

Birds in the Monkey House

(Avicultural experiences in the World of Primates)

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It happens without fail at least three times a week, and sometimes several times a day; I will be straddling the guard-rail, setting out little pans of soaked dog food, chopped fruit and finch seed several feet from the 28 foot deep moat that separates aloof gorillas from their human admirers. One of the latter will ask me, "You mean they come all the way up here to get that food?"

"Excuse me?" I reply.

"Them monkeys — they come up here to eat that?"

"This is *bird* food . . ."

"Oh! There's birds in here?"

Yes. There are birds in here. At least 75 specimens of 18 species. I cannot be more precise, despite the best efforts of myself, our Curator, our Assistant Curator, my supervising Keeper III, and my relief Keeper I, variously armed with binoculars, log-sheets, pens and pencils, in combinations thereof, or as individuals. All the birds are banded, and most with pretty "day-glow" plastic rings. This is often, however, not an apparent fact, while one is attempting to determine exactly which seven of the 17 Orange-cheeked Waxbills released in this building over a year ago are the ones just now jostling each other over a spray of millet. The same dilemma applies to the African Silverbills of which 22 were liberated, and even the Black-winged Bishops, only seven introduced here, but whose shyness mostly precludes a clear look at their bands.

The heptagonal glass roof of the World of Primates (W.o.P.) towers 38 feet above the moated plateau where gorillas roam, and encloses 8,400 square feet of tropical verdure dominated by three waterfalls, recirculating

between them more than 5,500 gallons of water every hour, day and night. This incessant roar is a perpetual reminder that the World of Primates was not designed for birds. The plans for this building were drafted, and construction proceeded, untroubled by a Bird Department patiently waiting for a new Bird House to replace the internationally famous (Hahn, 1976; Jones, 1968) if small one that burnt in December of 1983.

In 1991, however, less than a year before the opening of the World of Primates, Christopher Brown became Curator of Birds and decided at once that eight years without an indoor exhibit of birds at the Fort Worth Zoo were quite enough. Of course, plans continue apace for a Bird House we expect to be the epitome of good husbandry, beauty and intelligent presentation, but, for now, the "W.o.P." keeps us in practice — and our public has the opportunity to acquaint themselves with some marvelous birds.

The breath-taking array of tropical plants that pervade the World of Primates might seem, on the face of it, to provide perfect conditions for birds. As it happens, they impose limitations on what may be kept, and its potential for successful propagation. As will be seen, the lush "living wall" rising towards the ceiling from the border of the visitor's path presents special problems.

As is only to be expected, the horticultural staff is fiercely protective of its plants, a situation complicated by the fact that there are two wholly separate crews: members of the Fort Worth Zoological Park's Department of Environmental Planning, and employees of a contracted firm that otherwise manages the plants in industrial parks, malls, and other commercial settings.

Both teams are ultimately under the supervision of Kenny Sims, our long-suffering Director of Environmental Planning. Kenny had already put a great deal of effort and expense into creating a tropical forest in the building when he discovered that the Bird People were going to turn things loose in the middle of it all, and initially regarded our activities with a degree of guarded suspicion.

To mollify the concerns of our plant staff, the initial concession was made, to the effect that nothing much larger than a Golden-breasted Starling would be liberated in the "W.o.P." (When our then-Director, Elvie Turner, authorized the inclusion of birds, he stipulated that his favorite species, the Golden-breast, be among the elect.) The largest birds in this building are a pair of Hottentot Teal (*Anas hottentota*) and a Crowned Lapwing (*Vanellus coronatus*), which, though all full-winged, usually confine themselves to the shore of the creek that covers the bottom of the moat. Otherwise, the "big" birds are a Golden-breasted or Royal Starling (*Cosmopsarus regius*), the most popular bird with the majority of "W.o.P." visitors, a Javan Black-winged Starling (*Sturnus m. melanopterus*), the one bird in this exhibit which also lived in the old bird house, hatching there in 1983, the year it burnt, a pair of Fairy Bluebirds (*Irena puella*), and an East Kenyan D'Arnaud's Barbet (*Trachyphonus darnaudii boebmi*), hatched at the Denver Zoo, for which we have found no unrelated stock of that particular subspecies. (The inclusion of Asian birds in a building dominated by gorillas is justified by the presence of an Orangutan family, displayed behind glass, along the visitor's path, and more Orangs and alternating White-handed and White-cheeked Gibbons in moated enclosures outside.)

