

# Zoo Babies Numerous

Wild animals in captivity are being handled better than ever before, as people become more interested in their welfare, and scientists learn more about them—By Barbara Tufty

► BESIDE THE LUMBERING, baggy, six-ton elephant, trots an appealing 180-pound baby, flapping its ears and curling its tiny trunk. In another cage, a bright-eyed perky baby hog belies the ugliness of its grotesque African wart hog mother, often called a “four-legged nightmare.” Along a reed-bordered artificial lake, five downy white trumpeter swans push little circles of ripples as they swim beside their majestic parents.

Only recently have such wild animals in captivity started producing and rearing their young.

Zoo babies are material testimony to a growing success story on preserving wild animals in zoological parks and game farms. This comes at a time when exploding human population, expanding cities and need for carving farmland out of the wilderness are threatening the lives of wild creatures throughout the world.

## Babies Appealing

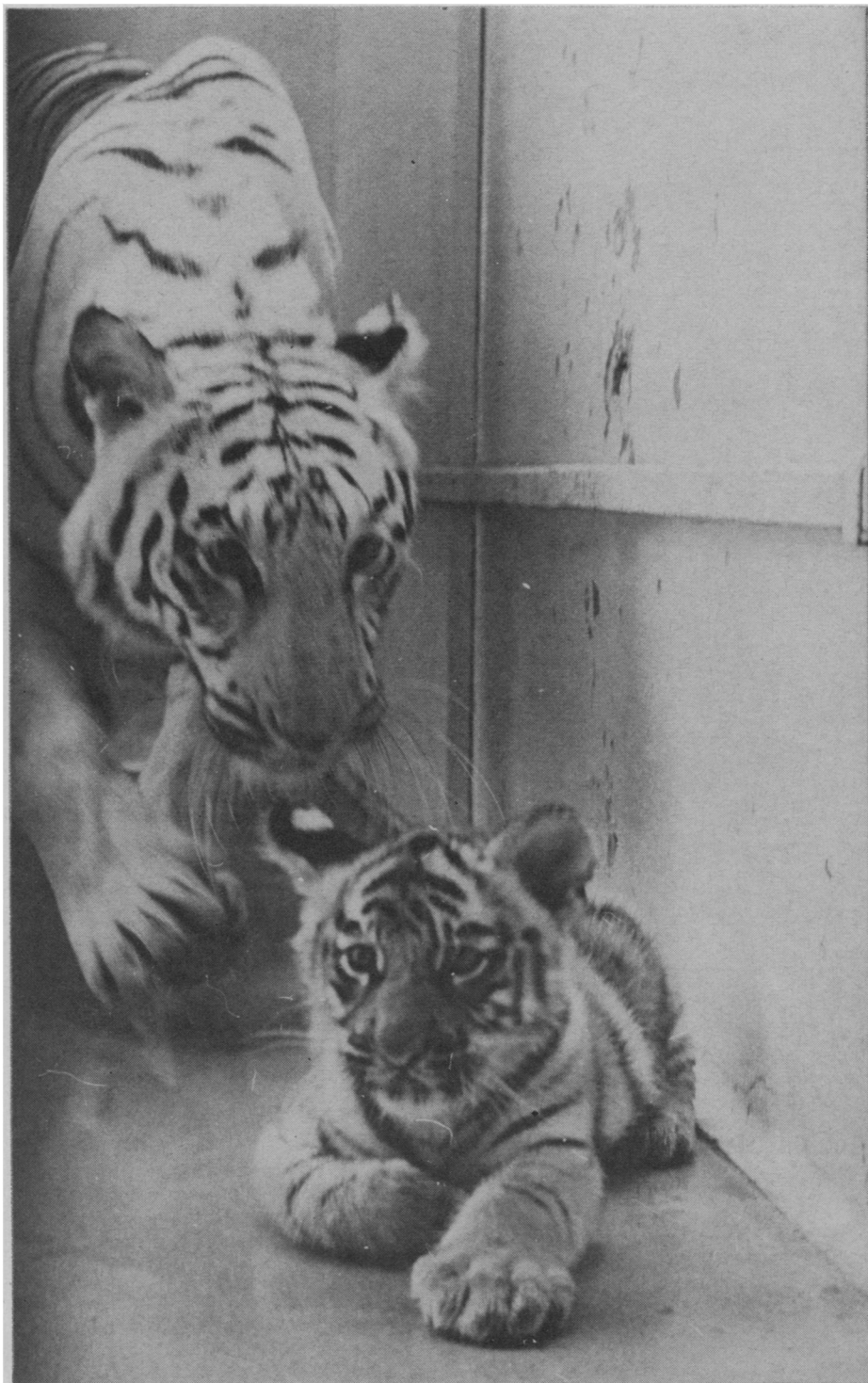
Hairy gorillas, boa constrictors, grizzly bears, Brazilian tapirs, green honeycreepers and other animals all have one thing in common: lively, appealing babies which are miniature bundles of their exotic, temperamental parents without their burning fire and fierce savagery. These young creatures are living perpetuations of the animal seed which has been passed down and modified for eons since the first cell sparked with life three billion years ago.

