MORE GOOD NEWS FROM ZOO ATLANTA

For the third consecutive month, we have seen regular copulations between 1.0 Willie B. (31 years) and 0.1 Kinyani (6 years). They usually mate several times throughout the day, usually over a three-day period.

The number of weeks between mating (4-5) is suggestive of cyclic behavior in Kinyani. Kinyani exhibits very obvious signs of perineal swelling. She also cues us by behaving very playfully and romping about for no apparent reason a day or two before actual mating. Urine is collected overnight from Kinyani every two weeks using a metabolic squeeze cage, which she enters readily. Urinalysis is being performed to determine what hormonal influences may be affecting her behavior.

The successful socialization and subsequent mating of our long-time beloved Willie B. is an event I would have once denied being possible. The general belief in my early days as a keeper was that "It's too late, he's been alone too long. He hasn't learned to be a gorilla, and besides, most of them are sterile anyway."

In those days, we really didn't have the facilities to try anything different, and to support our situation, I'd usually comment on how solitary males existed in the wild. There were many concerned inquiries about the fact that he didn't have a mate. Our old primate building had only one small holding cage adjacent to the exhibit, which eliminated any possibility of gradual introduction. Also, there was no means to monitor and control conflicts.

It is never too late to give gorillas a chance to become the family animals they were meant to be. A combination of good facilities, daily management, judgment, and some risk taking can in due course produce the desired result.

When I discovered Willie and Kanyani on the first day of mating, I was astonished and went first to call Zoo Director Dr. Terry Maple. Then I immediately began to tell everyone I ran into. We never expected things to progress so well so quickly. I was sure no one would believe me.

Willie and Kanyani proved throughout the course of the day that this was no singular incident: As they copulated frequently and for long periods, witnesses were plentiful. The media were also here to report (in somewhat exhaustive and anthropomorphic terms) that a 31-year-old solitary-raised silverback and a 6-year-old hand-reared female were making history at Zoo Atlanta.

So, gorilla socialization has taken another giant step forward. Having cared for Willie B. for 15 years, it is wonderful to see him involved in family life, and to see him interacting with other gorillas. When Kinyani finally attains maturity in terms of ovula-
CALL FOR ETHOGRAMS

As you may have read in the last issue of Gorilla Gazette, Deborah Schildkraut, of the MetroParks Zoo, and Jackie Ogden, of Zoo Atlanta, are organizing an effort to gather gorilla ethograms, and to investigate the possibility of making available a standardized gorilla ethogram to interested parties.

The article also asked that interested parties meet to discuss this idea at AAZPA in Pittsburgh. The "Gorilla Behavior Working Group," as we're calling ourselves, had its first meeting at AAZPA in September, with eight people in attendance. Present were Schildkraut and Ogden, Cynthia Bennett (Dallas), Cathy Cox (Los Angeles), Jill Mellen (Portland), Ingrid Porton (St. Louis), and Ben Beck (National Zoo, and member of Gorilla SSP).

The group is continuing to gather ethograms, and hopes to circulate these to all interested parties by late winter. As we said in the last issue, researchers have been using a number of different ethograms over the years, and many of us have inadvertently "reinvented the wheel" when starting our own research projects. Thus, we want to make available a compendium of ethograms to which researchers can refer.

We're also working on developing a standard "keeper checksheet" of general behavioral information, and are making plans to develop a standardized ethogram and related research protocols/sampling methods for answering specific behavioral questions.

These "menus" of behavioral descriptions and sampling methods would then be made available to all interested institutions. The intention is to have these available only as a resource, not to ask that zoos conform to any one protocol; the work at each institution should always be allowed to stand alone. The menus should be available simply to aid personnel who are interested in conducting research, or who are interested in developing projects with results directly comparable with other institutions.

We also hope to work closely with the Gorilla SSP group, aided by Ben Beck acting as our liaison to the group, and will focus on developing protocols that will enable researchers to answer questions of particular relevance to the propagation group.

So far, we have received ethograms from several researchers, and it is much appreciated. We're continuing our request, and will also be doing a thorough search of the literature to find additional gorilla ethograms used in zoo, lab, and field research on gorillas.

If any of you have an ethogram you've used to answer a particular question, or know of any that have not been published, or are published in hard-to-find materials (e.g., conference proceedings), we'd appreciate hearing from you. Also, if you would like to hear more about the working group or to be involved, please feel free to contact one of us. Thanks again for your cooperation!

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JACKIE OGDEN
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ZOO ATLANTA
800 Cherokee Ave., SE
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MORE GOOD NEWS cont.

tion, there is no reason why she and Willie can't reproduce. If this is the ultimate outcome, it will certainly have made this keeper's career worthwhile.

L. CHARLES HORTON
LEAD KEEPER, PRIMATES
ZOO ATLANTA
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GORILLA RADIOTELEMETRY

In contrast to mountain gorillas, western lowland gorillas in nature have proved difficult for field workers to routinely locate and habituate to the presence of human observers.

The apes are hard to find because they have relatively large day ranges, are quiet, and do not leave a trail of feeding remains that would allow them to be easily followed. Furthermore, when they are located, the dense vegetation of the preferred habitat makes it difficult to establish initial visual contact at a sufficient distance that they are not seriously alarmed (Tutin and Fernandez, 1987).

In an effort to facilitate the finding, following, and observing of wild gorillas, a field project in Gabon initiated continuing efforts to dart a silverback for radiotruemitter placement (via an anklet) in late 1987 (Tutin and Fernandez, 1987, 1989). More recently, Fay and Carroll in the Central African Republic have revealed plans to anesthetize gorillas, also with hopes of attaching radiotransmitters (Allen, 1989).

In late 1986 and early 1987, trials to assess the feasibility and safety of attaching radiotransmitters on gorillas were conducted on two of the captive gorillas, a silverback and an eight-year-old male, resident at the Primatology Center of the Centre International de Recherches Medicales de Franceville (CIRMF) in Gabon. Both trials were scheduled to coincide with the routine health examinations of these individuals. The silverback was anesthetised using tiletamine-zolazepam and the younger male with ketamine HCL-acepromazine maleate.

On 12-22-86, an AVM radiocollar mock-up LM (large mammal) originally designed for use on bears (AVM Instrument Co., Livermore, CA) was placed on a 141.7kg silverback. Although it was fitted as tightly as was safely possible, the silverback pulled it off (over his head) on his second attempt, well before he was recovered from anesthesia. We judged that the strength and intensity of his efforts were such that he might well have strangled or seriously injured himself had he not been able to get it off.

