Dallas Zoo

Reports on Jenny

Interesting Stuff here

- detailed description of Stereotypic/self-injurious behaviors
- interaction w/ USDA

27 pages

Animal Profiles
Dallas Zoo

Name: Jenny
Species: *Loxodonta africana*
Sex: Female
DOB: Approximately 1976-Wild caught
ISIS# 864858
Arrived at Dallas Zoo: 14 December 1986. Donation from Roman Schmitt.
Weight: 10,250 lbs.

Reproductive History:
No previous reproductive opportunities.
Reproductive assays reveal atypical cycling, almost flat-line.

Temperament:
She has a past history (up to app. Year 2000) of being very volatile behaviorally, with low resistance to stress. Presently there remains slight concern of regression to previous temperament, but she appears to be much better at responding and adapting to her environment. Aversive stimuli, such as increased noise and activity still affect her, but nowhere near the degree they once did. In addition, she appears to have gotten over the removal of the free contact environment. She is extremely responsive to protective contact training.

She does not like being locked inside her stall. We frequently have problems shifting her in for cold weather, especially if she has recently been locked in overnight, or for a period of time. Her stall is 20' X 15' enclosure. She shifts readily into the stall when she knows she will not be locked in (warm weather) and for training sessions.

She is very keeper oriented and frequently solicits attention. This had been a problem in the past, when keeper attention was divided between two elephants. This appears to have been a major factor in her aggression toward Vasha. Vasha was ten years younger than Jenny and much smaller, about 4000 lb. lighter. Cooperative behavior modification techniques were only marginally effective. Jenny also had some problems with Moja, her previous companion. Moja, however, matched her in size, so Jenny did not bully her nearly as much as she eventually did Vasha

Medical History Notes:
Chronic RR foot problems (abscesses), resulting from self-mutilating, stereotypic behavior first developed during reconstruction of the facility during 1995-96. Standing sedation and surgery were performed in December 1996, in "free contact", to resolve this condition. She was treated for six months with hydrotherapy, whereby a garden hose was used to flush debris and necrotic tissue from the surgery site. The treatment must have been extremely painful, because we frequently observed her knees buckling as treatment was administered. However, she allowed complete treatment, twice a day for six months.

This process occurred during the conversion from free to protected contact management, and treatments were only successfully performed in "protected" about 30% of the time. She responded very well for treatments in the free contact environment. For this reason,

along with the frequent occurrence of aggressive and aberrant behavior, the decision was made to medicate her with "Ace-Promazine". She had been receiving "Ace-Promazine" since January 1997 and dosage had gradually increased to a maximum level of 500 mg/day. Extinction of self-mutilating and marked reduction of aggressive behavior has been noted.

She was successfully weaned off the "Ace" in December 2001.

Edema began appearing on her abdomen in June 1999, during very hot weather (summer). This has appeared each successive summer, and it resolves itself without treatment.

Blood samples are drawn weekly for reproductive analysis, and recently for cortisol analysis.

Behavior Profile:

Jenny developed self-mutilating stereotypical behavior during reconstruction of elephant exhibit, in 1995, at which time she was exposed to heavy equipment activity and locked inside for extended period of time. She would often use her tusk to strike her right rear leg. Wounds had developed into abscesses that required intensive treatment.

During the period of conversion from free contact (FC) to protected contact (PC), 1996 – 1998, she showed aggression toward the PC trainers, but none toward the FC trainers. She frequently swung her trunk at the PC trainers. Usually, this appeared to be out of frustration during a training session. This always involved a forward swing, rather than swinging sideways or reaching out to grab, therefore the protective horizontal cables and pipes in the training areas prevented any contact. At the time, FC trainers performed free contact training only, and the converse was true for PC trainers. This was established to maintain clarity between the two training systems, as the conversion progressed. All but one of the PC trainers were new to the elephant program. Aggression was focused on the new staff, who were using the new training system.

Her aggression towards Vasha also intensified. This trend reduced significantly in the late 1990's and she seems more tolerant of her environment. She developed a more cooperative social relationship with Vasha. However, her access to Vasha still had to be carefully managed. Aggression toward Vasha would easily flare up, resulting in attacks on Vasha. Another factor in this relationship was that Vasha was beginning to catch up in size to Jenny, and her confidence was notably increasing to the point that Vasha would frequently issue challenges to Jenny. This always occurred during periods during which they were physically isolated from one another, so it is not known what Jenny's reaction would have been if she had access to Vasha – although experience makes the conclusion fairly obvious.

She became mildly to moderately depressed in November of 2000 when Vasha was shipped to Disney. She rocked constantly and was not interested in enrichment. This lasted for about 2 months.

Since being weaned off of her "ace" medication, she has not shown regression toward the aberrant behaviors we had seen prior to starting her medication. It had been observed that her rocking increased slightly, during and shortly after the weaning process. However, this has begun to decrease. In fact, she went through a period of heavy

construction activity in the elephant area shortly prior to, and shortly after removal of the "ace". Furthermore, she began training in the new elephant restraint device. Remarkably, she has been very manageable and trainable.

She was involved in one incident of aggression on March 17, 2002, during an interaction and feeding session. While being fed through the protective barrier, she flicked the tip of her trunk (app. 6-8") upward and caught the keeper under the chin. Witnesses observed that Jenny's demeanor was what we normally recognize as very calm, in that she was "rumbley", her posture was relaxed and her eyes were half-closed in apparent contentment. She contacted the trainer hard enough to knock her off balance, but there was no other movement or "wind up", as we had seen in the distant past when she swung at something. Following the contact, she withdrew her trunk and the backup trainer commanded Jenny back and away from the area. At that time, Jenny's appearance and demeanor had not changed. She continued to rumble and her eyes remained half shut.

No other form of aggression has been observed since, up to the time of this revision.

