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Elephant Notes and News

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ELEPHANT NOTES AND NEWS

compiled by Joann M. Holden, Eleanor C. Marsac, Faye D. Rosser,
Jeheskel Shoshani, and Sandra L. Shoshani

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Abbreviations: Below are abbreviations used in this and other sections of Elephant; publications are underlined.

AAZPA=American Association of Zoological Parks and Aquariums
aff.=affinity

AKF=Animal Keepers' Forum

AOL=America on Line (Internet)

AWIQ=Animal Welfare Institute Quarterly, The

AZA=American Zoo and Aquarium Association; same as AAZPA

cf. = *confer* (Latin for "compare to")

CITES = Convention on International Trade in Endangered Species of
Wild Fauna and Flora

CR=Circus Report

DFP=Detroit Free Press

EMA=Elephant Managers Association

ENN=Elephant Notes and News

ENS=Environmental News Service

ERF=Elephant Research Foundation

GM=Gray Matters, a newsletter of the EMA

HSUS=Humane Society of the United States

IUCN=International Union for Conservation of Nature and Natural
Resources

JEMA=Journal of the Elephant Managers Association

NATO=North Atlantic Treaty Organization

NSPCA=National Society for the Prevention of Cruelty to Animals

NG=National Geographic

NYT=New York Times, The

OP=Oakland Press, The

PDST=Pacific Daylight Standard Time

Proboscidea, Dedication page=Proboscidea: evolution and
palaeoecology of elephants and their relatives, Dedication page;
Reference no. 5153.

SSC=Species Survival Commission

WWFN=World Wide Fund for Nature

WWF=World Wildlife Fund

Elephant and related ERF business

- The name of our organization has been changed from Elephant Interest Group to Elephant Research Foundation.
- Legal status of ERF: The Elephant Research Foundation has a Board of Directors [roster on page i], has Bylaws, is incorporated as a non-profit organization under State of Michigan laws, and is exempted from federal income tax under section 501 (a) of the Internal Revenue Code as an organization described in section 501 (c) (3). Also, under the Internal Revenue Service, ERF is classified as "a section 509 (a) (1) or 509 (a) (2) organization". In Michigan we are registered as a non-profit Corporation [details in minutes of ERF meetings, September 16, 1992; July 16, 1994; March 21, 1998].
- Our deepest gratitude to all people who have helped us in past years, especially the Board members, and the following close friends: Jann S. Grimes, Joann M. Holden, Gary H. Marchant, Eleanor and Jerry Marsac, Jules L. Pierce.

- Elephant Research Foundation Library and Scientific Collection [includes elephant-related items and literature on other mammalian taxa, with emphasis on taxonomy, numerous books, articles, and rare scientific specimens]. We have been negotiating with various organizations for a "good" home for our library; the only stipulation we have is that the collection remains as one inseparable unit. Such a condition will encourage future prospective donors. There will be expenses in relocating; please help us with these efforts, and if you are unable to do that at present, you may consider including ERF in your will/estate. We thank Joann and Jim Holden who have been organizing the ERF Library.
- If any of our readers wish to include ERF in their wills [after-death instructions], our Board of Directors suggests the following language: "I give _____ (percentage, residue, or specific amount or items) to Elephant Research Foundation, having its office at 106 East Hickory Grove Road, Bloomfield Hills, Michigan 48304 USA, for its general purposes."
- As the future home of ERF has not yet been established, and since we are uncertain when the next issue of *Elephant* will be published, we suggest that members should not send dues until further notice. We would, however, appreciate donations to defray costs.
- ERF is listed in several publications in libraries; one is *Encyclopedia of Associations*, published by Gale Research Inc., Book Tower, Detroit, Michigan 48226 USA; Telephone 313-961-2242.
- SASE — Requests for information should be accompanied by a self-addressed, stamped envelope.
- Copyright — *Elephant* is copyrighted under the Library of Congress regulations.
- Copyright problems — A poster ("The elephant") found in a shop in Paris, France (Spring 1997) and produced in Italy by Arti Grafiche Ricordi S. P. A., Milan, contains the skeleton and muscles of the elephant from Reference no. 5123 (drawn by Gary Marchant, based on research by G. Marchant and J. Shoshani, pp. 69 and 74). No credit was given to Marchant or Shoshani on the poster, yet, it includes a copyright. This poster also contains errors.
- Recent accomplishments of, or under the auspices of, ERF are:
 - Taking a major part in publishing two books on elephants and Proboscidea (Reference nos. 5123, 5153).
 - Participation (June 10, 1996) in filming of "The Ultimate Guide to Elephants" produced by Windfall Films (see under "Elephant Films and Videos" below).
 - Representation of ERF in CITES meetings in Japan (1992), in the USA (1994), and in Zimbabwe (1997).
 - Compilation of an annotated elephant/Proboscidea bibliography (details under "A note from the Editors" and introduction to the Elephant/Proboscidea Bibliography).
 - Expansion of our collection of books, articles, and films in the ERF Library (details above).
 - Helping with the development of the Elephant Necropsy Protocol. We ask readers for any suggestions to improve this protocol which has proved to be a valuable source for obtaining specimens and data for research; cf. Reference no. 4388.
 - Completion of the Elephant Mini-series slides (three sets, 20 slides each) for the American Society of Mammalogists. To purchase these slides, contact Robert S. Sikes, University of Minnesota, 100 Ecology Building, St. Paul, Minnesota 55108, USA; telephone: (612) 625-5700; e-mail: <sikes001@maroon.tc.umn.edu>.
 - Continuation of promoting items for fund-raising (see Order Form at back). For the time being, we have delayed production of our own elephant calendars. Limited stocks of the books, *Elephants: the deciding decade* (1992, R. Orenstein, ed.), and *The illustrated encyclopedia of elephants* (1991, S. K. Eltringham, and D. Ward, eds.), are available. Back issues and other merchandise are available for purchase upon request. ■

ORGANIZATIONS

Editors' note: There appears to be little or no coordination between the various organizations/foundations for elephant conservation. According to Dr. Ronald Orenstein (August 20, 1999), over forty organizations dealing with CITES issues have joined the Species Survival Network (SSN, see below). It is our opinion that efforts to raise funds and to draw and execute elephant conservation measures must be coordinated between and among regional, continental, and international organizations, so that prospective donors are ensured that funds are employed in the most efficient manner [cf. *Elephant*, 2(3):83]. Following is an incomplete list of elephant-related organizations that are involved, or may be involved, in elephant conservation. It includes organizations whose names and addresses we obtained from correspondence, and other sources. For information, contact the organization(s) directly.

African Elefund — [affiliated with Care for the Wild] P.O. Box 308, Bristol BS99 7LQ, England; Telephone: +44 117 924 6489, Fax: +44 117 975 4567; e-mail: <ele@globalnet.co.uk>. Contact: Ian Redmond. Contributes towards elephant conservation. In the US and Canada, International Wildlife Coalition will receive donations for this fund.

African Elephant Research & Survival Ranch (formerly Elephant Research and Preservation Center) — 3909 S. 7th, Ste #1, P. O. Box 434, Abilene, Texas 79604 USA; Telephone: (915) 673-0040. Purpose: To maintain and propagate African elephants (*Loxodonta africana*).

African Elephant Specialist Group — [affiliated with IUCN/SSC and WWFN], P.O. Box 62440, Nairobi, Kenya; Telephone: (254 2) 331-543/332-963; website — <<http://iucn.org/themes/ssc/afesg.html>>. Chairman: Holly T. Dublin. Publication: *Pachyderm*.

African Wildlife Foundation — 1400 Sixteenth Street, NW, Suite 120, Washington, D.C. 20036 USA; Telephone: (888) 4-WILDLIFE (Also: Nairobi, Kenya). President: R. Michael Wright. An international conservation organization for over 28 years, which supports field projects including the Amboseli Elephant Research Project. Website: <www.awf.org>.

Animal Education, Protection and Information Foundation (A.E.P.I.F.), Rte 1, Box 452, Fordland, Missouri 65652 USA; Telephone: (417) 767-2195. Besides horses, two elephants reside at this facility run by Murray Hill. Dedicated to protecting and preserving unwanted exotic and endangered animals in a quality living environment.

Animal Welfare Institute — P.O. Box 3650, Washington D.C. 20007 USA; Telephone: (202) 337-2332. Internet address: <<http://www.animalwelfare.com>>. President: Christine Stevens. Publication: *The Animal Welfare Institute Quarterly*.

Asian Elephant Specialist Group — [affiliated with IUCN/SSC and WWFN], 110 Wattarantenne Passage, Kandy, Sri Lanka. Aims of publication *Gajah*: (editor: Charles Santiapillai) to highlight the plight of the Asian elephant, to promote its conservation, and to provide a forum for communication.

Asian Elephant Research and Conservation Center — Indian Institute of Science, Bangalore 560 012, India; Telephone: (000-127) 0812-340985. Director: Raman Sukumar. Conducting studies about wild elephants and their ecological impact.

Black Beauty Ranch — P.O. Box 367, Murchison, Texas 75778 USA; Telephone: (903) 463-5611; website — <<http://envirolink.org/arrs/fund/bbr/win94.html>>. Manager: Chris Byrne. The Fund for Animals (New York, New York) supports this 1,000± acre sanctuary, housing over 600 animals, including two elephants.

Born Free Foundation — Coldharbour Dorking, Surrey RH5 6HA, England; Telephone: (0306) 71209; Fax: (0306) 713350; USA address: 1725 E. 46th Street, Ashtabula, Ohio 44004 USA; Telephone: (216) 992-5854. Director: William Travers. Zoo Check, EleFriends, and Into the Blue are projects of the Born Free Foundation.

Care for the Wild — 1 Ashfolds, Horsham Road, Rusper, West Sussex RH12 4QX England. Supports an elephant adoption center with Daphne Sheldrick in Kenya.

Center for Elephant Conservation, The — Polk City, Florida USA. Manager: Jim "Chico" Williams. Since December 1995, dedicated to the study of conservation, breeding and study of the Asian elephant with funding provided entirely by Ringling Bros. and Barnum & Bailey Circus.

Chiang Dao Elephant Training Center — Highway 107 north of Chiang Mai, Thailand; Telephone: (66-53) 298-553. Working elephant camp for the Thai timber industry; public demonstrations by elephants.

David Sheldrick Wildlife Trust, The — P. O. Box 15555, Nairobi, Kenya; Telephone: (254 2) 891-996. Director: Daphne Sheldrick. Dedicated to the preservation of African wildlife by rescue and rehabilitation of wildlife orphans. This program trains care-givers to enable animals to return to the wild. Orphans raised include "Olmeg", "Taru", "Dika" and "Eleanor".

David Shepherd Conservation Foundation — P. O. Box 123, Godalming, Surrey GU8 4JS England. Contact: Michael Zilka. Funds projects in several African countries.

Defend the Elephants Society (Forsvara Elefanterna) — Bjorn Barksmanavag 30, S-14832 Osmo, Sweden. Contact: Elizabeth Peterzen. Non-governmental organization working to spread information on the current situation of elephants and to raise money for their defense.

East African Wild Life Society — P. O. Box 20110, Nairobi, Kenya; Telephone: (254 2) 574-145; Fax: (254 2) 570-335; e-mail address: <eawls@form-net.com>. Excessive Director: Hadley Becha. Objectives: Safeguard wildlife and its habitat in all its forms as a national and international resources. Publication: *SWARA, African Journal of Ecology*, and a publication on Forests.

Elefanten-Hilfe Europa E.V. (Elephant Aid Europe) — (no address available) founded in late 1990 to build a refuge for badly housed, mistreated, injured or sick elephants. Chairman: Angelika Hinke, veterinarian at Erfurt Zoo, Germany.

Elefriends — [affiliated with and run by Born Free Foundation (formerly Zoo Check)] c/o Born Free Foundation, 3 Grove House, Foundary Lane, Horsham, West Sussex RH13 5PL, England; Telephone: +44 1403 240170, Fax: +44 1403 327838; e-mail: <wildlife@bornfree.org.uk>. Funds projects in Kenya, Tanzania, USA and India, plus CITES lobbying.

Elephant Alliance, The — 6265 Cardeno Drive, La Jolla, California 92037 USA; Telephone: (619) 454-4959. Director: Florence L. Lambert. Investigates and documents cases of abuse of elephants and other animals; provides materials for demonstrations at circuses and other organizations; and initiates, supports and lobbies for legislation outlawing inhumane treatment of animals.

Elephant Interest Group — see Elephant Research Foundation.

Elephant Listserver — Ringvagen 162, S-116 31 Stockholm, Sweden; Telephone: (+46) 864-34467. Internet address: <elephant-l@listserver.wineasy.se>. Elephant Web Ring is also available at <http://www.webring.org>. Contact: Dan Koehl's e-mail address <dan.koehl@elephant.se>. Elephant Listserver is an Internet service, an excellent mode of communication where people can write to ask questions, express views, or just be "bystander listeners".

Elephant Management and Owners Association (EMOA - South Africa) — Administrative base: Rhino & Elephant Foundation (see listing below.) Chairperson: Marion Garai. Incorporates elephant owners and managers into a single association that promotes, monitors and advises on the management, conservation and welfare of the African elephant. As of 1999, members came from three southern African nations. Database on elephants (Global Elephant Network), unpublished elephant management booklet, guidelines on hunting elephants, workshops on regional issues. Website: <emoa.org.za>.

Elephant Managers Association (EMA) — For membership: 1 Conservation Place, Syracuse, New York 13204 USA, Attention: Chuck Doyle. For publication: Indianapolis Zoo, 1200 W. Washington Street, Indianapolis, Indiana 46222 USA; Telephone: (317) 630-2092. For journal: Deborah Olson, P. O. Box 366, Azle, Texas 76098 USA, Telephone: (817) 444-7381; home page: <http://www.indyzoo.com/ema/>. Objectives are to gather and distribute information on elephant training and husbandry; to promote the profession of elephant training and management; and to promote better communication and relations among elephant managers. Publications: Newsletter, *GM* bimonthly and *JEMA*, three times a year.

Elephant Museum — at Letaba Rest Camp in Kruger National Park; Kruger National Park, Private Bag X402, Skukuza, 1350, South Africa; Telephone: (01311) 65611. Exhibit focuses on elephant ecology and behavior.

Elephant Research and Preservation Center — see African Elephant Research and Survival Ranch.

Elephant Research Foundation (ERF) (formerly Elephant Interest Group, established 1977) — 106 East Hickory Grove Road, Bloomfield Hills, Michigan 48304 USA; Telephone: (248) 540-3947; Fax (248) 540-3948; e-mail addresses: <jshosh@sun.science.wayne.edu> and <hezy@eol.com.er>. Contact: Hezy and Sandra Shoshani. Objectives: To promote interest in and collect and disseminate information needed for education, research, and conservation of elephants. Publication: *Elephant*, published irregularly.

Elephant Resource Group of Oregon (ERGO) — 15500 NW Gillihan Road, Portland Oregon, 97231 USA. Director: Michael Schmidt, DVM. Concerned with elephant reproduction, especially with efforts on developing a practical method for artificial insemination in domesticated elephants in timber operations and other captive elephants in Myanmar (formerly Burma).

Elephant Sanctuary, The — P. O. Box 393, Hohenwald, Tennessee 38462 USA; Telephone: (615) 796-6500; website <http://www.elephants.com/sanctbio.htm>. Contacts: Carol Buckley, Scott Blais. A refuge for old, infirm or rambunctious female elephants from circuses and zoos. Newsletter: *Trunklines*.

European Elephant Group — Teutonenstrasse 13a, 8500 Nuremberg †; Germany; Telephone: +911 467025. Contact: Jurgen Schilfarth. Representatives of five European countries formed an interest group in 1993, open to anyone interested in improving captive conditions for elephants and working for the survival of elephants in the wild and in captivity. Publication (in German): *Elefanten in Zoo und Circus, Part I: Europe; and Part II, North America*. Regular reports on world status of elephants appears in the *JEMA*.

European Elephant Keeper and Manager Association (EEKMA) — c/o Harold Schwammer, Vienna Zoo, Maxingstrasse 13b, A-1130 Vienna, Austria (or contact Heidi Riddle, EMA representative, see Riddle's Elephant Breeding Farm below for address.) Founded in 1998; non-profit organization. A platform

Trewstrasse 6 D-90482 Nurnberg, Germany (911 5400693)

for elephant keepers and managers in Europe, to improve education. Quarterly newsletter, the *Elephant-Journal*, in German and English.