The impulse to mate can run strong in wild animals as well as the maternal reaction to protect the helpless offspring. The most ferocious beast in the world has been cited as the mother water buffalo, which, when her baby is threatened, turns into a fearless raging demon that will not slow down until the enemy—or she herself—is dead.

Yet this intense impulse of animals to mate and protect their species sometimes goes awry when confronted with iron bars, a concrete cage, the smell of man or anything that evokes fear. Often a male and female will not mate in captivity—they are too ill at ease, too shy, too lethargic. Or if they do mate, and a baby is born, they sometimes refuse to care for it and it lies where dropped until it dies of neglect, or is raised by human hands. Even worse, some wild animals will kill and eat their offspring.

What is this destructive impulse, stronger than the drive for reproduction?

This problem is one of many that animal scientists and zoo officials are



Fremont Davis

**NO NONSENSE, PLEASE**—Mohini, the National Zoo's rare white tiger, moves to protect her yellow cub, Kesari, from the photographer outside her cage. The cub, born Feb. 5, was sired by Mohini's uncle Sampson, a yellow tiger with white genes. One out of every two cubs born to Mohini and Sampson has the possibility of being white.

hoping to understand—and by understanding, to cast light upon the strange ways of the world's foremost animal, *Homo sapiens*.

It is not true to say a wild animal in captivity "misses his freedom," said Don G. Davis, director of the Cheyenne Mountain Zoological Park in Colorado Springs, Colo., and president of the American Association of Zoological Parks and Aquariums.

Often this so-called freedom is not so windblown and ideally free as people like to romanticize it. The animal is constantly on guard against his natural enemies, searching for food and water, and beset by weakness from parasites and wounds that fester for years without care.

Wild animals actually adapt very quickly to captivity with proper care, said Mr. Davis. Once established, an animal surveys his pen as his own territory. Incidentally, those "kings of beasts," the lions, are some of the most adaptable of all to captivity, and have bred so well that often there is a surplus of zoo lions. The cheetahs, on the other hand, which have been kept for centuries in Asia for hunting with man, cannot yet accept the conditions of captivity enough to mate and produce young.

People still come to the zoos primarily to be entertained, Mr. Davis said, but they cannot help but learn something—that a tiger has stripes, a leopard has spots, and bears and monkeys love to beg for attention and food while the snakes and large cats are aloof from such ham acting.

