

Domestic Breeding of the Brazilian Cardinal

by Edith Pendleton, Ph.D., Fort Meyers, Florida

Little has been written and even less documented about the domestic breeding habits of the Red-crested (Brazilian) Cardinal. With encouragement from Kenneth Reininger, Curator of Birds at the North Carolina Zoological Park, private aviculturalists have begun a cooperative information exchange with zoos on behalf of this beleaguered softbill. Only six zoos nationwide successfully reared Red-crested Cardinals in 1992, from a pool of 86. There were 62 birds in zoos in 1987, and 52 five years earlier, in 1982, perhaps reflecting the growing trend toward walk-in rainforest exhibits.

Colonies of Brazilian Cardinals have been sighted sporadically in Miami, but Hawaii remains the only American region with a sustained alien population. There, the species inhabits areas of O'ahu, lowland Kaua'i, Moloka'i, and Lana'i, with growing numbers on Maui. Ornithologists will find them plentiful at parks and golf courses, with colony flocks at the Manoa campus of the University of Hawaii, the Coast Guard Air Station at Barbers Point at Waikiki, and on the grounds of the Honolulu Zoo. The birds were introduced into Hawaii in 1928 for insect control, and soon joined an exotic population of imports that today includes the Yellow-billed (Pope) Cardinal, the common mynah and the Lavender Waxbill. To capture and sell such birds is illegal.

In *Finches and Soft-billed Birds*, Bates and Busenbark describe the Brazilian Cardinal as "extremely hardy," "ideal for the beginner" and "inexpensive and usually readily available (pg 233)," comments that reflect the once-plentiful supplies of imports. Hobbyists may remember occasions as recently as 1965 when these birds could be purchased in lots of 50 or more for \$15 apiece. Housed in groups in free-standing cages, such captive Red-crested Cardinals frequently perished from maim-

ing and stress, and those that survived often bore the scars of combat, including missing toes and eyes, mauled feet, or amputations.

Brazilian Cardinals thrill to the company of their own kind, and avidly observe and imitate one another.

Pairing and Sexing Birds

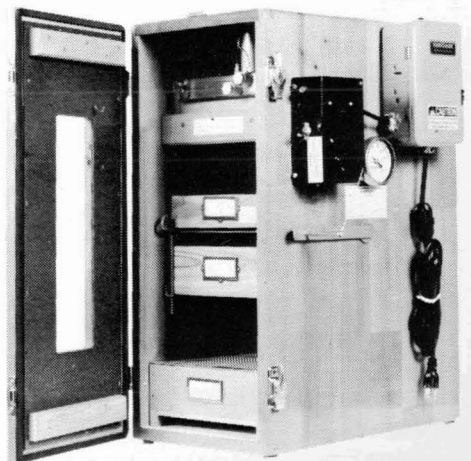
Brazilian Cardinals thrill to the company of their own kind, and avidly observe and imitate one another. An older bird who knows your flight well can be an invaluable asset, regardless of its breeding performance. A tame bird is even more help to you, as wilder members of the aviary will readily come to the cage of a confined bird, and will respond to its calm

demeanor. On the other hand, once a bird reaches puberty, it will fight for and defend its hen to the death. A bird can be fully scalped and left bleeding to death in the course of 10 minutes; a bird can lose one or more toes, or an eye, in five minutes. Two birds housed together may be congenial at dawn, but mortally maimed by afternoon, should spring fever strike them. For that reason, never leave two unsexed birds nearing puberty together, or even housed side by side, from February through August, the breeding months, unless you have every guarantee they are a bonded pair.

Both sexes will sing at about six weeks. Hens as well as cocks will trill and carry on at this age. The most reliable gender indicator is bone structure. At about nine months, the hens will begin to take on the shape of an English Budgie, with thick breasts, wide shoulders, and a gener-

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ally more square appearance. Males will retain the lanky look of the adolescent, gaining length but little weight. Both hens and cocks will strut, fan the tail, arch the back and court.

Often, the hen will clack her beak during advances by the male, indicating her interest. As the birds reach puberty, males will become noticeably aggressive, charging at the cage walls, calling, stretching their necks and engaging in combat with anything that moves. A new male released into my aviary one February crushed the skulls of eight Green Singing Finches within an hour. At the height of spring mating, the Red-crested Cardinal will attack Fairy Bluebirds, Black-crested Finches, Grenadiers, Violet-ears Waxbills and any other aggressor.

