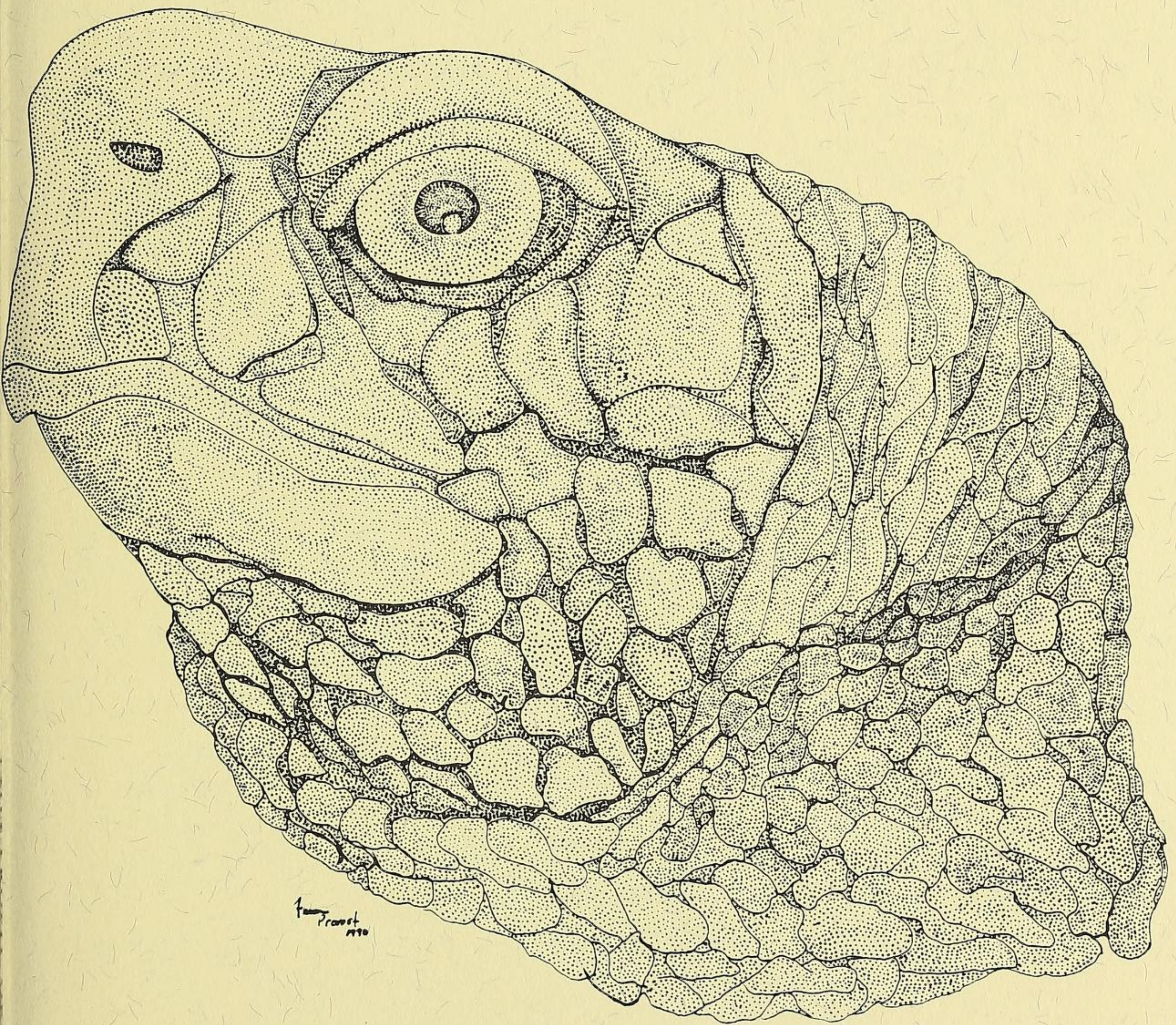


Animal Keepers' Forum

April 1994

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Dedicated to Professional Animal Care

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Information for Contributors

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration.

Articles should be typed or hand-printed and double-spaced. All illustrations, graphs, charts and tables should be clearly marked, in final form, and should fit in a page size **no greater than** 15cm x 25½cm (6" x 10"). Literature used should be cited in the text (Brown, 1986) and alphabetically in final bibliography. Avoid footnotes. Include scientific name of species (as per ISIS) the first time it is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Black and white photos **only** are accepted. Color slides should be converted to black and white prints (minimum size 3" x 5") before submission. Clearly marked captions should accompany photos. Please list photo credit.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed envelope. Telephone or FAX contributions of late-breaking news or last-minute insertions are accepted as space allows. However, long articles must be sent by U.S. mail. Phone is (913) 272-5821 Ext. 31. FAX (913) 273-1980.