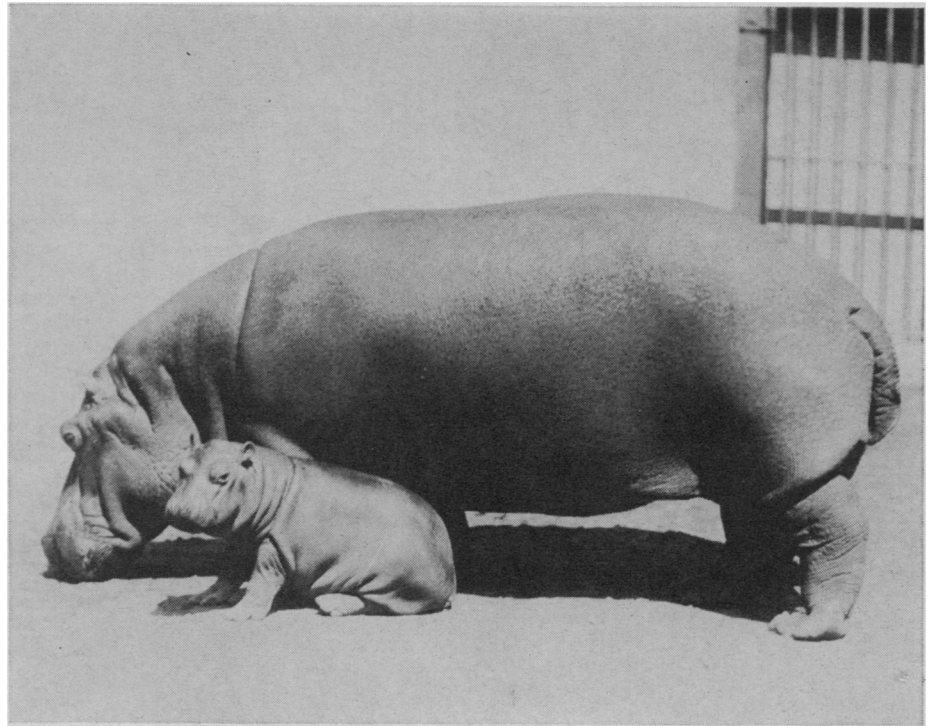
### Profession Growing

More serious studies on wild animals are being made now than ever before. The growing profession of animal behavior and conservation of wildlife is attracting more scientists, researchers and specialists who are traveling to parts of Africa and South and North America to conduct field studies on their behavior, ecology and nutrition. These careful expeditions have replaced large hunting orgies, when beasts were killed so man could collect specimens for static stuffed exhibits in museums, make wastebaskets from elephant legs, and fill trophy walls with huge heads of rhino, walrus, elk and other animals.

Today's public is more aware of the plight of wild animals as civilization expands. As we move into a more complex, mobile and populated civilization, we are realizing that wildlife must be managed for vital scientific and educational reasons as well as for mere amusement.

Small towns throughout the United States are writing in asking how to start a small zoo, pointed out Donald R. Dietlein, manager of the animal department of the National Zoological Park in Washington, D.C., part of the Smithsonian Institution.

Larger zoos with adequate financing are striving to build modern cages and buildings with new materials. They



National Zoological Park

**LOOK AT LITTLE ME**—One of the most popular zoo animals is the hippo—doubly so when there is a baby. The National Zoo boasts of having two healthy adult hippos.

are installing computers or automatic machines for keeping track of the health and condition of each individual animal, enhancing the scenery with live or artificial plants and setting up attractive exhibits. Some zoos have developed their grounds with moats instead of bars for the large felines, night cages with infrared lighting for bats and other nocturnal animals, and TV viewing systems for observing shy or brooding animals without their being aware of human eyes.

The maintenance of zoos as centers of amusement and learning is not inexpensive, said Mr. Dietlein.

For instance, it costs \$4.72 a day to feed a tiger the meat he needs. The fruits and vegetables for a gorilla cost about \$1.80 a day, while that little fat grass-eater, the pigmy hippo runs on only 32 cents a day at the National Zoo. A lion's share costs about \$4.13, an elephant's hay and fruit cost \$3.75, and a giraffe eats about \$1.20 worth of grass and vegetables a day.

The National Zoo's grocery lists run high for a year—about 96,000 pounds of fish for the sea lions, reptiles and bears; 126,000 pounds of meat for the carnivores; and 30,600 dozen eggs for many animals, since eggs are such a good source of protein.

### Menus Include Delicacies

The food must always be fresh, clean and carefully prepared, Mr. Dietlein pointed out. Menus for zoo animals include such essential delicacies as mice and rats for owls, fruitflies for hummingbirds, rice pudding cakes for monkeys, wax moths for chameleons

and lizards, and fresh vegetables and fruits such as kale, sweet potatoes, carrots, onions, celery, oranges, apples and bananas for the vegetarians. A check list of the zoo larder includes special food for babies and invalids—wheat honey cereal, canned milk, pabulum, dog food, rolled oats, peanut butter, red jello, carrot juice and egg noodles. Another special section of the zoo commissary is the grow-it-yourself section where millions of live mealy worms, cockroaches, fruitflies and crickets reproduce in specially prepared drawers and supply tasty snacks for those who like such diets. Succulent green grass, excellent salad during the drab winter months, is grown in trays hydroponically, immersed in liquid nutrients.

### Many Costs

The bills for food and nutrition are only part of the cost of running a good zoo, continued Mr. Dietlein. Over 86% of a zoo's expense can go for salaries—for keepers to tend the animals each day, sweeping the cages and scrubbing the animals with hoses, feeding them and checking their health; for carpenters and welders to repair the cages and buildings; for policemen to patrol the area and keep people from sadistic tricks, such as feeding glass, pins or cellophane wrappings to the animals or throwing coke bottles and firecrackers. Then there are the expenses for the quarters, light, heat and for medication and nursery care. . . .

