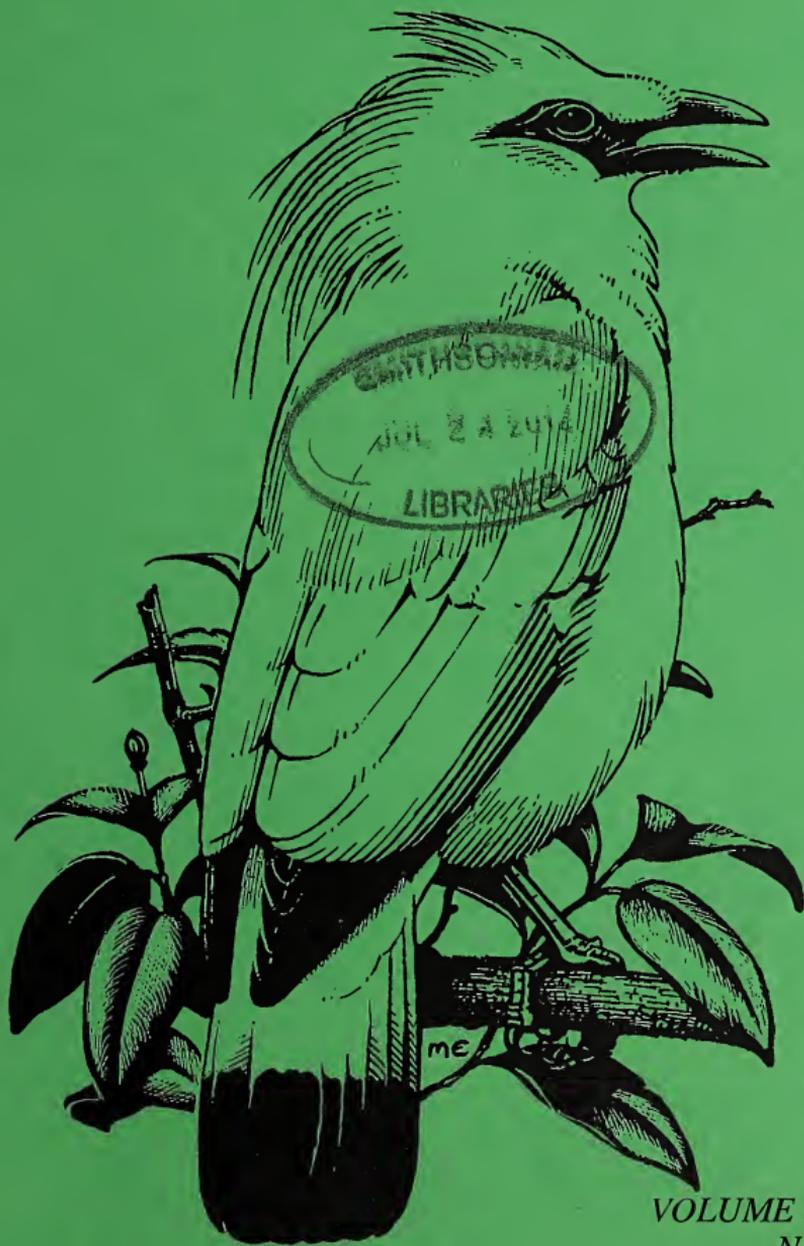


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BREEDING THE BUFF-NECKED IBIS *Theristicus caudatus* AT BLACKBROOK ZOOLOGICAL PARK

by Nicola Sumbland

Here at Blackbrook Zoological Park in Staffordshire we currently house 11 of the 27 species of ibis belonging to the family Threskiornithidae. Among the species housed here is the Buff-necked Ibis *Theristicus caudatus*, which is a particular favourite of mine. There are only about 20 remaining in captivity and we believe we are the only zoo in the world currently housing this species and are the first to have bred it. (See Editor's Note at the end of the article.)

The Buff-necked Ibis is widely distributed in South America, where it forages in wet grasslands, marshlands, flooded agricultural fields, swamps and along the banks of lakes and streams, feeding on small aquatic animals such as fish, frogs and shrimps.

Identification

The Buff-necked Ibis is often wrongly identified and frequently mistaken for the similar looking Black-faced Ibis *T. melanopus*. However, when you have both species alongside each other in captivity, as we have here at Blackbrook Zoological Park, the two species can easily be distinguished from each other.

The Buff-necked species can be identified by the following:

It has an area of white on the wings (see photo p.2).

The crown is a buffish-tan or rufous-buff colour, so too is the lower chest (the Black-faced Ibis has a grey band across the lower chest).

It does not have a lobe beneath the chin, just a tight piece of black skin.

The eyes are bright red with a black pupil.

It can be sexed quite easily, as the male is taller and has a longer beak than the female.

Our adult pair of Buff-necked Ibis was one of the first ever bred in captivity. The two birds were hatched in May 2007 and were hand-reared



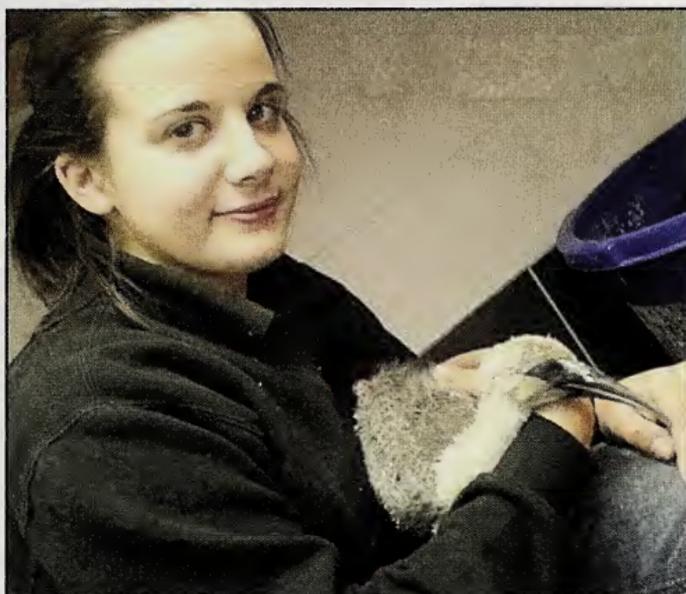
Blackbrook's breeding pair of Buff-necked Ibis.



JoJo showing the coloration of the underparts.

by members of Ibising (website: www.ibising.org). They would have been only four to five months of age when Blackbrook bought them from a dealer in October 2007.

Since being at Blackbrook the birds have been made comfortable in a large enclosure which gives the pair plenty of outdoor space and has a large

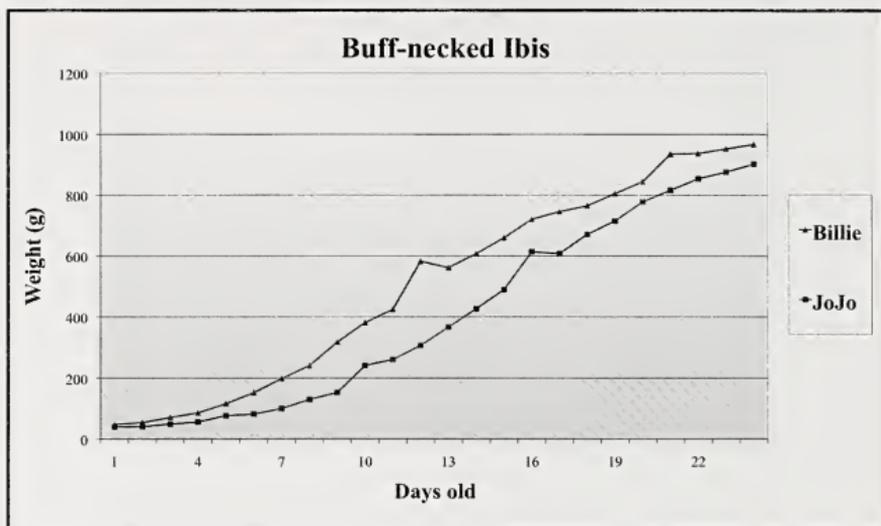


The author with a young ibis.

pond for wading in. The birds also have access to a shed, which is always left open, so that they can come and go as they please. There are two nesting platforms built outside around the posts supporting the netting covering the roof. These are approximately 10ft (3m) above the ground, one above the pond and the other just above dry land. The ibis share the enclosure with a pair of Purple Gallinules or Swamphens *Porphyrio porphyrio*, which being a ground nesting species, does not compete with the ibis for either of the nesting platforms.

Early in April 2011 we found an ibis egg on the ground below one of the nesting platforms, which we took to be an indication that the ibis had reached breeding age. The egg was placed back in the nest, but was found on the ground again the following day. We inspected the nest and decided that due to the pair's inexperience, the nest was inadequate and that the pair needed our help to build a better nest. Although we knew the egg would not hatch, we decided to leave it with the pair in the hope that it would encourage nesting behaviour. After sitting on the nest for just over a week, the ibis came off the nest that morning and showed no sign of returning. Late that afternoon we took the decision to remove the egg. On closer inspection of the nest, however, we discovered a further two eggs, making a clutch of three. No longer confident that the the pair would hatch the eggs and rear the chicks, we decided to remove the eggs and artificially incubate them and, if they hatched, hand-rear the chicks.

Fig. 1. The growth rates of the two hand-reared chicks.



We carefully cleaned the eggs and upon candling them discovered that the two later eggs appeared to be fertile. These were placed on a rack in an automated incubator which rotated the eggs every hour. The incubator was set at a constant temperature of 37.5°C (99.5°F) and the humidity was not allowed to drop below 50%. The eggs were inspected twice a day for any signs of development. As we were not sure when the eggs had been laid, we were unsure when they were likely to pip.

The first chick hatched after approximately 23 days of first being incubated by the parents and then in the incubator. The chick, which we named Billie, weighed 48g 24 hours after hatching. It was then taken out of the hatcher and placed in a small tub lined with paper towelling to cushion it and placed in a brooder set at 37.5°C (99.5°F) and 65% humidity. On day one the chick was given small amounts of food every two hours from 8.30am-11.30pm (23.30hrs). The chick was fed using a syringe fitted with a small silicone tube to ensure that the food did not enter the trachea.

By day two the chick was eating 3ml-5ml of formula every two hours, and sometimes demanded more. Twigs were provided to act as a nest for the chick to sit on and ensure that its legs and feet developed properly. Day by day the routine gradually evolved as the chick demanded more food. By day five it was eating 17ml-30ml of formula, but at longer intervals. The chick weighed a healthy 116g.

The second chick hatched exactly seven days after the first chick hatched. The second chick, which we named JoJo, weighed 40g, 24 hours after hatching. It was placed in the brooder with the first chick and, except for

some slight changes, we followed the the same hand-rearing routine.

By the time that the first chick, Billie, had reached 12 days old, she was eating small pieces of stint (small freshwater fish), as well as the formula. She was placed in a separate brooder and over a period of 12 days the temperature was gradually reduced to 25°C (41°F). Once this was achieved she was moved to a container full of twigs and with a heat lamp above. By day 16 she was eating a mixture of the formula, whole stint and pinkie mice. It was the last day that she received the formula. She weighed 721g. On day 21 she was able to pick up food on her own from a bowl. From then on I fed her only small amounts of food, leaving her slightly hungry to encourage her to feed herself. After a few days she no longer needed to be hand-fed and, therefore, on day 24 she was moved to an indoor aviary, which had perches and heat. Other foods were slowly introduced, including rat pups, chopped sprats and chopped, de yolked skinned chicks, until eventually she was eating whole sprats and chopped chicks.

When the second chick, JoJo, was able to pick up her own food, she was reintroduced to Billie. When the two young ibises reached approximately 1,150g the heat bulb was removed and a few days later they were introduced into their new outdoor pen, which has an indoor shed and plenty of perching.

Acknowledgements

I would like to say a massive thank you to Mark Rubery for giving me the opportunity to work with such wonderful birds and for trusting me to hand-rear the two chicks. I also wish to thank Nicole Rowley for helping me with the night feeds.

Nicola Sumbland is a 23 year old keeper at Blackbrook Zoological Park, Winkhill, near Leek, Staffordshire ST13 7QR, UK. Website: www.blackbrookzoo.co.uk

The First Breeding Records For Birds Reared To Independence Under Controlled Conditions In The United Kingdom compiled by Dave Coles (1986), states that the Buff-necked Ibis was first bred in the UK at Birdland in 1982. However, no breeding account was published. I have also found records of one bred in 1991 (collection unnamed) and two bred in 1992 (collection or collections unnamed). It is suggested that these birds were Black-faced Ibis which had been wrongly identified. It is probably too late now to resolve this matter one way or the other. - Ed.

