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NEW STUDIES FIND CHALLENGES AND OPPORTUNITIES FOR THE CONSERVATION OF PRINCE RUSPOLI'S TURACO Tauraco ruspolii

by Alazar Daka, Tolera Kumsa, Luca Borghesio, Jean-Marc Lernould and Afework Bekele

The Ethiopian highlands are home to two endemic species of turaco, the widespread White-cheeked Turaco Tauraco leucotis and the globallythreatened Prince Ruspoli's Turaco T. ruspolii. The two turacos co-occur only in a small region of southern Ethiopia, where T. leucotis lives mainly in forest and T. ruspolii mainly in more open woodland vegetation. Natural hybrids of the two species were reported in 2002, which may pose a further threat to the survival of T. ruspolii. Field work was carried out between November 2007-June 2010 to evaluate the abundance and distribution of the turaco hybrids and the impact of human-caused habitat change on Prince Ruspoli's Turaco. We obtained 342 records of T. leucotis, 231 of T. ruspolii and nine of hybrids. Hybrids were observed in the overlap zone between the ranges of the two parent species, suggesting that they are widespread in the region. Turaco hybrids are difficult to recognise and can only be safely distinguished from pure individuals at close range, therefore, we believe that the abundance of hybrids may have been underestimated. All of the hybrids were observed in anthropized habitats (i.e. habitats transformed or adapted either to meet the needs of humans, or by human activity), suggesting that habitat change may be one of the causes of hybridization. Recorded frequencies of T. ruspolii were quite high, especially in the Sede and Lela Lemu area, where human presence was limited. Recorded rates of turacos decreased in more anthropized habitats.

Five species of birds are endemic to the highlands of southern Ethiopia, an area of only 37,000sq km (approx. 14,285sq miles) and, therefore, smaller than the size of Denmark. Besides being biologically rich, the region is also densely populated and the impact of the human population continues to grow: satellite images show a 40% reduction in natural habitats in the past 40 years. It is not surprising, therefore, that two of the endemic species of

birds - the Ethiopian Bush Crow Zavattariornis stresemanni and the Liben Lark Heteromirafra sidamoensis - have been moved to higher categories of threat in the latest versions of the IUCN Red List. Little is known about another of the endemic birds of southern Ethiopia, the charismatic Prince Ruspoli's Turaco, a bird which figures prominently in many of the best known books on African birds, but which not many people have had the pleasure to see.

The range of Prince Ruspoli's Turaco extends over an area of only 7,000sq km (approx. 2,700sq miles), in which agriculture, towns, mines and roads are expanding at a fast pace. Add to this the menace of hybridization with the White-cheeked Turaco, which is much more widespread in the Ethiopian highlands and extends into Eritrea and Sudan and, moreover, also occurs on the edge of the range of Prince Ruspoli's Turaco. Observations of natural hybrids of the two species, first reported in 2002, have multiplied in recent years, raising concerns that the genetic integrity of this rare species may be at risk. Many authors have, in fact, proposed that environments disturbed by human activity are conducive to hybridization.

There are a number of questions which require answers, these include:

What is the current conservation status of Prince Ruspoli's Turaco?

What is the impact of habitat change on Prince Ruspoli's Turaco and which are the most important sites for its conservation?

Is habitat change a cause of the hybridization between the White-cheeked and Prince Ruspoli's Turaco?

How numerous are hybrid turacos compared with pure-bred individuals?

In an attempt to answer these questions, a survey was undertaken in the northern part of its range, where it co-occurs with the White-cheeked Turaco. This area is a broad ecotone (transitional) belt, which includes dense forests on its northern edge, shading towards progressively drier and more open woodland, with a mix of trees and open habitats. Finally, the habitat at the most southerly edge of the area becomes dry bushland.

Between November 2007-June 2010, two of the authors (Alazar Daka and Tolera Kumsa, who are students at the University of Addis Ababa), combed the study area and used recordings of the calls of the two species of turaco in an attempt to determine their exact numbers and distribution. A total of more than 900 sites were visited and 342 records were obtained of *T. leucotis*, 231 of *T. ruspolii* and nine of hybrids. The results show that the two turacos have different habitat preferences, with the White-cheeked being a largely forest species, while Prince Ruspoli's Turaco becomes progressively less abundant as the forest becomes more dense. Prince Ruspoli's Turaco tends to be more abundant where there is more abundant open woodland with

tall trees mixed with a matrix of shrubs and open spaces. Thus, it is at the edge of the forest that the two turacos come in contact with each other and have more chances to hybridize. The original division of habitat between the White-cheeked Turaco and Prince Ruspoli's Turaco can be seen very clearly around Sede and Lela Lemu, where some of the best preserved forests survive. This area remains relatively uninhabited by people and scarcely modified by agriculture. In Sede and Lela Lemu, the White-cheeked Turaco occurs only in forest, whereas Prince Ruspoli's Turaco is found at the edge and outside of the forest. No turaco hybrids were observed in Sede and Lela Lemu, though the coverage of these sites remains insufficient to conclude that absolutely no hybrids occur there.

