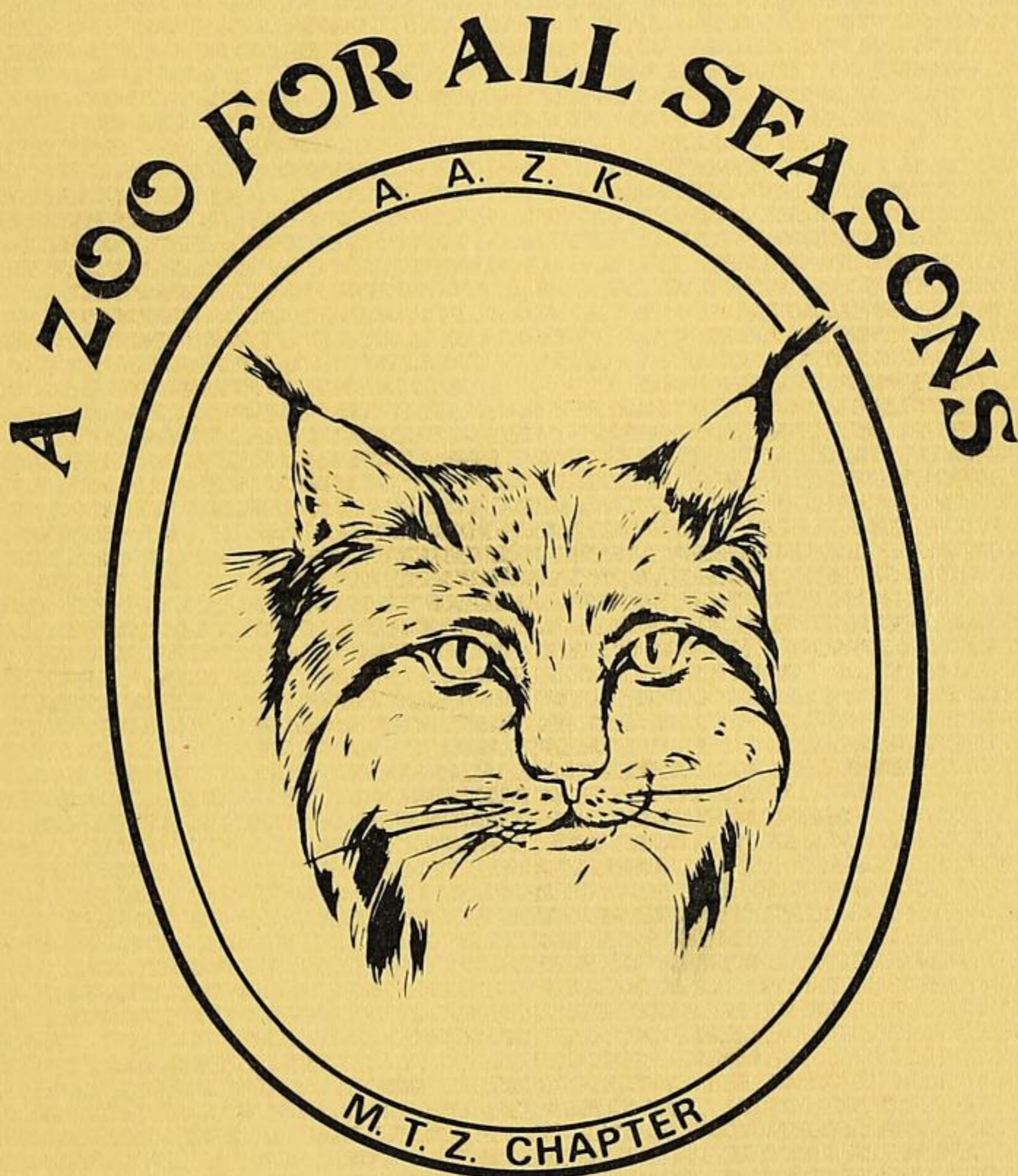


SPECIAL EDITION

Animal Keepers' Forum



SPRING SUMMER AUTUMN WINTER
ANCIENT ASTRONOMERS SYMBOLS



**A.A.Z.K.
NATIONAL CONFERENCE
1982**

Dedicated to Professional Animal Care

DECEMBER 1982

Executive Editor: Mike Coker
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Animal Keepers' Forum (ISSN 0164-9531) is a monthly journal of the American Association of Zoo Keepers, 635 Gage Blvd., Topeka, KS 66606. Five dollars of each membership fee goes toward the annual publishing costs of *Animal Keepers' Forum*. Second Class postage paid at Topeka, KS. Postmaster: Please send address changes to address printed below.