During courtship, hens will become absorbed in feeding and other activities, and will generally appear preoccupied. However, should a true pair be separated, the male will give sharp, deep staccato calls and will hasten to the hen's side wherever she goes. To verify a pairing, release the birds into a larger area and watch their movements. A true pair will never range out of sight of one another, and should they become separated, the male will thunder out his summons, a call that is unique and unmistakable, guttural and demanding.*

Never venture to test two males, even for a moment. Their combat is vicious and the results permanent. Any two sparring birds, regardless of their sex, should be separated immediately, at least for a cooling down period. Terrified birds—even lifelong mates—will attack one another in a crisis. Avoid such disturbance at all cost. Never place two birds, even a pair, in a closed container such as a shipping crate. When frightened, they will maul each other.

Courtship

Birds ready to nest will display relaxed congeniality toward one another. They do not engage in mutual grooming, but remain solicitous of the other's allegiance. Mating occurs in swift attacks by the male, usually on the ground when the hen becomes inattentive. A flat board provided at perch height may be of assistance when the male elects to mount. A male that fails to mount the hen will trigger a series of disasters culminating in an egg-

Never attempt to rush the nesting process by providing a ready-made nest or by confining the pair to close quarters.

bound hen. Never attempt to rush the nesting process by providing a ready-made nest or by confining the pair to close quarters. Strong bonds must be forged between the birds before successful nesting can occur.

These birds need ample space (at least 10 feet of open flight) and plenty of nesting sites both within thick vegetation and in the open. Hens may elect to build on the side of the flight, in a cavity in a hanging plant, or in a nest woven into the branches of a tree such as a ficus or bamboo.

Nesting

It is the hen who must approve the nest, but the cock who must weave it. Thus the cock may suggest first one site and then another. A careful curator will watch the activities of the cock, who will select a site and then call joyously to attract the hen's attention. If she seems to approve the site, the curator may want to secure a suitable basket of grapevines or screen mesh, or use an orchid box, small Easter basket or some other shallow natural-fiber cavity.

Several such containers may be attached to walls and trees, but should be placed to encourage nesting in a spot that provides ample shade from noon sun and protection from rain, that is well out of reach of ants and mosquitoes, and that is accessible by ladder to the curator, who will need to inspect activities regularly. A nest tightly woven into the branches of a shrub at the far back of the flight is not suitable for a safe, productive breeding season, since the chicks will be inaccessible for medical treatment, banding, and observation.

A large tree in a pot can be helpful, but should be provided well in advance of actual courtship lest the birds become distracted. For nesting, my hens consistently select an orchid box placed in the highest corner of the aviary, nearest the fan and the night lights. I hang a large flight cage directly under the nesting box to provide a lookout for the male, who will sing, nap and relieve the brooding hen. The under-

girding cage also provides a safe landing for the fledgling and makes it possible for the curator to closely monitor droppings expelled from the nest.

When the hen expresses her desire to mate, the male begins feverishly building the nest. He first needs sticks, pine needles and pliable twigs, followed by hemp string cut into 2 inch lengths and unraveled and scattered about the flight. He will gather these to line the nest. My birds also incorporate green Easter grass and fresh Spanish moss; they shun yarn, hair, thread, feathers and native grass. In desperation, a hen may also be cajoled into accepting a pre-constructed canary nest if her mate has engaged in elaborate material gathering without a clue what to do with the materials. Keep in mind that a hen, once duped into thinking her cock wove the nest, will be vulnerable to endless disappointment. If the cock is unable to conceive and build a nest, he is not ready for the arduous task of rearing three clutches of young birds. The cock becomes a critical link in the life of the chick and will serve as guardian and mentor to the fledglings long after the hen rejects them. Never push the cock bird into fatherhood before he is truly capable and ready.