Following the negative results of this trial, we saw some promise in the possibility of using either an anklet or a bracelet to attach a radiotruemitter. On 1-20-87, a bracelet (approx. 70mm diameter) made of excess strap material (3mm x 33mm in cross section) from the AVM collar was fashioned and attached securely but loosely around the left wrist of a 57kg eight-year-old male. After recovering from anesthesia, this male tugged and chewed at it intermittently for most of the day, but without much apparent damage to the bracelet and none visible to himself. The following morning the bracelet was still intact, but unfortunately, his left hand was very swollen, due apparently to the constant pressure of his efforts to pull (with his teeth and right hand) and push (with both feet) the bracelet off. He was anesthetised immediately and the bracelet was removed. The swelling receded gradually over a period of some days. Initially, he did not use the hand at all, and it took him several months to regain all of its function.

As a result of this experience, all involved agreed that trying the same strap as an anklet was not sufficiently promising to warrant the obvious risks involved.

The AVM collar was then tried on three subadult male chimpanzees, also housed at the Primatology Center at CIRMF, with completely different results. We found that all of the chimpanzees tolerated the collar well with no behavioral, medical, or technical problems, and during the four weeks that one chimpanzee wore the collar in his normal group, neither he nor any of his five male social companions paid significant attention to it.

When the results of the gorilla trials were discussed with an experienced gorilla keeper (Ian Williams, personal communication with RU, 1987), he expressed no surprise at our findings, and revealed that in his experience at Howletts Zoo Park, with the exception of a hand-reared infant raised wearing a sweater, he had never known a gorilla who would tolerate wearing or being bound by anything.

cont. p 16
EDINBURGH WELCOMES SCOTLAND'S FIRST GORILLA BIRTH

We always welcome a happy animal event at Edinburgh Zoo, but it has to be admitted that some are more welcome than others.

When we have made the decision to take part in a coordinated breeding programme for an endangered species and put much of our resources in space, time and energy into that species, it is especially exciting when this is rewarded with a successful birth.

We knew, as we entered 1989, that one of the most exciting events this year would be the birth of Scotland's first gorilla to Yinka. This was expected in late March/early April.

In the late 1970s, Edinburgh Zoo, as part of the Anthropoid Ape Group of Great Britain and Ireland (AAAP), decided to build accommodation for a future group of lowland gorillas. This space was to help the AAAP form new groups of this endangered species with the long-term view of increasing captive breeding. The group that was eventually formed at Edinburgh proved to be a wonderful example of this cooperation between zoos, as each animal arrived on breeding loan from its owner collection: a wild-caught male Sam Sam from Rotterdam; Naomi, a captive-bred female from Bristol; and the potential breeding group was complete in November 1986 with the arrival of Yinka, a wild-caught female from Dublin.

We had rather a traumatic time in 1987 wondering when and, indeed, if one of the females would conceive... We were therefore both pleased and relieved when a positive test proved Yinka to be pregnant in August 1988.

From work in other zoos, we know that the gestation period for a gorilla is 249-265 days. When preparing for a birth like this, from a female that has never had an infant before, one has to take many precautions. She may not look after the baby, or worse, maltreat it, and therefore staff should be on hand to intervene if required. However, the direct presence of people may adversely affect how the new mother handles and treats the infant.

We therefore set up a video camera with a red light source that did not disturb Yinka and which was viewed from a preparation area.

Night checks started from 15 March with constant video filming from the 20th. The keeper carrying out the early morning check on 23 March (251 days) noticed Yinka to be restless and about one hour later the vulva could be clearly seen dilating. She gave birth at 11:45 a.m., and this was fully recorded on video as was her subsequent behavior.

It is not uncommon for a primiparous female gorilla to have problems rearing her first infant. Yinka was actually very good and although she tried to look after the infant, never held it in direct contact with her body, allowing it to become very chilled.

The decision was made to anaesthetise Yinka with the idea of placing the infant correctly on her body. However, the infant, a male, was found to be very cold and weak and it was decided to take him for hand rearing. After a thorough check over in the Animal Hospital by David Shannon, the Zoo's vet, Sekondi, as he was subsequently named, was removed to the curator's house.

Although many people think, in their innocence, that hand rearing a gorilla must be great fun, in fact, to start with, it is far from fun. That comes much later on. The first few weeks are very hard work with feeding eight or nine times per day, nappy changing, and taking great care that everything is very clean to reduce the chance of the animal picking up an infection.

Sekondi was small and not particularly robust and, therefore, for the first few weeks required much time and attention. A room for him was fitted up in the Animal Hospital and Boots provided a playpen and three-months' supply of nappies, baby oil, and lotion. Gorilla skin tends to be dry and it is necessary to oil the infant two or three times a day to keep the skin moist.

Reprinted with permission from Ark File, the newsletter of the Royal Zoological Society of Scotland, Summer 1989.

4
GORILLA INTRODUCTIONS

The introduction of gorillas into established groups may include animals with different levels of socialization: i.e., translocated adult animals, nursery-reared infants, juveniles, and animals transferred into other groups within the same facility.

Although similar in practice, each introduction presents a different set of circumstances. The objective is always the same, which is to integrate the new individual with a maximum of safety and a minimum of stress.

The following steps are used at the Columbus Zoo to introduce gorillas.

1. The new animal is given the opportunity to become familiar with its new environment and be able to transfer between cages.

2. The animal who is to be introduced is then placed in a cage adjacent to the established group. To facilitate interactions, we feed and place bedding materials near the connecting mesh. After an adjustment phase of being housed next to each other, browse and/or pieces of cloth are placed in the cage of the animal being introduced. If later we find these objects in both cages, we feel that a sharing activity might have taken place. We then reverse the process to see if reciprocal sharing occurs.

3. The next step begins by placing the new animal in the same cage with at least one animal from the established group. We are able to utilize adjoining cages by opening both front and back shift doors, which provides a larger space and creates a circle configuration. This decreases the possibility of any animal being trapped without an escape route. Seeds and browse are placed in the bedding to provide activities that could create diversions during the initial introductory period.

4. The introductory periods are gradually increased. We feel that it is important to end these daily sessions at a point when the animals appear relaxed, so that the experience for all animals remains positive. This process is evaluated each day and not rushed until the animals can comfortably spend 24 hours a day together with a minimum of conflicts. During this time, the animals should be able to transfer as a unit.

5. The addition of the silverback is begun after all other group members are integrated. The same steps used during introduction of group members are applied when the silverback is introduced.

POSITIVE MARKERS USED TO EVALUATE THE INTRODUCTION

1. Alliances formed between the animal being introduced and members of the established group.

2. Rest-near occurrences. Rest-near is established when at least two animals sit or recline within arm's reach of each other for at least one minute.

3. Food sharing.

4. Intragroup interactions: i.e., aggression play, avoidance, etc.

TECHNIQUES USED DURING THE INTRODUCTORY PROCESS

1. Throughout the entire introduction, we

EDINBURGH cont.