Endangered Ark Foundation, The — P. O. Box J, Hugo, Oklahoma 74743 USA. Formed by circus people to protect and propagate elephants, tigers and other endangered species.

Friends of Animals — 777 Post Road, Darien, Connecticut 06820 USA; Telephone: (203) 656-1522; e-mail address: <foal@igc.org>; website: <www.friendsofanimals.org>. President: Priscilla Feral. Works to protect animals and preserve their habitat worldwide. Publication: *ActionLine*.

Friends of Elephant — 1st Floor, 187 Fuk Wah Street, Shamshuipo, Kowloon, Hong Kong. Promoting substitutes for ivory.

Friends of the Asian Elephant — 2/417 Ram-Indra Road, Tharaeng, Bangkhen, Bangkok 10220, Thailand; Telephone/Fax: 0066 2 519-1425, home page: <http://www.elephant.tnet.co.th>. Contact Soraida Salwala. In USA: Regional Associate, 1818 'H' Street, NW, Room J, 10-105, Washington, DC 10433 USA; in Canada: Wayne Jackson, 30 Guthrie Circle, Whitby, Ontario, Canada L1P 1A5. Supports the Elephant Conservation Center in Lampang, Thailand, 335 miles north of Bangkok. A hospital for aged and sick elephants from the timber industry.

Fund for Animals, The — see Black Beauty Ranch

Humane Society of the United States, The (HSUS) — 2100 L Street, NW, Washington, DC 20037 USA; Telephone: (202) 452 1100; Fax: 301-258-3080; e-mail address: <wildlife@HSUS.org>. President and Chief Executive Officer: Paul G. Irwin. Founded in 1954 to promote the humane treatment of animals and to foster respect, compassion, and understanding of all creatures. To achieve its goals, the HSUS works through educational, legislative, and investigative means. Publications: *All Animals*; *Humane Activist*; *Humane Lines*; *Wildlife Tracks*; *Wild Neighbors News*; *Wildlife Lands*.

International Elephant Survival Foundation — 15330 FM 421, Kountze, Texas 77625 USA; Telephone: (409) 287-2225. Contact: Chris Hamblen. Dedicated to providing a protective sanctuary and facilities for breeding, protection and research of captive or wild elephants in any situation.

International Wildlife Coalition — 70 East Falmouth Highway, East Falmouth, Massachusetts 02536-5954 USA; Telephone: (508) 548-8328. Also in Canada, England and Brazil. Contact: Ronald I. Orenstein at <ornstn@home.com> or Dan Morast at the Falmouth address. Informs and educates about critical threats to wildlife rescue and wildlife and habitat protection. Publication: *Wildlife Watch*.

Ivory Haven Farms — P. O. Box 130, Fremont, Michigan 49412-0130 USA; Telephone: (616) 924-1998; e-mail address: <ivoryhaven@riverview.net>. Contact: W. Chuck Walters. Offers private internships for the novice who has always wanted to be around elephants or to the handler who may want to gain additional experience. Founded to heighten awareness of elephants through education and entertainment. It is also a breeding facility for African elephants.

Kenya Wildlife Service — P. O. Box 40241, Nairobi, Kenya; Telephones: (254 2) 501-081/2, 506-671/4, 602-345; Fax: (254 2) 505-866 or 501-752; e-mail address: <kws@kws.org>; website: <www.kws.org>. Director: Nehemiah K. a. Rotich. Objectives: Dedicated to protecting wildlife and sustainability utilization of wildlife resources in the country.

Live Elephant — 13 Rosegate Road, Needham, Massachusetts 02494 USA. Publications: *Live Elephant Newsletter* (irregular periodical); *The Live Elephant Book*, a multidisciplinary teachers' resource, with elephants as a central theme (for grades 4 through 8).

Mammoth Site Of Hot Springs, South Dakota, Inc. — P. O. Box 692, Hot Springs, South Dakota 57747-0692 USA; home page: <http://www.mammothsite.com>. Largest collection of mammoth remains in the Americas. The skeleton of "Loren", an African elephant, donated by the Toledo Zoological Gardens (Ohio, USA) through ERF's connections, has been prepared and mounted for public display. Publications: a newsletter published quarterly, and Reference nos. 2466, 2472, 2477, 2480.

National Elephant Collectors Society — 380 Medford St., Somerville, Massachusetts 02415 USA. Contact: Richard W. Massiglia. For elephant collectors and research for collectors and collectibles.

PAWS Animal Sanctuary (Performing Animal Welfare Society) — 11435 Simmerhorn Road, Galt, California 95632 USA; Telephone: (209) 745-PAWS. Home to pachyderms, lions, tigers, bears, and baboons that have come from adverse or abusive situations in circuses, fairs and private homes or infants orphaned at birth.

Rhino and Elephant Foundation — P. O. Box 381, Bedfordview 2008, South Africa; Telephone: (011) 882-0606. Chairmen: Clive H. Walker, Chris Styles. Since 1980. Objectives: to protect rhino and elephant in southern Africa, to promote conservation projects and integrate them with needs of rural communities, to promote awareness, to maintain close links with organizations involved with wildlife management and to raise funds for survival programs. Publications: *REF NEWS* (a newsletter), and *The Rhino & Elephant Journal*.

Riddle's Elephant Breeding Farm and Wildlife Sanctuary — P. O. Box 715, Greenbrier, Arkansas 72058 USA; Telephone: (501) 589-3291; website: <http://www.hendrix.edu/other/elephant/>. Contacts: Scott and Heidi Riddle. Elephant handling schools, as well as providing an all-encompassing facility for the survival of African and Asian elephants.

Societe Nationale de Protection de la Nature (S.N.P.N.-Elephants) — B.P. 405, 75221 Paris Cedex 05, France. Secretary-general: Pierre Pfeffer. Appeals to heads of state and governments of the European Community to prohibit all importation and traffic in all forms of ivory.

Sanctuary for Animals, The — 38 William Lain Road, Westtown, New York 10998-9778 USA; Telephone: (914) 726-4267. Contact: Bunny Brook. Houses an African ("Myitcha") and an Asian ("Fritha") elephants, rescued as young elephants.

Save the Elephant — P. O. Box 54667, Nairobi, Kenya; Telephone: (254 2) 891673. Contact: Iain Douglas-Hamilton. Purpose: to secure a future for elephants and educate people about elephants and the diversity of their habitat.

Species Survival Network (SSN) — 2100 L Street NW, Washington, DC 20037 USA; Telephone: 301-548-7769; Fax: 301-258-3080; e-mail address: <annmichels@hotmail.com>. Contact: Ann Michels. A non-profit, international coalition of 50 conservation, environmental and animal protection organizations from around the world. Founded in 1992, the SSN is committed to the promotion, enhancement and strict enforcement of CITES. Its main function is to provide a framework for international cooperation among organizations on wildlife trade issues. Through scientific and legal research, education and advocacy, SSN is working to prevent over-exploitation of animals and plants due to international commercial trade.

Wildlife Conservation International (a division of the New York Zoological Society) — Bronx Zoo/Wildlife Conservation Park, Bronx, New York 10460 USA; Telephone: (212) 220-5100. President and General Director: William G. Conway. Internet address: <http://www.wcs.org>. Publication: *Wildlife Conservation*.

Wildlife Protection Society of India, The — Thapar House, 124 Janpath, New Delhi 110001, India; Telephone: (11) 6213 864, 6238-710. Website: <<http://www.nbs.it/>>. Executive Director: Belinda Wright. Formed in 1994 to avert India's wildlife crisis, and, in particular, to provide the additional support and information required to combat the escalating illegal wildlife trade. Publications include two reports on the illegal ivory trade, in collaboration with the Asian Elephant Research and Conservation Centre.

World Wildlife Fund — [affiliated with international WWF network, 40 countries, with international office in Gland, Switzerland] 1250 Twenty-Fourth Street NW, Washington, D.C. 20037 USA — US organization working worldwide to preserve the abundance and diversity of life on Earth; committed to reversing the degradation of our planet's natural environment and to building a future in which human needs are met in harmony with nature. Website: <<http://www.worldwildlife.org>>.

World Wide Fund for Nature — Panda House, Weyside Park, Godalming, Surrey GU7 1XR England. Has been funding many elephant projects in Africa. ■

ELEPHANTS AND ELEPHANTINE EVENTS IN THE NEWS

GENERAL

Elephant Appreciation Day: According to "Yak's Corner Calendar for Kids" [Copyright 1998, Detroit Free Press Inc.], September 22 is designated as "Elephant Appreciation Day". Exactly what the origin of this date is, we do not know, but for a long time we have been asked if there is a day in the year, removed from any holiday that would be an "Elephant Day"; September 22 may be the day people have been seeking; cf. Reference nos. 2602, 3445.

Elephant "Artists": Numerous zoos and elephant facilities have developed elephant enrichment programs which include "painting"; products of the "painting" activities have been sold as fund raisers by organizations [note: Hezy Shoshani does not define the so-called "painting" by elephants as painting comparable to what a human produces]. Among North American organizations which have participated in such programs in the past or at present are (names of elephants in parentheses): African Lion Safari, Cambridge, Ontario, Canada (Calvin); Alaska Zoo, Anchorage, Alaska (Annabelle); Buffalo Zoo, New York (Surapa); Burnet Park Zoo, Syracuse, New York (Siri); Calgary Zoo, Calgary, Alberta, Canada (Kamala); Cheyenne Mountain Zoo, Colorado Springs, Colorado (Lucky); Elephant Sanctuary, Hohenwald, Tennessee (Tarra); Indianapolis Zoo, Indianapolis, Indiana; Ivory Haven Farm, Freemont, Michigan (Laura); Jackson Zoo, Jackson, Mississippi (Marrie); Lincoln Park Zoo, Chicago, Illinois (Bozie and Shanti); The Nugget, Reno, Nevada (Bertha); Phoenix Zoo, Phoenix, Arizona (Ruby); Riddle's Elephant Breeding Farm & Wildlife Sanctuary, Greenbrier, Arkansas; San Diego Zoo, San Diego, California; Sedgwick County Zoo, Wichita, Kansas; Seneca Park Zoo, Rochester, New York (Genny C); Toledo Zoo, Toledo, Ohio (Renee); Woodland Park Zoo, Seattle, Washington (all elephants); The Zoo, Gulf Breeze, Florida (Ellie); Zoo Atlanta, Atlanta, Georgia (Starlet O'Hara). SOURCES: Press Release Zoo Atlanta [November 10, 1987]; *Smithsonian* [1990], 21(9):40-46, 48, 50-51; *CR* [December 3, 1990], p. 15; *The Miami Herald* [April 5, 1991], p. 4B; *CR* [May 6, 1991], 18:2; *DFP* [July 2, 1991]; *CR* [October 3, 1994], p. 14; *CR* [October 10, 1994], 41:16; *CR* [June 12, 1995], 24:20; *Macomb Daily* [July 21, 1995]; *JEMA* [Summer 1996], 7(2):14; *People Magazine* [November 4, 1996], pp. 71-72; *U.S. News & World Report* [March 3, 1997], p. 14; *CR* [May 26, 1997], p. 8; *DFP* [September 19, 1997], p. 10F; *AKF*

[October 1999], 26(10):400; Faye D. Rosser, personal communication, November 24, 1998; Don Redfox, personal communication, November 1, 1992 and September 10, 1995; Leland Hales, July 30, 1999. Special thanks to Don Redfox of Toledo Zoo for starting a collection of "paintings" from elephants.

Elephants in Wars: A photo caption following the Gulf War (1990) reads: "War survivor receives visitors at zoo. A father and his children visit an elephant ["Aziza"] Thursday at the reopened Kuwait City Zoo. The zoo was ransacked during the 1990 Iraqi occupation, and the elephant, which has a bullet lodged in its right shoulder, is one of the few animal survivors" (Reference no. 2460). Belgrade Zoo staff considered killing its dangerous animals including elephants if NATO planes were to bomb the capitol. SOURCE: *CR* [April 26, 1999], 27(7):2. Cf. the true story of "John", "Tonky", and "Wanly", the elephants from the Ueno Zoo, Japan, which were starved during bombing of Japan in World War II (John is said to have died after 17 days of starvation); cf. Reference no. 5839. "...civil war in the Congo has led to an increase in poaching and ivory trade. In one national park, 100 of the 250 lowland gorillas and 300 of the 400 elephants have been killed since 1996". SOURCE: *AKF* [1999], 26(9):345.

Exhibit on Evolution of Elephants and their Kin: A special museum exhibition entitled "Elephants! 40 million years of evolution" has toured North American museums in the past three years. While the exhibit was at Cranbrook Institute of Science, Bloomfield Hills, Michigan, in the summer of 1997, Hezy Shoshani spoke to members of the museum on "Elephants Never Forget?" as part of the opening celebration.

Elephants in Thailand: There may be hope for captive elephants which are gradually being introduced to natural habitats. In 1998 a group of elephants in northern Thailand were fitted with radio transmitters; one carried a satellite collar which enabled scientists with Smithsonian Institution to follow it through global positioning systems. Five female elephants were reintroduced in a northern park, a project sponsored in part by WWF in US. Now, in a new program, 72 unemployed elephants are being moved into a northern sanctuary which will be an interim location. World Wide Fund for Nature (Thailand) is directing the program. Captive elephants are being assessed and directed to the wild, centers for breeding or job retraining, to a retirement home or a rehabilitation center. SOURCES: *FOCUS* (WWF) [July/August 1998], 20(4):3 and [March/April 1999], 21(2):3, and AOL News, August 9, 1999; cf. "Motola" the elephant below.

New Elephant Display at the Smithsonian Institutions: The Behring Family Rotunda at the Smithsonian's National Museum of Natural History, Washington, D.C., will open on November 19, 1999. The new exhibit features a scientifically accurate and educationally intriguing diorama for the world's largest mounted African bull elephant (the "Fenykovi" elephant), a part of the savannah habitat. Three Elephant Discovery stations focus on elephant anatomy, evolution, and cultural images. The evolution section presents a simplified cladogram with modeled ancestral elephants. This display is next to a recreated bone bed from Rick Potts research at Olorgesalie, Kenya, where 992,000 year old bones of *Elephas recki* were found with 2,300 stone tools; cf. *Science*, 280, pp. 1186-1187.

New Regulations on Keeping and Showing Elephants: Since 1990 legislative proposals regulating keeping of elephants and public appearances of elephants in circuses or as ride animals have been discussed in city councils, state and provincial capitals and national bodies. Following is a list of localities with restricting legislation

(organized by size of jurisdiction). In the USA: Peoria, Illinois; Hollywood, Florida; Honolulu, Hawaii (city and county); state of Mississippi; state of Tennessee; state of California; state of New York. In Canada: cities in the province of British Columbia including Cloverdale, Nanaimo, Port Alberni, Vancouver, Victoria. Also: Canberra, Australia; and Sweden. SOURCES: e.g., GM [May-June 1998], 2(3):2; CR [January 30, 1995], 5:3.

Observing Elephants in Zimbabwe: On June 14 and 15, 1997 (during a break from the CITES meeting in Harare) Ian Redmond, Elke Riesterer, and Jeheskel Shoshani went on a safari to a private tourist estate adjoining Hwange National Park (HNP), Zimbabwe. Over 200 elephants known as the "Presidential Elephants" live in this estate; cf. Reference no. 3401. They roam freely and cross into HNP, which has 23,000 elephants. Our knowledgeable and studious guide, Debbie Grant, who works for "Touch-the-Wild" (Private Bag 5779, Dete, Zimbabwe) has been keeping meticulous notes on these elephants and recognizes most of them by sight, and has named many. Dr. M. Philip Kahl and Billie Armstrong have been studying these elephants for about five years (1991-1997, see Contents). Most of our observations were at the vicinity of Kanando Pan but also at Sikumi Tree Lodge. In this diverse habitat of wild fauna and flora, we observed: young and old elephants in various activities including digging for, and feeding on, soil; dust and mud bathing; collectively "rescuing" (with tusks, feet, and trunks) a calf that was stuck in the mud; pushing acacia trees with heads to loosen seeds which fell to the ground, and eating (delicacies!); and "masturbating" or evaporative cooling [one elephant was spraying mud on its penis with its trunk (12 times in 55 seconds, June 15, 12:05 PM, sunny, 31 degrees Centigrade, very little wind) and hitting its penis against its belly while mud bathing]. We also heard numerous vocalizations and saw four snared elephants; park authorities darted two of them and removed the snares (see also under "Individual Elephants", "Hezy" in this section of ENN). In 1997, Dr. Ronald Orenstein recorded an unusual pathology in the skull of an elderly female elephant that had apparently died of natural causes in Mana Pools National Park, Zimbabwe. The anterior right upper molar, instead of shedding material at its anterior end as is normal with tooth displacement, had been retained as the tooth moved forward in the jaw. As a result it had actually punctured the cranium, creating a hole opening into the tusk cavity. The left side of the cranium was normal. It was not clear if this injury had in any way contributed to the animal's death.

