

seven pairs for breeding, often with mixed species, and as long as you don't crowd them — and many people do make this mistake — most of the smaller finches will be peaceful, if territorial, especially when breeding. Since Goulds copulate in the nest cavity (an atypical finch habit), you want to provide them with at least a 5 in. cube nest.

After experimenting with nest boxes, I determined that you'll have more breeding success if you off-center the entry hole at the top of the box, so that they can place their nest cup in the far corner of the box as far from the entry hole as possible. The incubating birds are thus less likely to bolt off the nest when disturbed. They make great nests out of a fine dried grass that grows in this area, with which I half-fill the box to get them started. By the way, I much prefer nest boxes, with lids for inspection, as Goulds take to boxes readily, unlike some finches that favor baskets, and they easily tolerate regular inspections that a breeder will want to make for a variety of reasons.

All the birds are fed fresh, fertile seed including plenty of canary seed. I also offer them romaine or spinach, grit, eggshell, and whole wheat bread. And sprouted seed (the regular finch mix) is offered daily, as is egg food. I have never had much luck getting them to eat mealworms or other live food, and surmise that they don't really have a high protein requirement. This assumption perhaps contradicts what one reads about their dietary habits in the wild. I use Avitron as my vitamin supplement, with water given in open containers.

Down through the years I have handled a number of different finch species. Though a bit tedious, I have found this to be a rewarding experience, as a number of finches, the Gould certainly among them, make wonderful pets. I use a pureed mixture of hulled millet, boiled egg, soya powder, cuttlebone and Avitron and use just enough water to produce the consistency of thick pancake batter that will work in an eyedropper with a somewhat large opening. (Someone told me recently that this recipe had made its way onto the Web.)

Some people still are reluctant to try their hands with Goulds based on the bad information that most of the older printed sources contain regarding how delicate this species is. True, they're not as hardy as, say, the Zebra or the Society, but if one starts with good stock and manages them well, most will thrive and breed. They are more vulnerable to bacteria and candida and air sac mites than some of their cousins, but these three problems, when they do arise, are quite readily dealt with.

Poulykya: How varied is your experiences with finches?

Frey: At one time or another I have kept most of the available species, and bred many of them. While some have only rarely been bred in captivity, only a few species resist survival. Most of my experience has focused on the Australian finches, but I have worked with those from Europe, Africa, South America, and the Caribbean. I especially enjoyed the challenge of breeding the Painted and the Blood, both Australian. Unfortunately, neither is much available in American aviculture; we very badly need new bloodlines.

Poulykya: You have written for *Watchbird*. Have you contributed work to other publications?

Frey: Yes. I've done articles for *Bird Breeder*, *American Cage Bird Magazine*, and *Bird Talk*.

Poulykya: Does teaching allow you any time to be active in bird clubs?

Frey: I have been involved in the bird show circuit for many years, both as an exhibitor and a judge, at the local and national levels. I've been active in AFA and was a founder of the Greater Pittsburgh Cage-Bird Society, serving as its President for many years.

Poulykya: Is there presently a strong interest in finches?

Frey: Interest in finches, as with other birds, seems to be cyclical. In the 1950s breeding and showing cage birds was very popular. This was followed by a lull in the '60s, then an upswing again in the 1970s and '80s.

But there will always be a core of avid fanciers, who will insure the availability of many popular finches and, down the road, may even determine the survival of a few species that might otherwise disappear altogether. ➔

The Breeding of Regent Bower Birds

Sericulus chrysocephalus

by Neil Hamilton, Perth Zoo,
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Introduction

A total of 14 known bower birds species are found throughout Australia and New Guinea. Six of these are found within Australia. The most popular two species in captivity today are the Satin Bower Bird and the Regent Bower Bird. They are very striking in color and are presently in demand by aviculturists. There are usually also one or two other species, but they are not available in great numbers, .e.g., Great Bower Bird and Western Bower Bird.