It is in the exhibition of smaller birds that we have left the more traveled paths of indoor flight-cage management. Chris Brown's decision to largely stock the World of Primates with Estrildid and Ploceid finches has not only made things very interesting for the keepers of that exhibit, but has also had far-reaching effects elsewhere in the Bird Department.

It was discouraging to find just how thoroughly what seemed to be enormous numbers of finches could disap-

pear into the greenery of the World of Primates and not be seen. To a considerable extent, this remains the case at mid-day, and when it is overcast. Before noon and after 3:00 p.m. are always the best times to see birds in the "W.O.P." We have, however, contrived a method of making finches visible that also achieves the happy goals of lessening the volume of inevitable seed hulls and giving our public an opportunity to observe a natural behavior. The Fort Worth Zoo and surrounding Forest Park are blessed with great stands of Sea or Georgia Cane (*Arundo donax*), whose stout stems, topped with plume-like seed-heads and festooned with long, broad, pointed leaves, may reach a height of 20 feet. After some trial and error, I succeeded in attaching large numbers of millet sprays along these stems — by the simple expedient of using paper tape (or fiber masking tape if I ran out). Brown paper tape is preferable, as spaces are left when spent sprays are removed, and new ones can simply be reinserted, though, when the weather isn't freezing, the stalks themselves are changed fairly often to preserve the impression of living plants. The millet is usually positioned so it hangs out over the moat, eliminating the problem of chaff. It must be stressed that Golden-breasted Buntings (*Emberiza flaviventris*) appear unable to feed from these contraptions, and depend on seed provided in pans, while Twinspots and Melbas, though able to eat from sprays, appear to prefer pans as well. With these exceptions, millet taped to *Arundo* stalks works beautifully, and the sight of a clump of sprays bobbing up and down under the shifting weight of a changing array of Waxbills, Weavers, and Whydahs is one that causes even the daily care-givers to stop in their tracks.

Getting the Starlings and Barbet down where people will notice them is a simple matter when the keeper is present — I confess to deriving entertainment from startling the gorilla-engrossed public into noticing my birds by "materializing" a Royal Starling, almost under their noses, through tossing several mealworms, waxworms, or maggots onto an artificial boulder. (Then again, there are always certain individuals, usually small boys, who find the livefood more fascinating than its intended

beneficiaries.) Though the Fairy Bluebirds will occasionally alight on the rockwork, they much prefer their insects scattered on their softfood — the pans of which are placed in larger pans of seed, in turn secured in metal stands, designed by our Curator and made in-house, painted dark green, so they don't stand out amidst the Bougainvilleas and Bromeliads.

One species that remains elusive is the Japanese White-eye (*Zosterops japonica*). Though it is quite possible we still have all eight, imported from China, released in this building in August of 1992, we see, momentarily, two or three, darting to and away from the food pans, or through the foliage, furtively. Needless to say, a clear look at their bands is a rare privilege. *Zosterops* are evidently best displayed in more intimate exhibits.

I had hoped we would duplicate, and far surpass, the success of the Chester Zoo in England, where "numerous" Red-eared (Black-rumped) Waxbills and Red-cheeked Cordon Bleus, as well as a Pin-tailed Whydah raised by the Red-ears, were hatched and reared in its large planted Tropical House immediately after its opening (Coupe, 1965). And here the sister arts and sciences of aviculture and horticulture found themselves at cross purposes. We began releasing birds in late February, 1992, and by mid-March, several weeks before the public opening, we'd liberated the dozen Orange-cheeked Waxbills, seven St. Helenas, five Black-cheeked Waxbills, eight Red-cheeked Cordon Bleus, and other finches we had received from importers that January. Shortly, interesting things began to happen. The male Cordons at once commenced bouncing around in a typical straw display, and soon pairs were tucking material into the bases of Screw "Palm" (*Pandanus*) leaves. Pin-tailed and Fischer's Whydahs paid close attention. By training my binoculars on the glass ceiling, I was able to observe the progress of a nest built by Black-cheeked Waxbills at the top of the "living wall" of Philodendrons, Prayer Plants, Caladiums, various ferns, and other hothouse plants. Then came the gardeners.