Tuli elephants: The 1997 CITES downlisting of Botswana's elephants allowed trade in live specimens to "appropriate and acceptable destinations", though this term was never defined. In 1998, through an agreement with the Tuli landowners' Association and the Botswana government, 30 young elephants were captured in Northern Tuli Game Reserve (a privately owned area in Botswana) and sold to Riccardo Ghiazza, a wild animal dealer from South Africa. African Game Services, Ghiazza's company, bought the elephants for \$2,000.00 each from Tuli Reserve. The elephants were held in Brits, near Pretoria where they were being "tamed" by Indonesian mahouts. The National Council of the NSPCA in South Africa brought a suit against African Game Services and was awarded control of most of the calves until the outcome of the Tuli case was decided. Training was stopped and conditions improved, but it was forbidden that they be moved from Ghiazza's facility. As of January 1999, the South African government permitted seven of the elephants to be delivered to European zoos. Nine were sold to a park in South Africa. In July, under worldwide protests, Ghiazza terminated contracts with trainers, and Johannesburg Zoo staff took over care of the remaining fourteen elephants. As of July 26, five elephants were promised to a local property holder and former

associate of Ghiazza, Graig Sanders, though NSPCA opposed the transfer, and a deal was made by WWFN South Africa, with support from South African National Parks, to transfer nine elephants to Marakele National Park. Donations from two South African businesses will buy them from Ghiazza who will donate funds towards the elephants' cause in a national park. "The entire Tuli elephant saga has prompted a public outcry for the government of South Africa to put an end to all trading in wild elephants" (ENS, July 26, 1999). Plans for the sale of a further 20 elephants to Ghiazza were shelved. SOURCES: Newsletter for 1998 of the David Sheldrick Wildlife Trust, Nairobi, Kenya, pp. 6-9; AKF [1998], 25(2):396; All Animals [Spring 1999], page 3 of insert Animal update; Animal Watch [Spring 1999], 19(1):21-23; JEMA [Spring 1999], 19(1):9-10; Trunklines, The Elephant Sanctuary [Spring 1999], Issue no. 1:3, 6; AKF [1999], 26(2):61, 26(3):100, 26(4):136, and 26(9):344; CR [March 22, 1999], 12:12; ENS [July 26, 1999]; Ronald Orenstein, e-mail dated August 20, 1999. See Website: <www.africam.com >.

INDIVIDUAL ELEPHANTS

Ahmed: see explanations on the inside of front cover.

Dunda: "Medundamella" (female African elephant) was brought in 1971 from Zimbabwe to the San Diego Zoo (SDZ, California, USA) and since then was transported a few times back and forth between SDZ and San Diego Wild Animal Park (SD-WAP). In 1982 Dunda's jaw was broken when she was pushed into a moat by other elephants in SDZ; she was the only African elephant there and she was lowest on the pecking order. In 1988 it was decided that it would be better for Dunda to be in the African herd in SD-WAP breeding program. Because Dunda's behavior towards keepers who tried to approach her at SD-WAP was deemed aggressive and unsafe on the second day she was there, a planned program of disciplining was instituted on the next two mornings. By the fifth day she responded positively to keepers. Meanwhile photographs and word of the scenario reached HSUS, then newspapers and television. In May 1988 a representative from HSUS conducted an investigation and found that Dunda had been abused. The San Diego Humane Society conducted an investigation and concluded that Dunda was not abused. An investigation by US Department of Agriculture was requested. Based on this report and interviews, the City Attorney cleared the employees at SD-WAP of wrongdoing. On July 29, 1988, California State Senator Dan McQuordale held a public hearing. A study group was organized to define animal abuse and create guidelines for animals in captivity in the state. Editor's note: This incident evoked much discussion and soul-searching at institutions holding elephants. The AAZPA commenced a reassessment of elephant management. With the establishment of EMA, affiliated with AAZPA, a Code of Ethics, a school for elephant management, and a voice on legislative action have been developed for elephant managers and keepers.

Fenykovi: see under "New Elephant Display at the Smithsonian Institutions".

Flora: A 10-year-old, female, African elephant, subject of an animal abuse court case in England; cf. Reference nos. 2745, 5162.

Hezy: On June 15, 1997 Ian Redmond, Elke Riesterer, and Jeheskel (Hezy) Shoshani went on an excursion in a private tourist estate adjoining Hwange National Park, Zimbabwe, when to their surprise, their guide Debbie Grant told them about an elephant nicknamed "Hezy" (he is the editor's namesake). Hezy, the elephant, is a tall male, approximately 28 or 29 years old, has short evenly-shaped tusks of

about 2.5 feet (76 cm) long, slightly diverging away from the head and upwards. His ears are relatively undamaged; the right ear has a small elongated tear and a hole below it at the margin close to the center, and the left ear has two small tears at the margin slightly above the center of the ear (see also under "Observing elephants in Zimbabwe" in this ENN section).

Iki: Details on "Iki" were given in *Elephant*, 2(3):90. Unveiling of the display at Wayne State University was on April 18, 1988. Before mounting her skeleton, individual bones were photographed in different views for a future book. Her skeleton, trunk, and brain were used in the film "The Ultimate Guide to Elephants" (see under Elephant Films and Videos, ENN). Her brain has been studied (by B. Cressmann, G. H. Marchant, W. J. Kupsy, and J. Shoshani) along with other elephants' brains ("Missy" and "Tulsa") for structures associated with memory. Sections of her skin and hair were given to various institutions for educational programs. A polymer cast of Iki's brain is in ERF office, and a bronze cast of her brain is on display in the exhibit called "Think Tank", at the National Zoo (Smithsonian Institution), Washington, D.C., USA.

Jumbo Update: The Barnum Museum in Bridgeport, Connecticut, reopened in June 1987. Included in the exhibits are photos of "Jumbo" from England. SOURCE: *CR* [July 3, 1989], 27:7. HOW TALL WAS JUMBO?: After extensive research into Jumbo's height, it is suggested that he was 11 feet (3.35 meters) tall when he left London Gardens and undoubtedly grew some few inches afterwards. Some figures run as high as 13.5 feet (4.1 meters). His precise weight, too, is in doubt: anywhere from four to seven tons. SOURCE: Walter G. Kellogg in *The Circus Scrapbook* [April, 1932]. Reviewed in *CR* [August 24, 1998], 34(26):11-12, 17. JUMBO'S SKELETON: On Friday, January 22, 1993, the AMNH unveiled the skeleton of Jumbo in a refurbished and greatly revitalized exhibit. A parade of the Ringling show, as part of the observance of 200 circuses in America, passed through the AMNH. SOURCES: *CR* [October 26 1992], 43:16-18; *CR* [1993], 6:9; *CR* [March 29, 1993], 13:19. Additional information is found in *Elephant*, 2(2):86-122, see also Reference no. 1434 in *Elephant* 2(1):203; cf. Reference no. 5547.

King Tusk: see under Tommy.

Laura: see under "Philately, Numismatics, and Art", "ERF Artist" in ENN.

Little Jenny: "Little Jenny" the elephant, who played with nine other elephants in the film "Elephant Walk" (starring Elizabeth Taylor), died in 1972 at the age of 60 while performing with a circus. She was buried in the Summit Place Mall, Pontiac, Michigan, USA. Permission was granted to Hezy Shoshani to unearth her skeleton for display at the mall, but this plan was canceled. SOURCES: *OP* [July 22, 1972], pp. A1-A2; *CR* [May 22, 1989], 21:14.

Motala (or Motola): A 38 year-old Asian elephant, victim of a land mine near the Thailand-Myanmar border, whose left foreleg was badly injured and was partly amputated. "Veterinarians [at Elephant Hospital in Lampang, Thailand] prepared enough anesthetic to knock out 70 humans, readied 130 gallons of glucose and lactose and gathered dozens of mammoth-sized dressings to stem the bleeding from the surgery..." The medical team of five surgeons, five anesthetists, and two nurses operated using a specially constructed 11 1/2-foot-by-13-foot bed. They used a crane to hoist her onto a bed tilted 15 degrees during the operation to ease the pressure on her internal organs. She will need mechanical support for at least two weeks, then a brace to

help her stand up. Medics have considered fitting a prosthetic. SOURCES: *Maariv* [24 August 1999, in Hebrew], p. 15; *DFP* [25 August 1999], Section A; *DFP* [28 August 1999], p. 2A; *DFP* [30 August 1999], p. 5A; *Newsweek* [13 September 1999], pp. 72-73; *Maariv* [2 October 1999, in Hebrew], p. 17. Soraida Salwala (of Friends of the Asian Elephant, FAE) wrote: "Motala's operation took place on Saturday 28th August starting from 2:00 p.m.-5:30 p.m. She gained consciousness 3-4 hours later and was up the next day at 3:12 p.m. By evening she bled profusely but the team managed to stop the bleeding. The surgeon cut out the dead tissue, dead bone, evacuated pus from the carpus. He cut the left foot up to the carpo-metacarpal joint. The artificial leg will be made by the Artificial Leg Foundation under the Patronage of the Princess Mother. I owe so much to everyone, the army, the Electricity Generating Authority of Thailand, Petroleum Authority of Thailand, surgeon vets, anesthetist, nurses, FAE's staffs, and those I cannot name them all. Thanks on behalf of the foundation and on behalf of 'MOTALA'. I know she's grateful for what we have done and are doing for her. (How could I let her down after her fight to live, walking for 3 days to the border !!) My sincere thanks, once again." SOURCE: Elephant Listserver (Internet), 31st August, 1999, slightly abridged. Editors' note: Staff of ERF join all well-wishers in hoping that Motala will have a speedy recovery.

Motty: Although the unusual event of the birth of "Motty" [the only known hybrid between a male African elephant, "Jumbolino" ("Bubbles") and a female Asian elephant, "Sheba"] occurred in 1978, people have been continually asking about it. Motty lived only 10 days; his skin is mounted at the Natural History Museum (formerly British Museum of Natural History). SOURCES: *Elephant* [1979], 1(3):36-41; pages 168-171 in Reference no. 5123, and Reference no. 4225, especially pages 53-54.

Old Bet: Old Bet has aroused interest and curiosity for many years, mostly because of the mystery surrounding her time of arrival in the United States (she is either the "first", having arrived on April 13, 1796, or the "second", arrived in 1804), her species (either African or Asian elephant), her name (known by at least five different names: "The Elephant", "Old Bet", "Betsy", "Betty", and "Rajah"). "Little Bett" and "The Learned Elephant" apparently are names of another elephant acquired after Old Bet died, presumably in Alfred, Maine, USA in 1816. Interest in Old Bet's history was recently renewed by E. M. Kent (see under "Information from Elephant Research Foundation Questionnaire" in ENN). In 1982, Ann and Burt Knox and the editor visited Somers, New York (USA), to view the Elephant Hotel and the statue of Old Bet [see photographs in *Elephant*, 2(1):154-5]. For additional information on Old Bet, see Reference nos. 2461, 3445 and 3940. SOURCES: *Elephant*, 1(3):52, 1(4):235-237, 2(1):154-155, and Newsletter and literature of the Somers Historical Society (sent by Terry Ariano, September 10 and 15, 1999).

Raja: "Raja", the Holy Elephant of Sri Lanka (formerly Ceylon) who became a national treasure, died July 16, 1988, at the age of 81 or 82. Raja carried the tooth relic of Buddha for more than 50 years in the annual religious festival in the city of Kandy. Raja was Sri Lanka's "most adored, most loved and most venerated moving monument." A mounted version of Raja is preserved in a Buddhist Temple in Kandy. SOURCES: *CR* [August 8, 1988], 32:26; *NYT* [July 18 1988], p. 6; *DFP* [July 17, 1988]; *DFP* [December 13, 1988]. See also notes on Raja in *Elephant*, 2(3):91-92.

Ruth: see under "Philately, Numismatics, and Art", "ERF Artist" in ENN.

Tinker: see under "Variations in muscles attachment of African elephants" below.

Tory, Dutchess, and Arlan Seidon (also known as "Murray Hill")
Found: FBI agents arrested Murray Hill in November 1989, at Robert "Bucky" Steele's Texas ranch. Hill had been on the road with the elephants "Tory" and "Dutchess" as a fugitive for 5 years. In 1980 he sold his elephants (for \$100,000) to Robert Drake, a Hollywood animal trainer. Drake fell behind in payments and Hill suggested that Drake have the animals transported to New York to be featured in an American Express TV commercial Hill had arranged. On the way to New York, at a Spirit of '76 truck stop, Murray Hill "repossessed" the elephants and trailer. Drake sued, and a New Jersey Court awarded the trailer and Tory and Dutchess to Drake. Hill, feeling the decision was unjust, and that the elephants were abused, loaded Tory and Dutchess into a 40-foot semi-trailer and disappeared until he was caught at Bucky's ranch. Drake re-claimed Tory and Dutchess, and Hill was prohibited from seeing them. SOURCE: Zacks, Richard. "Life on the Lam with Tory and Dutchess" *Life* June 1990, Vol. 13, No. 8, pages 43-46. See also Reference no. 4916.

Tai: A female Asian elephant, about 31 years old, featured in many educational programs, commercials, and about a dozen films; cf. *JUNGLE BOOK, THE*, under "Elephant films and videos", in ENN. SOURCE: *JEMA*, 6(2):34.

Tommy (King Tusk): A male Asian elephant with the Ringling Brothers Barnum & Bailey Circus (RBBBC), weighs about 5.5 tons (11,762 pounds) and measures at the shoulder 2.9 meters (114 inches). His tusks measure more than 6 feet (about 183 cm) long, and about 6 inches (15 cm) in diameter. His 50th birthday was on October 9, 1992. SOURCES: *CR* [November 2, 1992], 44:18; *CR* [January 9, 1995], 2:19; RBBBC Government Relations (Feld Entertainment Inc.).

Tyke: On August 20, 1994, a 21-year-old female African elephant from the Hawthorn Corporation, Grayslake, Illinois, USA, attacked a handler and then killed Allen Campbell, elephant trainer, as he stepped in to help. "Tyke", highly agitated, broke out of the building and ran through the streets in downtown Honolulu, Hawaii, USA. She was subdued when police shot her, and a zoo veterinarian then gave her a lethal injection. Following the incident, legislation in Hawaii and in several cities, states, and provinces was passed restricting and/or regulating appearances of circuses or shows with animals deemed dangerous to the public (see item above, entitled "New Regulations on Keeping and Showing Elephants"). SOURCES: *Honolulu Star-Bulletin*, August 22, 1994, pages 1A, 2A; *Science* (September 9, 1994), 265:1529. ■

ELEPHANT FILMS AND VIDEOS

This list was compiled from many sources; some of the material is located in the library of the Elephant Research Foundation.

ACE VENTURA II: WHEN NATURE CALLS. (1995). Film. "Laura's" film debut. SOURCE: *CR*, 48:7, November 27, 1995.

AFRICA'S ELEPHANT KINGDOM. (1997). IMAX film on national parks, Kenya and Zimbabwe, covers elephant lifespan. World premiere was in Los Angeles on Tuesday, April 21, 1998. SOURCES: *Swara*, 21(2):11, 1998; *JEMA*, 9(2):147-9, 1998; *CR*, 26(46), November 16, 1998. A film — *The making of "AFRICA'S ELEPHANT KINGDOM"* takes a look behind the scenes and thrill of this IMAX production. SOURCE: *Lufthansa Magazin* 11/99:129.

AMONG THE ELEPHANTS. (1991). Television, *NatureWatch* (CBC). Iain Douglas-Hamilton in Lake Manyara after poaching decimated the elephant herds in the late 1980's.

AN EYE FOR AN EYE. (1990). Television, *Primetime*. Diane Sawyer reported on Richard Leakey's efforts as Director of Kenya Wildlife Service to conserve Kenya's elephants; interviews with Leakey, his mother Mary the archaeologist, and ivory burning in 1989 by the President of Kenya are interwoven.

ANIMAL INTELLIGENCE. (August 19, 1999). Television, *CBS News, FORTY-EIGHT HOURS*. Includes experiment at Oregon Zoo (Portland, Oregon) in which Katy Payne played soundtapes of infrasonic sounds made by elephants, "Rosie" and "Tunga", which had resided in the zoo but died, then recorded on video the responses of the remaining three female elephants.

