

On behalf of the society the president, John Bucan, presented John Schorer with a framed black and white drawing of an orange-breasted waxbill to acknowledge the society's appreciation of his 39 years of service as committee member, vice-president and president. John, who was thrilled with the drawing (a Debbie Clutterbuck original), responded appropriately. Supper then brought our first meeting for the New Year to a pleasant close.

STOLEN BIRD HOTLINE

Members are advised that the new **Stolen Bird Hotline** phone number is (03) 312 6358. It is conducted on behalf of the Victorian Avicultural Council by Larysa Hayes (nee Jaworski) whom we congratulate on her recent marriage to Michael Hayes.

WILL THIS BE YOUR LAST JOURNAL?

If you do not pay your renewal subscription by Friday 7 February 1992 this will be your last journal. Can you afford not to receive *Australian Aviculture*?

INCREASE ON POSTAGE FOR ALL SERVICE ITEMS

Due to the recently introduced postal rates announced by Australia Post the committee has reluctantly increased postage on all service items. Please carefully check the rates for the items you order - full details are on the inside of the back cover of the journal.

MOTION TO AMEND THE SOCIETY'S OBJECTS AND RULES

The committee advises that our treasurer, Ken Kleesh, will move an amendment to **Rule 24a** so that it will read:

"The Committee at its discretion may invest monies which are in excess of requirements to meet known liabilities. Such investments will be restricted to loans to government or semi-government bodies, first charge debentures, permanent building societies, or listed investment companies".

The reason for the proposed change is to obtain growth in the society's Building Fund by investing in a listed investment company. Members will be aware with interest rates falling the potential for growth in debentures etc has declined markedly. Investment companies invest in the equity market and have a good "track record" with regard to potential for growth.

MONTHLY SEED REPORT

At the January monthly meeting the following seed prices were quoted as current in Melbourne. Each refer to bag lots per kilogram. Canary 85 cents (+1) Aust. Bird Seed; panicum 65 cents (=) Mackay's; jap millet 62 cents (+9) Mackay's; white millet 64 cents (=) Mackay's; grey sunflower 89 cents (+9) Mackay's; black sunflower 65 cents (-5) Mackay's. If contacting Australian Bird Seed Company ask for "club prices". Figures in brackets indicate the increase or decrease from the previous month and the name following is the seed company which has the seed at the quoted price. All prices are exclusive of any sales tax, and are the lowest available at the time, but often change weekly.

MEETING DATES — 1992

The Society holds its monthly general meeting at 8 pm on the first Tuesday of each month in Nicholas Hall, 148 Lonsdale Street, Melbourne. The venue is between Russell and Exhibition Streets, right next to Wesley Uniting Church.

DATES

4 February, 3 March, 7 April, 5 May, 2 June, 7 July, 4 August, 1 September, 6 October, 3 November, 1 December

Visitors Always Welcome

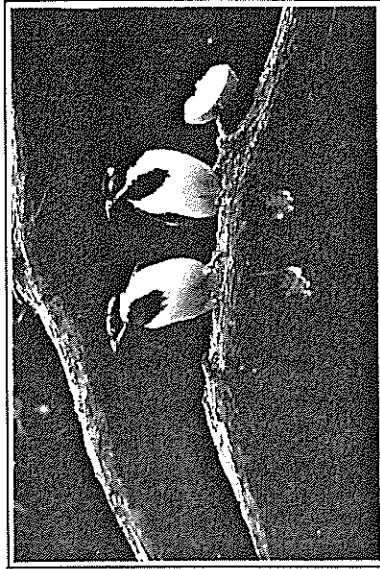
Breeding Blue-faced Honeyeaters at Taronga Zoo

by Nick Atchison, Taronga Zoo, Sydney, New South Wales

INTRODUCTION

The blue-faced honeyeater *Ertornyzon cyanotis* is a large honeyeater found across northern and eastern Australia and New Guinea. It measures 240-300mm in length and has olive-green wings, back and tail; black head and nape broken by a white crescent; and a black chin and throat, the remaining underparts being white. It inhabits eucalyptus woodlands, rainforest fringes, mangroves, mallee, melaleuca swamps and farmland (Blakers et al. 1985 and Reader's Digest 1977), living in pairs, small parties or in mixed feeding flocks in association with other nectar eating birds. They are nomadic, dispersing through various habitats and some birds may be migratory in part of their range (Reader's Digest 1977).