No, they couldn't leave portions of the wall unwatered. And yes, they had to regularly spray every square inch with alternating treatments of fertilizer and smelly, milky chrysanthemum oil (an

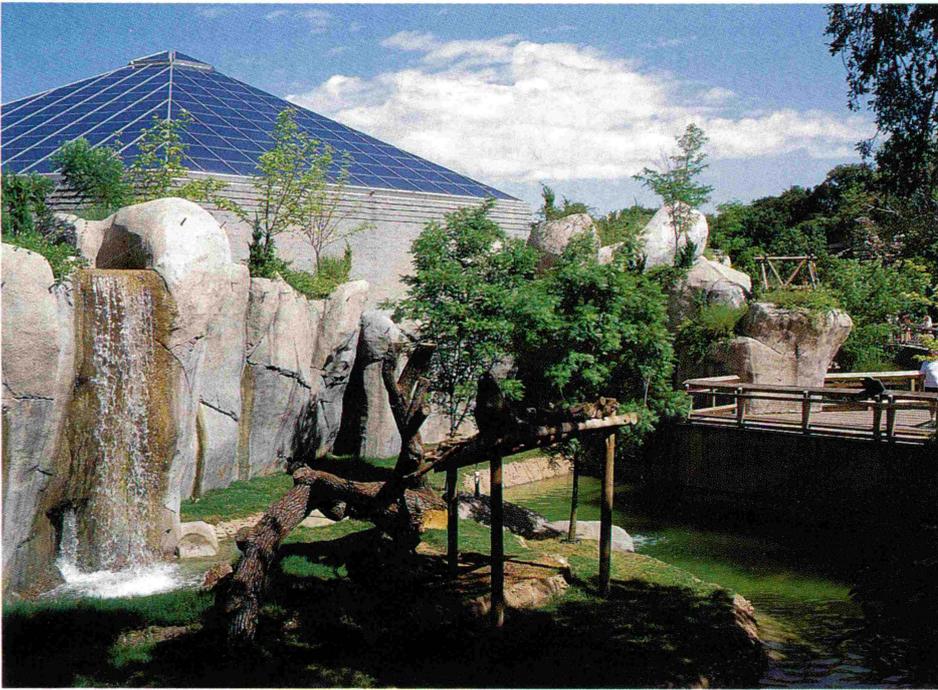
"organic" pesticide, which, despite its very obvious presence when freshly applied, appears to be harmless to vertebrates). And all trees, shrubs, and bushes were similarly honored. (Quite understandable, when one is informed that the monetary value of plants in this building runs to six figures). Then, in the interest of public composure, it needs be that dead fronds are regularly stripped from the *Pandanus* trees, lest they smite the heads of unwary gorilla-watchers. (As an effort to preserve the useful nesting sites provided by the bases of these admittedly rapier-like, pointy-edged, formidable-looking objects, I presented a Monty-Pythesque demonstration where I sought (in vain) to inflict damage upon my person with one of them, hoping to show that the lethal potential of a dessicated Screw "Palm" frond is equivalent to that of a piece of packing tissue — but, of course, to no avail. It is simply not acceptable to hit visitors on the head with anything at all.)

However, having ensured the continued well-being of their plants, and prevented danger-from-on-high, our