ANIMALS AND ME. (1994). Video series: "Wildlife Adventures for Young Children". Has elephant sequence. Small World Productions.

ASIAN ELEPHANT OF SOUTHERN INDIA, The. (May 28, 1996). Television. Safari — documentary. The Discovery Channel.

BA MIKI BA NOULA: CHILDREN OF THE FOREST. (1978). Television, *NOVA*. Describes lives of pygmies in Ituri rainforest (Zaire). SOURCE: Transcript, WGBH Educational Foundation, 1984.

BEAST OF BARDIA, THE. (1996). Television, Cicada Films. Director John Bulmer, Producer Frances Berrigan. First shown on Channel 4 television (England), Sunday 21 July 1996 at 8 pm. Featuring "Raja Gaj" at Royal Bardia National Park in Nepal. He is possibly the largest Asian elephant ever to have lived.

CAN THE ELEPHANT BE SAVED? (1990). Television, *NOVA* - show no. 1717. People must be considered in effort to save African elephants. SOURCE: *Signal* 56, November 1990, p. 15.

CELEBRATING ELEPHANTS. (May 5, 1997). Television, *Pamela Wallin Live* [60 minutes]. Discussion with Robert Kam, Ron Orenstein, and Hezy Shoshani, who work with or study elephants, before the CITES meeting in 1997. SOURCE: Copy of tape, *Canadian Broadcasting Corporation Newsworld*, Toronto.

CIRCLES IN A FOREST. (1987). Film made in South Africa, Pilo Pieterse, producer. Based on a novel by Dalene Matthee (compulsory reading in most South African schools), story set in late 19th century at Knysna Forest, Republic of South Africa, pleads for conservation of the coastal forests and creatures in them. Starring four African elephants: female "Sammy", "Cathy", "Bernie", "Abu". SOURCES: *Back to Africa* by Randall Jay Moore, 1989, and Letter from Randall Moore, August 30, 1990.

DIGGING UP MICHIGAN'S PAST. (1987). Video (10 minutes). Describes the Shelton Mastodon Site (Oakland County, Michigan, USA) where excavation took place in the summers of 1983-1987. Also includes the story of "Elmer" the mounted skeleton at Oakland Community College (Highland Lakes Campus, Union Lake, Michigan). Videotaped mostly by Rusty Walker, TOErfic Productions.

ECHO OF THE ELEPHANTS. (1993). Television. Filmed by Martin Colbeck at Amboseli National Park, Kenya. Featuring Cynthia Moss; cf. Reference no. 5814.

ECHO OF THE ELEPHANTS: THE NEXT GENERATION. (1996). Television. The sequel to "ECHO OF THE ELEPHANTS:", see above.

ED, THE ORPHAN ELEPHANT. (1991). Film, *World of Nature*. Filmed in Amboseli and Nairobi orphanages. SOURCE: Copy of tape, TV Ontario and NHK Enterprises (Japan).

ELE, MY FRIEND. (1993). Video [104 minutes]. Young boy with elephants in south India. SOURCE: Copy of tape, *Heartland Films, England*.

ELEPHANT. (1989). Film, National Geographic Special. Documentary filmed in Asia, Africa and the United States; scientists provide fascinating insights into the social structure, communication, and

- population dynamics of elephants. SOURCE: National Geographic Specials: A Resource Guide, 1989, page 4.
- ELEPHANT ART.* (September 10, 1995). Television, *CBS Sunday Morning*. Bill Geist looked into "painting" done by Renee (Toledo Zoo, Ohio). CBS Sunday Morning.
- ELEPHANT BOY.* (1937). Film. The story of "Toomai" (played by Sabu), a young man from a family of four generations of mahouts (elephant handlers). When Toomai's father is killed, the elephant he rode is given to another handler who mistreats it. Toomai steals the elephant and they live happily in the jungle until Toomai discovers a herd of elephants that has been the object of a search by British authorities [based on Rudyard Kipling's novel *Toomai of the Elephants*; cf. page 161 in Reference no. 5123]. SOURCE: The Motion Picture Guide, 1985, published by Cinebooks, Chicago.
- ELEPHANT JOURNEYS.* (1995). Video. SOURCE: *Wildsight Productions, New York*. No additional information available.
- ELEPHANT, LORD OF THE JUNGLE.* (1988). Television, *Nature*. Documentary on the status of Asian elephants in Mudumalai National Park, southern India; including the first filming of an elephant giving birth in forest. Bedi Films.
- ELEPHANT MEN, THE.* (1997). Television, *Nature*. Story of India's wild elephant trainers (mahouts). February, 16, 1997, December 16, 1997. SOURCE: JEMA [Spring, 1997], 8(1):95.
- ELEPHANT SLAUGHTER, IVORY GREED.* (November 12, 1998). Television, *CBS News*. An update on poaching and a plea to boycott all ivory products. Interviews with Iain Douglas-Hamilton, Joyce Poole, Thomas Mailu, Susan Lieberman, and Perez Olindo. SOURCE: Transcript, West 57th - CBS News, Show #148.
- ELEPHANT WALK.* (1950's). Film. Story of British wife who struggles to learn about her new husband and family estate called "Elephant Walk" in Sri Lanka (Ceylon). Starring Elizabeth Taylor, Peter Finch, Dana Andrews and several elephants including "Little Jenny"; cf. "Individual elephants" in ENN.
- ELEPHANTS OF AFRICA, THE.* (1997). Television, *Nature*. Filmed in Amboseli, Kenya; Congo River Basin (Central Africa); Namib desert of Namibia (Skeleton Coast elephants); Queen Elizabeth National Park, Uganda. Cynthia Moss contrasts herd structures, anatomical features and behaviors of elephants from diverse regions, including scene of mother elephant sensing her dead calf by holding the soles of her feet over the body. SOURCE: JEMA [April 1, 1998], 9(1):76.
- ELEPHANTS OF GARAMBA.* (1996). Television, *TBS Explorer*. Documentary written by Alan Root and Dean Campbell for National Geographic Society, on African elephants trained for work at a school originally set up by King Leopold of Belgium in 1879 in northern Congo and now resurrected.
- ELEPHANTS OF INDIA, THE.* (1996). Television series, *In the Wild*. Goldie Hawn stars in documentary about an 8-month search in India for a baby elephant and its mother - blind in one eye. SOURCE: DPS, October 9, 1996.
- ELEPHANTS OF TIMBUKTU, THE.* (May 29, 1996). Television, A&E channel. Smithsonian Expedition Special. A herd faces a "perilous confrontation" with humans on the edge of the Sahara.
- ELEPHANTS IN ERITREA.* (April 4, 1998). Television, in Eritrea. Filmed in Haykota area by Mahmood Mohamed, depicts elephants with young calves in doum palm habitat. SOURCE: Copy of tape in ERF office.
- EYEWITNESS: ELEPHANT.* (1994). Video [35 minutes]. General, well illustrated. SOURCE: Dorling Kindersley Ltd. and BBC Lionheart Television Intl. Inc., England.
- "FLORA". (1994). Television, *Regis and Kathy Lee Show*. African elephant from Moscow Zoo performed tricks including twirling a hula hoop on her trunk and lying above trainer. SOURCE: Channel 7 (Detroit), July 18, 1994.
- GAJAH SUMATRA* ("The Sumatran Elephant"). (1991). Film. P. T. Gemini Films, Ltd., Jakarta, Indonesia. Documentary on elephant training program with Thai elephants to domesticate crop raiding elephants in Sumatra. SOURCE: Gajah (1991), no. 7:45-46.
- GREAT ELEPHANT ESCAPE, THE.* (1995). Television, ABC-TV Family Movie [2 hours]. Story about two boys (one American, one Kenyan) who seek to free a young African elephant which has been raised in an orphanage and then is sold to an animal dealer. Stephanie Zimbalist as American mother. Filmed entirely in Nairobi, Kenya, by Signboard Hill Production.
- IKI THE ELEPHANT.* (1980/1988). Three amateur VHS videos produced about "Iki" the elephant, whose skeleton is mounted at the Science and Engineering Library, Wayne State University (WSU), Detroit, Michigan USA (cf. "Iki" under Individual Elephants, see Contents); they are: [1] "Elephant Dissection" (10 minutes) — videotaped during the unloading of Iki at WSU on July 11, 1980, by WSU Police staff, no sound; [2] "Wayne State University 'Elephant Project'" (15 minutes) — covers preparations for reconstruction of Iki's skeleton, videotaped by Doug Freed; [3] "Operation Iki" (60 minutes) — covers portions of the reconstruction of Iki's skeleton, trunk musculature, and the unveiling ceremony April 18, 1988, videotaped by Kent D. Schultz.
- IMPOSSIBLE ELEPHANTS, THE.* (1995). Film. Shows capture and training of young wild elephants in Garamba National Park, Democratic Republic of the Congo (formerly Zaire). SOURCE: Swara [1995], 18(4):23.
- IN AFRICA.* (1992). Television, *Today Program*. Show based in Zimbabwe explores people, politics and problems in more than 15 nations; elephants included. NBC, November 13-20, 1992. SOURCE: DFP, November 12, 1992, pp. 19-20D.
- ISLANDS OF ELEPHANTS.* (1993). Television documentary. Parks in Kenya form islands of protected habitat for elephants. Narrated by Peter Benchley, with black and white footage of hunting and culling, featuring Ian Redmond, Joyce Poole, Iain Douglas-Hamilton, Soila Sayialel, Katito Sayialel, and Norah Njiraini, who present the status of elephant conservation after the ivory ban of 1989. SOURCE: Copy of videotape, American Adventure Production in association with ESPN.
- IVORY WARS.* (1991). Television, The Discovery Channel. In Kenya with Iain Douglas-Hamilton, Joyce Poole. Narrated by James Earl Jones. Members of CITES designated the elephant an endangered species. SOURCE: TV Guide, Detroit, January 12, 1991.
- JUNGLE BOOK, THE.* (1999). Film. Walt Disney Studios. Based on Rudyard Kipling's stories, Mowgli and his animal friends protect their jungle domain. Among elephants shown is "Tai" a female Asian. SOURCE: TV Book from OP, July 18, 1999.
- JUNGLE CAVALCADE.* (no year given - 1940's?). Black and white sequences from *Bring 'Em Back Alive* by Frank Buck, a jungle explorer; one on catching an elephant in Ceylon (Sri Lanka) by using local methods and captive elephants. Video Yesteryear Presentation.
- LAND OF THE MOUNTAIN ELEPHANT.* (September 14, 1982). Television, Channel 9. Working elephants in Thailand. SOURCE: CBC Ottawa Film Production.
- LARGER THAN LIFE.* (1995). Film. Comedy with "Tai". SOURCE: JEMA, 7(3):56-57, Summer 1996. Note: Tai played a dog in the film, "George of the Jungle".
- LAST ELEPHANT, THE.* (August 20, 1990). Television, TNT [120 minutes]. Heroes face Africa's deadliest predator - man. SOURCE: DFP TV Book, August 19, 1990, page 29.

- LAST MAMMOTH, THE.* (1994). Television, BBC. Describes pigmy woolly mammoth fossils on Wrangel Island, Siberia. SOURCE: Horizon BBC Science Series, January 17, 1994.
- LAST MIGRATION, THE.* (1994). Documentary film. Deals with man-elephant conflict that makes elephant capture necessary. SOURCE: *India Today*, December 15, 1994, p. 116.
- LEEZA SHOW ON ELEPHANT ABUSE.* (1997). Television. On March 7, 1997, the "Leeza" show aired a segment on "elephant abuse" interviewing Kim Basinger and others. SOURCE: Elephant Listserv, 1997; cf. "Dunda" under Individual Elephants.
- MAMMOTH SITE VIDEOS.* (1989-1994). Three VHS videos produced about the Mammoth Site Of Hot Springs, South Dakota, Inc. (see under Organizations), they are: [1]. "Mammoth Site Video" (27 minutes) — covers discovery of site, explains how the sinkhole was formed, entrapment of prehistoric animals, mammoths included; [2]. "Story of the Mammoth" (20 minutes) — escorting five students on a tour of the site, including its laboratory and screenwashing; [3]. "Mammoth Site Tour" (30 minutes) — a detailed guided tour of the site. SOURCE: *Mammoth Site Of Hot Springs, South Dakota, Inc.*, Gifts/Publications Catalogue.
- MAMMOTHS OF THE ICE AGE.* (1995). Documentary (60 minutes). Includes discussion with well-known scientists on mammoth ecosystems and possible causes of extinctions, depicts locations in Asia (with scenes on Wrangel Island), Europe, and North America. Compares elephant skeletal remains in Africa to those in the Arctic to better understand taphonomical processes [what happens to the animals after they die] of mammoths. A NOVA Production by BBC-TV in Association with WGBH, Boston (USA).
- NATURE'S NEWBORN: ELEPHANT, ROCK HYRAX, BABY ANIMALS.* (1994). Video. Color, 30 minutes. Shot in Africa. SOURCE: INTV Production, Diamond Entertainment Corporation, Cerrito, California.
- 119TH EDITION, RINGLING BROS. AND BARNUM & BAILEY CIRCUS.* (1989). Video Program Book. Special performance of the Red Unit celebrating twenty years of Gunther Gebel-Williams' career as an animal trainer with circuses, including elephants.
- OPERATION DUMBO DROP.* (1995). Film. Based on true events, in Dak Nhe (Vietnam), 1968. Soldiers' efforts to save sacred elephant - starring "Tai". SOURCES: *CR*, 20:3, May 15, 1995; *JEMA*, 6(2):34, Summer 1995, and 7(3):57, Fall 1996.
- OUR GIRLS.* (?1999). Video (10 minutes). Amateur video about the elephants at The Elephant Sanctuary in Hohenwald, Tennessee USA (see under Organizations). SOURCE: *Trunklines*, "Bunny's Special Edition", page 2 [no date given, received in ERF office December 1999].
- PATTERSON EXPEDITION, THE, 1964-1967.* (1989). Video made by William Sill. Includes footage from paleontological expeditions featuring the late Brian Patterson and the surviving Vincent J. Maglio (cf. Reference no. 536). Copy purchased by J. Shoshani at Society for Vertebrate Paleontology Auction on October 15, 1993.
- PROBLEM CHILD.* (?1990). Film. Set in "Diablo Bros. Circus", really Donnie Johnson's (Clyde Bros.) Circus. SOURCE: *CR*, 18:22-23, April 30, 1990.
- QUEEN OF THE ELEPHANTS.* (1994). Television (2 hours). British author Mark Shand examines the plight of the endangered Asian elephant as he follows a wild herd across northeast India with India's only female handler. The Discovery Channel. SOURCE: *TV Guide*, March 1, 1994; *CR*, 13:14, March 28, 1994.
- REFLECTIONS ON ELEPHANTS.* (February 9, 1994). Television, National Geographic Society. Elephant behavior - scenes of burials, greetings, co-operation, lions hunting elephants. SOURCE: *NG*, February 1994 (no pages given).
- RESURRECTING THE MAMMOTH.* (1988). Television. Filmed September 6-8, 1997, by CICADA (London, England), shown September 1998 on Channel 4's Equinox (England) and Discovery Channel (US). Natural history, ideas for "creating/cloning" a mammoth. SOURCE: *Mammoth Site Newsletter* [of the Hot Springs, Mammoth Site, South Dakota, USA], January 1999, page 9.
- RUN AWAY WITH THE CARSON & BARNES CIRCUS!* (1997). Video [60 minutes]. Includes footage of Bucky Steele's breeding ranch in Texas, USA. SOURCE: Copy of tape, Carson & Barnes Circus & JKJ Equipment Company, Hugo, Oklahoma, USA.
- SADDAM'S WAR ON WILDLIFE.* (January 28, 1992). Television, NOVA. Kuwait: includes information on "Aziza" the elephant in Kuwait Zoo which had no water and was shot in the shoulder; cf. Elephants in Wars, above. SOURCE: *DFP, TV Book*, January 26, 1992.
- SURVIVORS OF THE SKELETON COAST.* (1993). Television, National Geographic Society. Focuses on the photography of Des and Jen Bartlett in Namibia: includes elephants sliding down a dune to a watering hole. SOURCE: *DFP*, April 14: 5D.
- TONS OF FUN.* (1992). Video [18 minutes]. Stars "Bertha" and "Angel" (Asian elephants, John Ascuaga's Nugget, Reno, Nevada, USA) and Don Bloomer, trainer/handler. SOURCES: *CR*, 46:25, November 16, 1992 and Copy of tape.
- TWENTY/TWENTY* (20/20) segment. (May 10, 1996). Television. A negative message regarding treatment of elephants in circuses, shows and zoos. A rebuttal appeared in *Grey Matters* letters. SOURCE: *GM*, 4, June 1996. Note: a similar show aired July 13, 1996 on CBC TV "A Current Affair".
- ULTIMATE GUIDE TO ELEPHANTS.* (1996). Television. Stars "Siri" (Asian elephant, Burnet Park Zoo, Syracuse, New York, USA). Special effects are used to describe elephants, evolution, anatomy (including that of brain of "Iki"), and communication skills; several elephant researchers are included. SOURCE: Windfall Films, Ltd; shown in U.S. by The Discovery Channel, April 6, 1996.
- WE LIVE WITH ELEPHANTS.* (1974). Television, Kodak Video Program. Documentary of five years of Iain and Oria Douglas-Hamilton's lives among elephants of Lake Manyara region, Tanzania. Written by Colin Willcox, narrated by David Niven, for Survival Anglia Ltd.