The head primate keeper then took on much of the work, but it was decided to give Sekondi a more stable environment in the Highland Wildlife Park. The present park manager and his wife have had considerable experience hand rearing six gorillas in Jersey and were willing to take on the challenge of yet another. Sekondi will therefore spend about three months there. After that time, it is important that he socialises with other young apes and he will probably have to go to another collection in order to do this.

We hope that Sekondi will be the first of many gorilla babies to be born at Edinburgh Zoo.

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GESTATION LENGTH AND BIRTH WEIGHT

To find out the gestation lengths and birth weights in lowland gorillas, I have collected data from publications and from personal communication with keepers.

In 62 full-term live births, gestation length varied from 234 days to 288-89 days, the median being 256 days. A range of more than 50 days is very high and may result from missing the conception date in some cases. It is more likely that the longer gestations are not correct because two of the babies with the shortest ones were conceived by artificial insemination (235 and 237 days), and so there can be no doubt about them.

Birth weights were included only from full-term live babies who were weighed on their first day. In 35 males, the weights vary from 1900 grams (4 lbs 3 oz) to 3058 grams (6 lbs 12 oz), the median being 2270 grams (5 lbs). Twenty-eight females weighed from 1396 grams (3 lbs 1 oz) to 2800 grams (6 lbs 3 oz), with a median of 1970 grams (4 lbs 5.5 oz). That means that females weigh 300 grams (10.5 oz) less than males at birth.

ANGELA MADER
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Federal Republic of Germany

GORILLA WORKSHOP UPDATE

By now, most of you should have received an information package concerning the upcoming Gorilla Workshop. The package included registration form, call for papers form, hotel information, etc. The mailing went out November 18th. If you have not received your package, please contact us.

We have firmed up commitments on the part of Craig Sholley, Kelly Stewart, and Sandy Harcourt to be our guest speakers. We are currently working on a fourth guest speaker to be announced at a later date.

During the Gorilla Workshop, we would like to present a slide show featuring the gorillas and exhibits from each of your zoos. So...during the "quiet" winter months, please start taking slides or look for your favorite old ones! Nancy Staley, the Columbus Zoo's Media Coordinator, is requesting that each of you send ten horizontal slides to be used in the show. More details in the next issue of Gorilla Gazette.

Another challenge: We would like each of you to send us typed copies of your gorilla diets, including special drinks, items not fed daily, do you use food to medicate? etc. The diets will be compiled and distributed cont. p 20

INTRODUCTIONS cont.

offer females, infants, and juveniles an escape route. They have the option to exit through shift doors that are opened to a position that only females, infants or juveniles can utilize.

2. We separate the animals for feeding during introductions and after the new group is established to avoid aggression that might be associated with food. Seeds, popcorn, and other food items are provided for foraging when the group is reunited after separately eating their morning and afternoon diets.

3. A large space, escape routes, and additional stimulus appear to reduce the aggression during the introductory period.

This system has been used when introducing both male and females ranging in age from 16 months to 32 years of age. When necessary, modification to this system has been made to adapt to a specific introduction.

At least one member of the Ape House staff is present to observe and record the animals' behaviors during all steps of the introduction. The pace for each introduction is always established by the behavior of the introductory animal. As a staff, we attempt to be consistent during an introduction and not rush the process.

CHARLENE JENDRY
ADELE ABSTI
COLUMBUS ZOO
P.O. Box 400
Powell, OH 43065-0400
THE GORILLA WORKSHOP
June 22-25, 1990

Please use one form per person - duplicate as needed.

Last Name

First Name (as you want it to appear on name tag)

Zoo/Organization/University

Address

City

State/Province

Zip/Postal Code

Country

( )

Telephone

Title

Home Address

City

State/Province

Zip/Postal Code

Country

( )

Telephone

Please send additional workshop information to: (check one)

[ ] Home Address

[ ] Business Address

NO OPEN REGISTRATION

Registrations received before March 1, 1990, will be eligible for a FREE REGISTRATION.

After April 2, 1990, a late fee of $20.00 will be added.

NO REGISTRATIONS WILL BE ACCEPTED AFTER MAY 15, 1990.

FULL REGISTRATION (Includes sessions, social events and some meals)

[ ] $85.00 Keeper

[ ] $125.00 Non-zoo Personnel

[ ] $100.00 Zoo Personnel

DAILY REGISTRATION (Includes sessions only)

[ ] $30 Saturday Sessions

[ ] $35 Dinner (Saturday)

[ ] $30 Sunday Sessions

[ ] $25 Zoo Picnic (Sunday)

[ ] $30 Monday Sessions

[ ] $25 Casual Dinner (Monday)

Total Amount Enclosed $__________ Date __________

Make checks payable to: The Columbus Zoo Gorilla Workshop
and remit with form

P. O. Box 400
Powell, Ohio 43065

9900 Riverside Drive Box 400 Powell Ohio 43065-0400 (614) 645-2426
THE GORILLAS OF TROPIC WORLD

1.0 Ndume (cb 10 Oct. 81)
1.0 Jabari (cb 5 Feb. 85)
1.0 Chicory (cb 13 May 85)
1.0 Kuisha (cb 28 Apr. 88)
0.1 Alpha (wc @ 29 years old)
0.1 Beta (wc @ 29 years old)
0.1 Babs (cb 12 Jul. 74)
0.1 Aquilina (cb 15 Dec. 81)
0.1 Kuizer (cb 11 Mar. 88)

The gorillas of Tropic World inhabit a large naturalistic indoor grotto (approximately 90'L x 60'W x 40'H) with a waterfall, river, cement/gunite trees and epoxy covered vines. The off-exhibit holding area consists of more "typical" cages (13'5"L x 13'5"W x 9'5"H) with cement floors, tile walls, stainless steel, mesh cage fronts, and corion shelves.

As the present time (Oct. '89), our gorillas are housed in two groups. Alpha and her son, Kuisha, are housed with Babs and her daughter, Kuizer. Ndume, Jabari, Chicory, and Aquilina make up the other group. Beta is housed alone due to medical problems (i.e., severe arthritis and some vertebral fusion).

For the past two years, the situation surrounding the Tropic World gorilla collection has been a roller-coaster ride, filled with positive events and tragedies.

In December 1987, the group consisted of Samson, our magnificent silverback (wc @ 20 years old), Alpha, Babs, Aquilina (Samson x Alpha), and Jabari (Samson x Alpha). Both Alpha and Babs were pregnant at this time.

Aquilina had begun cycling and Samson was starting to show some low-level sexual interest in her. A breeding loan trade was arranged with Lincoln Park Zoo, and we obtained a 10-year-old female, Bassa, in exchange for Aquilina. While at Lincoln Park, Bassa had borne one offspring that died from a fall before it was a year old. She was successfully introduced into our group in January 1988.

In mid-January, Samson started to show signs of declining health. His slow, stiff motion initially suggested a recurrence of rheumatoid arthritis. Samson's condition deteriorated through February and into March. He began to have vision problems, often bumping into walls, shift doors, and the cage front. He also had several shaking episodes and had trouble eating and taking medication, often drooling excessively.