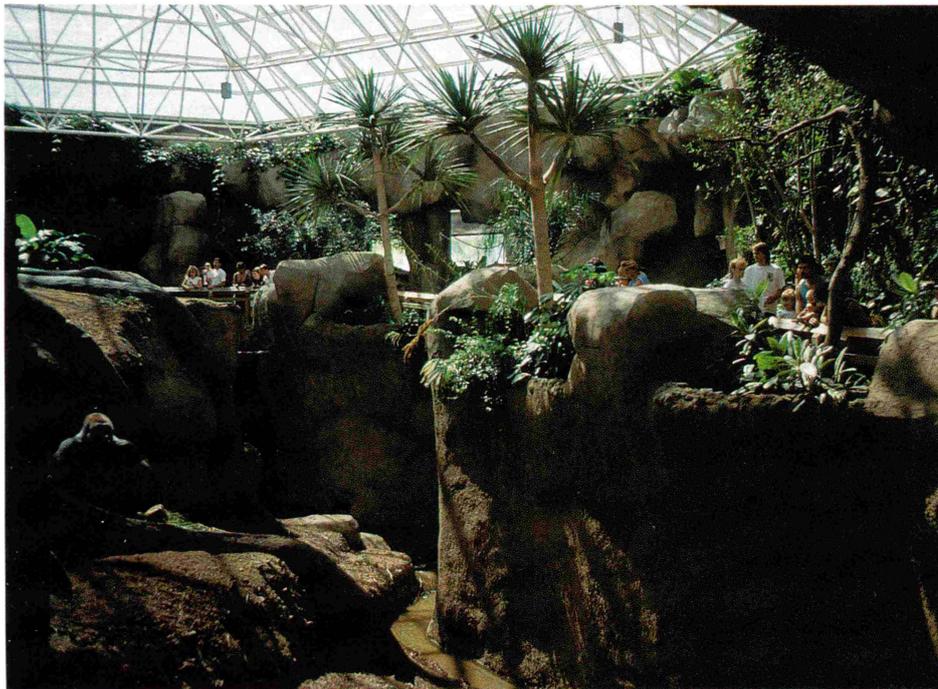
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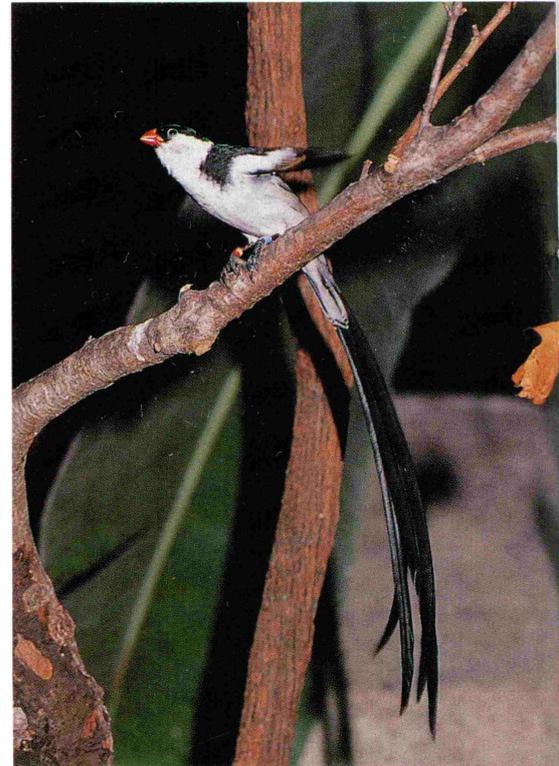
Surrounded by moated exhibits and a visitor's boardwalk, the World of Primates is a prominent zoo landmark.



A typical perspective in the World of Primates.

horticultural staffs have cooperated where possible, to provide alternate nesting sites. When the building opened in April 1992, there were not, aside from the Screw "Palms," all that many *trees* (as opposed to vines, groundcover and such specimen plants as *Dieffenbachia*). In the succeeding months, Kenny Sim's team, led by the perpetually unflappable Joseph Garivay, has brought in sizable *Ficus benjamina*, greatly increasing the actual amount of habi-

tat available to the birds. And especially for the Bird Department, they've created an intricate network of stout wild grapevine strung across the path over what appear to be sizable dead trees, but are actually only branches, cut high up in the great oaks, from which Forest Park receives its name, as a routine part of "tree maintenance." Not only has the "jungley" atmosphere been nicely enhanced, but we now have numerous places for wicker baskets (painted brown),



The three male Pin-tailed Whydahs (*Vidua macroura*) have not wreaked the havoc they might have in a smaller enclosure.



African Silverbills (*Lonchura cantans*) were the first Estrildid finches to successfully reproduce in this building.



One of a group of male Red-billed Fire Finches (*Lagonosticta senegala*) presented to the Fort Worth Zoo by the U.S. Fish and Wildlife Service. One of these paired-up off exhibit has sired several offspring in 1993.

Photo by John Wise



Getting finches seen. Along with the St. Helena and Orange-cheeked Waxbills is an East African Yellow-rumped Seedeater (*Serinus atrogularis reichenowi*), a close relative of the canary. Fort Worth Zoo's single wild-caught specimen has done very well in this exhibit, and the acquisition of captive-bred specimens is being investigated.