"In press" and Miscellaneous Media Notes

- ELEPHANT MASTERS OF PO PO, THE: A CELEBRATION OF MEN AND ELEPHANTS.* ("in press"). Television, Filmed 1993 or 1994 by James St. Productions, London, England. Documentary on the Burmese timber industry elephants and the indigenous people of northern Myanmar (formerly Burma). SOURCE: *Original manuscript* by Richard Gayer.
- FIRST OF MAY, THE.* ("in press"). Filmed 1997, private screening October 1998. Featuring Clyde Beatty Cole Bros. Circus. SOURCES: *CR*, 26(15):14, April 13, 1998; *CR*, 26(43):15, October 26, 1998.
- I DREAM OF AFRICA.* ("in press"). Filming completed early 1999. Kim Basinger plays wildlife conservationist Kuki Gallman alongside a cast of trained animals that includes elephants from a South African circus. Producer: Stanley Jaffe. SOURCE: *GM*, 3(4):1, July-August 1999.
- P.T. BARNUM.* ("in press"). Television, to be shown September 12 and 13, 1999, A&E network. Four-hour film on the life of the circus showman, with Beau Bridges in the title role, his son Jordan as young Barnum, and George Hamilton as financier for Barnum; a sneak preview to raise money for the Barnum Museum will take place on September 7 in Bridgeport, Connecticut USA. SOURCE: *CR*, 27(25):4, July 26, 1999.

RAISING THE MAMMOTH. (due March 12, 2000). Discovery Channel documentary film. Describing excavating a mammoth in Tajmir reserve, Siberia, in September and October by a French group for The Discovery Channel; it will be shown on March 5, 2000, in North America. Larry Agenbroad (USA), Bernard Buigues (France), Dick Mol (The Netherlands) and Nikolai Vereshchagin (Russia) are members of the international team of scientists which is involved in the excavation. SOURCES: CNN.com, July 26, 1999 [press release from Hot Springs, South Dakota (Reuters News Service)]; Tatiana Vereshchagin, personal communication, June 12, 1999; cf. Reference nos. 3969, 5350, 5272; The Mammoth Site Of Hot Springs, South Dakota, Inc. Newsletter, September, 1999, p. 5; website: <discovery.com>.

The main sound of the *Tyrannosaurus rex* in the film, "Jurassic Park", was made by an elephant. SOURCE: CR, 24:24, June 13, 1994. Circus World Museum. Robert L. Parkinson Library and Research Center, 426 Water St., Baraboo, Wisconsin 53913, has large collection of circus history material. SOURCE: CR, 34:6, August 22, 1994. ■

ANATOMY AND PHYSIOLOGY RELATED

Elephant Necropsy Protocol — A necropsy protocol for both living species has been developed over the past several years by Susan Mikota and Jeheskel Shoshani. Contact: Dr. Susan Mikota, The Audubon Institute, P. O. Box 4327, New Orleans, Louisiana 70178 USA; Telephone 1 (504) 398-3111; e-mail: <smikota@acres.org>.

Dissection of an Elephant, March 6, 1826 — Editors' note: Our readers may be interested in this account of the dissection of an Asian elephant which took place in England in early 1826, published in The Times on March 7, 1826. The flavor of this account is reminiscent of Blair's account on the elephant dissected in Dundee, Scotland, on April 27, 1706 [excerpts of which were included in Elephant, 2(1):86-93]. The Times newspaper clipping was sent to us by Dr. Clive A. Spinage who also wrote "This was the famous elephant 'Chuni' [possibly an abbreviation of "Chunilal", in Hindi "chuni" is "scarf-like", and "lal" stand for "dear"], killed on the 1st of March (a week before it was dissected) by a sword thrust after having 152 balls fired into it... Note that this [article] was followed by a brief indignant letter in the same newspaper from Mr. Brookes stating that he had certainly not eaten any of the elephant meat."

[From The Times, March 6th, 1826]

Towards the close of Saturday evening's business at Bow Street office Sir Richard Birnie inquired what chief officer was in attendance, and being answered that Bishop was in the neighbourhood, his immediate presence was directed; on his arrival, Sir Richard Birnie said "Bishop go directly to Mr. Cross, the keeper of the wild beasts at the Exeter 'Change and tell him, that I expect he will cause the body of the elephant to be removed tonight, and inform him, that if it is not, he will hear from me on Monday in a way that he will not like. It is in the present state a disgusting nuisance to the neighborhood. You had better take Avery with you." But few minutes elapsed before Bishop returned stating that he had not seen Mr. Cross who was not at home, but that the gentleman having the management of the department, requested him to inform Sir Richard the carcass should be removed in the course of the night. The officer added, although on ascending the staircase the annoyance from the smell was very considerable crowds of persons were pressing in to view the stupendous remains of the brute.

Dissection of the elephant, from The Times, March 7, 1826

On Saturday preparations were made for the dissection of the remains of this animal. In the afternoon pillars of enormous size were erected on each side of the den, to support a strong crossbeam, from which a pulley, capable of raising ten tons was suspended. These preparations were nearly completed, when a message was sent by Sir Richard Birnie to the proprietor, that unless the body was removed by Monday morning, Mr. Cross would hear from Sir Richard "in a way that he would not like."

On Saturday night a number of butchers were employed in flaying the skin. By ten o'clock on Sunday morning they had completed their operation, and it was removed to the residence of a Mr. Davis, who had purchased it of Mr. Cross for 50£. At 11 o'clock on Sunday morning, Mr. Brookes, Dr. Waring, Dr. Clarke, Dr. Spurzheim, Mr. Herbert Mayo, Mr. Morgan, Mr. Yarrall, Mr. Caesar Hawkins, Mr. Bell, and other surgeons, were present.

Mr. Ryals, a naturalist of some repute, was the operator, under the directions of Messrs. Brookes and Morgan. In the first instance the body was turned by ropes fastened to the fore legs, and the carcass being raised, the trunk was cut off and the eyes extracted. An incision was then made down the abdomen, and the abdominal muscles on the uppermost side were removed. The entire contents of the abdomen and pelvis were taken out. The contents of the chest were then removed. This occupied a considerable portion of time. The heart was found to have been pierced by a sharp instrument, and several bullets were extracted from the liver. The flesh was then cut from the bones, and was removed from the menagerie in carts. The professional gentlemen who were present, after the removal of the flesh, declared they never viewed a more beautiful anatomical display. The leg bones were then removed at the knee-joint, and being measured, they were found to be four feet in length from the knee-cap to the back. The thigh-bones were then removed, and being measured, were found to be three feet two inches in length. The greatest difficulty the anatomists said they experienced was in the removal of the hocks, having to cut through an immense thickness of a substance resembling India-rubber. A very singular appearance presented itself in the *acetabulum*, or cavity of the thigh joints. Instead of the usual *mucilaginous* fluid called *synovia*, the parts were lubricated with a white cream. It was remarked by several of the professional gentlemen present, that the appearance of the body denoted the most perfect health. The *interarticular cartilage* (between the joint of the upper and lower jaw) presented a singular appearance. It was two inches in thickness, and was covered with the same kind of substance as the knee-pans. Several balls were also found therein. The bones were not of that extraordinary magnitude which, from the size of the animal, it was supposed they were. From the *spinus* process of one *ilium* to the other was four feet. The width from one *acetabulum* to the other was 29 inches. The length of spine ten feet. The operators proceeded to take off the rib bones, the longest of which was three feet six inches. The head was severed from the body; from the forehead to the top of the trunk measured four feet and a half. The girth of the beast, before the skin was taken off, was 19 feet four inches. The length of the head and proboscis, four feet; from the rump to the forehead, 12 feet two inches; from the abdomen to the top of the tail, five feet nine inches. At ten o'clock on Sunday night the dissection was completed. Not fewer than four tons of flesh were carted away during the day, and the stench in the neighbourhood was very offensive.

We almost forgot to mention the enormous size of the heart of the elephant. It was nearly two feet long, and 18 inches broad; and was, when the body was opened, immersed in about five or six gallons of blood. In the course of Sunday two large steaks were cut from the

rump of the elephant, and were cooked. Mr. Brookes ate part; and during the day several other persons, male and female, who partook of them, expressed no disrelish for this novel food; but, on the contrary, declared that it was pleasant to the taste. Bruce, in his Travels, states that the Abyssinian hunters deem the flesh of the elephant a rarity, and prefer it to the flesh of most other animals.

Variations in muscles attachment of African elephants — "Tinker" was a female African elephant (*Loxodonta africana*) which lived at the North Carolina Zoo, Asheboro, North Carolina (NC) since 1979, and was euthanized on Sunday, October 7, 1990, at the age of 12, because she appeared to have severe arthritic-related problems. The necropsy was conducted at the College of Veterinary Medicine at NC State University, Raleigh, NC. Dr. Louise Roth of Duke University (Durham, NC) participated in the dissection of the elephant and was particularly interested in muscles of limbs. When Dr. Roth compared her notes to descriptions and illustration in Eales [Eales, N. B. 1928. The anatomy of a foetal African elephant, *Elephas africanus* (*Loxodonta africana*). Part II. The body muscles. Transactions, Royal Society of Edinburgh, 55:609-642 and 5 plates.], she found that there were some differences in positions and areas of attachment of muscles. Other workers (e.g., J. Shoshani and G. H. Marchant, personal communication) have also noted differences of this type. Note that the specimen of Eales was a fetus, and Tinker was an elephant 12 years old, and thus, variations observed may be due to age differences; additional comparisons are needed. SOURCES: [1] Brooks, Kim. October 7, 1990. Tinker the elephant loses her fight for life. News and Observer, published in Raleigh, NC (article sent to us by Hans Thewissen); [2] Anonymous. October 1, 1990. Elephant Tumbles. CR, No. 40, page 2; [3] Jim Small (Head Elephant Keeper at NC Zoo), personal communications.

Elephant fetuses — The Elephant Research Foundation has acquired three small fetuses, one of an Asian elephant [from African Lion Safari, Ontario; Canada; courtesy of Charlie Gray], eight months old, and two of African elephants [from University of California, San Diego, California USA; courtesy of Dr. Kurt Benirschke], three and five months old. Extrapolating the ages of elephant fetuses can be done from the graphs/figures on pages 163-4 of Sikes (1971, Reference no. 331), on page 103 of Buss (1990; Reference no. 2990), and on page 87 of Hanks (1979; Reference no. 946); cf. Reference no. 1917.

Elephant "Secret" Language — In recent years, we have learned that elephants can produce and hear calls below the range of human hearing (5-24 Herz, average adult human range of hearing is 50 to 8,000 Herz); see for example Reference nos. 4678 and 4756; cf. "Animal Intelligence" under ENN, Elephant Films and Videos. The low frequency calls of the African and Asian elephants can be perceived by other elephants within a distance of three to six miles (five to ten kilometers). Ongoing research on the mechanism that enables living elephants to communicate with infrasonic calls has been extended to extinct species. Evidence suggests that mammoths and American mastodons were also able to communicate with sound frequencies below human range of hearing, although the mastodons did not have as specialized hearing features as did mammoths. This research has been conducted by Jeheskel Shoshani, Jin Meng, Darlene Ketten, and James Kaltenbach. A manuscript will be submitted for publication soon. In this context, Shoshani wishes to express special gratitude to Alfred A. Aburto Jr., Della Drury, Meghan Kennedy, and Sherree Walters whom he "met" over the Internet, from whom he learned, and with whom he shared information on principles of sound production and hearing. ■

REPRODUCTION AND HEALTH-RELATED ITEMS

Artificial Insemination (AI) — AI has been tried unsuccessfully for many years. The first successful AI in North America, with confirmed pregnancy occurred at the Indianapolis Zoo (Indiana, USA) on "Kubwa", 23-year-old African, no previous pregnancies. Subsequent successful AI have been performed on "Moola" [17-year-old Asian, having calved previously, at Dickerson Park Zoo, Springfield, Missouri, USA] and on "Ivory" [17-year-old African, no previous pregnancies, at Indianapolis Zoo]. SOURCES: JEMA [1998], 9(2):92; GM [1999], 3(1):1; cf. Reference nos. 4609, 4610.

Asian Elephant Regional Studbook — In 1997 an updated version of the studbook was published, with the majority of the work accomplished by Norie Dimeo-Ediger and Laurie Bingaman Lackey, under the director of Studbook Keeper Michael N. Keele at Oregon Zoo, Portland, Oregon USA. Telephone: (503) 220-2445; fax: (503) 226-0074; cf. Reference nos. 3926, 3927, 3928.

North American Regional Studbook for the African Elephant (*Loxodonta africana*) — In 1997 a studbook, edited by Deborah J. Olson with help by Heidi Riddle, Laurie Bingaman Lackey, and Michael Blakeley, was published by Indianapolis Zoological Society, Indianapolis, Indiana USA. Telephone: (317) 630-2092; fax: (317) 630-5153; cf. Reference no. 4608.

European Elephant Studbook — The European Elephant Group (see "Organizations" in ENN) has published two studbooks; cf. Reference nos. 3429, 3431. Dan Koehl (September 16, 1997; <dan.koehl@elephant.se>) announced that the European Asian Elephant Studbook is now located at this website <<http://www.wineasy.se/elephant/studbook/europe/asian.htm>>.

Raising elephant calves — Elephant handler correspondents on the Elephant Listserver on the Internet have exchanged information on raising elephant calves. Below is information taken directly from the Internet. Some of our readers may find it useful. We are not responsible for any ill results that may be caused by using these references for milk formulae.

- People/institutions who raised or have attempted to raise elephant calves include: Daphne Sheldrick (P. O. Box 15555, Nairobi, Kenya) successfully hand-reared African elephant calves; Elephant Hospital in Lampang (Thailand); Oakland Zoo (California, USA); Jerusalem Zoo (Israel); Zurich Zoo (Switzerland).
- "The approximate constitution of elephant milk is reported to be as follows: 82% water, 4% protein, 7% fat, 6.5% lactose, 0.5% ash, vitamins A, B, D as in the cow, vitamin C four times as high as in the cow" [provided from Elephant Listserver].
- Sources on elephant milk include: Med. News (1882), 40:282; International Zoo Yearbook (1962), 4:333-342; Nature (1969), 222(192):493-494; British Journal of Nutrition (1970), 24(1):109-117; Elephant (1997), 2(3):88; Swara (1990), 13(4):13-17; Swara (1990), 13(5):23-27; Elephants: majestic creatures of the wild (1992), pp. 114-115.

Vitamin E — A question retrieved from Elephant Listserver (20 May 1998) reads: "What are the appropriate levels of vitamins A, D, and E, as well as levels of selenium in *Loxodonta africana*?"

- One reader replied: Tissue values of vitamin E, apart from plasma, based on natural foodstuff analyses and clinical observations, are between 50 and 200 mg vitamin E/kg DM. SOURCE: Journal of Nutrition, 1994 December, 124(12 Suppl):2579S-2581S.

• Another reader wrote: “While Vitamin E and selenium levels are low in many captive elephants, I believe much of the concern over their levels resulted from the lesions found after sudden death in young elephants that resembled vitamin E and selenium deficiencies in pigs. Since that time, most of the deaths of young elephants with hemorrhage of the tongue and heart muscles (which is classical vitamin E deficiency) have been determined to have been caused by herpesvirus.” Cf. Reference no. 4891, in this issue; see also under “Herpesvirus” below.

Breeding elephant project in Myanmar — Since early 1998, Dr. Michael Schmidt and his wife, Anne Moody Schmidt, have been pursuing elephant reproduction research based out of their new organization ERGO, the Elephant Resource Group of Oregon; see also under “Organization” in ENN in this issue, and also Reference no. 5835.