Bower birds can be considered very hardy in captivity and are usually used as display species in many bird collections. Their overall husbandry and breeding techniques have long been taken for granted with most bower birds coming into captivity directly from the wild. This trend of collecting birds directly from the wild has slowed down somewhat so the pressure is on all of us to breed, record, and maintain many softbilled species. This, in turn, will increase our understanding, knowledge, and, who knows, may even help support the wild population in some way.

The Regent Bower Bird

The Regent Bower Bird *Sericulus chrysocephalus* is found along the east coast of Australia from New South Wales into Southern of Queensland. A second sub-species *Sericulus chrysocephalus rothschildi* is believed to be found further north in Queensland.

Description

The male Regent Bower Bird has a forehead, crown, nape to mantle rich golden yellow, suffused with orange-red on forecrown and hindneck. The two outermost primaries and their coverts black, remaining flight feathers, golden yellow with black tips becom-

ing broader toward outer primaries. Secondary-coverts and tertials, rich golden yellow with other parts of the body mainly black. Male bower birds usually mature at around six or seven years of age.

The female Regent Bower Bird is usually larger than the male with the crown and nape sooty black. She is prominently brown with grayish to white feather markings throughout the rest of her body. Immature birds are similar to adult females.

Acquisitions

On the 22nd October 1987, the Perth Zoo acquired a pair of Regent Bower Birds of unknown age from Taronga Zoo. These birds were collected from the wild in October 1985. One of the main reasons for Perth Zoo becoming involved with bower birds was to obtain more breeding and captive information on them. The Perth Zoo uses the Regent, Satin and Great Bower Birds as analogue species to gain and gather information which may help alleviate the future threat to bower bird species either here in Australia or in New Guinea.

Housing and Behavior

Within Perth Zoo these birds are housed in adult pairs or one male to two females, using two or three aviaries side by side to allow introduction, breeding, and for other management reasons. This arrangement allows us to quickly separate the males from the females or, *visa versa*, remove offspring with minimal disturbance to them.

When the Perth Zoo first considered breeding Regent Bower Birds, we prepared two to five aviaries for breeding and maintaining them long term. In 1985 when we obtained our first pair of immature Regent Bower Birds from Taronga Zoo, we set aside two of our display aviaries. This was partly to enable us to show the public these beautiful birds but, most importantly, to monitor their behavior, knowing from previous experiences what they could do to each other.

These two aviaries are 2.70m (9.5 ft) in length, 4.5m (16 ft) in width and 2.70m (9.5 ft) in height. Both are made of 50 ml (2 inch) pipe and 1.6mm (one

inch by half inch) heavy wire. They also have a sheltered 1.8m (8 ft) area in each aviary. The aviaries had been well planted before to allow safety for the birds, and to give the plants enough time to become established. As bower birds are big plant eaters and destroyers, plants such as Fish Bone Fern, tree ferns, some native plants, fig tree species, fruit trees, Hibiscus plants, etc., can all be used in the aviary. It is important to provide plenty of decayed leaf mulch and fine sticks each season. The staff replaces all dead tea trees in the shelters, trims plants and re-mulches these aviaries every Autumn.

Introduction of bower birds can be very stressful to the birds which is why we used two aviaries side by side with interlocking doors. They were well planted so the birds could escape from each other. At least two feeding and drinking stations should be available so individual birds can not dominate a single station. Close staff observations are very important during feeding.

Diets

The main diet of bower birds at the Perth Zoo consists of minced heart, ground dog kibble, cheese, egg mix (insectivore mix), S.A. 37. (mineral and vitamins), diced fruits and vegetables such as bananas, pawpaw, rockmelon, grapes, pears, apples, oranges, tomatoes, watermelons, figs, currants, corn, carrots, lettuces/spinach etc. Finch or a parrot mix is also given, along with mealworms, fly pupae, moths and native figs which can be collected in the zoo grounds. This is fed to the birds twice a day. In addition, when there is young, the female receives live baby (pinky) mice and moths three to five times a day, as well as the normal twice a day feeds. If the female does not have young then she will leave any baby mice offered.