Photo by John Wise

The Crimson Seedcracker (*Pirenestes sanguineus*) has a reputation for delicacy, but the Fort Worth Zoo's single male maintains robust good health in the World of Primates. It has so far proved impossible to obtain any females.



Photo by John Wise

The most popular bird for visitors to the World of Primates is this Royal Starling (*Cosmopsarus regius*).

which we are putting up in increasing numbers, not only in the vines, trees and "dead trees," but also off the girders in the dizzying framework of the ceiling where, like the Phantom of the Opera, our fearless Supervising Keeper III, Brad Hzelton, sometimes ventures.

Whether the Waxbills, Cordons and Silverbills will actually use the nest baskets remains a question. Black-cheeked Waxbills slept in them at night but never added material (unlike their counterparts off exhibit, who make intricate nests inside their baskets). St. Helenas and Orange-cheeks continue to prefer the living wall, ignoring baskets hung in the middle of it, and disappearing into the plants

and underlying sphagnum and chain-link instead. Perversely, the most determined pair of waxbills is composed of a St. Helena and an Orange-cheek, firmly bonded. Knowing full well the potential for hybridization among the "red-eared" *Estrildas*, having chosen St. Helenas (*E. astrild*) as the most forest-favoring species, we avoided acquiring Black-rumped (or Red-eared) (*E. troglodytes*) and Crimson-rumped (*E. rhodopyga*) Waxbills. We had, however, presumed that the liberation of seven St. Helenas and 17 Orange-cheeks (in two installments) would preclude cross-pairing, an obvious miscalculation. The Cordons (Red-cheeks only, as we know the others hybridize) continue to prefer the Screw "Palms."

As far as I can tell, the African Silverbill (*Lonchura cantans*), which fledged December 10, 1993, after I had already written most of this article, was hatched in a nest tucked away in a Screw "Palm." So far, the Silverbills, all bred and donated in mid-1993 by Dallas finch-specialist Diana Mosier, have shown a preference for nesting in the rockwork and the living wall, but above-noted youngster is not only the first Silverbill fledged here, but also the first Estrildid finch raised in the World of Primates. African Silverbills were one of those species one could buy for \$3.98 a pair in the pre-Newcastle's days of the early '70s. They are also listed on CITES Appen-

dix III, for Ghana, which, of course, means none have been commercially imported to this country since October 22, 1993, under the provision of the Wild Bird Conservation Act of 1992 (U.S. Fish & Wildlife Service, 1993). The fact that they are one of the most easily-bred African finches has not, so far, resulted in their being widely bred in the U.S. due to this actually quite charming bird's lack of "brilliant" colors. Diana Mosier's (1994) article on this species is the first to appear in the 21 volumes of *AFA Watchbird*. We certainly hope a self-sustaining population will be established in the World of Primates, and contribute to nationwide efforts to maintain African Silverbills in American aviculture.

A prolific breeding colony of African Silverbills may hopefully be of interest to our Pin-tailed Whydahs (*Vidua macroura*), another CITES Appendix III species, like so many of the most familiar African cagebirds. Though the Pin-tail appears to parasitize only *Estrildid* Waxbills in the wild (one reason we introduced so many Orange-cheeks), parasitic Whydahs in captivity may be less discriminating (Lee, 1987). There are seven Pin-tails in the World of Primates, three cocks and four hens, an unnatural arrangement as there should be at least several females for each male. Pin-tailed Whydahs have a long-held reputation for extremely nasty behavior in aviar-

ies (Bates and Busenbark, 1963), and that reputation may well hold true for most aviaries of any usual size. My late friend K.C. Lint, Curator Emeritus for Birds for the Zoological Society of San Diego, assured me, however, that in "really big" aviaries this behavior was not a problem.

