Respecting Our Elders:  
The Oldest Gorillas in Captivity

How many times have you heard the question “How long do gorillas live?” or “What’s the longest a gorilla has lived?” Traditionally, the answers are “we don’t know for sure” and “54 years”, based on the ‘guestimated’ age of Philadelphia's famous silverback Massa. Today’s oldest gorilla is Dallas Zoo’s Jenny, who turns 54 years old in 2007, tying her with Massa for the known captive longevity record (wild born 1930 to 30Dec84). There are three gorillas born in 1956, making them the second oldest gorillas, including the world’s first gorilla born in captivity, and the star of the Columbus Zoo, Colo. While researching this article, I learned that Kora, a female born in 1955, had passed away at 51 years of age on 08 July 2006; otherwise she would have been the second oldest and the remaining eight places in the top ten list would have shifted accordingly. This began as a “filler” piece for the Gorilla Gazette, but soon I had emails from caregivers talking about their beloved elderly charges, so we’ve added some of their comments and remembrances too. Hopefully, I haven’t overlooked anyone, since this is an informal list. The 49 gorillas listed on the following pages were alive as of February 2007 (and hopefully still alive by the time you read this article too). Of interest, females are outliving males three to one (37 females; 12 males). That number increases dramatically when looking at the 14 gorillas born before 1960, where only 2 of them are male. Zoo Atlanta (with five), Louisville Zoo and Columbus Zoo have the most geriatric gorillas (with four).

As husbandry techniques improve, there will be more and more geriatric gorillas in captivity and with improved communications between caregivers and zoos housing gorillas, hopefully we can make their lives enriched and comfortable in their golden years. With only two exceptions (Colo and Goma), all the gorillas in this list were born in the wild. I wish I could know what stories they would tell of their lives for the past 40 or 50 years away from their native lands. It’s always a humbling experience to realize how forgiving and tolerant gorillas can be, after all we’ve put them through in the name of conservation. Perhaps, in some way, this is why zoos are starting to pay more than lip service to gorilla conservation in the wild, as well as in captivity—we owe it to these 49 gorillas and all that came before them, and will follow, and of course we all need to do more.

Jane Dewar, Publisher
"JENNY was born in 1953*, making her the oldest female gorilla in captivity. Despite her age, Jenny is in good health and is not on any medications. She is developing cataracts but gets around quite well. One of the first gorillas to be brought to the Dallas Zoo, Jenny has called this home since 1957. She has lived with a number of individuals, but now spends her time with a 44-year-old female named Timbo and a 42-year-old silverback named Hercules. Jenny has no surviving offspring. Jenny is curious, intelligent, stubborn, and enjoys her enrichment items. Jenny is like the grandmother of the group. She always gets her way (some call her Princess) and no amount of coaxing can make her change her mind. What Jenny wants, Jenny gets. When it comes to shifting, she often decides whether or not to go back outside if it happens to be hot, cold, wet, or anything not to her liking. But all the keepers live for making Jenny rumble, or purr happily. One way to do this is to give her a big pile of pine shavings and hide treats in it. Hours of entertainment." - John Fried, Curator, Dallas Zoo. Photo by J. Parkes.

"TIMBO was born in 1962 and lived in several zoos before arriving at the Dallas Zoo in 1991. She is a large female with a calm, sweet and patient disposition. Timbo has never produced offspring, as she is not reproducibly viable, but has been a caring aunt to two young males. She has thyroid condition which is regulated with medication, but she has trouble keeping her weight down. She also overcame a serious spinal infection in 1998. Timbo has been housed with a number of individuals and now lives with Hercules and Jenny (see above). Timbo receives operant conditioning, and has recently been hand-injected for an immobilization. Timbo is the sweet gentle giant that everyone loves. She receives regular visits by many staff. Timbo loves to trade hay or orange rinds for treats. She has a wonderful long loud rumble, or happy noise like a purr. Timbo greats the keepers in the morning with a small rumble, but reserves her big rumbles for her favorite food items. And Timbo's favorite thing in the world is food. She also likes to place hay or bedding on her head and shoulders and carry it around, or throw it into the air to play. She has been known to "break dance" by grabbing a rope while lying on her back on a shelf and spinning herself in a circle." - John Fried, Curator, Dallas Zoo. Photo by Dallas Zoo.

"In 1958, one-year-old TRUDY arrived from Africa and was purchased by the St. Louis Zoo for $4,125. Trudy and a male named Rudy, were raised in the home of a keeper for 1 to 2 years before being transferred to the St. Louis Zoo, where they lived together for the next 20+ years. In 1982 Trudy was transferred to the Buffalo Zoo, where she resided with a male named Ollie until 1988, when both were transferred to the Little Rock Zoo to open our brand new great ape exhibit. She and Ollie were the first gorillas to live in Arkansas, and were part of a social group until Ollie's death in 1990. In 1993 Trudy became the sole female in a group consisting of two males from the Columbus Zoo, JJ and Fossey, ages of 7 and 7 ½. The head of this newly formed group was 15-year-old silverback Brutus, with whom Trudy had lived since Ollie's death. As the young males matured into silverbacks, Trudy proved to play a pivotal role in group dynamics. We credit Trudy in large part with helping this group remain together for 11 years. Trudy's tough, no nonsense personality made her uniquely suited to handling the boys when they got out of line. In 2004 we introduced newly acquired females, Catherine and Sekani, to JJ and Fossey. At this time Brutus and Trudy moved to the smaller gorilla yard, where they do not have to worry about rambunctious teenagers interrupting their afternoon nap and can enjoy their retirement, and, as she turns 50 years old, her twilight years.

The Little Rock Zoo owes a great debt to Trudy. Not only was she one of the first gorillas in the state, but she has also been a wonderful steady influence on the gorillas with whom she's lived. Her early charge Fossey (see page 36) is now the proud father of 4-month-old Mosi. Undoubtedly, Trudy's discipline and camaraderie helped to shape the social skills of her young companions, continuing the success of the Little Rock Zoo's gorilla program." - Daphne Brock Pfeiffer, Caregiver, Little Rock Zoo. Photo by J. Parkes.

*Dates of birth for the oldest gorillas are a source of debate, and records vary from one source to another. ISIS records may differ from studbook or individual zoo records, but for the purposes here, I've used Jim Davis' studbook for birth years and dates. JD
"...My colleague discovered this photo of OKI which I send you. The record says that Gonta (died 1973), Oki, Puppy (died 1978) and (keeper) Rikizou Asai from left to right. But the record does not say when this photo is taken. I assume this photo is taken 1960, because Oki on this photo looks same age as Ai. I wish all gorillas keep health and send message of conservation to visitor...There are many story about Mr. Asai and gorilla and elephant. Unfortunately my English can not tell you enough ... Oki is our proud! Last month Japanese magazine picked up Oki as one of oldest animals in Japanese zoo. The data which we sent to that magazine is follow. Height:120cm Weight:130kg Her favorite food is grape, peach and kiwi. Mr. Shibutani (caregiver) commented about Oki: 'I cut foods small and avoid hard foods because Oki does not have so much teeth. I produce a warm room when it is cold or rainy day.'"

Tadashi Watanabe,
Caregiver
Higashiyama, Japan.
Photos courtesy of zoo.

"JOE (Kabako) doesn't manipulate objects or destroy things like many silverbacks, but as these photos show, he's always "had a ball". Photo left is taken by Joe's former caregiver, Randy Reid, in Birmingham, Alabama circa 1966. The photo on the right was taken in 2003 at Gorilla Haven, soon after Joe arrived. A bit of trivia is that Joe lived with Pongi (#33 on page 5) for 20 years while in at the Birmingham Zoo, and also lived briefly with Katanga (#42 on page 5) while at the Gladys Porter Zoo in Brownsville, Texas..."

Jane Dewar, Founder, Gorilla Haven

"In Touroparc, our female gorilla is dead the 8 July 2006. She was born in the wild and she arrived in the zoo of Antwerpen (Belgium) the 2 September 1956. Her name was KORA and she lived in Touroparc since 1988 with Rudi."

Fabrice Thete, Touroparc, Romanèche Thorins, France. Photo courtesy Touroparc Zoo.

Kora would have been the second oldest gorilla in captivity had she lived to 2007, and so she deserves to be recognized here too. Ed."
## Tribute To Some of the Oldest Gorillas In Captivity

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**Photo Credits:** C. Abe: #40; B. Allinson: #22; R. Arnold: #39; Belfast Zoo: #34; A. Clay: #12, 17, 37, 48; J. Dewar or unknown: #8, 19, 25, 26, 27, 32; R. Elsner: #10, 36; Gladys Porter Zoo: #28, 42; Granby Zoo: #15; Higashiyama Zoo: #9; D. Honey: #16; D. Lampe: #6; L. Lewis: #26; www.davelliggett.com: #33, 43; K. Maciel: #41; J. Parkes: #1, 2, 7, 21, 35, 36, 45; G. Paterok #4, 5, 11, 13, 14, 18, 20, 23, 24, 31, 44, 45, 48, 47; P. Spaulding: #30; dc wagner: #9.

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Massa’s Story
Roseann Giambro, Pittsburgh, Pennsylvania, USA

In September 1931 a baby gorilla arrived in Brooklyn, New York. He was in a coma and dying of pneumonia. This gorilla lived, however, and continued to live for fifty-three more years. When he died in 1984 he was the oldest captive gorilla in the world. His name was Massa. In 1931 there were few gorillas living in the United States. Susie, who arrived on the maiden voyage of the Graf Zeppelin, was in Cincinnati; Bushman was in Chicago and Bamboo was in Philadelphia. Late 1931 would also see the arrival of two young gorillas who achieved fame at the San Diego Zoo as M'bongo and N'gagi. But in September 1931 Massa arrived in a cardboard box with little fanfare. A Captain Philips of the West Key Bar brought six chimps and one gorilla, all sick, to Gertrude Davies Lintz of Brooklyn, New York. She had raised a variety of animals including chimps, but this was her first gorilla. Perhaps not having any pre-conceived ideas of how to care for the baby gorilla was to his advantage. She nursed him around the clock for five days until he was out of the coma. For the next two years the youngster was ill. But constant care pulled him through. The baby was given the name Massa. He was believed to be a female mountain gorilla. After his recovery, Massa was given the run of the house. He enjoyed wearing his owner’s shoes, hats and face powder, and he especially loved draping Mrs. Lintz’s dresses around himself.

About a year after Massa’s arrival he developed symptoms which were very much like polio. His arms and legs were useless. The standard treatment for polio at the time was to keep the patient quiet and still. Mrs. Lintz did the opposite. She put together a rope and pulley exercise machine, based on Sister Kenney’s method of treatment. Before Massa’s recovery was complete, Mrs. Lintz received another call from her friend, Captain Philips. He had a second young gorilla for her, a very healthy gorilla who had met with an unfortunate accident. His head and chest had been burned by nitric acid. The new gorilla, Buddy, required a great deal of treatment. In about six months he was healed, but not without scars. If this story sounds familiar, it is because it has been repeated many times. Buddy would always be Buddy to Mrs. Lintz, but when she sold him to Ringling Brothers circus, his name was changed to Gargantua the Great. Anyone who has seen the movie "Buddy", will recognize that it is actually the story of two gorillas. During Buddy’s first year in Brooklyn, he gained about one hundred pounds and would often carry Massa around the house. Both gorillas loved their daily ride in the car. The rides continued until Buddy weighed about two hundred pounds. In 1933, Massa and Buddy and twelve chimps were exhibited at the Chicago Century of Progress Exposition. They were in fourteen steel and glass cages designed by Mrs. Lintz for their protection and comfort. The same year Mrs. Lintz had an encounter with an enraged Massa. In her book, "Animals Are My Hobby", she said that she had learned to expect the best and worst from Massa in quick succession. Massa was playing at scrubbing the floor. Mrs. Lintz entered the room, slipped in a puddle of water and knocked the bucket of water onto Massa. Massa became completely enraged and attacked his owner and bit her repeatedly. After the incident, Mrs. Lintz knew that Massa could no longer be trusted or controlled. Massa knew it too. After this incident Massa and Buddy were a bit more confined than they were before.

In 1935 when the Philadelphia Zoo offered to buy Massa as a mate for their male Bamboo, Mrs. Lintz agreed. In December 1935 Massa took the last car ride he would know for the next forty-eight years. Buddy stayed with her until 1937. After several months of being acclimated to the zoo and visually introduced to Bamboo, the two were introduced. At that time Massa was still believed to be a female. Massa was very aggressive towards...
Bamboo and after several days of fighting the decision was made to separate them. The headline in the paper that day said "Gorilla No Lady, Wedding Off." No other introductions were ever attempted. The photo on the previous page lower right, shows Bamboo on the left, and the smaller Massa on the right.

In 1940 Massa achieved fame in National Geographic when he was included in an article by William Mass, Director of the National Zoo. In 1949 Massa's old playmate, Buddy, died. In 1950 Bushman died. In 1961 Bamboo died of a heart attack at the age of thirty-four, making Massa the world's oldest captive gorilla. The Philadelphia Zoo began celebrating Massa's "birthday" on December 30. This was the anniversary of his arrival at the Zoo. Massa followed in Bamboo's footsteps by throwing a good deal of his birthday treats at the waiting press. In 1965 the new Rare Mammal House was opened. Massa, then thirty-five, was considered too old to move. In 1969 after many years of good health, Massa began having problems. He had the first of several major dental extractions. Over the years Massa's physical condition deteriorated. He lost weight and became a bit arthritic. He also continued his long-standing habit of hair plucking.

1983 was a big year for Massa. Eighteen years after he was considered too old to move, Massa was moved. The old monkey house was being torn down. He was acclimated to his shipping crate for several months. On June 3rd he went into his crate for food. The door was closed, the crate put onto the forklift and Massa left the monkey house for the first time in forty-eight years. He arrived at his new home at the Philadelphia Zoo, and walked in as though he owned the place. In November Massa again experienced dental problems. He refused food. Only an occasional peanut butter sandwich would interest him. We all thought his time had come. The decision was made to knock him down. All but three of his remaining teeth were extracted. He quickly recovered and was soon eating again. His birthday celebration was a quiet one that year. We didn't know how many more he would have.

December 30, 1984. Massa made it to another birthday. As usual, he received a multitude and cards and letters from admirers all over the world. Articles about him appeared in many newspapers. Late that night Massa died quietly in his sleep—alone, as he had lived.

Roseann Giambro
Pittsburgh Zoo
One Wild Place
Pittsburgh, PA 15206
Email: gorillas@mailstation.com

Roseann wrote 12Feb07: "Years ago we tried to find Massa info in the zoo archives and discovered that there was virtually nothing. We didn't know if things were tossed out, stolen or lost. Most of my photos were given to me by an older gentleman who actually took those early photos of Massa on the day that he first arrived at the zoo." (Editor's note.)

Article reprinted with permission; presented at AAZK, Calgary in 1986.
Gorillas in Berlin
Malk Schaffer, Berlin, Germany

Gorilla care in Berlin has a long tradition, reaching back to the last quarter of the 19th century. On January 14, 1873 the German Loango Expedition went into the dense jungle of what is today the Democratic Republic of Congo. After ten months collecting specimens, the expedition doctor and zoologist, Dr. Julius Falkenstein, was given a male infant gorilla as a gift from a Portuguese trader. The baby was given to him by the trader as a gift because of its very bad mental and physical condition. So Falkenstein expected to soon lose him. He went back to the camp and started feeding him with goat’s milk. Everybody in the camp was pleased to see that little M’pungo enjoyed drinking the milk and ate several kinds of fruit. In the next months the little gorilla recovered and his constitution improved considerably. Then suddenly in February 1876, M’pungo suffered a bad infection with convulsions. Falkenstein suspected a strange kind of malaria. Every day for four weeks, they feared they would lose the young gorilla, but the good care and some medicine from Falkenstein resulted in M’pungo getting slowly better again.

Finally, on June 20, 1876, Dr. Falkenstein and the young ape reached the harbor of Liverpool, England. A few months later he published a book about the Loango-coast (Afrikanisches Album**), with the first photo of a gorilla. M’pungo was the second living gorilla brought to Europe (there was a gorilla before in 1855, that traveled with the Wombwell-Menagerie through England, but eventually everybody believed that the gorilla, "Jenny," was a chimpanzee). The Berlin "Zoo Aquarium Unter den Linden" bought the sprightly ape for 20,000 Goldmark and showed him as the first gorilla in Europe. For breakfast they fed him wiener or Frankfurter sausages, Hamburger smoked-meat, Berlin cow-cheese or miscellaneous butter bread. For lunch they gave him a cup of bouillon, rice, vegetables and cooked meat. Besides all this, he liked to drink a cool "Berliner Weiße" (a kind of beer). Thousands of people in Berlin wanted to see the unknown primate, which represented a sensation in those times. In July 1877 M’pungo was taken on an excursion to London in order to show him to many more people. On the deck of the ship, M’pungo soon became everybody’s darling. He was the only passenger who did not get seasick. In London, where the separation from the gorilla was hard for several passengers, a huge publicity campaign was running for M’pungo. Every newspaper reported this event and big posters were put up to inform the public about the gorilla’s arrival. The royal family, all ministers and dignitaries came to see M’pungo. After eight weeks in England, the gorilla star was shipped back to Hamburg, where 40,000 people awaited him. After all these trips, M’pungo returned to Berlin in a healthy state, so when he died six weeks following his return to Berlin, this came as a surprise. The cause of his death was a mild gut-catarrh. Strangely enough, he had still taken his meals and had no fever, however poor diet probably

Note pose in top left of sketch matches the only known photograph of M’pungo, below right.**

Photo above right is of Bobby, from the Berlin Zoo Archives.
harmed his gut-flora over time. He died in November 1877, after a mere fourteen months in Europe.

In 1928 the gorilla Bobby, was four years old when he came to the Berlin Zoological Garden, and grew up to be the first pubescent silverback in captivity. He was both very docile and frisky and very popular in Berlin and the rest of the world. Bobby weighed about 262 kg when he died in 1935, of appendicitis. Bobby’s successor was Pongo, who came to the Zoo in 1936. He grew up to be a stately gorilla as well. Unfortunately he was killed during the relocation of Berlin Zoo in the last days of the Second World War. Keepers found him with two stab wounds in his chest. It was very difficult to keep the delicate gorillas in the destroyed zoo, as appropriate accommodations did not exist. The next gorilla after the war was the young male Knorke. He was ailing during his lifetime and died in 1963, before he could mate with Fatou. She came to the Zoo in 1959 as a two year old infant, and was intended as Knorke’s mate. In 1961 the Zoo was able to get three gorillas, all born circa 1959: two young males Bakala and Tono, and female Gigi. In 1965 a company donated Knorke II (in memory of his predecessor). Knorke II was born circa 1963 and developed very well. The Berlin Zoo now already had two couples and a single male, who should be mated as soon as possible. Then they acquired the female Cocotte (born 1965), who was a very adorable character.

Today, the Berlin gorillas are divided in two groups. The older group consists of two of the original gorillas, females Fatou and Gigi*, approximately 50 and 48 years old. The main gorilla group is lead by newcomer Ivo, a very beefy and agile silverback from Amsterdam. He came to the Zoo in September 2005 as the replacement for Derrick, who died in March 2005 of a heart attack, the first time that a heart attack was diagnosed in one of the Berlin gorillas. There are also two adult females, Bibi (ca. 10 years old) and M’penzi (ca. 21 years old). Ivo mates with Bibi continuously. Also there is one juvenile female, named Djamba (ca. 6 years old), offspring of Derrick. The Zoo hopes that Ivo will father an offspring soon.

Left to Right: Derrick; his successor, Ivo; Bibi; M’penzi reclining; Bibi; Derrick’s daughter, Djamba. Photos courtesy of the author. *Photos of Fatou and Gigi can be found on page 4, as two of the world’s oldest gorillas, #6 and #14, respectively.

**Special thanks to Dr. Kainbacher, whose copy of Dr. Falkensteins’ rare book, with the only known photo of M’pungo in it, was used to provide a copy of the photo used in this article.**

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Pioneering Fertility Treatment
Results in Successful Gorilla Birth

Mel Gage and Lynsey Bugg, Bristol, England

In November 1998 Bristol Zoo, UK, received 22 year old female western lowland gorilla, Salome, from Chessington World of Adventures near London. Salome had been housed in several groups previously and therefore had gained good social skills and experienced several different adult males. Although Salome had bred twice, sadly neither of her offspring survived. Her first baby was a stillborn in 1986 and her second was born in 1988. Salome reared this animal successfully, but it later died at another collection in 1997. Following the second pregnancy, and despite being housed with several proven breeders, Salome failed to produce another viable offspring, either not conceiving or not maintaining a pregnancy. Salome is genetically very important (both her parents came from the wild) so the lack of further breeding from her, combined with the arrival of a new male to Bristol in 2003, led to fresh efforts by the animal, curatorial and veterinary departments to further investigate the reason for Salome’s lack of breeding.

Keepers had already been recording and monitoring her oestrus cycles and matings, but in addition to this, urine was collected on a daily basis. Urine collected was stored, frozen and sent off for analysis in 3 month batches. This enabled full hormone analysis to be carried out and compared over a number of cycles. The results suggested that Salome was not ovulating. To investigate this further, urine continued to be collected for analysis and keepers began carrying out ovulation tests on the urine around the time of her oestrus. Over a period of 6 months, all tests, both in-house and external, confirmed that Salome was not ovulating. Following extensive research and in consultation with others, Sharon Redrobe, Head of Veterinary Services at Bristol Zoo, diagnosed Salome with a condition known as diminished ovarian reserve, a condition that also affects humans. This means that although she appeared to be cycling normally and was being mated, the ovary was not releasing any eggs. Following the study and research of the condition, Sharon consulted gynecologist David Cahill, Senior Consultant Lecturer in Obstetrics and Gynecology at the University of Bristol. One of the key priorities for us at Bristol was that fertility treatment should ensure that mating and conception were as natural as possible. Additional treatment methods would have been very difficult to perform in a non-invasive manner, so a treatment that involved as little interference as possible, allowing for natural mating, was desired. It was therefore decided to use clomiphene, a common fertility drug used by women to stimulate ovulation. Clomiphene is just a short course of tablets every month, so it was the simplest and easiest treatment to try. For the first few months of treatment we had to change the doses to find the ‘gorilla’ dose to produce ovulation. If that hadn’t worked we would have had to use injections of another drug that would have been more stressful.