On March 15, Samson had a violent, stroke-like shaking episode on his left side, and was virtually comatose for the next 48 hours. He was euthanized on the 17th. The necropsy revealed a 5cm x 8cm brain tumor on the right cortex. Samson's loss was a major blow to our collection and staff.

A bright spot during this time was the birth of Kuizer to Babs the week before Samson's death. This was followed by the birth of Kuisha to Alpha on 28 April 1988. Alpha had a postpartum uterine infection and was lethargic for two to three weeks after giving birth. This may have been a contributing factor to the event described below.

Without an adult male, the relationships between the females changed. Bassa was often observed trying to get near Alpha and Babs and touch the infants.

On May 15, Bassa tried to grab Kuisha from Alpha, and his right arm was broken in the process. His arm was set using metal pins. After a five-day recovery in our hospital, reintroduction attempts to Alpha alone were tried on three consecutive days. Initially, Alpha would carry Kuisha for a short time, but would soon ignore him. After the third unsuccessful attempt, Kuisha was pulled for hand rearing. Brookfield Zoo is a very strong advocate of mother rearing for all animals, but this situation left no option. Kuisha was less than three weeks old and needed to be cared for.

After this incident, Bassa was separated from the group, and in June 1988 was returned to Lincoln Park, with Aquilina returning to Brookfield. In June, we also acquired Chicory on breeding loan from Audubon Park Zoo in New Orleans. An unsuccessful introduction of Chicory to the solitary Beta resulted in Chicory being housed alone until July, when Ndume was acquired on breeding loan from the Cincinnati Zoo. Ndume and

cont. p 10
Chicory were successfully introduced to each other in August.

September 1988 brought more bad news as far as our infants were concerned. The morning of September 4 found Kuizera, now almost six months old, vocalizing loudly and fading in and out of consciousness. She also kept her arms crossed over her chest and her fists tightly clenched. She was removed and examined. Kuizera was kept at our hospital for one week and had appeared to improve.

During a reintroduction attempt, Kuizera was bitten by her mother (Babs) and was hit a few times by Aquilina. She was removed immediately and kept out for further examination. A EEG and C-scan revealed a fractured skull on the occipital, and a central area of cerebral hemorrhage. Exactly when and how these injuries occurred is not known. Kuizera was kept out for hand rearing.

Both injured infants were hand reared in gorilla holding in close proximity to their mothers and the other gorillas. Due to the injuries, each infant needed special care, which included physical therapy. The orthopedic surgeon and our vets developed a program for Kuisha's arm. Kuizera was showing signs similar to cerebral palsy (i.e., shaking, stiff arms and fingers), thus a therapy program was developed by a pediatrician and physical therapist. Both infants have healed well and today are quite healthy.

With both infants out of the group and the threat of infanticide removed, it was decided to obtain an adult male. In October 1988, we acquired Bobby (wc @ 20 years old) on breeding loan from the San Antonio Zoo. Bobby was introduced to Alpha, Aquilina, and Jabari on November 18. The introduction went fairly well, but Bobby, who had been housed alone for five years prior to coming to Brookfield, tired very fast, so it was decided to keep him together with just Aquilina for a few weeks.

Bobby appeared to be adapting fairly well to his new situation, but had a problem with coming off exhibit into the holding area. He stayed on exhibit for 21 consecutive days. He seemed content on exhibit, and ate well.

In mid-December, Bobby came off exhibit a few days in a row and seemed to be getting the hang of going in and out.

But bad luck hit us again; on December 17, Bobby was noted as being slightly lethargic after coming off exhibit. The next day, he was very lethargic, was vomiting, and had diarrhea. He died the following morning prior to being sedated for examination. Necropsy results showed severely necrotic bowel, probably the result of Balantidium. The loss of a second adult male in less than one year was very disheartening.

With the start of the new year, we hoped our fortunes would change. In January 1989, Aquilina was successfully introduced to Ndume and Chicory. Jabari was added several days later with no problems. The newly formed group got along well, although Aquilina dominated the three males, probably due to her larger size. Ndume and Aquilina did copulate on several occasions, and in June we received some good news: positive pregnancy test results.

The group changes mentioned above left Alpha and Babs together and us planning reintroduction of the infants. In July, Alpha and Babs were separated. Kuisha (now 15 months old) was successfully reintroduced to Alpha in late July. Kuizera (now 16½ months old) was successfully reintroduced to Babs in early August. In September, the mother/infant pairs were reunited and introduced to the exhibit.

This brings us to our present (October 1989) grouping situation. The past two years have been a series of highs and lows. We hope to continue on the upswing. Future plans include uniting our two existing groups into one large group of eight individuals. We'll let you know the outcome.

CRAIG DEMITROS
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Brookfield, IL 60513
NOTES FROM THE GORILLA FOUNDATION

We would like to clarify some points in the article titled "Gorilla Foundation Opens New Outdoor Quarters" in the August 1989 (Vol. 3 No. 2) issue of the Gazette.

1. The new outdoor enclosure for Koko and Michael is 60' x 80', not 60' x 60' (that other 120 square feet would be sorely missed by these two active individuals).

2. On the subject of dried fruit: in the recipe for Koko's Cincinnati Rice Cake, the raisins or other dried fruit should be added during the cooking process, thereby reconstituting the fruit. We do avoid giving the gorillas dried fruit as such. Our dental consultant has told us that it is worse than giving straight candy, because the dried fruit sticks to the teeth for a considerable time, creating an environment for plaque and bacteria to thrive. We hope this is helpful.

Our request for videos has been answered by Rob Shumaker of the National Zoo, who graciously sent a tape composed of the activities of gorillas in a number of captive environments throughout the country. We would still like to hear of experiences, strategies, etc. concerning breeding behavior.

FRANCINE G. PATTERSON, PhD
GORILLA FOUNDATION
Box 620-530
Woodside, CA 94062

NEWS FROM HOWLETT'S

The Gazette has no details, but a note from keeper Peter Halliday reports that Howletts has enjoyed another gorilla birth and two more females are expecting. Another female is due to go out on breeding loan. Work has started on two new facilities at Port Lympne, near Hythe, Kent: a bachelor house and a new main house. Howletts currently houses 36 gorillas.

Notes from THE DIGIT FUND

The November 1989 Digit Fund Newsletter reports two female gorilla babies born in August among the research groups: one to Puck in Ziz's group and one to Tuck in Beetsme's group.