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The Birth of a Black Rhinoceros at the Cheyenne Mountain Zoo

By

Tracey L. Anderson, Veterinary Technician and
Vicki Sawyer Gough, Hoofstock Keeper
Cheyenne Mountain Zoo, Colorado Springs, CO

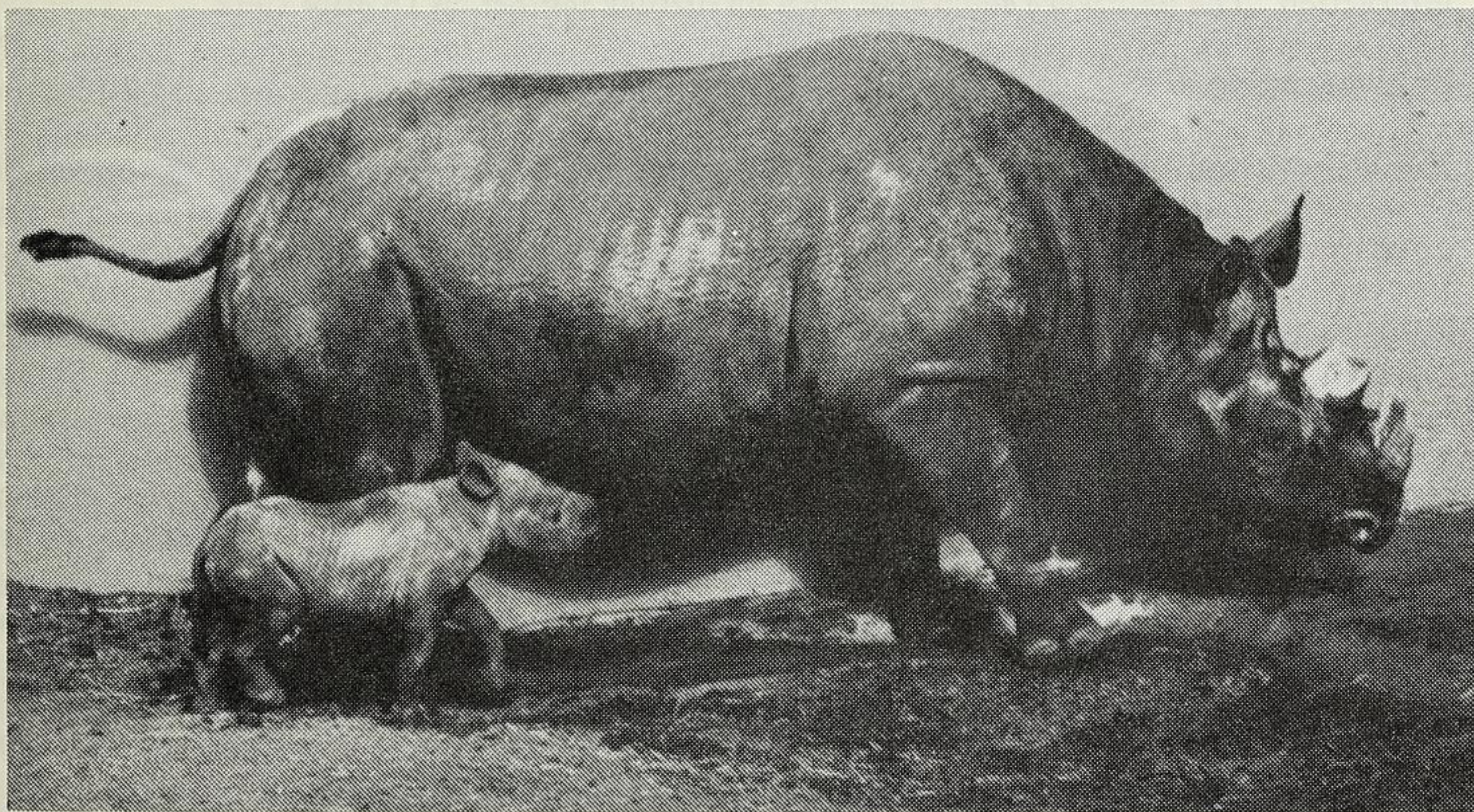
On 20 October 1993 a male Black rhinoceros (*Diceros bicornis*) was born at Cheyenne Mountain Zoo. Three weeks prior to parturition a remote video camera was set up in the female's stall to monitor the impending birth. Heavy rubber mats were placed on the concrete stall floor and grass hay bedding was put down.

Sometime between 1430 and 1630 hours, our female Black rhino gave birth. The calf was lying motionless on a unbedded portion of the stall when the keeper first observed him. The mother was very nervous and not paying any attention to the calf. At 1700 hours the decision was made by the General Curator and Staff Veterinarian to separate the mother from the calf to evaluate its condition.