Carbon monoxide and elephants [by Ray L. Ball (DVM, Busch Gardens in Tampa Florida, USA)] — Carbon monoxide (CO) is the leading cause of poisonings in the United States and causes 3,500 to 4,000 deaths of humans per year. Its pathology is related to tissue hypoxia and cerebral edema, due to its high affinity to bind with hemoglobin (Hb) molecules. Depending on the species, this affinity can be from 240 to 300 times stronger than the affinity the oxygen molecule has for hemoglobin. Not only does CO occupy sites on the hemoglobin molecule that are designed to carry oxygen, but it hinders the release of any oxygen that has bonded to the hemoglobin. Acute toxicity can be seen at levels around 20% COHb. These symptoms include headache, nausea, chest pain, and irritability. Sub-acute levels (less than 20%) may cause such symptoms as gastroenteritis. At levels approaching 40-60%, stupor, coma, and then death are the possible outcomes. Chronic toxicity can cause such conditions as polycythemia, neuropsychiatric disorders, cardiac toxicity, and fetal effects; cf. Penny, D. G. (1990) in *Toxicology*, 62, pp. 123-160. The 1995-1996 AZA Report on Conservation and Science reported that over 30% of newborn elephants are either stillborn or die within the first 30 days of life. It is known that elephants have the highest affinity for oxygen of any terrestrial mammal (about twice of the “normal” of 8%). From this it stands to reason that they also have the highest affinity to CO binding to their hemoglobin. This would, in turn, imply that the fetal elephant is at an even greater risk for developing CO toxicity. It is recommended to avoid exposing elephants to any situations where high concentration of CO may be present, e.g., housing close to highways.

Floppy trunk syndrome — The syndrome, reported in northern Zimbabwe, can be described by its physical appearance and microscopic pathological changes. Scientists believe the elephants could have been afflicted by high levels of plant toxins, pollutants, such as heavy metals, or a deficiency of selenium, a trace mineral found in the vegetation. The syndrome seems to affect male elephants more than females; it leaves the elephants unable to feed themselves; it appears to affect/destroy nerves; death, however, can take months. Elephants rely on their trunks for eating by pulling vegetation into their mouths. In Zimbabwe, however, increasing numbers have been observed trying to cope with the restrictions imposed by the syndrome. One technique involves flicking their heads to throw their trunks across tree branches to bring vegetation within reach of their mouths. Others learned to compensate by picking up grass using their feet and unaffected portions of the trunk. Normally water is sucked up through the trunk, but the paralysis means they have to wade deep into rivers and lakes to put their

mouths directly into the water. SOURCES: Elephant Listserver, May 31, 1998; Proceedings of the Seminar on Elephant Floppy Trunk Syndrome held at Fothergill Island (Matusadona National Park, Zimbabwe) March 8, 1998; Mark W. Atkinson reply to Elephant Listserver, June 1, 1998; cf. Reference nos. 3116, 3983, 3984, 5737.

Can elephants control their nostrils independently? — J. Shoshani (Hezy) hypothesized that elephants are capable of independently using one nostril at a time, that is, an elephant has voluntary control over each nostril. This hypothesis arose as part of a study on elephants ability to produce infrasonic calls. To test this hypothesis, an experiment was conducted by Hezy and friends, on two African elephants [*Loxodonta africana*, “Snuffy” (male, 13 years old) and “Makky” (female, 19 years old), owned by the Barreda family, March 14, 1998], who visited Detroit as part of the Shrine Circus. Our results indicate the possibility that elephants are capable of controlling air flow in one nostril independently of the other. First, the elephants “played” a harmonica in one nostril while exhaling. At the same time the elephant’s breath caused a feather held close to the other nostril to flutter. Next, one nostril was blocked (with a lubricated, gently inflated and sealed tracheal tube) and the elephants “played” the harmonica with the free nostril. The elephants could easily have blown out the tracheal tube as was demonstrated at the end of the experiments, but, while asked to “perform”, they did not. It is noted that the owners had our total cooperation and at no time were the elephants mistreated; on the contrary, they were given treats. In reply to a question to members of Elephant Listserver if anyone observed elephants with injured trunks, Dr. Jayantha Jayewardene wrote: “I have seen wild elephants with holes in their trunks twice. The first was in 1985 in northeast Sri Lanka where an ethnic war was on. The hole was about 8 eight inches from the end of the trunk on the left hand side. The elephant was drinking at a waterhole and every time it drew in water, there was a squirt coming out through the hole. The second time was in 1997 when a crop raiding elephant was killed by farmers. The dead elephant had a one inch diameter hole about a foot and half up the center of its trunk. This was an old wound since it had healed round well. Probably an earlier gun shot wound”. Observation made by J. Shoshani, Eden Akavia, Gary Marchant, Jackie Chiger, and Richie Chiger (August 2, 1998; at Popcorn Zoo, Forked River, New Jersey USA) on a 21 years old male African elephant, *Loxodonta africana*, “Sonny”, with a hole in his trunk, revealed that he was able to suck water through one nostril. Sonny had injured his trunk when he was young in Zimbabwe. The opening is on the right side, it is about 25 cm (about 10 inches) long and about 20 cm (about 8 inches) from the tip. SOURCES: *DFFP*, March 15, page 3B; Jayantha Jayewardene, reply to Elephant Listserver, April 1998. Pages 52-53 in Reference no. 5821; cf. Reference nos. 2519, 4160, 5179.

Herpesvirus — Herpes is the virus killing young zoo elephants. Researchers have discovered the cause of death of eleven young North American zoo elephants — fatal hemorrhaging from a previously unknown form of herpesvirus. The virus hits suddenly, killing within a few days. Following the sudden death of a 16-month-old Asian elephant, “Kumari”, at the National Zoo (Washington, D.C., USA), in 1995, researchers began an extensive investigation and identified a new type of herpesvirus in tissues from Kumari and from seven other elephants. An elephant calf, “Chandra”, was diagnosed with the virus in 1997; veterinarians at the Missouri zoo prescribed Famcyclovir. Chandra recovered in a few days. A young Florida elephant was diagnosed in 1998 and recovered after the same treatment. Herpesvirus was found in

healthy African elephants in the wild, confirming that the virus exists in wild African elephants, but does not kill them. "It is likely that the virus is transmitted from African to Asian elephants in zoos" said Laura K. Richman. "Separating the Asian and African elephants could prevent more deaths," said Gary S. Hayward. SOURCES: Reference nos. 3448, 4888-91, 5045.

Tuberculosis (TB) in elephants — Between August 1996 and April 1999, 12 elephants in California, Illinois, Florida, and Arkansas (all in the USA) were diagnosed with tuberculosis. *Mycobacterium tuberculosis* was isolated from trunk-wash cultures or post-mortem samples. Three strains of *M. tuberculosis* have been identified. One elephant handler working with the Illinois herd was diagnosed with active tuberculosis. Some elephants are receiving anti-tuberculosis drugs, including isoniazid, pyrazinamide, rifampin and ethambutol. The occurrence of TB in elephants in North America has led to formation of the National Tuberculosis Working Group for Zoo and Wildlife Species and to Guidelines for the Control of Tuberculosis in Elephants <www:aphis.usda.gov/ac>. SOURCE: Susan Mikota, personal communication, 1999, excerpts from a paper presented at the Fourth International Elephant Research Symposium, 1999; cf. Reference nos. 4405.

Bad antz and white-eyed elephants — "No one knows exactly how the little red fire ant, *Wasmannia auropunctata*, arrived in central Africa. This species is native to the American tropics, but it hitchhikes with human cargo and is now dispersed around the world. Because of its painful sting and aggressive nature, *Wasmannia* is used in central Africa as a biological control agent." The ants have been implicated in the disappearance of many native arthropods in the Galápagos Islands and their stings have been blamed for blinding dogs in the Solomon Islands and house cats in Gabon. "Also, at Lopé [Game Reserve, Gabon], there are reports of elephants with white eyes, which act as if they are blind, and surveys at Petit Loango revealed a high concentration of white-eyed elephants behaving similarly. Blind elephants have also been reported from the Wonga Wongué Presidential Reserve." SOURCE: *Wildlife Conservation* [1999], 102(5):9, report by Peter Walsh, Lee White, and James Wetterer.

Elephant Foot Care and Pathology — The Metro Washington Park Zoo (now called Oregon Zoo) hosted the First North American Conference on Elephant Foot Care and Pathology in Portland, Oregon, on March 20-21, 1998. It covered possible causes, prevention and treatment in captive Asian and African elephants, animal husbandry, and veterinary science. SOURCE: *JEMA*, 9(1):38-40 [contains a summary of recommendations from the conference]. The Second North American Conference on Elephant Foot Care and Pathology will be held June 4, 2000, at the Oregon Zoo in Portland Oregon USA. It will follow the 5th International Elephant Research Symposium held there on June 2-3, 2000. SOURCES: Norie Dimeo-Ediger and Blair Csuti, Oregon Zoo, Portland, Oregon USA.

The mammoth demise: "Typhoid Mary" — Dr. Ross MacPhee of the American Museum of Natural History believes, based on circumstantial evidence, that the cause for the mysterious disappearance of mammoths and many other species was disease, possibly virulent viruses that killed quickly and crossed species boundaries. He argues that this "Hyperdisease", a hypothetical plague, came to the New World with the first humans, or with such fellow travelers as dogs [comparable to Typhoid Mary because they carried the disease, but did not suffer from it themselves].

SOURCES: *Mammoth Trumpet* [1999], 14(1):15-21, 23; *Discovering Archaeology* [1999], 1(3):18; cf. Reference no. 3477; cf. <http://www.creo.org/>. ■

CONSERVATION-RELATED

Contraception attempts at Kruger National Park, Republic of South Africa — An experiment is under way to see if the park's elephant population can be kept under control with contraception. While elephant populations are decimated elsewhere on the continent, they are not in southern Africa, where, in Kruger National Park (KNP) they have been culled at an average of 600 elephants per year to keep the population at about 7,500. Following a public debate in Pretoria in 1995, the 1996 culling was suspended in the park, and testing of two forms of contraception began on 31 elephants. The first method is an implant that slowly releases hormones into the blood stream. The second is based on creating an immunological response: a vaccine made from pig ova produces antigens that prevent elephant eggs from recognizing elephant sperm. In 1997, the hormone experiment was suspended indefinitely after rangers noticed that the cows with implants were giving off signs that they were in heat. The cows had become separated from their herds and were constantly being harassed by bulls. Even more disturbing, two of the cows had lost their calves. So far, Kruger officials say there has been no problem with the vaccine — if it is working. In 1998 the board overseeing the park decided that the area will be divided into six zones to determine the impact of elephant populations over the next 30 to 40 years. Elephants will be allowed unrestricted reproduction in two zones while they will be subject to contraception efforts or culling in the remaining four areas. SOURCES: *NYT* [July 22, 1997], p. C3; *WildNet Africa News* [October 19, 1998].

Situations associated with culling — In establishing Pilanesberg National Park (South Africa) in the 1970's, 80 young elephants orphaned in culling operations in Kruger National Park were translocated to Pilanesberg. In 1995-1996, at least twelve dead white rhinos were probably killed by elephants. Three young bull elephants found near a dead rhino were shot. When more rhino carcasses were found in 1996, a plan was developed to bring in mature bulls from Kruger National park in an effort to compensate for "social maladjustment" which may have produced unruly teenage bulls. In March 1998, six male elephants over 40 years of age were translocated in specially designed trucks. By September, no young bulls had come into musth yet and there had been no reported incidents involving rhinos. SOURCES: *NG*, *Earth Almanac*, May 1995; *International Herald Tribune* [December 30, 1996], p. 9A; *The Arizona Republic* [September 19, 1998], p. A36.

More contraception news — Toronto's Museum of the History of Contraception at the offices of Ortho Pharmaceutical (Canada) Ltd. has nearly 300 human birth control devices. "Elephant dung, used in Africa, might have worked since it has a high acidic level capable of killing human sperm", said curator Heather Bennett. SOURCE: *DFP* [March 5, 1997], pp. 2, 3B.

Tusk identification — Identification to the species level of pieces of worked or unworked ivory may be possible with macroscopic techniques. Possible determination may help conservation and customs officers to hinder smuggling; see Reference nos. 2865, 3066, 3159, 3421-23, 3469, 3471, 3552, 3981, 5538-39, 5541-43, 5587.

Two kinds of elephant mortality profile — Apparently (not proven) drought can create two kinds of elephant mortality profile during die-offs. When starvation during drought is the major cause of deaths, mortality profiles show mostly youngest subadults and oldest adults; when water scarcity is what kills elephants, the mortality profiles may be “catastrophic”, or good reflections of the entire population age structure, without the selectivity seen in starvations. Age profiles of drought-related die-offs in Mozambique and Zimbabwe show these two kinds of variability, and I think the amount of water available is the key factor. SOURCES: Gary Haynes, personal communication, 1999; Reference no. 2291 [in *Elephant*, 2(3):129], and other references by Haynes in the Bibliography of this issue of *Elephant*. ■

BEHAVIORS

An incredible physiological behavior — Editors' Note: Recent literature has provided examples of how captive elephants help us to understand the ecology and behavior of living species better. In 1984, Katherine Payne discovered the phenomenon of infrasonic communication in elephants based on observations she first made in captive elephants. We also learned how, under stressful conditions, elephants spray themselves with water stored in the pharyngeal pouch in the throat, and we noted that exact measurements of water intake of three captive elephants were collected [cf. Reference nos. 4678, 5137, 5140, 5161, see also article on pharyngeal pouch in this issue (see Contents)]. Below are observations made of captive situations which further add to our knowledge of elephants.

On August 31, 1997, Gary H. Marchant, Sandra and Hezy Shoshani visited the Michigan State Fairgrounds and observed the performance of the elephants with Bill Morris, his wife Cindy, and their son Lee (M&M International Circus, P. O. Box 913, Gibsonton, Florida 33534 USA). An interesting observation was made by Hezy and Bill when they stood about two meters (two yards) from “Shannon” (16 years old female African elephant). She apparently got excited and moved away when Hezy wanted to look at her vent gland — Shannon jerked away and a liquid came out of her right ear. Bill said the liquid was clear, but Hezy thought it was a light color in the low lighting under the sun canopy. It squirted about 12-15 cm (six inches) sideways from the head, seeming to last less than a second. We searched for remains of it on the straw but found none. We have heard reports of such a phenomenon in captive and wild elephants, but were not able to confirm it. On August 16, 1999, Gary Johnson (of “Have Trunk Will Travel”) conveyed to Hezy that he observed young and old African elephants squirting clear liquid from their ears when they get excited. He had not seen such behavior in Asian elephants, although they discharge a thicker “paste-like” substance from their ears. This is the first time that Hezy was able to see what seemed to be an incredible physiological behavior. We would appreciate any additional observations to better understand this puzzling behavior.

Learned behaviors — During a visit to the Michigan State Fairground (August 31, 1997, see under “An incredible physiological behavior” above) we observed that Shannon, a 16-year-old African elephant used the “grasp” rather than the “pinch” method to pull grass [usually Asian elephants use both the grasp and pinch methods; see *Elephant*, Supplement to Vol. 1, page 60]. Bill Morris told us that when Shannon and “Linda” (the other African elephant, 11 years old) joined his act, they used the pinch method to pull grass, rather unsuccessfully. Apparently they learned the grasp

method from “Cora”, a 42-year-old Asian elephant in the Morris' elephant act. Similar observations were made by Richard A. Chiger and Hezy Shoshani in 1996 on “Myittha” and “Fritha” [female African elephant (19 years old), and female Asian elephant (24 years old), respectively] at The Sanctuary for Animals, Westtown, New York, USA. Myittha employed the “grasp” method with ease. On August 16, 1999, Gary Johnson told Hezy that when both species are together and compete for food, the African will employ the grasp method.

Sleeping elephants: observations at the Washington Park Zoo, Portland, Oregon, USA, during night of October 21-22, 1991 by Jeheskel Shoshani and Gregory Ahlijian

Permission to observe the elephants was given by Dr. Michael J. Schmidt and Mr. Dennis Pate. Observations began at approximately 8:30 P.M. PDST. At that time, the lights were turned on in the elephant compound. JS and GA stood in a public area with a glass partition between them and the elephants. Below is a brief account.

