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Mixed Waterbird Exhibits

by Kerry A. Muller,
Assistant Curator/Ornithology

and

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More than ever before people are keeping birds in captivity, and the number engaging in this activity is increasing at a surprising rate. Aviculture has never been more popular. Although many aviculturists are primarily concerned with aviaries that are functional and do all they can to promote the best breeding results, many keep birds for their aesthetic values. Waterfowl in particular lend themselves to extremely attractive landscaping in the appearance of the pools, lawns and aquatic vegetation that provide a home for the various species of ducks, geese and swans.

A good deal of literature has been published on keeping waterfowl in captivity, and on the various aspects of landscaping to enhance their beauty. However it is seldom that any thought is given to including other types of aquatic or semi-aquatic birds in the exhibit. With the great number of bird dealers now active in the United States, many other species of birds are often available that would greatly increase the aesthetic value of almost any well landscaped aquatic exhibit. These fall very generally into the following categories:

- A. Flamingos.
- B. Coots, moorhens, gallinules and rails.
- C. Long-legged waders:
Ibis, spoonbills, herons, egrets, and relatives.
- D. Short-legged waders, shorebirds:
Stilts, avocets, plovers, oystercatchers, curlews, godwits (and other sandpipers), jacanas.
- E. Cranes, sunbitterns.

All of these birds have been kept for many years in most zoos and many have successfully reproduced in captivity. They can be mixed with waterfowl in large areas. Outlined here are considerations which must be given when an exhibit is planned.

Flamingos

Two species of flamingos are occasionally available on dealers' price lists. These are the Caribbean Flamingo, *Phoenicopterus ruber ruber* and the Chilean Flamin-

go, *P. chilensis* (or *P.r. chilensis*). They have often been housed with small species of waterfowl and will live compatibly with most other birds. Flamingos have long, thin legs which can be broken relatively easily, and if broken cannot be repaired. They should not be housed with large, aggressive swans or geese. Any horizontal barriers such as branches, etc., that they could trip on should be removed from their exhibit. They require a flat lawn area for resting and display, and a pool area, with gently sloping non-slippery sides, for bathing and breeding. One portion of the pool should be up to three feet deep. Fresh water should be introduced regularly. For breeding, at least 10 pairs are required for they are a communal species and require group display stimulation. They require a muddy area near the pool for their communal cone-shaped mud nests, and a flat lawn display area no less than 40' x 60'. Only one species should be kept as they will hybridize if kept together.

Flamingos can withstand considerable cold if they have access to water that does not freeze. However, in very cold climates they are usually provided with a heated shelter and pool. Suggested diets for the species discussed here can be found in the appendix at the end.

Coots, moorhens, swamphens, gallinules, rails, etc.

The American Coot, *Fulica americana*, is a very common species in most of the United States. The Common Coot, *F. atra*, is equally so in Europe. Most waterfowl breeders with large ponds have coots come in as wild birds, and if natural aquatic vegetation occurs in the exhibit, they may breed there. There are a wide variety of swamphen, waterhen and rail species. Most are difficult to keep in an exhibit area and may make attempts to escape. Even when pinioned or wing clipped they can easily climb a wire fence. For this reason they are usually best kept in an enclosed aviary. The larger species will eat eggs, small ducklings and may be aggressive to teal and other small duck species. The smaller rails, such as the Afri-

can Black Crake, *Limnocorax flavirostris* or the *Lateralis* crakes are delightful in an enclosed aviary, and will often reproduce readily.

Long-legged Waders (Ibis, spoonbills).

There are several species in this group which may be desirable. The larger ones such as the Sacred Ibis or Straw-necked Ibis, can be aggressive to small waterfowl and even prey on baby ducks. On the other hand, the Scarlet Ibis, *Eudocimus ruber*, or the American White Ibis, *E. albus*, are smaller and will live peaceably with most waterfowl. Although they have been wing clipped or pinioned in open exhibits, they do best and reproduce if kept in an enclosed exhibit where they can fly and set up a colony of stick platform nests in trees or large shrubs. They require protection in very cold weather.

Herons, Egrets, Bitterns, and Relatives.

There are several species represented in this large family but most are not suitable for housing with waterfowl or other small birds. Most herons, bitterns, etc., will kill ducklings and harass small ducks. They all require a covered aviary and can escape even when pinioned from an open topped enclosure. Only the small egrets, such as the Cattle Egret, and small herons can safely be kept with waterfowl and shorebirds.

Short-legged Waders, Shorebirds.

Stilts, avocets, plovers, oystercatchers, sandpipers, and relatives — all of these species can live together with the smaller waterfowl species in the proper exhibit. It is best if the exhibit is covered. However, some have been kept pinioned or wing clipped, but they are then very vulnerable to predators, and will drown if the pool is at all steep sided. They require shallow water pools with fresh water, preferably with sand or natural bottoms. A lawn area is desirable. Most require some protection in freezing weather, but this depends on the species. Their diet is not particularly difficult (see appendix) but their food must be protected from being eaten by other birds, and pans of food

should be available in several locations to avoid being monopolized by one fat bird while the others starve. Properly cared for, most shorebirds live for many years and will often reproduce in captivity. They are seldom aggressive to waterfowl or other birds; however most will protect their nesting area when they have a clutch of eggs.