She has done very well in training for the ERD (elephant restraint device), and she shifts through it regularly. This is probably because she was able to experience the ERD during a lengthy period of construction, as opposed to being suddenly introduced to it following completion of the device.

Summary of Historic Observations of Jenny's Aberrant Behavior

Toe tapping – She stands in one place and taps – sometimes bangs – the toe of one of her rear feet on the ground. It is a fairly obvious stereotypic behavior. This can be a very brief occurrence, or it can last for several minutes. Often, it increases in intensity until she starts banging on something (see next). Sometimes you can tell if she has been doing this by observing that her feet are muddy/dirty, but a portion of the nail is wiped clean. You could even see a flat spot, where she has worn the nail down by repetitive scraping.

Banging her back feet on other structures – This can occur while she is standing in one place, or as she is moving about the enclosure. Usually, she stands facing away from the stall gate and back kicks the gate. The loud noise is reinforcing for her, and usually it turns into a repetitive action that increases in intensity. Most of the time, you don't need to actually be in the area to know that she is doing this; you can hear it from the Wilds of Africa. Often, you can tell if she has been doing this by the footprints on the wall or gate. At night a flashlight would be needed to see this as well. Make sure to check what she is banging against. If the object looks like it could potentially puncture her footpad, call the supervisor immediately.

Vocalizations – Rumbling, soft or loud, is a happy, contented vocalization. Trumpeting in sharp, loud blasts usually means excitement or exhilaration. This is usually not a negative thing. Trumpeting in long, trailing bursts, that change pitches either up or down are usually a sign for fear, agitation or stress. Sometimes this type of vocalization sounds like a trumpet player that starts out soft and low pitch and ends up loud and higher pitched. Other times it sounds like a trombone player on drugs, where the volume and pitch change up and down in a random pattern. She is really worked up if you hear the later. Again, you don't have to be in the area to know this is going on. However, in some instances she has made the later two types of vocalizations when she has been playing really hard, which is a good thing. So, you really have to observe her before making a distinction as to what is going on.

Tail raise – This always means she is feeling some sort of stress. Sometimes, you can be fooled, however, when she is razing it to swat an itch or bugs or when she is urinating or defecating. We use this signal to determine her psychological state when we do training sessions or have interactions with her. The visual appearance is that the base of the tail raises and the remainder cocks to one side. This is usually immediately followed by some other aberrant or aggressive behavior.

Wide eyed – This is self-explanatory. When she is relaxed, you cannot see the whites of her eyes and her eyelids are slightly closed. A wide-eyed appearance always means she is stressed or very excited. This is another reliable signal we use during training sessions.

Leg rub/raise – This can occur in several forms. First, she swings her front leg back to rub on the outside of her rear leg. This is usually a rapid, forceful motion that can be distinguished from just casual scratching. Sometimes it can be repetitive. Second, she can swing her rear leg up to the outside of the front leg. This can be an even more forceful motion than the previous example. Sometimes she will really drag the rear foot across the front leg. Often she bangs the heel of her rear foot on the ground, when she swings the leg back to its original position. Sometimes this can be a repetitive action as well.

Back foot stomp – This looks much like the rear leg rub, except she stomps down forcefully without contacting the front leg. She usually does not do this in repetition. She kind of acts like it doesn't feel real good afterward, and it seems more like a display to show who is boss. She usually looks around to see who is watching after doing this.

Leg swing – This often looks similar to the rub/raise action, except that it is more rapid and usually more repetitive. However, sometimes she swings one of her rear legs back and forth, with it extended out to the side. It actually looks kind of silly, like she is doing some kind of aerobic exercise. An elephant has to expend a lot of energy to do this, so this normally would not occur unless it had a good – or bad – reason. It would be kind of like humans doing a hundred leg lifts *just for fun*. Conversely, she will display this behavior when she is playing in her pool, to splash water around.

Trunk reaching to rear foot – *This is kind of self explanatory, except that she swings, more than reaches her* trunk back. Usually, she picks up the rear foot and brings it forward to meet the trunk. It is usually – almost always – the right rear foot. We think this behavior developed when she had her abscess on that foot. We used to think this was a sign of pain or discomfort. She has been doing this recently. We are not sure if this is indicates anything at this point, because we have not seen it coupled with any other negative behavior, but she usually does not do this when she is obviously calm and content.

Kick rear – She brings her rear leg forward and then violently kicks backward. Usually, she kicks so hard that you hear a loud slapping noise, as the skin on the inside of her leg hits the skin on her belly. She used to kick so hard that both of her rear legs would briefly leave the ground. Sometimes, this causes her to loose her balance. This is always a sign of stress or agitation.

Head press – *You have probably seen this behavior on "Animal Attack" TV shows. She will press either her* forehead or her tusks into the ground or other objects, such as a tire, pole or tree trunk. This is another behavior that takes a lot of energy, so it can mean she is either really worked up, or she is having a really good time. It is a common play behavior. Head pressing into the ground is usually determined to be aggressive, whereas pressing into an object – especially enrichment devices – is usually play.

Head Shake – She turns her head to one side and then snaps it the other side, making her ears flap. It kind of resembles snapping a towel, and it sounds similar. This is usually non-repetitive, as it is a display behavior. It usually means frustration.

Crab Walk – This is a bizarre and extremely aggressive behavior. We have only seen this when she prepared to attack Vasha elephant. Basically she faces her head at a 45 angle from the direction she is moving, and she has sort of a hunched up posture. It looks like she is winding up for a charge or something, and that may very well be what is occurring.

The Funky Lotus Standing Position – She stands on three legs, and raises and holds one of the rear legs at the bend of her front "elbow". She has to sort of contort to do this. It is so bizarre you can't miss it. This is another strenuous activity that means something is very wrong. It is also one that we really worry about, because it places her rear foot in a perfect position for her to "peg" at it with her tusks. If you see this, the supervisor needs to be called immediately.