Their diet is varied and includes insects, nectar, pollen and fruit. They'll catch insects on the wing; hunting them through foliage or by prising them from underneath bark with their bill. When nesting they often use the deserted nests of grey-crowned babblers *Pomatostomus temporalis*, either relining them or using them as is. Otherwise they build a cup nest of bark strips, fibres and grasses (Reader's Digest 1977).



Blue-faced honeyeater - breeding pair. Photo: Author

Taronga Zoo's interest in breeding blue-faced honeyeaters in this instance stems from its plan to gain skills of relevance to the threatened regent honeyeater *Xanthorniza phrygia*. Information gained will be applicable to a Species Management Plan for regent honeyeaters in preparation for a captive breeding/release program. The zoo decided to use the blue-faced honeyeater as a model because it was the closest captive analogue (species) currently available, thought to be reasonably closely related to the regent honeyeater and will give us some insights into their captive husbandry. Further work of this kind will be carried out using striped honeyeaters *Plectrohyncha lanceolata*.

THE CAPTIVE SET UP

The blue-faced honeyeaters at Taronga Zoo are displayed as a small colony of five birds. When it was decided to use the species for trial breeding work, we had them surgically sexed and found we had four males and one female. A pair were moved from the display to our breeding facility on 22.6.90, into an aviary 2.8m x 1.6m x 2.1m high that had thick tea-trees in the back section for nesting purposes. A wire basket was attached to the inside wall near the front of the aviary so nesting material could be placed up off the ground. The birds fed by entering a wire cage attached to the outside of the aviary which had food placed in it from the outside, thus reducing the necessity for keepers to enter the aviary.

DIET

The diet the birds receive is a combination of frugivorous bird mix, insectivorous mix, a finely ground meat mix and Wombaroo nectar mix (see Appendix A). This is supplemented with mealworms and halved fruit spiked on to a branch. Fruit eaten includes apple, paw paw, soaked figs, pear and orange. In Queensland the blue-faced honeyeater has the local name of banana bird because of its fondness for this fruit. Our birds consume most fruit offered with relish - except banana!

BREEDING - THE ACTION BEGINS

The pair were moved to the breeding aviary on 22.6.90, and seventeen days later had started nest building. The material provided for them was teased coconut fibres, stringybark *Eucalyptus* spp. fine grasses and cobweb. The cobwebs were a source of great interest, a bird inspecting them for insects by inserting and opening its bill then peering into the hole made, however none were used in nest building. The fine grasses were ignored completely, so the nest was built almost entirely of coconut fibres, with a small amount of stringybark.

In the early stages of nest building the female (identifiable by a coloured leg band), would make one trip between the material basket and the nest site every 2 to 3 minutes, taking a beakful of fibres each time. When the nest had some form and was nearing completion, she would flatten her body into it and wiggle the material into shape. The nest took 10 days to complete, the female spending longer periods sitting in it between collecting trips in the last few days. The male would visit the nest site and would often pick at bits of nesting material but was never seen to take any active part in nest building.

The female usually left the nest when the aviary was approached, so when after two days she was sitting tightly it was assumed she had an egg. The nest was checked and indeed contained one egg, the female quietly leaving when the aviary was entered, and returning shortly after. The second egg was laid two days later. The eggs were candled during incubation and were found to be infertile. This gave us the opportunity to see how long the female would sit on infertile eggs. She continued to incubate for 24 days; eight days over the usual incubation period of 16 days. A brood patch was apparent on the female throughout incubation and occasionally the male was seen to feed her on the nest.

Five days after the removal of the eggs, the female had laid again in the old nest, producing a second egg the following day. These were candled after eight days and being infertile were removed, with the intention of also removing the male and replacing him with another. However, their determination was underestimated and within eight days the female had laid again to the same male and once again the eggs were infertile. This time we removed the eggs and the male on the same day.

A new male was introduced to the female by placing him in a cage inside her aviary for four days. Two days after his release into the aviary, the pair were seen mating and the female was adding more material to the nest. The behaviour of this male was quite different to the last. He spent a lot more time around the nest and took quite an aggressive stance towards anybody outside the aviary, lifting his wings and peering at the intruder.

Mating was seen to take place after a short courtship ritual: the male would take a mealworm and the female waiting on a perch, would immediately adopt a position with wings lowered and quivering, tail lifted, head lowered and pupils contracted so the eyes looked white. The male flew to her with a mealworm and mated with her, keeping the present for himself. The previous male was seen to go through the same procedure, but was never seen to mate with the female.