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BIRDS IN MIXED SPECIES EXHIBITS

By
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New Orleans, LA

The expansion and renovation of most zoos today emphasize "natural" exhibits, designed to suggest the habitat from which the animal originates. The elimination of visible barriers is a major factor in creating the illusion of being in the wild. Carrying the "natural" concept a step further leads to an exhibit in which several species endemic to the same habitat are displayed together. Hoofstock often have been maintained together in the past. And mixed flocks of birds have been the rule rather than the exception. But in recent years, the concepts of natural habitat, minimal barrier and mixed species have been combined to create realistic exhibits in which both birds and mammals are successfully displayed. This paper discusses the results of birds in mixed exhibits at Audubon Park.

1. Selection of Birds

The selection of bird species must first take into consideration the physical characteristics of the exhibit. A large, open air, "plains" type exhibit would require large birds adaptable to being rendered flightless, such as cranes or storks. Passerines would not do. A marshy, thickly planted exhibit would be unsuitable for an ostrich but could be an effective place to display herons. The possibilities are further limited by the mammal factor. In most cases of a mammal-bird exhibit, the mammal will be the dominant species as a result of size, temperament, speed or agility. The birds selected for an exhibit must be able to cope with the character of the mammals present. For instance, our bison enjoy running around their exhibit. The pheasants, geese and cranes are sufficiently fleet-footed to stay out from under the hooves. But when we attempted to add pinioned vultures, they were summarily trampled. Part of the problem is that any new fixture or animals in an exhibit is a novelty and must be "tested" by all the resident animals. Any bird introduced into our elk exhibit must be vigorously chased by the elk before it becomes just another fixture in the yard and is left alone. In such cases, introduction of the bird via a so-called "howdy" cage is probably a good idea.

Even when birds are successfully introduced into an exhibit, they still need to be provided with a "safe" place into which they can escape and not be followed. In many cases a brush pile or some other solid structure to hide behind or under is sufficient. Our ground hornbills have access to a large oak tree. The secretary bird and marabou storks can slip between posts to avoid the white rhinos. And swimming birds can always find refuge in the water. The individual personalities of the animals is also significant.

EXHIBIT	MAMMAL SPECIES PRESENT	BIRD SPECIES	INJURY DUE TO MAMMAL	BREEDING
Africa I 1.1 acres	white rhino Grevy's zebra	marabou stork	none	none
		secretary bird	none	no mate
		eastern white pelican	none	juveniles
Africa II 1.1 acres	ellipsis waterbuck sitatunga	red-necked ostrich	male ostrich gored by waterbuck	fertile eggs
		leadbeaters' ground hornbill	none	none
		white-bellied cormorant	none	some nest building
Africa III 1.2 acres	gemsbok Thompson's gazelle ankole	East African crowned crane	none	nest building fertile eggs incubation
		Abdim stork	none	none
Africa IV 1.1 acres	sable white-bearded gnu	lappet-faced vulture	stepped on by hoofstock	no mate
		Egyptian geese	none	none
		blue-necked ostrich	none	infertile eggs
North America I 1.5 acres	bison white-tailed deer	sandhill crane	leg broken by bison	none
		Canada geese	legs broken by bison	nest building, fertile eggs, incubation, hatching
		white-fronted geese	none	none
North America II	tule elk	ring-necked pheasant	none	nest building, fertile eggs, incubation, hatching
		sandhill crane	male killed by elk	none
		ring-necked pheasant	none	nest building, infertile eggs, incubation
		wild turkey	none	nest building, fertile eggs, incubation, hatch

		barnacle geese	none	none
South America I 1.2 acres	tapir	jabiru stork	none	no mate
	guanaco	rhea	none	nest building, fertile eggs, incubation/hatching
	capybara	ocellated turkey	none	none
		northern screamer	attacked by capybara	none
		cape shelduck	none	fertile eggs in box, incubation
		black-necked swan	none	nest building, fertile eggs, incubation/hatching, young raised
		assorted waterfowl	none	none
South America II .9 acre	cavy	American flamingo	none	nest building, fertile eggs, incubation/hatching, young raised
		assorted waterfowl		
Asian Domain I .8 acre	axis deer	ruddy shelduck	none	fertile eggs in box, incubation/hatching
	blackbuck	sarus crane	none	none
		barheaded geese	none	none
		blue-eared pheasant	none	none
Asian Domain II	swamp deer	demoiselle crane	none	none
	nilgai	radjah shelduck	none	none
		Eyton's tree duck	none	none
		Indian spotbill	none	none
		Swinhoe's pheasant	none	nest building, fertile eggs, incubation/hatching
Primate	talapoin	seriema	none	none
	muntjac			

2. Feeding

Once the task of choosing and introducing birds into a mixed exhibit is accomplished, feeding each species becomes a major problem. Depending on the species involved, birds may eat mammal food, mammals may eat bird food, so it becomes a matter of devising a system by which each species has access to the diet designed for it to the exclusion of the other animals in the exhibit. Again, since the mammals are generally the dominant species, provisions must be made to exclude them from the bird food.