The Funky Lotus Sitting Position – This really needs no description. Think of the weirdest position that an elephant can get into, and this would be it. This is very bad, because the whole point of it is to get her foot into a position for her to "peg" at it. If you see this, the supervisor needs to be called immediately.

THE AUDUBON INSTITUTE

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November 13, 2000

Chuck Siegel
Deputy Director for Animal Management
Dallas Zoo
650 South R.L. Thornton Freeway
Dallas, Texas 75203

Dear Mr. Siegel,

I have just completed reviewing the medical records on your African elephant "Jenny." I think your staff is to be commended for their management of this difficult case. I support your plan to attempt to wean Jenny off acepromazine after the construction projects are completed and to seek an older elephant as a companion.

From my review of the records it did not seem that Jenny has experienced any detrimental effects from the long-term acepromazine therapy. It is likely that the acepromazine actually prevented potentially serious medical problems that might have resulted from self-inflicted trauma. Nonetheless, I think it is worth attempting to wean her off the ace. The plan to wean her gradually will hopefully be successful. If it is not, however, it is my opinion that continued acepromazine therapy is a better alternative to aggressive, self-trauma behavior. The dose of acepromazine that Jenny is receiving is actually very low compared to the dose that would be given to other species.

The records indicate that Jenny has experienced two episodes of ventral edema. This condition, which is of unknown etiology, occurs commonly. It is non-life threatening and often resolves without treatment. I doubt that it has any relationship to acepromazine therapy.

Like humans, elephants vary in their ability to cope with life's circumstances. I think that your staff has been thoughtful and thorough in their approach to finding a solution to Jenny's aggressive behavior. Please do not hesitate to contact me if you have any questions.

Sincerely,

Susan K. Mikota DVM

Susan K. Mikota DVM
Director of Veterinary Research and Animal Health

Southwest Missouri State
UNIVERSITY

October 17, 2000

Rich Buickerood, Director
Dallas Zoo
650 South R.L. Thornton Freeway
Dallas, TX 75203

Dear Sir:

I have completed a review of the medical records of your African elephant "Jenny" (ISIS # 864858). I am especially impressed with the detail and completeness of the medical and daily records kept on Jenny. The medical and elephant staff are to be commended on their care of an animal which has exhibited several chronic problems during her residence. The administration and supervisory staff I am sure have rewarded their efforts.

After reviewing Jenny's record and the summary of an action plan to remove the use of acepromazine from her daily routine, I am in agreement with the steps needed to make this as successful as possible. I am aware of the possibility that Jenny may not be able to respond appropriately to new stallmates and to changes in her environment. However, all efforts to incorporate her into a social group without continued chronic chemical intervention are in place. I believe your staff have considered the alternatives for Jenny and have her best interests at heart. I wish you and your staff success in this endeavor.

Sincerely,

Dennis Schmitt

Dennis Schmitt DVM, PhD, DACT

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30 Oct 2000

Rich Buickerood, Director
Dallas Zoo
650 South R.L. Thornton Freeway
Dallas, TX 75203

Dear Rich,

I have reviewed the medical and management history materials for your female African elephant "Jenny", ISIS 864858. There is a large amount of information and the veterinary records are well documented. It appears as if "Jenny" has a significant medical history and has a life threatening behavior problem. This is evident in her numerous attacks on herself, her exhibit mate, and on staff. The records indicate that the veterinary staff has evaluated the animal extensively, and have shown and documented rational thought processes in trying to solve Jenny's problem. Behavioral problems in animals, especially in zoo animals, can be very difficult to diagnose and treat. In many cases, it is necessary to initiate "trial therapy" and monitor the patient's response. Your veterinarians tried several treatment options, which were ineffective prior to initiating therapy with acepromazine. It seems that "ace", as used to subdue her aggressive behavior, has worked well at maintaining safety and reducing stress and injury to your animals and staff. A number of behavior altering medications are available and are commonly used to control behavior problems in animals (and humans for that matter). Acepromazine is relatively non-toxic and is readily available in veterinary formulation.

It is evident that when "Jenny" was started on acepromazine there was a different management philosophy. Keeper and veterinary records indicate numerous problems with Jenny, but there is no documentation of attempts at behavioral modification prior to initiation of her medical therapy. Were it done, I would expect there would be extensive notes regarding training and enrichment efforts to address her aggression and self mutilating behavior.

Recent documentation of enrichment and training activities are very good records of the efforts your staff has made to improve the quality of life for your animals. At the same time, there are fewer medical record entries, and those consist largely of preventive medical procedures. The coincidence may be related to improved training and husbandry efforts, but may also be due to the fact that Jenny has been medicated at an effective dose during the whole period of time.

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I was asked to comment on the use of acepromazine and the planned protocol to wean Jenny from it. I do not consider it desirable to constantly medicate animals in order to maintain them in the zoological setting. However, as stewards of animals we sometimes "inherit" animals with problems from their previous life histories. These problems can be life threatening, cause disfigurement, or merely appear pathetic to staff and the visiting public. In some cases, it may be necessary to maintain animals on medication for their own protection, the protection of their exhibit mates, staff, and the public.

I believe it may be worthwhile to attempt to wean Jenny from acepromazine. I would not attempt to do so until her exhibit, social setting, and staff interactions are stable and positive. While gradually reducing the dosage of acepromazine, I would recommend phasing in a focused program of positive re-enforcement to encourage physical activity and mental stimulation. This effort may require the attention of one or more staff members on a daily basis to circumvent negative or destructive behaviors on Jenny's part. Clearly, if at any time in the weaning process Jenny begins to display negative behavior, she should be returned to the previously determined effective dose of acepromazine.

Sincerely,

Joseph P. Flanagan DVM
Senior Veterinarian
Houston Zoological Gardens
1513 North MacGregor
Houston, TX 77030

Management of African Elephant "Jenny" at Dallas Zoo

- This document will present the captive history of the female African elephant, Jenny, currently managed at the Dallas Zoo. Her captive history has included behavioral challenges and the transition of a training program from free contact to protected contact. Future management decisions based upon AZA guidelines and Elephant SSP recommendations for Jenny and her current companion, Vasha, will also be presented.

