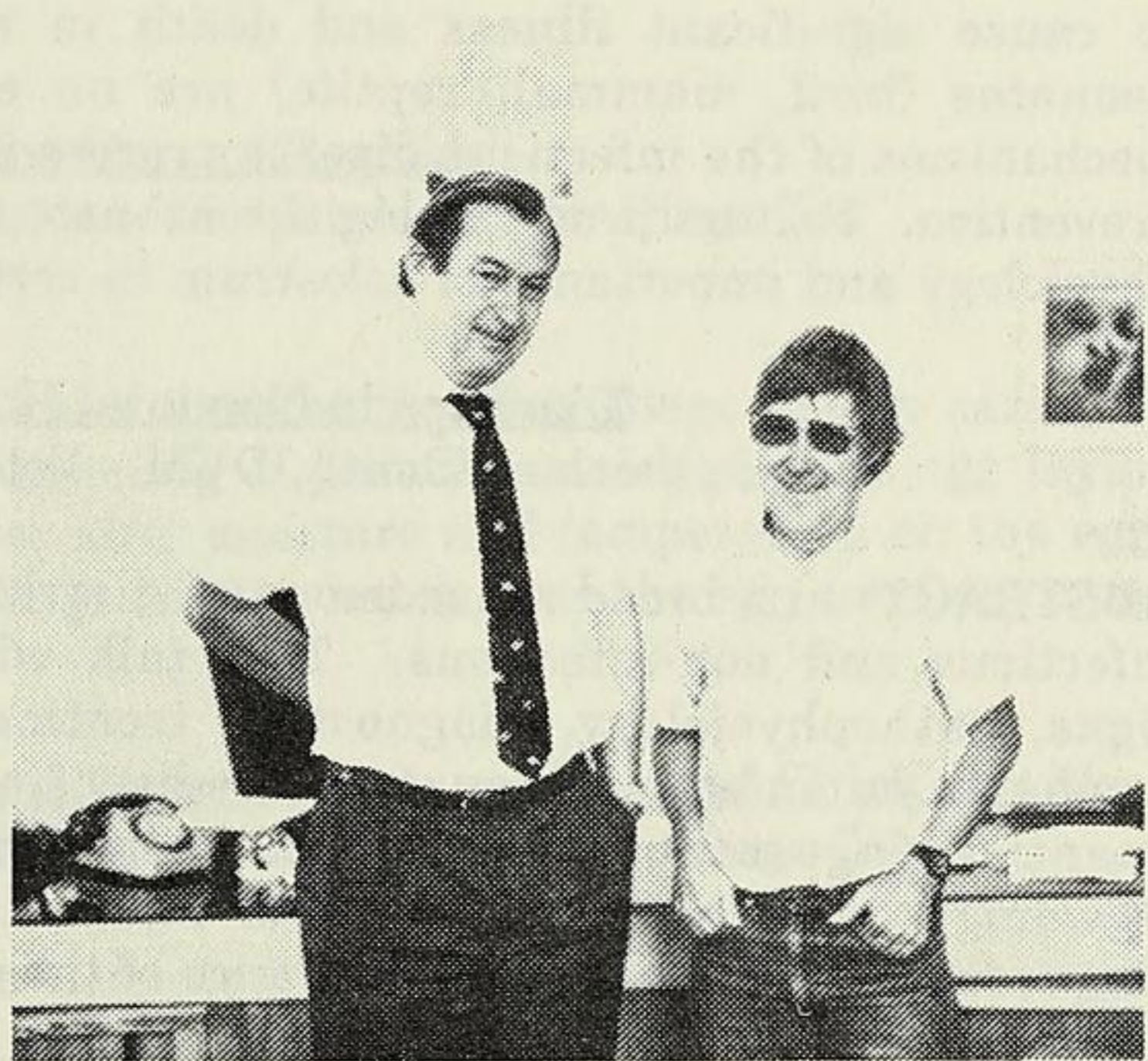
Best Wishes,

Ian and Jane Craig





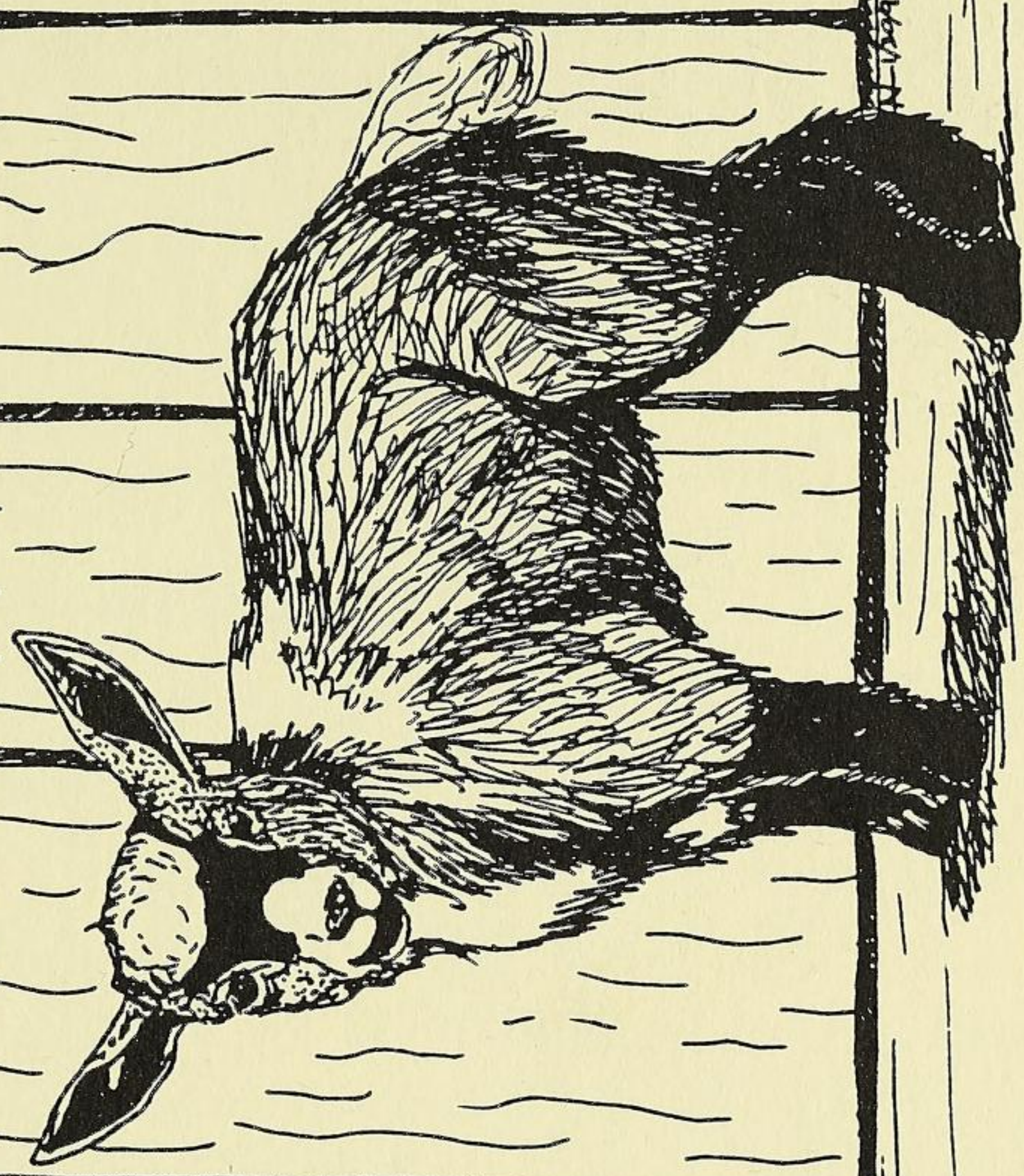
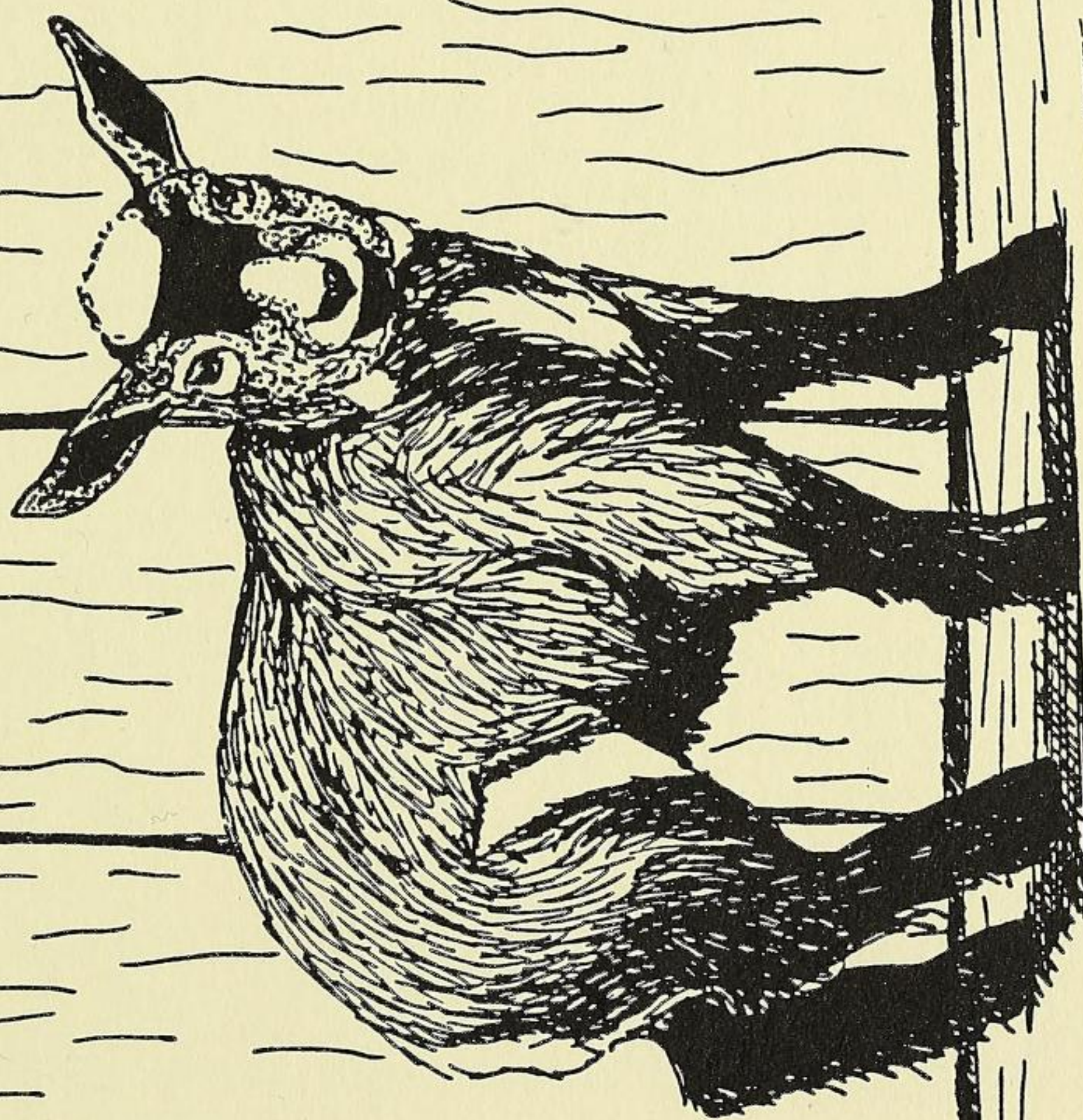
Photos clockwise: the AAZK-purchased truck translocating giraffe; a close-up of the truck showing the AAZK rhino logo on its door; Andy Lodge meeting with Dr. Richard Leakey, the Director of the Kenyan Wildlife Service; and the Super Cub airplane, also sporting the AAZK rhino logo, which is used for elephant counts, herding and poacher tracking. (Photos courtesy of Andy Lodge, Ngare Sergoi Support Group)



Animal Keepers' Forum

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Dedicated to Professional Animal Care

Chapter News

Memphis Zoo AAZK Chapter

Officers for 1991 are:

President.....Gail Karr
Vice Pres.....Cindy Pinger
Secretary.....Carolyn Bratcher
Treasurer.....Joe Byrd
Chapter Liaison.....Kathy Fay

We are happy to have an AAZK Chapter again after 7 years of inactivity. We have raised money for the Chapter at a number of zoo functions, including "Winter Lights", Spring Members Night, and "ZooGrass" - all evening activities, open to the public on zoo grounds. We are hoping to use some of these funds to help with Keeper Education and Sending Keepers to Conferences & Workshops.

The Memphis Zoological Society has been very supportive, especially with seed money for fundraisers. They have also generously agreed to match Keeper Education funds. Many Thanks, MZS!

Our first every 'Bowling for Rhinos' was fun and successful. We raised nearly \$2800.00. Many area businesses donated door prizes, and bowlers included zoo staff, docents, Society members and friends. Also donated were 100 T-shirts with BFR's artwork by Memphis Keeper/Artist Mike Turri. We are looking forward to next year.