DIETARY CONSIDERATIONS WHEN BREEDING MONTEZUMA QUAIL *Cyrtonyx montezumae*

by Jack Eitniear and Terry Becherer

Most North American quail (Odontophoridae) are easily bred in captivity, some even at commercial facilities. Two exceptions, however, are the Mountain Quail *Oreortyx pictus* and the Montezuma Quail *Cyrtonyx montezumae*. This article describes our experiences with the Montezuma Quail.



J. C. Eitniear

Adult male Montezuma Quail.

Our project began with the desire to produce enough quail to begin a soft release programme in the Texas Hill Country, from which the species was extirpated decades ago. After consulting with several aviculturists who housed Montezuma Quail, we discovered that the species was not doing well in captivity. Most of those who had a desire to breed this species, consulted *Upland Game Birds: their breeding and care* by Hayes (1996) for their general husbandry guidelines. According to Hayes and individuals we consulted, first year pairs do not breed well. Furthermore, overall fertility



J. C. Eitniear

Front view of the Montezuma Quail enclosure, showing potted plant and feeding and nesting compartments at the rear.



J. C. Eitniear

Rear view of suspended enclosure. The nesting compartment is on the right and the feeding area is on the left.

was low at all ages, and their offspring were often skewed towards male birds. Members of the Yahoo Neotropical Quail Captive Management Group (<http://pets.groups.yahoo.com/group/Neotrop-Quail>) reported fewer than five young per pair in 2008. With hopes of increasing the number produced, we initially devoted our efforts to enhancing the diet and searching for additional bloodlines.

The Montezuma Quail is principally a native of the grassy pine-oak woodlands of Mexico, though the northern periphery of its range extends into parts of Texas, Arizona and New Mexico in the USA. Montezuma Quail lay six to 12 unmarked white eggs in a domed nest, generally during the rainy season (late-April-late-September). The domed nest is thought to offer protection from rain. Nests of this nature are also constructed by other forest quail, such as those of the genus *Dendrortyx*.

In the wild, the diet of the Montezuma Quail consists of bulbs of Rusby's Flatsedge *Cyperus rustbyi* (*sphaerolepis*) and Broadleaf Woodsorrell *Oxalis amphifolia* (*drummondii*), along with acorns *Quercus* sp., the seeds of grasses such as Thin Paspalum *Paspalum stramineum* (*setaeum*) and the flowers of manzanitas *Arctostaphylos* spp. Given that often there is a lack of standing water within the quail's habitat, plant bulbs (e.g. *Oxalis* spp.) which are rich in moisture, likely meet the quail's needs. Field studies have shown an increase in the amount of insects in the diet during July. This not only corresponds with the normal increase in insects after rain but also with the increased need for protein during egg laying and for chick growth. The only significant difference between the diet of the Montezuma Quail and other (commonly bred) grassland quail is that the diet of the Montezuma Quail includes acorns and plant bulbs. An analysis of bulbs of *Oxalis alpino* concluded that they are an important source of energy with low quality protein (6.82% fat, 6.92% protein). These bulbs provide moisture and calories needed by the quail in order to survive the winter. A nutritional analysis of acorns shows that they are high in fats (31%) and carbohydrates (54%) and low in protein (8%). Although the quail do not feed on acorns throughout the year, they are considered to be a significant component of the diet (40%) from April-September. During the breeding season the highest components of the diet are acorns and insects. The nutritional value of insects varies depending on their developmental stage. In general, however, insects range from 40%-60% protein and 4%-55% fat. Additional dietary components provide a number of vitamins and minerals. A typical gamebird diet, however, (e.g. Mazuri™ Exotic Gamebird Breeder) fed during the breeding season contains 20% protein and 2.5% fat. To more closely resemble the wild diet, we felt that some modification to the captive diet was warranted and decided that the diet would benefit from added protein and fat.

Feeding trials

From 2009-2011 we maintained three to nine pairs of adult Montezuma Quail in suspended 1m x 1m x 2m (approx. 3ft 9in x 3ft 9in x 6ft 6in) enclosures with feeding and nesting compartments at the rear and an artificial plant in the centre of the enclosure (see photos p.7). In 2009 the birds were maintained on Mazuri Super Breeder™. In 2010 and 2011 the diet was modified and the birds were fed the following mixture:

- 5 cups Mazuri Super Breeder™ (21% protein, 4% fat)
- 4 cups ABBA™ canary mix (15% protein, 6% fat)
- 1 cup millet (11% protein, 5% fat)
- 3 cups Ultra Kibble™ ground in a food processor
(32.3% protein, 10.67% fat)

The eggs were collected daily and incubated at 99.5°F (37.5°C) with 35%–40% humidity. On day 22 the eggs were moved to a hatcher and the humidity was increased to 65%. The chicks were fed a standard commercial chick starter diet. The number of eggs laid, their fertility and the growth of the chicks, as determined by wing length (see Fig.1), were noted.

Results

Following the diet modification described above, we observed significant changes. Egg production increased from 10 eggs per pair on the standard diet to 48 eggs per pair on the modified diet. The fertility of first year pairs also increased from almost 0% to 20%. Likewise, with second year pairs, not only did egg production increase but the percentage of fertile eggs went up from 12% to 41%. We feel it is likely that total egg production is now within the normal range for the species but the fertility rate should be closer to 80%. The current low fertility rate is likely due to inbreeding within the captive population. Inbreeding is also likely to be the cause of the skewed sex ratio, although the wild population of this species is known to be male biased. According to Brown & Gutierrez (1980), under normal conditions, populations of Montezuma Quail consist of about 60% males. Researchers have also noted that the sex ratio varies from area to area. It is not known if this is due to varying levels of predation or changes in plant communities which result in nutritional differences. Some studies have shown that a lack of vitamin E impacts fertility. Although this vitamin is often present in commercial mixes it is not present in acorns. As most commercial diets are based on poultry studies, it is the responsibility of aviculturists to supplement the diet of their birds with whichever additional specific nutrients various species may be lacking. With wild-caught birds this may be dealt with by providing a variety of food items and then noting which of these the species is consuming. With captive-bred birds this can be more difficult, as often

Fig. 1. Wing measurements of captive Montezuma Quail.

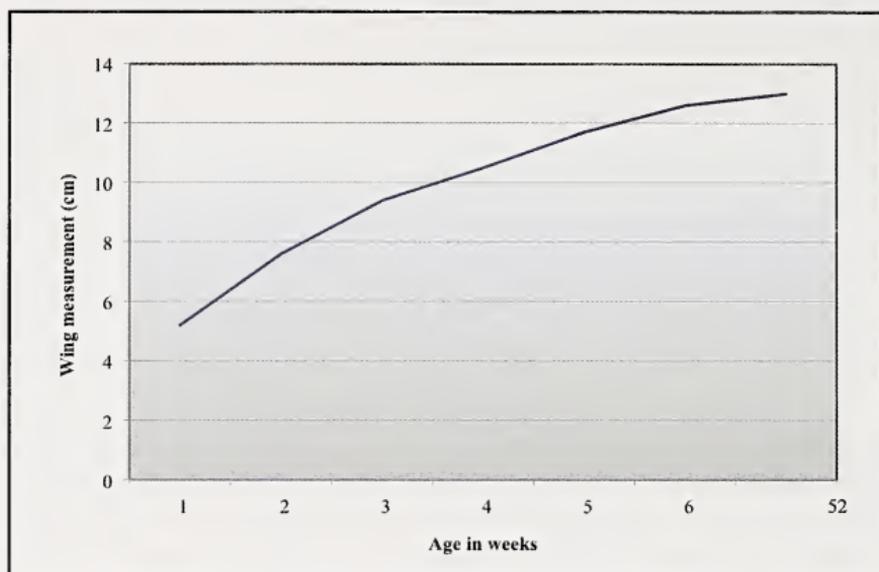
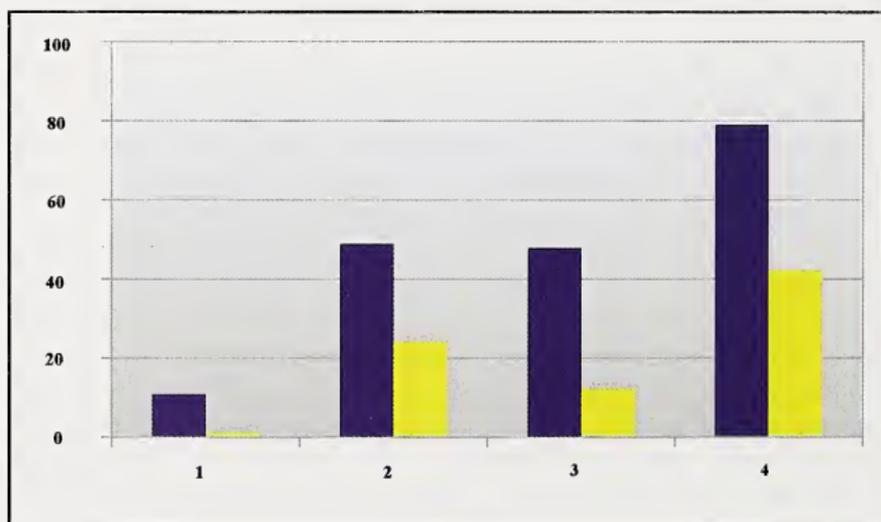


Fig. 2. Average total egg production (blue) and number of fertile eggs laid by captive Montezuma Quail (yellow).



1 = One year old breeders on standard diet.

2 = One year old breeders on modified diet.

3 = Two year old breeders on standard diet.

4 = Two year old breeders on modified diet.

birds will not eat foods they were not fed when they were chicks. To prevent this scenario from occurring, we suggest that the chicks of all Galliformes be fed a variety of foods, including commercial chick starter crumbs, fruits and vegetables, and a varied seed mix, including small finch and canary seed, as well as larger grains.

Although our sample size may indicate that our results are not statistically significant, the results are undoubtedly encouraging. Aviculturists often face the dilemma husbandry standards have not been established, yet the number of pairs maintained preclude a statistically significant study being conducted. With such species one needs to look at recent breeding successes with related species and duplicate any common elements. With regard to the diet, we suggest that rather than relying totally on commercial preparations, one attempts, as far as possible, to replicate the natural diet. Often this is only possible through the use of 'cafeteria style' experiments (offering the birds a variety of choices). The results of such experiments should be well documented and published in the avicultural literature. Only in this way will the science of aviculture advance beyond being an endeavour which relies on 'tradition' and 'trial and error' methods.

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The authors hope that the above article will encourage members to conduct detailed studies of the diets of their birds, rather than simply rely on commercial preparations.

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BREEDING THE SPECTACLED LAUGHINGTHRUSH

Rhinocichla mitrata

by Llyr Davies

The Spectacled Laughingthrush *Rhinocichla mitrata* is found in forests, at forest edges and among adjoining cultivation from 500m-3,200m (approx. 1,650ft-7,500ft) above sea level in south-east Asia. It is also known as the Chestnut-capped Laughingthrush (and until recently was listed in the genus *Garrulax*) and was previously treated as conspecific with the Chestnut-hooded Laughingthrush *R. teachery*, with which it forms a superspecies. Two subspecies are currently recognised: *R. m. major*, found in extreme southern Thailand and Peninsular Malaysia, and *R. m. mitrata*, which is found on the Indonesian island of Sumatra (Collar & Robson, 2007). The Spectacled Laughingthrush is common in Peninsula Malaysia and on Mt Kerinci in Sumatra.

This laughingthrush has apparently always been rare in western aviculture with very few birds having been kept in the UK and Europe. During a recent search of the ISIS database I could not find any listed in North American zoological collections. The assumption must be that the majority of birds trapped for the bird trade remain in south-east Asia.

Description

It is a medium-sized, dull grey laughingthrush, approximately 23cm (9in) in length. It has a white eye-ring, chestnut on the head and vent and a bold white wing-flash. The irises are usually red or often red-brown or chestnut, or sometimes brown or dark brown. The bill, legs and feet are yellow. The sexes look similar. The juvenile is duller and browner than the adult and has less white streaking on the forehead.

Acquisition and pairing

Waddesdon Manor Aviary (WMA) purchased the female in 2004. She was estimated to have been wild born in 2000. This specimen and another female made a nesting attempt in 2008. The 2004 female was observed sitting in the nest, and a broken egg was found on the aviary floor.

In March 2011, a male, estimated to have been hatched in 2005, was acquired on loan from Ronald Hoogervorst. Following quarantine, it was paired with the female, which was the fittest of the two females we had at WMA. In the morning, the male was introduced to the female in an off-show aviary. This was 14ft long x 5ft wide x 7ft high (approx 4.2m long x 1.5m wide x 2.1m high) and planted with box bushes and bamboo and had natural perches. Mulch and mix was used as the substrate on the floor of the aviary,

which was roofed at each end and had a small shelter attached.