Jenny was donated to the Dallas Zoo by Roman Schmidt in December of 1986. She was estimated to be approximately 10 years of age when she arrived. The Dallas Zoo was managing two elephants at the time that Jenny was acquired. A female African elephant, Rafiki, lived with Jenny for about one month before being transferred to the Toledo Zoo. The other female African elephant, Moja, was approximately 8 years of age when Jenny arrived. Jenny soon established herself as the dominant animal with Moja. Social challenges developed between Jenny and Moja. Jenny would intimidate the younger elephant by chasing and pushing her into corners. Keepers would intervene to prevent escalating aggression and the risk of injury to Moja. Moja died in November of 1991 after a short clinical illness determined to be viral myocarditis.

Jenny lived alone for slightly over a year before another elephant was acquired. In March of 1993 a female African elephant Vasha was purchased from Cheryl Shawyer. Vasha was approximately 7 years of age when she joined Jenny at the Dallas Zoo. Shortly after Vasha arrived at the zoo, social problems developed between 7 year resident Jenny and newly acquired Vasha. Jenny started demonstrating aggression towards Vasha about four months after Vasha's arrival. Every few weeks Jenny would knock Vasha down on her side. Jenny would also direct Vasha into exhibit corners then press her from behind, sometimes leaving gouge wounds with her tusks. There were no behavioral indications that these incidents would occur prior to the aggressive interactions. These episodes became intensely violent and more frequent. Keepers would have to intervene to prevent injury to Vasha. Jenny also demonstrated a self-trauma behavior that would result in minor injuries to her leg.

Efforts were made to correlate behavior and possible medical causes. Progesterone, estrogen, and thyroid levels were evaluated (see enclosed).

In 1995 the manual swing gates in the elephant barn were replaced with hydraulic doors. An adjacent cement wall was also demolished at this time to provide additional space for the elephants. During the demolition process the elephants were either chained in the yard or locked inside the barn. The noise from the equipment seemed to have an adverse effect on Jenny. The self-trauma behavior intensified. Jenny would repeatedly strike her right rear leg using her tusk. This continued behavior resulted in a substantial injury that included a chronic abscess.

The self-trauma and aggressive behaviors directed toward Vasha continued after the completion of the construction at the elephant facility.

In 1996 a new system of training management was investigated as a possible option to address Jenny's behavior. A protected-contact system of management was initiated. This system involves the voluntary participation of an elephant in training sessions by using positive reinforcement operant conditioning. Trainers interact with the elephants while remaining behind a protective barrier. The barrier is designed to allow for physical access to the elephant for husbandry procedures without the use of a restraint device or anesthesia. Physical discipline is not utilized in this system of management.

Protected-contact management for elephants was developed by Active Environments, Inc.. Their pilot program was developed at the San Diego Wild Animal Park to address the management of aggressive elephant bulls in captivity. The success of this system of management has led the company to serve as consultants for elephant programs at many zoological institutions including: Tulsa Zoo, Bronx Zoo, Detroit

12/Sep/2000

Zoo, Lincoln Park Zoo, North Carolina Zoo, San Antonio Zoo, and the Houston Zoo. Active Environments was hired as a consultant to help develop the protected contact program at the Dallas Zoo.
Jenny was initially quite confused and frustrated with training sessions. She would not cooperate in training sessions and would frequently hit the training targets or stomp her feet and swing her trunk at the cable fence barriers. Jenny's uncooperative behavior was interfering with treatment options for the self-trauma injuries. Jenny's aggression toward Vasha was still prevalent. In an effort to minimize Jenny's aggression toward Vasha and her self-trauma behavior, she started receiving low doses of Acepromazine in late 1996 (see enclosed). Jenny was taken off the sedative during May of 1997. She immediately started demonstrating aggressive behavior toward Vasha and the keeper staff so she was placed back on the sedative.

Discussion with Elephant SSP advisors indicates that at least two other elephants present management challenges with regard to self-trauma behavior. One institution has contacted our staff to inquire about potential acepromazine treatment for one of their animals. Dallas Zoo staff will be developing a survey with input from the Elephant SSP to gain a better understanding of behavioral challenges affecting the captive population and management options that are being used to address these challenges.

Jenny's aggressive encounters with Vasha are now minimal and her self-trauma behavior has ceased. The training transition has been very successful. Jenny and Vasha have been trained to voluntarily cooperate in several behavioral components including baths, footwork, tusk trims, wound treatments, vaccinating, blood collection, TB testing/trunk washes, and weighing procedures. Keepers have noted that the elephants seem to be much more relaxed when involved in training sessions for invasive procedures including blood collection and vaccinations.

A recent study conducted by the Chairman of the AZA Small Population Management Advisory Group has determined that the captive population of Asian elephants will be demographically inviable within 10 years and lost within 50 years. The captive population for African elephants is even more critical due to their smaller population and lower fecundity. The AZA Board has designated the management of captive elephants to be a priority for the association. The preservation of captive elephant populations will require intensive cooperation among AZA institutions to ensure zoos will continue to have elephants for their conservation and education programs. The AZA is recommending that all elephants be identified for high reproductive potential through hormone assessments and transrectal palpation.

Elephants have been an important component of the animal collection at the Dallas Zoo since 1923. The zoo has managed African elephants since 1981. The Dallas Zoo has established itself as a leader in several conservation management efforts. The upcoming public bond referendum on the Great Grasslands Exhibit will allow the Dallas Zoo an opportunity to develop a breeding facility for African elephants. The facility will be designed to manage at least two males and six female elephants. It is anticipated construction for the new facility will be initiated in about 2004.