To answer the question of what are the effects of habitat degradation on the hybridization of these two Ethiopian turacos, we focused our attention on the area between Shakiso and Kebre Mengist, the largest towns in the region. There, deforestation has been intense and natural forest has been eroded and thinned by the removal of large trees for their timber. Open habitats have been observed in what was formerly dense forest and, where forest persists, its structure is much more open and discontinuous due to illegal logging and the removal of firewood, as well as other forms of human disturbance. In partly deforested regions, the White-cheeked Turaco may remain in small patches of remnant forest, along rivers and in plantations of exotic trees such as Eucalyptus spp. and Cupressus lusitanica, which have greatly expanded in the area over the past 20 years. At the same time, at partly deforested sites, Prince Ruspoli's Turaco may be able to move into forests which have been made more open and discontinuous by the selective felling of trees. Therefore, in landscapes modified by human activity, the two species may come in contact with each other far more frequently and the chances of hybridization may be increased. Our results support this hypothesis, as observations in Shakiso and Kebre Mengist suggest that the distribution of the two species overlaps far more frequently than it does in Sede and Lela Lemu. The division of habitat in Shakiso and Kebre Mengist is much less clearly defined than it is in Sede and Lela Lemu and, indeed, the area of contact between the two turacos may be much larger in Shakiso and Kebre Mengist. As suspected, turaco hybrids were observed in this area on several occasions. Therefore, our study provides initial support to the hypothesis that habitat degradation can trigger hybridization between species. Our data, however, remain limited, with observations of only nine turaco hybrids having been recorded and, therefore, the sample size on which we base our hypothesis is insufficient to draw definitive conclusions.

On the question of how abundant hybrid turacos are in the highlands of southern Ethiopia, raw numbers suggest that hybrids make up only 1.6%

of the total number of observations recorded during field work. However, we fear that this relatively low figure may be an underestimate, as hybrid turacos are not easy to distinguish from pure-bred birds. Only birds of which a good view is obtained at close range can safely be identified as hybrids or pure-bred individuals. Moreover, we cannot exclude the possibility that the external appearance of some hybrids may be so similar to that of either one of the two parent species, that accurate identification in the field may, in some cases, be impossible. Genetic tests on laboratory samples may be the only means of establishing the true prevalence of turaco hybrids.

We do not know whether or not hybrid turacos are fertile and therefore capable of reproduction with either of their parent species, Neither do we know much about the behaviour of hybrid turacos. We know that hybrids usually occur in mixed flocks in which both pure Prince Ruspoli's and Whitecheeked Turacos occur. However, a flock observed in July 2003 by Mike Pennington, a professional tour guide, was composed of five hybrids with no pure-bred individuals amongst them, which suggests that hybrid turacos can at times occur independent of the parent species. Further research is required to accurately evaluate the impact of hybridization on Prince Ruspoli's Turaco. Current results suggest that as human-caused habitat degradation escalates, reports of hybrid turacos may become increasingly more widespread.

Fortunately, Prince Ruspoli's Turaco remains abundant where appropriate habitat occurs. Although more accurate estimates of the population density will require further detailed analysis, it is reassuring to know that, where woodland makes up 50% or more of the habitat, the recorded frequency of Prince Ruspoli's Turaco is 0.3 or even higher (i.e. three or more observations for each 10 points sampled). This suggests that it is present in satisfactory numbers, especially when one considers that Prince Ruspoli's Turaco often goes unrecorded due to its shy and silent behaviour. However, the frequency of sightings decreases rapidly as the amount of agriculture increases, which shows - if there was any need - that increased human activity will certainly have a negative impact on the population of Prince Ruspoli's Turaco.

The results of our study also show the importance of the forests of Sede and Lela Lemu for the conservation of Prince Ruspoli's Turaco. The large expanses of woodland surrounding these forests are where Prince Ruspoli's Turaco was most frequently observed and, the forests themselves, are among the few remaining examples of largely intact montane forest in Ethiopia and are important not only for the White-cheeked Turaco, but probably also for many other birds, mammals and plants. These forests should be afforded greater protection to save them from rapidly growing human disturbance, which is bound to escalate, as large mining sites (gold has been found in the area) and new roads are being opened close to them.

Acknowledgements

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A FINAL REMINDER

Those of you who have not yet paid your 2012 subscription will not receive any further issues of the magazine until your subscription for 2012 has been received, i.e. £21 for UK membership and £24 for overseas membership, plus £6 if air mail is required. Cheques should be made payable to The Avicultural Society and sent to: Peter Stocks, The Hon. Secretary and Treasurer, The Avicultural Society, Sheraton Lodge, Station Road, Southminster, Essex CM0 7EW. E-mail:otusscops@talktalk.net/ Tel:01621 772427.

THE BEAUTIFUL BLUE-BELLIED ROLLER

Coracias cyanogaster

by Gary Bralsford

I have never tired of the beauty of the Blue-bellied Roller *Coracias cyanogaster*. I have had several pairs over the past six years or so, but now concentrate on keeping just two pairs. I have a 2008-bred pair and a 2009-bred pair. Both pairs were bred by my good friend Bob Jewiss in Kent and are unrelated to one another and this year (2011), I succeeded in breeding this species for the first time. Two young were reared, which have proved to be a male and a female. Only one brood was raised, which is unusual as they usually have two clutches.

This species was probably first brought to the UK from The Gambia by Dr Emilius Hopkinson in 1925 and a colour plate of it from a painting by Roland Green, illustrating an article about it by David Seth-Smith, was the frontispiece in the magazine in February 1927.

The Blue-bellied Roller measures about 28cm-30cm (approx. 11in-12in) in length, plus an additional 6cm (approx. 2½in) which is accounted for by the tail streamers. The entire head, neck, breast and upper mantle are pale buffy or chalky white and the belly and under tail-coverts are dark ultramarine blue, as are the wings and rump. There is a patch of light blue on the wings and the tail is also shades of light blue. The back is brownish-black. When it flies the wings have a pale blue bar or band running along the base of the flight feathers. The sexes look alike. The juvenile is described later.