In the wild, it is a natural behavior for male Pin-tails in breeding plumage to chase "other small birds" and "dominate" feeding stations (Newman, 1984). Perhaps this is part of the courtship display, possibly a "fitness demonstration," in the words of evolutionary biologists. At any rate, in the vast space of the World of Primates, they have never been observed to make physical contact with any bird. During the majority of the year when our males are in their magnificent full breeding plumage, one is likely to dive-bomb Waxbills and Cordons foraging on the ground, or gathered on millet sprays. Usually, though, the Whydah hardly ever gives pursuit. It seems as if the point of the display (if it is one) is to scatter the flock. Since we always maintain a number of feeding stations, there is always somewhere else to go. It would seem that fatal injuries or stress to Estrildids caused by Pin-tails is an artifact of captivity. Despite spectacular aerial "dog-fights" and breathtaking pursuits, where they whiz through the girders like the flying handkerchiefs in a magic show, their four long black tail-feathers streaming behind them, the males never hurt each other either.

While the normous expanse of the World of Primates appears to have quelled the dangerous potential of Pin-tailed Whydahs, space alone has not been the solution to another problem caused by captive conditions — the abnormal behavior of male Southern Masked Weavers (*Ploceus velatus*), due to an artificially low ratio of females.

As with the majority of *Ploceus* weavers, the Southern Masked Weaver is highly polygynous, each male attempting to attract a harem of females. The tradition in the bird trade of selling everything in pairs obviously creates an unnatural condition. The Woodland Park Zoo in Seattle managed somehow to circumvent this — perhaps they did obtain extra females. At any rate, breeding there commenced in 1982 and, with the exception of 1986, has occurred there

every year since (Zoological Society of London, 1984-91). From this colony, the National Zoological Park in Washington, D.C. established one of their own. And in 1991, as the nucleus of its collection of African finches, the Fort Worth Zoo purchased seven immature birds from the National Zoo. They were the very first birds turned loose in the World of Primates, on February 23, 1992, shortly after we determined they were four males and three females.

Not yet in fully adult breeding plumage, one of the males began building its fascinating nest in March, weeks before the building's opening. Into the fall, all the males built one nest after the other, taking three or so days to construct each one from pre-shredded strips of *Arundo* leaves I provided — and about 45 minutes to entirely destroy it, scattering to the floor a rain of little bits when no females expressed interest. (This, I believe, is an entirely natural behavior — one can imagine a disused nest harboring snakes or other predators — or simply attacking other birds whose proximity and competition for food would not be welcome.) Such was the situation through September. In October, I noticed a couple of nests that were still there after more than a week. Late that month, two of the females displayed a sudden interest in mealworms — and flew up to their nests immediately after eating. Sharp squeaking noises were heard above the din of the waterfalls and crowds. On October 23, I fished the sodden corpse of a fledgling weaver from one of the pools, and not long after, a male tore apart a nest that held a well-developed chick, sending all sailing to the concrete faux-mud floor — with fatal consequences.

I believe the male's harassment of chicks (noted also at the National Zoo where the male, being in a small exhibit, can be pulled), and the premature destruction of a nest holding offspring are artifacts of captivity caused by there being more males than females. And now we have no females at all. In July 1992, all three were noted missing at once. One theory concerns a conjunction of amorous pressure, passerine flocking behavior, and, possibly, one of the very rare situations where non-animal staff doing something in the building propped open a door before anyone

could catch them. We are investigating reports of the availability of a sizable group of females, unrelated to the Woodland Park stock.

We are shortly expecting the arrival of 10 or so female Black-winged Bishops (*Euplectes hordeaceus*) to supplement the group of, again, four males and three females, the story of whose arrival I have told elsewhere (Lindholm, 1993). Even with our present uneven ratio, a chick fledged November 6, 1993, choosing to appear the day the Bird Interest Group of Texas held a meeting at Fort Worth, so that its debut was witnessed by a distinguished assemblage of zoo professionals and private aviculturists. While the Black-winged Bishop has only rarely been bred previously, we hope, with the arrival of the anticipated additional females, to be at least as successful with this weaver as the Frankfurt Zoo has been with the well-known Red Bishop (*E. franciscanus*). In an indoor cage of quite ordinary dimensions (Marvin Jones, pers. comm.), 209 were fully reared from 1967 through 1989, second generation breeding being indicated from 1977 onwards, and 1975 being the only year when hatchlings did not occur (Zoological Society of London, 1969-91).