--Kathy Fay, Chapter Liaison

SanDiego AAZK Chapter

The annual Chapter Member's Photo Caravan at the Wild Animal Park was held on 17 July. Three trucks carried about 30 eager members on a two-hour tour through "East/South Africa", and "Asian Plains/Swamp" exhibits.

Members fed out apple and carrot treats as they came nose-to-nose with habituated giraffe, rhino, eland, banteng, wisent, ostrich, and many deer and antelope species.

Special thanks to our guides Deanna Herfel, Gloria Kendall and Kim Wiebel; our drivers Donna Biesek, Mary Jo Hunsicker and Dennis Riggs; and our maintenance workers Bob Kirkbride and Van White, Jr. who did last minute truck fix-ups.

--Mary Dural, Chapter Liaison

Los Angeles AAZK Chapter

Our June meeting featured Rick Barongi, from the San Diego Zoo, sharing his experiences in Panama while visiting Noriega's Zoo. His fine report engendered a \$125.00 donation to assist in the training of Denis Santiago, tapir keeper.

In July, we thoroughly enjoyed the presentation of our own orangutan keeper Jeannette Tonnie, whose program recounted her unusual experiences in Borneo with Birute Galdikas and her organutan rehabilitation project. She related a hair-raising hijacking at sea involving their small craft. Fortunately, the incident ended without bodily harm to our intrepid keeper.

The annual Buffet and Flashlight Tour fundraiser in August was a great success thanks to those who donated articles for the raffle and the keepers who donated their time to lead tours.

The Chapter has assigned a \$200 donation to the Rhino Rescue Fund and a \$500 donation to Namibia's "Sponsor a Rhino" program. Keeper Jeff Briscoe brought back a great deal of enthusiasm for Namibia's program after attending the International Rhino Conference in San Diego.