It is found in West Africa, in Senegal and The Gambia and in countries including Guinea, Mali, northern Sierra Leone, Ghana, Nigeria and northern Cameroon, eastwards to Chad, the Central African Republic, extreme southern Sudan and the north-east of the Democratic Republic of Congo (Zaïre). It is most abundant in the west of its range and becomes increasingly scarce further east. This lovely roller is both a resident species and an intra-African migrant which undertakes a partial north-south migration linked to the rains. It is a resident in the south of its range and these birds are joined by birds from other areas in the dry season. They often migrate in small flocks, with movements occurring in the months of October-January.

Its preferred habitat seems to be savannah woodland dominated by *Isoberlinia* trees. It can, however, also be found in the rainforest zone, plantations and burnt clearings where it hunts insects fleeing the area, as well as being found in galley forest (forest bordering rivers in otherwise open country) and dense woodland in which it searches for hollows in which to nest. It is also said to occur in damp areas with scattered *Borassus* palms.

It feeds mainly on grasshoppers, beetles, termites and large ants and also take wasps, millipedes, earthworms, small skinks and snakes and has been seen taking the fruits of the Oil Palm *Elaeis guineensis*. When it spots prey on the ground, it swoops down and glides straight onto its prey. Most of its food is taken on the ground but quite a lot is also taken on the wing. Its large head, neck and bill, mean that once it has seized its prey, it seldom manages to escape. These rollers make short work of a small mouse if it manages to get into their aviary and are equally adept at dealing with dead day old chicks, so should have no difficulty dealing with a small snake or lizard.

The Blue-bellied Roller is not as solitary as some of the other rollers and often occurs in pairs, and groups of as many as six to 20 birds have been recorded. They interact socially with one another - as my birds do at times - and have mock chases and call to one another and may roost together. They choose an exposed perch at the top of a tree and in my aviaries choose a high perch on which to roost. Their flight is direct and due to their shallow wing-beats has a laid-back look about it.

They can be territorial and males often outnumber females. Courtship in the wild and in aviaries involves fast chases on the wing, which in aviaries can occasionally result in injuries. In the wild, the bird often plummets earthward, rolling from side to side and calling all the time as it rolls through the air. Not all pairs or groups of birds attempt to nest during any one year. This can cause those attempting to breed this species to think that their birds may not be compatible or perhaps may not be a true pair. My birds made little attempt to breed in 2010 because, I think, they were too young, but one pair bred successfully this year.

The eggs are white and roundish in shape like owls' eggs (those of the European Roller *C. garrulus* measure 35.4mm x 28.4mm and those of the Indian Roller *C. benghalensis* 34.3mm x 28.1mm). In the wild, egg laying has been recorded from February through to September. It breeds during the rains and in the northern part of its range, in countries such as The Gambia, for example, the resident birds are joined by additional birds which arrive about May to breed, whereas in Côte d'Ivoire egg laying has been recorded from February-September.

The Blue-bellied Roller (and other rollers) should, as a general rule, be housed in the largest flight you can manage to provide for them, you will then have the chance to see them perform their rolling display flights. These are not, however, always strictly necessary, as they will breed, or attempt to breed, in smaller enclosures. The flights in which my birds are housed are $10 \text{ft} \times 4 \text{ft} \times 6 \text{ft}$ high (approx. $3 \text{m} \times 1.2 \text{m} \times 1.8 \text{m}$ high).

My friends have no problems breeding the Blue-bellied Roller in 12ft (3.6m) long flights. A few years ago, Rob Monks bred these rollers in one of

his flights and on that occasion the pair nested quite late in the year. Other breeders, such as Richard Green and Harry Sissens, who have much larger gardens than I have, have bred them in correspondingly larger aviaries.

When it comes to sexing Blue-bellied Rollers, I pay particular attention to the shape of the head. Males seem to have a more domed or rounded skull, whereas that of the female is flat on top. This is, of course, not a foolproof method and DNA sexing is the most reliable way of ensuring that you have a true pair. There can be some aggression between the male and female and it is a good idea to have an area where the female can escape the attention of the male.

My birds have access to a nest log approximately 1ft in diameter x 1ft 6in high (30cm in diameter x 46cm high) with a 4in (10cm) entrance hole. The perches in the flights are as high as possible and as far apart as possible. My birds' diet consists of an insectile mix, mixed with minced (ground) beef. I also give them chopped day old chicks, as well as morio worms, mealworms, waxworms and locusts or crickets, depending on which of these I have available at the time. My birds love pachnoda grubs (fruit beetle larvae), which are quite large and full of protein.

Bob Jewiss, who has had considerable success breeding the Blue-bellied Roller, said that following an 18 days incubation period, the chicks spend quite a long time in the nest - 34 days or more and it is even longer before they are weaned. So, it can be a lengthy process of about three months from the time the eggs are laid until the young become independent.

After the young have fledged, the nest log needs a good clean out, as it is full of droppings and is quite smelly. The Blue-bellied Roller usually produces at least two clutches a year and is, therefore, a good bird to establish in aviculture. My only concern is that as I mentioned earlier, in captivity, as in the wild, a pair may breed one year and then take a break of a year or more before breeding again. There could be a number of reasons for this, particularly in captivity, while in the wild it is likely to be due to unsuitable weather conditions resulting in a lack of food, or the right sort of food, on which to rear the young.

When the young rollers fledge they look like duller versions of their parents and it may be five to six months before they moult into adult plumage and get their tail streamers.