We intend to breed softbills in the World of Primates. After a long search, Chris Brown located a female Black-winged Starling (*Sturnus melanopterus*), generously loaned to us by the well-known Florida aviculturists Mac and Cyndi Sharpe. With the male hatched here in 1983, this is the only pair in any U.S. public zoo. This is not a difficult species to breed. The first record was at the London Zoo in 1922 (Coles, 1987), and the following year Jean Delacour (1923) bred it in a rather small aviary with a breeding pair of Crimson-winged Parakeets. Its current low status in American aviculture is due to lack of coordinated interest rather than difficulties in husbandry. Before introducing the newly acquired female, we will remove, despite his popularity with the public, the Royal Starling (we have another pair elsewhere, and had early decided against breeding this actually semi-desert species in the "W.o.P." after hearing reports of the savage behavior of breeding pairs of this otherwise generally compatible species).

While never observed to attack

other birds, the Royal Starling is in the habit of closely following any birds of similar size, such as the Crowned Lapwing (whenever it flew) and the Fairy Bluebirds, for several days after introduction. It has never paid attention to anything finch-sized — we have not observed any aggression at all from the starlings, Fairy Bluebirds or Barbet towards any of the finches. The only problem is keeping enough livefood in stock, especially when the Waxbills and Cordons are, we hope, eventually successful at nesting. We will be breeding fruitflies, are experimenting with feeders with baffles, and may try and see if we can't keep the larger birds entertained with "giant mealworms" and waxworms, so that they might ignore dishes of fly larvae and "mini-worms."

The question will arise to the reader as to what interactions occur between birds and primates in a Primate House. Indoors, only two species of the latter (not counting humans) are not behind glass; the gorillas and the East African Colobus Monkeys. The Colobus, though leaf-eaters, certainly take an active interest in any birds that might venture through the "piano wire" of their path-side enclosure, no doubt intrigued by the "toy" potential of any they might catch. In more than a year and a half, we have had one certain fatality. Although birds sometimes enter the exhibit when it's empty, usually they keep a healthy distance from the monkeys, likely recognizing the "predator" potential of these cat-sized arboreal creatures with spectacular plume-like tails.

On the whole, the gorillas pay no attention to the birds that share their exhibit. One often sees a living carpet of Cordons and Waxbills, punctuated with a Whydah, Bishop or Firefinch, foraging on the ground, several feet away from a regally oblivious ape. One bird did not initially allow itself to be ignored. Our Crowned Lapwing Plover was hand-raised at the Milwaukee Zoo and marches up to keepers to be fed (he now stays entirely on the gorillas' side of the moat, having shortly learned that screaming hoardes of school children are, as far as he's concerned, a malevolent life form). Initially he marched right up to sitting gorillas and loudly vocalized, no doubt in hope of mealworms. The most response he ever got was when one of our dignified old females very

cautiously reached out and touched him with one finger. He soon no doubt dismissed these creatures as hopelessly dense and stupid and now generally spends his time by the stream where he belongs.

The pair of Hottentot Teal did provide one of our female gorillas with some unfortunate entertainment when she finally discovered the nest they had made in a planter several feet up the side of the concrete "mud-bank." We had been removing eggs for incubation and replacing them with "dummies" while the gorilla exhibit was cleaned. Eventually, however, the nest was discovered and provided a few moments of puzzled amusement. The Hottentots will probably nest there again, and perhaps the gorilla will have by then forgotten this interesting experience.

The bird staff involved with this monumental building actually spend a proportionately small amount of their day in it. Most of the daily routine of the "W.o.P. string" takes place off exhibit. The establishment, after nine years, of an indoor exhibit of small birds at Fort Worth Zoo "justified" the existence of a behind-scenes breeding facility for African and Asian finches which has now very much taken on a life of its own. So far we have been successful with Dybowski's and Peter's Twinspots and Red-billed Fire Finches, and with the completion this spring of two outdoor units designed and constructed by our endlessly enthusiastic Supervising Keeper III, Brad Hazelton, our facility will be tripled, and we are certain to make major contributions to the establishment in American aviculture of species neglected until the passage of the Wild Bird Conservation Act.

At the same time, the challenge of breeding birds in the World of Primates continues to be enjoyed. It will be most interesting to watch the evolution of the collection in this building over the years. The most recent development is the impending release of several Giant Fruit Bats, or Flying Foxes (*Pteropus giganteus*), which happen to be one of my favorite non-avians. Where they will go and what they will do remains a question. But that, in the words of Rudyard Kipling, is another story. . . .

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