Food

The birds were fed an insectivorous and a frugivorous diet. The insectivorous mix consists of universal and low iron softbill foods, to which was added finely grated carrot, finely diced apple, soaked raisins and minced hard-boiled egg. The frugivorous mix consists of a variety of diced fruits and low iron softbill pellets. Every other day the food was dusted with Nutrobal multivitamin powder. Livefood, consisting of mealworms, crickets and waxworms, was offered thrice daily.

Reproduction

Two nesting baskets were present in the aviary when the birds were introduced and a third, placed at a height of 6ft 7in (2m) above the ground, was added soon afterwards. The baskets were screened with *Cupressus leylandii*. A nest constructed of coconut fibres was found in the third basket on April 25th. One of the birds was observed sitting on the nest on May 16th and, the following day, it was noted that there were two eggs in the nest, which a day later were found broken on the aviary floor. A new cycle began on May 24th and again resulted in two broken eggs being found. When an undamaged egg was observed in the nest on June 6th, it was removed and artificially incubated. On June 26th, the pair was recorded building in a different nest basket.

Hand-rearing

After having been artificially incubated at 37.2°C (99°F) for 13 days, the egg hatched on June 19th. The chick weighed 3g before its first feed at approximately 14 hours old. It was initially kept in a brooder set at 36.2°C (97.2°F), the temperature of which was gradually reduced as the chick grew older.

The hand-rearing diet, fed to it using tweezers, consisted of equal quantities of pinkie mice and papaya, puréed and with an added pinch of Nutrobal multivitamin powder. It is a diet we have used with much success hand-rearing other passerine chicks, including those of other species of laughingthrush. As the chick grew, increased quantities of ecdysed mealworms (mealworms which had recently shed their skin), crickets and small waxworms, were added to the diet.

The chick was fed at hourly intervals from 6.00am-10.00pm (22.00hrs) for the first three days and gained 5.4g in weight during this period. Feather development advanced up the neck on day two and was visible on the crown the following day. The pins of the primary wing feathers had broken through the skin by day three. The interval between feeds was increased to one-and-a-half hours until day seven, by which time the chick had gained a further



Ian Edmans/WMA

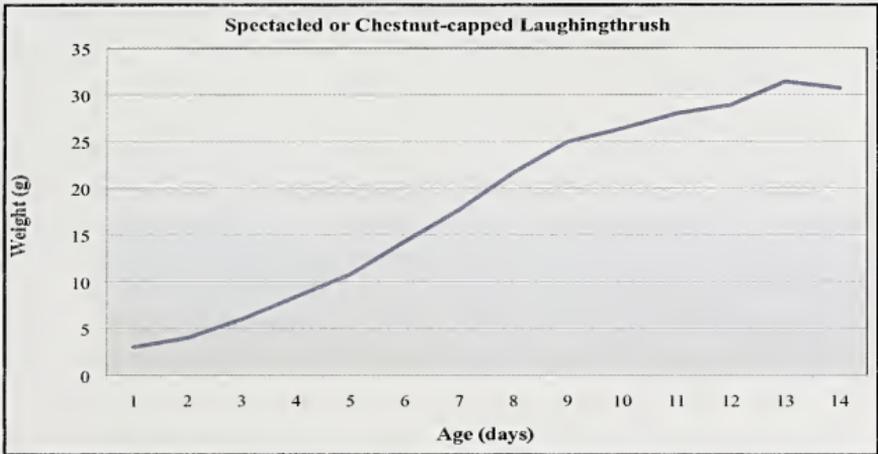
The young laughingthrush at seven months of age. Until recently this species was better known as the Chestnut-capped Laughingthrush.

9.3g in weight. The pins had begun emerging on its shoulders and nape and the eyes had begun slitting.

From then until the chick fledged, it was fed at two-hourly intervals, except for the period between days 11-13, when for convenience's sake, the interval was reduced to one-and-a-half hours, to synchronise feeding times with those of younger chicks being hand-reared. On day nine the feathers had begun unfurling from the pins on the wings. The following day the chestnut cap was coming through and, by day 11, the eyes were fully open and the chestnut vent was observed. The chick fledged from its nest pot on July 12th. It was 14 days old and weighed 30.7g (Fig. 1 tracks its growth rate). It was placed under a heat lamp in a small cage for fledglings.

After a few days in the cage the young laughingthrush was observed pecking at insects and pieces of fruit. Following this, it was offered food from tweezers only twice a day, at 7.00am and 7.00pm (19.00hrs). Once it was fully independent, it was moved to a larger cage measuring approximately 5ft long x 4ft wide x 6ft high (1.5m long x 1.2m wide x 1.8m high), which it shared with a younger hand-reared Spotted Laughingthrush *Ianthocincla ocellata*. On August 17th the young Spectacled Laughingthrush weighed 50g and some feathers were removed and sent for DNA testing, which revealed that it is a female. On September 26th both young laughingthrushes were moved to an outdoor off-show aviary, at which time the young Spectacled Laughingthrush weighed 47g.

Fig. 1. Chick's growth rate from days one to 14.



Conclusion

There is the need for research into why the majority of eggs, having been laid in a nest, are later being found broken on the aviary floor. It is hoped that we can perfect the breeding requirements of this charismatic species and, ideally, be able to produce parent-reared young in the near future.

We hope that the lessons learnt from breeding this species, which remains common in the wild, can be applied to breeding endangered species, to which captive breeding may prove significant in their recovery.

Products mentioned in the text

Nutribird T16 low iron pellets: Versele-Laga nv, Kappellestraat 70, 9800 Deinze, Belgium.

Nutrobal multivitamin powder: Vetark Professional, PO Box 60, Winchester, Hants S023 9XN, UK.

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As described above, the Spectacled Laughingthrush *Rhinocichla mitrata* has been bred at Waddesdon Manor Aviary. This is probably the first successful breeding of this species in Great Britain or Ireland. Anyone who knows of a previous breeding is asked to inform the Hon. Secretary.

LOOKING BACK AT RAYMOND'S FIRST TWENTY-FIVE YEARS AT COBHAM

by Malcolm Ellis

Following the sad death of our President Raymond Sawyer on February 21st (see *The End of an Era and Memories of Raymond*, pp. 45-47), it was suggested to me that it might be a good idea to look back at his time at Chestnut Lodge and the wonderful garden parties, while the memories are still fresh in our minds.

In Vol.103, No.2, pp.49-66 (1997), Raymond wrote that the previous year 1996, had marked a quarter of a century during which he and Ruth Ezra (who later became his wife) had been keeping their wonderful collection at Chestnut Lodge. During those first 25 years many birds were bred there. These included 16 species which it was believed had never before been bred in the UK and several others which had been bred for only the second time in this country. There were also numerous other notable successes. Of the many birds which had been bred there, it was with the wading birds that they had been most successful. Several species bred successfully over many years.

Raymond's notes aimed to provide as much information as possible, although, as he pointed out, in the case of some of the smaller species it was difficult to write a great deal about the breedings, as the nests were sometimes difficult to observe or it was thought best to leave the birds alone and not disturb them.

The aviaries at Cobham were many shapes and sizes and various heights. They were generally beautifully landscaped and planted to blend in with the various trees and plants, etc. A problem had been that the growth was at times very vigorous and the vegetation had to be pruned back, otherwise it would have been difficult to see the birds. Subtle alterations had been made to some of the flights but otherwise they had remained unaltered since they had been constructed. The lay-out had taken about 20 years to complete. At all times the birds came first and were all encouraged to breed.

Correct feeding is a vital part of breeding birds, wrote Raymond. Living in mixed aviaries with a wide variety of foods available, meant that many of the birds had a wider variety of foods to choose from than might otherwise have been the case. Most aviaries had a supply of nectar and in some aviaries there was a choice of more than one type of nectar. There were now many nectar preparations available, all claiming to be the best and containing their own particular combination of ingredients. At Cobham they preferred to mix their own and provided it in open dishes, except in the case of the more

delicate nectar-feeders such as hummingbirds, sunbirds and honeycreepers, for which they used hanging or clip-on plastic feeding tubes. Over the years nectar had changed as research had improved. How appropriate it was, wrote Raymond, that Ruth's father Alfred Ezra, was the first to develop a nectar mixture - which included Nestlé's Condensed Milk, Mellin's Food and sugar - on which nectar-feeders thrived. Some of the hummingbirds fed on it lived for up to eight years in his collection.

Raymond was often asked for his opinion on the best softbill and insectivorous mixtures. He had used a mixture of Haith's Prosecto Insectivorous Food and Bogena, but at the time was using a Witte Molen product and high protein chick starter crumbs. The variety of foods available was increasing all the time and there were even specially formulated diets for certain specific groups of larger softbills. Raymond was a great believer in mixing the softbill food with hard-boiled egg, including the shell, which was apparently done in a food processor. This was then sprinkled with the vitamin/mineral supplement Vionate and fed to the birds daily. There were very few birds which did not take some of this, he wrote. Raymond was also a great believer in using ox heart which was mixed with the insectivorous food. Any food left over the following day was given to the cranes. The art, he wrote, was to provide just enough food so that there was just a little left over the next morning. All too often he felt you saw dishes so full of food that you knew the birds had been given enough to last all week. When a new keeper arrived, one of the first tasks was to teach him or her how to judge the correct amount of food to give to the birds.

A wide variety of fruits were fed to the birds. Most were cut-up but some others were chopped-up in the food processor. Certain fruits such as grapes, apples and pears were used all year round but others were used only seasonally. Oranges were never used for feeding the birds and, whereas a lot of bird keepers put fruit on spikes, this was something Raymond never did. Any uneaten fruit was removed the next day. Again the art was to have just a little left over the next morning.

Once livefood had consisted of only maggots and mealworms, but maggots were no longer used following problems with botulism in the 1970s. Raymond used as great a variety of livefood as he could obtain, although of course, there was not as wide a variety as we have available today. What a difference mini-mealworms made to successfully rearing young birds, wrote Raymond, especially during the first few days. Ants' eggs were no longer commercially available, and had not been for a long time.

Large parrots such as macaws and Keas *Nestor notabilis* were given plenty of fresh fruit and nuts, plus small quantities of sunflower seed. The Scarlet Ibis *Eudocimus ruber* had carophyll added to their food during the

moult in order to maintain their brilliant colour. The flamingos received a proprietary diet. The waterfowl had their own food, consisting of wheat, pellets, bread and sea duck food, which they seemed to thrive on, as did the wild ducks, which all seemed to know when it was feeding time.

Raymond saw Emerald Starlings *Lamprolornis iris* for the first time in 1954 and thought they were quite the most spectacular and breathtakingly beautiful birds, with their wonderful iridescent plumage. They were the first to ever be imported. Twenty-six were brought back by the joint London Zoo/BBC Zoo Quest Expedition to Sierra Leone, West Africa. Brought back (along with the first White-necked Picathartes *Picathartes gymnocephalus*) by David Attenborough, Jack Lester and my first Head Keeper, 'Timber' Woods, they were mostly in immature plumage. One pair went to Jean Delacour and another pair to Alfred Ezra, but none to Raymond, something for which he never quite forgave the zoo (I think he blamed the Director Harrison Matthews). Years later David Attenborough told Raymond that if he had known that he had wanted a pair, he would have given a pair to him. Raymond eventually managed to obtain one which Ray Shingler, who had been a keeper in the Bird House at London Zoo, brought back from Sierra Leone in the early 1960s. This bird lived in Raymond's collection for many years.

In 1979, a dealer rang Raymond to say that he had some interesting starlings, including the Emerald. Raymond wrote, that he almost had a fit, and immediately went and bought four or six of these birds, which were all that were available. These were housed in a large aviary and the following year (1980) two young were reared. It was the first time the Emerald Starling had ever been bred in the UK. Emerald Starlings are, wrote Raymond, a flock or colony bird and it is possible to keep several together in a large aviary. A breeding pair will become dominant but provided there is plenty of space and cover, the others will be safe. Raymond noted that Emerald Starlings often carry green leaves in their bills, but remained uncertain whether this was for display or nesting purposes. I think the answer is possibly for both display/pair-bonding and nesting purposes. Emerald Starlings went on to breed at Cobham several more times though not on a regular basis. They generally preferred a sloping-type nest box, with a flat bottom and with wire mesh on the inside to assist the birds to get in and out. The eggs were typical starling eggs, that is mainly light blue with brown/red blotching.

Emerald Starlings are, observed Raymond, highly nervous when first received. They did not make good show birds as they spent their time on the floor of the cage and their plumage became soiled. The same thing happened in quarantine and at dealers' premises and this could result in them picking up infections. The first birds Raymond obtained were not perfect,

but nothing was seriously wrong with them. They bathed a lot at first, as lots of birds do when newly arrived. He recommended that the water should be changed each time after they had bathed and considered bathing to be a sign of a good healthy bird. His continued to bathe regularly in almost all types of weather.