I have found that Blue-bellied Rollers become quite tame and often chatter away and greet me and seem to know when it is feeding time. Their voice is not loud and their dry, clicking "ga-ga-gaa-gaa" uttered at three to five second intervals, does not trouble my neighbours. I have sometimes witnessed my rollers gorging themselves with food and then being unable to fly back up onto the perch. Some individuals are more prone to this than

others. Therefore, I find it best not to give them too much food at one time, but to feed them 'a little and often.' For such relatively large birds, Bluebellied Rollers have very small feet and it is essential to provide them with suitable sized perching, as well as a frost-proof shelter during the winter, to guard against them getting frost-bitten toes.

Quite a few European-bred birds have been appearing on dealers' lists. These are being offered for sale at around £400 (approx. US\$600) each, which is quite a high price, but they are well worth it if you have the money to spare.

I know of at least six other aviculturists in the UK who are breeding this species and, with new birds being brought in from Europe, there are signs that it could become established in UK aviculture. It can be kept with other species in a large flight or in a tropical house, like I have seen it housed at the Cotswold Wildlife Park, so long as the other birds are of a similar size to the roller.

I am delighted to have at last bred the Blue-bellied Roller and hope for further success with this species in 2012. Rollers are beautiful and colourful birds and have personalties to match - they are truly tropical birds.

Another of the species kept in the UK is the Lilac-breasted Roller *C. caudatus*, while others such as the Rufous-crowned *C. naevius*, Abyssinian *C. abyssinicus* and Racket-tailed *C. spatulatus* have appeared occasionally. The Racket-tailed Roller was bred by Roger Cattermole in 1991 (see Vol.98, No.1, pp.22-26 (1992)) and the once familiar Indian Roller was bred at Blackpool Zoo in 1984. Surprisingly perhaps, the European species was bred by W. H. St. Quintin way back in 1901 and the Lilac-breasted was first bred by Herbert Whitley at Paignton in 1929. I believe Whitley bred the subspecies *C. c. lorti*, which has the lilac confined to the throat.

Gary Bralsford has been keeping birds for more than 20 years. He keeps mostly softbills, but also keeps a few other species and wrote recently about breeding the Oriental Greenfinch Carduelis sinica (Vol.117, No.2, pp.49-50 (2011)) and his next article will be about the Burrowing Owl Athene cunicularia. E-mail: gary.bralsford@hotmail-co.uk

PELICANS OF THE WORLD

by Christopher Marler

There are either seven or eight species of pelicans, depending on the opinion of the different experts. Clements (2007) lists eight species (see list below). Pelicans have always been a prominent species in my zoological park in Buckinghamshire, here in the UK, which has housed all eight species.

The species most commonly kept in zoological collections here in Europe is the Great White Pelican *Pelecanus onocrotalus*, a large and colourful species and therefore a great attraction to the visiting public. Over the past 50 years or so that I have kept pelicans I have always found them most appealing. All of the species are quite different in character and all remain friendly and enjoy the human company of those who look after them - and not only for the food that they provide.

The eight species of pelican

American White Pelican Pelecanus erythrorhynchos
Great White Pelican Pelecanus onocrotalus
Dalmatian Pelican Pelecanus crispus
Australian Pelican Pelecanus conspicillatus
Spot-billed Pelican Pelecanus philippensis
Pink-backed Pelican Pelecanus rufescens
Brown Pelican Pelecanus occidentalis
Chilean Pelican Pelecanus thagus

Not only was it a challenge to obtain all eight species - in fact it took nearly 40 years to eventually obtain the eighth species - a lovely pair of Australian Pelicans *P. conspicillatus*, courtesy of my good friends at Tierpark Berlin (in exchange for rare waterfowl). They are the tamest two pelicans in my collection and always come to be greeted and caress the hand. The pair has settled in here so well and is so well paired that I hope, with time, the pair will provide us with our first breeding of this species which is seldom kept in captivity which, sadly, reflects the difficulty of obtaining such Australian birds.

I count myself fortunate to have kept all eight species of these magnificent birds in my collection and have also been fortunate enough to have observed all eight species in the marvellous areas of the world in which they live. The Great White and Dalmatian Pelican *P. crispus* I have seen in the wild in the state of Gujarat in north-west India, on a large reservoir which at the time was only about half full of water. This required wading out into the



A splendid example of the Great White Pelican.

Ian Pretty



ian Pretty

The Great White Pelican has proved to be a difficult species to breed in captivity.

water to get a closer view of the birds - five Dalmatian and seven Great White Pelicans. It was in the month of February and they would have been on migration, so were in adult plumage, probably on their way back to their breeding grounds on the Danube Delta.

While attending a Whooping Crane Convention at Wood Buffalo Park near Fort Smith in the Canadian north, the American White Pelican *P. erythrorhynchos* was seen on a rapid flowing river with islands on which there were several nests. The journey to Wood Buffalo Park to view Whooping Cranes *Grus americana* on their nesting grounds was probably the most exciting birdwatching trip I have ever been on. Seeing the Whooping Cranes with their chicks from the air from a float plane (an aircraft capable of landing on water) was a truly memorable experience.

The Australian Pelican *P. conspicillatus* with its spectacular black and white plumage I have seen on numerous occasions during my visits to that great continent. I have been fortunate to have judged at cattle shows in various parts of Australia and have always taken the opportunity to fit in some birdwatching en route. On Kangaroo Island, off South Australia, many Australian Pelicans can be seen and on the occasion of one of my visits several hundred were coming to a feeding station each day to be fed.