--Lois Carwile, Chapter Liaison

Columbus Zoo AAZK Chapter

The Chapter continues its support of various conservation causes through its successful aluminum and glass recycling. Totals for 1990 were:

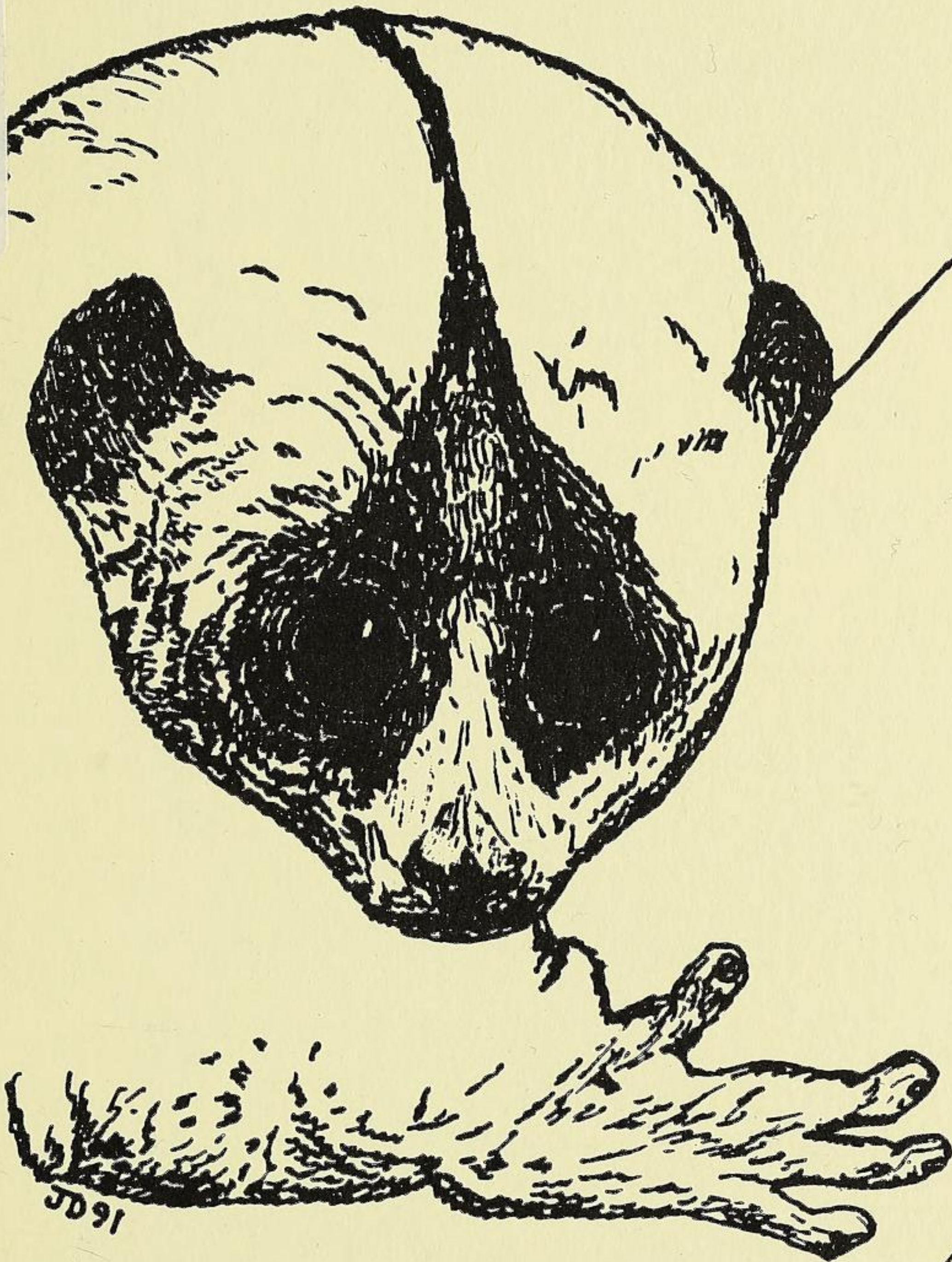
Glass 120,141 lbs.
Aluminum 29,165 lbs.

(Continued on Page 304)

Animal Keepers' Forum

October 1991

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Births & Hatchings, Continued

Los Angeles Zoo...the month of August produced a wide selection of species babies.

Reptiles: 2 Prehensile-tailed skink (*Corucia zebrata*), an arboreal skink; 4 Rough green snake (*Opheodrys aestivas*), arboreal and semi-aquatic in shallow water, has keeled scales - hence the term rough.

Birds: 2 Sacred ibis (*Threskiornis aethiopica*), 2 Superb starlings (*Spreco superbus*), 3 Kookaburra (*Dacelo novaeguineae*), and 2 Congo peafowl (*Afropavo congensis*) - not discovered until 1936, the first living specimen was not obtained until 1949 due to World War II - Endangered.

Mammals: 1 Vampire bat (*Desmodus rotundus*), 1 Black howler (*Aloutta caraya*), 1.0 Emperor tamarin (*Saguinus imperator*) threatened status, 1 White-cheeked gibbon (*Hylobates concolor*) endangered, 1 Kikuyu colobus (*Colobus guereza kikuyuensis*) threatened, 0.1 Alpaca (*Lama glama pacos*), 0.1 Sable antelope (*Hippotragus niger*), 0.2 Giant eland (*Taurotragus derbianus*), and 0.1 Gerenuk (*Litocranius walleri*).

We were saddened by the death of one of the Giant eland mothers during the birthing process. Her baby is being hand-raised. *submitted by Lois Carwile, Chapter Liaison, Los Angeles Zoo, Los Angeles, CA.*

Kansas City Zoo...reports the following B&H for July-August 1991:

Mammals - 1.0 Gunther's dik-dik (*Madoqua guentheri smithi*), 0.1 Brown Swiss (*Bos taurus*).

Birds - our Chilean flamingos (*Phenicopterus chilensis*) laid several eggs, 0.0.2 hatched and were being raised by the parents. Unfortunately both chicks disappeared within a few days. Other hatchings include: 0.0.2 Black crane (*Limnoconax flavinostra*), 0.0.1 Roseate spoonbill (*Ajaia ajaja*), 0.0.2 Bali mynah (*Leucopsar rothschildi*), 0.0.1 Silver beaked tanager (*Ramphocelus carbo*). *submitted by Shirley Williams, Keeper, Kansas City Zoo, Kansas City, MO.*

San Antonio Zoological Gardens & Aquarium...a male Southern white rhinoceros (*Ceratotherium s. simum*) was born on 1 August. Unfortunately the calf did not survive. However, this event represents the 10th birth of this species at our institution. Twin Golden-headed lion tamarins (*Leontopithecus rosalia chrysomelas*) were born on 12 August. This is our second set of twins from these parents this year. Other mammal births include: 0.0.1 Short-tailed fruit bat (*Carollia perspicillata*), 0.0.2 Squirrel monkey (*Saimiri sciureus*), 1.0 Chapman's zebra (*Equus burchelli antiquorum*), 1.0 Arabian oryx (*Oryx leucoryx*), 0.1 Impala (*Aepyceros melampus*), 2.1 Greater kudu (*Tragelaphus s. strepciseros*), 1.1 Addra gazelle (*Gazella dama ruficollis*), and 0.1 Slender-horn gazelle (*Gazella leptoceros*).