It was determined in August of 1995 that Jenny did not have a normal estrous cycle. Serum progesterone levels evaluated by the endocrinology department at the Indianapolis Zoo in May of 1999 demonstrated elevated levels of progesterone followed by eight months of non-ovarian activity. Jenny's endocrine profile closely resembles a pattern observed among captive elephants. Dr. Janine Brown of the National Zoo (Elephant SSP advisor) is conducting a study investigating "flatliners" in the captive population. Dr. Brown is aware of Jenny's history and has requested that Jenny be included in her study. Blood samples and behavioral information has been provided to Dr. Brown for her project.

Vasha has a normal estrous cycle as determined by serum progesterone levels evaluated by the endocrinology department at the Indianapolis Zoo. Vasha has recently undergone a reproductive assessment conducted by Dr. Dennis Schmitt of the Dickerson Park Zoo (Elephant SSP Advisor). An ultrasonographic examination performed by Dr. Schmitt determined that Vasha is a satisfactory potential candidate for a breeding facility. Vasha will be transferred on breeding loan to Disney's Animal Kingdom as an Elephant SSP recommendation in mid-October of 2000. Vasha's return to Dallas, in addition to the acquisition of additional elephants, can be resolved with the completion of the new elephant breeding facility.

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The AZA is recommending that all protected contact facilities be required to have an elephant restraint device. The Dallas Zoo plans to initiate renovations at the current facility in October of 2000. These renovations include the replacement of hydraulic doors in each of the elephant stalls and the construction of an elephant restraint device. The construction process would be extremely challenging while trying to house both Vasha and Jenny in their current facility. The Dallas Zoo will take the opportunity to minimize this challenge by initiating construction after the departure of Vasha to Disney's Animal Kingdom in mid-October. The demolition process is tentatively scheduled to start on 25 October. The installation of the hydraulic doors and restraint device would take place November 2-23. The elephant floors would be resurfaced on the 15th of December. The final punch list would be conducted from December 15-21. Once the construction has been completed every effort will be made to minimize the amount of time needed to obtain another companion for Jenny. It is anticipated that a new companion would not arrive until late March or early April due to winter temperatures that would preclude shipment.

The Dallas Zoo is committed to the long-term care of Jenny. Conversations with several members of the Elephant SSP management group indicate that she would be a difficult elephant to place at another institution due to her behavioral challenges and non-reproductive status. The Dallas Zoo will attempt to bring in a companion for Jenny to replace Vasha. It is felt that Jenny was able to easily intimidate her previous companions due to their age. The staff will seek a companion that has previously demonstrated confidence with other elephants and that is at least of the same age as Jenny. The staff will take the opportunity to attempt acepromazine withdrawal prior to the arrival of a new companion (see enclosed). Compatibility issues are a consideration for any animal acquisition. Incompatible behavioral issues that cannot be resolved will be addressed to the Elephant SSP. The Dallas Zoo will work with the Elephant SSP in determining the best situation for Jenny. Two members of the Elephant SSP, Dennis Schmitt and Debbie Olson, have commented that it may eventually be determined that it would be in Jenny's best interest to be housed alone.

There are currently two adult female African elephants that are being considered as potential replacement companions for Jenny once Vasha leaves the Dallas Zoo for Disney's Animal Kingdom.

- KeKe is approximately 30 years of age. She was wild caught and purchased by International Animal Exchange in 1969. She was sold to the Lincoln Park Zoo in Chicago in 1970. She was on temporary loan to the Baton Rouge Zoo from 1979 to 1997. She returned to Lincoln Park in September of 1997. Keke is a confident animal. She is the dominant animal over her current herd-mate at Lincoln Park. She is currently being managed in a protected contact program. Keke needs to be placed at another institution due to impending construction of a new facility at Lincoln Park.
- Britney is approximately 20 years of age. She was wild caught and purchased by International Animal Exchange. She was sold to the Carson and Barnes circus in April of 1983. She was transferred to the Greenville Zoo in South Carolina in September of 1999. Britney is currently the dominant animal over her current herd-mate at South Carolina. She needs to be placed at another institution due to social issues with the older female African elephant. Her medical/animal records are being sent to Dallas for review.

Jenny's overall health has been good. She has demonstrated two episodes of ventral edema during the last two years. The first episode was observed on 24 August 1999. Some edema was noted at her midline and vulva region. The edema seemed to be resolved by 7 September 1999 indicating a time frame of approximately 1month. Jenny allowed the area to be palpated and did not demonstrate any discomfort as a result of the edema.

Jenny's second episode was first noted on 9 June 2000. She was reported as having an uneven ventral contour. The left ventrum was substantially larger than the right and was edemous through and including the vulva. As of late August 2000, Jenny's edema appears to be resolving. The area of concern has reduced in size. Jenny has never demonstrated any discomfort as a result of the edema. Keepers are providing hydrotherapy for the area. Keepers have also adjusted the amount of time that Jenny has access to her exhibit yard. The elephants alternate their overnight exhibit yard access due to potential aggression from Jenny. Both elephant are now allowed overnight access to individual exhibit yards during weather permitting evenings. This access provides opportunities for increased activity. Trainers have also focused

on physical behaviors including stretches, salutes, and downs in her daily training sessions to promote exercise. These behaviors are also included in her bath sessions. Sessions are usually 30 minutes a day.

Edema in elephants is an unknown etiology. Dr. Susan Mikota of the Audubon Institute conducted a study of the medical management of North American elephants in captivity (Elephant SSP Advisor). Part of her study investigated ventral edema in elephants. A total of 61 elephants at 35 different zoological institutions have demonstrated some form of ventral edema. This figure represents 16% of the captive population. Seventy-six of the cases were acute, six were chronic, and two were unknown. Eighty-three cases were of unknown etiology. Thirty cases were treated. Treatments included diet change, antibiotics, and furosemide or trichlormethiazide with dexamethasone. Hot packs, analgesics or steroids were prescribed in a few cases. Ten of the diet changes involved a reduction in grain or a change from grain to pellet. Five records indicated successful resolution of the problem following this treatment. Dr. Mikota feels it is noteworthy that the majority of cases (64%) resolved without treatment, and only seven percent persisted for three months or longer. Jenny's case history has been discussed with Dr. Mikota. She does not believe that any relationship exists involving her edema episodes and the acepromazine treatment.