Salome started her treatment in November 2004 and then it was a tenuous ‘wait and see’ for Salome to come back into oestrus. Keeping staff continued to test for ovulation and within the first two months, positive ovulations were seen. The following month revealed a positive pregnancy test. There was a great deal of anticipation as we
waited to see if Salome would be able to sustain this pregnancy. All seemed well throughout the pregnancy until 4 weeks before the expected due date, when Salome was found holding a dead baby, born about a month prematurely. Despite the disappointment, it clearly showed that the fertility treatment had worked well for Salome. We did not give any treatment for the next few months in order to allow for her cycle to settle back down and further urine analysis to be carried out. Further analyses through several cycles showed Salome was not ovulating again, so early in 2006 it was decided to re-start the fertility treatment.

On the 15th December 2006, Salome gave birth to a healthy baby. As you can imagine, everyone was ecstatic with the new arrival. The baby, sexed as male, was a little on the small side after having arrived almost two weeks early, but both mum and baby are doing really well. The rest of the group are enjoying the new arrival too, especially our 20 month old male, Namoki, who is fascinated and is regularly trying to investigate his new playmate. This has been such a great start to the New Year. To have a second successful gorilla birth at the Zoo and to know that clomiphene can be used in the fertility treatment of gorillas is a major boost to the international breeding programme for these magnificent animals. It has been such a successful couple of years for our gorilla group, and we can’t wait to see what the next few years bring!

Acknowledgements: Sharon Redrobe, Head of Veterinary Services, Bristol Zoo Gardens (BZG), BSc(Hons) BVetMed CertLAS DZooMed MRCVS, RCVS Diplomate in Zoo and Wildlife Medicine (Mammalian), RCVS Specialist in Zoo and Wildlife Medicine; David Cahill, Senior Consultant Lecturer in Obstetrics and Gynaecology at the University of Bristol; for assistance with animal management, John Partridge, Jo Cheesman, Vicky Snook and Karla Holmes BZG. Photo courtesy of Mel Gage BZG.

“The Gorilla Organization”

A New Name for the Dian Fossey Gorilla Fund Europe

Dan Bucknell, London, England

Last year the Dian Fossey Gorilla Fund Europe changed its name to the Gorilla Organization. This came following a lively debate amongst the staff and trustees, and as a reflection of how our organisation has developed over the years. In 2006 we celebrated our tenth anniversary of managing projects in the Democratic Republic of Congo. Our first project there was the Mount Tshiambe guards Conservation Project to protect a unique and isolated population of gorillas that numbered just 16 back in 1996. It was fitting that there was another birth just ahead of the anniversary celebrations to take that population to 21. This project is currently supported by the European Commission in conjunction with the United Nations’ Great Apes Survival Project, of which the Gorilla Organization is a partner.

We now support more than a dozen projects in Congo. In recent years many of these have been for the protection of Eastern lowland gorillas, and it was thought that having an organisation named after someone who is so strongly associated with the Virunga Mountain gorillas is not necessarily an advantage. Nevertheless, Dian Fossey is not being forgotten. We are endowed by her estate and her example of courage and dedication to her beloved mountain gorillas will always be an inspiration to us. Indeed, Ian Redmond OBE – one of our Trustees and a former student of Dian Fossey – points out, Dian Fossey would not have wanted an organisation in her name. With the name change comes the opportunity to expand our programme for the benefit of other gorilla populations. For example, this year we are planning to support Western lowland gorillas as well, with the launch of a project to train rangers in Gabon. In future years it is hoped that we can continue to develop our programme wherever there are gorillas that need our help.

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In the summer of 2006 two gorillas were born at Barcelona Zoo. N’tua, a female, born on June 5th to mother Virunga and father Xebo, and Ngoro, a male, born August 25th to mother Machinda and father Xebo. N’tua is the first of Virunga’s babies to survive. Her previous offspring were all premature except the last one, who died after 5 days. The necropsy showed that the stomach was empty, so insufficient milk could have been the cause. Even so, Virunga, a mother-reared gorilla herself, always showed good maternal skills with her offspring, taking good care of them, nursing and giving protection to them. All Manchinda’s previous offspring had to be hand-reared. Machinda was also hand-reared. It is known that gorilla females that were hand-reared and did not have the chance to observe maternal behavior in their groups have more difficulties in developing good maternal skills.

We planned that if Virunga was pregnant again, we would try to train her to allow a keeper to give extra food to her baby. As soon as a pregnancy test was positive the training began. Virunga was habituated to come close to the enclosure bars and to allow a keeper to touch her body with a special bottle (made by the keepers) that could pass through the bars. After she had the baby, the keeper would be able to supply extra milk if needed by bottle, feeding it through the bars. It was a difficult process but it worked! For the first days everything was hard and some intakes were not good enough, but day after day the process improved until now, with N’tua 5 months old, she is able to grasp the bars by herself to get her extra-feeding.

When Ngoro was born two months after N’tua, his mother, Machinda, showed quite good maternal behavior and properly carried Ngoro for the first days. Probably being in the company of Virunga for the last months of her pregnancy, and observing Virunga’s behavior with N’tua, helped her to improve her own maternal skills. Ngoro was observed nursing and enough milk was present this time (checked by pressing Machinda’s nipple). But after a few days Ngoro showed some signs of weakness (legs hanging, head not so well supported and dehydrated skin). As Machinda had also been trained like Virunga during past months (she had shown such a big interest in the process being done with Virunga that we decided to take advantage and train her too), we tried the same procedure with her and Ngoro, and it worked too!

Both babies are with their mothers. The father, Xebo, is with them part of the day when they all go together to the outside enclosure for sunshine. During the rest of the day both mothers and babies are together in the inside rooms keeping visual contact and physical contact through the bars with the male. This measure is needed to facilitate bottle feeding six times during the day. All the primate and veterinary staff at Barcelona Zoo are very proud of this successful breeding achievement, thanks to a strong collaboration between them all, and the hard, but wonderful work accomplished.
Post-War Kahuzi-Biega National Park
Dominique Bikaba, KBNP, Democratic Republic of Congo

Introduction: The wars that started in 1996 and officially ended in 2003 have caused incalculable damage to human, material and environmental potential in the Democratic Republic of Congo (DRC). Four million Congolese are reported to have been killed from 1998 to 2003. During this period, the Kahuzi-Biega National park (KBNP) has known the highest levels of poaching and destruction. More than 450 elephants, half the number of resident gorillas, chimpanzees and other mammals were killed. Most of them were killed for bushmeat and the great apes were hunted for both bushmeat and trading purposes. Apart from the fact that the KBNP was refuge to militias and rebel troops, where they have been fighting for years, it was also invaded by more than 8,000 people, who were mining coltan, cassiterite and gold. The United Nation forces in DRC (MONUC) estimate that between 8,000 and 15,000 Rwandan combatants are still living in the Eastern Congolese forests. The KBNP is the habitat of the Eastern lowland gorilla (Gorilla beringei graueri), an endemic gorilla subspecies facing extinction in DRC due to high human pressure on the park, mainly caused by primary needs, such as education, not being met. The KBNP, World Heritage Site designated by UNESCO since 1980, is also exposed to human pressure because it doesn’t have any buffer zone in its whole 60,000 square kilometers. Its borders are still unmarked in some areas, which creates confusion in the surrounding local communities.

Overview of gorilla numbers in the KBNP during the war period: According to successive gorilla censuses conducted at the KBNP by the World Conservation Society (WCS) and the Congolese Institute for Nature Conservation (ICCN), the number of known gorillas has fluctuated. In 1991 gorilla numbers in this region were estimated at 16,900 individuals, distributed in 11 different areas, including Kaséze, Thsiabirumi and Maiko National Park. The KBNP and the Kasese region accounted for 86% of this number (Jefferson et al, 1998). The highland part of the KBNP was estimated to contain 262 individuals. While in 1996 the number of gorillas was estimated between 245 and 262 in the highland part of the KBNP, the June 2000 gorilla census revealed that the number had decreased to 130 individuals in this area. During the wars Park Rangers were disarmed and could neither patrol the park, nor perform very effectively regarding the park’s conservation. Anti-poaching activities were limited to raising awareness among villagers and village chiefs, based on the denunciation of persons who were guilty of any poaching activities in the park. Since the KBNP rangers resumed normal activity on May 19, 2000, a short gorilla census in 2004 estimated the number of gorillas at 168 in the highland part of the park.

Patrol activities in the KBNP: As soon as the Park Rangers began functioning normally in 2000, they started with anti-poaching activities inside the park. Many times they confronted militias and rebels living in the park, and some Park Rangers lost their lives. In 2005, 3,125 daily patrols were organized in the park and 49 camping patrols were done, with Park Rangers spending 103 days inside the park tracking poachers. The main poaching activities that were noted during these patrols were: placing traps for small and large mammals, cutting down trees for construction and firewood, bamboo cutting, mining, fighting against armed poachers and other people in the park, bush fires, hunting and the transport of contraband in the park. During these patrols, 1,100 cases of mining were registered, representing 63.7% of the data collected on illegal activities. Also 42 poachers were arrested in the habituated gorilla area, among them 2 women, representing 4.8% of the total number.

Composition of the habituated gorilla groups in the KBNP: Despite the damage to the KBNP’s natural resources, combined efforts from ICCN and its partners improved ways to increase the number of the habituated gorillas in the park. In total, 111 gorilla individuals distributed in 9 gorilla groups are monitored daily in the highland part of the KBNP. This number doesn’t include the wild groups (non-habituated ones). At the same time,

Gorillas of Kahuzi-Biega.
2 gorilla groups are being monitored in the NZOVU Station, counting 2 silverbacks and 9 adult females.

Conservation efforts at the KBNP: Various conservation activities are undertaken to support KBNP’s preservation. These activities are grouped in three main campaigns. Some activities recognize the involvement of the surrounding local communities to the park’s conservation and are especially promoted by local stakeholders. Other activities seek to support the park’s management with infrastructure and equipment, including research inside the KBNP, supported by the ICCN international partners. Through a program called the “Durban Process”, the other campaign at the KBNP concerns minimizing the mining impact on the KBNP’s natural resources. This last domain is led by the Gorilla Organization (former Dian Fossey Gorilla Fund Europe, DFGF-Europe—see page 11). Activities involving local communities for the park’s preservation are done through different programs: Environmental education, hand craft programs, reforestation around the park, farming projects, plus other different socio-economic projects such as Microfinance and trust funds. The KBNP is located in the area of DRC where the demographic issues are high and people are living in a high state of poverty. The wars in this part of the country have affected the conditions of local life, leading communities to depend mostly on the park’s natural resources.

In 2006, Partners in Conservation (PIC, Columbus Zoo) funded an animal breeding animal program that enabled 147 households around the park to each receive a goat. During the same period, 134 Park Rangers’ families also benefited from this program and received a goat too. This program is planned to be extended to other villages around the park, to further reduce hunting by the communities in the park. The project is also seeking to provide income to the beneficiaries for their children’s scholarship and family feeding. In addition, the Rhodes Scholars’ Southern Africa Forum (RSSAF/Oxford University) funded a farming project where 40 pygmy households living around the park received agricultural tools, beans and corn seeds to grow in rented land near their villages. Each pygmy woman grew beans and corn on 0.5 hectares land, providing more food for their families.

In 1992 the Pole Pole Foundation (POPOF), a local Non Governmental Organization (NGO) that administers projects at the KBNP, started working at the park, with the aim of involving the surrounding local communities in the KBNP’s long term preservation. In their Environmental education program, POPOF is currently working with 21 schools around the KBNP and running 11 Centers for adult literacy. In the beginning of 2007, POPOF finished building the environmental secondary school that was entirely funded by the PIC. The school has 6 class rooms and one head master’s office. It is host to 213 pupils for the 2006 – 2007 school year. Annually, plant nurseries are set up in villages around the park, where the communities receive plants for their fields. An average number of 100,000 plants are produced each year and distributed to villagers around the park. The Gorilla Organization has funded this project at the KBNP since 2003.

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**Gorilla group composition in the highland part of the KBNP**

<table>
<thead>
<tr>
<th>No</th>
<th>Group's name</th>
<th>SB</th>
<th>ADF</th>
<th>BB</th>
<th>SUB</th>
<th>JV</th>
<th>Baby</th>
<th>Total</th>
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<tr>
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<td>0</td>
<td>0</td>
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<td>2</td>
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<tr>
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<td>0</td>
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<td>30</td>
</tr>
<tr>
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<td>0</td>
<td>3</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>04</td>
<td>Muhanzaia</td>
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<td>8</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>05</td>
<td>Nanga</td>
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<td>0</td>
<td>0</td>
<td>1</td>
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<td>7</td>
</tr>
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<td>06</td>
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<td>1</td>
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<td>10</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
</tbody>
</table>

*Began to be monitored some months ago; to be named. SB: Silverback; ADF: Adult female; BB: Blackback; SUB: Sub-adult; JV: Juvenile. Only the CIMANUKA and MUGARUKA families are opened to ecotourism; other groups are monitored daily by park rangers. The Mankoto group sometimes integrates with the Mugarkia group and is also visited when living together.

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Female and baby of the Cimanuka Family.
**Perspectives:** To sustain the park’s conservation, tools that build and reinforce the health capacities of humans and animals are needed at the KBNP. Future steps will concern the promotion of zoonotic disease prevention. The program will concern mainly the Park Rangers, who always track the wildlife in the park, the communities, and the livestock in the villages around the park.

**Conclusion:** As well as for the whole DRC, the KBNP needs combined and various efforts for its reconstruction. Any support for the Park Rangers’ equipment or to the community based initiatives would be appreciated. Since 2000, the ICCN has been confiscating great apes and other animals that are handled by poachers and other persons in towns for the pet trade. Presently, the Research Center for Natural Sciences (CRSN-Lwiro) provides facilities to ICCN for these confiscated animals. It now hosts 23 chimpanzees and 23 other different monkeys. Much more work is still needed before these animals are released into their natural habitat. Moreover, efforts and support to build the communities’ socio-economic welfare are necessary. Health issues, including malnutrition and poverty, in communities living around the KBNP, are the current major obstacles for this park’s preservation.

Finally, we are grateful and thank all the good willed people who are contributing to the KBNP’s conservation by supporting POPOF to achieve the planned programs. We thank the POPOF sub-branch in Japan through Professor Juichi Yamagiwa, who has supported us since 1993. We are especially thankful to the Canadian Ape Alliance (CAA) and the Born Free Foundation (BFF) for their faithful contribution to our projects in the field.

The DRC’s future wildlife protectors and one of the new schools in KBNP.

**Acronyms:**
CAA: Canadian Ape Alliance  
CRSN: Centre de Recherche en Sciences Naturelles  
BFF: Born Free Foundation  
DFGF: Dian Fossey Gorilla Fund  
DRC: Democratic Republic of Congo  
ICCN: Institut Congolais pour la Conservation de la Nature  
KBNP: Kahuzi-Biega National Park  
MONUC: Mission de l’Organisation des Nations Unies au Congo  
POPOP: Pole Pole Foundation  
PIC: Partners in Conservation  
UNESCO: United Nations Educational, Scientific and Cultural Organization  
WCS: Wildlife Conservation Society

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All photos courtesy of the author.

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News that two endangered gorillas had been killed and eaten by Congolese rebel soldiers shocked the world - not just because of the environmental implications but because of the unique relationship we have with the great apes. "There is more meaning and mutual understanding in exchanging a glance with a gorilla than any other animal I know," whispered David Attenborough during his memorable encounter with the mountain gorillas of central Africa during filming for the groundbreaking BBC Life on Earth series in 1978. That short scene of a family group of gorillas - playing, resting, feeding and reflecting ourselves back through the camera lens - cemented our affection for a creature with which mankind shares around 98 per cent of our DNA. They are, as Attenborough suggested so effectively, our cousins in the wild. And it is that unique relationship which underpinned the horror felt by many last week when it was revealed that one and possibly two of the remaining 700 mountain gorillas, confined to a small area bordering three central African countries, had been killed and probably eaten by Congolese rebel soldiers. And these were not just some anonymous wild creatures: they had names, ages, personalities and were adult male members of one of the most closely observed and documented communities of the animal kingdom. This was akin to cannibalism.

Now, following the intervention of two wildlife conservation groups, it has been announced that the rebels have agreed to stop the killing of primates. For the time being, at least, the conservation groups hope their future is secure. "We are fairly optimistic that the agreement will hold. But at the moment, we do not know how many other gorillas might have died," said Emmanuel de Merode, the Congo director of Wildlife Direct, one of the organisations involved. The killings illustrate the precarious position of the population of mountain gorillas - a community that has, remarkably, managed to thrive despite living in an area that is plagued by war, famine, disease and genocide. So, what are mountain gorillas? And why are we so concerned about the loss of only two of these animals, in an area that has seen the deaths of millions of people? Mr. de Merode believes that they are as important as any human beings. "The mountain gorillas are extremely vulnerable and the death of only a handful could have a significant impact on the population as a whole," he said. David Jay, who works for the United Nations-backed Great Apes Survival Project and the Born Free Foundation, puts the argument another way: "Compared to the millions of humans, these are the last remaining creatures of this type on the planet. They don't live anywhere else. The death of even one adult male can affect the vitality of the entire population."

All gorillas face three serious threats: poaching for bushmeat, the Ebola virus and the erosion of their habitats. Mountain gorillas, mainly distinguished from their lowland compatriots by their longer hair, which protects against the cold, are not the most endangered gorilla sub-species. That distinction belongs to the Cross River gorilla, with just 280 or so individuals left. But both are among the world's most threatened primates. We know so much about the mountain gorillas mainly because of the work of such pioneers as Dian Fossey, the American animal behaviourist who along with Jane Goodall, the chimpanzee expert, went to Africa in the late 1960s to work for archaeologist Dr Louis Leakey, who believed that primate behaviour held the key to human evolution. Fossey began work on the mountain gorillas in the Virunga, created in 1925 as Africa's first national park and now a UN World Heritage Site. When, more than a decade later, Attenborough arrived in the area on the Rwandan side to film for Life on Earth, he was wary that the famously fierce and protective Fossey might not let him have access to "her gorillas", as she called them. She did, eventually, let the crew in, giving them strict instructions on how to approach the animals: keep low and grunt a lot. Attenborough's famous sequence with the gorillas, shot with a young gorilla lounging on his chest and a baby taking off his shoe, became rightly celebrated. Fossey's work ensured that, throughout the years, of the Rwandan civil war and genocide in the mid-1990s, the Virunga gorillas would become closely monitored by conservationists and the local national park rangers—so
much so that David Attenborough was able to discover recently that Pablo, the youngster who was filmed with him, was now a 200kg silverback and group leader.

The legacy of that earlier era continues through such people as Ian Redmond, once Fossey's assistant and now chief consultant to the Great Apes Survival Project, who helped to re-install some of the national park staff when peace returned to Rwanda. Dr Leakey's son, Richard Leakey, also became a renowned archaeologist - for his discoveries of fossils in Ethiopia - and conservationist, for his campaign against elephant poaching. The gorillas have become famous and gorilla-related tourism, which has sporadically continued amid the conflicts, has become a huge earner in countries otherwise stricken by poverty. But tourism, and the close monitoring by national park rangers, is a double-edged sword because it also means that the animals become accustomed to - and therefore more trusting of - human beings, which can be their downfall. Nevertheless, Mr. Jay believes both are crucial: "Tourism is a major source of income for a deprived area. So ensuring the survival of the gorillas is an investment for the future of the local people." And so the story comes full circle as Leakey, who has had a career as both a wildlife expert and politician/administrator in East Africa, now runs the Africa Conservation Fund and Wildlife Direct, whose intervention in the latest deaths led to the current agreement with the rebels. That took place on the DRC side of the Virungas, where, despite ceasefire agreements, areas are still controlled by rebel fighters loyal to renegade Congolese army general Laurent Nkunda.

The DRC itself was devastated by civil war and famine between 1998 and 2003, in which more than 4 million people died. Despite the conflicts on both sides of the border and the deforestation of their habitats for fuel and farming, the number of gorillas has risen by 14 per cent since the war began. Last week, the national park rangers learned that one solitary male gorilla, later identified as Karema, who was 18 years old, had been killed and butchered, his remains, principally his head, dumped in a pit latrine. On the Wildlife Direct website, there was a short and poignant obituary for Karema, written by one of the senior rangers, Paulin Ngobobo, and typical of the close, familial regard these men have for the gorillas. Entitled "Farewell To A Friend", it said: "Karema was born in 1989 to Mukechuru and Rugendo, a large silverback. His mother, Mukechuru, died of old age in 1991, when Karema was still very dependant on her care. His father looked after him thereafter. The word Karema means 'handicapped'. He lost his left hand, most likely to a snare. Men plagued his existence to the end, and yet he was known for his exceptionally calm personality. The first recorded contact with Karema was by the biologist Conrad Aveling, who noted his friendly disposition. He was a calming influence on the gorilla group, which was frequently visited by tourists in those days. He disappeared from his family in February 2002, reappearing as a young blackback a few months later, living a life of solitude. He died at the hands of a species he trusted completely, aged 18."