On my only visit to Sri Lanka I witnessed the magnificent spectacle of a large flock of Spot-billed Pelicans *P. philippensis* in Yala National Park in the south-east of the country. I also saw this species during another trip to

India, when visiting the breeding area called Vedanthangel, south of Madras, where it breeds in tall trees alongside Asian Openbills *Anastomus oscitans* and Painted Storks *Mycteria leucocephala*. I have now visited this area twice and the density of breeding birds is quite unique and reflects the abundance there of fish which is, of course, dependent on good rainfall at the vital time of the year when the chicks are being reared.

The Pink-backed species *P. rufescens* I first saw on Lake Naivasha, one of the Rift Valley lakes in Kenya. It is another tree-nesting species which is often found in great numbers. The Great White Pelican can also be seen in many parts of Kenya. I particularly remember seeing about 1,000 of these magnificent birds resting on the shore of Lake Nakuru early one morning when we were the only visitors in the park. They were a lovely pink colour so it was possibly just before the breeding season. Seeing the pelicans, as well as thousands of Lesser Flamingos *Phoeniconaias minor* and Greater Flamingos *Phoenicopterus roseus* on the same lake, was a sight that was so memorable and vivid that I will never forget it.

The Brown Pelican *P. occidentalis* and the Chilean Pelican *P. thagus* are now considered to be two separate species, due to the size difference (the latter is the larger of the two) and differences in the coloration of the bill, face and head and the heavily streaked underparts of the Chilean species. I have observed these two species: the first in the USA in Florida and California and the Chilean off the coasts of Perú and its adjacent islands. Both dive for their food like the Gannet *Morus bassanus* does, and it is great to watch them when they see a shoal of fish and dive dart-like into the water after them with their wings outstretched behind them.

Keeping pelicans in captivity is relatively straightforward, but breeding them presents an entirely different challenge. We have had eggs from five of the eight species but the successful breeding of any of these species has so far eluded us. Earlier this year our six Great White Pelicans were very active; they gathered nesting material and their plumage and facial coloration were stunning and we witnessed attempted matings, which have given us hope for the future. Freshwater fish are fed to them daily, following the feeding pattern practised by our colleagues at Tierpark Berlin, and lots of nesting material is provided.

The bird collection of Avicultural Society Chairman Christopher Marler FLS, at Flamingo Gardens and Zoological Park, Weston Underwood, Olney, Buckinghamshire is no longer open to the public, but is maintained now purely as a private collection.

THE LEMON-BREASTED CANARY Serinus citrinpectus

by John Santegoeds

This 12cm (approx. 4³/₄in) long Serinus spp. (which may also be found listed in the genus Ochrospiza or Crithagra) remained undescribed until as recently as 1960. Clancey and Lawson (1960) wrote that in October 1959. C. H. (Jack) Scheepers of Bela Vista, Maputo, Mozambique, trapped about 40 examples of what was then an unknown species belonging to the genus Serinus. Most of the birds remained in his aviaries until towards the end of August I960, when many of them were studied closely by members of the



Male Lemon-breasted Canary.



Courtesy of Hugh Chittenden
Nest containing three eggs in Lala Palm.

staff of Durban Museum, during the course of its ornithological expedition to Mozambique. Clancey and Lawson wrote that while the duty of describing this new species to science had fallen to them, full credit for the initial discovery must go to "Mr Scheepers."

The male and female can readily be distinguished from each other by their different coloured plumage. The male has a pale lemon yellow chin, throat and upper breast, with the sides of the breast and flanks washed peachy buff, lightly streaked with grey and with the lower breast and belly white.



Courtesy of Hugh Chittenden
Typical habitat of Lemon-breasted Canary.

The female (whose upperparts are similar to those of the male) lacks yellow on the face and underparts and has a dull white stripe above the eye. Her underparts are buff, with the breast and flanks lightly streaked with darker brown (see photo p.162). The juvenile resembles the female, but is more buffy on the upperparts, especially on the head and has fine streaking on the chest and flanks (see photo p.163), which is lost after the first moult. Following the moult, some of the nice lemon yellow feathers begin to show through on the chest of young males, but it is another year before they acquire their full colour. In my experience, very young males have a fine lemon yellow 'glow' before the moult, but this is not easy to see.

The Lemon-breasted Canary is a monotypic species with no known subspecies. However, I used to own an imported pair that was a fraction larger and more brightly marked than my other Lemon-breasted Canaries. Unfortunately, I failed in my attempts to persuade the pair to breed. Although I have no record of where this particular pair was caught, I suspect that the slight variation can be put down to so-called "geographical differences."

This species is confined to south-east Africa, where it is now known to occur not only in southern Mozambique, but also in southern Malaŵi, southeast Zimbabwe and eastern Transvaal and north-east KwaZulu-Natal in South Africa. Its preferred habitat is Lala Palm Hyphaene coricea (natalensis) savannah and mixed Lala Palm and dry woodland as well as, in Zimbabwe,

low-lying Mopane *Colophospermum mopane* woodland; it is also said to be attracted to cultivation and settlements. It usually occurs in pairs when breeding and in small to large flocks when not breeding, often in the company of Yellow-fronted Canaries (Green Singing Finches) *S. mozambicus*. Winter flocks occasionally number up to 250 birds.

I contacted Hugh Chittenden, an enthusiastic birder in South Africa, who has written about the Lemon-breasted Canary. Hugh is one of the founding members of Birdinfo, a website - www.birdinfo.co.za - which is well worth visiting. It was on this site that we found the report on the research Hugh has done on the breeding habits of the Lemon-breasted Canary and are grateful to him for allowing us to use his photographs, including those that are reproduced here.