Wrapping up this year's hatching season, we've had 26 chicks hatch during August: 0.0.2 Scarlet ibis (*Eudocimus ruber*) - bringing the total of this species' 1991 hatches up to nine; 0.0.3 Sacred ibis (*Threskiornis aethiopicus*), 0.0.14 Red junglefowl (*Gallus varius*), 0.0.4 Crested wood partridge (*Rollulus roulroul*), and 0.0.3 Painted conure (*Pyrrhura p. pictus*).

On 28 August, 1.4 Madagascar ground boa (*Acrantophis madagascariensis*) were born. This is believed to be only the third brood to be born in the United States (the first at the Fresno Zoo, and the last two at San Antonio). Our Reptile Department has also raised 1.0 Namib sand gecko (*Chondractylus angulifer*). *submitted by Terrence L. Fisher, Registrar, San Antonio Zoological Gardens & Aquarium, San Antonio, TX.*

Sea World of Florida (Aviculture Dept.)...significant hatchings include: 0.0.1 Toco toucan (*Ramphastos toco*), 0.0.1 Lilac breasted roller (*Coracias caudata*), 1.2 Argentine ruddy duck (*Oxyuru vittata*), 5.2.1 Brazilian teal (*Amazonetta brasiliensis*), 3.6 Hooded merganser (*Mergus cuculatus*), 7.3 Hottentot teal (*Anas punctata*), 2.1 Javan whistling

Chapter News

San Diego AAZK Chapter

August Program...Dr. Jack Allen, D.V.M., Associate Veterinarian at the Wild Animal Park, spoke on "The Tagua (Chacoan peccary) Project in Paraguay." The program was held at the WAP's Mombasa Pavilion.

The project, Proyecto Tagus, began in 1986 under the guidance of Dr. Kurt Benirschke. Veterinary involvement started in 1990. Dr. Allen gave an excellent slide presentation as he discussed the history and geography of Paraguay; the geographic range of the Tagua; pen construction with the need for visual barriers; how the 25 animals in the project were trapped and darted; and biking 26 miles from the nearest town to the remote project site.

Veterinary work consisted of: complete physicals (including heart and lungs), blood work, fecal samples, parasite checks, oral exams (problems with decay and fractured canine teeth are common), bite wounds with maggots, weights, measurements, inspection of glands, ear tagging, notching, and color-coding.

Habitat loss is the number one reason the population of the Chacoan Peccary has decreased: clear-cutting of the Chaco (scrub/thorn) land for cattle raising and hay growing.

Dr. Allen remarked that there's very little scientific literature on the Tagua and nutritional requirements are not known. He stressed the need for studies on nutrition, behavior and husbandry.

The biggest problem currently is overcrowding at the project site and continued funding is needed. Those who attended left feeling that the Tagua is a species well worth saving.

--Mary Dural, Chapter Liaison

Beardsley Zoo AAZK Chapter

The Beardsley Zoo Chapter's summer lecture series was a big hit this year and we hope to expand it for next year. Both

talks were given to a filled-to-capacity crowd in our Education Center.

Our first lecture, entitled "An African Adventure at the Zoo", was given in July. Noted wildlife photographer and safari leader Mike Devlin and his wife Betsey conducted a slide show on his adventures, concentrating on the plight of the African elephant and Black rhino. Along with the slides he presented a number of biofacts and took questions from the audience.

Our second lecture held in August was entitled "A Tropical Afternoon at the Zoo" and featured our Zoo Director, Gregg Dancho. Director Dancho presented a slide show on his many trips to South American rainforests. With the help of AAZK Chapter members, he also brought several of our zoo animals out to meet the public. A blow gun demonstration, along with other tropical artifacts, capped the lecture.

--Linda Oltra, Prsident

Central Florida Chapter

New Chapter Officers are:

President.....Debbie Zombeck
Vice Pres.....J. Michael Cothran
Secretary.....Laura Reynolds
Treasurer.....Bonnie Breibeil
Chapter Liaison...Sandy Wieprokowski

Thanks to everyone who has contributed fund-raiser ideas. There has been an incredible amount of input sent to us and we sincerely appreciate all of the information. Hopefully in the future we will be able to share these ideas with other interested chapters by offering a collective packet.

We recently sent monies to Ann Young - Avian Rehabilitation. AY - AR is a private, self-funded rehab for injured wild birds. The majority of zoos and animal institutions in the central Florida area refer AY- AR to the general public or transfer the birds themselves. It is staffed by volunteers and any financial support is used for necessary equipment and supplies.

In other news, our Chapter members are readying for this year's AAZK

Tuberculosis in Domestic and Zoo Animals

By
Martin Hancox
72 Bisley Old Road
Stroud, Clos. GL5 1NB
England

The everyday use of antibiotics, and progress towards vaccines for diseases as diverse as AIDS, malaria, meningitis, and even tuberculosis in badgers rather obscures the almost incredible advances in microbiology which have taken place in little over a century. Linking an outbreak of colds with unpacking of a contaminated but otherwise 'clean' parcel of blankets was newsworthy on the Scott 1912 Antarctic expedition. Fleming's discovery of penicillin; the late 1800s pioneering of antiseptic surgery by Lister, and an antimicrobial heat treatment for milk by Pasteur are a few milestones towards greater knowledge.

Consumption, phthisis or tuberculosis was recorded in Hindu literature of 2000 B.C.; and being no respecter of persons, victims of the disease included an Egyptian mummy, as well more recently, of the Brontes, Chopin, F. Kafka, D.H. Lawrence, Napoleon II and R.L. Stevenson. This bacterial, wasting and potentially fatal disease was very widespread formerly, particularly under crowded slum conditions, and according to a recent World Health Organization report, may soon take an increasing toll in Africa linked to a spread of the immunodeficiency disease (HIV-AIDS). Although the bovine strain of TB was the causative organism responsible for patchy outbreaks of meningitis in England in the 1940s, one cannot help wondering whether the present not fully explained patchy occurrence of meningococcal meningitis might not be linked immunologically to the sporadic incidence of TB in cattle.

Probably no animals are completely immune to TB, and a very wide range of species have been recorded with the disease due to Mycobacteria related to the leprosy bacterium (*M. avium*, *bovis*, *microti*, and *tuberculosis/leprae*). The 954 mammals and 2112 bird cases reviewed by Francis (19958) and shown in Table 1 are undoubtedly a biased and incomplete sample from autopsies, but nevertheless an interesting indicator of the ubiquitous nature of the disease and its importance in different groups. American Indians and other tribal peoples lack immunity to 'diseases of civilization', but whereas New World non-human primates have notably few cases, Old World monkeys and especially apes are very vulnerable to TB and other communicable respiratory diseases, hence accounting in part for their segregation behind plate glass in many collections nowadays.

The parrots too seem to be particularly prone to TB and may develop warty facial growths, and similarly, long-lived fish may develop skin lesions. Tuberculosis is one of the most important diseases in poultry, and is also a major disease in some waterfowl collections since many of the Arctic and north temperate species seem to lack any natural immunity. Surprisingly, no cases were found amongst 116 penguins examined, but such temperate region birds are susceptible to the fungal respiratory disease Aspergillosis, which may flourish on moldy straw bedding and affect other livestock as well as providing 'farmer's lung'. Hoofed stock are the other main group of particular concern, since many are of economic importance as beasts of burden or in agriculture.