- All elephants appeared to be “friendly” with one another.
- Not much swaying motion; Tamba swayed a little, however.
- At about 9:00 P.M., Packy the bull elephant was let into the outside yard by Pam Ore.
- At 11:00 P.M., Pam returned and let the four cows into the yard. They entered in this order: Rosie (with “sandals”), Me Tu (with warts), Hanako (notch on ear), and Tamba (smallest). They remained outside for 15 minutes (it was about 40 degrees Fahrenheit, partly cloudy with a full moon high in the sky), during which time Hanako flapped her ears back and forth against her neck producing an interesting drumlike sound which echoed into the night. [This was the second time we learned a way elephants can produce sound. The first time was when Belle, a 39 year old Asian cow, tapped the tip of her trunk against the side of her trunk producing a sound as though somebody was knocking on a door. Roger Henneous and Jim Sanford (elephant staff) told JS that they had been deceived by her many times; they opened the door just to find nobody there!] The elephants returned inside in the following order: Me Tu, Hanako, Rosie, and Tamba. Upon entering, Me Tu ate all the apples that had been placed on the floor. Note: while the females were out in the yard, “Hugo”, a bull, was transferred into their area while his quarters were being cleaned. We were told by Pam that the process of moving the elephants and cleaning their quarters is done throughout the year regardless of weather conditions. After finishing the apples, Me Tu stood and pulled her nipples intermittently, especially the right one.
- At 1:00 A.M., lights turned off in elephant section. Table below summarizes elephants' sleeping pattern during night. Me Tu and Hanako slept an equal length of time, whereas Tamba slept about 70% of that period. Me Tu slept in more continuous stretches of time than Hanako and Tamba. Rosie stood throughout the night, possibly because of the sandals on her feet, and for a total of 35 minutes, rested her head on the crossbar and wedged her trunk in the space between the bars until gravity won and the trunk fell down. The area of Rosie's trunk that touched the bars was darker than the rest of trunk, and the bars where it was wedged were shinier than rest of bars, which implied that she had been behaving in this way for a long time.
- Throughout the night, we heard much squeaking and snoring but the highest concentration of snoring was between 3:00 and 3:30 A.M.
- At 3:29 A.M., when Me Tu lay down to sleep, she held a tuft of hay

(her "teddy bear") in her curled trunk and was still holding it when we had to leave at 4:50 A.M.

—Between 4:26 and 4:31 A.M., we counted 82 earflaps by Rosie. At that time, she stood by the wall, not resting her trunk and not in contact with Me Tu who was lying on the floor about a meter from her. It may be noted that throughout the night, Me Tu paired with Rosie and Tamba with Hanako.

Names of elephants (all are females)

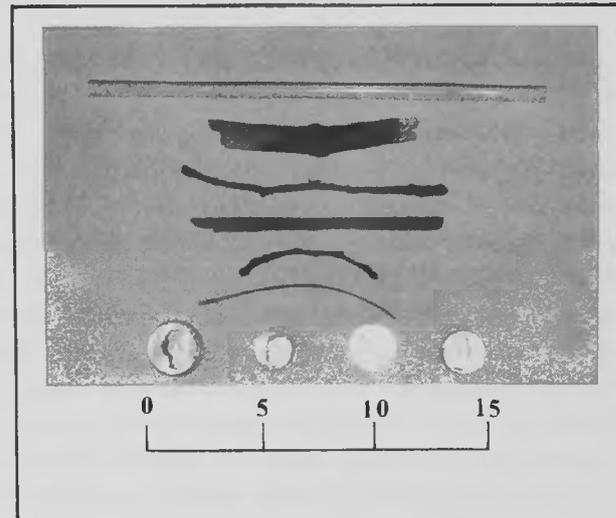
| | Rosie | Me Tu | Hanako | Tamba |
|--------------|-------|--------|--------|-------|
| Age (years) | 42 | 29 | 28 | 18 |
| Weight (lbs) | 7,260 | 10,790 | 11,180 | 6,640 |
| Time | | | | |
| 1:35 | S | S | L | S |
| 2:05 | S | L | L | S |
| 2:10 | S+RT | L | L | S |
| 2:16 | S | L | S | S |
| 2:35 | S | L | S | S |
| 2:45 | S | L | L | L |
| 3:00 | S+RT | L | L | L |
| 3:15 | S+RT | S | L | L |
| 3:20 | S+RT | S | S | S |
| 3:29 | S | L | S | S |
| 3:30 | S | L | L | L |
| 4:35 | S | L | S | L |
| 4:36 | S | L | S | S |
| 4:50 | S | L | S | S |
| Total* | 0 | 151 | 141 | 101 |

S = standing, RT = resting trunk, L = lying down, most of the time snoring.

* Numbers refer to total minutes each elephant lay down. We left building at 4:50 A.M., thus, the total for Me Tu is maximum.

How small an object can an elephant pick up with its trunk? — It has been claimed that elephants can pick up a pin or a needle with their trunks. To find out, the editor conducted an experiment with "Siri" on various small items to learn if and how she would pick them up [experiment conducted on concrete floor, with the help of Chuck Doyle at Burnet Park Zoo, Syracuse, New York, USA, June 14, 1999 (during filming of "The Ultimate Guide to Elephants", see under "Elephant Films and Videos"); Siri, whose name in Thai means "to be free", is a female Asian elephant, 28 years old, 8 feet and 6 inches (2.6 meter) tall at the shoulder; weighing 8,800 lbs (about 4 tons)]. Items presented to Siri included: American coins [penny (1 cent), nickel (5 cents), dime (10 cents), and quarter (25 cents)], a drinking straw, five sticks of various lengths and thicknesses (in the figure in next column, the one near the coins is about as thick as a large pine needle). The penny was picked up with the "pinch" method (see page 60 in Reference no. 1501 for illustration), the nickel with pinch, the dime with pinch but also applying suction, and the quarter with pinch. All sticks and the straw were also picked up with the pinch method, with these additions — lifting of the narrowest stick (closest to coins) was done with a combination of pinch and "grasp" methods, and the flat stick (fourth from top) was pressed against the side of trunk and lifted. I was not allowed to give Siri a pin nor a needle to pick up; the narrowest stick was used instead. This experiment was repeated on August 14, 1999 on rough asphalt ground, in Livonia, Michigan USA, with the help of Joe and Jinny Frisco and Bentley James, with "Rosie" a 15 year-old

female Asian elephant, 7 feet and 3 inches (2.2 meter) tall at the shoulder, weighing 5,300 lbs (about 2.4 tons) [owned by Gary Johnson, "Have Trunk Will Travel", Perris, California, USA, performing with the Reid Brothers Circus]. All items that were given to Siri were picked up by Rosie, using the pinch method; coins were picked up by a combination of suction and pinch. We also gave Rosie one grain of rice (could not pick it up), a pile of rice (used grasp method), one peanut (pinch), handful of peanuts (grasp), and a white pine needle [no metal needle was allowed]. There was a steady wind, and Rosie, with an effort not to lose the needle, pressed against it with the "finger" tip of her trunk; as she tried to pinch it, it blew away in the wind. Given a better surface and no wind, we believe, she would have picked it up.



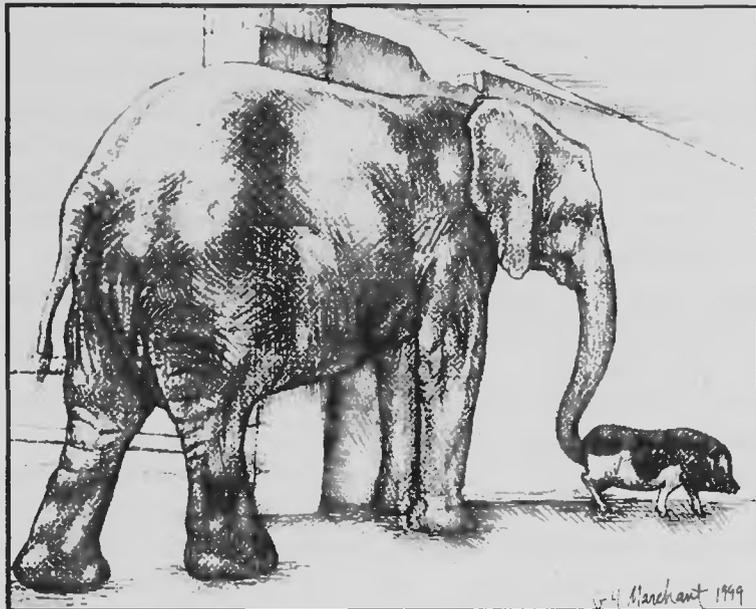
Items used in an experiment to learn how an elephant picks up small objects; "Siri" (female Asian elephant, 28 years old) and "Rosie" (female Asian elephant, 15 years old) were tested [photo credit: J. Shoshani].

"Improbable" interspecies relationships (compiled by Sandra L. Shoshani) — Following are short descriptions of a few cases of improbable interspecies relationships involving young elephants. While most of the examples given here are specific to young animals in solitary (or isolated) circumstances, the last two accounts portray long-term relationships in which other elephants are or have been present. Dr. Denise L. Herzing, research director of the Wild Dolphin Project (Jupiter, Florida, USA), has been studying interspecies relationships, including elephants. She cites the case of Tarra, Watson and Carol (Case 8, below) as an "example of elephants' ability to connect on an emotional level not only with other elephants but also other receptive beings." SOURCE: *Trunklines* (The Elephant Sanctuary), Spring 1999, Issue Number 1, page 9.

Case 1 — In 1985 the 17-year old female African elephant named "Gretchen" at Cincinnati Zoo [Cincinnati, Ohio, USA], lost her "friend", a hippopotamus named "Maudie". In 1987 the zoo imported a 2-year old female Nile hippo called "Cleopatra" from Metro Toronto Zoo (now called Toronto Zoo), Ontario, Canada, and the two pachyderms lived amicably together until Gretchen went to Bowmanville Zoo, Ontario, Canada, to reside with other elephants in 1994. SOURCES: *People* magazine [December 21, 1987], 28(25):117; Michael Hackenburger, personal communication, September 1995; Val Nastold, personal communication, December 1996.

Case 2 — At Tulsa Zoo [Tulsa, Oklahoma, USA] "Tooma", the mother of "Maverick" (a male Asian calf), died four months after giving birth in October 1986. Two attempts were made to provide a companion to the solitary Maverick, and the goat, a one-year old named "Jack" became his "friend". SOURCES: *CR* [August 24, 1987], 34:25; account printed in *Elephant*, 2(3):97, under "Elephant is Happy."

Case 3 — In 1988 in a small private park in Tüddern, West Germany, a 9-year old female African elephant named “Kenya” shared a barn and paddock with a pig. Dougie Robertson, who arrived that summer at the park with the acquisition of a male African elephant “Ben”, wrote that Kenya was “madly in love with a pig - tis the truth,...” and sent us a photograph of Kenya and her friend. Kenya, Ben and the pig became companions, according to Robertson; see figure. SOURCE: Douglas S. Robertson, personal communications, 1988.



“Kenya”, 9 years old, and her companion at Tüddern, West Germany, 1988 [redrawn by Gary H. Marchant from photograph by Douglas S. Robertson].

Case 4 — In 1996 an 8-month old African elephant rejected at birth by his mother was introduced to a two-month old La Mancha goat. “Kijana” the elephant was being raised by zookeepers and volunteers at Oakland’s Knowland Park Zoo [California, USA] and was separated from the two adult elephants which were in a protected contact situation unlike the calf’s free contact status. “Rafiki” the goat lived with Kijana until he died from a herpesvirus infection shortly before his first birthday. SOURCE: West County Times [July 15, 1996], no page number; cf. Reference no. 2925.

Case 5 — In the late 19th century, Samuel Clemens (the author Mark Twain) traveled extensively and lived in Europe periodically. He observed that an elephant at the Zoological Gardens of Marseilles, France, was “boon companion” to a “common cat.” Clemens recorded that the cat climbed the elephant’s hind legs to roost on its back. “She would sit up there, with her paws curved under her breast, and sleep in the sun half the afternoon.” SOURCE: Catnip (Tufts University School of Veterinary Medicine) [May 1994], 2(2):7.

Case 6 — In 1998 in northern South Africa near Kruger National Park, a 2-year old male elephant abandoned on a private game reserve was brought to Hoedspruit Breeding and Research Center for Endangered Species. A female sheep which had previously “mothered” other orphaned animals, including white rhinos and water buffaloes, became inseparable from the calf. It was hoped that the elephant might be released into a neighboring game reserve and be adopted by a herd of elephants there, early in 1999. SOURCE: San Francisco Examiner [November 22, 1998], p. A-27.

Case 7 — In 1977 in northern Zimbabwe, a female elephant from Hwange National Park became a resident of a private ranch. “Nzo” was under two years of age and the only elephant on 7,000 acres. Her caretaker spent days with her. When the farmer turned his land into the Imire Game Reserve and imported animals from all over Africa, Nzo began interacting with a herd of Cape buffalo. Eventually she started spending days with the herd, feeding as they did. She has since rejected

a male elephant brought for company; she killed him. She has also “flattened” fourteen young male buffaloes, as they have matured and challenged her. She protects her steadfast caretaker from the buffaloes however, as she continues to “lead the herd” at Imire, there being no viable alternatives for the owner than to keep her on her own terms. Four other male elephants are kept on the ranch, far away from Nzo. SOURCE: The Detroit News [August 9, 1997], pp. 1A and 6A; cf. Reference no. 5491.

Case 8 — From the age of six months until she was about 13 years old, “Tarra”, a female Asian elephant, owned by Carol Buckley, lived as a solitary elephant, with only people and their pets as company. She developed a strong interest in dogs and has befriended numerous ones. Her close companion today at The Elephant Sanctuary, Hohenwald, Tennessee (USA), where three other female Asians reside, is the dog “Watson”, “the smallest and most engaging” of her dog friends, according to Carol, co-director. He even lets her pick him up, a sign of real trust. SOURCE: Carol Buckley, personal communication, 1999.

Self-recognition in Asian elephants, preliminary findings — Working with Don Bloomer at The Nugget’s barn in Sparks, Nevada (USA), students in the Animal Behavior class at Sierra Nevada College in the fall of 1996 used Gallup’s mirror mark test methodology with “Bertha”, a 44 year old Asian female elephant. In this series of experiments, an animal is marked or painted in such a place that the elephant would look in the mirror to see the marks and touch, or investigate in some way, whether the marking is on it. Adjunct professor Patricia Simonet reported that Bertha “went to the mirror and examined (gazed into the mirror and rubbed) marks only visible when looking into the mirror. She did not display such behavior when she was marked and no mirror available.” These results suggest that elephants may be intelligent enough to recognize themselves in the mirror, a situation contrary to earlier results obtained by Daniel Povinelli in 1988 (cf. Reference no. 4760), according to Simonet. SOURCES: CR [December 9, 1996], 50: 21; Patricia Simonet, personal communication, May 14, 1999. ■

ELEPHANT/PROBOSCIDEA MEETINGS

Numerous conferences, workshops and symposia have focused on elephants or have included elephant-related presentations over the past twenty years. Following is a listing of many of them for reference. Where Proceedings have been published, the symbol **P** will appear after the listing, or there is a cross-reference to the Elephant/Proboscidea Bibliography, where greater details on titles and editors/authors may be found. Listing is by groups and chronologically.