Jacanas

There are several species of Jacanas (Family Jacanidae) and most have been kept in captivity at one time or another, most with poor success. They require water lilies or water hyacinth on which to walk. Their extraordinarily long toes are especially adapted for life in lily-covered ponds. If kept on any other substrate, their toes usually become infected and they die. If the reader lives in southern Texas, southern Florida or southern California where a pool can be maintained with growing water lilies or hyacinth, Jacanas should do well there. They are best kept full winged in a covered enclosure. They cannot stand frost. They do well on a standard shorebird diet.

Cranes

A wide variety of articles have been published on cranes and the reader is referred citings in the bibliography. Most species are too large and aggressive to be housed comfortably with waterfowl, especially when breeding. However, if the exhibit is large enough for birds to avoid each other, some species such as Demoselle Cranes, *Anthropoides virgo*, Crowned Cranes, *Balearica sp.*, Blue Cranes, *Anthropoides paradisea*, or Sandhill Cranes, *Grus canadensis*, may be kept successfully with large species of waterfowl.

Sunbitterns

Sunbitterns, *Erypyga helias*, may be kept in an enclosure with waterfowl, if the enclosure is covered. They require heat in cold weather. These birds are especially attractive when they spread their wings, their plumage pattern being particularly evident. *contd on next page*



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The inclusion of various waterbirds in one's private collection depends not only on the availability of the specimens but on the legal acquisition and possession of them. Some species mentioned in the broad groups may be protected by various regulations. A recent bird price list had offered for sale, Blacksmith Plovers, Crowned Lapwings, and Black Crakes - all nice additions to a suitable aviary setting, and all could be legally possessed. The assumption is made that if the birds are being purchased directly from a USDA-approved quarantine station that all the proper documents for their importation are in order, and permits showing legal taking in the country of origin are in the hands of the quarantine station operator for inspection. In this case, it is assumed that one is not attempting to acquire species listed by the Department of the Interior, Fish and Wildlife Service as endangered species (50CFR17) nor those listed on the International Convention (50CFR23). The offer to sell endangered species is contingent upon the receipt by the purchasing party of a U.S. Fish and Wildlife Permit for a specific transaction. In addition, the birds should not be listed on the Migratory Bird list (50CFR10). These documents can be obtained by contacting the district or area office of the U.S. Fish and Wildlife Service.

Each state also has regulations pertaining to the keeping of various waterbirds. Before obtaining any birds, it is wise to consult the Fish and Game Department laws and regulations of the particular state. Most departments will supply a copy of their laws upon request. For example, Article 2, 2150, of the California Fish and Game code states: "The department (Fish and Game) in cooperation with the State Department of Food and Agriculture may, upon application, issue a written permit to import into, possess, or transport within this state any wild animals enumerated in or designated pursuant to Section 2118, upon determination that the animal is not detrimental or that no damage or detriment can be caused to agriculture, to native wildlife, to the public health or safety, or to the welfare of the animal, as a result of such importation, transportation or possession."

Special purpose permits can be obtained from the U.S. Fish and Wildlife Service for well justified scientific reasons. There is still much to be learned about bird behavior, and observations in captivity, when recorded, will add to our accumulated knowledge. The key here, however, is well justified" with a strong purpose in mind as these permits are diffi-

cult to obtain.

An estate can be made even more attractive with the addition of shorebirds and waders around the edges of a pond. However, most states require that wild birds exotic to the state be rendered flightless through pinioning or else contain the birds in an aviary structure where they cannot escape, thereby risking competition with native birds. While it may be undesirable to have pinioned birds in a free-flight cage, wing clipping can serve to reduce the risk of traumatic injury while a newly introduced bird becomes accustomed to its new surroundings. For record purposes, of course, it is desirable to have the birds banded before adding them to the enclosure.

Rewards come to an aviculturist in a variety of ways. Some get satisfaction from turning the dollar from a sale. Others find that mere possession of living birds is a desired goal. And, too, who can deny the pleasure of watching our charges nest and raise offspring. After all, the true measure that our birds are healthy and have been provided with a suitable captive environment is when they reproduce. There is something contemplative and tranquil about watching a long-legged wader's reflection in a quiet pool of water, or hearing the call of a duck late in the evening. As we become farther removed from our primitive beginnings by technological advancements, and shudder with horror at the rapid loss of wildlife habitats, our ability to successfully hold, mix and reproduce certain birds might serve as a reminder that we do live in a real world.

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(Note: Numerous articles have appeared over the years in "Aviculture Magazine" Froude & Co., England on various aspects of keeping shorebirds (and all birds) in captivity.)