Anita Schanberger/Curator of Mammals
12 September 2000

14/17

Management of African Elephant "Jenny" #141 at Dallas Zoo
For Elephant SSP Management Group Review and Comment

The Dallas Zoo requests some guidance from the Elephant SSP regarding the adult female African elephant "Jenny" (ISIS# 864858-Stubook #141). Jenny has lived at the Dallas Zoo since December of 1986. She has lived with two different female African elephants at Dallas. Jenny lived with Moja (ISIS#813063-Studbook#180) from 1986-1991. Jenny would intimidate the younger elephant and demonstrate some level of aggression towards her. Vasha (ISIS#938189-Studbook #239) was brought to Dallas in 1993 after the death of Moja. Social problems developed shortly after the arrival of the younger elephant. Jenny demonstrated a high level of aggression towards Vasha. There were no behavioral indications that these incidents would occur prior to the aggressive interactions. Episodes became intensely violent and increased in frequency. Jenny also demonstrated a self-trauma behavior that involved using her tusk to strike her rear legs. Initially, this resulted in minor injuries to her leg but as it became more frequent and intense, eventually a substantial injury to her leg occurred.

Efforts were made to correlate behavior and possible medical causes. Progesterone, estrogen, and thyroid levels have been evaluated. Jenny has been determined to be somewhat of a reproductive flatliner. She has demonstrated elevated levels of progesterone followed by up to 8 months of inactive ovarian activity. Blood samples and behavioral information has been provided to Dr. Janine Brown for her study.

In an effort to minimize Jenny's aggression towards Vasha and her self-traumatic behavior, she started receiving low doses of acepromazine in late 1996. There was a notable positive change in Jenny's behavior. A single attempt was made to take Jenny off the medication in May of 1997. She immediately demonstrated aggression towards Vasha and the keeper staff.

Jenny's aggressive encounters with Vasha are now minimal and her self-trauma behavior has ceased. Both Jenny and Vasha have been managed in a protected contact system since late 1996 and are doing very well. The elephants voluntarily cooperate in baths, footwork, tusk trims, vaccinating, blood collection, TB testing/trunk washes, and weighing procedures.

Vasha has demonstrated a normal estrous cycle. Dr. Dennis Schmitt performed an ultrasonographic exam few weeks ago and determined Vasha to be a satisfactory potential breeding candidate. Plans are being made to transfer Vasha on breeding loan to Disney's Animal Kingdom in October.

Animal Restraint Company will be installing an elephant restraint device this fall. The installation will be initiated after Vasha's departure. Other renovation projects include the replacement of barn hydraulic doors and the resurfacing of the elephant barn floors. It is anticipated that construction for all these projects will be completed at the end of December.

An attempt will be made to wean Jenny off the acepromazine after the completion of the construction. This would be a gradual process over an 8-12 week period. She will be monitored closely for any self-traumatic behavior or aggression.

The Dallas Zoo is committed to the long term care of Jenny. It is realized that she would be a difficult elephant to place at another institution due to her behavioral challenges and non-reproductive status. The Dallas Zoo will attempt to bring in a companion for Jenny to replace Vasha. We are currently considering two confident elephants, 30 year-old Keke from Lincoln Park, and 20 year-old Britney from South Carolina.

10/SEP/2000

Short term and Long term plans for Jenny elephant

	Short term	Long term
Current Companion "Vasha"	Depart for Disney's Animal Kingdom on breeding loan in mid-October 2000.	Return to Dallas upon completion of African Elephant breeding facility in 2005.
Construction	Install AZA recommended elephant restraint device and replace hydraulic elephant doors. ♦ Demolition starts 25 Oct 2000 ♦ Installation of doors and restraint 2 Nov-23 Nov ♦ Resurface elephant floors 15 Dec 2000 ♦ Punch list 15 Dec-21 Dec	Restraint device and hydraulic doors are designed to be utilized in future elephant breeding facility.
Acepromazine	Weaning from long term acepromazine would be managed gradually over 8-12 week period. Weaning process will be initiated after completion of construction. Start of process would be dependent on Jenny's behavior.	Jenny will continue to be monitored for any self-traumatic or aggressive behavior that compromises her health or management.
Companion	Confident and age specific elephant to be considered as companion for Jenny. Elephant would be brought to Dallas in late March/early April. This time frame is based on late December construction completion date, 3 month acepromazine weaning period, and appropriate shipping weather conditions.	Incompatible behavior will probably result in Jenny living by herself at Dallas until the completion of the new facility.

THE AUDUBON INSTITUTE

Audubon Center for Research of Endangered Species
Freeport-McMoRan Audubon Species Survival Center
14001 River Road • New Orleans, LA 70131 • 504-391-7700

November 13, 2000

Chuck Siegel
Deputy Director for Animal Management
Dallas Zoo
650 South R.L. Thornton Freeway
Dallas, Texas 75203

Dear Mr. Siegel,

I have just completed reviewing the medical records on your African elephant "Jenny." I think your staff is to be commended for their management of this difficult case. I support your plan to attempt to wean Jenny off acepromazine after the construction projects are completed and to seek an older elephant as a companion.

From my review of the records it did not seem that Jenny has experienced any detrimental effects from the long-term acepromazine therapy. It is likely that the acepromazine actually prevented potentially serious medical problems that might have resulted from self-inflicted trauma. Nonetheless, I think it is worth attempting to wean her off the ace. The plan to wean her gradually will hopefully be successful. If it is not, however, it is my opinion that continued acepromazine therapy is a better alternative to aggressive, self-trauma behavior. The dose of acepromazine that Jenny is receiving is actually very low compared to the dose that would be given to other species.