Elephant Workshops/Elephant Managers Association International Conferences:

- 1980 Tulsa Zoo, Tulsa, Oklahoma, USA
- 1981 San Diego Zoo, San Diego, California, USA
- 1982 Dickerson Park Zoo, Springfield, Missouri, USA
- 1983 Kansas City Zoo, Kansas City, Kansas, USA **P**
- 1984 Audubon Park Zoo, New Orleans, Louisiana, USA **P**
- 1985 Fort Worth Zoo, Fort Worth, Texas, USA
- 1986 Calgary Zoo, Calgary, Alberta, Canada **P**
- 1987 North Carolina Zoo, Asheboro, North Carolina, USA **P**
- 1988 Jacksonville Zoo, Jacksonville, Florida, USA **P**
- 1989 Tulsa Zoo, Tulsa, Oklahoma, USA
- 1990 Milwaukee County Zoo, Milwaukee, Wisconsin, USA
- 1991 Burnet Park Zoo, Syracuse, New York, USA **P**
- 1992 Zoo Atlanta, Atlanta, Georgia, USA **P**

- 1993 Marine World Africa USA, Vallejo, California, USA P
 1994 Metro Toronto Zoo, West Hill, Ontario, Canada P
 1995 Point Defiance Zoo, Tacoma, Washington, USA P
 1996 Jacksonville Zoo, Jacksonville, Florida, USA P
 1997 Fort Worth Zoo, Fort Worth, Texas, USA P
 1998 Indianapolis Zoo, Indianapolis, Indiana, USA P
 1999 Zoo Atlanta, Atlanta, Georgia, USA
 2000 Burnet Park Zoo, Syracuse, New York, USA

International Elephant Research Symposia:

- 1996 Indianapolis Zoo, Indianapolis, Indiana, USA (videotaped Proceedings)
 1997 Pittsburgh Zoo, Pittsburgh, Pennsylvania, USA P
 1998 Dickerson Park Zoo and Southwest Missouri State University, Springfield, Missouri, USA
 1999 Zoo Atlanta, Atlanta, Georgia, USA, combined with Elephant Managers Association International Conference
 2000 June 2-3 Oregon Zoo, Portland, Oregon, USA, combined with Second North American Conference on Elephant Foot Care and Pathology Symposium (June 4, 2000)

U.K. Elephant Workshops/Elephant Keepers' Workshops:

- 1988 (May) Chester Zoo, Chester, England P
 1989 (November) Regents Park Zoo, London, England
 1989 Bristol Zoo, Bristol, England P
 1990 Port Lympne Zoo Park, Port Lympne, England P
 1991 Windsor Safari Park, Windsor, England P
 1992 Twycross Zoo, Twycross, England P
 1993 Cricket St Thomas Wildlife Park, Somerset, England P
 1994 (September) Chester Zoo, Chester, England
 1996 (September) Chester Zoo, Chester, England

International Theriological Congress:

- 1978 (June 20-27) — Second International Theriological Congress, Czechoslovak Academy of Science, Brno, Czechoslovakia. Included a presentation on Paenungulata, by Shoshani *et al.*
 1982 (August 16-20) — Third International Theriological Congress. University of Helsinki, Helsinki, Finland. Included a paper on Elephantidae taxonomy; cf. Reference no. 2149.
 1985 (August 13-20) — Fourth International Theriological Congress, Edmonton, Alberta, Canada. Presented film "King Elephant" by Simon Trevor.
 1989 (August 22-29) — Fifth International Theriological Congress, Universita di Roma, Rome, Italy. Included a symposium "Evolution and paleoecology of the Proboscidea"; cf. Reference no. 5153.
 1993 (July 4-10) — Sixth International Theriological Congress, University of New South Wales, Sydney, Australia. Workshop no. 9 "Biology of forest elephants"; cf. Reference no. 5129.
 1997 (September 6-11) — Seventh International Theriological Congress, Acapulco, Mexico. Included a symposium "Ecology as a tool in taxonomic studies", with a discussion on proboscidean taxa.

Mammoth Conferences:

- 1995 (October 16-22) — "First International Mammoth Conference", St. Petersburg, Russia; cf. Reference no. 3720.
 1999 (May 16-20) — "2nd International Mammoth Conference: 200 Years of Mammoth Research", Natuurmuseum Rotterdam, The Netherlands; cf. Reference no. 3719.

Others: e.g., Symposia, Conferences — Africa, Asia

- 1992 (May 20-22) — Asian Elephant Specialist Group Meeting

- (IUCN/SSC), Bogor, Indonesia (Proceedings published by Asian Elephant Conservation Centre, Indian Institute of Science, Bangalore 560012, India; cf. Reference no. 2624.
 1993 (June 13-18) — International Seminar on the Conservation of the Asian Elephant, Mudumalai Wildlife Sanctuary, Tamil Nadu, India; coordinator: J. C. Daniel, Bombay Natural History Society, Bombay, India; cf. Reference nos. 3200-1.
 1995 (May) — The Elephant Debate at The Theatre on the Track, Kyalami Park, Midrand (Johannesburg), Republic of South Africa; sponsored by The Rhino & Elephant Foundation, Bedfordview, South Africa.
 1998 (May 29-30) — First National Symposium on Elephant Management and Conservation in Sri Lanka, Colombo, Sri Lanka; coordinators: Charles Santiapillai and Jayantha Jayewardene; held at Bandaranike Memorial International Conference Hall, Colombo; cf. Reference no. 3853.
 Various years — African Elephant Specialist Group meetings (IUCN/SSC); some have been reported in *Pachyderm* and/or in *Oryx* journals.

Others: e.g., Symposia, Conferences — North America

- 1979 (June 17-21) — "Elephant Symposium", Fifty-Ninth Annual Meeting of the American Society of Mammalogists, Oregon State University, Corvallis, Oregon, USA. See Supplement to *Elephant*, Volume 1.
 1986 (October 24-25) — "Smith Symposium: late Pleistocene and early Holocene paleoecology and archaeology of the eastern Great Lakes region", Buffalo Museum of Science, Buffalo, New York, USA; cf. Reference no. 4085.
 1995 (September 12-17) — "Worldwide Elephant Symposium", Second Annual Meeting of The Wildlife Society, Portland, Oregon, USA; cf. Reference no. 5049.
 1996 (October 16-19) — A symposium "Taxonomy, classification, and biogeography of Proboscidea", Society of Vertebrate Paleontology, American Museum of Natural History, New York, New York, USA.
 1998 (September 18) — First North American Conference on Elephant Foot Care and Pathology Symposium, Metro Washington Park Zoo, Portland, Oregon, USA. ❧

MISCELLANEOUS

Reprinting of the *Proboscidea* by Henry Fairfield Osborn — The Elephant Research Foundation, in conjunction with the American Museum of Natural History in New York, has been investigating the possibility of reprinting Osborn's two volume set of the *Proboscidea*, which was published posthumously in 1936 and 1942, and is no longer in print. The publisher with whom we are currently negotiating is Krieger Publishing. These hefty, classic books are still in great demand, and our aim is to reduce the price so they will be accessible to everyone.

Osborn's ivories — A pair of elephant tusks, depicted in Henry Fairfield Osborn's monograph (the *Proboscidea*, 1936, page 183, figure 127) and used to study chronological age by examining the growth rings in living elephants, were put up for auction (Lot no. 163) for the price of \$12,000-15,000. SOURCE: Phillips International Auctioneers & Values, 1998, Sale No. 773, pages 38-39.

Mammoths and mastodons — Data on numbers and distributions of mammoths and mastodons in the New World has been collected over the years by Larry D. Agenbroad, Jeheskel Shoshani, and Russell

Graham (e.g., Reference nos. 2472, 3595, 5106, 5109). Additional information is being accumulated (see also under Information from ERF Questionnaire).

Glossary, a note on — for many years we have been compiling a glossary on elephant-related matters (by Jules L. Pierce, M. Philip Kahl and others; see also article by Chris Wemmer in this issue). A glossary will be published once checking, cross-checking, and verification are complete. Please send suggestions; new entries will be acknowledged.

Elephantine animals and plants

In *Elephant*, 1(2), pp. 17-19, Dale J. Osborn provided a list of some animals and plants with the word “elephant” as part of their name. Here, we provide five new names, followed by a summary of all the names compiled thus far.

Animals:

Mycoplasma elephantis, a new species of microorganism found in elephants; cf. Reference no. 3959.

Proboscis bat, *Rhynconycteris naso*, family Emballonuridae — page 63 in Graham (1994); about 40 mm (1.5 inches) long, found in southern Mexico to Bolivia and Brazil. Has long fleshy nose, or proboscis, feeds on small insects captured over water. SOURCE: Graham, G. L. (1994). *Bats of the world: 103 species in full color*. Golden Press, New York, 160 pp.

Plants:

Elephant ear, *Colocasia esculenta*, from Pacific islands, where its bulbous root is used as food, gets its name from its green, shield-shaped leaves, about 3 inches wide and 5 to 6 inches long. Grows in bushy clumps several feet tall. SOURCE: *DFP* [March 12, 1991], p. 3C.

Elephant garlic, *Allium savitum*, a large hardy bulbous perennial of the same genus as the onion. SOURCE: *Britannica World Language Dictionary* (1961), published by Encyclopaedia Britannica, Inc., Chicago.

Elephant head, *Pedicularis groenlandica*, a figwort, is a small perennial herb, found growing in cold wet soil in Greenland, across Canada, and southward in the mountains to New Mexico and California. The red or purple flower has two lips; the upper one is curiously contracted into a long beak, with curves and recurves resembling an elephant's trunk. SOURCE: *Collier's Encyclopedia*, 1967, published by Crowell Collier and Macmillan, 9, p. 82.

Miscellaneous:

Elephantiasis, a chronic disease of the skin characterized by the enlargement of certain parts of the body, especially the legs and genitals, and by hardening and ulceration of the surrounding skin; it is caused by obstruction of lymphatic vessels, often due to infestation by filarial worms. Also applied to various skin diseases. Note: the “Elephant Man” (John Merrick) suffered from “Multiple Neurofibromatosis or Von Recklinghausen's Disease”, not from elephantiasis.

For convenience, we provide a summary:

'Elephantine' animals:

| | |
|--------------------------------|------------------------------|
| Elephant beetle | Elephant snout fish |
| Elephant bird | Elephant tick |
| Elephant bot fly | Elephant tortoise |
| Elephant bug, or weevil | Elephant tusk shell |
| Elephant dung beetle | Elephant's ear |
| Elephant fish | Elephant's trunk snake |
| Elephant hawk moth | Elephant, or basking, shark |
| Elephant louse | Ivory billed woodpecker |
| Elephant seal, or sea elephant | <i>Mycoplasma elephantis</i> |
| Elephant shrew | Proboscis bat |

'Elephantine' plants:

| | |
|------------------------|------------------------------|
| Elephant apple or wood | Elephant tusk |
| Elephant cactus | Elephant wood |
| Elephant corn | Elephant ear/Elephant's ears |
| Elephant foot | Elephant's foot |
| Elephant garlic | Elephant's head |
| Elephant grass | Elephant's root |
| Elephant head | Elephant's tail |
| Elephant palm | Ivory fig |
| Elephant pepper | Ivory nut |
| Elephant privet | Ivory tree |
| Elephant thorn | Little elephant's head |
| Elephant tree | Vegetable ivory |
| ----- | |

Rhinos and elephants killed by monsoon floods — Monsoon rain floodwaters killed 30 rare one-horned rhinoceroses, 500 deer, seven elephants, and other species in Kaziranga National Park, Assam state, India. SOURCES: *The Sunday Oklahoman*, December 6, 1998, Section A, page 12. Editors' note: the elephants drowned despite their reputation as good swimmers.

Laxative causes death to keeper — Zookeeper Friedrich Riesfeldt fed his constipated elephant, “Stefan”, 22 doses of animal laxative and more than a bushel of berries, figs and prunes. Investigators say Friedrich, 46, was attempting to give the elephant an olive-oil enema when the relieved beast unloaded on him like a dump truck full of mud. “The sheer force of the elephant's unexpected defecation knocked Mr. Riesfeldt to the ground, where he struck his head on a rock and lay unconscious as the elephant continued to evacuate his bowels on top of him,” said Paderborn, Germany, police detective Erik Dern. He lay under the dung for at least an hour before he was found, and during that time he suffocated. SOURCE: <elephant-l@listserver.wineasy.se> (24 June 1998).

Philately, numismatics, and art

Philately: Four Prehistoric Animals commemorative stamps were issued by the US Postal Service on June 8, 1996, depicting eohippus (*Hyracotherium* sp.), woolly mammoth (*Mammuthus primigenius*), American mastodon (*Mammuthus americanus*), and saber-toothed cat (*Smilodon* sp.). In April 1993 when the US Postal Service released a set of commemorative circus stamps, “King Tusk”, Ringling Bros. and Barnum & Bailey Circus' male Asian elephant, canceled a giant replica block of stamps with a foot. One of the stamps portrayed a circus elephant. SOURCES: *Postal Bulletin* 7-6-95, Number 21897, pages 35-36; *DFP*, April 10, 1993.

Numismatics: An elephant appears on a new set of coins minted for Eritrea (new country in the Horn of Africa). In 1997, the coins are embellished with native animals: 1 cent (gazelle, *Gazella* aff. *dorcas*), 5 cents (leopard, *Panthera pardus*), 10 cents (ostrich, *Struthio camelus molibdophanus*), 25 cents (aff. wild ass, *Equus africanus*), 50 cents (great kudu, *Tragelaphus strepsiceros*), and 100 cents (elephant, *Loxodonta africana*). 100 cents = one Nakfa in the official currency established in 1997.

Art Exhibits: An exhibit entitled “Images in Ivory: Precious Objects of the Gothic Age” presented, in 1997, a collection of nearly 100 intricate carvings from 18 museums and galleries around the world. It was held at Detroit Institute of Arts, Detroit, Michigan USA, and Walters Gallery in Baltimore, Maryland, USA. SOURCE: *The Observer* March 23, 1997], p. 2C.

ERF Artist: Gary H. Marchant, artist for many ERF projects, has contributed use of many of his drawings of captive elephants for

publication in JEMA, over the past several years; examples: JEMA, 5(2), Summer 1995; 5(3) Winter 1994-1995; 6(3), p. 15 Winter 1995-1996; and 6(3):69, where "Ruth" (female Asian elephant, Detroit Zoo, Michigan USA), "Laura" (female African elephant, Ivory Haven Farms, Michigan USA), "Iki" (female Asian elephant, Ringling Bros. and Barnum & Bailey Circus prior to July 1980) and "Nikolai" (male Asian elephant, Lion Country Safari, Ontario, Canada) are depicted.

Casting a life-sized bronze elephant: Sculptor Mihail launched a mammoth project in 1976: to cast a live, wild, adult bull elephant in Kenya. Part one was accomplished in 1980. After ten years the non-profit foundation called Cast The Sleeping Elephant Trust, raised funds to finish the model. The first bronze edition, with 2-foot penis exposed, was presented to the United Nations by the governments of Kenya, Namibia, and Nepal. SOURCES: Woodstock Times (New York) [August 1, 1991], p. 20, Times 2; The Argus, Times-Star [November 20, 1998], p. News-7.

Recycling at its finest — Several zoos in the USA are cashing in on exotic manure for fertilizer; Philadelphia Zoo sells "ZOOM": US \$2.95 for 2 pounds. Woodland Park Zoo in Seattle: US \$1.00 for 25 pounds. This venture has made as much as US \$18,000.00 in one year. Memphis Zoo supplies the ZooDoo Company of Memphis, Tennessee (USA). They sell animal shaped manure products such as "Dung Bunnies," and "Crock A Doos". SOURCE: CR [1999], 27(1):6. Gibraltar, Michigan USA. The city has invited gardeners to help themselves to the leavings of "Nina", "Viola" and "Brittany". The Kelly-Miller Circus left some 900 pounds of elephant manure. The manure, when mixed with grass clippings and leaves in a compost heap, becomes a rich garden fertilizer, according to Pamela Morrison, an assistant horticulturist at the Henry Ford Estate in Dearborn, Michigan, USA. SOURCE: OP [(Michigan) June 28, 1995], p. A8. Dung from elephants at the Pretoria Zoo (Republic of South Africa) has been used to make a rough, fibrous paper that is folded into envelopes containing three Bushveld willow seeds. The package — seeds and manure — can be planted together. SOURCE: CR [September 18, 1995], 38:3. Ringling Bros. and Barnum & Bailey Circus gives away "pachyderm poo". It is high in nutrients including phosphorus, calcium and nitrogen and plenty of organic materials, said circus officials. SOURCE: paper unidentified, circa 1990. Finally, artist Chris Ofili won the controversial The Turner prize of US \$33,000.00. His vibrant paintings are bedecked with elephant dung. SOURCE: Orlando Sentinel, circa 1998.

In 1990, 65,000 teachers in North America received packets of tomato seeds from the National Aeronautics and Space Administration (NASA) in a program for schools. Half of the seeds had been placed in earth orbit in the Long Duration Exposure Facility (LDEF) in 1984 and not retrieved until six years later by the crew of space shuttle Discovery, following delays due to the Challenger disaster. Half of the seeds had been kept in North Carolina (USA) under similar environmental conditions. Among the schools participating was Roeper City and Country School, Birmingham, Michigan, where Hezy and Sandra Shoshani were teaching. Students in the middle school germinated seeds and then employed five different media to raise plants. One of the media was sterilized and dried elephant scat obtained over a number of years from circuses visiting southeastern Michigan. A total of 99 plants (both control - from seeds not flown in space - and experimental) was grown in elephant scat but only 34 achieved flowering and bore fruit. Tomatoes from those plants were as tasty as those from other plants, research students agreed. NASA reported that studies from schools indicated differences in the germination rates and in early plant growth rates but the latter were not sustained. No information has indicated mutation effects in the seeds. SOURCES: OMNI [May 1990], 12(8):46; personal observations. 🐘