Another solitary male, whose details have not been released was also believed to have been killed. After worldwide publicity about the deaths was generated by Wildlife Direct and the Frankfurt Zoological Society, which works with the charity in the area, the rebel movement even went so far as to issue a press release denying any involvement. UN peacekeeping troops in the area then set up a meeting on Tuesday between Ngobobo, a representative of the society and both sides in the military conflict. The result was an agreement by the local rebel commander, known as Colonel Makenga, to allow the rangers into the area in order to check on the welfare of the gorillas, and, on the part of the rebels, to refrain from killing more gorillas. The rangers hope to return next week. Paulin Ngobobo said afterwards: "This is a very positive result. We weren't expecting to succeed given the overwhelming odds against. However, this is just another small step. We must keep up international pressure to ensure this doesn't happen again next week, next month or next year."

Why all this is so important to us is perhaps best explained by Redmond, who has known the mountain gorillas since he first started working with Dian Fossey in the 1970s. He said yesterday: "When you catch the eye of a gorilla, you realise that there is someone - as distinct to something—in there. If human beings are defined by a sense of self-awareness, then without a doubt that is something the great apes share with us. When you see a gorilla, it is a gorilla being. And you realise that humans are not the only self-conscious and aware creatures on the planet."

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The Development of Ai: A Report
Yasushi Shibutani Tadashi Watanabe, Nagoya, Japan

Ai was born on February 27th, 2003. This was the second case of a western lowland gorilla birth in our zoo, Higashiyama Zoological and Botanical Gardens, Nagoya, Japan. Unfortunately her father Ricky died of acute cardiac problems six days after her birth. Since then, Ai has been reared by her mother Nene (wild-born, age 33), with the support of Oki, Nene’s senior friend. Oki is in her late 40’s and gave birth in the 1980’s, which was the first birth at our zoo. Unfortunately Oki’s baby died soon after birth, but her experience with her own baby may have been of help to the primiparous mother, Nene. Now Ai is three years old, and has developed a cheerful and friendly character thanks to loving care by Nene and Oki. I would like to report the physical and social growth of Ai.

Nene is a careful and affectionate mother, and has been taking good care of Ai since she was born. Until the 16th day, Ai could not hold on to her mother’s breast by herself, so Nene kept supporting Ai with one hand. Nene used her elbows and knees while both her hands were occupied in feeding. Even after Ai’s hands and legs became strong enough to hold on to the mother’s breast, if Ai showed any difficulty in staying on there, Nene was willing to support her. Nene always touches Ai gently and lovingly. While nursing, I often observed her stroking Ai softly on the head or the face. I also observed her kissing Ai, or lifting her up like playing “airplane,” lying on her back. Nene also showed behaviors encouraging the development of Ai’s physical ability. For example, around the 60th day, Nene started to have Ai sit on the floor. At first, she kept touching Ai with one hand, and drew her back several seconds later. Little by little, Nene began to put Ai alone on the floor, but always stayed close by her, and if Ai gave any distress call, Nene immediately soothed her with a gentle hug. Soon Ai learned to stand bipedally holding on to her mother. Around the 90th day, Nene started to lead Ai by the hand to the cage mesh and tried to have Ai hold it.

Nene even pushed Ai up lightly against the mesh. It seemed Nene was trying to “teach” Ai how to climb up the mesh. I had read that mother gorillas show such kinds of behavior, but I was deeply moved to see it with my own eyes.

After one year of age, Ai became able to climb up to the ceiling of the indoor enclosure, skillfully hanging on to the ropes. Then I observed Ai enjoying a game of tag with Nene. Nene, as a younger, chased after Ai, and Ai climbed up to the ceiling and brachiated away from Nene. Nene seemed to handicap herself so as not to easily catch Ai, which made the game longer and gave Ai more pleasure. Sometimes Ai became the tagger, and ran after Nene. Caught by Ai, Nene rolled Ai over and pressed her down, and ran away again. This seemed to be Ai’s favorite game, and running after her mother, she often gave an open-mouth laugh.

“Granny” Oki seemed to be fascinated with Ai immediately after her birth. She quietly approached Nene, peeped at her breast, and reached out a hand to the newborn infant. At first, Nene was very cautious, and kept brushing Oki’s hand away and avoiding her. However, Oki never gave up trying to have a glimpse of Ai and touching her. I was impressed to see Oki start grooming Nene on the head or the leg, like trying to get her relaxed. Though Oki and Nene had been on amicable terms, they had usually kept each other at arm’s length before the birth. But it seemed the arrival of Ai motivated Oki to make more active approaches to Nene. Eventually, Oki’s patience was rewarded. When Ai was about 85 days old, she came to show interest in Oki, and held out a hand to touch her. On the 133rd day, I observed Ai crawl to Oki sitting next to Nene. It was the first time when Oki was allowed to take the infant in her arms. However, Nene retrieved Ai from Oki immediately. Later, around the 180th day, Nene seemed to lower her guard against Oki, and began to let Ai play with her. I sometimes
observed Ai play climbing up and down on Oki's body. Around the 300th day, Oki started to give Ai piggyback rides. It was interesting that Oki seemed to assign this role to herself, while Nene had kept carrying Ai on the belly until this May, since when Ai was sometimes observed to ride on her mother's back, too. Oki gently lowered her hips when Ai reached the side of Oki like asking for a piggyback ride. Then Oki started to walk after seeing if Ai held on tight to her back. She sometimes pushed Ai up when Ai was trying to climb onto her.

I have been trying to gain the trust of the gorillas, and training them to cooperate with caregivers for daily health checkups, for example, sitting still on the weighing machine. When Ai began to walk alone around the 140th day, I began training her. At first, I started to speak softly to Ai while she was playing on the grid of the cage, and, if she came closer to me, I praised her and rewarded her with a small piece of banana. Gradually Ai got curious and started to come close to me voluntarily. When Ai sat with her back against the mesh between us, I tickled her on the side. Ai gave a loud laugh, seemed to find it exciting to play with me, and pushed her back against the mesh, like saying "Please tickle me more!"

Ai came to enjoy playing with me, and soon learned "shaking hands with a caregiver", "clapping your hands", "drumming on your chest", and "presenting your behind to a caregiver." It took her only a few weeks to learn to clap her hands while sitting on the weighing machine. I think it was easier for Ai to learn these actions because she had been familiar with them through watching what Nene and Oki do in their daily training procedure. Ai even showed some creativity. One day Ai kicked her legs up high while being trained "presenting your behind to a caregiver." Then Ai did an excellent handstand. I have never seen Nene or Oki stand on their hands. I was so impressed and praised Ai a lot. Ai proudly repeated "standing on the hands" over and over, just like small children in triumph showing off their achievement.

We are planning to introduce a young male gorilla to our three females, expecting to enrich their social environment, especially for Ai. We will make every effort to establish good relationships among them, and hope to make another report of improvement in their physical and social environment, and Ai's further development - hopefully to be a happy young mother - in the future.

Acknowledgment:
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All photos courtesy of the author.

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An Investigation of Ape Smuggling

Jason Mier, Nanyuki, Kenya

When a poorly constructed wooden crate containing six chimpanzees and four monkeys arrived at the Jomo Kenyatta Airport in Nairobi Kenya in January 2005, questions about where the crate came from and who was behind it (and why no one else was asking these questions), led to the uncovering of what is likely the largest group of ape smugglers in Africa. While the crate was confiscated in Nairobi and the chimpanzees were then transferred to Sweetwaters Chimpanzee Sanctuary, not only was no one held accountable for smuggling this shipment into Kenya, but more worrisome was the fact that there was very little information about the shipment, and even less follow up by the government bodies and international organizations who should have been responsible for getting to the bottom of this shipment. Such a large commercial shipment should not just be forgotten or written off. This was a 'success' due to the fact that the chimpanzees were now at a sanctuary, and the decision was made to mount an investigation to determine the origin of the chimpanzees, who the individuals are that were behind the shipment, and why the chimpanzees arrived with no health permits or CITES documents, and did not show up on the airline records.

Documents received from Kenya Wildlife Service indicated the chimpanzees arrived in Kenya on a Kenya Airways flight from Cairo, Egypt, listed as personal baggage of a young Egyptian woman named Walaa Mohammed Ali Alua. Acting on this one piece of information, over the course of more than a year and repeated investigative trips to Egypt and one to Nigeria, the smuggling ring – as well as their modus operandi – was fully revealed. A middle aged woman, Heba Abdel Moty Ahmed Saad, and her two daughters, Rima and Walaa, working with an Egyptian pediatrician, are not only conclusively linked to this case, but are also directly responsible for smuggling in the gorilla and chimpanzee in 2001, who were then drowned by Egyptian officials in a vat of chemicals. Heba was also listed in a 1996/1997 WSPA report as having smuggled annually approximately 40 chimpanzees and eight gorillas from Nigeria to Egypt and elsewhere in the Middle East. Egyptian government officials stated that she had been smuggling in animals even before Egypt became a party to CITES in 1978, even supplying the Giza Zoo, and that now CITES has just made the smuggling a bit more difficult.

A trip to Kano, Nigeria confirmed that other than chimpanzees and gorillas being harder to supply, very little else has changed since the WSPA report nearly ten years earlier. Heba’s husband, Mohammed, lives in Kano and the doorman and neighbors confirm that Heba and her daughters repeatedly travel between Kano and Cairo. The doorman offered to supply chimpanzees to my hotel at a cost of $360 per chimpanzee. He had the phone number of a supplier who lives on the Cameroon border and made a call to confirm the availability.

When questioned what part of Nigeria the chimpanzees came from, the doorman

Left: Alleged smugglers, Walaa and Heba (seated on couch), inside their Cairo apartment. Center: This gorilla was drowned in a vat of chemicals in September 2001. Right: Two chimpanzees reportedly smuggled into Egypt in September 2006. These are now illegally kept at the Africa Safari Park on the road between Cairo and Alexandria. The head of CITES in Egypt went on record stating that this facility has no permission to have chimpanzees.
said they are too difficult to find in Nigeria now and they all come from Cameroon. Conveniently enough, Mohammed owns a transport business with offices in Cameroon, Nigeria and Egypt.

Solid evidence of 21 chimpanzees and four gorillas was found, most filmed and photographed, which are scattered throughout Egypt in zoo, circus and private collections. One zoo in Sharm el Sheikh, owned by Mr. Gamal Omar - friend of President Mubarek, who for the last few years has hosted British Prime Minister Tony Blair at his hotel and showed off his zoo to Mr. Blair, has as of June 2005 eleven chimpanzees and two gorillas. These are all kept in small, empty cement and metal bars cages with no form of enrichment, and on two visits, there was no food or water available. Pictures were able to be taken on one visit when the owner was not present, but on a visit with the owner's son, he stated they do not let people take any pictures as they have received negative press in the past. Three of these chimpanzees were babies still holding on to each other and had clearly been smuggled into the country in the last couple of months - certainly after the January shipment.

This zoo is hidden behind a high brick wall enclosure, and has one gate for entry which is locked and manned by security, and even the head of CITES Egypt said no one can enter, as it is a private facility. Other chimpanzees are kept in equally miserable conditions, two at another hotel zoo in Sharm el Sheikh, with workers at the zoo stating that the owner could supply more chimpanzees in Cairo and had two gorillas at his house. Roadside zoos between Cairo and Alexandria had baby chimpanzees which had recently been smuggled in, and all of the chimpanzees were kept without access to food and water. The zoos in Alexandria and Giza lock the chimpanzees inside for most of the day, charging visitors extra to go in and have a look. One young chimpanzee photographed at the Giza Zoo in 2004 has since disappeared with no explanation. The National Circus, long known to be involved in animal smuggling, had three chimpanzees caged separately, and all tied by their necks to the tops of their cages by metal chains. The circus manager later brought a new baby chimpanzee to the streets of Cairo to try and sell to a local investigator.

The pediatrician working with the smugglers, Dr. Ahmed Ibrahim Abdel Shafy, reportedly has a completely different use for the chimpanzees. Two CITES officials state that he is taking the kidneys and liver out of some of the chimpanzees and transplanting them into humans, and that he even brags about this as the reason he should be allowed to bring in chimpanzees. He has a clinic in Cairo and on two separate visits, his clinic was full of women and children, but on both visits he refused to discuss this. Egypt does have a history of black market trade in organs, and newspaper reports have documented that there is a wide range of organ suppliers and clinics willing to perform the surgeries.

While this is all circumstantial evidence, and understandably one of the most difficult aspects to secretly document, the possibility that this is true, along with the statements by the CITES officials, should warrant an immediate suspension of Dr. Abdel Shafy's license until an investigation is carried out. The ongoing smuggling and conditions of these chimpanzees is bad enough, but what is just as disturbing is the cover-up/negligence/corruption of the Egyptian CITES officials. A document was uncovered, signed by the head of CITES Management Authority Prof. Samy el-Fellaly, which mentions one gorilla being given to the hotel zoo owner in Sharm El Sheikh. This document is written in Arabic - not one of the working languages of CITES, and makes no mention of where the gorilla came from. One of the CITES officials was willing to provide a copy of this document to illustrate the laundering exercises going on, but to receive a copy of this document required a payment of nearly $100 to the personal secretary of Samy el-Fellaly, as he said it was 'dangerous' to be involved in this. After presenting this document to CITES in Geneva, Prof. el-Fellaly admitted that he was investigated by Interpol but would not comment on the outcome of this investigation. Prof. el-Fellaly also stated that some of these facilities had no permits and were not authorized to house chimpanzees or gorillas, but that the facilities which were classified as CITES rescue centers also bought all their animals on the black market and could not provide any sort of import or export permits for the apes currently in Egypt. He stated that these 'rescue centers' were far better than anything Africa had to offer. Despite permission by the Minister of Agriculture, Prof. el-Fellaly refused to go on camera to have his say. In regards to the organ transplant reports, Prof. el-Fellaly
confirms they are true, but said that he thought it was only tissues being transplanted. He did not seem to understand why this would be alarming, but insisted that as he had a background in microbiology, there was no health risk in what Dr. Abdel Shafy was doing and in fact we should be proud he is helping humans.

Where do things stand now? Most of this information has been presented to Interpol and CITES Geneva. There is a request that one of the relevant countries issue a notice with Interpol so that these smugglers are watched when they travel internationally. CITES has been requested to further investigate and suspend Egypt until their laws are strengthened and enforced, and some of these chimpanzees sent to approved sanctuaries. This entire investigation was documented with video and still cameras. A documentary is being finished and will be broadcast in the US on PBS as well as other broadcasters worldwide. A short teaser of this documentary is available at http://news.yahoo.com/video/2714. There is a wide range of prominent newspapers and magazines planning on publicizing the investigation. As with the Interpol investigation of Prof. el-Fellaly, due to the documents passed to CITES, one thing is certain - the only way of effecting some major change both in Egypt and with CITES in general is if more publicity of the issues results in further pressure and public support on the authorities.

For more information or if you are interested in helping, please contact: kamman@africaonline.co.ke

All photos courtesy of author (including photos taken from video footage).

These gorillas (male, top and female, below) are sad survivors of the smuggling trade, housed in a private “zoo” by friends of high ranking government officials.

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A Gorilla With Friends

Sian Evans, Miami, FL, USA

King is a western lowland silverback gorilla who has lived for almost 30 years at Monkey Jungle, a small zoological park in Miami that specializes in primates. Much of his life has been spent in the limelight. Shortly after King’s arrival as an infant from Cameroon in West Africa in the late 1960’s, he began a career in entertainment as part of a casino show in Las Vegas. This was followed by some years in a circus before he arrived at Monkey Jungle in 1979. Monkey Jungle had hopes that King would provide companionship and eventually mate with a much older gorilla named Mitzi, who had been raised there. However, Mitzi showed no interest in interacting positively with him and, while they did coexist next to one another, they did not live as compatible social companions. Mitzi died in 1989 at the age of 40.

King was the subject of some publicity about ten years ago, as a result of the slow progress that was being made in providing him with a more spacious living area. However, in January 2000 everyone was very pleased when King stepped out onto a new home: a lush one-acre island enclosure. The island is a natural patch of South Florida forest known as a hammock and comprised mainly of Neotropical hardwood trees, including fig, gumbo-limbo, oak and wild tamarind trees, surrounded by a dry moat. This island is connected to his original night house and exercise area by a tunnel. King had watched with great interest the construction from his window and was very eager to venture initially into the tunnel and later more cautiously onto the island. However, within a week King had created trails on the island and picked out a special resting spot to build a daytime nest to snooze in. King uses his entire island and travels along all his trails, especially in the morning. On cooler South Florida winter mornings, King will carry hay to a spot in the extreme northwest of the island, which is a great sun trap and warms up in the morning sun, as the temperature gradually climbs to more comfortable levels. He is constantly rearranging the furnishings in his resting area and will gather vines from elsewhere on the island to ‘decorate’ it. There are a number of large trees on the island and King occasionally climbs a little way up one of them. Apart from removing some vines from trees, King has not destroyed any of the vegetation and, if anything, the tropical foliage is more abundant since King has had access to it.

King is no longer on permanent display to Monkey Jungle visitors, however, at certain times visitors can enter through a garden planted with African plants to view an educational and entertaining presentation, if King decides to participate. Typically, he does because he remains a showman and spontaneously interacts with his trainer and keepers and occasionally, the public and always demonstrates that he understands an impressive amount of spoken English. Like much of the population of Miami, King also understands a good bit of Spanish and he can be regarded as aurally bilingual. Every evening King willingly comes indoors to his air-conditioned night house where he settles down to watch his favorite videos before falling asleep. He has a strong preference for watching images of Koko and gorillas in nature. Interestingly, he is fascinated by chimpanzees and seems to take great delight in their more extroverted behaviors and claps enthusiastically when he views aggressive encounters between chimpanzees.

King’s best friend for the past 13 years has been his dedicated caregiver Tina Casquerelli, a Mexican-American woman who is unusually in tune with gorillas, in general, and King in particular. It seems quite appropriate to call the relationship that King and Tina have developed a friendship, as they appear to have true empathy for one another. For example, when Tina’s mother died several years ago, she would frequently arrive at work with a very heavy heart and King, sensing Tina’s
sadness, would initiate the morning’s joint activities. These morning activities are based on an extensive training that King received almost 20 years ago to respond to gestural and verbal commands. He exercises each morning and then presents various parts of his body for medical checking, including his chest for asculation, which is increasingly important, as King is getting older. Tina has also developed an extensive, innovative enrichment routine for King and he has become very good at naming various foods, animals, tools and familiar humans and indicates this by using sturdy wooden cards with pictures drawn on them.

Tina is not King’s only human friend. There are other Monkey Jungle caregivers that King is clearly pleased to visit with, and some volunteers that visit regularly. Dr. Robert Cooper is always welcomed by King for energetic chases, tickles and hide and seek playtimes. Dr. Cooper usually leaves his straw hat behind with King for him to investigate and eventually deconstruct. More recently, Nigel Fields has become a regular visitor and King has accepted Nigel to the extent that Nigel is able to perform much of Tina’s enrichment routine with King. And King may not confine his friendships to humans. King established a very comfortable relationship with an elderly De Brazza monkey named Raymond who lived on King’s island for three or so years and spent much of his time in a tree house. It took King quite some time to accept Raymond’s presence on his island, and he initially objected when Raymond cheekily showed up at King’s regular feeding time and reached over to grab some food. Gradually King accepted Raymond and eventually shared food with him but only his least preferred items! Raymond died about 2 years ago of an aneurysm, but we hope that another guenon with the right disposition can be introduced on the island. King also interacts playfully (on his terms) with several large iguanas, which have found their way onto his island.

The friendships and trust that King has developed with humans, and specifically with Tina, has allowed us to learn about King’s ability to recognize himself in a mirror and his memory for past events. King was judged to respond to his reflection in a way that suggested he recognized himself, and this was confirmed when Tina was able to sneekily place some red paint on his brow ridge without King realizing it, and which he promptly rubbed off when he saw his reflection in the mirror. Investigations with his wooden cards have shown that King remembers humans well and can indicate correctly who visited him recently and the context of the visit. The Discovery Channel and the British Broadcasting Corporation have given King his latest taste of the limelight, this time to a very wide audience and consequently people in several continents are now aware that one gorilla, at least, is able to communicate what he remembers with accuracy.

Whatever close bonds King forms with Tina and others, they may not be the same as the ones that King would form with other gorillas. While it is hard to predict how King would feel and act if it were possible to give him gorilla companionship (his canine teeth were removed while he was part of the circus), there is no doubt that in the absence of a gorilla companion he has forged several successful and long lasting human friendships. King’s friends frequently discuss what could make him happier and other humans committed to improving the lives of captive gorillas have also joined this discussion. There have been many thoughtful exchanges, where those that care about King share their opinions on what social future might suit King best. While we realize we may never have the opportunity to discover if King would enjoy a younger gorilla companion, it is reassuring to know that King genuinely enjoys human friendships and we feel privileged that he shares his playful personality with us.

We would like to thank all King’s friends who have contributed to his contentment, especially Frank and Ann Rubino, Jackie Moran and the late Valerie Kessler. Dr. Karyl Schwartz helped investigate King’s reaction to his mirror image and Dr. Bennett Schwartz and his students surprised everyone, except Tina, by demonstrating how
much King remembered about the people he met and the events that he witnessed. Sian particularly thanks Evelyn for her gentle persistence in making her think (and now write) about King’s social environment.

All photos courtesy of the author.