The records indicate that Jenny has experienced two episodes of ventral edema. This condition, which is of unknown etiology, occurs commonly. It is non-life threatening and often resolves without treatment. I doubt that it has any relationship to acepromazine therapy.

Like humans, elephants vary in their ability to cope with life's circumstances. I think that your staff has been thoughtful and thorough in their approach to finding a solution to Jenny's aggressive behavior. Please do not hesitate to contact me if you have any questions.

Sincerely,

Susan K. Mikota DVM

Susan K. Mikota DVM
Director of Veterinary Research and Animal Health

Southwest Missouri S
UNIVERSI

Chuck - I think
1 - this is more of
their business
2 - they can be interested
and concerned
3 - our response should
be succinct (over)

October 17, 2000

Rich Buickerood, Director
Dallas Zoo
650 South R.L. Thornton Freeway
Dallas, TX 75203

Dear Sir:

I have completed a review of the medical records of your African elephant "Jenny" (ISIS # 864858). I am especially impressed with the detail and completeness of the medical and daily records kept on Jenny. The medical and elephant staff are to be commended on their care of an animal which has exhibited several chronic problems during her residence. The administration and supervisory staff I am sure have rewarded their efforts.

After reviewing Jenny's record and the summary of an action plan to remove the use of acepromazine from her daily routine, I am in agreement with the steps needed to make this as successful as possible. I am aware of the possibility that Jenny may not be able to respond appropriately to new stallmates and to changes in her environment. However, all efforts to incorporate her into a social group without continued chronic chemical intervention are in place. I believe your staff have considered the alternatives for Jenny and have her best interests at heart. I wish you and your staff success in this endeavor.

Sincerely,

Dennis Schmitt

Dennis Schmitt DVM, PhD, DACT

Department of Agriculture
901 South National Avenue Springfield, Missouri 65804-0095 (417) 836-5638 Fax (417) 836-6979

M E M O R A N D U M

To: Chuck De

From: Rich Buickerood

Subject: Meeting With USDA Inspector

Date: August 7, 2000

CC: USDA File

Reference my meeting today with Dr. Jeanne Kjos, USDA inspector for the Dallas Zoo. Both this MFR (Memorandum For Record) and my memo dated 8/2/00, "USDA Meeting" should be filed in our USDA file.

Jeanne related to me her conversation with her boss, Dr. Sabala. In spite of what I reported in my 8/2/00 memo, Dr. Sabala prefers not to send us a letter expressing their concerns about Jenny elephant, but rather wants to work through these issues together, verbally.

MEMORANDUM

To: Chuck rec'd 08 Aug Zoo (YES)

From: Rich

Subject: USDA Meeting

Date: August 2, 2000

CC: De

Reference: today's one-on-one meeting with Dr. Jeanne Kjos of the Ft. Worth USDA office. I would categorize the meeting as candid and cordial, wide-ranging and mutually beneficial. We generally talked about three topics which I'll relate in reverse order of their relative importance:

1. *Administrative practices:* Jeanne and I agreed to some processes which would keep zoo management "in the loop" while allowing the zoo to be responsive to USDA's needs. Specifically, if Jeanne wants information at times other than during her inspections, she will send me a written request with a suspense date. I/we will than ensure USDA gets what they need in a timely manner. Second, Jeanne will now come to **my** office when she first arrive on grounds. If I'm not available, Sandra and De will ensure you are notified so the appropriate persons can accompany Jeanne on her inspection.

2. Exhibit design: Jeanne is very pleased to be part of our future exhibit teams. She already has some good ideas about some people we might talk with relative to our elephant breeding exhibit.

3. Jenny elephant: Jeanne and USDA have some concerns about Jenny, although they are our concerns as well. They primarily focus on two aspects of Jenny's life with us. First, the rather "...highly unconventional..." use of drugs for an extended period along with her operant conditioning, and second, the possibility of her being alone for a protracted periods after Vasha leaves (ideal topic for PETA!).

Jeanne will send me a letter asking us to provide her a written response about our treatment--giving us the opportunity to explain our rationale (and results) for the current course of treatment. It obviously also gives us the opportunity to highlight all the responses we are getting from AZA colleagues around the country. Jeanne feels our husbandry is OK, it's the extended use of drugs which is causing USDA some concern (some articles she gave me are attached) as no one has apparently taken this course of action before (to their knowledge).

Jeanne is also "recommending" we have an outside vet review Jenny's medical records just to ensure we are not lost in the forest. I very much agree--we can ask Dennis Schmidt or Bill Boever or Joe Flannagan to help us. If they concur, it will help justify our treatment plan a great deal. Jeanne would like to be "...invited to the zoo without her book..." if one of these vets reviews the records here. We do have the option to send the records to them.

Other topics for us to discuss **immediately**:

--What is plan for Jenny long term?

--What are your goals for her? Do you have any?

--When does Vasha leave?

--Do we concur with the dates?

--How long will Jenny be alone?

--Where could we place Jenny rather than leaving her alone?

--When could we realistically get a companion for Jenny? Will it be someone else's problem elephant?

DALLAS ZOO

Memorandum

DALLAS AQUARIUM

Date: 6 September 2000

To: Chuck Siegel through Dr. Alvarado (pending approval)

Subject: Acepromazine Schedule for "Jenny" Elephant 864858

This animal was started on acepromazine several years ago to control self-traumatic behavior and allow re-direction of her focus to more productive training activities. This decision was made jointly by management and veterinary staffs after extensive investigation into potential medical issues. Dr. Alvarado and I discussed this option before initiating it. You have requested a proposal for withdrawal of this medication; as Dr. Alvarado is out of town until 22 September, I request that this schedule be considered *preliminary* until he is able to review it. It also should be considered that weaning her from this medication may not be in her best interest; this will depend on her behavior when "Vasha" leaves and her new exhibit mate.