TB became a notifiable disease under the Tuberculosis (Deer) Order 1989, and the Deer Health Scheme was launched with a view to achieving attested herds amongst some 40,000 head in 300 or so deer farms in Britain: mostly red, but circa a quarter being fallow deer. TB had been eradicated from cattle in many countries, but is still a problem in Ireland and certain parts of England and in New Zealand.

Species vary greatly in their natural susceptibility to TB. Species prone to TB include ferrets, pig, primates, rabbit and vole; whereas resistant species comprise the dog, horse,

Tuberculosis in Domestic and Zoo Animals, *Continued*

mice and rats. Genetics plays a part, as seen in some captive rabbit family lines, breeds of mink, and short-faced dog breeds. Overall health can also play a part - TB in horses, for example, is often linked to anemia or other diseases. Similarly, individuals may exhibit varied symptoms following infections ranging from acute disease with a spread of tuberculosis lesions in organs away from the primary infection site to species such as rats and mice which fail to develop tuberculosis at all (although rats can also transmit bacilli physically by ingestion and defecation without necessarily becoming fully tuberculous themselves).

Clearly the pathological course of the disease affects the potential for disease transmission, and whereas, for example, in badgers and man lesions may become encapsulated and the disease quiescent unless remission occurs perhaps under stress, lesions in cattle tend to remain open increasing the risk of cross infection. TB bacilli may be passed on especially via either the respiratory or alimentary routes: bronchial pus-sputum-saliva aerosols may be a crucial factor in young cattle or sheep if over-wintered indoors/ or ingested whilst grazing off tuberculosis-urine-feces contaminated pasture; or from non-pasturized milk, the probably route of infection of cats and hedgehogs before the war.

Uncooked offal has been a source of infection in ferrets, and mink and silver fox farms. The first tuberculosis positive wild badger in Switzerland in the '50s was believed to have eaten infected roe deer carrion, but badgers in Britain probably acquired TB from cattle; often foraging for worms or Dor beetles on pasture, with the first wild case in 1971, and zoo cases in the '30s and a Whipsnade case ending up surprisingly at the Royal Scottish Museum, Edinburgh (Hancox, 1980)! Bite wounds have been a lesser infection pathway in badgers and voles for example, whilst congenital prenatal infection also occurs occasionally in cattle.

A great deal remains to be discovered concerning TB transmission and epidemiology however, with vital implications for health in animal husbandry. Pigs are very susceptible to avian TB, and since infection can persist for up to 4 years in the soil, they are at risk from chicken manure fertilizer spread on pasture (as are cattle), pigs being at risk also from feeding troughs shared with rooks, starlings and sparrows. The bovine strain TB bacillus may survive for only a month or so exposed on fields even in winter, but although rabbits are very susceptible to it in captivity, and live in crowded colonies grazing on presumably infected pasture, there has strangely been only one wild case reported from New Zealand (Wildlife Link, 1984).

Even under experimental conditions, cross-infection from tuberculous to healthy stock is not guaranteed however, taking some 6 months as regards rabbits, from badger to calves, cattle to cattle, and had not occurred after 1 year in one M.A.F.F. red deer herd. Although cattle (and other ungulates) are especially susceptible to the bovine strain via the respiratory route, or nose-nose 'contacts', cattle may acquire avian TB from pheasants or via woodpigeons sharing water troughs (Francis, 1958), or at waterholes shared in arid areas; with other cattle herds in Australia, or with kudu in South Africa. The difficulty of eradicating TB in cattle with the continued presence of wild reservoirs of the disease is undergoing further study both as regards opossums in New Zealand, and badgers in Ireland and English southwest problem areas, where paradoxically the disease is renal in badgers but respiratory in cattle.

The pathology of the disease would also repay further study, since in long-lived animals TB may affect the bones and joints, and could be a source of insights into arthritic complaints. Tubercular bone disease occurs in animals as diverse as dogs, horses, lion, man, pig, rabbit and rodents, and perhaps badgers as well, which display osteomyelitis (Hancox, 1980), and are also prone to arthritis, as recorded for example in captivity at Melbourne Zoo.

Tuberculosis in Domestic and Zoo Animals, *Continued*

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TABLE 1 - Range of species recorded as having tuberculosis [with numbers of cases]. (Francis, 1958)

Marsupials - 17 kangaroo, rat kangaroo, wallaby, Phalangerid opossum (*Trichosurus vulpecula*)

Insectivora - 1 hedgehog, mole, shrew (Sorex)

Chiroptera - 2 Flying fox fruit bat

Primates - 733 - Common marmoset and New World monkeys 29; lemurids 34; Cercopithecids including baboon (Guinea and Hamadryas), macaque (Barbary, crab-eating, Javan, rhesus, toque), patas, vervet 646; Pongids concolor gibbon, chimp, gorilla, man 25.

Lagomorpha - brown hare, rabbit

Rodentia - 12 Hystricomorphs: agouti, capybara, guinea pig, porcupine (Hystrix); Myomorphs: Apodemus, beaver, brown rat, Clethrionomys, hamster (golden & striped), mice, Microtus; Sciurormorph: ground squirrel.

Carnivora - 65, 6 or 7 living families: dog, fox, silver fox; cat, cheetah, jaguar, lion; Eurasian badger, ferret, mink; coati; bear; mongoose.

Pinnipedia - 1 seal

Proboscidea - 12 African and Asian elephant

Perissodactyla - 15 ass, horse, mule, zebra; rhino; tapir

Artiodactyla - 94 Bovids including American and water buffalo (Bison, Bubalus), cattle. Cape duiker, goat, kudu, sheep; Deer including elk, fallow, moose, mule, red, roe, sika; Arabian camel; giraffe; pig and wild pig.

Total Mammal cases in study - 954

Sphenisciformes - 0 despite 116 examined

Struthioniformes/Casuariformes - 7 emu, ostrich

Pelecaniformes/Ciconiiformes - 6/21

Anseriformes - 75 including ducks (common scoter), geese, swans (*Cygnus colombianus*)

Falconiformes - 47 African eagle, kestrel

Tuberculosis in Domestic and Zoo Animals, Continued

Galliformes - 290 black grouse, capercaillie, fowl, partridge, peacock, pheasant, turkey

Gruiformes - 28

Charadriiformes - 3 golden plover, gull (several species), lapwing

Columbiformes - 1181 pigeon, wood pigeon

Psittaciformes - 409 eclectus lory

Cuculiformes - 4

Strigiformes - 8 pygmy owl

Coraciiformes - 2

Passeriformes - 38 canary, sparrow; American and European crow, jackdaw, rook, jay; starling, thrush

Total Avian cases in study - 2112

Reptiles - caiman; terrapin (*Trionyx*); snakes including Coluber grass snake, puff adder, African python, rattlesnake (*Crotalus*)