Large parts of the Lala Palm savannah in southern Mozambique and South Africa are now occupied by farming communities that tap the palms in order to made palm wine, coupled with which, palm fronds are increasingly used these days in basket making for the craft and curio trades. As a result of this, nests are often disturbed and many of them are unsuccessful. Research conducted in KwaZulu-Natal in 2007, revealed that of the 22 nests examined, only eight showed signs that young had fledged from them.

Another concern is the alarming number of birds that are trapped annually in southern Mozambique for the cage bird trade. The Lemon-breasted Canary is, or was, frequently offered for sale at bird markets in Maputo and Beira in Mozambique, with up to 2,000 being exported annually (Hockey et al. 2005, who cite Clancey, 1971 and Parker, 1999, respectively).

Although up to 2,000 were said to have been exported annually from Mozambique, it was never imported in large numbers into Europe. Following the ban on the importation of wild birds into the EU (European Union), aviculturists here in Europe have had to make do with those imported prior to the ban. I have no idea how many Lemon-breasted Canaries are at present kept in European aviculture. Contact with other breeders/keepers suggests that, although it is often stated in avicultural literature that it is not a difficult species to breed, this is not always the case.

In KwaZulu-Natal it lays in December-February and in January in Zimbabwe. Recently imported birds, in particular, stuck to this time frame, which contributed to the fact that it was and, continues to be, seldom bred here in Europe. As often happens with African seedeaters, recently acquired birds were frequently housed in outside aviaries in which, with a bit of luck, they may have attempted to breed. However, because they often nested during the winter months, there were generally few successes. There were exceptions, of course, but more often than not, those keeping them indoors were more successful. However, this is not to say that it was easy - that



Courtesy of Hugh Chittenden
Female and well-grown nestlings.

would be stretching it a bit.

The birds that are being bred nowadays are often those that enthusiasts have been establishing in cages for one or more generations, although here and there an imported bird may be found. This has contributed to the fact that the breeding period here in Europe is gradually changing. In an aviary, they are peaceful birds that are not too set in their ways, which can be the case with some other *Serinus* spp. They have a nice song which is heard regularly.

I give my birds a good seed mixture formulated for European species, along with a tropical seed mixture and, sometimes, a small quantity of niger seed and spray millet. I supply some chicory or a piece of apple every now and then, but little of these are eaten. Chickweed fairs better, as do buds of dandelions, barnyard grass, mugwort and evening primrose. I also, of course, provide fresh water and grit.



© www.Serinus-Society.eu Juvenile

When they have young, I give them a simple homemade eggfood made using three Dutch rusks to one boiled egg (well heated and ground down), mixed together with eggshell, a little honey and a good protein/vitamin/mineral supplement, following the quantities recommended by the manufacturer. I divide this into small portions which I freeze and each day take the required amount out of the freezer and defrost it. I mix it with frozen maggots which I have also defrosted and add a small quantity of niger seed to it and then give it to the birds.

My breeding cages measure 80cm x 60cm x 60cm (approx. 2ft 7½in x 2ft x 2ft) (see photo p.164). When the birds begin to come into breeding condition, the frequent singing of the male often becomes noticeable, as he puts in a real effort to impress the female with his beautiful song. The birds follow each other and wherever the females flies, the male follows her. Often, but not always, the female begins pecking her breast feathers

and this becomes clearly visible after a few days. Now and then I place a small piece of cotton wool between the cage wires and this increases the tension even more.



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One of the breeding cages used by the author.

The nest-box is in the back left-hand corner.

As soon as the nest box is provided (I use the type illustrated in Vol.117, No.1, p.38 (2011)), construction of the nest does not take long. Before putting the nest box in place, I securely fasten a coconut fibre insert in the bottom of the box. If it is not secured properly the birds will persist in tugging and pulling at it and will not stop until it has been removed and is lying on the floor of the cage. I supply plenty of a popular brand of European bird nesting material and white cotton wool, as it has been noticed that this species has a preference for light coloured/white nesting material. Some males take a full part in assisting to build the nest, and all males assist in some way. On completion of the nest, the site is fiercely protected from possible trespassers.

The Lemon-breasted Canary usually lays three or sometimes four white eggs, which I remove and replace with plastic eggs (used by canary breeders) until the full clutch is laid. Some females sit so tightly that I have to push them off the nest in order to inspect it. After approximately five days, I check the eggs to ensure that they are fertile. If possible, I leave the male in the breeding cage with the female as, luckily, most males prove to be

concerned husbands and excellent fathers, who feed the female on the nest and also feed the chicks.

The eggs hatch after an incubation period of 13 days. The shells are removed from the nest and neatly deposited on the floor of the cage or in one of the food containers. After approximately five to six days the chicks are ringed with 2.5mm size rings. I used to use 2.3mm size rings, which meant I could ring the chicks a little earlier, but this proved to be quite a hassle and I now ring them a little later and use a slightly larger sized ring.

About 20 days after hatching the young leave the nest, but return to it during the first few days and roost in the nest at night for at least the first week. About 10-12 days after they have left the nest, I catch the young and place them in a 'baby cage' attached to the front of the breeding cage, in which they continue to be fed by the male for quite some time.

The female usually begins her next round quite quickly. I am very careful though not to remove the young from their parents too soon and often leave them in the 'baby cage' for a further three weeks or so, until I am sure they are feeding independently. In the past I have lost young birds because I thought they were independent before they were feeding entirely by themselves.

A good, well bonded/compatible pair, together with good care is, I believe, the key to success. As I stated earlier, this species has never been imported into Europe in large numbers and has never been widely bred. There are, however, several breeders in Europe who are reasonably successful with this species. It is to be hoped that by working with one another, the number of young bred each year can be increased and this species can find a permanent place in European aviculture.