In many cases, this can be accomplished by selectively corralling and feeding some species at night, thereby creating two or more separate areas within an exhibit. Where this is not feasible, feeders must be devised. Our most difficult exhibit is South America--tapir, guanaco, capybara, rhea, jabiru and waterfowl. To feed rheas but not tapirs, capabaras, or guanacos, a slotted feeder was devised. To feed jabirus but not tapirs or rheas, a slotted feeder over the water proved to be effective. For waterfowl, a slotted feeder keeps out capabaras and a large overhanging top prevents rheas, tapirs and guanacos from reaching the slots.

In hoofstock-ostrich exhibits, the ostrich feeder is hung high on the fence. But this does not prevent the sitatunga from "walking up" the fence to reach the food. A slotted feeder on a post will be a possible solution.

A variation on the slotted feeder is a hole in the chainlink fence with the food pans outside of the exhibit. The cranes and geese adapt well to this and you avoid the problem of having a structure in the exhibit which could potentially cause injury to the other animals. Even so, a hole which will safely accommodate a crane's head is also large enough for a small gazelle to reach through. Trade off.

3. Reproduction

Once the birds are established in an exhibit and have learned to co-exist with the mammals, the next goal is reproduction. Success in this area may be heavily dependent upon the amount of area available per animal (as would be true in any conventional exhibit). The "safe" places play a role in reproduction by providing a place of security, a prime factor in any nesting. Our Canada geese and ring-necked pheasants nest at the perimeter of their exhibit, staying out of the way of the bison. The wild turkeys nest under brush piles which, after an initial period of investigation, the elk do not disturb. In several exhibits, ducks successfully nest in boxes. No "safe" place was created for the crowned cranes to evade the ankole, gemsbok and Thompson's gazelles, so they found their own. They built a nest and laid eggs on a drain cover four feet out on the lagoon which forms the front of the exhibit. The black-necked swans were sufficiently aggressive to prevent disturbance of their nest by tapirs, guanacos, rheas and jabiru. However, aggressive defense of a nest by a male sandhill crane resulted in his being trampled by an elk which was not intimidated. Although cavies are not aggressive, they do disrupt flamingo nesting merely by their presence and activity.

Raising chicks in our mixed exhibits is generally not attempted. This is not due to the mammal factor but because of predation by natural wildlife. To date, only flamingos and black-necked swans have successfully raised young on exhibit. However, eleven other species have produced fertile eggs, some of which hatched on exhibit and the chicks were taken for hand-rearing, others of which hatched in the incubator.

4. Capture

Capturing the birds in a mixed species exhibit can pose problems, depending on the nature of the mammal species. As with feeding, the ideal situation would be one in which some of the animals could be corraled while the capture takes place. If this is not possible, care must be taken to separate the target birds from the rest of the animals. This reduces the possibility of alarming the other animals and the problems that could cause.

In conclusion, it is possible to manage birds in a mixed species exhibit. With some forethought and planning, most problems can be avoided before they occur. Even so, a lot of trial and error is still required to determine which species or which individuals are compatible. Reproduction of birds in a mixed species exhibit is the ultimate indicator of an exhibit which "walks". One must use imagination and persistence. But it can be done.



KEEPER SAFETY ACCORDING TO
THE GOSPEL OF BUCHANAN

By
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It would be difficult to find a vocation that offers as great a variety of ways to inflict mayhem on oneself as does zoo keeping. Therefore, as zoo keepers, we have ample reason to consider the subject of safety. Yet, I am constantly amazed at the regularity with which I see keepers unnecessarily risk life and limb. I am even more amazed at how often they get away with it. Perhaps this is why so many pay so little attention to this aspect of zoo keeping.

There are, in my mind, two basic reasons for being concerned with safety. The first is quite obvious, but I will mention it anyway: to preserve one's own life and health. The second is also rather obvious, yet is often overlooked: to preserve the life and health of the animals in your care. The stress inflicted on an animal during an aggressive encounter with a keeper, and any physical injuries it might incur during the event, are completely contrary to the objective of one's job as a zoo keeper. I encourage you to give serious consideration to this second point now. It is doubtful you could do so objectively if you delay until a time when all your energies are directed at preventing an enraged and/or fearful animal from nibbling on your eyebrows.

In the remainder of this paper I propose to offer a systematic safety approach to the job of zoo keeping. For ease and continuity, I will address the situation of a keeper entering an occupied animal enclosure. However, it is applicable to all animal situations as well as many non-animal situations. It is a system that is tried and tested. It works! It has saved lives!