Successfully Treating a Gorilla With an Abdominal Abscess
Robyn Rousseau, Asheboro, North Carolina, USA

Recently, one of the North Carolina Zoo’s five gorillas, Hope (born October 30, 1974), became very ill with an abdominal abscess. I have since learned that this is not an uncommon illness in captive female gorillas. I hope that by telling the story of her treatment, it may help others with ideas for treating gorillas with the same condition. In February 2002, keepers noticed that Hope had become lethargic and stopped eating her diet. If you take care of gorillas, you know how much they like to eat and that something is wrong if they don’t. Hope was treated for digestive problems, using Metamucil, to see if this would help. Unfortunately, there was no change. She continued to eat little, was losing weight, remained lethargic, and keepers were having a hard time getting her off exhibit. It became obvious that something more serious was going on and a physical exam was scheduled. The exam took place in March 2002. A palpation of her abdomen revealed a 30 cm x 10 cm, round mass. Using ultrasound, veterinary staff found a 12 cm round abscess in that area. When weighed, we found that she had lost 7 kg since her last exam in July 2001. Hope was started on the antibiotic Augmentin (Amoxicillin-Clavulanate Potassium) and surgery was scheduled for a few days later. During the surgical procedure at the zoo vet hospital, it was discovered that the abscess had adhered to all surfaces in her abdomen and could not be removed surgically. This was a blow to the NC Zoo staff because her prognosis was not looking good. A biopsy was taken at the time and fortunately, we learned that the abscess area was not cancerous.

During the month of April, Hope continued on the antibiotic Augmentin. She wasn’t getting better and still wasn’t eating well. She was started on the steroid Prednisone to increase her appetite. The amount of Prednisone given was slowly decreased over time. She ate better when we started her on the Prednisone, but she stopped eating well when the amount given was decreased. Two more exams took place in May. The good news was that the abscess was slowly shrinking. The bad news was she had lost more weight and now had an area near her belly button where the abscess had started to drain out through a fistula. She was kept on the same drug regimen through the month of June, since the abscess was shrinking. She started eating better and during an exam in July, we found that she had gained weight and that the abscess was no longer distinct. Her drugs were ended and we thought we were out of the woods, but three weeks later she became ill again. This led to yet another exam, which revealed her condition to be worse. She now had two large abscesses on her left inner thigh and an uterine infection. Doses of antibiotics Baytril and Clindamycin where given during the procedure. Cultures taken during the exam showed that one of the bacteria causing the infection was resistant to Augmentin. The antibiotic Sulfamethoxazole Trimethoprim (TMS) was added to her daily meds.

In August 2002, Hope was anaesthetized and taken to the North Carolina State Vet School in Raleigh, NC for a CAT scan. This was an interesting, but nerve-wracking trip for the staff. Having a powerful animal in a building
full of people is enough to put anyone on edge. The CAT scan showed pockets of infection that could not be removed surgically. Infected areas were flushed with saline and injections of antibiotics were given. A drainage tube was put in, but Hope pulled it out before she was even fully recovered. We had to get more aggressive with treatment. When we returned from the vet school, Hope was housed at the NC Zoo vet hospital for two weeks of injectable antibiotics, Amikacin and Amoxicillin. Keepers visited her daily. While I’m sure being separated from the troop was stressful for her, she ate fairly well during this necessary treatment. After the two weeks, she was moved back to the gorilla building with the rest of the troop. We continued with oral antibiotics Augmentin and Amoxicillin throughout 2002.

Physical exams in March and May 2003 showed that Hope was gaining weight, however, the uterine infection and abdominal abscess were still present. Ultrasound showed that the abscess had not shrunk any more in size. Hope was started on the antibiotic Cephalexin. In July 2003, our vets came up with a new treatment idea. We would rotate different antibiotics (to prevent drug resistance), with periods of no antibiotics in between. We started by taking her off antibiotics for one month and then starting her on TMS for two months. She went off antibiotics for one month and was on Doxycycline for two months. We continued this rotation throughout 2003. In 2004, we switched to an every other month antibiotic treatment. While exams in 2004 and early 2005 showed that the abdominal abscess was still present, Hope’s behavior and eating habits were normal again. The new drug regimen was stopping the infection from getting worse and was keeping her alive.

In 2005, we switched the drug duration to twenty days on antibiotics and forty days off, continuing to rotate antibiotics. During an October 2005 exam, we were happy to learn that the abscess was shrinking again. We continued with the drug program that was working.

Finally, four long years after her initial diagnosis, we got the news we all wanted to hear. An exam in April 2006 showed no sign of infection, no lesions related to the infection, and no abdominal abscess. Antibiotic treatments were discontinued and keepers monitored Hope’s health. I am happy to say that nearly one year later she has remained healthy. We will be doing her next yearly exam soon and are all hoping for another clean bill of health.

Drugs Used in Treatment
- Augmentin (Our gorillas don’t mind the taste of this drug and take it easily)
- Clindamycin (Injection only)
- Ciprofloxacin (antibiotic she refused to take)
- Prednisone (Steroid used to increase appetite)
- Baytril (IV)
- Sulfamethoxazole Trimethoprim (TMS)
- Amikacin (Injection only)
- Amoxicillin
- Cephalexin
- Doxycycline

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Notes:
Gorilla Haven’s Newest Arrival
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Gorilla Haven’s latest charge, Oliver, arrived on May 10, 2006 from the Bronx Zoo, New York. Born at the Bronx on October 7, 1988 to father Barney and mother Tunuka, he was hand-raised. After transfer to Memphis Zoo, Tennessee in October 1994 to be part of an all male group, he returned to the Bronx in May 2003. Oliver is a wonderful individual, and something that really sets him apart from other gorillas is the fact that he is profoundly deaf. He compensates very well, and at times it is hard to believe he is in fact deaf.

Oliver took some time to adjust to his new home. Initially he was very restless, had loose stools and would not eat his regular diet. It took two months until he regained his pre-shipping weight, during which time his regular diet was supplemented with Ensure (a high caloric meal replacement product). Now, of course, we have the opposite problem of not allowing him to gain too much weight, since he is relaxed and eats everything. Oliver has since taught us that he is not impetuous and likes to adjust slowly to change, but thankfully he does adapt. For example, initially when new visitors entered the service corridor of his building, he would become very agitated and grind his teeth, but now he relaxes after making a couple of displays and watches from a distance. He is also very bright, loves to undo bolts and turn on water faucets with a stick. One day I found two video cameras lying in the service corridor of his villa. These cameras had been mounted on the roof of his outside cages. Even though it was screwed to a post, Oliver had manipulated the wooden mounting block through the 2” mesh until he could access each camera, then gently unscrewed the camera bodies (each the size of one’s finger) from their delicate metal base plates. Apart from twisting the wires off, they were undamaged and we were able to remount them, albeit more securely.

As Oliver is solitary, bright and deaf, he has special needs and Kelly Maneyapanda, our “Enrichment Queen” as Jane Dewar calls her, came up with some novel ideas and these are detailed and discussed in depth in the following article. As part of his enrichment he is given blankets and cardboard boxes. The blankets he sometimes wears over his shoulders or head, looking like the world champion he undoubtedly is, and both the blankets and boxes are used to sit and sleep on. One of his most endearing acts is to carefully flip open a blanket he is carrying, so that it lays on the floor like a tablecloth ready for a picnic, and then sit in the middle of it so he can rest or be fed.

Joe, our other and original resident is doing well, although being 44 years old, he does have a couple of minor health problems, including the Hemolytic Anemia (IMHA) we knew about which seems to be in remission. However, Joe was found to have periodontal disease and an ulcer in his esophagus, in conjunction with a restriction next to the ulcer. Before intervention and treatment, he also had an ulcerated gum and an upper canine broken below the gum. The esophageal problems were causing him to regurgitate most of his food. All these problems, apart from the broken tooth, are probably the legacy of past, outdated, diet regimes that caused regurgitation and acid reflux; the stomach acid in the mouth and esophagus eventually damaging the lining tissue. After four chemical immobilizations which included a tooth extraction, biopsies and a stretching of the scar tissue restricting his esophagus, Joe’s regurgitation is now manageable. At the onset of symptoms his regurgitation was akin to projectile vomiting and all his food was coming back up. Now by cutting his food up small and scattering it, in combination with medications to reduce stomach acid and coat the ulcerated area, he hardly regurgitates at all. The other good news is all his examinations and screenings show him in excellent health for an animal of his age. The bad news is that making Joe “work” for his
food has turned him into a grumpy old gorilla and we get little displays and threats when we don’t give him all his food immediately.

Our plans are to subdivide our 8.5 acre main habitat with semi-permanent fences to connect or separate each of the five holding areas as needed. These fences were under development, and after modifying the design from metal to plastic posts, we erected a double fence line around Oliver’s area, so he could have access to a portion of the habitat and we could test our design. This allowed Oliver and Joe to see each other, although they are some 200 yards apart. They really haven’t reacted to each other and the distance is probably the main reason for this. Having Oliver here highlighted the differences in personalities between the two. Joe is reserved and tentative but relaxed, Oliver more tense and boisterous but not reckless. Joe enjoyed his 25 hour road trip from Texas to Gorilla Haven. Whenever we stopped to check him en route, he was calm and looking at the view from the back of the trailer and happily shared breakfast grits (he is a Southern boy after all) with us at 5 a.m., arriving relaxed and in much better shape than the rest of us. Oliver, on the other hand, was very stressed and screamed and crashed about inside his transport crate. Joe likes to hang out with visitors and after an initial and mandatory display, settles as near the guests as the mesh will allow, and seems a part of the conversation as he “pan handles” for food (Joe arrived at GH knowing how to snap his fingers or clap his hands “asking” for more food). Oliver is settling down, but was disturbed by strangers both on the observation deck above his outside cages and inside his villa. Oliver prefers fruit to greens and vegetables, whereas Joe is the other way around. Some of the differences between the two can be explained by age: Oliver makes a display flying from one side of the indoor area to the other, clearing doors with the speed of an Olympic athlete and the grace of a deer. Joe, as an elderly gentleman, does not do this, although he still puts on a good show when displaying. But Joe is almost too passive, and I think his background, combined with his personality, resulted in his never leading a group or successfully breeding. Oliver is a little immature but otherwise normal. He is intelligent and sensitive and, despite his deafness, could probably lead a group of socially adept animals in a well designed enclosure.

Health problems not only beset Joe but our local steel fabricator too. This unfortunate situation has put us way behind on our construction schedule. Rather than “change horses in mid-stream” (the local company does good work when it is actually working), we are now engaged with a second contractor and working on the Group Building in parallel with the last two Villas, still in local hands. Our own small staff does the wiring, plumbing, lining out and painting plus a myriad other tasks. They like to meet challenges, and doing things that no one has done before, is often challenging. Having a small staff allows everyone to be valuable and multi-task. I find it a real privilege to work with such a talented staff. Kelly Maneyapanda is not just a first class caregiver, but excels in training and enrichment. Steuart Dewar is a real “Renaissance Man” who not only designs devices that combine electrical and electronic components, writes the software to make them run, but he builds them as well, often surpassing the capabilities of commercially available products (this is in addition to running Gorilla Haven and another company, award winning Pimlico Software).

Top Left: Oliver running and displaying at visitors outside; Top Right: Joe outside enjoying visitors; Bottom left: Joe loves to picnic and sun-bathe on the grass; Bottom right: Oliver rarely settles down outside and is usually on the move. Top left photo courtesy of Lyn Lewis, DVM; remaining photos courtesy of GH.
Left: Joe (circled) is outside at the same time as Oliver. Right: GH 8.5 acre Habitat, with Oliver’s yard in the foreground, the green electric fence/sight barrier, Group Building in the distance, and Joe’s yard on the left. Photos courtesy of GH.

Jane Dewar is not only a walking repository of knowledge on gorillas rivaling the Library of Congress (well, maybe a slight exaggeration there), but uses a gift for journalism to write our website. This site (www.gorilla-haven.org) receives a great many visits and positive comments from the public, and

Jane has that rare talent of making the esoteric available to all in a way that touches their hearts. We all greatly enjoy having Oliver here and none more than Jane, who sums it all up with her daily comments of “Have I mentioned how much I love that boy today?”

Left: We may be biased, but think Joe’s one of the most amazing 44 year old gorillas we’ve seen (see page 5, he’s #29 on the list of oldest gorillas); Center: Joe’s procedures are done in his villa to lessen time under anesthesia; Right: Oliver loves his blankets. Photos courtesy of GH.

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Are Gorillas Pro-Choice? An Experiment
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Historically, non-human primates have been offered enrichment on a passive basis. In our study here, we decided to present enrichment on a more active basis. The subject now has the opportunity to select specific parameters of the enrichment provided. For our trial we decided to use a western lowland gorilla named Oliver. He is 18 years old and was born and hand-raised at the Bronx Zoo in New York. At an early age, Oliver was diagnosed as being deaf and there may have been concern that husbandry and enrichment could be more complicated. However, Oliver has learned numerous Operant Conditioning techniques, as well as adapting to this potential handicap.

Oliver arrived at Gorilla Haven in May 2006. Since his arrival he has made attempts at affecting the environment outside of his housing. Standard enrichment of blankets, burlap, browse, cardboard tubes, and boxes often end up being pushed through or slid under the mesh. He has even used browse to manipulate and turn on the water faucet at a nearby sink (see story in box). Because of this tremendous interest in manipulating his environment, we felt Oliver would make an ideal candidate for this new project. The basis of this project was to create a system by which Oliver could choose between two variable enrichment aspects. Oliver's view is a flat panel tightened to the front of the mesh cage with 2 buttons exposed, one Green (button #1) and one Red (button #2). There are also LED lights near the buttons that light up when each button is pushed. Early on in the project, before enrichment devices were chosen and the program written, the lights were helpful while training Oliver to press a button, where he would see something happen as a result of button pushing. Our panel needed to be completely stable because any non button movement was a distraction. We found that with the original "simple" design of buttons on a metal plate held on by carabiner clips, Oliver could put his fingers around the corners and pull, making this more interesting than the buttons themselves. We have also learned the importance of securing the wire where Oliver can't see it, so it doesn't get pulled into the enclosure and chewed apart. Wood was attached to the front and frame of the original design to strengthen it and make it less interesting. The keeper view is the back of the buttons where there are various connections, a wire connecting the laptop computer to the panel, quick disconnects, and knobs to hold the panel tightly to the wire mesh. We wanted to be able to remove this panel quickly, easily, and without putting the caregiver or animal in too close of proximity with each other. The panel is not waterproof and would need to be taken down during cleaning.

Seven enrichment devices (see box, page 31) have been systematically scheduled each month, for proper distribution, since October 31, 2006. The button panel is set up everyday at 3 p.m. and taken down the next day by 9 a.m., a period of 16 hours. Each item is connected to an extension cord which runs to the laptop computer. During this trial, only two enrichment items are connected at one time. A program was written to record the time of button pushes, which button was pushed, how many pushes were made, and which enrichment device was used. Our program has choices on how the buttons will work: either to control a single toy with the green button turning it on and the red button turning it off; or with two toys, where the green button controls the first toy and the red button controls the second toy. The buttons can also operate the toys in several different ways: either as a momentary on/
off, as a toggle, or to turn the device on for a timed period. This program records all the button pushes into a file format which can be easily read into a spreadsheet program for analysis. The control program was written in Visual Basic and communicates directly with an inexpensive USB board that is targeted for hobbyists and has several digital inputs and outputs. The buttons are connected to the digital inputs. The digital outputs are used to drive higher powered relays that could then switch the 120 VAC to a regular duplex outlet and turn the various toys on or off. Total hardware expenditure for the project was less than $100. A second program was written to analyze all the data in the spreadsheet file and create a timed bar graph, which clearly shows the frequency and level of interest in the various toys, along with designated colors to show rotation of each item. Even with using a simple combination of buttons early in this project there are several details that may affect the outcomes of Oliver's button pushing:

**Enrichment device:** It is important to find enrichment devices that will spark curiosity in the subject. If Oliver has no interest or curiosity in the enrichment device, he may not be pressing the button that day.

**Time of day and time of year:** Starting each session at 3 p.m. allows the subject time to explore button pushing before daylight is lost. Providing a “night light” or running this project during the summer may entice the subject for longer periods.

**Test vs. no test:** Prior to each session a “test” can be done on the program to make sure there are no problems with the device itself, the program, or the electronics when a button is pushed. If a test is done and the subject is watching, there is a chance that the preview may deter or encourage them to press when the real session is running.

**Other enrichment given that day:** At Gorilla Haven we make it a priority to offer the gorillas a varied enrichment regime every day. There may be some instances when the daily enrichment is more attractive than the button controlled enrichment. For example, on December 26, 2006 we celebrated the holidays by filling Oliver's enclosure with a huge pine tree, decorated it with shredded paper, hung streamers, and gave boxes with treats and blankets, etc. Oliver did not press any buttons on this day.

**Stress or Illness:** Bad weather, construction, change in routine or any illness may prevent the subject from having interest in the button project that particular day.

**Boredom:** For the first two months we had been using the same six enrichment devices. There is a chance that Oliver is now used to and has become bored with this current set up, which is why we added a new item (strobe light) to the rotation recently.

With the data collected so far, we have seen that Oliver has had an initial and continued interest in pressing the buttons, despite a lack of caregiver involvement or immediate reward (no verbal/hand/facial praise or food). After the early “learning” phase, we saw a resurgence in mid December, but overall it looks like Oliver is showing no particular preference towards specific devices, but instead shows interest on an individual daily basis. Once the sample size for each combination has increased, we’ll be able to look more deeply into the recorded data in order to determine if Oliver has “favorite” devices, if there are patterns in his button pushing, if he is showing button color preference, and even try to determine handedness.

**Enrichment Items Used:**

- Blinking “bat” lights
- Lighted/spinning disco ball
- Bubble blower
- Water fountain
- Cat lamp
- Small fan
- Strobe light (added later)

The photo on the right shows the laptop computer recording button pushes for the disco ball and the fountain.
There are many possibilities that can be used with this system. At this time we have used only simple combinations, and after seeing such interest, we’ll continue on with the project. Some long term goals include (1) increasing the number of button options; (2) altering the program difficulty; (3) distributing enrichment stations; (4) creating new enrichment devices such as a treat dispenser, other light forms, heat and possibly even limited door control; (5) changing the time of day this project runs; (6) video taping to get new perspective, and (7) trying this project with other gorillas and possibly other species.

Acknowledgements: Thanks to Steuart Dewar for his help with the design and conception of this project, including computer programming and electronics. All photos courtesy of the author.

Gorilla Haven as a Gorilla Museum

Gorillas in captivity have a relatively new history, but from the beginning, there have been gorilla “groupies” or fans of gorillas, collecting photographs, documents and information over the decades. Ken and Irene Wenlock of Wolverhampton, England have a treasure trove of gorilla-related items in their home, reflecting the more than 40 years they’ve been fascinated with gorillas. Whenever I need a photo of a gorilla, I go straight to Jan or Tom Parkes of St. Louis, Missouri, who have the most amazing collection of photos and videos of gorillas around the globe. And most caregivers I know use Jim Davis’ version of the gorilla studbook, instead of the more official version, which wasn’t published annually in the past, making Jim’s efforts even more valuable. Then there’s my own home, which is literally floor to ceiling covered in all things gorilla, with a library with literally hundreds of gorilla and primate related books.

When visiting the Wenlocks a few years ago, we realized we all held a huge part of history, which would be lost unless it were preserved in some way. That was the first seed of turning our home, a cabin built in 1900, into a Gorilla Museum. As gorilla caregivers visit Gorilla Haven, they agree it’s a good idea to have a clearinghouse for gorilla items, to be categorized and displayed for future generations as a Gorilla Museum. For now, we are accepting gorilla related items, so if you have a collection that you don’t have someone to leave it to one day, please consider donating it to the Gorilla Museum at GH. For more information, contact Jane Dewar (see contact details on back cover).

Views of the GH cabin, which is already museum-like, with gorilla items found everywhere! Photos courtesy of GH.
All Male Gorilla Group Study; A Behavioural Vision
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One of the most important problems of captive animal populations is the surplus of individuals. This is the case with the European gorilla population, where we have to cope with surplus males. The sex-ratio at birth is one male for one female, and they have to be maintained in a harem (one male for many females) to have good reproduction. The community of zoos thought of many solutions: male euthanasia at birth, males maintained alone, castration of young males, or founding bachelor groups, also called ‘all male groups’ (AMGs). It is not my intention to dispute the relevance of these possibilities, here I only wanted to study AMGs; their stability and viability in captivity. Toward this goal, I studied an AMG composed of 5 male western lowland gorillas (Gorilla gorilla gorilla). This group was formed 3 years before the beginning of the study. It was maintained at the zoo of La Boissière du Doré, France. Their whole enclosure comprised: 3 internal enclosures for the night, an internal enclosure of 300 m² and an island of 5500 m². The members were: a 14 year old silverback (SB), who was hand-reared (HR); two 10 year old blackbacks (BB), one was mother-reared (MR) and one HR; two 8 year old sub-adults (SU), one MR and one HR. Furthermore, in the middle of the study, a 3 and a half year old HR male was introduced to the group.

Protocol. There were 3 different phases of observation during this study (beginning in 2005, April the 2nd, ending in 2005, June the 5th): (1) during the winter: the gorillas were in the inside enclosure (Int) of 300 m² during the day; (2) spring beginning: the gorillas had the whole enclosure (internal and island) at their disposal (Ext); (3) end of the spring, after the introduction attempt, the whole enclosure at their disposal. During these stages, the group was studied during 5 days in a week, for 8 hours a day. Observations were based on 2 principles, defined by Altmann in 1974: scan sampling (collecting data on all the individuals every 15 minutes) and focal sampling (observing two individuals and their behaviour and collecting all the studied behavioral occurrences during 30 minutes). The first one allowed understanding of the activity of each individual in the group (resting, feeding, playing, locomotion, aggressions, affiliations, in order to make behavioral histograms, see graph 1). It also allowed an understanding of the spatial structure of the group, i.e. the distance between each individual and their favorite place to occupy. The focal sampling helped me to understand the social structure: hierarchy, relationship between the individuals, i.e. aggressive or affiliative (see graphs 2 and 3).