There are some 600 breeders of *Serinus* spp. throughout Europe and several breeders of the Lemon-breasted Canary have registered on our website. Through this initiative breeders can contact each other to exchange birds and knowledge about the keeping and breeding of this species.

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John Santegoeds, who lives in Lierop in the Netherlands, is a founder member of the European Society of Serinus Breeders (ESSB). Website:www. Serinus-Society.eu/E-mail:fam_santegoeds(@hotmail.com

ACTION FOR THE CONSERVATION OF THE ENDANGERED SWIFT PARROT Lathamus discolor

by David Waugh

In 2010, a team began conducting research into the breeding biology and migratory behaviour of the Swift Parrot *Lathamus discolor*, in order to obtain information essential for the effective conservation of this endangered species. The project is supported by the Loro Parque Fundación (LPF) and the Australian Research Council and is being undertaken by Prof. Robert Heinsohn of the Fenner School of Environment and Society, the Australian National University, and team members Dr Debra Saunders and Dejan Stojanovic. The project's objectives include documenting critical aspects of the breeding biology and ecology of the Swift Parrot in relation to land management and, especially, forestry practises.



Dejan Stojanovic

Swift Parrot at nest entrance.

A lot of important data was obtained during the past breeding season, which generated substantial interest amongst key stakeholders in the conservation of the Swift Parrot. Work on its breeding requirements, including its choice of nesting hollows and food sources, was especially successful, with 21 nests being found. During the past breeding season, due to the widespread occurrence of flowering trees throughout the region, Swift Parrots nested across a large area of south-eastern Tasmania. Because of the extent of the flowering and the small size of the parrot population,



Juvenile Swift Parrot

Dejan Stojanovic

nest densities were low and nests took time to locate. The 21 nests were found across an area stretching over 300km (approx. 186 miles). The team monitored the growth of the 53 nestlings and found that 96% of the chicks fledged. The results show that the nestling period is approximately 35 days and the average clutch consists three to four chicks. Crop samples collected from nestlings revealed that, contrary to the assumption that the Swift Parrot is mainly nectarivorous, the parents feed a high proportion of invertebrates to the nestlings.

All of the nests were in cavities with specific characteristics and a comparison was made between the trees and tree cavities used for nesting and those that were not used by the birds. The results suggest that the parrots significantly prefer to use large, old trees for nesting, and that these trees have more hollows. Furthermore, the parrots prefer to nest in hollows which are deep and wide, but have a small entrance. The researchers found that survey techniques used to search for tree cavities in Tasmanian forests are prone to error and are planning improvements which will help in the conservation of the Swift Parrot.

Blood samples were collected from the 53 nestlings and screened for psittacine beak and feather disease (PBFD). The results showed that one chick had been exposed to the virus (circovirus). This chick had been

exposed to a strain of the virus typically carried by the Sulphur-crested Cockatoo Cacatua galerita and the nest in which the chick was found had been subjected to severe flooding due to rain. The low rate of exposure to PBFD during the past breeding season will be compared to successive seasons for a better interpretation of the dynamics of disease in this species. During the next breeding season the researchers will, for example, collect samples of substrate from Swift Parrot nests as part of an investigation into the possible transmission of PBFD between parrot species which use the same tree cavity successively over the course of a breeding season.

Another important objective of the project is to develop techniques for tracking Swift Parrots, in order to determine better how they locate their food sources and other resources. To this end, the researchers successfully undertook the first trial of transmitters, which they attached to Swift Parrots living in aviaries at Adelaide Zoo.

The aim of the trial was to identify a tracking device which can be safely deployed on breeding adult Swift Parrots, to obtain accurate data from which to interpret the behaviour of breeding birds. Three transmitter designs, each using ultra-lightweight materials - one collar and two backpacks of different weights - were tested on different groups and there was a control group, the birds of which did not have a transmitter attached. No differences were observed in the bodyweight or the condition of the birds in any of the groups - either those with transmitters attached or those of the control group. These trials clearly showed, however, that the collar is more suitable than either of the backpacks. It can be attached in only one minute and, furthermore, the bird does not bite the transmitter and there is very little risk of it becoming entangled in vegetation. Further modifications to the design will reduce the overall weight of the transmitter, in readiness for tracking Swift Parrots in the wild using this highly innovative technology.

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SUCCESSFULLY BREEDING THE LILAC-BREASTED ROLLER Coracias caudatus

by Dick Jaquest

For more than 25 years we have been breeding waterfowl with some degree of success in our back garden. However, several years ago during a storm the power went off and so did our electric fence. The family of foxes living next door had a field day killing some 20 of our birds, including one of the best breeding pairs of New Zealand Brown Teal *Anas aucklandica* we had ever had.

As a result, we realised that we had to rethink how we house our collection. Those of you who have seen it, will know how difficult this was for us, as we live in a very congested residential neighbourhood, where we are surrounded by six other houses.

The first thing we did was to invest in a very expensive Gallagher PowerPlus MR2500 energizer (to provide electric current) and, just to be on the safe side, we bought a second one in case the first should fail. Our next step was to house some of our birds, such as the African White-backed Ducks Thalassornis leuconotus, New Zealand Brown Teal, full-winged Hottentot Teal A. hottentota and whistling ducks Dendrocygna spp. in aviaries.