Adequate money is a primary requirement  
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# MS Study Uses Frogs

► **SCIENTISTS** are coming closer to understanding the baffling symptoms of multiple sclerosis. The isolated spinal cord of a frog in a recording chamber and in test tubes is reported from Belgium as a model that could lead to something more than speculation on localization of nerve problems.

Understanding precise relationships between the immune processes, long believed to play an important part in the cause of the central nervous system disease that attacks hundreds of thousands of young people in the prime of life, and other symptoms such as destruction of the fatty sheath of nerve fibers, is the aim of research that is going on in many laboratories.

Dr. Jean A. Cerf of the University of Brussels and Dr. Guy Carels of the Centre National de Triage et de Readaptation in Melsbroek, Belgium, reported in *Science*, 152:1066, 1966, that although more work along different lines of investigation will be needed to "obtain precise information on the site of the blocking effect" they hope the method of their experiment will be useful in other research.

The frog's spinal cord was used to investigate the effects of serum from multiple sclerosis patients on bioelectric responses of a highly organized nerve center. The preparation was mounted in a recording chamber and submitted to a constant flow of Ringier's solution with oxygen.

Serums from normal persons were used as controls. The control experiments showed that exposure to normal serum sustained or even enhanced the electrical activity of the isolated frog spinal cord. But when the cord was exposed to serum from multiple sclerosis patients there was significant depression of reflex discharge from two or more adjacent nerve cells (poly-synapses).

To make it easy to apply solutions, the researchers cut the frog's spinal cord from front to back in the experiments dealing with the single nerve responses, but they sectioned it transversely above and below the lower-back enlargement when they were investigating the segmental reflex activity. Reflex discharges were affected much more than motoneuron responses.

The Belgian researchers compared their results with those of Dr. Murray B. Bornstein of Mt. Sinai Hospital, New York, and Dr. Stanley M. Crain of Columbia University, but said their own work suggests that "major alterations should be looked for in other spinal structures participating in reflex activity."

Both the Belgian and American researchers, however, found that there is an active factor in MS serum that depends on complement.

• *Science News*, 89:451 June 4, 1966

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(Continued from p. 441)

site for running a zoo as it should be run, agreed the National Zoo's veterinarian, Dr. Clinton W. Gray. It is needed also for space for the animals, and cognizance of the human personnel.

Zoo officials still have much to learn about wild animals—their stresses, their ailments, and their proper handling, he said.

Zoo veterinary medicine is still in its infancy with only less than 100 authentic zoo veterinarians in the world, more than 20 of whom are in the United States.

Medicine for animals started as a science about 1870, Dr. Gray said. Since 1900, most efforts have been directed to only 10 animal species—primarily the horse, cow, dog, cat and lately the swine. Since there are about 1,500 species of zoo animals, there is need for much more study and specialization.

Parasites—the flukes, worms, amoebae, ticks, and other small creatures that live off other animals—are probably the largest problem in Dr. Gray's realm of zoo medicine. An apparently healthy animal can waste away and die in a short time before the particular destructive parasite can be isolated, identified, and a proper cure found.

One of the famed Komodo dragons from Indonesia, lost its life because of a rare amoeba. Dr. Gray worked hard to save the other, now alive and well, drowsing in the reptile house.

Every animal needs constant observation, to make sure it eats its "spinach," or vitamins and nutrients, with its "ice cream," the foods it prefers, said Dr. Gray. Pregnant and nursing animals and growing youngsters need special attention to keep them healthy. There is only a small proportion of fights that break out between the animals, and little wound infection.

Animals go through a state of stress on close association with man, if they do not get proper food, clean cages or enough space for their sense of ease. At this time, diseases have a tendency to crop up. Particularly critical periods for wild animals occur during transportation from the wilderness to captivity or from one zoo to another, during their arrival at their destination and introduction to their new quarters, and during their mating period. At these times, the animals should be handled with special care, in adequate cages. A well-cared-for animal in an uncrowded cage is an animal in healthy condition. Chances are good that it will not sicken or die, but will thrive, mate and care for its young. This means the difference between perpetuation of the world's wild creatures or their possible extinction.

• *Science News*, 89:440 June 4, 1966

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