On the fundraising front, The Digit Fund can now receive funds at the following:

Digit Fund UK
Charity #801160
National Westminster Bank PLC
Brompton Square, SW3 Branch
186 Brompton Road
London SW3 1HH ENGLAND

Digit Fund Japan
Acct. #024-022-2948
Ginza Branch
Mitsubishi Bank
9-1, Ginza 8-Chome, Chuo-Ku
Tokyo T04 JAPAN

Digit Fund Australia
Acct. # 2154 87717
ANZ Bank
Martin Place at Pitt St.
Sydney, NSW 2000

Digit Fund USA
45 Inverness Drive East
Englewood, CO 80112

Speakers who have spent time in Rwanda and are knowledgeable about the program at the Karisoke Research Center and Volcano Veterinary Center are available. A fee for the Digit Fund is charged, and all speakers use slides or video tape in their presentations. They include:

Jan Rafert and Sandy Vojik/Milwaukee Zoo
David Kenny, DVM, Bronx Zoo
Peter Clay, Lincoln Park Zoo
Sandy Harcourt, PhD, and Kelly Stewart, PhD
Univ. CA, Davis
James Foster, DVM, Bellevue, WA
David Watts, PhD, Duke Univ.
Hank Klein, PhD, Redmond, WA

Groups wishing to book a speaker should phone or write the Digit Fund at the above US address.
A TELEVISION JOURNEY

For those who don't yet know what THE URBAN GORILLA is, I'll take the easy way out and quote my original proposal: "THE URBAN GORILLA is a one-hour television documentary --an intimate journey into the world of gorillas living under human care. It is a celebration of the recent progress that has been made, as well as a look at the distance yet to be traveled.

What I didn't yet know when I wrote that proposal was that this was to become one of the richest, most touching experiences of my life. I think Bob Collins, my cameraman and partner, would have to say the same.

It was a difficult process selecting locations, but when all was said and done, we'd finally arrived at: Los Angeles, San Diego, Columbus, Seattle, Tacoma (home of Ivan), Atlanta, Houletts, Apenheul, Brazzaville in the Congo, and the recent Gorilla SSP meeting in Pittsburgh. My greatest regret has been that I'm bound to a one-hour format. I could produce a series on the subject; there's an amazing story in every zoo--and in every gorilla.

Of course, there have been the highs and lows. Filming gorillas has its challenges: Generally speaking, they're not very vocal or particularly active. Photographically, they're quite dark--especially when lurking in the shadows where you'll most often find them. We quickly learned that one must enter the world of the gorilla on their terms, capturing their subtle language with respect and patience.

Labors of love are often slow in the making, fueled by lots of heart and not much money. But the last year and a half have been filled with some of the most touching moments, frustrating moments, and hysterically funny moments--unforgettable moments that will always make me smile...

...in Brazzaville, I'd taken a few minutes while we were changing tapes to step out of the sweltering room in which we were shooting. It seemed like a good time to review the interview questions for Yvette Leroy that I'd carefully had translated into French. I settled down next to my new friend, Magne. Before I knew it, the questions were out of my hands, and the last shred of paper was being happily devoured by the 3½-year-old orphan. My French immediately improved.

...Then there was the moment during a long shot at Houletts when Tebe, with lightning speed, snatchd soundman J.V.'s $600 microphone and ran off like a baton-twirling cheerleader. Peter Halliday went far beyond the call of duty (with the help of Keith and Phil), working for nearly an hour in the pouring rain till he finally managed to talk Tebe out of her new acquisition.

...Perhaps the most touching moment took place in Columbus where, after a separation of nearly four years, we filmed Pongi's reunion with the keeper who had raised her, Randy Reid. Randy never dreamed he'd see Pongi with a baby on her back, but thanks to the work of the Columbus keepers, the dream came true.

...When we arrived in Atlanta, they were experiencing record-breaking rains. On a tight budget, this spells disaster. It looked as if the trip had been in vain, but...Willie B. majestically sat out in the torrential downpour, savoring every drop. I guess rain feels pretty good after 27 years indoors.

...At Woodland Park, watching Nina turn and present to keepers Violet and Judy for AI was absolutely astounding. The level of trust between gorilla and keeper was extremely moving.

...And then there was the usual production nightmare: We arrived in the Congo with a Betacam deck that had been dropped and rendered useless by Air Afrigue. I'll never forget that excruciating night--with 3:00 a.m. $60 phone calls to Sony in LA, and the horrible realization that the local Congolese electronic genius (who lived down a dirt path and didn't speak a word of English) wouldn't be able to repair it. We went from plan A clear through plan Z. But, of course, the gorilla god was looking out for us, and we finally managed to get...
WILD GORILLA DIET

Gorillas are usually described as folivores, based on our knowledge of mountain gorillas. But the majority of gorillas live in lowland tropical forest, and would be unlikely to consume similarly large proportions of foliage, given the diversity of fruit available in these forests. Despite the portrayal of frugivory by lowland gorillas in Equatorial Guinea by Sabater-Pi, (1986) over 20 years ago, the ape's tendency to feed in secondary forest has been best known, probably as such areas are closest to human habitation.

The study in Gabon took place in 1984 and 1985, as part of a long-term project in the Lope Reserve. The data came from feeding trails and observation, but mostly from 700 dung samples. Faecal analysis provides valuable information, particularly when apes are not habituated, and the vegetation is dense, restricting visibility.

During the 17-month study, gorillas ate 139 plant foods, including 78 species of fruit. At least 65% of fruits came from trees, and 98% of dung contained fruit remains, mostly seeds that had been swallowed with pulp. Structural plant parts are less easily identified in the gorillas' dung, as leaves and fibre are generally reduced to an indistinct mass.

Four classes were identified among the 56 species of fruit recorded in the dung, and these classes tend to correspond with nutritional values. These types are: succulent fruits, which are brightly coloured, contain most sugar and water, and little fibre or secondary compounds, so they are easily digested. These form the bulk of fruits eaten by gorillas; fibrous fruits are generally large and dull coloured, containing a lot of fibre and tannins, so they have a low nutritional value and low digestibility; arils are thin, brightly coloured layers of fatty compounds; and seeds have a high protein content but tend to be rich in indigestible secondary compounds. The first two categories, succulent and fibrous fruits, are the most important in the gorillas' diet at Lope.

There were two annual peaks in the consumption of fruit, one in the minor dry season, January and February, and a smaller one in the major rainy season, October and November. Least fruit was eaten during the long dry season, from July to September. The availability of fruit in the habitat was estimated from the abundance of food-trees in the forest, and the production of fruit by these trees, and the variation in fruit ingestion reflected seasonal rhythms in production.

The proportion of the fruit diet formed by succulent fruits also varied: in March, April, and May 1984, 100% of the pulp consumed was succulent, but this was reduced to between 35 and 57% for the same period of the following year, when succulent fruit was scarce, and more fibrous fruits were eaten. This variation was caused by the failure of, or reduction in, the size of the some fruit crops. Virtually no fibrous fruits were eaten when succulent fruit consumption was high, but during the latter half of the present study, two fibrous species, Duboscia macrocarpa and Klainedoxa gabonensis, were eaten in large quantities, despite their low nutrient content. Assuming that fibrous fruits have low nutritional value, and that other fruit types are of little importance, succulent fruit intake may be an indicator of the quality of the gorillas' diet.