The first egg was laid on 2.10.90, four days after the introduction of the new male. It was weighed at 8.3g and marked with pencil. The second egg was laid the following day, weighing 8g. For the first three days of incubation, the female didn't sit very tightly, leaving the nest when the aviary was approached. After day three, however, she only left the nest to feed. The male would take this opportunity to check the nest.

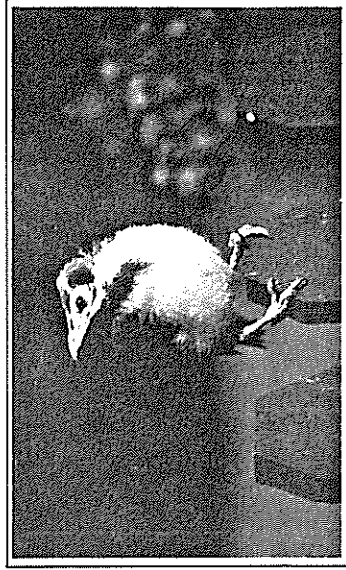
Nine days after the first egg was laid the eggs were candled and reweighed. They were both fertile, the first weighing 7.4g and the second 7.1g. The first egg hatched on 18.10.90, 16 days after laying. The chick was fed by both parents on a selection of moths, mealworms and maggots. These were crushed and wiped against the perches first. The male was also

seen to feed the female who in turn fed the chick. On 20.10.90 the second egg was removed, the embryo having died when about ¾ developed. The two day old chick was also taken on this date for handraising, for reasons discussed later.

The female was back on the nest and adding extra material four days later. The nest was empty on 26.10.90 but when checked again on the 29th it contained two eggs that were being incubated. These were candled five days later, both being fertile. The first hatched on 13.11.90 and the second on the following day, giving an incubation period between 16 and 17 days.

The feeding of the chicks was similar to that of the last nest except it was noticed that three days after hatching the parents gave a soft whistle after landing on the nest which would stimulate the chicks to beg. Prior to this the chicks begged as soon as the nest was landed on.

Daily weights were taken of the chicks from day one until they fledged on 6.12.90, from when irregular weights were taken.



Blue-faced honeyeater - fledgling. Photo: Author

On 12.1.91 the parents and two chicks were reintroduced to the group of males on display, which at this stage also contained the handraised bird from the previous nest. The parents were immediately aggressive to the other birds but soon settled down and within a week were acting as part of a flock. The chicks were still seen soliciting food from their parents in early February, over 60 days after they had fledged, but for the most part they were feeding themselves.

HANDRAISING

The chick taken for handraising on 20.10.90 was placed in a hospital humicrib and kept at an initial temperature of 33.5 Celsius. It appeared too hot in this so the temperature was lowered to 32°C. Over the next six days this was lowered to 29°C and by day ten was being kept at room temperature of about 24-27°C. Inside the humicrib, the chick was kept in a margarine container padded with tissue paper, giving plenty of support on the chick's sides so its legs didn't splay. A small piece of plastic flyscreen netting was placed under the front of the chick. This gave it something to grip, and kept its feet open, thus preventing the clenched feet that can sometimes occur with handraised softbills. It placed all the way under the chick, the netting tended to rub on its leg joints, causing irritation.

It was fed on a diet of small pieces of baby "pinkie" laboratory mouse; bogong moth *Agrotis trifusa* abdomens and housefly maggots that were pulverised with tweezers. The bogong moth abdomens had both ends cut off and were floated in water, then wiped on paper towel to remove the scales and dust. This was supplemented with one drop of Calcium Sandoz and one drop of Aviclops per day. The maggots were phased out after about nine days and whole moths were introduced at 13 days, only one per feed initially, increased over the next three days until all moths given were whole.

The chick was fed using tweezers and begged eagerly, but at first was only fed a small amount until its abdomen looked tight. This was usually one moth abdomen, four to six maggots and two to four small pieces of pinkie (equalling .6g to 1g of food). It continued to beg after

this but to give any more would be overfeeding. The second day it was given 2ml of water as it looked slightly dehydrated, probably due to the humidicrib temperature being too high. The amount of food was increased daily, using the fullness of the chick's abdomen as a guide to how much to feed. When five days old (weight 28g) it was eating half a pinkie (in small pieces), three moth abdomens and five maggots per feed and by seven days old it was getting virtually as much as it would eat (up to two chopped pinkies, four moths and ten maggots per feed). This continued to increase as the chick grew, with some of the adult diet introduced at day fifteen.