It is really important to define what is an offensive or aggressive behavior and what is a defensive one. Real fights in a gorilla group are quite rare. So we can see the hierarchy with the displacements. For example: individual X is seated (eating, resting, playing alone...). Individual Z approaches, calm, not displaying or not even looking at X. If X relinquishes its place to Z, we can say that Z dominates X. According to that, I have defined an offensive behavior as “Z displaces X” and a defensive one as “X avoids Z.” During each stage, all the individuals were observed during the same time (± 1 h). The data obtained during these observations were used for statistical analyses, but only for the first two phases, because I had fewer data for the third (the results would have been biased).

Results-Discussion. Phases Int and Ext analyses: I will focus here only on the main interesting results. First, looking at the global results and comparing them with the conclusion made on past studies (Pullen 2005; Stoinski and al. 2001, 2003; Yamagiwa 1987), I did not find any difference. This AMG had a “normal” behavior. Each behavior time rate was equivalent: the aggressive one (Rag = 1.45) was significantly lower than the affiliative one (Raf = 6.7); the gorillas ate and rested for 88% of the whole daytime. I observed natural behavior, such as

Space is crucial for all male gorilla groups, seen here on their island at La Boissière du Doré in France.

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social staring (Yamagiwa 1992). So, this AMG did not have aberrant behavior. The behavioral results obtained for the 2 first phases are qualitatively the same. In the 2nd stage (Ext) the different time rate was proportionally lower. This is due to a space parameter: in Ext the whole enclosure was bigger than in the first phase (Int), the individuals were less close to each other, they interacted less. So the differences between Int and Ext are only a behavioral dilution. Concerning the hierarchy, according to Appleby's formula (1983) it was stable and linear during the whole study and did not change: the silverback was at the top, following by the 2 blackbacks and at the bottom the 2 subadults. An interesting fact is that, for the same age, the MR individual dominated the HR one. Concerning the social relationship, the silverback was the more aggressive, principally with the 2nd in the hierarchy. The subadults made less aggressions and only between themselves (graph 2). This result was classic. The MR subadult is the only one in the group to initiate affiliative interactions with all the others: he was the "socializing" individual (graph 3). All the individuals had their own behavioral repertory. Furthermore, I noticed that HR individuals (except the silverback) had the same repertory (mostly defensive). The MR individuals also had their own repertory (playing, affiliative).

At this point I decided to analyze this group making classes of ages or of rearing histories. Studying the age classes (SB; BB; SU) did not reveal any particularly interesting result. The silverback was the more aggressive and spent 70% of his day-time resting. The blackbacks ate more than the 2 other groups. The subadults were the more active during the day (playing, affiliation). Those results followed the normal behavior of a gorilla group: the oldest individual being calmer and more aggressive than the youngest. Analyzing the rearing stories classes did not show quite the same uninteresting results. First, I did not include the silverback (HR) in these analyses. As he was the oldest and so at the top of the hierarchy, the results would have been biased, showing HR individuals as the more aggressive because of him. There were 2 groups: MR (mother reared) and HR (hand reared). According to graph 1, I was able to see that, significantly, the HR class was more defensive and so the MR class is more offensive. Furthermore, the HR individuals rested 66% of the day-time, 58% for the MR. Another interesting point: in Int condition, HR and MR individuals did not occupy their enclosure in the same way. HR spent the majority of their day in only one area of the enclosure (where the silverback never came). On the contrary, MR occupied the whole enclosure and did not really take note of the silverback. These behavioral differences between the 2 classes can be explained by the fact that the HR individuals did not learn the social rituals. They could not understand the others' behavior and especially the silverback's. So they were more defensive towards the silverback and less interactive with the others. It also explains their space distribution.

**Introduction of a new individual.** We decided to introduce the young gorilla first to the low ranking individual. It succeeded very well, the 2 gorillas played together. Then we introduced a new individual following the reverse hierarchy each day. The different introductions succeeded, there was no dangerous aggression, only a few displays. At last we introduced the silverback to the group. He directly attacked the young individual. The others tried to defend him but it was not sufficient. Finally we managed to isolate the youngster. This introduction failed because of the silverback. There was a too important age difference between the young gorilla and the silverback who did not have "normal" behavior.

**Conclusion.** With this study, we can see that AMGs are a suitable solution to cope with the male surplus: the group behavior is not aberrant (as in Int and Ext conditions). Before the introduction attempt, the hierarchy was stable, each individual had found a position in the group. The actual situation of the group changed. The lowest individual in the hierarchy was transferred in June, 2006 to another zoo with younger males because he was too isolated from the others. The rest of the group is quite unstable now and there is a lot of tension between the individuals as they grow up. So, to create AMGs, we have to take into account two important parameters: the age and the rearing story of each individual. We have to maintain males who have approximately the same age and to mix HR and
MR. If the age differences are too great during an individual introduction, the youngest cannot defend itself and the introduction of a new individual would fail. If there are only HR individuals, as they would not be able to understand each other, there would be a lot of conflicts. This sort of AMG would not be stable. This is only one study on a specific AMG. There are a lot of questions to be answered concerning the creation and the evolution of gorilla AMGs. What about the individual character? We need more data on attempts at introductions and more social data following the departure of an individual, for whatever reason makes this necessary.

**Graph 2:** Agonistic relationship sociogram between the 5 individuals.

**Graph 3:** Affiliative relationship sociogram between the 5 individuals.

**Graph 1**

**Behavioural repertory according to the rearing story**

**KEY:**
- SB — silverback
- BB — blackback
- SU — sub-adult
- HR — hand-reared
- MR — mother-reared

*All photos courtesy of the author.*

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Fossey, The Next Chapter
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Left: Family outside group.

November of 1993 marked a turning point for the gorilla program at Little Rock’s zoo. Columbus Zoo had offered to send us two of their most cherished residents, JJ and Fossey. They both were celebrities of sorts: Fossey was the first gorilla born at Columbus to be mother-reared, and JJ was the first gorilla to be surrogate-reared there. Each of them represented new ideas about how to allow captive born gorillas to experience being raised by their own species. The staff at the Columbus Zoo had not only developed protocols, but also made certain the information was widely available through the Gorilla Gazette and hosting the first Gorilla Workshop. The boys were 6 and 7 years old when transferred. We felt honored that the staff at Columbus trusted us with their ‘kids.’ I was the keeper sent to pick the boys up, and I felt both proud and nervous to be removing the gorilla boys from their home. A parade of staff stopped by to bid farewell to JJ and Fossey, and there were few dry eyes during the process.

We had housed several different groupings of gorillas, and at the time had two different pairs, housed in separate exhibits. One pair, Brutus and Trudy, had shown no inclination to breed, and seemed likely candidates for accepting the youngsters to form a multi-male group. We had no precedent for forming a group consisting of 3 males and a female, but based on our pair’s previous resilience we felt the group might work. Daphne Brock Pfeiffer’s article in a (June 2003, pg 31-32) Gorilla Gazette documents many of the changes in the group, and in our management of them. The personalities of the gorillas in the group, along with the ability to flexibly manage them according to their needs, were keys to the long-term success of this unusual group. They stayed together for 12 years until we made the decision to break the group up, so that our two newly acquired females, Sekani and Catherine, could be housed with the Columbus boys. The new group consisted of two mother-reared females ages 16 and 22 years, one mother-reared male (Fossey), and a surrogate-reared male (JJ), both about 20 years old. None had ever been parents. The decision to keep the boys together with the females was not made lightly. There were many discussions among the staff and with other gorilla keepers that helped us decide to take the risk of keeping two silverbacks in a group with reproductive females. We intend to address the decision and process in more detail in a later publication.

By January 2005 we had all four gorillas together, but it was very obvious that the girls and Fossey had formed one group, and that JJ was living as a peripheral male. We considered this acceptable, since it allowed maximum outdoor time for all the gorillas, and gave us an alternative to keeping JJ as a solitary male. It was not long before Fossey had become the object of both females’ affections. He was relentlessly pursued by Sekani, and only slightly less so by Catherine. When their cycles happened to coincide, we almost felt sorry for the Fossman; he’d no sooner have bred one female than the other would approach. While this may have seemed a dream come true for most teenage guys we knew, the novelty quickly wore off and Fossey began to look a bit haggard. We were anxiously awaiting a pregnancy, and at the same time learning quite a bit. Despite the combined experience of the staff, none of us had any working knowledge of a reproductive gorilla group. We eventually got a positive pregnancy test from Sekani, and began to prepare for our first gorilla birth. Both females had been mother-reared, and had been exposed to other youngsters while they lived at Toronto’s zoo, but we wanted to plan for any event. Our staff is encouraged to ask for assistance from other zoos, and we had several contacts we relied
upon for information and advice. They were most generous with both time and knowledge, but we soon began to loathe the phrase ‘it just depends.’ The schedule for 24-hour baby watches had finally been completed, and the first overnight watch was started on October 10, 2006. The next morning, all three of us were at work and around 8:00 a.m. we noticed Sekani walking oddly and acting more restless than usual. We were quite certain she was in labor. JJ had always been separated from the trio at night, and we had decided to keep him separate once the baby watch started, but the trio was together as usual. Fossey and Catherine behaved normally, and we saw no real change in Sekani’s behavior for several hours. Finally, we decided to let the overnight observer go home to rest, send one keeper off to lunch, and leave one person to wait and watch. Within ten minutes, Sekani’s contractions became noticeably stronger and she began to strain and shake her hands. Her water broke and it was only minutes before the baby’s head began to crown. She delivered the baby and cleaned it up immediately. For the entire time, both Catherine and Fossey were in the same indoor area, but stayed up on the beds observing while Sekani, on the heavily bedded floor, gave birth and cared for her newborn.

Sekani cradled the baby and nearly disappeared into one of the gigantic floor nests she had constructed. We observed her holding the baby correctly for nursing. All three keepers breathed a huge sigh of relief as the family reacted to the birth as a normal event. None of the gorillas, including the new mother, paid much attention to us as we conducted the regular daily routine. We normally do not have many unfamiliar visitors in the gorilla holding area, and we had decided that for the first two weeks after the birth only the keepers in the area, the supervisor, and the vet tech were allowed to enter. No exceptions! Management agreed with our decision, and fortunately we were able to provide some video and digital photos to tide them over. We attempted to conduct overnight nursing watches, but these proved too upsetting to the group and were discontinued within two days. The first couple of days we had difficulty directly observing frequent nursing, due to the places Sekani chose to rest with her baby. We did not become overly concerned as we observed some nursing, and both mother and infant were exhibiting behaviors that reassured us that all was well.

The baby is a male and has been named Mosi, which means first born. He sports a bright red head much like his father’s. Initially Sekani did not let either Catherine or Fossey touch the baby; after a few weeks she let each of them touch him briefly, and that was it. Since then, we have observed Fossey touching him more frequently, and even cradling his head and fondling his extremities. Catherine was allowed to hold him briefly at age four months. Our exhibits are outdoor viewing only, and the family is only allowed outside on warmer days. In spite of this, the public is well aware of him and seems to understand that a new baby cannot be outside and on view while the weather is cold. We began to reintroduce JJ to the group in January, and it appeared to be going well, but the process is weather dependent and we have had to postpone it until warmer temperatures return.

The keepers have fallen in love with our first baby gorilla, and have come to respect the ability of his family to behave exactly as they should. Fossey in particular has taken to his role. He has always been a good natured and easy going guy, and this has become even more evident as we watch him put the new mom at ease by engaging in goofy solitary play, which eventually moves closer to her until she is a participant almost by accident. The first four months of Mosi’s life have been a privilege to observe, and we are looking forward to future developments.
Nearly fourteen years after JJ and Fossey came to our zoo, they continue to participate in helping us chart unexplored areas in gorilla husbandry. We feel most fortunate to have them to work with, and earlier innovative keepers and managers to follow as an example. Our management and veterinary staff have been most supportive at every step leading up to and including the birth of our first gorilla. This has been invaluable, as we have been allowed to make decisions with the needs of the animals as the first priority.

Fossey’s Special History
Beth Armstrong, Merritt Island, Florida, USA

On a warm summer night in August 1986, a baby gorilla was born at the Columbus Zoo that would change us all. He would become the first mother-reared infant at our zoo. His parents were Bongo, a 30 year-old male who had sired three infants in the late 1960’s and early 1970’s, but had not been allowed to see or rear them. The infant’s mother was Bridgette, on loan from the Henry Doorly Zoo in Omaha, Nebraska. Bridgette had a long history of having infants pulled from her (due to a number of reasons, mainly due to the mistaken philosophy of the 1970’s and 80’s), and had, in essence, become a baby-making machine. This was her seventh infant and only the second one she was allowed to rear. As we “owned” this infant, the Columbus Zoo staff was in agreement that she would be left alone to rear her son with her mate, Bongo. The keepers decided to name the infant Fossey (aka Fos and Fosman), after famed primatologist Dian Fossey. As a keeper you are in a privileged position of being witness to the gorillas’ everyday lives. In between the cleaning of cages, shifting animals and preparing food, there are many moments of great tenderness. Watching Bongo with his son was one of those moments partially because of Bongo’s difficult past. He had more than paid his dues, he had witnessed unspeakable horrors when captured from the wild, and had lived in a sterile cage on constant public display for the first 25 years of his captivity. It was only in the mid 80’s when he had paired up with Bridgette and we had shut the gorilla building down to public viewing, that he had finally been given some semblance of normalcy and so the birth of his son was a joy for the entire ape house.

The birth went smoothly and Bongo was a quiet presence within the cage during the birth. Bridgette immediately began caring for Fossey who had a strong grip and rooting behaviors. Within 24 hours it was clear that Bongo desperately wanted to touch his son. He would sit side by side with Bridgette, Fossey cradled in her lap, and Bongo would tentatively reach out one of his massive index fingers to try and touch the baby while looking in the opposite direction. Bridgette would simply brush his hand aside, Bongo acted as if nothing unusual had happened but sometimes he would gently bite on his fingers in what appeared to be frustration. It was apparent that Bridgette was the boss. Eventually Bongo was allowed to touch his boy and would softly vocalize to himself while sniffing his son’s scent on his fingers. As time went on Bridgette allowed Bongo more frequent contact with his son and sometimes Fos would wander over to his dad to play...
with his toes and belly. Bongo, never glancing (a studied nonchalance) at his son, would gently reach down and touch him. Meanwhile Bridgette was in the background watching every move. The joy that this trio brought to the Ape House was immeasurable, but fourteen months after Fossey’s birth, Bridgette died due to complications (peritonitis) from diverticulitis. Bongo watched as we took Bridgette’s body from the building. He repeatedly called to her for the next few days with Fossey nestled up against his body for comfort. We immediately got Fos on milk served from a cup and they soon adapted to just the two of them, but we had another scare about six months later.

In early March of 1988 I had flown to Colorado to pick up a female gorilla named Bathsheba to bring back to Columbus. Don Winstel, then the Curator, picked me up at the airport. Once we loaded Bathsheba’s crate into the van, and headed out to the zoo, Don told me that Fossey was sick and that they were very concerned about him. Sometimes in life things seem to be too much, when you want to say “Enough already.” That Bongo had only recently lost Bridgette, combined with any possibility of anything happening to Fossey, was beyond the pale. If anything happened to Fos, his heart would surely break and my heart for him. As it was the middle of the night I would have to wait to see them in the morning. The next morning I immediately headed to Bongo’s cage. On the floor was Fossey huddled in a ball, shivering slightly, and his eyes had that “I’m not feeling so hot” distracted look to them. Fos was about a year and a half, so he was still relatively small, and his father weighed 400 plus lbs at the time. Bongo was bent over, rear end in the air, gently cradling his huge hands around his son’s shivering body, gently vocalizing to him. Thankfully, Fossey recovered a few days later but it frightened all of us. When Fossey was four years of age his father passed away from a heart attack. I was the keeper that found him and I will be forever thankful for that. Bongo was slumped forward, Fossey was quietly hooting bent over trying to peer into his Dad’s unseeing eyes. Just ten days before his death, I had been hosing an adjacent cage when Bongo and Fossey began playing. Bongo was up on a long narrow platform running back and forth, Fos running below him grabbing his feet, they were both hysterical with laughter. People wonder what it is like to work with gorillas. It is a privilege, as simple as that.

On Tuesday, October 10th 2006, Ann Rademacher called from the Little Rock Zoo to tell me that Fossey, the first mother and father-reared gorilla infant at the Columbus Zoo, had become a father. Twenty years ago he was born, nineteen years ago he lost his mother, sixteen years ago he lost his father. To say that Fossey has a soft spot in my heart is an understatement. He is his father’s boy; handsome, majestic, funny and goofy with his mother’s sweetness of character. A few tears were shed that day and with that, a huge sense of relief that Fossey had a life complete with a family. Bongo would have been proud.
Prague Zoo Update
Marek Ždánský, Prague, Czech Republic

The whole idea came from Radio Leonardo, who suggested we place 16 web cameras in both indoor and outdoor gorilla enclosures and observe the gorillas' behaviour. We liked this idea as our zoo wanted to support some in situ project for a long time, but our laws do not allow this as we are a so-called contributory organisation. So that is why we really appreciated this project whose profits would be dedicated to Limbe Wildlife Centre in Cameroon where gorillas live. The project lasted for 70 days. For the whole time, gorillas were observed continuously. Every day a short summary was on TV and radio. People could watch day and night what the gorillas were doing. The keepers tried new experiments every day, for example: hiding of food, different tools to get to food, toys etc. A very interesting part of this project was the introduction of a new female, Kamba, into the group and challenges of settling of a new hierarchy in the group. Kamba had also never seen a gorilla baby before, which made observation even more important than we thought. Every movement, every gesture, was recorded by cameras and watched by thousands of people, who wrote comments and messages to us. The biggest contribution of the whole project was that it brought both the life of gorillas in captivity (and in the wild) and the every day work of their keepers close to the public. The behaviour of gorillas was explained and commented on by the head scientist of the Czech Republic. Another outcome of this project was a DVD, which is being sold and the profits again going to the conservation of gorillas in wild.

We keep five lowland gorillas in Prague Zoo. We have a 16 year old male, 3 females (ages 16, 15 and 34), and a one-year old baby female from the 15 year old. It is a September morning and I come to work as usual. It is raining, the temperature is about 12 degrees Celsius and the wind blows. I go to the changing room, and before I manage to change my clothes, I have a short look at the monitor, which shows us the gorillas in their outer enclosure. I see that the gorillas are sitting outside, which is rather strange as our gorillas do not like to go outside when it is raining. I mention it to my colleague and we decide to go out and see what is going on. As I am approaching the enclosure, I see that something is wrong, as all gorillas are sitting close to each other on the moat bank and are looking into the water. I come closer and I see that the gorilla baby, Moja, is floating head down in the water about one meter from the bank! I do not hesitate and jump into the moat which is 3 m deep and 3.5 m wide. I grab Moja with my hands and I have to get out of the water, but on the side all the gorillas were sitting, and I could not use the other bank as there is an electric fence, deepwater and an overhang. Moja is unconscious so I start to resuscitate her, totally ignoring the fact that half a meter from me the male Richard (215 kg) is sitting. I try artificial breathing to Moja and after a while, she awakens and starts to scream, since she was never in human hands before. I call the oldest female Kamba and give Moja to her. Then they all stand up and leave for the pavilion. I wait till my colleague opens the door for me and I can get

Above: Prague's outside gorilla exhibit, where a water moat separates the gorillas from the public.
Below: Caregiver, hero and author, Marek and friends.
out of the enclosure. After half an hour Moja dries off and is running through the enclosure as if nothing had ever happened. However, there are still several questions remaining to be answered.

- Why didn’t the gorillas help Moja?
- Why didn’t they hurt me, when there are two aggressive females in the group?
- How did Moja fall into water? Unfortunately our recording system did not work, so we can only guess.
- Another question is: to fill up the water moat or not?

We are really worried about this, since we are expecting another two babies next year. As we cannot forbid them to run, play and climb on trees, we must think of ways to avoid such accidents in the future.

Clockwise from left: Moja; the Gorilla Pavilion; silverback Richard; Kamba, the newest group member near Moja.

All photos courtesy of the author.

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Gorilla Drowns in Moat Exhibit

Tracy Williams, Jacksonville, FL, USA

On November 9, 2006 two of our silverback gorillas, Quito and Ben, were outside together in our larger gorilla exhibit. Because this dyad was still in the early stages of socialization and they had fought during their previous introduction period, staff observers were watching them closely. Several bouts of chasing occurred. Quito was displacing Ben around the exhibit, behavior we had typically observed during five previous all-silverback introductions. When the last of these chases came to a stop, Ben stood with his back to the water moat while facing Quito who was standing approximately six feet away. After a short time Ben took a small step backward to turn and leave, but lost his footing and slid feet-first on his stomach down a short slope into the water.

Although the water at Ben’s point of entry was shallow and sloped relatively gradually to approximately four feet, he was not able to pull himself out and/or did not know how to get out. Within two minutes, keepers were able to bring the other apes inside in order to gain access to Ben in the water. When staff pulled him out of the moat, Ben was non-responsive with no detectible pulse or respiration. Efforts to resuscitate him were unsuccessful. Necropsy supported that there was no physical trauma and the cause of death was drowning.