Breeding and Observations

From 1985 until 1988 the Regent Bower Birds were still maturing, although the male would build display bowers. This is not uncommon for young males to do. We keep the pairs together for most of the time, but always with close staff observations. In January 1989, the male in full breeding plumage was observed chasing the

female. He had built a beautiful display bower in one of the aviaries and lined it with blue, white, and yellow objects given to him by the staff. During this time staff observed a lot of hassling and aggressive behavior between both the male and female. It was decided to lock them separately away for awhile.

This occurred on 08.04.89 [April 8th, 1989] through 20.08.89 [August 20th, 1989], during which time the male continued to call and display to the female through the wire. The bower was built and located under a thick cover of plants not visible to the public on the outside nor to the staff feeding on the inside. This is unusual, for the bower built by the male Satin Bower Birds are usually easy to observe by both staff and the public.

The bower was constructed out of very fine sticks closely knitted together. It was about 26cm (10.14 inches) wide by 22cm (8.58 inches) long with each wall about 20cm to 30cm (7.8 to 11.7 inches) in height, curving inward at the top and about 8cm (3.12 inches) thick at the base facing north to south. We find the local Western Australian Peppermint Tree ideal for sticks. The female also finds them ideal for her nest building.

On 20.08.89 (August 20, 1989) the center dividing door was opened so staff could observe all events. Shortly after, the female was seen entering the male's aviary. Straight away the male followed her around, calling and, at times, displaying to her. At one stage the female was observed inspecting the male's bower with him following close by. Staff left the interlocking door open for the rest of the day, but it was closed overnight and the birds separated. On the next day staff re-opened

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the interlocking door and throughout this day both birds were observed at different times in different aviaries and the male was continually calling and displaying to the female. Staff decided to leave the two birds together from then on. The male was observed on the 06.09.89 (September 6, 1989) calling to the female as she sat beside him on a branch above the bower and a number of soft rolling whistles were heard. The female appeared to be mesmerized by the calls and sat perfectly still. A short time later the pair were observed tapping their bills together.

The calling and displaying continued throughout the rest of the season with poor results. Perhaps they were still too young or the climate was not right. It must also be noted that male Satin Bower Birds take up to six to seven years to breed. Do Regent Bower Bird males take just as long to breed? This was one question we needed to consider. We know females have laid eggs at two years of age.

After being left together in the one aviary, it was not until the 25.05.90 (May 25, '90) that the staff observed the female carrying nesting sticks and building in her allocated aviary. This nest was located at the rear of her aviary in the dead tea tree provided by staff. Size of nest was 30cm (11.7 inches) wide by 10cm (3.9 inches) deep, made of sticks only and was about two and a half meters (8.2 feet) off the ground. Since this was her first nest there was very little interference and disturbance by the staff.

Over the next few days she continued to build, but she was not incubating or if she was, it was not observed. A few months passed with the female only building. It was not until October 1990 that the female was observed incubating in a nest she had built in May 1990. The number of eggs was unknown.

Upon observations of this, the pair of birds were separated by closing the interlocking door. On the 03.11.90 (November 3, 1990) staff on duty noticed the female off the nest in the morning feeding time. This was different from previous mornings. The keeper inspected the nest and found one chick hatched and one egg (later

found to be infertile). The female was observed eating mealworms, breaking up cockroaches and flying off to the nest to feed the one or two day old chick. Keepers observed the female leaning over the nest making soft calls trying to entice the young chick to feed. As with most softbill captive birds, the hatched eggshells were found in the furthest part of the aviary, in this case, toward the front.