Raymond's original pair of Splendid Starlings *L. splendidus* came from my friends Tim and Jane Barnley, near Kitale, in Western Kenya, which is at the eastern limit of the range of this principally West African species. Raymond considered this starling to be most appropriately named. It is one of the few starlings which is easily sexable, the male being more brightly coloured and larger than the female. The original pair first bred at Cobham in 1976, which was the first time this species had been bred in the UK. However, Jean Delacour had bred the Splendid Starling two years earlier at Clères, which was probably the first ever captive breeding. Over the first few years the Cobham pair regularly produced young, but was then stolen and was never recovered. Raymond was able to obtain some more Splendid Starlings and had occasional successes, including in 1992, when one was hand-reared. Patrick Taplin, a keeper at the time, put a good deal of time and effort into raising it. Raymond wrote, that whereas the Superb Starlings *L. superbus* readily went to nest, albeit not always rearing the young, the later Splendid Starlings carried green leaves around the aviary and perhaps even built an incomplete nest, but seldom seemed to lay fertile eggs. This was in marked contrast to the original pair which hatched every egg that was laid and reared all the young. There were still six Splendid Starlings living at Cobham in 1996 and Raymond knew of a few others in bird gardens and private collections and hoped these would form the nucleus of a breeding programme. Raymond failed to mention that the Splendid Starling is a most wonderful mimic, far better than any parrot or hill mynah *Gracula* spp.

Superb Starlings bred at Cobham in 1996. The Golden-breasted Starling *Cosmopsarus regius* though had yet to be completely successful. This beautiful starling had reared young which were about to leave the nest but had then died. Golden-breasted Starlings are very prone to getting gapeworms and precautions needed to be taken when they were newly imported, wrote Raymond. However, once established they did well, even in our damp autumns. Amethyst or Violet-backed Starlings *Cinnyricinclus leucogaster* had also got young to the stage of almost being about to fledge. Here again, this species is easily sexable, although mistakes can occur because young males take up to three years to lose their female-like immature plumage.

The Black-necked Stilt *Himantopus mexicanus* (the American species) was bred at Cobham in 1992 and was another UK first breeding. The pair was housed in a large aviary and fed on an insectivorous mix and minced ox

heart and, when they could be obtained, sand eels. The male stilt developed a pink flush on the breast (which may not be noticeable in the wild), which was a sign that he was coming into breeding condition. The display was quite spectacular with the birds reminding Raymond of two ballet dancers. The male danced around the female and then suddenly he mated with her. The pair bred during only its second year at Cobham. The pair went on to breed each year, producing a clutch of four eggs, all of which hatched and all of the chicks were reared. It was a great success - with only one drawback - when the pair had young all the other waders had to be removed from the aviary and the stilts would even fly up and attack birds sitting on the perches. They were wonderful parents who doted on their chicks and they became one of Raymond's favourite waders. A single clutch of eggs was laid each year, which had a speckled dull green background colour and mottled brown markings. The pair had nested in the same place each year for the past five years.

The aviary had a stream running through it and was the same aviary in which the Black-winged Stilts *H. himantopus* nested so successfully. These first bred in 1979, which was another UK first breeding. Raymond believed that the Black-necked species is the prettier and more attractive of the two. The Black-winged received the same diet, but some of them developed a gout-like condition which could lead to lameness. Both species were very hardy and would roost standing in running water during the winter. In the summer they roosted on the ground.

To Raymond's surprise and delight, a pair hatched the previous year, reared chicks successfully in its first year. Raymond was surprised that the birds had matured so quickly. He greatly disliked paperwork and, because of this, later disposed of the Black-winged Stilts and kept only the Black-necked species, as these did not require paperwork and could be disposed of without permission.

Raymond was of the opinion that stilts require an aviary measuring not less than 6m x 3m (approx. 20ft x 10ft), with a constant trickle of running water. Stilts carry their food into the water to wash it and, if the water is not moving, an oily film quickly develops on the surface of the water and this gets onto their plumage. This had occurred with some Cobham-bred birds which had gone to other aviculturists, but as soon as running water was introduced the problem disappeared. Sexing stilts is not difficult as the male has a more intense black on the back, with a sheen to the feathers, whereas the female's back has a brownish tinge. The young pair that bred in 1996 could be sexed fairly early on, but generally it takes a year before you can be certain of their sex, wrote Raymond.



Raymond feeding his flock of Avocets.

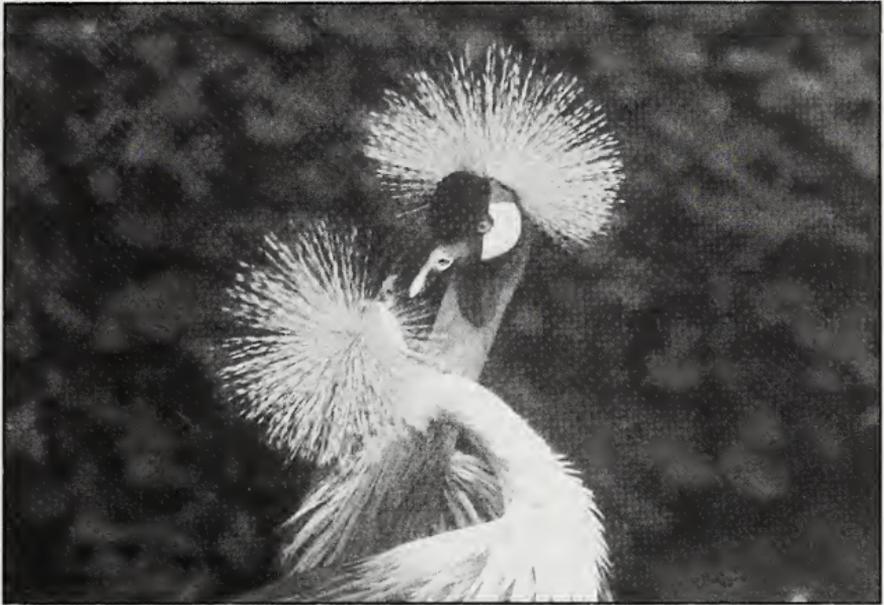
Avocets *Recurvirostra avocetta* bred regularly at Cobham almost up until the time of Raymond's death. He found it most gratifying when first time visitors admired this instantly recognisable species which was once rare in the UK, but is now once again breeding here in considerable numbers. (Wild Avocets have nested at the WWT London Wetland Centre at Barnes, close to Central London.) Back then before the widespread availability of DNA sexing, Raymond found that Avocets needed to be surgically sexed in order to find a true pair - and even this method was not always accurate. He once had a supposed pair sexed again, only to discover that both birds were the same sex. As with the stilts, Raymond found that when Avocets have young they will dominate the other birds in the flight and, therefore, the entire family was moved into a side aviary on its own. He added, that many members who visited Cobham had noticed (and no doubt commented upon the fact) that the grass in the aviaries was always mown around where the waders nested. Once they get used to the mower, they appeared to have no fear of it, he wrote. Much the same happened with the cranes which lived at liberty in the garden, where it was possible to go right up to them with the mower without frightening them.

The 1994 breeding of the Wattled Jaçana *Jacana jacana* was thought to be another UK first breeding. If jaçanas are provided with the right conditions they will thrive, wrote Raymond, but if they are kept in poor conditions foot problems are inevitable. The pair at Cobham bred in an aviary which housed

birds up to the size of the Purple-throated Fruitcrow *Querula purpurata*. This jaçana is, wrote Raymond, much tougher than the African Jaçana *Actophilornis africanus* though, of course, in a bad winter it ought to be shut inside at night. At Cobham they were usually able to walk them in at night or sometimes they went in on their own accord. Raymond was fascinated to observe that the male did almost all the work. He built the nest with only partial assistance from the female and incubated the eggs. Raymond never saw the female on the nest. When the chicks hatched the male carried them in his breast feathers. The female remained in the background, but if a Sparrowhawk *Accipiter nisus* appeared on or above the aviary, she would come forward and attempt to defend the chicks. Apart from this, she took very little part in the proceedings and the male almost seemed to resent her coming too close to defend the chicks or interfere with them in any way. In the centre of the pond there were rocks and also lilies and blanket weed and it was there that the nest was built. The eggs were a beautiful shiny bronze colour. This species can easily be sexed by the fact that the female is larger than the male. The young can also be sexed by their size. They attained full colour after about 18 months.

Although jaçanas are not as aggressive as stilts and avocets, the breeding pair did drive off the old jaçanas that Raymond had in the aviary and the latter had to be removed. Four young were reared in 1994 and three in 1995. Raymond tried the tiny chicks with mini-mealworms, but was uncertain what they ate at first. Within a few days, however, the mini-mealworms were being taken. Getting the young jaçanas onto an artificial diet was not too difficult. They had to mix livefood in with the softbill food and then be patient. The main problem was that it was expensive to supply unlimited livefood in a large mixed aviary.

Red-and-white Crakes *Laterallus leucopyrrhus* could, Raymond found, be very aggressive and at times difficult to keep together. He imported a few to go with the existing group at Cobham, but by the next morning the new birds had been killed. In a large planted aviary with plenty of cover in which to hide they can live happily, but every so often one or more will get picked on. They climbed all over the place, wrote Raymond, one minute they were on the ground and the next they were at the top of a bush. They bred several times at Cobham and chose extraordinary nesting places, such as high in the bushes or in half-open-fronted nest boxes. Raymond found them to be good parents and the chicks enchanting. These crakes had, wrote Raymond, been accused of being egg-eaters, but he had not found this to be the case. At the time of writing, he was down to his last two crakes. They were no longer breeding and were no longer available. He feared that this species would not be seen again in our aviaries. He concluded by noting that it ate softbill



Grey Crowned Cranes *Balearica regulorum* in courting dance.

food and fruit, etc., as well as seed, including various millets.

The Crested Wood Partridge *Rollulus rouloul*, called then the Roulroul or Roulroul Partridge, appeared to breed well for a short time, say about three years, in Raymond's experience, but then seemed to stop breeding. Back in 1956, when he was living in London, Raymond had recorded what was then only the second UK breeding of this popular species. (It was first bred in the UK in 1927 by W. Whitley - presumably, Herbert Whitley's brother William.) Raymond's young were parent-reared and the following year a silky hen brooded and reared the young. At that year's National Exhibition of Cage Birds, held at Olympia, in London, Raymond won the award for the Best Foreign exhibit with the male and one of his daughters. It was the first time that a UK-bred foreign bird had won this award at what was then the UK's premier exhibition of foreign birds. To the best of Raymond's knowledge this also included the Crystal Palace shows going all the way back into the previous century. Over the years Raymond had several pairs which had bred at Cobham. His latest pair laid but refused to incubate the eggs. He believed there was a strong possibility that the pair was not parent-reared and, in his opinion, this led to problems with both infertility and the rearing of the young.

Raymond knew of several aviculturists who had achieved fleeting success with a pair or two, after which nothing further happened. Most successes

appeared to be as a result of taking the eggs away to be hatched and then artificially rearing the chicks. We seemed to have ended up with an egg layer which did not know how to sit and incubate her own eggs, wrote Raymond. His original pair was wild-caught and took nesting very seriously. Whereas his latest pair was captive-bred and played about with the nesting material and never made a proper domed nest. In 1996, the eggs were taken away and placed in an incubator and five chicks hatched and were hand-reared. They were raised under a lamp along with another chick for company. Raymond found that the Crested Wood Partridge does not like cold weather and can get frostbitten toes. He felt that in the UK climate it definitely needs some form of shelter, such as a glass-covered, rather than an open aviary, in which he had experienced problems with this species. He added, however, that it is okay outside from April-October.

The UK first breeding of the Violet Turaco *Musophaga violacea* was achieved at Cobham in 1984, after which the pair went on to breed for several more years. Raymond commented on the fact that the young seem to leave the nest awfully early and climb about on the branches of bushes. He had not found this turaco aggressive until recently when the female, who was not frightened of anyone, developed an absolute hatred of women and would attack the female keeper.

Ross's Turaco *M. rossae* was also bred at Cobham, although it was not the first breeding, that honour having gone to Raymond's friend Newton Steele, who bred it in 1972. His pair was extremely aggressive and the male had taken out one of the female's eyes. Turacos can be very aggressive towards each other when kept in a small flight, wrote Raymond. He added, that they need to be watched when they are breeding, as the males sometimes persecute the females. The Red-crested Turaco *Tauraco erythrolophus* bred at Cobham most years and Livingstone's *T. livingstonii* had been bred there and also Schalow's *T. schalowi*, as well as Fischer's *T. fischeri* which, at the time, had only previously been bred once before in the UK (at Leeds Castle Aviary). Raymond considered surgical sexing to be the best way of sexing turacos (at that time) - the alternative being to let them choose their own partner.