Since Ben’s death, we have surrounded all bodies of water in our ape exhibits with electric fencing to restrict access. It is important to point out that Ben’s death was the result of utilizing a water moat system, not the result of introducing him to other silverbacks. Even since this death, we continue to have success at housing silverbacks together. Although electric fencing has been added to prevent further water-related accidents, our ultimate goal is to eventually eliminate the deep water moat system. We hope that by sharing this information, Ben’s death can at least serve as a learning experience for other ape facilities. Ben is deeply missed by all of our zoo staff and guests. We would like to thank everyone who provided support, kind words, cards, and donations following this tragic event. Trees acquired through donations in Ben’s memory will be planted in our gorilla exhibit.

Ben was born to Frederika and Tatu in Oklahoma City on 12Aug85.
Photos courtesy of Barry Rabinowitz. Drawing of Ben by Chisato Abe.

Shanghai Zoo: Changes in Progress & Process
Stephen Protz, Shanghai, China

China is home to a vast resource, i.e.: its people, who represent the largest population in the world. This brings both challenges and opportunities. China will be taking on more responsibilities, both internally and globally, and not just for economic growth, but also for leadership and contributions to “humanity” (including animals and the environment). Shanghai and its zoo can reach millions of people that have never seen or known about the gorilla’s plight. This opens the door for Chinese citizens to relate and contribute to the protection and sustainability of the world gorilla population and causes. It’s a chance for increased awareness, education, inclusion and action.

The New Shanghai Zoo (SHZ) Gorilla Exhibit: This story is not just about the gorillas coming to China, but also about how a group of diverse and sometimes reserved humans with different backgrounds and ideas came together with the common goal of making an exhibit better, to help the species’ long term survival, and how every idea and contribution from Shanghai and Rotterdam, Asia, Europe, and North America was made in the best interests of a species that could not speak for itself.

Project Mission: In Feb. 2006, Shanghai Zoo Director Xiong established a Project team that consisted of SHZ primate keepers, SHZ Project Manager, Shanghai LAC Landscape Designers and a U.S. Architect for the design of a new Gorilla facility and exhibit. Xiong set the overall mission “to design and build a World Class Gorilla Facility that will be outstanding for the future 50 years.” My role was the architect, charged with the design concept and overall design development. I was familiar working with the Shanghai Zoo over the prior 3 1/2 years working with head primate keeper Yao in implementing a Master Plan for a number of facility improvement projects at the Chimp and Orangutan buildings, as well as working together with the Zoo’s Education Dept., Jane Goodall’s Shanghai Roots and Shoots Office and US based Chimpanzee. I have also been very fortunate to have had the opportunity to talk and listen behind the scenes, with gorilla keepers who unselfishly shared their knowledge with me over the years, especially in Houston, San Diego, Seattle, Louisville and LA. As a designer, the most important aspect is to be able to put oneself in the mind of the facility user as much as possible, to accommodate needs that can be felt but not often described.

The Story to be Told: How a group/family of gorillas came to Shanghai, why gorillas are on the endangered species list, and what Shanghai Zoo, together with its sister city Rotterdam, and their zoo are doing along side with other international organizations and individuals to help protect this species from natural environmental extinction. In addition, emphasize the critical and global link between people, animal and environment and what individuals can do to help make a positive difference.

Design Goals/Needs: The exhibit design requirements focus on four user type needs, listed hereunder. At this point, it is critical to understand the needs of every end-user starting with the one that uses the space the most (the priority of these four needs has been different throughout history). I hope that the environment becomes a standard fourth requirement that zoos and designers will address in the future, because it is a critical component to protecting any remaining natural wild environment the animals have. (1) Animal: to provide

Wild born in 1974, silverback Bouleman (circled) sits in the existing gorilla exhibit at Shanghai Zoo, where he lives alone. When gorillas arrive from Rotterdam, his home will also be improved.
the gorillas with the ability to live a quality life outdoors and indoors, with freedom of movement and daily enrichment so that they display natural behaviors, remain healthy and propagate the species. (2) Keeper: to provide keepers with the ability to manage animals, visitors and facility with safety and efficiency, including daily operations and enrichment programs. (3) Visitor: to educate the visitors about gorillas in an entertaining way, to provide the public with a direct view of a gorilla family exhibiting natural behaviors, to create a personal appreciation for the individual gorillas and the species, and to create an individual sense of responsibility for their well being and survival. (4) Environment: to provide the environment with a facility that is energy and environmentally friendly, efficient in the use of natural resources, encourages conservation and provides keepers and visitors with recycling stations, and is an example of good sustainable design principles.

Design Description: The visitor enters an open outdoor area themed as an African and Environmental Conservation Research Village for gorilla information and hands-on touch and a learning display. From this point the visitor has a strong orientation point and can either enter the Indoor facility or walk the gorilla loop perimeter trail to view the outdoor exhibits. The Main Building is divided into three clear zones for visitor, animal and keeper. Visitors enter a room and structure identical in size to the gorilla rooms, that will be used primarily for further introduction and transition to the indoor gorilla viewing areas. Once inside, they view the animals through laminated glass into their indoor room, with the outdoor area beyond. They can also watch the food being prepared by the keepers or watch the animals forage or use natural tools to get food from the enrichment/termite wall. The gorillas have three day rooms approximately 150 sq. m. each, with isolation boxes and a double loop circulation system for both indoors and outdoors, such that a weaker gorilla can not be trapped by a stronger one. Two rooms can be combined to form a larger 300 sq. m. room with linkage to either of the outdoor areas. The gorillas can explore their territory and this loop system allows freedom of movement and choice. The indoor rooms are eight sided, without corners, multi leveled with 6 m. plus height with natural light and ventilation. They also have multiple feed and water locations, sloping floors and ample large drains.

There are two outdoor areas for the gorillas; a larger approximately 1700 sq. m. area, and a smaller, about 1000 sq. m. surrounded by a combination of water moat and varying 4.5 meter rock barrier wall with an occasional visitor viewing window. The gorillas will have timed release food containers, similar to those in Rotterdam, such that they will roam the outdoor looking for food as they would in the wild. They will also have areas

Above: Conceptual plan of the new Shanghai Zoo gorilla exhibit.
Below: Construction of the new gorilla exhibit is underway (February 2007).
that they can choose to either be on display and view visitors, or each other or hide from view as well. The intent is to create an area where gorillas have freedom to move and behave naturally in a family setting and not be affected by visitors.

Keepers’ areas are located centrally and are organized along a single service corridor connecting all of the 3 day rooms and 2 outdoor animal areas, one outdoor keeper service area and second floor. It is envisioned that this facility will be able to accommodate and promote future meetings for gorilla research and primate management. Details are designed for keeper’s safety, maintenance free operations and efficiency of daily work tasks. The new facility will incorporate more modern, passive and active energy management systems. The main building orientation is east-west with most of the exposure south facing, allowing for better control of natural lighting, shading and thermal massing. Windows will be designed to give more control to keepers for air circulation and other energy saving elements. Solar hot water panels and photovoltaic panels are planned for installation. Overall the new facility will be a modern flexible facility able to accommodate new information, techniques and management systems for future generations to come, both gorilla and human.

Conclusion: Years ago, I was doing some research on how we could make small inexpensive improvements for poorer zoos to help chimpanzees. All it takes is the will and a local organization or zoo with the vision and desire to make change, and time. It is difficult to make change when the system does not encourage that. But every day is an opportunity for new relationships, sharing insight and positive change. So my challenge to all of you good keepers, designers and activists out there, is to develop tools, charts and small case studies, that could help zoos that either do not have the resources to make improvements or the will. If it’s the will, then we just have to be smarter than the problem to solve it, and never give up! The evolution of zoos will, of course, also change one day. But for now, those of us that work in and out of zoo’s have a responsibility to take every new zoo design project to a higher level. It’s like music. Every song different, some pleasant, some not, but at their core should be the expression of meaning in someone’s soul. In this case it should be the soul of the gorilla, both captive and wild.

All drawings and photos courtesy of the author.

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A Gladys Porter Zoo Fairy Tale

Once upon a time there were four sisters. All four were great girls with happy, healthy babies except for one. Penney’s three sisters had several babies and raised them all very well, except Mary, whose babies needed a helping hand. But Penney seemed to have trouble getting pregnant. Of course, this story is about our gorillas at Gladys Porter Zoo: Penney, Mary, Kayla, and Martha. Although she is the oldest, Penney had not had the fertility record of her sisters. So, General Curator Jerry Stones started asking questions about why Penney was different from her sisters in this regard.

The veterinary staff was on the case! After several attempts to help Penney through assisted reproductive techniques, such as in-vitro fertilization and embryo transfer, we started investigating further. Penney was cycling normally and an ultrasound examination of her reproductive tract found everything to be within normal limits and apparently healthy... but, still, no pregnancies. Then, a break in the case! Penney’s serum levels of prolactin were through the roof! Prolactin is a little-known hormone that affects the immune system as well as the reproductive system. It can have a negative effect on endometrial binding proteins which inhibit the implantation of embryos into the uterus. AHA! But, why was Penney’s prolactin level so high? Could the hormones from the assisted reproduction efforts cause this? No, prolactin is not affected by those hormones administered to increase ovulation or support pregnancy. Prolactin can be affected by abnormal levels of thyroid hormone and while we joke that some of our female gorillas must suffer from hypothyroidism, they all actually have normal thyroid hormone levels. I know because we checked! So, if the hormone treatments didn’t cause this and the thyroid gland is normal, what could the problem be?

Prolactin levels are regulated by the pituitary gland. The most common cause of elevated prolactin (hyperprolactinemia) in women is a pituitary tumor. The pituitary gland actually hangs on the pituitary stalk in a little chamber just below the brain. This inopportune location makes surgical removal of a tumor a bit difficult. Once an MRI confirmed that Penney actually did have such a tumor that actually was on the pituitary gland as well as the stalk, she was started on treatment. Fortunately, prolactinomas, or prolactin-secreting tumors, can be treated chemotherapeutically. Penney was started on oral medication twice a week for 8 months. Then, a repeat MRI revealed that the tumor had decreased in size and was no longer active and her prolactin levels were normal. Three months after finishing her medication, Penney had a positive pregnancy test! And October 14, 2006, she gave birth to a healthy baby!

Penney’s story does have a fairy tale ending thanks to the caring staff at the Gladys Porter Zoo. Many times questions lead us to answers we never knew existed. Because we kept asking questions about Penney, we discovered and successfully treated a life-threatening illness. Also, zoos across the country are now investigating prolactin in their female gorillas that have a history of low fertility. Also, veterinarians are discovering that prolactin plays a large role in the reproductive capacity of megavertebrates like the elephant and rhinoceros.

And Penney and her baby lived happily ever after.
Ventro-Ventral Copulation in Gorillas
Thomas Breuer & Mireille Ndoundou Hockemb, Leipzig, Germany

Our current knowledge of the sexual behaviour of wild gorillas is derived from an isolated population of mountain gorillas (Gorilla beringei) in the Virunga volcanoes, and from studies on captive western gorillas (Gorilla gorilla). The typical hetero-sexual copulatory posture of wild mountain gorillas is dorso-ventral,\(^{[1-3]}\) although ventro-ventral copulations of captive western gorillas have been observed.\(^{[4,6]}\) In most cases female gorillas initiate the copulation by slowly approaching the silverback male in a submissive posture.\(^{[1,5]}\) Male sexual displays have been observed preceding the copulation\(^{[5,7,8]}\) and both male and female gorillas can be heard vocalizing during copulations.\(^{[2,4,5]}\) Copulations are short (lasting around 1-1.5 minutes of pelvis thrusting),\(^{[1,2,9]}\) but it is difficult to see males ejaculating. Immature gorillas are often seen close to the mating pair\(^{[1]}\) raising the possibility that in doing so they gain sexual experience while watching adults. Field research on wild western gorillas has proven difficult, due to their elusive behaviour and the dense vegetation of the lowland forest in which they reside. Nevertheless, there is now accumulating information from a very few habituated groups and studies from forest clearings ("bais"), advancing our knowledge of the genus Gorilla.\(^{[10]}\) Here, we document the first ventro-ventral copulation in western gorillas in the wild, confirming the occurrence of face to face copulation in this species under natural conditions. Interestingly it was the same adult female "Leah" who was observed for the first time to use a tool in the wild\(^{[11]}\) (see page 66).

Our observations were made at the Mbeli Bai forest clearing, a 12.9ha large swampy forest clearing in the southwest of the Nouabalé-Ndoki National Park, Republic of Congo. Monitoring of the social organization, demography, and behaviour of western gorillas has been ongoing since 1995.\(^{[12,13]}\) Gorillas are habituated to the presence of researchers and can be identified by variation in distinctive features, such as pelage, nose-prints and shape of brow ridges.\(^{[12]}\) During the 2005 study period, the clearing was visited by over 130 different gorillas from more than 25 different social units (groups and solitary). Observations were made using 15-45x60mm telescopes from a 9-m high viewing platform, at a distance of approximately 90m. On May 3rd, 2005 we observed the George group entering the forest clearing at 8:37 in the
morning. George group was the most frequent group visiting Mbeli Bai in 2005 with a total of 58 visits. The group contained a total of seven members, including the leading silverback George, two primiparous adult females, Leah and Hillary, and one multiparous female Bessie. Leah’s daughter Nancy (3.7 years) and Bessie’s son Custer (3.4 years) were still suckling at the time of this observation. In addition, the group contained an adolescent female Betsy (6.7 years) who remained in the group after her mother transferred to a different group. During the visit (which lasted until 13:27 hrs.), before we observed the copulation, George was unusually vigilant both towards the observation platform and his two females Leah and Hillary. At 10:32 hrs. female Leah left the clearing and spent over two hours on the forest edge, while George was frequently resting nearby in contact with female Hillary. At 12:44 hrs. Leah re-entered the clearing and moved 20-25 m close to Hillary and George. At 12:53 hrs. Hillary moved away from George and one minute later George did a double-belch (grunt) vocalization and immediately after this, we heard a grumbling noise from the direction where Leah and her offspring Nancy were feeding. A few seconds later Leah was very vigilant and staring at George who was some 20-25 m away from her. (See photo sequences, next page). She continued to watch him for over four minutes and then slowly approached George and George watched Leah. When Leah was about 10 m from the silverback, George suddenly charged towards her direction and passed one meter away from Leah. George stopped 5 m from Leah, turned around and was displaying with a stiff limbed body posture, a tight lipped face and turning his head. Leah was staring at George and then started to make copulation calls, a series of rapid pulsating whimpers. She then approached George (followed by her daughter Nancy), who was still with a tight-lipped face but not any longer turning his head. His arms were in a relaxed position and when Leah was 1 m from him he opened his right arm and embraced Leah. We could not observe whether intro-mission or ejaculation occurred, but George started pelvic thrusting and this continued for approximately 1 minute and 10 seconds. Leah was lying on the ground and George was looking into Leah’s eyes. We could not see if Leah’s eyes were open or closed. George then bent over to lie on Leah, while Leah wrapped her legs around George’s waist. Meanwhile Nancy approached the mating pair and touched George’s arm and head and watched the scene. After the copulation, Leah was resting in George’s arm, while Nancy continued to hold onto George. After around 30 seconds George turned Leah on her back and again started pelvic thrusting, while Leah was wrapping her legs around George’s waist. After little more than 45 seconds Leah moved away from George for some 5 meters. Both rested for the next seven minutes, and then George approached Leah and rested within 2 m of her. For the rest of the visit Leah often moved away from George, frequently turning around and looking back at him. George always followed Leah and remained close to her. Finally the group left the clearing and returned one month later. It is not currently known if ventro-ventral copulations occur at a higher rate in western gorillas. The main activity in the clearing is feeding and in more than three years of observation we observed only one other copulation which was dorso-ventral. Also all other copulations in the 11 years monitoring at Mbeli Bai (n=10) were dorso-ventral (Mbeli Bai Study, long term records) and no ventro-ventral copulation has been observed in continuous monitoring of a habituated group in Mondika (n=342) (Doran-Steel, personal communication). Although the dorso-ventral posture is the most common position in mountain gorillas, one mating pair, which has been observed briefly, assumed the ventro-ventral position. Additionally in one multi-male mountain gorilla group, both silverbacks have been observed to mount in the ventro-ventral position on four different occasions (Fletcher, personal communication). Our observation confirms that our knowledge of certain behaviour of great apes is still in its infancy, and this is particularly the case for western gorillas. Great apes in Central Africa are declining at a rapid pace due to bushmeat hunting, habitat destruction and diseases, such as Ebola. Long-term studies such as the Mbeli Bai study not only aid the conservation of this critically endangered species by providing important demographic data, but also demonstrate that more fascinating behaviour remains to be documented, which has often previously been observed in captivity.

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Gorillas at Zurich Zoo
Denise Nierentz, Zurich, Switzerland

At the moment our gorilla group consists of nine animals. Ngola, the silverback, was born 1977 in Jersey and arrived at Zurich 1984. He is a very friendly dad to his kids and is a calm silverback. People from other zoos say that he is a very short silverback, but of course to us at Zurich Zoo he is the most beautiful, and our big boy. He is very protective of his family. When a female leaves to go to another zoo, he spends days in the off-exhibit area crying and looking for her all over, before he accepts the fact that she is gone. He is a very gentle silverback - with his children, his females and his keepers. However, he doesn’t like to be touched by humans, so we try not to overdo it.

The names of our adult females are Mamitu and Nache. Both came to us at the age of about 2 years in 1979 and 1981 from Stuttgart Zoo, where they had been hand-reared. Luckily both of them turned out to be good mothers, but very different from one another and not only just in their mothering styles. Mamitu is a very active gorilla, and still very focused on humans, but she also helps us a lot. When a gorilla doesn’t want to come into the holding area (which they need to do in order for us to clean the exhibit), Mamitu will leave the area again and try to get that gorilla to come inside. She will just grab the young ones by the arm or chase them inside, and with Ngola she tries in more charming ways. Mamitu also likes human attention. When an item which is not supposed to be in with the gorillas is detected, we call Mamitu, show her a peanut and point to the item (most of the time she figures it out herself what it is we want) and she gets it for us and trades it.

Nache, on the other hand, is not interested in us at all, except for us being the food delivery. She’s an eating machine and tends to forget everything around her when it comes to food. Sometimes she even forgets her babies and runs off to get to the food, ignoring the baby’s screams in her rush to get to the food quickly. Once, when her youngest one just started moving away from her a bit, I didn’t count the baby yet when I called the gorillas into the holding area for their breakfast. I just assumed he was with his mother. So on that day I got the group shut in and even made it back to the kitchen before Nache heard her baby crying in the exhibit (behind the now closed door) and started screaming herself. I learned from my mistake and Nache forgave me (that cost me a peanut). There is also a big difference in Mamitu and Nache in the way they raise their offspring. As mentioned, Nache is rather careless and tends to forget about being a mom, while Mamitu is very protective of her young. This shows well in the development, as Nache’s children leave their mother sooner than Mamitu’s do. They are much more courageous and exhibit chest-beating earlier (and are embarrassed when they fall on their back trying). Usually Nache has her baby about 3 months before Mamitu does, making this a hard time for Mamitu, as it makes Nache the center of attention (not that she would care).

The third female is N’Yokumi or N’Kumi (see Gorilla Gazette 16, June 2003). She arrived at Zurich Zoo in June 2005 from Stuttgart and she had some difficult months ahead of her following her arrival, but we can now say that she is happy in the group. We got a special permit to quarantine her in the ape house, so she could hear and smell the others from the first day. After quarantine a slow integration process began, which included looking, touching, letting only the young ones in with her etc, but it all came to the same result: N’kumi obviously wanted to get out of there and be with us humans rather than with those black animals. It was a bit surprising, as she had been with other gorillas in Stuttgart, but initially she was clearly terrified. Our three boys soon found out that N’kumi would start screaming as soon as they touched her, and of course they found great pleasure in picking on her. It took a long time before she finally realized that she could stand up to those boys and didn’t
need to be their playball. Slowly friendships started and
the boys were no longer quarrelling about who was first
to tease the new girl, but rather about who was allowed
to sit next to or play with her. It was like watching teenage
boys showing off and trying to impress the girls. How-
ever, N’Kumi still didn’t like Ngola and didn’t seem to
know how to perform submissive gestures. In the begin-
ning she used to scream whenever he just came close or
even looked at her. She received some bites from him,
which is no surprise, as she used to bang him in the chest
with her fists instead of taking a submissive posture.
During that time Ngola often showed that he is a softie
inside and he just sat close to her as if to say ‘‘you see,
I’m a nice boy, I won’t harm you.’’ She was still scared,
and of course he couldn’t let a teenage girl hit him with-
out responding. This was very painful to see but also
gradually improved. Mamitu soon showed her kindness
towards N’Kumi and let her sit near, while Nache, as
usual, didn’t really care as long as it wasn’t about food.

With N’Kumi’s integration improving, Nache’s be-
havior also changed. Ma-
mitu is the dominant fe-
male, so Nache is num-
ber two. As N’Kumi was
no longer the outsider,
but started to become a
part of the group, another female in the group,
Nache’s attitude changed and she became more
unfriendly towards
N’Kumi. I guess it was
that with N’Kumi being a
female in the group
Nache started to worry
about not losing her rank
to N’Kumi. Luckily
Nache is too lazy to do
much harm, so her unfriendliness was always just cough-
ing and glaring at N’Kumi (typical of Nache, this hap-
pened mostly when N’Kumi took some food). Sometimes
Nache’s behavior made the whole group go after
N’Kumi, but most of the time it didn’t have any conse-
quences at all. So N’Kumi is learning to be out of
Nache’s sight, and Nache is back to caring about her
food. After many weeks N’Kumi still preferred to sepa-
rate herself from the group and sit in the holding area,
where she could see us keepers going in and out of the
kitchen. So we closed the holding area during the day and
she was forced to be with the group. Often she sat outside
alone, but after some time we saw her more and more
often playing with the boys or sitting next to Mamitu
feeding. She found her preferred spot in the enclosure
where she likes to eat, play by herself, bite a rope or just
playfully defend her spot against the still interested boys.
She plays with the youngest ones (Enea and Eyenga) and
takes great pleasure out of babysitting them. And of
n course, the boys are happy to have a girl for practicing
sexual behaviors or just to show off how incredibly cool
they are!