As the days went on, the female was observed feeding the chick moths, currants, soft fruits and baby pink mice. The keepers tried a number of other foods, like cockroaches, termites, snails, and mealworms, but the female preferred the above. Nearly every day the female would show aggressive behavior towards the male next door. We would have liked a third aviary with another female, next to the male, so we could have run the male again.

By the Nov. 11, 1990 the nest was looking a little flimsy and the chick was becoming bigger and more visible. Staff were feeding up to six times a day. On the 19th the chick was perched above the nest with some well developed pin feathering, but looked strong and was still being fed by the female. One would also assume this to be normal chick behavior to escape natural predators.

The December 4th saw the young Regent Bower Bird flying more and looking very similar to the female but with feather markings lighter than hers. On the 15th the young bird was observed feeding on banana and moths. We also observed the male next door, sensing the female ready to breed again, displaying, calling and re-doing his bower. The female was observed carrying nesting sticks again into the back of the dead tea tree and by Dec. 26, 1990 she was incubating two more eggs, unfortunately the male had not yet been re-introduced. On the next day the two eggs and the young Regent Bower Bird were removed.

After being with the female for 54 days the young bird weighed 89 grams and was given a metal number I.D. The young bird had very dark black to brown feathering mainly on the head back, and wings. The under parts were grayish to white, ear coverts were

noticeably yellow. (At a guess, it was a male). A day later the dividing door was re-opened and both adult birds were observed exploring each others territories. A few weeks later in January 1991 both birds went into molt.

Developments and Guidelines

- Since that first successful breeding in 1990 the Perth Zoo bird department has been extremely successful with a total of 13 young Regent Bower Birds being bred to independence. (5 males, 7 females and 1 unsexed.)
- Incubation is 21 days, usually two to three eggs in the nest. The young birds are usually separated away from the female at around 45 days after leaving the nest. Breeding season was between May to February with the months of February to March being the molting period.
- The compatibility of other bird species with bower birds is difficult to determine. For many years zoos, sanctuaries and other interested bird keepers have kept bower birds with many varieties of birds, without finding out what they require.
- Bower birds can be a great display bird in most walk-through aviaries and this is usually the way most are kept. They can also cause a lot of problems not only to each other, but to other species of birds they are housed with. This is mainly seen when other species are breeding or new birds are being introduced to the aviary. Bower birds will destroy and interfere with any nesting bird, sometimes killing the pairs of nesting birds and eating their eggs and chicks.

One concern when the bower bird species themselves are breeding, is whether to keep them paired or maintained in groups. We have tried a number of situations with the Regent Bower Birds and found that if you want to keep, breed, and maintain bower birds then the following applies:

- For breeding, allow yourself at least four well planted aviaries for breeding and holding. When introducing a male to a female or visa versa, closely monitor as one may kill the other.
- If housing in large walk-through aviaries, identify all stock and monitor

bower birds daily. Would suggest one male and two females in a walk-through situation. Do not expect to have successful breeding in walk-through aviaries.

- Provide a well planted group of aviaries with plenty of fine sticks, nesting sites, and colored materials for the male to both build his bower and display in. The female must also be provided with plenty of sticks to build her nest.

- I.D. birds with metal, plastic color bands or even micro-chip implants. This is a must for long term records and daily observations.

- If offspring are placed together, observed daily, I.D. and surgically sex as soon as possible. Divide into individual sexes and surplus out. If left in juvenile groups for long periods, fighting and sometimes death will occur.

- When holding surplus birds, most are compatible with medium to large species of birds. This is dependent on whether you wish to breed in the aviary as they will eat any eggs and chicks of other species they can find.

- Always provide more than one feeding and drinking area. This helps in territory arrangements and most of the above concerns.

Conservation

The above breeding notes, could be of great value to many vulnerable bower bird and birds of paradise species found in Australia or New Guinea. I believed most of the above methods could be use to support any captive breeding program.

Acknowledgements

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References

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Photo by Craig Moir

Regent Bower Bird.