The chick was fed over a twelve hour period; for the first four days being fed hourly. This was decreased gradually until feeds were being given every three hours from 17 days old until independence at 25 days. Its appetite was mostly good but varied especially towards the fledging age when at times the chick was not interested in feeding.

It was weighed before and after each feed on sartorius electronic scales, accurate to one decimal place. When fed, it defecated in a convenient faecal sac that could be picked up with tweezers (or fingers by the hardy) and this was weighed as well, giving us an exact weight of food intake at each feed. At fifteen days it kept jumping out of its nest so was moved to a small cage with perches. After 25 days it started feeding itself the adult diet from a dish so it was no longer necessary to handfeed it.

DEVELOPMENT OF CHICKS

The chicks hatch with skin pink except for a dark grey stripe along the tops of the wings and alula. The bill is pinkish-white with a creamy gape. They have very sparse tufts of light brown down on the back, and tops of the wings and "shoulders", crown and back of head and a tuft on each side of the body behind the legs. The eyes are closed and the belly seems very full and rounded.

At four days the eyes start to open and pin feathers break through on the wings, breaking through on the rest of the body by day six and opening on days seven and eight respectively. They start to look quite feathered by day eleven though feathers on the wings are still mostly in their sheaths. These sheaths are lost by day fifteen but the wing feathers still contain blood.

DISCUSSION

With our breeding trials of blue-faced honeyeaters we were able to gain some insights into what we can achieve by pushing the birds beyond what we would normally expect them to tolerate. This information will be a valuable guide towards applying similar techniques to related species to maximise our management of them.

The knowledge of how much longer than the normal incubation period the birds will sit is valuable when fostering eggs. It means that the synchronisation of the foster parents with the eggs to be fostered becomes less critical. In this case, fresh fertile eggs could have been placed under our female up to eight days after she'd laid her own and she still would have sat long enough to hatch them. Fostering eggs from rarer species under a common species can be an important management tool in conservation work, as demonstrated by the work being done on helmeted honeyeaters *Lichenostomus melanops cassidix* at Healesville Sanctuary, Victoria, using yellow-tufted honeyeaters *Lichenostomus melanops gippslandica* as foster parents.

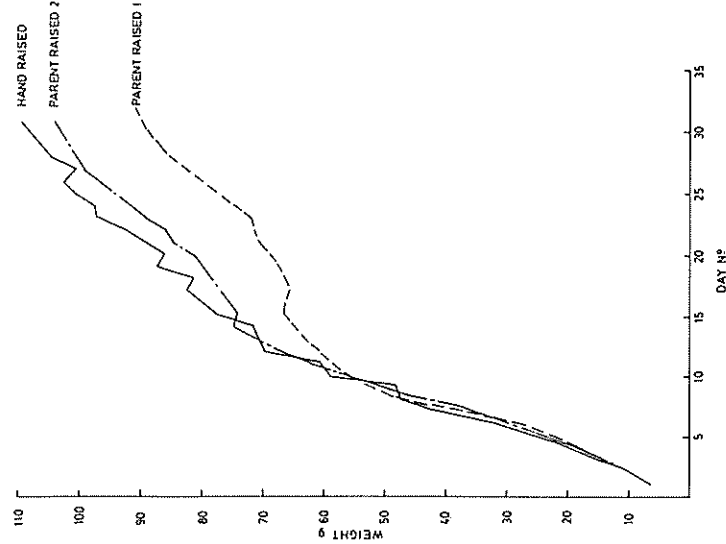
Further points of interest were that the female would recycle and lay again so quickly after the removal of eggs or young, taking only 5 to 8 days; and that she would accept a new male with almost no disruption to her nesting drive.

We found blue-faced honeyeaters to be quite tolerant of nest interference, and with each clutch we became bolder with our inspections, feeling confident enough to take fresh egg weights and daily weights of chicks from the later clutches. The weights were taken on portable digital scales that were used in the enclosure near to the nest. Similarly, the egg candling was done near the nest with a portable candler. The female always returned to the nest shortly after the keeper left the aviary.