On initial examination, the calf weighed 29.5 kg (65 lbs.) and his body temperature was 29.4° C (85° F). He was very weak and unable to stand or hold his head up on his own. He was placed on blankets and a space heater was placed beside him. Soon after the space heater was turned on the power to the barn went out. Towels heated in a microwave oven were used to warm him up. Power was restored in about an hour.

The veterinary staff attempted venipuncture for blood collection and to hook up an IV catheter for fluids, but the calf's blood pressure was so low that the attempt was unsuccessful. The calf was vaccinated with 5ml of a 7-way Clostridium and given 300 I.U. of Vitamin E by IM injection.

At 2000 hours the calf's body temperature was up to 35.5° C (95° F). He was responsive and could stand with assistance. We offered warmed 5% Dextrose by bottle and he managed to suckle about 118 mls. We then offered bovine colostrum by bottle. He took about 473 mls in two separate feedings about one hour apart.



"Shyanne", 0.1 Black rhinoceros (*Diceros bicornis*) with her 1.0 offspring which was born on 20 October 1993 at the Cheyenne Mountain Zoo, Colorado Springs, CO. (Photo by author)

Birth of a Black Rhinoceros at Cheyenne Mt. Zoo, Continued

At 2130 hours the calf was standing by himself and was steady and alert. We decided to reintroduce the calf to its mother. Two keepers and the Associate Curator stayed in the barn out of sight in case an emergency separation was required. The rest of the group viewed the reintroduction on the video monitor at a remote location.

The calf was placed in the birthing stall. The cow was in an adjacent shift stall and could see the calf through a "howdy door". After the cow settled down, the calf was moved to the far corner of the stall. The "howdy door" was opened and the cow allowed to enter. The cow made an immediate bluff charge at the calf, but stopped short and began investigating him. Within 15 minutes she was fairly calm, so keepers left the barn and joined the rest of the group viewing the monitor.

By 0200 hours on 21 October, the mother was showing more and more positive interactions with the calf. The calf was standing and seeking out the teat. The video monitor was viewed for the rest of the early morning hours. No nursing was observed. The mother was up and down and pacing all night with the calf following her around when he wasn't sleeping.

On 21 October, at 0830 hours a confirmed nursing was seen. The nursings became regular and the calf became stronger and more active every day. On 16 November, the calf and mother were separated to give the calf 300 I.U. of Vitamin E by injection and to get a current weight. His weight was up to approximately 39.5 kg (87 lbs.).

Breeding History

Cheyenne Mountain Zoo maintains one pair of Black rhinos. The male, "Aki" was purchased from Hiroshima Asa Zoological Gardens, Hiroshima, Japan. He was born 13 March 1981 and CMZ acquired him on 10 November 1983. The female, "Shyanne" is on breeding loan from the San Francisco Zoo and was brought to CMZ from the Kansas City Zoo on 14 January 1987. She was born on 11 December 1982.

Beginning on 3 August 1989, our pair of Black rhinos were placed together during the day with access to the barn and the yard. Mountings were observed but with no confirmed copulations.

Beginning on 27 April 1992, the pair were left together on a 24-hour basis with total access to the outside yard and barn stalls. Daily reports show sparring, fighting and periods of no interaction. The pair were separated with no further contact on 15 July 1992.

Determination of Pregnancy

The keepers had been observing the female's cycles and by 4 August 1992 she appeared not to be cycling. Due to a chronic vaginal discharge the female was immobilized to do a rectal ultrasound. Drs. Nancy Kock from Colorado State Vet School, Richard Cambre from the Denver Zoo and Norm Armentrout from the Pueblo Zoo assisted Staff Veterinarian Dr. Mike Burton with the procedure. She had small raised lesions on her vulva, which were biopsied. The ultrasound revealed multiple 5-10 mm follicles on the right ovary. She also had a possible cystic follicle. The left ovary could not be visualized. A 3-4cm "vesicle" was seen in one uterine horn which was consistent with a possible early pregnancy. The vesicle was similar in size to 18-20 day vesicles in equines. At the St. Louis Zoo rectal ultrasound of pregnant female Black rhinos had similar size vesicles at 45 days of gestation.

On 1 September 1992, saliva that had been collected 3-4 times a week for several weeks was sent to the San Diego Zoo for hormone analysis. The results indicated the female was not cycling, but it did not confirm positive pregnancy. Salivary hormones are not accurate in detecting pregnancy until 90 days into gestation (personal communication, Nancy Czekala, 1992)..

On 2 December 1992, Dr. Nancy Czekala, Reproductive Physiologist at the San Diego Zoo, confirmed positive pregnancy based on salivary hormones. Based on the hormonal evaluation and the ultrasound results, a late October 1993 due date was estimated.