Flamingo Diet-Adults - San Diego Zoo

1. Brown Rice - cooked - 3 oz. per bird.
2. Carrot Pulp - fresh - 2 oz. per bird.
3. Purina Kibbled Dog Food - 2 oz. per bird.
4. Fresh Shrimp - 1 per bird.
5. Spiny Lobster - ground - 2 oz. per bird.
6. Ground Meat - fresh - 2 oz. per bird.
7. Table Salt - 2 percent of mixture.
8. Bread - 1/2 slice per bird.
9. "Caradee" - Vit. A & D Carrot Oil - Supplement 1/5 oz. per bird.
10. Red Salmon - 1 oz. per bird.

All of the ingredients are thoroughly mixed and blended in a large electric blender and then fed in stainless steel containers, 16" x 24" in size and three inches deep. The adult birds consume this mixture and then go to the nesting area where the adult birds feed the chicks by regurgitation.

Flamingo Diet

-
- 5 can Feline ZU/Preen
 - 2 tea cups Purina Trout Chow (Pellets)
 - 4 lbs. Dried Shrimp
 - *2 teaspoons Roxanthin Red to ten pounds of food.
 - 1 cup of caradee
 - 1 lb. Fresh Carrots (ground)
 - 2 pkgs. Ground Shellfish (Shrimp)
 - 1/4 cup of Bone Meal
 - 1 cup of Salt
 - 2 Fresh Shrimp per bird (in season)

*Roxanthin Red 10
10% Dry Canthaxanthin - Beadlets
Roche Chemical Division/Hoffman-La Roche Inc., Nutley, New Jersey 07110

Ibis, Spoonbills, Small Egrets, Rails, etc.

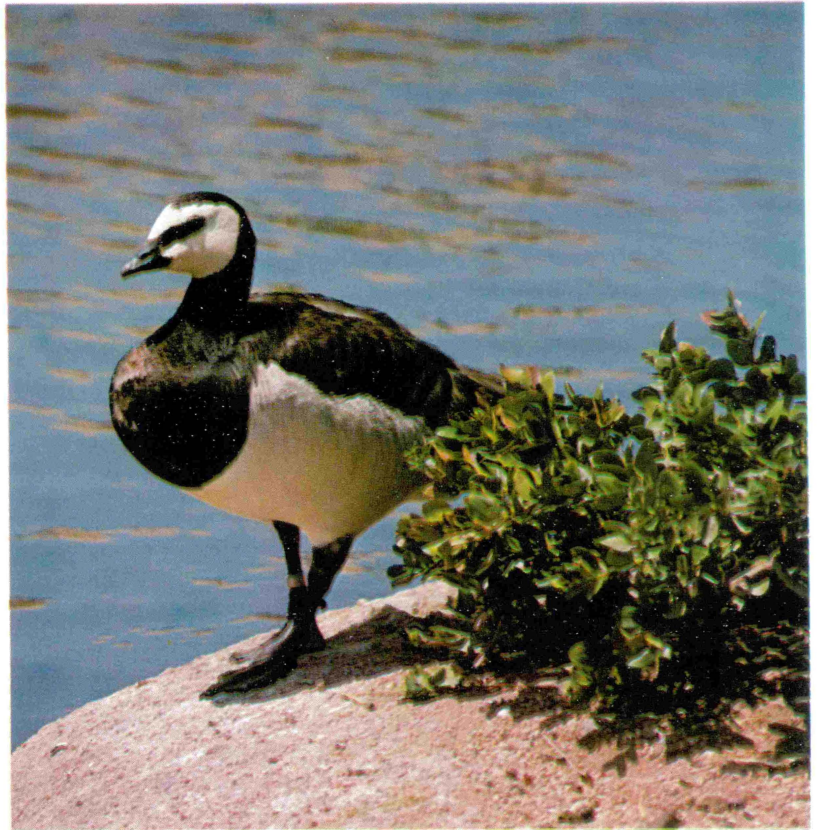
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- 1 part ground raw lean beef
 - 1 part Purina game bird startina
 - 1 part trout chow - presoaked
 - Supplement with vitamin-mineral mix
 - Feed thoroughly mixed, dry.
 - Add Roxanthin Red 10 for Scarlet Ibis and Roseate Spoonbills.

Stilts, Plovers, Sandpipers, Avocets, Oystercatchers, Jacanas, Sunbitterns

-
- 2 parts raw lean ground meat (beef, horsemeat)
 - 1 part Purina game bird startina
 - 1 part trout chow
 - 2 parts dried shrimp
 - 1/2 part small seed (millet, canary)
 - 1 part ground raw carrot
 - Supplement with vitamin-mineral mix.
 - Mix thoroughly, feed dry in flat pan, twice daily.
 - Supplement with mealworms as available.



Orinoco Geese (Neochen jubatus)



Barnacle Goose (Branta leucopsis)



American Avocet (Recurvirostra americana)

Ruff (Philomachus pugnax)



Photos courtesy of San Diego Zoo

Photos courtesy of San Diego Zoo.