Amphibians - frogs (*Leptodactylus*), toad

Fish - carp and halibut



AAZK Publications Available

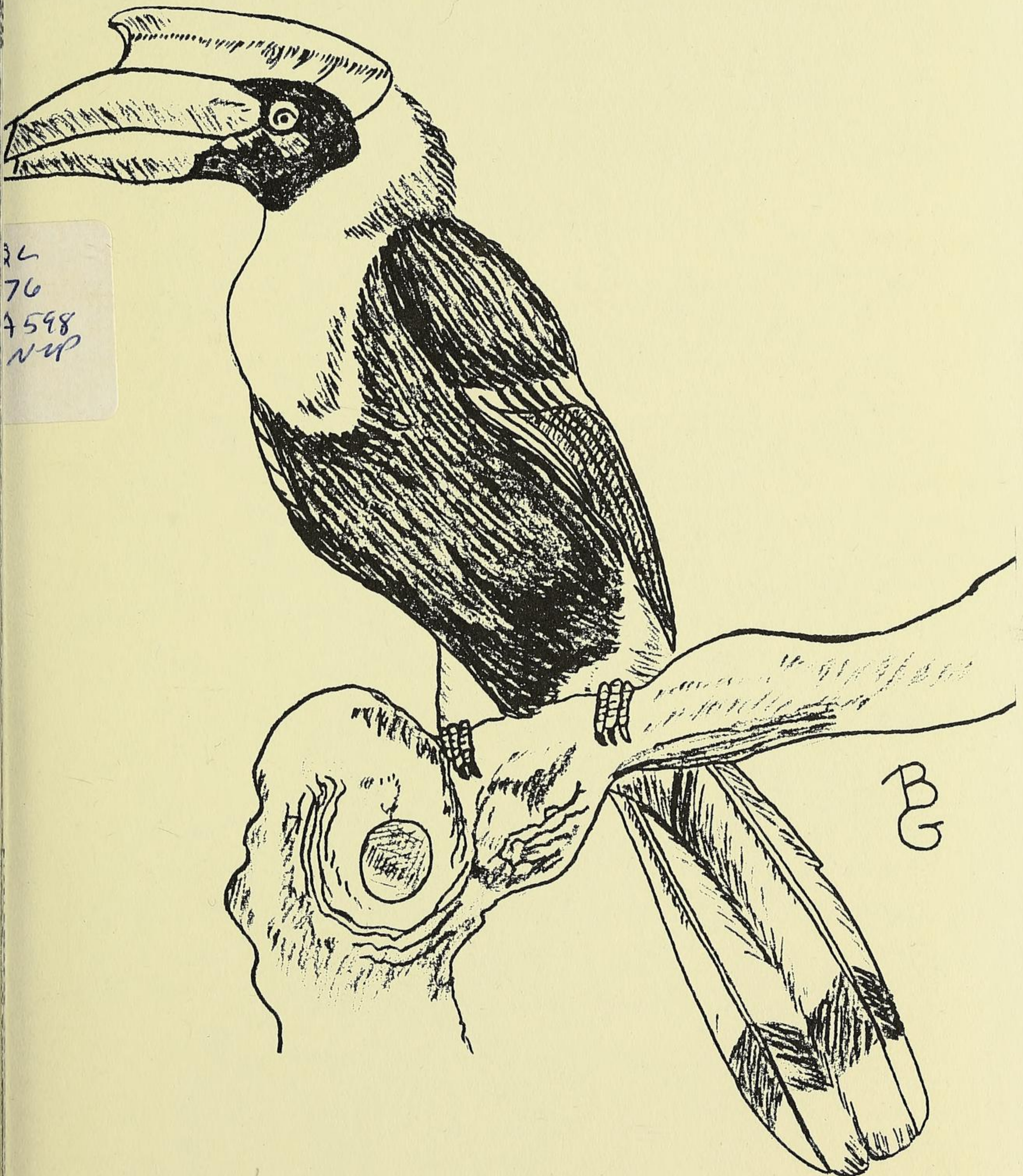
AAZK Diet Notebook, Mammals, Vol. 1 - contains approximately 325 diets representing 213 species and subspecies from fourteen participating institutions. The diets are arranged by taxonomic order using ISIS numbers in a durable and attractive three-ring binder. Each Diet Response Form included in Volume 1 contains the following information: common name, scientific name, ISIS number, the contributing individual, their institution and its address, how long the diet has been used, whether the animals have bred while on the diet, the diet ingredients, instructions for preparation, notes and remarks, special considerations and nutritional analysis (if available). Cost is as follows: 1) AAZK Members \$40.00; 2) Non-members \$55.00; 3) Institutions \$70.00. These prices represent prepared order prices and include postage for the U.S. and Canada. Those placing orders from overseas should contact AAZK Administrative Offices for additional postage charges. Please allow 4-6 weeks for delivery. Make checks payable to "AAZK Diet Notebook" (U.S. FUNDS ONLY).

Zoonotic Diseases, 2nd Edition - this 40-page reference work details the most common zoonotic diseases, offers guidelines for preventive control and covers personal hygiene and disinfection procedures. Information on each disease is presented in a text format which includes Etiologic Agent, Means of Transmission to Man, Global Distribution, Alternate or Intermediate Hosts, Human Incubation and Human Symptoms. Editor of this volume is Bruce Clark of the Toledo Zoo. Prices are: 1) Professional Members \$5.00; 2) Other AAZK Membership Categories \$6.50; 3) Non-members \$8.50. These prices include shipping and handling within North America. Orders outside of the U.S. and Canada should add \$3.00 for foreign postage by Air Mail. Make checks payable to "AAZK" in U.S. FUNDS ONLY. Please allow 3-4 weeks for delivery.

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ALL ORDERS MUST BE PRE-PAID**

Animal Keepers' Forum

November 1991



Dedicated to Professional Animal Care

This month's cover features the Great Indian Hornbill (Buceros bicornis) drawn by Betty Grogan, a bird keeper at the Jacksonville Zoo, Jacksonville, FL. This member of the hornbill family inhabits the jungles of India and Burma where it lives on a diet of fruits and insects. Typical of this family, the female nests in large tree hollows and is sealed in by the male during the incubation period. During incubation and until the chicks are ready to fledge, the female is solely dependent on the male to bring her food. The chicks are born naked. Thanks, Betty!

Scoops

and

Scuttlebutt

Second Gorilla Workshop Announced

The Second Gorilla Workshop will be held in Milwaukee, WI from 12-15 June 1992. Co-sponsored by the Milwaukee County Zoo and the Zoological Society of Milwaukee County, the workshop will be held at the Hyatt Regency Milwaukee. Topics for discussion and presentation include: behavior, husbandry, research techniques, behavioral enrichment, management, diet, veterinary, exhibit design, education and tourism. The workshop will include a tour of the new gorilla and bonobo facilities which will be open in the spring of 1992. For information regarding registration and paper/poster presentations, contact: Jan Rafert, Curator of Primates & Small Mammals, Milwaukee County Zoo, 10001 W. Bluemound Road, Milwaukee, WI 53226 (414) 771-3040.

Rhino Capture/Giraffe Relocation Tape Available

Andy Lodge, Founder and President of the Ngare Sergoi Support Group, Inc. is making available to interested AAZK Chapters or individual members a videotape showing some of the work being done at both the Ngare Sergoi Rhino Sanctuary and the Ngare Ndare Forest Reserve. Included on the tape is footage of the giraffe relocation program, the building of the solar fence at Ngare Ndare and the first release of a sanctuary rhino into the wild. Cost per tape is \$6.00 and may be purchased by contacting Andy at N.S.S.G., Inc., P.O. Box 29503, Columbus, OH 43229. Make checks payable to Ngare Sergoi Support Group. Slides showing the airplane and truck purchased with 'Bowling for Rhino' funds and sporting the AAZK Rhino logo are available to Chapters free of charge by contacting Andy.