The Blue Whistling Thrush *Myiophonus caeruleus* bred at Cobham in 1992 and was yet another UK first breeding. The pair, which built a typical thrush-type nest, albeit a very large one in view of the size of the species, went on to breed several more times, with the young leaving leaving the nest looking like paler versions of their parents. The Blue Whistling Thrush can at times be a killer and is not to be trusted with birds smaller than itself, or even some birds of its own size, that is about 33cm (13in) in length. It is definitely a species to keep a close eye on, even if there is just a pair on

its own in a spacious flight. When she was nesting, the female at Cobham would attack the keepers and eventually killed the male. Raymond had noticed that yellow-billed birds were no longer being imported, but those with black bills continued to be imported occasionally.

There was a pair of Island Thrushes *Turdus poliocephalus* in the collection at Cobham, then some more were obtained and eventually a male and two females were living in the same aviary. One of the females nested and successfully raised young and then, to Raymond's amazement, the second female did the same - obviously the male had mated with both females. They nested in half-open-fronted nest boxes, which was unusual for thrushes. It was another UK first breeding.

Over the years the Laughing Kookaburra *Dacelo novaeguineae* often bred at Cobham. Members who visited the collection may remember that they bred first in a small enclosure by the garages. Mice and day old chicks formed the bulk of their diet.

Another species which bred at Cobham on several occasions in recent years was the Azure-winged Magpie *Cyanopica cyana*. In the past Raymond had kept them in a flock and thought this may have galvanised them into breeding. However, he had cut back the number in 1996 and, at the time of writing, had only two pairs, one of which had reared five young. They are, he observed, quite small birds when they moult their tail feathers.

The Red-tailed Minla *Minla ignotincta* was bred at Cobham in 1989 in one of the range of six smaller aviaries. The pair was thought to be sitting, then livefood was seen being taken into the nest and eventually two young were seen in the flight. Of the other two species, the Blue-winged *M. cyanouroptera* is a rather highly strung bird, whereas the Chestnut-tailed *M. strigula* is a very confiding species. The Red-tailed is the only one of the three where there is a slight difference between the plumage of the male and female. Apparently, it was the first time for many years that this species had been seen in the UK and Raymond knew of several others who had succeeded in breeding it - no doubt helped by the fact that it could be sexed relatively easily. In the Foreign Bird Club's magazine, *Bird Notes* March 1915, there is a coloured plate of it painted by Goodchild. This was painted from life from a male owned by Ruth's father, Alfred Ezra. He described the bird as the most fascinating softbill he had kept - it was full of curiosity and not at all frightened by anything. This was an observation which was confirmed by Raymond.

The breeding of the Southern Tit-Warbler *Parisoma subcaeruleum* was another small softbill about which Raymond was able to provide very few details. They too were housed in one of the six smaller flights, where in 1989 they built a small compact nest and reared two young. The sexes look alike

and the young when they left the nest were merely duller versions of their parents. The latter were sold to Raymond as tit-babblers and this species is now known as the Chestnut-vented Tit-Babbler or Rufous-vented Warbler.

Plumbeous Redstarts *Rhyacornis fuliginosus* bred successfully twice in 1988, rearing three young on each occasion. They too bred in one of the six smaller flights, where they nested in a thick currant bush. Raymond was unaware that they were nesting until the male went for Alan Lewis, who was their keeper at the time. Others were later successful with this species which is found from the Himalayas to northern Thailand and western China. The male is basically a dark bluish-slate colour, with a bright chestnut tail. The female is greyish-brown, with a white and brown tail. Often pictured in or near water, the Plumbeous Redstart enjoys access to a stream or pool.

The Masked Crimson Tanager *Ramphocelus nigrogularis* bred successfully in 1992, once again in one of the six smaller flights. The pair nested in a half-open-fronted finch-type nest box and was tolerant of the other occupants of the aviary. The pair took a lot of livefood while nesting. Raymond found that this tanager did not like our damp autumn weather and, although the six aviaries had heated shelters, it could not tolerate our cold winters.

Not many woodpeckers were imported and few have been bred in captivity here in the UK, but one which was bred successfully at Cobham is the Black-cheeked Woodpecker *Melanerpes pucherani* from Central and northern South America. The male and female look similar to each other, except that the male's cap is a stronger shade of red. This species was first bred there in 1992. The pair nested in the trunk of a Silver Birch *Betula pendula*, cut into three sections for ease of handling and moveability. Once the pair had excavated the nest hole, there was nothing further to do but wait and hope until they saw lots of food being taken into the nest and then knew the pair had young. Eventually four emerged. Raymond believed they remained in the nest for about three weeks. The pair went on to breed successfully on numerous other occasions, including in 1996. Over the years Raymond found that woodpeckers enjoy nectar and always ensured that it was available for them. He added, that as well as nectar, the Black-cheeked Woodpeckers liked softbill food, fruit and livefood. At the time, the pair shared the flight with a Scarlet-chested Sunbird *Nectarinia senegalensis* and Raymond got pleasure from watching the sunbird and woodpeckers drinking from the same dish of nectar. He found it is not a particularly aggressive species. When the pair first bred, it was sharing the flight with a pair of Black-naped Fruit Doves *Ptilinopus melanospila*.

In 1960, Chat and Lindsay exhibited a pair of Blue-faced Honeyeaters *Entomyzon cyanotis harteri*, from southern New Guinea and northern

Queensland, at the National Exhibition of Cage & Aviary Birds at Olympia, in London, where the pair won the award for the Best Large Foreign Softbill. The pair obviously caught Raymond's eye, but it was not until 1991 that he managed to obtain six of these honeyeaters. These were housed in an aviary with a shelter which was heated during the winter. Two pairs nested though only one pair did so successfully. They nested in a wire basket and the young were not difficult to rear and were left with their parents. The small colony was progressing well until Raymond attempted to introduce some new birds into it. These new birds were resented and were attacked and had to be removed. There were problems with egg-eating in 1994 and 1995, so in 1996 when a single honeyeater egg was found, it was taken away and hatched in an incubator and the chick was hand-reared by Sheila Becker. When it was newly-hatched, it was impossible to tell which species it belonged to, but when the blue began to break through on the face, it could be seen at once that it was a Blue-faced Honeyeater chick. The chick was fed on a turaco diet, with papaya and added vitamins, together with the squeezed out contents of mealworms and small grubs. The chick soon learnt to pick up food for itself and all went well. Raymond preferred chicks to be parent-reared, but in this case he had no choice.

Raymond obtained four Green Wood Hoopoes *Phoeniculus purpureus*, which he housed in a large mixed aviary next to the waterfowl aviary and very quickly it became obvious that a pair was nesting in a box hung at an angle. When they were rearing their young an enormous amount of livefood was put into the aviary, until Raymond hit on the idea of putting ½in (12mm) wire netting over the top of a large hook-on feeding pot and letting the wood hoopoes use their long bills to reach in for the food, which remained out of reach of the other birds. Raymond found them to be very good parents, which made a great fuss of their young. He also noted that the other two wood hoopoes helped the parents feed the chicks. On the downside, he found that they did not like new birds being introduced into their aviary and could be murderous to their own kind, if he attempted to introduce new wood hoopoes into the group. In the case of other species, it was not that they killed them, but that they pursued them around the aviary and interfered with nest boxes and generally made the new birds feel insecure. At night the wood hoopoes roosted in the nest box. He did not mention their very distinctive musty smell.

Ringed Plovers *Charadrius hiaticula* nested successfully at Cobham for several years. Raymond kept the pairs separate and wrote that his last pair were excellent parents. The pair nested against the wire of the main aviary, where the dogs walked up and down outside during the day. When the dogs did this the plovers would fly against the wire and try to drive them away.

The plovers were great characters and were no problem to keep and were very protective of their young. Unlike the stilts, they were not aggressive towards other birds.

In 1992, Raymond had another first breeding, this time with the Masked Lapwing *Vanellus miles*. He had an extraordinarily prolific pair, which had three nests a year with a 100% success rate. He even had them sitting and successfully rearing young when there was snow on the ground. Naturally he would have preferred them to have nested later in the year, as the winter days are so short and not usually conducive to good breeding. The nest was a scrape in the ground lined with a few twigs.

A great disappointment to Raymond was the fact that he had failed to breed pygmy geese. His original pair of African Pygmy Geese *Nettapus auritus* displayed but went no further. It is, he wrote, the prettiest of the pygmy geese but it is not a free breeder. He thought his pair might be the oldest pair in captivity, for the pair was over 10 years old and this was beginning to show. He had recently acquired two new pairs which were housed in the waterfall aviary and shut into the shelter at night if it was at all cold.

Doves had been quite successful at Cobham. The Black-naped Fruit Dove had bred there for the past six years. The Beautiful Fruit Dove *P. pulchellus* had so far produced only male chicks. He had also been successful with the Jambu *P. jambu* and the Superb Fruit Dove *P. superbus*. A pair of Beautiful Fruit Doves had attempted to build its nest on a leaf and, although they stitched a small basket to the leaf, this attempt was doomed to failure. Raymond stressed that fruit for these doves needs to be cut-up very small, otherwise it gets stuck all around their beak and face. Whereas if it is cut-up small it goes straight down and the birds do not get sores on the sides of their mouth. They will, he wrote, also take livefood such as mealworms and drink nectar.

The Cinnamon Ground Dove or Golden-heart *Gallicolumba rufiflora* and both the Luzon *G. luzonica* and Mindanao Bleeding-heart *G. criniger* had over the years been bred at Cobham. His present pair of Mindanao Bleeding-hearts had reared six young. His birds liked seed, peanuts and insectivorous food, plus livefood. It was perhaps unnecessary to add that doves are not very energetic birds and will sit in the same place for long periods and, if they are panicked, will crash about and do untold damage, especially when other birds are nesting. He added, that in our climate here in the UK, heated accommodation is advisable during the winter and it is also advisable to house only one pair of doves in a flight, unless it is particularly spacious. This is especially true when they are nesting.

Raymond imported a pair of Black-billed Weavers *Ploceus melanogaster*

direct from Kenya and achieved the UK first breeding with this species in 1976. These weavers built a typical hanging nest and when they were breeding were totally insectivorous and never appeared to eat seed. Many years had passed since he had last seen this species. The Madagascar Fody *Foudia madagascariensis*, which Raymond found did well when kept in a small colony, had always been a favourite and had bred several times at Cobham in the 1980s.

Raymond was not, as he himself wrote, well-known for breeding parrots, but had over the years enjoyed a number of successes with these birds. Keas, which he thought are perhaps the most interesting of all the parrots, had bred there most years, always early in the year. The ancestry of a lot of the Keas in the UK could, he wrote, be traced back to his original pair. The female came from what was then Jersey Zoo and the male from New Zealand. The pair had produced up to four young in a nest, but on the last occasion there were only two. The male remained keen on mating, but they were probably over 30 years old and by then too old to breed any more.

The nest box was constructed of breeze blocks, with paving slabs on the top. When nesting the female gives out a scream if anyone approaches, but otherwise Keas are secretive when nesting with, wrote Raymond, the female being "sort of" guarded by the male. They enjoyed a varied diet which included nuts, fruit, lettuce and mealworms. Raymond wrote, that his good friend the late Sydney Porter, who was first to breed the Kea in 1946, visited New Zealand and could find no evidence that these very inquisitive and highly active birds kill sheep. His Keas played all the time and especially enjoyed playing with a cup. He had them in an aviary with running water which they liked to run through.

Keas seem to enjoy calling at night, wrote Raymond, and Sydney Porter got lots of complaints about this from his neighbours. He always said he would dispose of them, but still had them 20 years after the complaints started. He left them to Raymond when he died.

When Raymond bred Stella's Lorikeet *Charmosyna papou stellae*, he was the first person to breed it since E. J. Brook bred it before the First World War. The pair used a typical upright nest box in a small aviary. These lorikeets love to bathe, wrote Raymond, and enjoy rubbing their plumage on wet leaves after it has rained. He was also successful breeding the Red-flanked Lorikeet *C. placensis*, but quickly sold the parents after he caught them attacking and eventually killing a Crested Jay *Platylophus galericulatus* and a Blue-breasted Kingfisher *Halcyon malimbica*. Most aviculturists had no trouble with them, wrote Raymond, and others he had later proved to be trouble-free. It shows how careful and observant you need to be, he added. Philippine Hanging Parrots *Loriculus philippensis* bred at

Cobham on numerous occasions. He had a small colony until some of them disappeared in 1995. He never did find out what happened to them, but had his suspicions. Early in 1996, the parents deserted a single chick on two occasions, but just when he was considering hand-rearing the chicks, if the parents nested again, they surprised him by rearing three young.

Raymond had no luck keeping Salvadori's Fig Parrot *Psittaculirostris salvadorii*, Edwards's *P. edwardsii* and the Double-eyed Fig Parrot *Cyclopsitta diophthalma*. He found they came into breeding condition and looked beautiful, but then suddenly dropped dead and the post mortem failed to reveal the cause of death. Vitamin K had recently been found to be beneficial. London Zoo had no such trouble and had kept a female Double-eyed Fig Parrot in a small cage in the Bird House for about 15 years. I looked after this fascinating bird and can confirm that it ate millet, canary seed, sunflower, hemp and peanuts, the same nectar as that given to the hummingbirds, fruit, insectivorous/softbill food and mealworms, which it chewed to extract the innards and then discarded the skin. At the time it was the only fig parrot most people had ever seen. It was one of two females and a male Plicated Hornbill *Rhyticeros plicatus* brought back from New Guinea by David Attenborough, along with a consignment of birds-of-paradise which Sir Edward Hallstrom presented to the zoo.