Birth of a Black Rhinoceros at Cheyenne Mt. Zoo, Continued

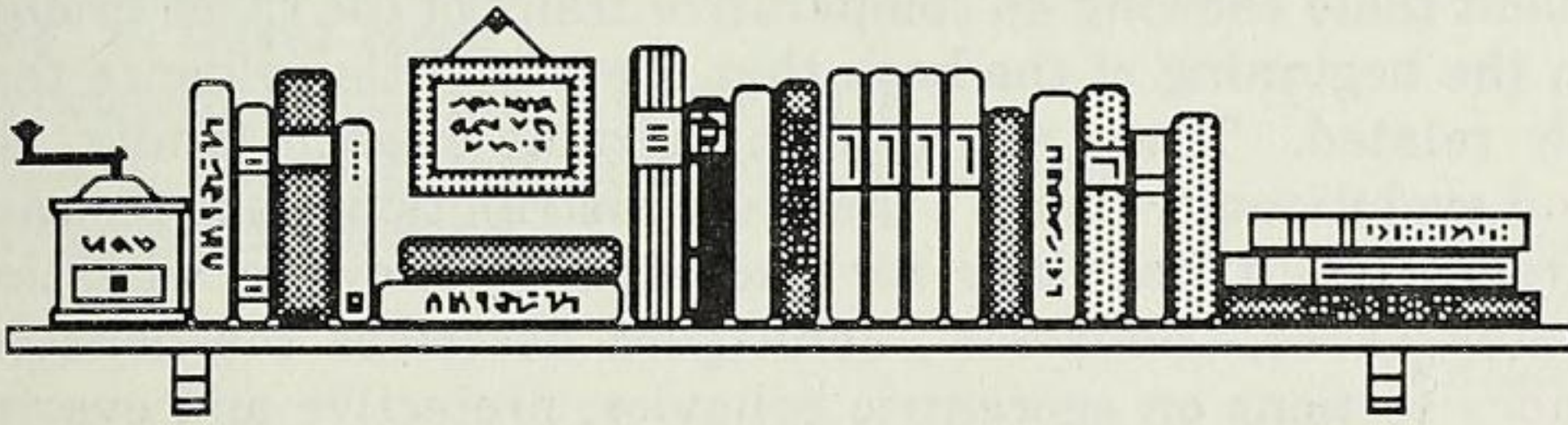
In Conclusion

This calf marks a very significant birth for the Cheyenne Mountain Zoo and the Black Rhino SSP. It is the first viable offspring at the Zoo in 21 years. Both our male and female Black rhinoceros were unrepresented genetically until this birth.

As of this writing, mother and calf are doing fine and exhibiting all normal behaviors. (Article submitted to *AKF* 10 Jan. 1994).

Acknowledgements

We wish to thank the keeper, curatorial and veterinary staff for all their hard work and long hours. Special thanks to Dr. Mike Burton for his guidance in the writing of this paper.



Book

Review



Primate Paradigms: Sex Roles and Social Bonds

By Linda Marie Fedigan - 1992 (Originally pub. 1982)

The University of Chicago Press
5801 S. Ellis Ave., Chicago, IL 60637
386 pgs. Paperback - \$18.95

Review by Kathy Clark
Senior Zookeeper
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When Primate Paradigms was republished in 1992, the author updated the version with a new introduction. In the introduction, Fedigan acknowledged the work of other, predominantly female, primatologists who had begun studying female primates and their social roles in the 1980's. Fedigan writes: "The basic coverage of primate sex roles and social bonds that Primate Paradigms first provided...is still sound." In fact, due to the work of those such as Shirley Strum, Sarah Hardy and Jeanne Altmann, readers of Fedigan's work can better appreciate and understand the outline she provides.

The author attempts to correct the imbalance that focused pretty much on male primates, virtually ignored female primates, and which led to a rather skewed understanding and vision of primate society and behavior. Fedigan emphasizes that this neglect of the females' role also put an overemphasis on primate aggression. Fedigan stresses the equal importance of the role of the female and how that role ties into the group structure and society as a whole.

The book is divided into five sections. The first section - "Constructing the Paradigm" - gives a good basic introduction to primates and begins an exploration of behavior, dimorphism, sex roles and primate society. Later sections delve more completely into roles, kinship and parental care. The fourth section concentrates on nine different species including Gelada baboons, Chimpanzees, Vervets and Marmosets, with respect to their lifeways and the role their gender plays. The fifth section discusses evolutionary theory and sociobiology, and how these have affected how we view male and female primates.

Primate Paradigms is very readable. It is well-written, thoroughly researched and provides some thought-provoking and challenging ideas. The discussions and arguments that the author sets forth are convincing, and backed up with extensive data. There is also a useful and elaborate bibliography. The work is further enhanced by illustrations done by Linda Straw Coehlo. I would recommend this book to anyone interested in animal behavior, particularly that of primates, and those interested in expanding, and updating some rather myopic research findings and methods of the past.