New ABWAK Publication Now Available

At the Toledo Conference, Nigel Platt, International Affairs Coordinator for the Association of British Wild Animal Keepers (ABWAK) announced that this association is offering a publication entitled "Management Guidelines for Exotic Cats" (154 pp, paperback) to the AAZK membership. Anyone interested in obtaining this publication is asked to contact: John Partridge c/o Bristol Zoo, Clifton, Bristol, BS8 1UQ, England. Cost is £9.95 plus £3.25 postage. Check with the international desk at your local bank for British pound sterling equivalents in U.S. or Canadian dollars.

Invitation to Experience the 'Real' Jungle at Cano Palma Biological Station

Cano Palma Biological Station was founded by two Canadian zoo keepers as a center for research, conservation and education on the northeastern Atlantic coast of Costa Rica in a biological corridor of lowland tropical rainforest. Here is an opportunity for you to experience first-hand the wonderful diversity of life in the rainforest. Hear the roar of a jaguar; wake up to the call of the howler monkey; watch the Disney-like morpho butterflies; witness the mystery of nesting sea turtles. We want to share these wonderful experiences with our fellow keepers and invite you to visit. For more information, please contact: Marilyn Cole, Box 335, Pickering, Ontario L1V 2R6, Canada.



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Births & Hatchings, Continued

moved to another corner, slightly more remote. At that same time we nailed some old palm tree bark on the front of the box to simulate a natural log and slightly enlarged the entrance hole. We had previously filled the nestbox with pine chips stopping approximately 12" from the nest entrance. The pair quickly developed an interest in the box and began spending a lot of their time inside. They hauled out nearly a foot of the shavings during this time. On 21 June two eggs were discovered and the nest was not disturbed after that time. Both parents shared incubation and on 8 July check vocalizations were heard coming from the nest. The following day we were able to check the nest and discovered two chicks.

Their usual diet of soaked monkey chow, Promix® dog food, catfish chow, diced fruit (cantaloupe, apple, banana, grapes, blueberries, mango and tomato) was fed with the addition of pinkie mice. Three food pans were offered daily each with four pinkies. Also, an aquarium with live crickets was placed inside the aviary. As soon as a pan was placed inside the aviary, one of the adults would snatch up a pinkie and after working it over for several minutes, would disappear into the box for 10 to 15 minutes. Because they were first-time parents, we wanted to minimize disturbance and did not regularly check the nest. On 15 July one chick was discovered missing. The remaining egg was pulled at this time and candled infertile. The surviving chick was healthy and strong.

The chick was removed from the nestbox on 31 July when it was 23 days old and fledged out by hand. It weighed in at 355 grams when it was pulled. We continued the same diet that we had fed the adults. The weight gain from this point ranged from 5 to 8 grams daily. Initially the chick was placed in a rubber tub with a wood shavings substrate and a heating pad under one end of the tub. On its 36th day the chick began perching on the side of the tub and it was moved to a cage. At 42 days old the chick began eating on its own. *submitted by Anita Schiavoni, Aviculture Supervisor, Sea World of Florida, Orland, FL.*

Los Angeles Zoo...reports the following B&H for September and October 1991:

Reptiles - 4 Rough green snake (*Opheodrys aestivus*.)

Birds - 1 Palawan peacock pheasant (*Polyplectron emphanum*) endangered, 1 West African crowned crane (*Balearica pavonina pavonina*), 2 Congo peafowl (*Afropavo congensis*) endangered/very rare, 1 Common trumpeter (*Psophia crepicans*), 1 Pink-necked green pigeon (*Treron vernans*), 1 Magpie robin (*Copsychus saularis*).

Mammals - 4 Vampire bats (*Desmodus rotundus*), 2 Kuhl's marmoset (*Callithrix kuhli*) endangered, in 1981 included as subspecies of *C. penicillata* but further research in 1987 shows it to be quite distinctive and possibly in its own species status; 0.1 Sable antelope (*Hippotragus niger*), 0.1 Speke's gazelle (*Gazella spekei*) endangered, 0.1 Greater kudu (*Tragelaphus strepsiceros*), 0.2 Gerenuk (*Litrocranius walleri*), Europeans first discovered it in 1898 but it was represented in Egyptian paintings from 5600 BC; 0.1 Celebes crested macaque (*Macaca nira*), 1 De Brazza guenon (*Cercopithecus neglectus*), 0.1 Red-crowned mangabey (*Cercocebus torquatus torquatus*) endangered, 0.1 Masai giraffe (*Giraffa camelopardalis tippelskirchi*) - Twiga is being hand-raised after she failed to nurse properly.

We are expecting the arrival, momentarily, of a Sumatran rhinoceros (*Dicerorhinus sumatrensis*). They are the smallest of the rhinos, hairiest, carry two horns and are the most primitive and endangered. *submitted by Lois Carwile, Chapter Liaison, Los Angeles Zoo AAZK Chapter, Los Angeles, CA.*

Bronx Zoo...the Chapter has the following significant B&H to report for the remainder of the summer through Fall 1991.

Mammal Dept. - 3.0 Chilean pudu (*Pudu pudu*) were born in late July and August. These small South American deer are rare in the wild so each captive birth is significant. 0.0.2 Rodriguez flying foxes (*Pteropus rodicensis*) were born at the World of Darkness during September. The Bronx Zoo is one of the few U.S. zoos to have a breeding colony of

Audubon Chapter AAZK

As many of you know, 1991 was the year of the Rhino Walk. The Audubon Chapter of AAZK helped sponsor the New Orleans leg of this national event the weekend of 17 August. Although August is not a good time of year to be walking in this part of the country, and in spite of the fact that the Rhino Walk was scheduled the same day as the Audubon Zoo's annual Kool-Aid Day (a day known for record attendance), the Rhino Walk went well.

That evening we sponsored, organized and ran an event at a local bowling alley/bar; we named the event "Rockin' for Rhinos". The bowling alley allowed us to charge a \$5 cover for the evening's entertainment. They also helped us with publicity, as did our Zoo PR Dept. For their assistance, the bar kept the money made on alcohol sales; the Chapter got to keep the money made from the cover charge and raffle ticket sales. A total of five bands played that night to record-breaking crowds. "Rockin' for Rhinos" was a huge success. We made \$2,338, half of which will go to the Ngare Sergoi Rhino Sanctuary; the other half will go to the Rhino Walk fund.

Other news: many of our Chapter members are taking Spanish lessons. Dean Wolcott, who has worked with CARE and the Peace Corps, is teaching two classes per week. This is a great opportunity for many to start learning, or brush up on the language of our sister zoo, La Aurora Zoo in Guatemala.

Our Chapter is currently in negotiation with our zoo's administration to install a Conservation Parking Meter for the rainforests. Hopefully with further information supplied to us by Norman Gershenz, we will be able to convince the powers-that-be to let us install this simple, but effective means of collecting funds to save the rainforests.

--Pamela Barker, Secretary

San Diego AAZK Chapter

The Chapter hosted its First Annual Beach Party on 13 October, complete with Bar-B-Q and zoolympic games! Proceeds were donated to the Pam Orsi Memorial Fund in the amount of \$160.00.

October Meeting...Dr. Nancy Czekala, Endocrinology Specialist/CRES (Center for Reproduction of Endangered Species) at the Zoo, discussed her project involving the Mountain gorilla (*Gorilla gorilla beringei*) of Rwanda.

Dr. Czekala conducted a study of the reproductive events of the free-ranging mountain gorilla, in an effort to understand the causes of infertility in captive populations of the Western lowland gorilla (*Gorilla g. gorilla*). According to studbooks, 48% of mature, captive female lowland gorillas are non-reproductive.