Raymond was not successful with Scarlet Ibis until 1996, when a chick was hand-reared. The flamingos had always looked lovely but up until that time only one had been bred. Vulturine Guinea fowl *Acryllium vulturinum* were allowed to wander free and had laid eggs and some of these hatched. He recalled his old friend Donald Risdon telling him that all you had to do was to catch the young along with their parents and put them in an aviary until the young were big enough to release. However, Raymond found this was not as easy as it sounded and after a time gave up and left the birds to their own devices. Some aviculturists found these birds susceptible to foot problems, wrote Raymond, which may have been related to their diet. It was something he remembered Reg Partridge telling him about.

They had kept various species of cranes at Cobham and got immense pleasure watching these stately birds wandering free in the garden. They always seemed to be in peak condition, wrote Raymond, and loved to display on the lawns. Sexing them was, of course, a problem and Raymond usually relied on surgical sexing. Stanley or Blue Cranes *Anthropoides paradisea* had always done well at Cobham and at the time they had a pet crane named Emma, who members may remember. Demoiselle Cranes *A. virgo* were also bred there, but sadly, neither the Black Crowned Crane *Balearica pavonina* or the Grey Crowned Crane *B. regulorum* had bred at Cobham. In all the years they had been there, try as he may, Raymond had never even seen

them mate.

Amongst the more unusual members of the pheasant family bred at Cobham were the Palawan Peacock-Pheasant *Polyplectron emphanum* and the Congo Peafowl *Afropavo congensis*. Raymond believed he was only the second person in the UK to succeed in breeding the Congo Peafowl, which were housed in a secluded aviary which they shared with the Red-billed Choughs *Pyrhacorax pyrrhacorax*. The Cobham birds had come from Antwerp Zoo, where they had been kept in sandy pens in a dry environment to help prevent disease. At Cobham they were offered a varied diet and their plumage began to improve and the shine returned to their feathers, which had begun to curl-up. Raymond's main problem was that both males suffered a burst main artery and died. Following the death of the second male, the female was sent to London Zoo.

Raymond concluded his lengthy notes by referring to his pair of Andean Cock-of-the-Rock *Rupicola peruviana*, which in August/September 1980 hatched two chicks which, sadly, lived for only a few days. If the greater variety of livefood we have available today had been available then, he wondered, whether there might have been a more successful outcome. The male died soon after mating but the female, which came from Len Hill at Birdland, Bourton-on-the-Water, lived at Cobham for several more years. Raymond had another male which lived at Cobham for 16 years.

**Species bred for the first time in the UK
during Raymond's first 25 years at Cobham.**

- Wattled Jacana *Jacana jacana* (1994)
- Black-necked Stilt *Himantopus mexicanus* (1992)
- Black-winged Stilt *Himantopus himantopus* (1979)
- Masked Lapwing *Vanellus miles* (1992)
- Violet Turaco *Musophaga violacea* (1984)
- Black-cheeked Woodpecker *Melanerpes pucherani* (1992)
- Plumbeous Redstart *Rhyacornis fuliginosus* (1988)
- Blue Whistling Thrush *Myiophonus caeruleus* (1992)
- Island Thrush *Turdus poliocephalus* (?)
- Red-tailed Minla *Minla ignotincta* (1989)
- Chestnut-tailed Tit-Babbler *Parisoma subcaeruleum* (1989)
(Listed in the original article as the Southern Tit-Warbler)
- Blue-faced Honeyeater *Entomyzon cyanotis harteri* (1992)
- Masked Crimson Tanager *Ramphocelus nigrogularis* (1992)
- Splendid Starling *Lamprotornis splendidus* (1976)
- Emerald Starling *Lamprotornis iris* (1980)
- Black-billed Weaver *Ploceus melanogaster* (1976)

**BREEDING THE TOCO TOUCAN *Ramphastos toco* AND
BLACK-NECKED ARACARI *Pteroglossus aracari*
AT WELTVOGELPARK WALSRODE**

by Jürgen Vielguth, Kerstin Kirchhöfel, Timo Allner
and Anne Hoppmann

Breeding toucans, araçaris and toucanets (birds of the Ramphastidae family) in captivity remains a relatively rare event. At Weltvogelpark Walsrode we have been working with these birds since the park first opened. The Toco Toucan *Ramphastos toco* is the 'heraldic bird' of Weltvogelpark Walsrode. It was chosen as the logo of Vogelpark Walsrode, the name by which the park was previously known, and the Toco Toucan continues to figure on our flyers, posters and entrance tickets. We were the first zoological institution in the world to breed toucans. This was in 1965 just a few years after the park first opened, when we succeeded in breeding the Green-billed Toucan *R. dicolorus* for the first time. Four young were successfully reared by their parents and a detailed description of the breeding was published in the park's *Annual Report* for that year.

In January 2010, five species of Ramphastidae arrived at the park from Guyana, South America. Having successfully completed quarantine, the different pairs were set up on and off-show. After having been here for only a year, some of the pairs showed pronounced interest in the nest boxes and displayed courtship and mating behaviour. Pairs of two of the species, the Toco Toucan and Black-necked Araçari *Pteroglossus aracari atricollis*, have since bred successfully, with young of both species having fledged in July 2011.

The Toco Toucan is found in the eastern parts of South America from Guyana southwards to Paraguay and northern Argentina. Generally, it lives at the edge of forests, near streams and rivers, in habitats with scattered trees and on the savannah and in plantations. The largest member of the toucan family, it is the only species that prefers more open habitats in preference to rainforest. It feeds mainly on fruits and insects and may use its large bill to rob the nests of other species and take their eggs and young - although recent studies on the Pantanal, show this to be exceptional behaviour (R. Watson pers. comm.). The Toco Toucan usually lays a clutch of two to four eggs, which both sexes take turns to incubate for 17-18 days. At the beginning, the chicks are fed mainly on insects, then as they grow older they are fed more and more fruits, as well. They fledge after 43-52 days.

In spring 2010, one pair of young Toco Toucans was placed in a large, densely planted enclosure in the pheasantry - on show and thus visible to

visitors to the park. In May, the following year (2011), the pair was already showing great interest in the nest box, which was made from the base of a tree trunk. This was placed at a slight angle by the back wall of the outside enclosure. To further stimulate the pair, before the beginning of the breeding season, the amount of protein in the diet was increased and it was enriched with additional vitamins. Relatively early on the pair showed territorial behaviour and behaved aggressively towards other birds using the upper branches of the enclosure. Therefore, the other birds were removed leaving the two Toco Toucans the sole occupants of the enclosure.

On June 6th 2011, bird keepers in the tropical section found two eggshells outside the nest box. So as not to disturb the brooding birds, cleaning and maintenance were minimised. We were unsure how many young were in the nest box and it was not until the end of June that we first heard begging sounds coming from inside the nest box. While the young were growing up, the parents removed the droppings from the nest box. The pair was provided with fresh food throughout the day so as to ensure that the young birds had sufficient food to eat. Shortly before they fledged the beak of at least one of the young birds and then the whole body of one of the youngsters could be seen at the entrance to the nest box.

The first young toucan left the nest box on July 21st 2011. One day later a second youngster fledged and a third youngster was seen for the first time at the entrance to the nest box. The staff were very proud and happy about this, as nobody had believed that there were three young Toco Toucans in the nest box. The third youngster fledged on July 25th. One could see that the young toucans differed from each other in body size but, nonetheless, they were all able to fly from tree to tree. Upon fledging they flew directly to the perches in the enclosure and began investigating their surroundings. They were never seen to enter the nest box again and, even when it rained, remained in the outside enclosure. On July 30th the oldest of the three young was seen at the food dish feeding by itself. The young resembled their parents, except that they had a smaller and duller coloured beak and duller coloured plumage. Weltvogelpark Walsrode's first ever parent-reared Toco Toucans, they were in very good body and feather condition and from the beginning were very alert and curious. They were not fearful of the keepers or the visitors.

The main conditions needed to successfully breed toucans are a compatible pair and a suitable nest box which is acceptable to the pair. We use nest boxes made from the bases of tree trunks which are specially produced for the park. These are half filled with wood shavings. Here at Weltvogelpark Walsrode we always try to let the parents rear their own young. We believe that if they are able to follow their natural breeding behaviour,



Adult Toco Toucans *Ramphastos toco*.



The first young Toco Toucan fledged on July 21st, the second a day later, and the third on July 25th.



The four newly-fledged young Black-necked Araçaris with one of the parents (far left).

this will contribute greatly to their welfare. Furthermore, the young toucans are able to socialise with their parents and this increases the probability that they will later succeed in breeding and rearing their own young. Toucans which are hand-reared can be highly imprinted on humans, making it less likely that when the time comes, they will have the necessary know-how to rear their own young.

Two species of araçari, the Black-necked and the Green Araçari *P. viridis*, are represented in the Weltvogelpark Walsrode collection and have bred successfully. The Black-necked Araçari occurs from north-east South America (eastern Venezuela) southwards to south-east Brazil. It inhabits lowland rainforest, as well as gallery forest (forest bordering streams and rivers) on the savannah and plantations of fructiferous trees such as papaya. This araçari lays a clutch of two to four eggs, which both sexes take turns to incubate for 16-17 days. When first hatched the young are naked and have greyish coloured skin. They are fed by both parents - partly on regurgitated food. The young fledge after approximately 40 days.

At almost the same time as the Toco Toucans were breeding, a pair of Black-necked Araçaris also began breeding. This pair too, which was also housed on view to visitors, had the amount of protein in the diet increased and additional vitamins added at the beginning of the breeding season. This pair also became very territorial and the other birds sharing the enclosure were removed and housed in other aviaries. From mid-June, the pair was

observed to be spending most of the time in the nest box but, on June 20th, was seen in the enclosure feeding and then directly returning to the nest box. Later we could hear increased begging sounds coming from inside the nest box, but had no idea how many young were in the nest. Eventually, a small beak was seen at the entrance to the nest and, on July 20th, the first juvenile was seen leaning out of the nest box. On July 31st, three juveniles fledged, followed a day later by a fourth juvenile.

In contrast to the Toco Toucans, the four young araçaris left the nest box at almost the same time and, during the first weeks after fledging, returned to the nest box at night. Another difference was that in comparison to the young Toco Toucans, the young araçaris were highly active. Araçaris are lively characters and even the adults are considerably more active and agile than the much larger Toco Toucan. Flying ability-wise, they were similar - the young araçaris and young Toco Toucans both flew directly from perch to perch in their enclosures. The adult birds were very caring towards their young and never let them out of their sight. The young were fed by both parents, who tirelessly collected food from the inside enclosure and brought it out to the young. Apart from their smaller body size and smaller, duller coloured beak, the young resembled the adult birds.

This year Weltvogelpark Walsrode in northern Germany celebrates the 50th Anniversary of its opening. Website: www.weltvogelpark.de/E-mail: anne.hoppmann@weltvogelpark.de

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NEW UK RECORD KEEPER

Simon Matthews has taken over Dave Coles's *First Breeding Records For Birds Reared To Independence Under Controlled Conditions In The United Kingdom*. All future enquiries regarding first breedings in the UK should be addressed to: Simon Matthews, Senior Aviary Keeper and ARKS Representative, The Rothschild Foundation, Waddesdon Manor Aviary, Waddesdon, near Aylesbury, Buckinghamshire HP18 0JH. E-mail: Simon.Matthews@nationaltrust.org.uk/Tel: 01296 6532

A FINAL NOTE ON THE DRAKENSBERG SISKIN

Pseudochloroptila symonsi

by Neville Brickell and Trevor Konigkramer

When we previously wrote about this siskin (Brickell, 1986; Brickell & Konigkramer, 2000), it had yet to be successfully bred in captivity. We described the hatching of nestlings in an aviary belonging to one of the authors (T.K.), but on that occasion both nestlings disappeared within two days, having possibly been taken by an alien species of gecko, which had invaded our coastal towns and cities and driven out the indigenous Striped Skink *Mabuya striata* (Brickell & Konigkramer, 2000).

The pair was housed in a large aviary and nested in an approximately one-third-open-fronted nest box measuring 12cm x 16cm x 14cm (approx. 4¾in x 6¼in x 5½in). The nest was built mostly of coir, in preference to various grasses and, when completed, the top of the nest was level with the lip at the front of the box, enabling the sitting female to have a clear view of the approach to the nest. Two eggs were laid and incubated by the female for 17 days. The nestlings had reddish-pink skin and creamy coloured down on the head.