Keep in mind that the hen will re-use the nest all summer, so it must be sturdy. If the hen detects any weakness she will reject the nest. Any disturbance at this critical time could lead to an unproductive breeding season. Do not rush around adding plants or relocating birds. Things must be calm and ready before the process can move forward. The birds should have absolute privacy, ample fresh water, sparkling cleanliness in all things, and plenty of open space so that danger can be easily detected from any point of observation the male selects. Thick plantings that obstruct the view and make access to the nest difficult can lead to calamity. I once witnessed a cock build an elaborate nest in the uppermost branches of a thick bamboo that brushed against the roof of the flight. The hen readily laid two eggs, but the rapid growth of the bamboo paired with the rampant infestation of ants always found in bamboo led to disaster; the hen was horribly bitten by the ants as she brooded, and the young birds were devoured. Use good judgment and discourage any impractical nesting activities.

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Immediately upon completion of the nest the hen will lay two or three eggs. Do not inspect the nest during this time. If she is brooding, she has an egg. Wait at least five days before attempting to inspect the nest. Thereafter, use restraint. On the tenth day of brooding, a small gray-pink chick will emerge, and the parents will immediately begin the delicate task of feeding and care of the chick. After day 12, begin checking the nest daily for evidence of diarrhea, an odiferous indication that coccidiosis has set in. Immediately swab the chick lightly with liquid Ivermectin, add a mild dilute of Chlorox to the drinking water, and remove mealworms, substituting with quarter-inch crickets offered frozen every two hours. If crickets cannot be obtained, use mini-mealworms. Do not offer waxworms until the tenth day, or the chick will die of an impacted crop.

Brown Heads

Fledgling Brazilian Cardinals have an erect crest of brown until they reach puberty at about nine months. The crest on first molting becomes rust brown, and

only in the second year will the mature Brazilian Cardinal develop its characteristic blood-red (cock) or tomato orange (hen) coloration that marks it as sexually active. In fledglings, a crest the color of Hershey chocolate indicates a high-protein diet; a crest the color of coffee with cream indicates a diet consisting of seeds. In the 12 months between fledging and the final molt the chick must attain its full adult growth.

If its diet is inadequate or a case of coccidiosis goes untreated, weakness will be revealed first in much noisy begging, then a reluctance to explore, and finally through an unwillingness to leave the parents. In extreme cases the chick will become lethargic, and will finally succumb by simply refusing to move. In cases of parasitic infestation (coccidiosis), the chick will develop a curled foot; the second foot will also go lame within eight hours, and within 24 hours, if not given emergency treatment, the chick will die. This sequence can occur any time from birth until the chick is fully five months old, and contributes to my growing ten-

dency to leave youngsters with their parents until the first year.


Diet, cleanliness and open flight space are critical during this critical time. The fledgling should receive a diet that includes:

- Rich finch seed.
- Parakeet mix.
- A cube of Zu/preem monkey chow soaked in Gatorade fortified with Nekton-S mixed fresh daily.
- Fresh food daily to include sliced grapes, sliced orange, mango, banana, cucumber, frozen peas, peaches.
- Unlimited medium mealworms offered in a 10-gallon fish tank with 1-inch layer of fresh bran.
- Waxworms when available

This is the MINIMUM diet. A negligent curator will see the results for years to come, in every aspect of the adult bird's life.

Monkey Chow and Gatorade

Daily offer a cube of Zu/preem Monkey Chow in a honey cup, soaked in green Gatorade enriched with the powder nutrient Nekton S. When the Gatorade soaks in, add more, so that the cube is swimming in fluid. Birds trained to monkey chow know to eat the soft food even in grave distress, a habit that will stave off dehydration until the patient regains strength. Aviculturalists may argue the point, but brooding hens receive it fresh twice daily in my aviary, and if they start the chicks on it, a successful brood usually follows. If anything goes wrong, I simply add medication or additional vitamins to the Gatorade. If I am forced to pull the chicks for hand feeding, they are already accustomed to the monkey chow and will take it from tweezers readily.

*In addition to the summons call of the separated male, Brazilian Cardinals vocalize in five major areas: The twittering practice song of fledglings from 12-30 weeks old characteristic of both sexes; the soft chipping sounds of the parent birds offering food and encouragement to their young; the joyous melody of the male at day-break and during breeding; the shrill screams of distress used by birds under attack; the three-syllable song of greeting used by both sexes to welcome a returning mate to the roost. Variations on these main groupings include a query call that seeks information about birds in the area, and a steady staccato chipping of distress used to signal lurking danger. 

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