The three boys are Azizi, Bonsenga and Binga. Azizi
(born 2000) had a hard time in life, since his mother, Sand-
dra, passed away when he was about 2 years old. Keepers
had to pull him off her dead body and he didn’t trust peo-
ple after that for quite a few years. Even now he has days
when he moves away from the fence when someone
walks past, to prevent the keeper from touching him, but
then on other days he likes to play and be tickled. Azizi
grew a huge big belly after his mother died, probably
because he had to stop drinking milk from one day to the next.
He was a very funny looking gorilla, just like a
black round ball with short arms and legs stick-
ing out. In the meantime
this has grown out a bit
and he had started grow-
ing also in length, not
only width, so he doesn’t
look that funny anymore,
but he seems to have de-
veloped a sense of hu-
mour and likes to play

N’kumi (left) and Azizi, stealing milk from Nache (right).

tricks on the others (mostly on or about N’Kumi). Azizi
also loves noise and as he is the oldest and the strongest
of the three boys he often has all the plastic bowls we
give them and likes to find new ways to make noise with
them, until Ngola’s had enough of it and confiscates all
those bowls.

Bonsenga is Nache’s son, born in 2001. He once es-
apped through a small door at the top of the roof which
we sometimes open to give them branches or wood with
raisins inside drilled holes. Luckily it was not possible
from where he was to get outside or anywhere near visitors, but it was an exciting chase to get him back inside. This was when he had his horrible phase of "I am the best teenage gorilla in the world" and we often thought if he was a human boy, he’d be one of those we’d like to not visit the zoo because they have nothing but loads of nonsense in their heads - the kind of boys wearing their big jeans below their butt - I’m sure you all know them! But as Bonsenga grew older he became a bit quieter and in fact seems to be N’Kumi’s best friend (steady boyfriend?) now.

Mamitu’s son, Binga, is just cute. He was also born in 2001 and is rather quiet and funny, and although he needs to show off as well, he also loves to play girl’s games and carry his younger siblings on his back. Binga was very ill when he was a little over 2 years old and we had to take him away for a few days, since he was feeling so bad that he didn’t take any medicine and didn’t get to the food. It was hard for us to see him sitting alone, sick, small, lonely, but it probably saved his life, since we were able to treat him medically and feed him up a bit for a few days. When he returned to the family Mamitu immediately came to pick him up and Binga went to every one of the group to say "hello." At that time a Swiss television team was filming some animals at the zoo, and they filmed Binga on his return going up to Ngola and touching faces with him. People still come up to us and ask "Which one is Binga, the one we’ve seen on television?" They are always surprised at how healthy, happy and big he has become. What is also so nice about Binga is that he didn’t seem to keep any bad experience from "the bad humans taking him away." He retained his friendly manner towards us humans and often comes for contact, or a back massage or just to look at what we are doing.

Eyenga and Enea are our youngest offspring from Nache and Mamitu, both born in 2004. Eyenga, a male, was born a few months earlier and is much more independent, but Enea, a female, clearly profits from her older half-sibling. For example when we show them a cricket, Eyenga takes some time to get himself to dare and look at and finally touch it, while Enea first takes off to mom, but when she sees that Eyenga is doing something she becomes curious, approaches and watches the whole scene from a rope above everyone’s head. There she feels safe as long as no human looks at her and we all pretend we don’t know she’s there. Often Eyenga can help her to forget that she is scared and curiosity takes over. But Enea is not just the shy shadow behind Eyenga, oh no, when it comes to food she coughs at her older half-sibling and doesn’t hesitate to try taking it away from him. I didn’t know gorillas could cough like that when they are still so tiny and cute, but Enea coughs like a big one already!!

At Zurich Zoo there is an inside and an outside enclosure and six holding areas which can be opened to one another (three and three). The outside enclosure is open during the summer, fall and spring, but is closed during the night or on very cold days. But even in winter we sometimes open it for a short while so our Swiss gorillas can experience snow, which is always good fun for everybody. Usually after having had a first look at that white stuff they go back inside and grab some straw in each hand and foot, so they wear it like shoes to keep dry and warm. The younger gorillas like to touch the snow and eat a little bit, and then they shake their hands as they get cold. In the morning at half past 7 we call the gorillas into their holding area (or in summer outside), where they receive their breakfast and stay for about 2 hours until we’ve cleaned the enclosure. The floor is filled with wood chips and they have loads of straw to make nests and where we can hide their food. There are many dead trees to climb on, ropes and hammocks, and there is a tower from which water runs 24 hours. Two to three times a week we bring in fresh branches with leaves which we attach to special holders so they stand like trees. There is browse given on a daily basis. Feedings are 7 times per day, mostly given with some enrichment. Occasional nonsense like an old T-Shirt given into the enclosure usually gets no attention from the adults and guarantees an hour or two of excited playing and chasing each other or wetting it to clean the enclosure themselves, by the younger gorillas. The zoo’s master plan includes a new gorilla area but it will still be a few years before it is built.

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All photos courtesy of author, except as noted.
Intro of a Female Gorilla into a Small Group
Tjerk ter Meulen, Limburg, The Netherlands

Situation in GaiaPark: Two Apenheul-born males: Makula, silverback, born February 1990 and M’tonge, blackback male, born February 1999 and adult female Irala, born April 1985 in Krefeld Zoo, Germany. All three animals were mother-reared and grew up in social groups. The males are paternal half-brothers and grew up in the same group at Apenheul Primate Park in the Netherlands. Irala was introduced as an adult into the Apenheul group in December 1997. After a temporary separation of the animals from their natal group at Apenheul, they were transferred to Gaia Park in March 2005.

On 01 June 2006 a new group member arrived: Juvenile female Sangha, born March 2000 in Berlin Zoo, Germany. She was hand-reared in very close contact with a keeper and consequently is very attached to human caregivers. She was re-introduced into a sort of social group at Berlin Zoo. However, this group lacked a natural social structure and in a way that makes her very keen for keeper attention. She has a bad kind of aggressive (spoiled child/bratish) manner, which means she mostly reacts very unpleasantly towards other animals, new things and keepers in order to get her own way. An obvious sign of stress or habituated abnormal behaviour is her regurgitation. It is hard to find out if this is related to stress or just a habit, because she grew up with her brother and sister who also have this behaviour. Her position in the Berlin group was very uncertain because there was no real social structure, and Sangha is an animal who likes to spend a large amount of time on her own. Her regurgitation behaviour is then very intense, and she is focused on it. So the question is: Does she like to spend time on her own because this is her character or does she like to spend time on her own to regurgitate quietly and peacefully?

After Sangha arrived, we accommodated her alone for some days to let her get used to the new building, the keepers and the daily routine. During this period she spent most of the time in room 1 (see map of building, on the next page) where she could see, smell and hear the other gorillas. After a couple of days she was allowed to inspect the whole building, while the other gorillas were in the outside exhibit. This is important because with the sliding doors on different levels and the building divided into 5 rooms of approximately 40 sq. meters each, it can be quite complicated. Therefore, it seemed logical to us that we give Sangha some days to get used to the space and possibilities. She seemed relaxed, and enjoyed this time with the keepers and was easy to transfer, e.g. in going back to room 1.

On the 12th of June (just before the start of the introduction) Sangha was in Room 1; Makula was in Room 3; and M’tonge and Irala were in Room 4. We prepared for the first physical encounter. To keep the situation relaxed, we spread food around room 2 to allow the individuals to focus their attention on the food instead of each other. We decided to first introduce Sangha to Makula. We let in Sangha and when she was calm and eating, we let Makula in as well. As long as there was food available there was no interaction, but interactions started when all the food was gone. Makula tried to dominate Sangha; but Sangha is much smaller and she can run and hide from Makula which of course frustrated him. Unfortunately Sangha did not react submissively, but instead tried to beat Makula.

Luckily, the socially experienced silverback ignored this inappropriate behaviour. Between 9 and 11 o’clock Makula hit her once and he tried to impress her by beating his chest, but he still ignored her strange way of reacting towards an adult silverback. In the meantime, Irala and M’tonge started to get nervous and Makula noticed this and did not know how to react. He wanted to “help” Irala, of course, but because he was locked in with Sangha he could not do anything, so we decided to separate M’tonge and Irala and now Makula and Sangha were in Room 2; M’tonge was in Room 4; and Irala was in Room 5. Sangha started to regurgitate, but this was the first time she did in in this new situation with another gorilla around. Of course, Makula tried to eat it, which
irritated Sangha. Because of this there was some activity with Makula going after Sangha until Makula started to vocalise. He made nice, friendly, calming sounds, to which Sangha reacted by looking at him. This was quite special as it was the first time she reacted to ‘gorilla’ behaviour and she reacted positively to a positive sound. They then both settled down for a while. After half an hour Makula made very excited vocalizations and some chest beats towards the other two gorillas. After this, he climbed on one of the plateaus to eat a branch. Obviously, Sangha was curious and she moved towards Makula and soon she sat under his plateau chewing on the same branch as Makula.

Around 1 p.m. Makula started to react more and more nervously towards the mesh in the direction of the other gorillas. We decided to provide food for all the gorillas, and they all ate quietly, even Sangha. Normally at this time of the day there is a public feeding and of course Makula wanted to go to the other gorillas. But the food relaxed them all. Around 2 p.m. we started to introduce Irala by giving her the opportunity to go to Makula and Sangha. Irala, pregnant in her 7th month, went immediately to the others, so we closed the sliding door again. So now there were three of them in room 2. Makula seemed pleased with Irala’s presence, which he showed by making friendly sounds and being much more relaxed. Irala herself first ignored Sangha. We gave them extra branches and they ate but spatially distant; Sangha in one corner, and Makula and Irala in the other corner. Finally, no interaction was observed between the two females for the next 3 hours. Around 4 p.m. food was provided again, but Makula took all the greens from Sangha, so we stopped feeding them together. The following hour was quiet and the individuals ate. The rest of the afternoon the animals were all quiet and they ate their branches.

Around 5 p.m. (coincidentally?) Makula and Irala stood up and unintentionally walked in Sangha’s direction, which frightened her. Sangha screamed, pushed Makula away and climbed up on the balcony as soon as she was able to. Makula and Irala seemed a bit shocked by all this and sat back and relaxed. As there were not so many interactions between the animals, and Sangha and Makula ignored each other a lot, we decided to postpone the introduction with M’tonge to the next day. We expected him to chase Sangha a lot and wanted Sangha to gain full support from Makula in such a situation. During the first night, Makula, Irala and Sangha had access to Rooms 2 and 3 and M’tonge was in Room 5.

On the 13th of June, we spread a lot of food and branches in the rooms we expected them to use, but then we just left the three in room 2 and gave M’tonge the opportunity to go there as well. All individuals were left together around 9 a.m. As expected, M’tonge immediately started to chase Sangha and tried to grab her. After a while Makula was fed up with it and supported Sangha. M’tonge walked around with tensed lips, but Makula kept helping Sangha. Around 11 a.m. M’tonge really attacked and hit Sangha, so Makula then punched M’tonge, and in the meantime Irala started to bite Sangha. It took Makula some time to resolve the situation. But after this the others respected that Makula is a real silverback who will not accept any aggressive behaviour behind his back. Sangha unfortunately screamed a lot and often this seemed to work badly on Makula’s nerves. Between 11 a.m. and 2 p.m., M’tonge often tried to challenge Makula and the atmosphere was getting unpleasant. Finally Makula and M’tonge started to fight, and in spite of Makula being twice as big as M’tonge, the latter tried to bite him and the fight looked quite serious. And while the males were distracted, Irala tried to bite Sangha again. When they were all done, we decided to give them more space, but M’tonge was not yet done. He went on and on trying to provoke...
Makula and Sangha. Makula demonstrated his social role and that afternoon there were some more fights which were quite intense. However, the most important thing was that Makula defended Sangha. Therefore, from that moment on we decided to leave them all together for the night.

In our opinion this stage of the introduction wasn’t too bad at all; we only had to wait and see how M’tonge would behave towards Sangha in the future. One day later on the 14th June, we introduced the Black Mangabeys (Lophecebus albigena aterimus) together with the gorillas, without any serious results. They seemed to ignore Sangha. On the 15th of June we noticed that the gorillas felt like going to the outside exhibit. We were concerned about Sangha’s reaction, as she would have to follow Makula closely. When we opened the sliding doors, Makula did his best to take Sangha out as well, but she started to scream and refused to go with him, while the rest ran out. As soon as M’tonge realized that Sangha had stayed in alone, he went to her and started being aggressive. Hearing Sangha screaming, Makula came running and saw his chance to beat him up. For Sangha it took some time to explore the whole island. She was used to an outside enclosure with grass and trees in Berlin, but not to water. So on one of her first days she got her feet wet, but noticed that this was cold and wet. The island is about 3000 square meters with quite a lot of hills, and the hills were especially a little problematic. When M’tonge chased her she sometimes slid and fell. Makula defended her, but he couldn’t be there all the time and unfortunately she still did not stay with him a lot. In a couple of weeks, Sangha explored the island and discovered the public feeding place, but M’tonge kept on provoking her. However, as she screamed so often and so readily, Makula got habituated to this and did not intervene at once. Due to this, M’tonge got more chances to chase her, while Irala still ignored her. This situation stabilized and went on for at least 2 months, without real progress. Sangha was really interested in coming to the feeding place, but most of the time she was chased off by M’tonge.

On the 10th of August 2006, Irala gave birth to a healthy daughter and the group situation changed. This opened up a really new era for Makula, as it provided another reason to be a serious leader. As Makula seemed busy with his new father role, M’tonge took opportunities to harass Sangha even more. Fortunately the juvenile female herself showed real interest in Irala and her offspring. On the same day we saw for the first time that Sangha was in oestrus. Of course Makula mated several times with her and during the next 3 days it looked like everyone had relaxed and problems were solved; the “group” seemed calm. After the oestrus, life continued but Makula seemed to be more aware of Sangha. She was even allowed to come to the outside feeding place without being chased away by M’tonge, and she really had the opportunity to eat and spend some time there. At the next oestrus she appeared to be more shy and uncomfortable, even when Makula mated with her. During the third oestrus she seemed to be relaxed and we felt that she had finally settled in the group. Unfortunately this was, up to the time of writing, her last oestrus, and the last time that year we would be positive about the integration. During the last months of 2006 things did not go better; they became even worse. Sangha stopped going out of the building. She did not eat enough, ignored the other gorillas as much as possible and became very afraid of M’tonge. Even for the keepers it was hard to make contact with her. Of course we became worried about her, but we did not know what to do exactly. We hoped that either Makula would start to give her attention or that she would go back to her old self. But her self esteem was gone and the only thing she did was to regurgitate. Because of her regurgitation behaviour and her lack of self esteem, Sangha became quite depressed. As it looked like nothing would change, we decided to intervene in the social structure of our little group. It seemed that she was sort of gliding into depression.
We knew of some zoos using Prozac with their great apes and the veterinarian discussed this with the EEP coordinator. After this, the decision was taken to also try this with Sangha. We gave her Prozac because she seemed to be depressed, but this is something which is very hard to be sure of. In the meantime, the relationship with M'tonge was especially bad; Makula spent a lot of time with Irala and her baby and he did not help her enough. Unfortunately when Makula stood on her feeding site she did not like it, reacted negatively and looked for a place to be on her own. Besides giving her Prozac, which should reduce the habit of regurgitation and hopefully would give her more pleasure in life, we decided to interfere with the group. Our plan was to separate M’tonge during feeding time which would result in Sangha eating more and better, something she really needed at that time. Another reason for separating M’tonge was the future; the base for our group would be Makula with Irala and Sangha, not M’tonge. So the plan was to feed M’tonge in room 3 every feeding; he quite soon got used to it and seems to be happy with it. Makula and Irala have their breakfast and dinner in the separation room and the feedings during the day in room 2. This also was very soon a habit. Sangha gets her breakfast in room 4 (so we can clean room 2, which is the favourite room of all the animals) and she eats together with Irala and Makula during the day. In the evening she has her dinner in room 2. We have been doing this for 3 weeks now and all the animals seem quite relaxed with it. This is something we did not expect to observe so soon.

Sangha is finally getting a small “gorilla-belly” and her regurgitation behaviour has decreased. Of course we will never know if this is because of the Prozac or the change in feeding structures. What is for sure is that she has started to trust Makula much more and seems not to be so afraid of M’tonge anymore. What we hope now is that this period will give her so much self-esteem that she also dares to come to the outside public feeding place when spring arrives, and maybe one day will just follow her leader. Of course this will be a very exciting time because when they are in the building we can force things a bit, but when they are outside again the animals have to do it by themselves. This is a story with an open end, but we all hope that one day Sangha will live and think like a “normal” gorilla.

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Notes:
PASA’s Expanded Challenge
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The Pan African Sanctuary Alliance (PASA) was founded seven years ago to promote unity and cooperation among its member organizations, which include established sanctuaries from Gambia to Zambia and from Kenya to Cameroon. But what about non-members? PASA sanctuaries collectively care for over 750 chimpanzees, 85 gorillas, 55 bonobos and literally thousands of other endangered primates, yet there are still hundreds more orphans at ad-hoc facilities throughout Africa. Some are crumbling colonial-era zoos, some are tourist hotels that never took off, and still others are earnest sanctuaries in various stages of development. But PASA is increasingly compelled to work with these organizations as it monitors the movement of captive primates throughout Africa. One of the problems is that PASA sanctuaries are already at capacity or beyond, and struggle to manage the steady stream of confiscated orphans as it is. To simply close down poorly run facilities across Africa or ask governments to confiscate the primates would overwhelm PASA sanctuaries and compromise the welfare of the chimpanzees, gorillas and others already in their care. For that reason, PASA engages non-member organizations as a protective buffer for its own sanctuaries. But more important is PASA’s role in encouraging African governments to enforce the laws that protect great apes. Without sanctuaries to care for the confiscated primates (or other wildlife), law enforcement inevitably wanes and the illegal trade – be it bushmeat, live animals or both – surges back to life.

In Cameroon, PASA has helped coordinate medical assistance, food, and managerial support for a small sanctuary on an island in the Pongo Songo River in the southwestern region of the country. Although begun by a French-based organization, the sanctuary lacked veterinary protocols or any management plan, and PASA was forced to intervene repeatedly to ensure the health of the 11 chimpanzees on the island and four infants being kept in a village nearby. At present, PASA is working to install a permanent manager and identify funding. In Angola, a request from the Government of Angola to help confiscate and protect more than a dozen formerly captive chimpanzees in the nation’s capital into a three-year project that grew to include a start-up sanctuary in South Africa. The chimpanzees had been released or abandoned following fears of an outbreak of the deadly Marburg virus, and were identified with the help of local volunteers and a grant from the Disney Rapid Response Fund. The first chimpanzees were eventually transferred to the new Jane Goodall (JG) – Chimpanzee Eden sanctuary in South Africa in 2006, and it is hoped another airlift can be organized for later in 2007.

In Gabon, PASA helped coordinate a response to a health crisis in mid-2006 that resulted in the deaths of three captive gorillas kept at the Petit Evengue island.

Left: Chimps at the Atlantic Beach Hotel in Limbe (now at the PASA sanctuary, Sanaga-Yong Chimpanzee Rescue Center in Cameroon). Photo by Jane Dewar. Center: One of the chimpanzees burned in the Lumbumbashi Zoo (DRC) fire. Right: Veterinarian Peter Appell of PASA/JGI attending to a confiscated chimpanzee at Lwiro. Photos courtesy of PASA.
facility adjacent to the Loango National Park (see Gorilla Gazette, April 2004, pgs 16-17). Working with a Canadian veterinarian hired by the Wildlife Conservation Society (WCS), PASA donated medical equipment and veterinary manuals to the project, and continues to monitor the gorillas’ health. But Gabon is problematic for PASA, as the country is crisscrossed by hotels that use infant chimpanzees and gorillas as tourist attractions under the guise of a “sanctuary”, yet no clear law enforcement protocol or captive-care standards exist. That is why PASA is consulting with the Shelton Ape Foundation (SAF), an American organization that hopes to establish a chimpanzee and gorilla sanctuary in Gabon later this year, and may seek to stage a captive primate workshop in the country by 2008.

In the Democratic Republic of Congo (DRC), PASA responded to an emergency in September, 2006, when five confiscated chimpanzees were trapped in a fire set by a disgruntled employee at the Lubumbashi Zoo. Although two chimpanzees died in the fire, the other three survived with injuries, and PASA rushed a veterinarian to the scene from neighboring Zambia. A third chimpanzee was too badly damaged and needed to be euthanized, but the remaining two were saved. PASA has also engaged the Lwiro rescue facility in the eastern DRC since 2003. Housed in a converted research center that lies alongside the Kahuzi-Biega National Park, Lwiro enjoys the official support of the DRC government, and currently cares for over 20 chimpanzees and more than a dozen baboons and other monkeys. PASA brought the Lwiro staff to its annual workshops from 2003-2005, and supplied the center with veterinary and conservation education materials. Although management and funding problems hindered efforts to improve the facility, PASA is hopeful that a new consortium of NGOs – including the Jane Goodall Institute, Cooperia, AWARE, and the Pole Pole Foundation – can finally stabilize the site.