One of us (T.K.) discovered four nest sites in the wild in Lesotho in February 2000. One nest, which had been abandoned, consisted of fine dry grasses and tendrils and was lined with fine grasses and four dried leaves. The nest measured 90mm in diameter x 55mm deep on the outside and the inside (the cup) measured 58mm in diameter x 35mm deep. A second nest, also by the Khatse River, contained three eggs, one of which measured 18mm x 13mm and, like the two laid in the aviary, differed very little from those described by Mackworth-Præd and Grant (1963) as: "white with fine brown speckling and occasional larger spots of brown." Maclean (1993) described the eggs as: "white to pale greenish blue, sparingly spotted with brown and grey mainly at the thick end." Photos of a nest and the siskin's habitat by the Khatse River in Lesotho, along with colour photos of the male and female Drakensberg Siskin, were included with our article published in 2000.

In November of the 2003/2004 breeding season, aviary pair A produced a clutch of three white eggs with fine brown speckling, mainly at the thick end. An incubation period of 17 days and a nestling period of 19 days were recorded. Pair B produced a clutch of four eggs in January, for which an incubation period of 16 days was recorded, with a nestling period of 20 days.

The successful breeding occurred in a budgerigar nest box which was filled with earth to the rim of the entrance hole. It was lined with no more



Trevor Konigkramer

The chick begs the male for food.

than two dried seeding heads of Guinea Grass *Panicum maximum*. Two pale greenish-blue eggs, spotted with purplish-brown, were laid and incubated by the female alone for 19 days. Only one of the eggs hatched and the chick was raised to adulthood by both parents.

All of the captive birds have since been released on the border of KwaZulu-Natal, South Africa and Lesotho.

Confined to the Drakensberg mountain range in the eastern Cape, northern KwaZulu-Natal, north-east Free State and Lesotho, where it inhabits montane heathlands, shrublands and grasslands, this siskin is treated now as a full species, rather than as a subspecies of the Cape Siskin *P. totta*, hence it was previously listed as *Serinus totta symonsi*.

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Neville Brickell, who lives in Durban, South Africa, says that the government there plan to bring in stiff new laws on the keeping of indigenous birds. There is a nature reserve outside his window and, as he was writing to me, he could hear two Purple-crested Turacos (Louries) Tauraco (Gallirex) porphyreolophus calling to their mates in the tall trees below where they feed next to a bowling green. - Ed.

BOOK REVIEW

BIRD SENSE

Prof. Tim Birkhead has written another book about birds that is scientific yet a pleasure to read and contains a wealth of information and insights relating to the behaviour of birds.

Although *Bird Sense: What It's Like to Be a Bird* is about the senses of birds, it is not a dry academic volume and includes detours into the author's travels and stories relating to his and other peoples' personal experiences of both wild and captive birds.

The format and chapter headings: Seeing, Hearing, Touch, Taste, Smell, Magnetic Sense and Emotion, might suggest that this is an academic text book. In that it covers so much of the history of the science of bird senses, it could certainly assist in this purpose, but is clearly aimed at and able to reach a much wider audience. The enquiring readers' needs are met by a notes section and extensive bibliography and a glossary assists with technical terms which may be less familiar to some readers.

"Bugged is how most New Zealanders describe their bird fauna and it is", to quote the first line of the preface, which whilst perhaps not setting the tone for the rest of the book, does indicate just how accessible this book is. We get good science, the most up to date thinking and theories, combined with a reader experience more akin to a compelling storybook.

Katrina van Grouw's pencil illustrations, which are frontispieces to each chapter, are excellent and enjoyable. At times the scientist in me would have liked more illustrations related to the structure of sense organs and the birder in me would have enjoyed more illustrations of some of the more exciting birds. However, this would have interrupted the text and may have distracted from the read.

I could not help but feel envious when reading of the author's experiences in New Zealand where he saw Kakapos, in Ecuador where he saw Oilbirds and in the swamps of Florida where he saw Pileated Woodpeckers whilst searching for the Holy Grail - the presumed extinct Ivory-billed Woodpecker. Birders' tales indeed and stories here and there about other engaging ornithologists add additional interest to the book.

So do birds feel envy, pain, fear or pleasure? Well there is evidence suggesting some birds may experience pain, fear and pleasure. Some of these questions are taken up in the chapter on emotions, and others in the chapter on touch. For ourselves this involves the appreciation and bringing together of so many senses - both emotional and physical. Tim Birkhead suggests that the brief touch of a "cloacal kiss" for many birds may suggest a

shorter and lesser experience. However, other birds including the Red-billed Buffalo Weaver, copulate for a much longer period. He describes how one of his research students stimulated a male buffalo weaver and brought it to ecstatic orgasm by stroking its abdomen.

Most fascinating is the fact that the eyes of some birds have two foveas (sensitive areas on their retinas where light is focused), the functions of which are to enable the bird to have excellent distant vision and good close vision, with one fovea for each purpose. Falcons and shrikes are two groups of birds which have two foveas and we learn how Dutch birdcatchers once employed shrikes to assist in detecting and catching falcons.

Perhaps as fascinating is the fact that birds may see differently with their left and right eyes and use these for different tasks. Even more challenging to understand is not only that some birds can sense magnetic fields but that with one species, experimental work indicates this is sensed through the bird's right eye. How weird is that?

There are various theories to explain the amazing ability of birds to navigate, these include smell, sight and learning landmarks, the use of a sun compass and a star compass or combinations of these. In order to navigate birds need both a map to determine where they are and a compass to determine the direction which they should travel. Many birds, especially oceanic seabirds, have a well developed sense of smell that may assist their navigation and this is perhaps more surprisingly also true of homing pigeons. Other theories attach greater importance to birds using vision or having a magnetic sense. Recent experimental work suggests that the European Robin requires both visual and magnetic senses through its right eye to provide the compass direction needed to navigate. This may then be used in combination with a map detecting the strength of the magnetic field by providing magnetite receptors in the beak.

Are you still with me? This is really amazing stuff and although a theory that remains controversial this, as with all science, must be retested and validated. If this and similar questions about bird behaviour excite you as much as they do me, then I can really recommend this book.

Bird Sense: What It's Like to Be a Bird by Tim Birkhead, with illustrations by Katrina van Grouw, 265 pages, hardback, is published by Bloomsbury Publishing, London, Berlin, New York & Sydney. ISBN: 978-1408-2013-1. It is also available as an e-book. ISBN: 978-1408-2871-7. Price £16.99.

Roger Wilkinson

NEWS & VIEWS

AN EXTRAORDINARY SUCCESS STORY

The world's largest bird park, Weltvogelpark Walsrode (formerly Vogelpark Walsrode) in Germany, celebrates its 50th Anniversary this year. To mark the occasion, many new attractions are being unveiled including a new hummingbird breeding centre.

As mentioned earlier (p.32), it was the first collection in the world to breed toucans, when it succeeded in breeding four young Green-billed Toucans *Ramphastos dicolorus* in 1965, a few years after the opening of the park.

Other species bred for the first time at Weltvogelpark Walsrode include the Greater Bird-of-Paradise *Paradisaea apoda*, Secretary Bird *Sagittarius serpentarius*, Giant Coua *Coua gigas*, Blue Coua *C. caerulea*, Knobbed Hornbill *Aceros cassidix* and Silvery-cheeked Hornbill *Bycanistes brevis*.

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A SAD FAREWELL

As Weltvogelpark Walsrode celebrates its 50th Anniversary (see first news item), another famous collection, that at Leeds Castle Aviary in Kent, has closed. According to the official guidebook it was opened by HRH Princess Alexandra on May 25th 1988. Lady Baillie, the owner of Leeds Castle, who died in 1974, had introduced Black Swans *Cygnus atratus* onto the moat in the 1930s, but they appear not to have survived the Second World War and a new pair arrived in the early 1950s. Lady Baillie also kept Australian finches and was particularly fond of Australian parakeets and the blue and yellow mutations of the Ring-necked Parakeet *Psittacula krameri*. Her first bird keeper was Peter Taylor, who had previously been a gardener on the estate.

The first Curator of Birds, David Franks, who I believe was an American who had previously worked at either San Diego Zoo or Wild Animal Park, or possibly both, described progress on the construction of The (new) Aviary (in reality a series of aviaries) in the *Avicultural Magazine* Vol.92, No.1, pp.50-51 (1986) and in Vol.95, No.2, pp.100-101 (1989), Ken Lawrence described the society's first visit in the summer of 1988.

Three notable UK first breedings were achieved in the 1990s, that of Von der Decken's Hornbill *Tockus deckeni* in 1990, Fischer's Turaco *Tauraco fischeri* in 1992 and the Crowned Hornbill *T. alboterminatus* in 1997. They also succeeded in breeding the Toco Toucan *Ramphastos toco*. It is difficult now to remember back to a time when Laura Gardner was not Curator of Birds at Leeds Castle Aviary, so closely is she associated with it and its

breeding successes and for her work with the Blue-crowned Laughingthrush *Dryonastes courtoisi*, both here and in China. After more than 23 years, however, Laura has now left Leeds Castle and I am sure members will want to send their best wishes to her for the future.

* * *

RARE DUCKLINGS HATCHED

Eighteen Madagascar Pochard *Aythya innotata* ducklings have been hatched in Madagascar. The birds are part of a captive-breeding programme overseen by staff from the Durrell Wildlife Conservation Trust (formerly Jersey Zoo) and the Wildfowl & Wetlands Trust (WWT).

This species was until recently thought to be extinct, but then a small surviving population was discovered on Lake Matsaborimena. This appears to be far from ideal for them and initial investigations suggest there is not enough food for the birds and this may explain why so few ducklings survive. Some potentially more suitable lakes have been identified, but the relocation of the species to these lakes will depend on the support of the local community, many of whom earn their livelihood from fishing.

Contrary to some reports, these are not the first captive-bred Madagascar Pochard ducklings. This species was bred by Jean Delacour in France and was also bred in the Netherlands and the UK in the 1930s. The parents were presumably birds collected by C. S. Webb on Lake Alaotra - who stated that it was confined to that lake.

* * *

AMONG THE FIRST TO BREED

Lorikeets are always among the first species to begin breeding at Loro Parque and by mid-February, Rainbow Lorikeets *Trichoglossus haematodus moluccanus*, Forsten's Lorikeet *T. h. forsteni* and the pale-headed/blue-headed subspecies *T. h. caeruleiceps*, the Scaly-breasted Lorikeet *T. chlorolepidotus* and Goldie's Lorikeet *Psitteuteles goldiei*, as well as the Yellow-streaked Lory *Chalcopsitta sintillata*, Black Lory *C. atra* and Purple-bellied Lory *Lorius hypoinochrous devittatus*, already had young. So too did a pair of Mindanao (Mount Apo/Johnstone's) Lorikeets *T. johnstoniae*, which was particularly pleasing. Concerned that all of its pairs of this species were closely related, last year a new unrelated male was acquired and paired with one of the females already at Loro Parque, and it is this pair which has produced young. It is an important step forward in preserving this species in captivity. It is kept now in only four European zoos, with the number

fluctuating between 20-25 birds. It has more-or-less disappeared from private collections. The European Breeding Programme (EEP) for this lorikeet is coordinated by the Loro Parque Fundación (LPF).

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OF SIGNIFICANT CONCERN

Following a meeting hosted by Chester Zoo in 2011 to discuss the management of threatened Asian birds, which highlighted the Javan Green Magpie *Cissa thalassina* as a species of significant concern, Roger Wilkinson the zoo's Head of Field Conservation and Research and Andrew Owen, the zoo's Curator of Birds, travelled to Indonesia to help develop a project to conserve this species. With the support of Chester Zoo, the Javan-based Cikananga Conservation Center is developing a breeding programme for the Javan Green Magpie using birds recovered from the bird trade. The project also hopes to carry out further searches for this species in the wild, which Roger and Andrew failed to find during their short stay.

Roger and Andrew travelled onto Bali to see the work that is being done to conserve the Bali Starling *Leucopsar rothschildi* and discuss how Chester Zoo can help. They visited the Begawan Foundation Bali Starling Release Programme and took part in the project's biannual bird census on Nusa Penida.

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ANIMALS IN THE BLOOD

Animals in the Blood: The Ken Smith Story, a biography of "Gerald Durrell's Right-Hand Man" by Russell Tofts, has just been published by The Bartlett Society, 6 Queen Street, Dawlish, Devon EX7 9HB, UK (website: www.zoohistory.co.uk). Price £16.99, plus £3.99 p&p.

Smith and Durrell met when they were both trainee keepers at Whipsnade Zoo and Smith accompanied Durrell on his second expedition to Cameroon and his subsequent expedition to Guyana, as well as undertaking several of his own expeditions. He later became Superintendent of Paignton Zoo, helped set up Jersey Zoo (now the Durrell Wildlife Conservation Trust) and had his own zoo at Exmouth in Devon. Frank Woolham remembered working with him at Belle Vue Zoo, Manchester.