Gorillas selected fruit when vegetative plant parts were also available, and they had preferences for particular species. Their overall strategy was to select succulent fruit, and to compliment this with other food types. When less fruit was available they ate more stem-fibre, leaves and bark.

The striking differences found in the feeding ecology of different populations of gorillas relate to the density and distribution of food sources in the environment, the types of food available, and to the extent of competition with the other fruit-eating fauna. Previous studies of lowland gorillas by Sabater-Pi (1977) and Calvert (1985) took place in areas of predominantly secondary vegetation where little fruit is found.

Adapted from a paper given at the IPS Congress, Brazil, July 1986, coauthored with C.E.G. Tutin, M. Fernandez, and M.E. Rogers.

cont. p 14
WILD DIET cont.

Mountain gorillas are highly specialised and highly selective, as there are few limitations on food availability in their lush herbacious montane habitat (Watts, 1983).

However, the tropical forests of Gabon provide very different conditions: diverse habitats are unpredictable and most foods occur at low density. Production of fruit is seasonal and ephemeral, so lowland gorillas must adopt an opportunistic feeding strategy. As for types of foods, eastern gorillas do eat fruit when it is available, but it is uncommon in their habitat (Goodall, 1977). Although the Lope gorillas eat a variety of foods, they depend primarily on the wide range of fruits available, especially those with succulent pulp.

Competition is virtually negligible for mountain gorillas, so they need not seek alternative food sources. Whereas competition is an important factor at Lope, as eight species of diurnal fruit-eating primates are sympatric with gorillas, including chimpanzees and mandrills. Large terrestrial mammals, such as elephants, duikers and bush-pigs, and many birds, including hornbills, also eat fruit. Thus, gorillas eat fruit in spite of direct competition for resources.

Gaulin (1979) described the gorillas' diet as the poorest known for primates in nutritional terms, but this is not the case for the western lowland subspecies living in mature forest. The lowland gorillas' broad diet is appropriate to a heterogeneous habitat, where dietary overlap within the frugivore community is extensive. The scope of frugivory by lowland gorillas suggests that their ecological and evolutionary niches should be reevaluated.

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URBAN GORILLA cont.

another deck to the Congo...as always, the footage was well worth the struggle.

I am even more respectful of the Gorilla gorilla than when I began the project (if that could be possible). I am overwhelmed by their intelligence, sensitivity, sense of humor, patience, curiosity, complexity, simplicity, individuality, sense of justice, sense of order, patience, and above all, tolerance.

Now, as we begin the editing process, staring at the stacks and stacks of tapes, I'm suddenly aware of my greatest fear: That you, the gorilla keepers, whom I care about most, won't be pleased with the results. There are a million ways to tell a story. I hope that you will be happy with the way I tell this one--your approval is far more important to me than that of the critics.

I regret not having had the opportunity to meet each and every one of you. I make it a rule not to generalize about people, but I find it impossible not to in this case; Gorilla keepers are an amazing breed of people--sensitive, down-to-earth, caring. Many of you have become friends for life. The love and dedication with which each and every one of you works is an inspiration.

How can I thank all of you who have helped turn this project into a reality? We have crashed into your worlds, disrupted your routines, depended completely upon your help .... Many of you have come in on your days off, stayed long after hours, moved animals back and forth--and back again--fed animals off schedule, put up with cameras and microphones in your faces--and my endlessly redundant questions.

THANK YOU! If there is ever any way in which I can return the kindness and support, it would be a privilege that would make me happier than I can say.

ALLISON ARGO, PRODUCER
THE URBAN GORILLA
54 Navy Street
Venice, CA  90291
VITAL STATISTICS

BIRTHS

Apenheul (Apeldoorn, Holland): 1.0 to Frale, September 29, 1989. Sire Kibabu. This is the first offspring for the dam and the third for the sire. Both parents are captive born. The infant's name is Kukuma, meaning "Boss." The infant is being mother reared and the sire was present at the birth.

0.1 to Mandji, October 5, 1989. Sire Bongo. This is the third offspring for the dam and the eighth for the sire. The infant's name is N'Datwa, meaning "something to be proud of." The infant was born within the group and is being mother reared.

Atlanta: 1.0 to Paki, March 15. Sire Ozoum (Ozzie). The infant was named Kekla, from the Bause language meaning "dawn." This is the first gorilla born at Zoo Atlanta, and the name represents the dawn of the renovation of Zoo Atlanta. This is the dam's fifth offspring.

0.1 to Machi, March 18. Sire Ozoum (Ozzie). The infant was named Mia Moja, Swahili for "100 ones," signifying the 100th anniversary of Zoo Atlanta. This is the dam's first offspring.

1.0 to Shamba (age 30), July 20. Sire Rann. The infant was named Taz, the Swahili term for "to look at, observe, or contemplate" (reflecting the attention given the three babies by zoo visitors and scientists). This is the dam's fifth offspring.

All three infants are being mother reared within their respective family groups.

Columbus: 0.1 to Toni, November 10, 1989. Sire Sunshine (on breeding loan from San Francisco). This is the dam's sixth offspring and the sire's fifth. The unnamed infant was born within the group and was mother reared for nine days before being removed for nursery rearing (due to decline in maternal care). The infant belongs to the San Francisco Zoo. Ten days after the infant was removed, the dam was anesthetized and a pilonidal cyst was surgically removed. The unsutured incision healed rapidly, but drainage was observed in January. She was again anesthetized on January 10 and the site was tapped and flushed and a small, new channel near the anus was discovered and opened for drainage. The infant weighed seven pounds at 60 days and continues to progress well in the zoo nursery.

DEATHS

Milwaukee County: Tanga, 30+ year-old silverback, October 20, 1989, of congestive heart failure. He had been at Milwaukee County since arriving as a 17 pounder in April 1960.

Toronto: Correction. 0.1 Minkebe, who died as a result of a fall in her night cage, was nine months old, not 22 months as reported in the last Gorilla Gazette. She was born 19 August, 1988, and died 5 June, 1989.

TRANSLOCATIONS:

Howletts (Bekesbourne): 1.0 Kibobo, age 9, on breeding loan to the LaPalmyne Zoo in France in October.

FIRST BREEDINGS:

Pittsburgh: Hercules (@ 24 years old, on breeding loan from Baltimore) with Zakula owned by Pittsburgh.

Atlanta: Willie B. (@31 years old) with Kinyani (6 years, on loan from Yerkes).