There were numerous reasons for removing the first chick for handraising. We wanted to develop a suitable diet for rearing. We also wanted to record the development of the chick and compare it to that of parent-raised birds. We found the hand-raising diet gave a suitable

weight increase though perhaps there is need for a slower weight gain towards fledging. It also gives us the opportunity to observe the behaviour of the hand-raised bird and to see how well it integrates into a flock of its own species. Although it has certainly been slower in this respect than the parent-raised chicks, it quickly ceased begging from people and is behaving in an increasingly similar manner to that of the other honeyeaters. It is also associating well with the flock now, whereas initially, it was quite detached. Finally, we wanted to see if the adults would recycle after the removal of their chick (which they did) and how long it would take them to go back to nest.

The moths mentioned in the diets were caught overnight in an insect trap. We were fortunate that bogong moths were abundant at the time of hand-raising as we found them to be a very suitable food item.



Weight gain of blue-faced honeyeater chicks

CONCLUSION

Breeding blue-faced honeyeaters in 1990 was a particular success for Taronga Zoo. We had set ourselves a number of goals prior to accommodating the birds for breeding and we achieved these goals as well as gaining additional information that presented itself along the way. To be able to apply what we have learned from them to other species such as striped honeyeaters and eventually to the threatened regent honeyeater is our overall plan. This aside, breeding and rearing blue-faced honeyeaters has been a rewarding experience when based entirely on their own merits as a fascinating species.

APPENDIX A

FEED MIXES USED BY TARONGA ZOO'S BIRD DEPARTMENT

EGG CAKE	wholemeal cake (crumbled)	4 kg	
INSECTIVORE MIX	fine meat mix	1.5 kg	
	egg (grated with shell)	3 doz	
FRUGIVOROUS MIX	cheese (grated)	3 cups	
	fly pupae	2 cups	
	calcium carbonate	2 tbsps	
	Petvite	1 tbsps	
	crushed dog biscuits	3 cups	
	turkey starter crumble	3 cups	
	dried currants	2 cups	
	diced apples	20	
	diced bananas	12-16	
	egg (grated with shell)	2 doz	
FINE MEAT MIX	carrot (grated)	3 cups	
	calcium carbonate	2 tbsps	
	Petvite	1 tbsps	
	greens (spinach, celery etc.)	2 cups	
	minced meat	8.75 kg	
	crushed dog biscuits	3 kg	
	egg (grated with shell)	1 kg	
	(vitamins and minerals are previously added to meat).		

Tsp = teaspoon
Tbsp = tablespoon

APPENDIX B

BLUE-FACED HONEYEATER WEIGHTS - CHICKS 1990

Day	Hand Raised	Parent Raised 1	Parent Raised 2
1		6.9 g	6.3 g
2		9.3 g	9.45 g
3	14.3 g	14.96 g	13.3 g
4	18.1 g	19.4 g	18.8 g
5	22.6 g	24.6 g	24.4 g
6	28.5 g	31.3 g	
7	36.5 g		
8	47.2 g		
9	48.0 g		
10	58.7 g		
11	60.9 g		
12	69.5 g		
13	70.3 g		
14	71.5 g		
15	77.3 g		
16	79.6 g		
17	82.2 g		
18	81.3 g to cage		
19	87.1 g		
20	86.3 g		
21	89.3 g perching		
22	92.1 g		
23	97.1 g		
24	97.5 g		
25	100.9 g		

26	102.6 g to cage with adult	
27	100.4 g	99.29 g
28	104.7 g	85.0 g
29		
30		
31	109.3 g	104.0 g
32		90.4 g

PRODUCTS MENTIONED IN TEXT

- Avidrops - manufactured by Vetsearch International, Division of Medical Research Pty Ltd, 6 Lenton Place, North Rocks, New South Wales 2151, Australia.
- Calcium Sandoz - manufactured by Sandoz Australia Pty Ltd, 54 Waterloo Road, North Ryde, New South Wales 2113, Australia.
- Lorikeet & Honeyeater Food - manufactured by Wombaroo Food Products, PO Box 151, Glen Osmond, South Australia 5064, Australia.

REFERENCES

Blakers, M., et al. 1984. *The Atlas of Australian Birds*. Melbourne University Press, Melbourne.
Reader's Digest. 1977. *Reader's Digest Complete Book of Australian Birds* (2nd rev.). Reader's Digest Services, Sydney.

ACKNOWLEDGEMENTS

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Graph: Drawn J.E. Buchan.

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