For many years, Ken Smith was a member of the Avicultural Society, whose name often cropped up in News & Views and who wrote several articles which appeared in the magazine.

UNDER NEW OWNERSHIP

Umgeni River Bird Park, Durban, South Africa, opened in 1984 by the late Dr Alan Abrey and sold in 1996, prior to his retirement, to Tsogo Sun International, was in 2010, bought by the local municipality, which plans to turn it into one of eThekweni's leading attractions.

A lot of renovations have been made and many new species of birds have been added to the collection. Those visitors can see include South Africa's National Bird the Blue or Stanley Crane *Anthropoides paradisea*, Blue-headed Macaws *Primolius couloni*, Palm Cockatoos *Probosciger aterrimus*, a Nicobar Pigeon *Caloena nicobarica* (apparently the only one in South Africa), Great Hornbills *Buceros bicornis*, Southern Ground Hornbills *Bucorvus leadbeateri* and Pink-backed Pelicans *Pelecanus rufescens*. All of the flamingos in a photo accompanying the story appear to be Greater Flamingos *Phoenicopterus roseus*. Species breeding there are said to include a Barn Owl *Tyto alba*, African Spoonbill *Platalea alba*, Golden Conure *Guaruba guarouba*, Blue-winged Kookaburra *Dacelo leachii* and various lorikeets.

The park has a free-flight bird show, which has grown to be a favourite amongst visitors, and also offers educational programmes.

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WHISTLING LIKE AN OTTER

Simon Bruslund, Curator of Birds at Loro Parque, has observed that the male Edwards's Fig Parrot *Psittaculirostris edwardsii*, whose aviary is just in front of the enclosure housing the Asian or Oriental Small-clawed Otters *Amblonyx cinereus*, mimics the whistles of these small otters.

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RUNNING FOR THE SPOON-BILLED SANDPIPER

Nigel Hewston completed the London Marathon in 4 hours, 19 minutes, 35 seconds, which was slightly slower than he had hoped. At the last count Nigel had raised over £2,000 (approx. US\$3,000), with hundreds more promised. The Avicultural Society donated £200 (approx. US\$300).

The money will go towards an ambitious conservation project to help conserve the dwindling population of the Critically Endangered Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, of which as few as 200 birds may survive.

An expedition to Chukotka in eastern Siberia by the Wildfowl & Wetlands Trust (WWT) and its Russian partners succeeded in rearing 13 birds, which were brought to the UK and are now housed in a purpose-built breeding facility at Slimbridge and should be old enough to breed next year.

OBITUARIES

RAYMOND SAWYER THE END OF AN ERA

Raymond Sawyer, President of the Avicultural Society, died on February 21st 2012. He was 87 years old. Raymond joined the Avicultural Society in 1949 and succeeded his late wife Ruth as President in 2007, having previously been a Vice President for several years and a long-serving Council Member.

There must be very few people in the world of aviculture in the past 50-60 years who Raymond did not know. He had been a friend of almost all of the notable aviculturists of the period. Jean Delacour (the doyen of aviculturists) had been a dear friend, so too had Dick de Quincey and Sydney Porter (who in 1946 had been the first aviculturist in the UK to breed the Kea), other friends included Ruth's father Alfred Ezra, John Spedan Lewis, The Duke of Bedford and Herbert Whitley (the founder of Paignton Zoo). Sir David Attenborough, a long-time friend, was among the guests who gathered at Chestnut Lodge to celebrate Raymond's 87th birthday last August, so too were Dr Henry Quinque and his wife, who flew over from France specially to join the celebration.

In the mid-1950s, when I began working in the Bird House at London Zoo, Raymond was a regular visitor and was a leading exhibitor, who took most of the top awards at the leading bird shows. He won the Supreme Award at the National Exhibition of Cage & Aviary Birds four times in the 1950s: in 1952 with a Ruby-Topaz Hummingbird, in 1955 with a King Bird-of-Paradise, in 1958 with an Andean (Scarlet) Cock-of-the-Rock and in 1959 with a Streamer-tailed Hummingbird.

For several years Raymond was responsible for the livestock kept in the parks and open spaces of the Greater London Council, which included the zoos at Crystal Palace and Battersea Park. In Vol.103, No.2, pp.49-66 of the magazine (1997), Raymond wrote about the first twenty-five years at Cobham, during which he succeeded in breeding 16 species for the first time in the UK. These included the Splendid and Emerald Starlings, the Violet Turaco, Masked Crimson Tanager, Blue Whistling Thrush, Black-necked and Black-winged Stilts and Wattled Jaçana. The Blue-bellied Roller (1998) and more recently the Long-toed Lapwing, along with some as yet undocumented species, may bring the final total to 20 or more UK first breedings.

Raymond often became tearful when recalling his many friends who are no longer with us, but we also laughed a lot. He recently recalled how in the 1950s he persuaded the actress Jayne Mansfield (the US blonde bombshell

and a big star at the time) to open his local bird show in East London and after the show invited her and her husband back to his home for tea. As they were leaving, Jayne Mansfield lost her footing on the narrow staircase and fell on top of Raymond. Her husband, the strongman Mickey Hargitay (Mr Universe 1955), tried to save her but also lost his footing and he too landed on top of Raymond at the foot of the stairs. Fortunately nobody was hurt and Raymond turned a potentially serious accident into an hilarious story.

Raymond loved to talk about the "good old days" and just a few weeks before he died, I had promised to go up and spend two or three days with him at Chestnut Lodge.

Malcolm Ellis

MEMORIES OF RAYMOND A LUMINARY OF THE BIRD WORLD

I first got to know Raymond in the 1960s when I worked for John Yealland, Curator of Birds at London Zoo. Raymond was already one of the luminaries of the bird world in England and he and fellow aviculturists such as Viscount Chaplin, Newton Steele, Harry Horswell, Fred Johnson and Alfredo Marques exchanged birds and told wonderful stories.

As well as a love of birds, Raymond and I also shared a love of horses. Raymond had been a successful show jumper in his teens and had competed against both Pat and Stirling Moss. When I first visited the home he shared with his father, I was struck by the large aquariums of freshwater and tropical fish and the wonderful aviaries he had set up in the small back garden. Not only was Raymond an expert in the care of rare and beautiful birds, his talent extended to the wonderful way in which he had planted out the aviaries. He always said that his love of birds was sparked by a canary given to his mother, which he took over and cared for when he was just five years of age. His first exotic bird was a hill mynah purchased from Palmers Pet Stores in Camden Town.

Later in life, visits to Palmers (which was just down the road from London Zoo) became a staple of his Saturday outings with his good friend David Attenborough, as they scoured London for unusual birds and tropical fish. His mother died when Raymond was in his late teens and Raymond remained with his father and cared for him until his father's death. It was then that Ruth Ezra invited Raymond to live at Chestnut Lodge and, with Ruth's encouragement, Raymond used his extraordinary talent to transform the grounds into the magical place everyone so adored.

Raymond will be greatly missed by the avicultural world and especially those of us who were lucky enough to be his friends.

Jane Cooper

THE WORLD'S LEADING SOFTBILL SPECIALIST

Raymond was acknowledged as the world's leading exotic softbill specialist. It seems unlikely that any other individual kept more species or had a greater depth of knowledge on the subject. At Chestnut Lodge, with its park-like grounds, he was able to keep a wide range of birds but it was always the softbills which were closest to his heart. A few parrots featured in the collection, including mutation kakarikis and rosellas, as well as a pair of Eclectus and he formerly bred Keas.

Raymond was known primarily as an aviculturist but his true genius lay with plants. He had an unmatched gift for creating extraordinarily beautiful yet natural settings in aviaries and on the patios where his remarkable collection of bonsai, cycads, shrubs and plants formed such a wonderful display that no one who saw it could ever forget. An aviary bigger and more beautifully planted than the average lawn, a tropical house filled with gems such as cotingas and sunbirds among flowering vines and palms, and numerous smaller aviaries, some enclosed to protect the more delicate species, delighted the eye.

The President's Garden Party was always the highlight of the society's social calendar and, like Ruth before him, with great generosity Raymond donated to the society all of the money raised by ticket sales. He regularly opened the garden to local organisations for charity and as the fame of the collection grew, literally thousands of people visited it as part of the National Gardens Scheme.

Raymond was also an aquarist of note, keeping the then difficult Discus Fish back in the 1960s. He never lost his interest in tropical fish. The Koi pond at Chestnut Lodge was always a focal point. Raymond had a deep love of animals, especially dogs and was a successful show jumper in his youth.

Those who knew him well, as I had done since 1962, relished his (often wicked) humour and will miss him sorely. Everyone is saying the same: "It is the end of an era." The days of big collections in park-like settings have now gone, along with a remarkable man who was truly a unique individual.

Rosemary Low

PROF. J. R. HODGES

Recently the weekly publication *Cage & Aviary Birds* (February 15th, p.2, 2012) reported that only 21 Orange-bellied Parrots survive in the wild. Recent research undertaken at Melaleuca in Tasmania, where the birds breed (which Bob and his wife and two friends visited in October 1997), found only eight females among the surviving group of birds. All hope is now pinned on a captive breeding programme.

Knowing Bob's strongly held view that a captive breeding programme involving reputable aviculturists should have been instituted many years ago, I cut out the report and posted it to Bob and was saddened to learn from his daughter Ros, that her father had died peacefully on February 9th 2012. Bob joined the Avicultural Society in 1947. He took a keen interest in all groups of birds but, I believe, specialised in grass parakeets (and possibly Gouldians) and in Vol.81, No.2, pp.61-63 (1975) wrote about his experiences obtaining and breeding the blue mutation of the Splendid Grass Parakeet.

Following the death of Mary Harvey, after a prolonged period of poor health, Bob stepped in and picked up the pieces and, despite the difficulty he had getting sufficient material, edited the magazine from 1991-1993. He was elected a Vice President in 1985, became Chairman of the Council following the death of Harry Horswell in 1990 and was later elected an Hon. Life Member.

Malcolm Ellis

WENDY DUGGAN

We regret to report the death of Wendy Duggan of Putney on February 21st. Wendy was known for her great affection for parrots, especially cockatoos, with whom she shared her home - probably since at least the 1950s. For many years she worked for the BBC in connection with children's programmes. Her Sulphur-crested Cockatoo, named Katoo, became famous for his regular appearances on the children's TV programme *Playschool*. Wendy joined the Avicultural Society in 1961 and was a familiar face at the wine and cheese evenings at the Linnean Society and at other gatherings and was also an active member of the Southern Foreign Bird Club from its inception in 1963. She exhibited cockatoos at the annual shows and won many awards with them. She was also a Fellow of the Zoological Society of London.

Wendy was always delighted to see friends and always interested in their news. She had a fund of stories from the past and was a most entertaining raconteur. Wendy and her husband shared an interest in art and antiques - especially any object connected with birds and other animals. Rumour has it that when the Queen Mother decided she would like a cockatoo, she asked Wendy for one and in exchange Wendy received several bottles of a very expensive brandy!

In recent years Wendy had sadly suffered from very poor health. Condolences are offered to her husband Ron.

Rosemary Low and Rosemary Wiseman

COLLABORATING ON NEW TECHNIQUE

Loro Parque Fundación of Tenerife, Spain and the University of Giessen in Germany are collaborating on the use of a new technique, using sperm collection and artificial insemination (AI), in an attempt to increase the number of Spix's Macaws *Cyanopsitta spixii* being bred.

There are fewer than 80 captive birds in the recovery programme and reproduction within the population is slow. The main objective therefore is to increase the number of young birds being bred. Although successful with humans and with many other mammals and some other types of birds, sperm collection and artificial insemination has had only very limited success with parrots. However, the use of this new technique shows very promising results and, hopefully, will lead to improved breeding success with this incredibly rare macaw.

The initial phase of the project began in 2009/2010 and during that time the technique was used successfully for the first time to collect sperm from birds at the Spix's Macaw Breeding Centre of the Loro Parque Fundación. Successful artificial insemination, however, is yet to take place. Loro Parque Fundación has nine macaws, which are on loan from the Brazilian Government, which gave its permission for the technique to be tested. Trials will also take place on birds at Al Wabra Wildlife Preservation in Qatar.

During the same period, the new technique was used to successfully collect semen and artificially inseminate over 100 species of large parrots in the large and diverse Loro Parque Fundación collection. It is a significant step forward and, this pioneering first phase, will act as an excellent foundation for establishing a method of cryopreservation (frozen storage) and the eventual establishment of a parrot sperm bank.

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AUTUMN SOCIAL MEETING

The Autumn Social Meeting & AGM will be held on Saturday, September 22nd, at Christopher Marler's collection at Weston Underwood, Olney, Buckinghamshire MK46 5JR. Further details will follow later.



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