These were first-ever breedings for both of these males, both in new environments and new social situations: Hercules with access to a new female, Willie with access to females for the first time.
COMO ZOO'S ZTV PRODUCTIONS

The use of audio/visual equipment began at Como Zoo two years ago. It was decided that a closed-circuit animal monitoring system and the necessary equipment to produce and present "in-house" informational and training tapes would benefit the staff, volunteers, and our visiting public.

When word leaked out that we were in the market for the equipment, sales representatives outnumbered the zoo visitors. Sales brochures promised everything, and many reps felt our organization should top NBC. After serious shopping and comparing, we found "user friendly" commercial quality components. An excess of buttons, dials, and switches could frighten our interested but novice volunteer production staff.

We were very fortunate to acquire funding from the Como Zoological Society, and found that some sort of CCTV or taping system can fit into the smallest budget.

The system at Como Zoo consists of a portable Camcorder camera, 20" color monitors mounted on the public side of each zoo building, and continuous-play VCRs located in the keeper areas that allow a program to run unattended for the zoo visitors. In our production office, we have an editing VCR and a title generator for video printing, resulting in fairly professional finished programs.

Our CCTV animal monitoring system consists of low-light black and white cameras and 12" monitors. We have used our cameras to monitor impending births, breedings activities, and behavioral problems. The system is self-contained and uses standard home-use coaxial cable.

ZTV Production has been an excellent aid in our educational, informational, and veterinarian programs. We hope that in the future, we will be able to create a video library and use our programs on the Twin Cities local cable television network.

If you are interested in our system or have any questions, please contact the Como Zoo.

MIKE THELL
COMO ZOO
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RADIOTELEMETRY cont.

On the basis of the data available to us, it seems the combination of gorilla hand/neck anatomy and their apparent strong aversion to being girded with or wearing anything would make the benign placement of an external transmitter on this species extremely problematical.

As the dominant silverback of any group is uniquely important not only to the behavior of the social unit but also to the group's very existence, it would seem unwise to proceed with gorilla radiotelemetry in nature, without good reason to suppose that the required technical manipulation held considerably more promise for achieving its goals than it did for seriously compromising them.

Beyond any practical problems of placing a radiotransmitter in nature, there still remains the ethical question of whether any unnecessary risk to the life of these magnificent anthropoids is justified in an effort that promises no certain benefit to either the individual or its endangered and legally protected species.

Acknowledgments
We thank Dr. P. Bussi, A. Feistner, Dr. F. Moysan, and N. Orbell for assistance with the trials at CIRMF.

References

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A COMMENTARY:
DISPELLING THE MYTH OF THE OLDER GORILLA

The casual reference to gorillas in their 20s as older and the subsequent negative connotation associated with that word is important to address.

Inability to reproduce by the age of 20 appears to be the main criterion regarding the use of the world "older." By the mere use of that word, we are, in effect, continuing to "blame the victim" rather than focusing our attention on a system that did not recognize the behavioral needs of these highly social animals. Labeling of this particular age group limits the possibilities for them, both behaviorally and reproductively.

It is true that within the last decade the importance of socializing gorillas has been recognized. With greater interzoo cooperation, the result has been numerous relocations and breeding loan agreements (from which our program has greatly benefitted). There can be no doubt that great strides have been made, but I think it is important to stress positive behavioral husbandry techniques to effect behavioral growth in this age group rather than exploring other more intrusive methods.

When analyzing the possible reasons behind an animal's lack of reproductive success, it is essential to examine the environmental factors, i.e., number of group members that the animal is exposed to, age diversity within the group, facility design, and husbandry procedures.

Sufficient time after an introduction to adjust to group dynamics, consistency in daily routines, proper housing and bedding, and a diet rich in variety are the essential tools that have allowed us at Columbus to successfully integrate these "older" animals into established groups.

We recognize that we are at somewhat of an advantage in that we house 4 groups at our facility, which allows us to translocate a 0.1 from one group to another. In other words, we have more available options. But the important factor to recognize is that we begin with an attitude that does not pigeon-hole these animals.

What we have found is that these animals are more than capable of becoming socially sound when placed in a comfortable environment and given the time to adjust.

Several of the 0.1s on loan to us have done remarkably well since their arrival. A 25 year old 0.1 is now rearing her 2 year old infant. She arrived at the age of 21 having never before copulated and subsequently has had 2 offspring.

Another 0.1 arrived at the age of 19 and had not produced an offspring in 9 years. She is now in her 3rd pregnancy and hopefully will raise this offspring. (The 1st offspring was pulled at the request of her home zoo and the 2nd was pulled due to insufficient weight gain after seven weeks with the mother.)

Another 0.1 arrived 3 years ago at the age of 21, she too had never copulated before. She has subsequently copulated and has become an integral part of the group by serving as an "aunt" figure to a 2 year old infant within the group.

Another example is that of Bongo (1.0) who at the age of 30 was allowed to be present at the birth of his infant. He had no prior experience (all three infants that he sired previously were pulled for hand-rearing) but proved to be a gentle and nurturing father. When his son was 14 months of age his mate died leaving him with the sole care of his offspring. He has continued to this day to be an excellent father to his now 3 year old son.

The final example is the use of these older animals as surrogates to reintroduce hand-reared infants into social groups. Colo, a 31 year old 0.1 having no prior experience with infants was used as a surrogate to integrate her 14 month old grandson into a social group. She had produced 3 offspring in the late 60's and early 70's with no opportunity to rear them. (As was zoo policy at that time.) She in essence had no practical experience but proved to be an excellent mother figure.
VITAL STATISTICS NEWSNOTES

The Gorilla Gazette staff needs your assistance in notifying us of gorilla collection changes at your zoo. Please tear out or copy this page and post it in a conspicuous spot as a reminder; using it to let us know about changes will take just a few minutes. Please let us hear from YOU! Thanks.

BIRTH

Zoo ___________________________ Date of birth ______________________

Infant sex ___ Name ______________________ Meaning ____________________

Dam __________________________ No. previous offspring ____________________

Sire __________________________ No. previous offspring ____________________

Mother reared ________ Nursery reared ________ Comments ____________________

DEATH

Zoo ___________________________ Date of death ______________________

Gorilla name ______________________ Age _______ Sex ______________________

Wild born __________ Captive born __________ No. offspring __________

If captive born where __________________ Dam __________ Sire __________

Cause of death ______________________ Comments ____________________

TRANSLOCATION

Gorilla name ______________________ Date of translocation________________

To (zoo) ______________________ From (zoo) ______________________

Age _______ Sex _____ Wild born _____ Captive born _____ No. offspring __________

If captive born where __________________ Dam __________ Sire __________

Breeding loan ______ Exhibit loan ______ Other ____________________

Comments ______________________

Please send to: Gorilla Gazette, Great Apes Dept., Columbus Zoo, P.O. Box 400
Powell, OH 43065-0400 FAX (614) 645-3465
MILWAUKEE LOSES PATRIARCH

Tanga, our 30+-year-old silverback patriarch, died on Friday, October 20, 1989. It was apparent that death was due to congestive heart failure. He had been lethargic and not eating well recently. His cough was probably due to fluid in his lungs that he was trying to clear. We were treating him with antibiotics at the time of his death.