Dr. Czekala addressed probable causes/stressors of subnormal fertility and/or subnormal reproduction: diet, environment, enclosure, noise, the public, hormonal, genetic, lack of ovulation, lack of breeding, miscarriage, infertility of males or females. Detailed graphs were presented among the excellent slides.

Reproductive evaluation of the gorilla can be done by measuring hormones in the urine. Urine collection was obtained from habituated, cycling Mountain gorillas in the Virunga Mountains (7-12,000 foot elevation) to compare urinary hormones with that of captive gorillas. There are no non-captive, habituated Western lowland gorilla groups at this time.

Once the individual was spotted within the group (by nose prints), she was followed until she urinated. Watching and waiting took over an hour! The urine was collected by syringe from the ground and vegetation and sample tubes were frozen at camp. Over 150 urine samples were collected during the trip and transported to the San Diego Zoo's CRES lab.

--Mary Dural, Chapter Liaison

Chapter News, Continued

National Zoo AAZK Chapter

The National Zoological Park was the last stop for Michael Werikhe (affectionately known as the Rhino Man) on his 1,500 mile series of walks through North America to raise awareness and funds for rhino conservation. Michael was at NZP from 6-13 September. The week of activities included a 5-mile Rhino Walk; a 5-kilometer Fun-Run; Rhino Revelry, a walk with the Potomac Appalachian Trail Club; Kilimanjaro Club Night, a walk from the Kenyan Embassy to Capitol Hill; Rock for Rhinos at the Hard Rock Cafe; a reception followed by rhino lectures; and finally a Rhino Encounter Reception at NZP's elephant house. Over \$10,000 was raised during the week of activities.

In October, six representatives of the NZP-AAZK Chapter attended the AAZK Conference in Toledo, OH. One of these six attendees was Brian Phillips, an exchange keeper from the Healesville Sanctuary in Victoria, Australia.

Eric Krussman (NZP) and Rosemary Krussman (Baltimore Aquarium) presented their outstanding video at the Conference. Their presentation was entitled "On the Ground Conservation that Really Works: The Preakness Clean-up". Eric also participated in an Exhibit Design Workshop in which keepers shared examples of their involvement in exhibit design. Eric talked about his work on NZP's new Bat Exhibit.

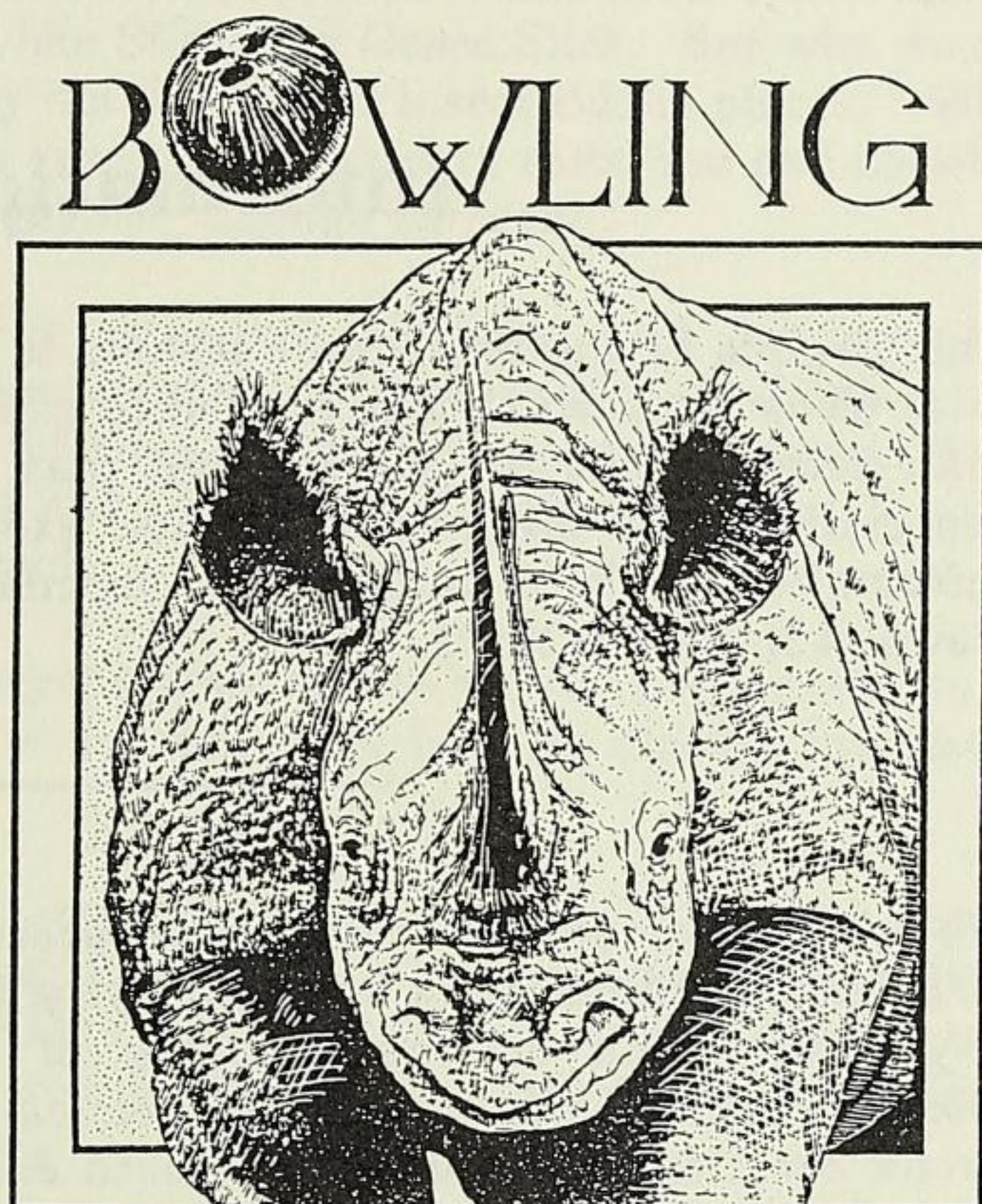
Kathy Kelly and Carol Prima gave a presentation entitled "Keepers Helping Keepers Across the World". The presentation demonstrated how the NZP Chapter has implemented an international outreach project which has provided over 1,400 pounds of wildlife and conservation materials to 14 foreign zoological institutions and one African Wildlife Management University. The project is a year old now and still going strong.

--Kathy Kelly, Chapter Liaison

Rocky Mountain AAZK Chapter

The Chapter is offering both posters and T-shirts featuring the Bowling for Rhinos design shown here. The posters are 18 x 24 inch in black on white and may be used to advertise a Chapter's BFR event in 1992. Cost is \$4.50 for individual orders and \$4.00 each for a Chapter order of five or more. The T-shirts are black print on grey, 50/50, size Large only. Cost is \$12.00 per shirt or \$10.00 each for a Chapter order of five or more. Shirts can also be personalized with your Chapter's name on it. Call for details.

Write Rocky Mountain AAZK Chapter, Denver Zoo, 2900 E. 23rd., Denver, CO 80205 or call (303) 331-4117 and leave a message.



Los Angeles AAZK Chapter

Our October meeting featured a slide presentation, "Zoos of Mexico", by Robert Cudney, reptile keeper, The Zacango Zoo, 45 minutes outside of Mexico City. This was of particular interest to us as that is the future home of Hannibal, our bull African elephant. The zoo is located at the base of a volcano at an elevation of 9,000 feet on the site of a former estate. The exhibits