Weaning from long-term acepromazine would be managed gradually over 8-12 week period. She currently receives acepromazine orally at 250mg twice daily. The first month (1-4 weeks) would reduce the dose 25-50mg per week to a twice-daily dose of 100-125mg. The second month (5-8 weeks) would reduce the twice-daily dose to a once daily dose by gradually eliminating the PM dose by 25-50mg per week. The third month (9-12 weeks) would repeat the elimination schedule for the AM dose. Stepwise removal of her medication will depend on her reaction to the reduction in dose. As is current protocol, she will be monitored monthly with a CBC, chemistry panel.

Return of self-traumatic behaviors, uncooperative or misdirected behavior in training, or other unexpected behavior or physical complications would require adjustment of the acepromazine dose and possible return to the full dose. Of note, in Spring 1997, an abrupt withdrawal of acepromazine did produce a sudden return to "old" behaviors.

Please contact me if there is any clarification or further information that you might need on this topic.

Kathryn C. Gamble DVM, MS, DACZM
Associate Staff Veterinarian

Anita - This is summary submitted to Dr Kjos

1992 to 1993

Current veterinary-patient relationship established in late 1992. Elephant is known to have a history of "tantrum" behaviors (self-injury, banging gates/doors and walls, spinning and vocalizing). This behavior often focused on the left rearlimb and veterinarians were often called upon to evaluate scrapes and minor injuries. In 1993, a new stallmate was added to the exhibit area. This produced a second behavior problem of "stalking" the second animal often ending in pinning or injury to that animal.

1994

Behavior problems have become commonplace and unpredictable in onset. This animal has been intimidating its younger stallmate multiple times. This animal is not deterred by changes in the exhibit or housing structures to discourage such behaviors. Protected contact is a process in discussion and may provide the mental enrichment to help deter these behaviors but often her behavior prevents her from cooperating with training. Further efforts this year were made to correlate behavior to outside stimuli and assess possible medical causes for the problem behaviors, especially as treatment for the self-injuries were increasingly necessary.

Androstienediol concentrations were assessed in this elephant as "elevated" (3x the younger animal's values). Thyroid hormone concentrations were considered "normal" when compared to Asian elephants.

December 1994: ethinyl estradiol (0.02mg PO SID x 10 days)– no change
ethinyl estradiol (0.04mg PO SID x 7 days)- no change

1995

January 1995: phenobarbital schedule was planned of 4mg PO SID, then 4mg PO BID, then 8mg PO BID, then 10mg PO BID
- immediate aggressive behavior towards younger animal after first dose, discontinued for a week and restarted without aggression but with little other effect

March 1995: soloxine (8mg PO SID x 14 days) – no change
soloxine (4mg PO SID x 7 days) – no change
soloxine (2mg PO SID x 7 days) – no change

The elephant sustained a substantial traumatic injury to her right rearleg that is presumed self-inflicted. Treatment interval was protracted into the Summer. During this interval, blood collections were made to assess progesterone concentrations throughout a 4-month estrous cycle. By August, the progesterone cycle had been assessed as "flat-line".

May 1995: Right carpal injury sustained this month but resolved uneventfully.

August 1995: Right rearleg developed an abscess at the point of prior injury. Treatment was again involved over several months.
medroxyprogesterone acetate: (10mg PO SID x 3 mos, one month without drug then repeat)

1996

Elephant sustained additional traumatic injury to her right rearleg during this year. Specific events occurred in January and July. This continued despite the progesterone supplementation through an entire year of the 3-month medicated, 1-month unmedicated cycle (to simulate normal elephant cycling.

November 1996: Another injury to the right rearleg that required treatment over several months. Her behavior was interfering with treatment options.

December 1996: Acepromazine treatment began, increases in dose occurred after 5-7 days;
75mg PO SID, 100mg PO SID, 125mg PO SID
At this last level, she was beginning to have quieter periods of behavior although continued to have "tantrums" after the treatments for the rearleg injury.

Acepromazine adjustment:
150mg PO SID, 100mg PO BID, 125mg PO BID

1997

Record remarks demonstrate that protected contact is underway and slowly progressing. By conclusion of this year, venipuncture in protected contact is a reality.

January 1997 Acepromazine is having a positive effect but she still does not consistently demonstrate positive behaviors with all staff members
Acepromazine adjustment:
150mg PO BID

March 1997 Acepromazine adjustment:
200mg PO BID

May 1997 A trial acepromazine withdrawal was tried:
One day, 100mg PO BID was given – appeared calm
Following day, none was given – she chased younger animal twice
Returned to acepromazine at 200mg PO BID

June 1997 Right rearlimb trauma again that resulted in 5 months of involved treatment and management.

October 1997 Acepromazine adjustment:
250mg PO BID

1998

Protected contact is ongoing in the barn for these animals and is proceeding well. This elephant is much calmer, more workable and overall, participating in training with great interest. The elephant may leave training sessions but will re-enter them with little coaxing. However, she did have an episode of moderate self-trauma on the right rearlimb but did not involve the need for as intensive treatment as had been necessary before in injuries.

Acepromazine continues to facilitate calmer behavior and attention to training in this animal. It minimizes aggressive interactions with the younger stallmate and has improved her keeper and veterinary interactions. Self-inflicted injuries that occur now are minor, compared with the problems of prior years. Although CBC and chemistry panels are completed on this animal yearly concurrent with her annual physical, it has been elected to monitor monthly CBC/chemistry panels due to the necessity of chronic acepromazine administration (March 1999).

2000

Elephant receives 250mg Acepromazine PO BID. She has "tantrum" behavior highly infrequently. She occasionally exhibits offensive, threatening behavior toward her stallmate but can usually be distracted from this path by commands from staff.

Her CBC/chemistry panel profiles, collected monthly, are consistent month to month and demonstrate no significant change from those evaluated at annual physical exams of 1996, 1997, 1998.