In Sudan, international relief workers began reporting infant chimpanzees that were appearing at refugee camps in late 2005. Although probably smuggled across the border from the DRC, the chimpanzees were nevertheless in need of care and a suitable home. PASA reported the situation to the United Nations Environment Programme (UNEP) – which promptly warned its employees not to buy or trade for chimpanzees or other wildlife, for fear of creating a black-market trade – and PASA undertook negotiations with the Government of Southern Sudan. Although the chimpanzees remain in Sudan, it is hoped they can eventually be transferred either to JG-Chimpanzee Eden in South Africa or a PASA sanctuary in Eastern Africa. In Côte d’Ivoire, the dilapidated Abidjan Zoo is a major concern for PASA, as are other colonial-era zoos in the Democratic Republic of Congo (Kinshasa), Congo (Brazzaville), Ethiopia (Addis Ababa), Sudan (Khartoum), and Ghana (Accra). In most cases, the zoos lack the funding or expertise to properly care for the primates – or any animals – in their collections. But African zoos employ large staffs and are viewed as a viable revenue stream, and many fall under the control of ministries that safeguard such public institutions. As a result, the zoos limp along, with the animals – which include chimpanzees, baboons, macaques, Vervet monkeys, among others – suffering the worst.

When PASA was founded, it contained no provision for the captive populations of chimpanzees, gorillas, bonobos and others that might exist outside its membership. But it has quickly become clear that those populations – while often existing in harsh conditions barely removed from their original capture – are no less important, and will continue to receive PASA’s commitment and concern.

"PASA member sanctuaries are committed to providing the best possible facilities and care to captive African primates in Africa, while working towards the protection and conservation of the species in the wild." PASA mission statement

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“Taiping Four” Gorillas: An Update
Felix Lankaster, Limbe, Cameroon

Oyin, Tinu, Abbey and Izan, more commonly known as the “Taiping Four,” (T4) are possibly the most (in) famous gorillas in the world. Their story is familiar to many of us: captured from their forest homes in Cameroon, they were smuggled to Nigeria, where they were kept at Ibadan Zoo before being flown, in January 2002, with South African Airways via Johannesburg, to Taiping, Malaysia. Whilst being kept behind the scenes at Taiping Zoo, news of the four new gorillas leaked out, and an investigation into their actual origin was carried out by the International Primate Protection League (IPPL). It was soon discovered that the gorillas were not in fact captive bred in Nigeria, as their falsified CITES documents alleged, but had been taken from the wild in Cameroon. The ensuing furor resulted in the gorillas being confiscated from Taiping Zoo by the Malaysian Government and returned to Africa. Here the story took another twist: rather than sending the gorillas to their country of origin, Cameroon, the Malaysian Govt. decided to send them to live in Pretoria Zoo in South Africa.

The Taiping Four arrived in Pretoria in April 2004 and ever since the international conservation community (including IPPL, International Fund for Animal Welfare (IFAW), the Pandrillus Foundation and the Last Great Ape Organisation) have campaigned vigorously for their return to their actual home, Cameroon. The argument being that it was members of the zoo community that were complicit in the original crime that had resulted in the four infant gorillas being taken from their forest homes, at the cost of who knows how many of their family members’ lives. So, it is argued, it should not be the zoo community that end up benefiting from the gorillas now that the crime has been exposed. Rather, the gorillas should be returned to live in their country of origin, in a sanctuary, not a zoo, that has rehabilitation and release as its core philosophy, and has active conservation education programs designed around the animals it houses and aimed at the very people that share their country with gorillas, and who will, ultimately, decide the fate of the species. After many, many, months of debating the nuances of CITES (Convention on International Trade in Endangered Species) regulations it was decided that the confiscating authority, in this case the Malaysian Government, had, in the eyes of CITES, the authority to decide where the confiscated apes should end up. Subsequently, the Malaysian Government sided with the conservation community, and decided that the Taiping Four should indeed be returned to Cameroon.

Finally, 5 long years after they had been smuggled to Nigeria, December 13th, 2006, was set as the date that the T4 would be returned to Cameroon. The plan was that they were to be brought to live in the Limbe Wildlife Centre (LWC), a rescue and rehabilitation project in the South West Province of Cameroon that is home to 11 other western gorillas. The head keeper of the LWC, Jonathan Kang, flew to Pretoria Zoo three weeks early to become acquainted with the four gorillas, so that on their return to Cameroon they would have at least one familiar face to reassure them. One week before the transfer date, I also flew to Pretoria to perform pre-transfer health checks on the gorillas (photo left), to check the transfer crates and to help the IFAW representatives prepare for the transfer.

On arriving in Pretoria my first impression was of how large the four “babies” were. The largest of the four, Oyin, a female, was bigger than any of the females at the LWC and the other three were not much smaller. I’d estimate that they were, at least, between 7 and 10 years old. They were all in good health and seemed happy in their enclosure. The keeping staff at Pretoria Zoo clearly loved and cared for the gorillas very much. It was a difficult situation for everyone involved, as Jonathan and I had essentially come to take away their beloved gorillas for whom they had been caring for 2½ years. Yet, despite the potential for tension, everyone at Pretoria Zoo helped us enormously in our work and the health checks, which involved each gorilla being anaesthetised and having faecal and blood samples taken, a thorough physical exam-

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ination performed and having intra-dermal and gamma-interferon tuberculosis testing done, which went by smoothly. We now had to sit and wait for the blood, faecal and TB test results to come back before the transfer could take place, and, so we thought, we might have a few moments to relax. How wrong!

Suddenly the news trickled down that there was a problem at the level of the Department of Science and Technology, in the Republic of South Africa (RSA) Government. I was called into a crisis meeting to be informed that the Malaysian Government had requested, many months previously, written confirmation from the RSA Government that financial compensation would not be demanded from the Malaysians for the years that the T4 had spent in Pretoria Zoo once the gorillas were returned to Cameroon. This letter, which detailed the Malaysian Government’s request, signed off with a critical line stating that until such a letter was received by the Malaysian Government, the gorillas must, under no circumstances, be moved from Pretoria Zoo. Now, three days before the gorillas were due to be transferred to Cameroon, after health checks had been performed, Kenyan Airways planes re-routed to accommodate the transfer, and crates constructed, we were informed that this official request had been accidentally overlooked and had only now, at the eleventh hour, come to light. Suddenly the transfer was off. Swift telephone calls had to be made to Cameroon to inform the Government of the debacle, and that their extensive welcoming celebrations needed to be cancelled. It is easy to be a conspiracy theorist and to assume that some cloak and dagger mischief had been designed to delay the transfer, to demoralise those involved and possibly totally scupper the plan. However there is no proof of this and it may well have been a simple, if very careless, bureaucratic error. Now, several months on, we are informed that the transfer has been delayed, not cancelled, and that the RSA Government has now complied with the Malaysian Government’s demands and that we should be hearing very soon of a new transfer date.

Stay tuned! Watch this space!

Left: Two of the four “baby” gorillas known as the Taiping Four at the National Zoo in Pretoria, South Africa.
Right: LWC’s gorilla enclosure will be the new home of the T4 gorillas.

All photos courtesy of the author.
Recap of the Paignton Gorilla Workshop 2006

The 2006 "English Riviera" International Gorilla Workshop was hosted by Paignton Zoo Environmental Park, UK and took place at the Imperial Hotel, Torquay, 23rd – 26th June. This is the first time that this conference has been held outside of the North American continent, and as such encouraged participation from a wider range of European zoos. The 3-day meeting was preceded by a day trip to the Eden Project in Cornwall, where those who took advantage of this tour saw how an old redundant mining quarry can be transformed into an innovative “theme park” with strong ecological and environmental messages. Five huge domes containing recreated Tropical Forest and Mediterranean habitats, along with museum activities and creative horticultural exhibits all made for an enjoyable and enlightening precursor to the Icebreaker that evening.

The conference was attended by over 90 international delegates from 16 countries comprising experts, both academic and professional, in gorilla conservation, husbandry and research from all over the world. The participants were entertained by a wide range of talks covering everything from managing gorillas in zoos to the work of sanctuaries and conservation efforts in the wild, with additional discussion workshops on topics concerned with husbandry. Two travel grants of £500 were made to two of our speakers from the 'carried over Calgary Workshop fund' to enable them to attend, one of whom was Cynthia Cipreste, Belo Horizonte Zoo, Brazil. As part of her presentation, Cynthia showed us a wonderful gorilla exhibit currently occupied by a lone wild-caught male, Idi, who hopefully with some improved inter-regional cooperation will soon be joined by a female or two!

A grand total of £1283.50 was raised by a Silent Auction - a BIG thank you to the donors and buyers for contributing to this. A donation from the accumulated workshop fund of £1500 was made to the Cameroon Wildlife Aid Fund such that the workshop fund now stands at £1,117.01 (that 1 penny makes all the difference!) to be used by the next host for travel grants. A Race Night dinner on the last evening and a post-conference tour to Bristol Zoo the following day rounded off a thoroughly enjoyable conference. I would like to reiterate my thanks to the Paignton Zoo staff who put in so much effort into its organisation, all of you who attended for making it such a worthwhile event and in particular to those who gave presentations without whom it would just have been a programme of non-stop eating, drinking, lying out in the sun and visiting zoos. Hang on a minute, what a great theme for the next workshop!! The proceedings of this workshop are nearing completion – an announcement will be made on the gorilla list-servers when they are available.

Clockwise from right: Break time in a beautiful setting; Belly dancing fun, with identity disguised for job security(!); Eden Project; Paignton Zoo’s all male gorilla group.

Eden Project photo courtesy of author; other photos courtesy Jane Dewar.
Gorilla Workshop 2008!

GORILLA WORKSHOP
DISNEY'S ANIMAL KINGDOM
2008
BREVARD ZOO

More details found at the GW 2008 website: http://www.2008gorillaworkshop.com/

When: January 23rd – 27th 2008
Where: The Radisson WorldGate Resort in Kissimmee Florida, USA, 1 mile from Disney’s Animal Kingdom.
Registration Fee: US $195 per person, which will cover many of your meals, coffee breaks, a conference t-shirt and bag. $10 of each registration fee will be used to support in situ conservation project(s).
Keynote Speakers will include Mbeli Bai field researcher Thomas Breuer, Doug Cress of the Pan African Sanctuary Alliance, Alicia Lilly of the Dian Fossey Gorilla Fund International.
Deadline for Registrations fee and/or abstracts: October 15th 2007. A late fee of $25 will occur after October 15th.
Call for Papers: A blend of topics with an emphasis on multi-male and bachelor gorilla groups; field work and conservation; and innovative best practices in gorilla husbandry.
Abstracts should include:
• Author’s name, affiliation, address, email address and phone number
• Title of paper and concise description of paper, not to exceed 500 words (single-space)
• On a separate page please include a brief bio of no more than 2 paragraphs of the author/presenter.
Tentative Schedule:
TU/WE, Jan. 22/23: Possible SSP/EEP Meeting
WE, Jan. 23: 7:00 p.m. – 9:00 p.m. Icebreaker
TH, Jan. 24: 8:00 a.m. – 6:00 p.m. Multi-male/Bachelor groups
FR, Jan. 25: 8:00 a.m. – 6:00 p.m. Innovations/Best practices in husbandry
SA, Jan. 26: 8:00 a.m. – 6:00 p.m. Conservation/Field Work
SU, Jan. 27: 8:00 a.m. – 11:30 a.m. General Sessions; 12:00 p.m. – 9:30 p.m. Zoo Day/Banquet at Animal Kingdom

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**Tidbits and Rumbles**

Pan African Sanctuary Alliance Merchandise now **available online**: A wide selection of T-shirts, sweatshirts, caps, coffee mugs, tote bags and office supplies bearing the Pan African Sanctuary Alliance (PASA) logo is now available to purchase online through a virtual storefront with the e-commerce sales company, Café-Press.com. To view PASA merchandise, please visit www.cafepress.com/pasaapes.

PASA, which represents 17 primate sanctuaries in 12 African countries, will receive a portion of the proceeds from all sales through CaféPress.com. The funds will be used to manage the day-to-day operations of PASA, which helps promote conservation, education and veterinary healthcare programs at its member sanctuaries. Visitors to the PASA site at CaféPress.com can purchase items bearing the familiar green and gray chimpanzee and gorilla logo using credit cards, and all sales include a 30-day money back guarantee. CaféPress.com in an online marketplace that was launched in 1999 in California to help individuals, organizations and small businesses create, buy and sell customized merchandise. For more information, please contact PASAapes@aol.com.

For more on PASA, see pages 57 and 58.

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**The Dewar Wildlife Trust is pleased to announce the 2006 recipient of the Debbie McGuire Gorilla Keeper Grant**, an annual grant of $1,000 awarded to gorilla caregivers to enhance their knowledge and/or experiences with gorilla husbandry and conservation. Bruno Djakou, a Cameroonian national, has worked with gorillas since 1997 at CWAF (Cameroon Wildlife Aid Fund), where there are currently 15 gorillas in residence, all rescued victims of the bushmeat trade. Bruno had a brief cameo in the TV show about CWAF on Animal Planet's "Growing Up Gorilla," and has been working with juvenile and infant gorillas for almost a decade, yet he has never seen an adult gorilla.

With the grant and contributions from others, Bruno is scheduled to travel to zoos in England, to see his very first silverback up close sometime in the spring or summer of 2007. This will be an exciting learning opportunity to prepare Bruno and his colleagues for what they will be facing as their 15 gorillas (the oldest, a female named Geri, who is 10 years old) mature. In his application for the DM Grant, Bruno wrote: "If you choose me my dream is to visit another zoo or sanctuary with big gorillas. I can never imagine seeing the size of a true silverback. My babies are now getting big and I want to be able to give them the best care possible. Maybe you could help me and my gorillas to realize our dream."

Past winners of the DM Grant included keepers from the Czech Republic, India, Spain and Rwanda. The grant accepts applications year-round, with deadlines for applications being September 30th of each year. The winner is announced by November 2nd of each year, but this year we were able to announce Bruno’s win early. For more information contact Jane Dewar at jdewar@gorilla-haven.org.

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**ATTENTION GORILLA KEEPERS!** We’re looking for more articles by gorilla keepers for future issues of the Gorilla Gazette. You can write about the history of gorilla husbandry at your zoo, your own experiences, or even about someone or something which inspired you to pursue a career involving gorillas. We have people willing to help translating to English too, if this is a concern. Even permission to reprint articles about your zoo gorillas appearing in your zoo magazine would be of interest to our readers, so please, get inspired and contact one of our editors (Beth Armstrong, Pete Halliday) or me soon! Thanks! Jane Dewar (Contact info on inside back cover)
New from Nancy Roe Pimm and Darby Creek Publishers, The Heart of the Beast. You are about to enter the lives of eight famous gorillas—male and female—old and young—with true-life stories that take you to the heart of these often misunderstood, yet fascinating beasts.

Jack Hanna says, "Nancy Roe Pimm has truly captured the 'heart of the beast' in this long overdue book! The stories are not only insightful and authentic, but are also important in helping readers learn about the history, behaviors, and intriguing nature of these, the greatest of great apes. "20% of Nancy's earnings from this book are being donated to help gorillas in the wild, which are currently facing possible extinction. Website nancyroepimm.com

(From Amazon.com) Grains of Golden Sand, by Delfi Messenger: "Grab a ticket for the adventure of a lifetime: meet an American woman who protected rare apes by painting SIDA ("AIDS" in French) in blood on a Kinshasa wall to keep rampaging looters at bay. Hear bullets zinging overhead...Living on the edge, Delfi Messinger takes on bureaucratic snafus, starving animals, corrupt officials, swarming ants, and even Ebola. Meet a dozen bonobos—golden grains of ecological sand—that Delfi fought to save. Few books on Zaire, the bonobo, or women Peace Corps volunteers have been written. No other offers a first-hand look at one of the world's most precarious, endangered species in a precarious, dangerous place. While providing adventure and exotic appeal, this book adds a new perspective to readers' understanding of the relationship between humans and what remains of the natural world."

Gorilla KEEPERS Forum is an email list dedicated to sharing information between keepers from all over the world. This list is moderated to keep posts relevant and professional, and all subscriptions must be approved. At the time you send your request to yahoogroups to subscribe, please send your name, affiliation and/or interest in the group to the moderator at jen450@aol.com. To subscribe, send a message to: gorillakeepers-subscribe@yahoogroups.com

Gorilla Groupies Forum is a new, informal Yahoo! Group that was created by and for gorilla groupies to share news, behavioral observations, historical information, and other gorilla related facts and events. To subscribe, send an email with "subscribe" in the subject to: gorillagroupiesforum@yahoo.com
Blogs from the Wild: Stories of people working to protect Africa's wildlife [http://www.wildlifedirect.org/]

Berggorilla & Regenwald Direkthilfe (BRD): Journal with news regarding gorilla research and conservation [http://www.berggorilla.org/]

Gorilla Gestures Welcome to Dr. Joanne E. Tanner's Website. Learn more about the gorillas at the San Francisco Zoo and their gestural communication. You will find a great deal of video that illustrates gorilla gestures better than words can. [http://www.gorillagestures.info/]

God and gorillas (?) Anthropologist Barbara J. King explains what our distant cousins can tell us about religion and why it's OK for scientists to believe in God. Full interview at: [http://www.salon.com/books/int/2007/01/31/king/]

The following link presents the article "Nutritional adequacy of gorilla diets in EEP facilities." [http://www.biaza.org.uk/resources/library/images/Vol8No1.pdf]

The Last Great Ape Organization Cameroon [http://www.lastgreatestape.org/]
The Last Great Ape organization encourages the capture of dealers in meat and products of endangered species and bringing them to justice. Then exposes the fact that the law is enforced and that deters poachers and dealers from getting into this commercial business, educates the public, gives the bushmeat trade the deserved status of a criminal activity, and introduces a new concept to the Cameroonian public – Wildlife Crime. Cameroon: Tel -00-237-9651803 Mendong, Yaounde Israel: 6 Kehilat Pozna St., Tel-Aviv, 69989, Tel-00-972-3-6476623

Ape Alliance [http://www.4apes.com]
The Ape Alliance is an international coalition of organisations and individuals, working for the conservation and welfare of apes.

Primates in the News on the web: [http://pin.primate.wisc.edu/news/inthenews/]


Gorillas back from Rwanda: A group of habituated gorillas, which had crossed to Rwanda three years ago, has returned to Mgahinga Gorilla National Park in south-western Uganda. Habituation is a process in which gorillas become used to the presence of human beings without losing their wild character. Damian Akankwasa of the Uganda Wild Life Authority yesterday said the number of gorillas in the Nyakagezi group had reduced from 11 to seven only. TU, 30th January, 2007; [http://www.newvision.co.ug/00/D/13/546227]
Gorillas using tools in the wild ... Surprise?  
Not to gorilla caregivers!

Descriptions of novel tool use by great apes in response to different circumstances aids us in understanding the factors favoring the evolution of tool use in humans. This paper documents what we believe to be the first two observations of tool use in wild western gorillas (Gorilla gorilla). We first observed an adult female gorilla using a branch as a walking stick to test water depthness and to aid in her attempt to cross a pool of water at Mbeli Bai, a swampy forest clearing in northern Congo. In the second case we saw another adult female using a detached trunk from a small shrub as a stabilizer during food processing. She then used the trunk as a self-made bridge to cross a deep patch of swamp. In contrast to information from other great apes, which mostly show tool use in the context of food extraction, our observations show that in gorillas other factors such as habitat type can stimulate the use of tools.

Scientists have reported what they believe to be the first two observations of tool use in wild western gorillas (Gorilla gorilla). In this first image, a female gorilla - named Efi by the researchers - is seen at the boundary between a swamp (foreground) and a segment of forest. Efi breaks away a 1.3m-long and 5cm-thick leafless trunk of a dead shrub with both hands. She then forcefully pushes the big stick into the ground by the edge of the swamp with both hands. Her intention is to use the stick as support. In this picture, taken by the scientists some 150m away, Efi is shown leaning forward to dredge for aquatic herbs with her free hand. After a couple of minutes, she will use the stick as a make-shift bridge to walk across the swampy ground.

In another observation, the adult female Leah is seen to use a stick to help her walk through a pond. She had initially tried to do it without the aid of the stick, but returned to the edge to fetch the implement when the water had become quite deep. Relative to Leah's body size, the leafless branch is estimated to be approximately 1m long and 2cm thick. Leah stretches forward with it in her right hand, apparently using it to test the water depth or the stability of the pond-bottom. Leah moves further into the pool, holding the detached branch in her right hand and using it as a walking stick for support. The scientists watch her advance several metres from the pool edge, repeating the prodding and support actions. Eventually she returns to the edge and her crying offspring.

For full articles and more information, please see these links:
http://biology.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pbio.0030380
and
http://news.bbc.co.uk/2/hi/science/nature/4296606.stm

See more research from this area on pages 47-49 of this issue of the Gorilla Gazette.
Deadline for the next issue of the
GORILLA GAZETTE
is December 15, 2007!

For articles for the next Gorilla Gazette, please send documents (preferably in Word format) by email or hard copy, including photos with captions to the following addresses. If emailing photos, make sure they are in JPEG formats; otherwise original photos can be scanned and returned to author if mailed. Documents may be faxed to (USA) 706-374-4491.

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Subscriptions: Complimentary hard copies of the Gorilla Gazette are provided for each institution housing gorillas and any in-situ researchers or individuals working with gorillas. Electronic and printed versions are available by providing the following information to jdwar@gorilla-haven.org:

Your Name:
Affiliation: (ie: Zoo, Institution, University, etc)
Position: (ie: Keeper, Researcher, Docent, Student, etc)
Mailing Address: and Email address, if available.

Bruno and his gorilla friend, Geri, enjoying the Gorilla Gazette.
Photo courtesy of CWAF.

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