Tanga was brought to the Milwaukee County Zoo on April 26, 1960, as a mere 17 pounder from the Cameroons. His entire life was spent at the zoo, and I was with him most of that time.

There is a chance we will be bringing in an adult male as we have three experienced adult females in their twenties. Our young male, Obsus, born at the zoo in Stuttgart, West Germany, is eight years old and not fully at breeding status.

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GORILLA GAZETTE SUBSCRIPTIONS

From its inception in 1987, the purpose of Gorilla Gazette has been to provide a networking system among gorilla keepers. All costs have been willingly absorbed by the Columbus Zoo.

Since that time, we have received requests from numerous individuals and institutions to be added to the mailing list. We have honored those requests, but as the volume has grown, it seems appropriate to institute a subscription fee.

Consistent with the commitment of the Columbus Zoo Great Apes staff to facilitate keeper communication, ALL INSTITUTIONS HOUSING GORILLAS WILL CONTINUE TO RECEIVE AT LEAST ONE COMPLIMENTARY COPY OF GORILLA GAZETTE. Individuals/institutions connected with the Gorilla SSP and Studbook or otherwise directly associated with the welfare of gorillas will also receive courtesy copies.

The subscription rate for Gorilla Gazette is $10.00 for the calendar year 1990. Subscriptions are due by February 28, 1990. Individuals subscribing after that date will receive appropriate back issues from 1990 plus the new issues for the remainder of the year.

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DISPELLING THE MYTH cont.

Since incorporating the infant into the group she began exhibiting overt ovulatory behavior which had not been seen in years. I feel these positive behaviors may be linked to the inclusion of the infant and the 0.1 assuming the role of surrogate-mother.

In closing, I think it is vital to stress the importance of a consistently stable environment coupled with the willingness to recognize the highly adaptive nature of gorillas. Hopefully, these two factors can help to diminish the stigma of the "older" gorilla and allow these animals the behavioral opportunities denied them in the past.

BETH ARMSTRONG
COLUMBUS ZOO
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THE GORILLAS OF SAN DIEGO WAP

Ten western lowland gorillas reside at the San Diego Wild Animal Park. They are presently exhibited in two groups.

Trib is a 30-year-old silverback. His group consists of two adult females (Vila, age 32, and Kami, age 12), a blackback male (Jitu, age 9), two juvenile males (Schroeder, age 4, and Gordy, age 3½), and an infant male (Paul Donn, "P.D.", 10 months).

Winston, a 17-year-old silverback, Alberta, a 10-year-old female, and their 11-month-old daughter, Ione, form the second group.

Both of the infants are doing quite well, and all of the keepers have enjoyed the opportunity to watch them grow. Although there is only a month's difference in their ages, the infants have developed at very different rates. This is probably due to a number of variables, including individual mothering styles and their respective social environments.

Alberta, born at the Roeding Park Zoo in Fresno, CA, was hand-raised at the Wild Animal Park. Winston was hand-raised in England with age mates. Alberta had had a number of opportunities to witness another female give birth and care for her infants. Winston, however, had never been exposed to infants or juveniles. Alberta gave birth to Ione during the night with Winston present. Both gorillas have proven to be exemplary parents.

Kami was mother-raised at the Woodland Park Zoo in Seattle. She had also observed births and maternal care. Trib has sired eight offspring and has been a surrogate father to four hand-raised infants. P.D. was born mid-day with all of his group and several keepers as witnesses.

Kami is extremely protective of P.D. and clung tightly to him for several months. This was probably due to the presence of the juvenile males in her group. Jitu, Schroeder, and Gordy were very interested in P.D., and constantly tried to touch the infant.

Alberta, on the other hand, spent quite a bit of time playing with her infant and had Ione riding dorsally when the infant was only two months old! Since there was no competition for the attentions of her infant, Alberta would put Ione on the ground by herself for varying amounts of time. Ione's motor skills developed rapidly, and she began climbing and exploring while in their night quarters. Alberta was much more cautious of Ione when they were out on exhibit.

At this time, P.D. plays frequently with Gordy and Schroeder. As they learned to be more gentle in play, Kami has allowed them increased access to her infant.

It would be interesting to know all the variables involved in creating such different rates of development. For now, we will continue to monitor their progress and enjoy the process.

PEGGY SEXTON
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GORILLA WORKSHOP cont.
at the workshop. Thank you for your enthusiasm and the extra effort.

We would like to ask your help in expanding our mailing list. If you have names of colleagues (either in the field or associated with a zoo or university) who you feel would be interested in the Workshop, please forward their names to us.

The response to the workshop has been overwhelming thus far, and we continue to receive requests for information on a daily basis. We hope to see you in June.

REMINDER: Paid registrations are due by March 1 in order to be eligible for the drawing for a free (reimbursed) workshop registration.
POPULATION STATISTICS
GROWTH RATE ANALYZED

Since 1976, I have been collecting unofficial captive gorilla statistics. My original interest in zoo gorillas centered on which diseases they were susceptible to. Besides the data on diseases, I also found that the total number of gorillas in U.S. zoos was surprisingly small. Furthermore, it was also quickly apparent that if one subtracted imported wild animals, the population was stagnant.

Over the years, the volume of statistics has grown, and so has the gorilla population. Enclosed is a recent update of the population of U.S. captive gorillas in zoos, which I first published in 1982. I hope that the data in the table will be of interest to readers of Gorilla Gazette.

With the exception of 1984, the last nine years have been good ones. Births have exceeded deaths and the overall growth rate remains in the plus column. When examining the total number of gorillas for each year, please remember that this figure includes non-zoo animals transferred to zoos, such as the 13 gorillas from Yerkes to Zoo Atlanta in 1988. While this tends to complicate the growth-rate calculation and make the numbers appear smaller, the absolute figures are still increasing.

There is little doubt that recent increases in population numbers reflect a better knowledge of the gorilla's complex social behavior. Excellent "keeper care" deserves much credit in understanding these primates. Without the dedicated zookeepers, maintaining a viable zoo gorilla population would not be possible.

The future of the wild gorilla certainly remains tenuous and ever changing. However, the tools to perpetuate the zoo gorilla through captive breeding programs are in place. Medical procedures designed to aid infertile humans, such as artificial insemination, in-vitro fertilization, and embryo transfer are applicable to our nonhuman cousins. I will not be surprised to see future multi-level jumps in the zoo gorilla population. My only concern is for genetic diversity. Who knows--the gorillas may even be around long enough for us to really get to know them.

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DEADLINES

The deadline for articles for the next issue of Gorilla Gazette is March 9 for March publication.