In a small garden such as we have, space is at a premium, so in order to make the best use of as much of the space as possible, we decided to keep some smaller birds in the aviary, and chose a species which would nest high up. Hoopoes *Upupa epops* were our first choice, but following a few accidents, it soon became clear that it was not a good idea to keep such long-beaked birds in this aviary. It was 24ft x 8ft x 10ft (approx. 7.3m x 2.4m x 3m), but we have Herring Gulls *Larus argentatus* living on the roof of our house and, they scared the Hoopoes so much, that on two occasions they flew into the wire and broke their beaks.

The next birds we obtained were some full-winged Madagascar Teal *A. bernieri*, which proved to be a bad decision, because after living with African Pygmy Geese *Nettapus auritus* at their original home, on arrival here they promptly killed our pygmy geese.

We then decided to try Lilac-breasted Rollers Coracias caudatus. The first two birds settled in very quickly and got on well together and were fun to watch, but failed to produce any eggs. We had no idea how old they were and, to be honest, were not absolutely certain that they were a true pair, although they had been seen feeding each other with mealworms, etc., and we were pleased to have them.

We had been toying with the idea of getting a second pair, but before we



Brooding two small chicks and an unhatched egg.



The chicks seem unaware that the parent has arrived back at the nest with food.



Watched by the photographer, the parent feeds one of the rapidly growing chicks.



Dick Jaquest

Taking a mealworm from the hand, watched by three African White-backed Ducks.

had got any further with this idea, we woke one morning to find one of the first pair dead in the pond. We found that the dead bird was a female and began to look for a replacement. A company in the Netherlands had a female available, so we made arrangements to bring her over to the UK.

It was not difficult to divide the aviary into two, and we housed the new female on one side and the male on the other side for about a week and allowed them to get used to each other. At the weekend we removed the partition separating them and both of us took turns to watch them and see that nothing went wrong. Sadly, however, a couple of weeks later the male killed the female.

A few weeks passed and after advertising everywhere we could think of for another female, we were offered a pair which we were told was old and had been together for some time but had never laid any eggs. The pair was housed in the second of our aviaries. I tried splitting them up and putting the female with our original male, but it soon become very obvious that this was not going to work and so I reunited the old pair. To our great surprise, shortly afterwards the first eggs were laid and we were even more surprised to discover that they were fertile. The very first youngster to be hatched was a male. Although we were obviously delighted, we would have preferred it to have been a female, which was what we needed.

We continued to search for another female for three years. Then, we were given hope, when we received a phone call from Birdland, which had a female and was looking for a male in order to make up an unrelated pair. It was a three-hour drive to Birdland, but proved to be well worth it. The new female and our original male were housed in separate aviaries for approximately two to three weeks to get used to each other and were then put together in the original aviary. Within six months of being introduced to each other, the first eggs were laid. The pair later produced a second clutch of eggs and the other pair also produced a second clutch of eggs, which resulted in us being able to set up further unrelated pairs.

Only a quarter of the roof of our aviaries is covered, but the sides facing the sea are screened to shelter the birds from the wind. The aviaries have two heated boxes, but the birds never use these even during the cold weather. The nest boxes are placed as high as I can get them and the birds have a choice of at least four boxes. Our pairs move from one nest box to another each time they nest. For perching I use hemp rope and natural branches and give the birds plenty of space in which to fly around.

When we believe the young are old enough, we remove them from the nest box and take samples for DNA sexing and place two sets of rings (bands) on each bird. This saves us from catching up related birds when we are trying to pair them up. At the same time, we clean out the nest box and refill it with fresh, clean material and clean it out again a few weeks later. This does not worry the parents or the young.

As the accompanying photos show, the parents appear happy for us to watch them feeding their young. I feel that this is important, as it helps us check that all of the chicks are being fed and there are no problems. In the past, if I felt a chick was being neglected, I have fed it whilst the parent was feeding the other chicks.

The diet fed to our birds consists of Whiskas cat food in jelly (with the jelly removed), soaked puppy and small bite mixture pellets, mixed with Witte Molen insectivorous food, with the jelly from the Whiskas added and then topped with large and small mealworms. Each day during the summer each roller also gets a pinkie mouse. If one of the birds is not quick enough, this will be stolen by its partner, so we have to make sure that the birds get just one each.

Up until now (2011) we have bred nine Lilac-breasted Rollers, one of which was killed, we believe, by a Sparrowhawk *Accipiter nisus*, when the young female roller was perched close to the roof of the aviary and, sadly, the very old male died whilst in the nest box with chicks. The female is now paired with an unrelated young male (a toy boy!) and the two seem quite happy together.

Dick and Kay currently have some spare males which they would consider swapping for one or even two new females to make up further unrelated pairs. E-mail:d-jaquest@toucansurf.com/Website:www.ornamentalwaterfowluk.co.uk/Tel:01273 584737/Mobile:0785 1190176.

CZECH VISIT

The society has arranged a trip to the Czech Republic. The departure date is Friday, September 14th 2012, followed by a visit to Prague Zoo on Saturday, September 15th, Plzen (Pilsen) Zoo on Sunday, September 16th and to a private collection on Monday, September 17th, before returning home later that day. Further information about the collections to be visited can be obtained from Mike Curzon. E-mail:mcurzonmbe@hotmail.co.uk/ Tel:01373 824077. Details of the travel arrangements, accommodation, costs and booking information are available from Karli Lisiecki, Howard Travel, 12/13 Church Walk, Trowbridge, Wiltshire BA14 8DX. E-mail:karli@howardtravel.com/Tel:01225 777227.

A BIRD EXTRAVAGANZA WITH A FRENCH ACCENT

by Pierre de Chabannes

Most French zoos and animal parks rarely have more than 50 species of birds and these consist mostly of common species such as ostriches, rheas, macaws, pheasants and ducks. Having a park devoted entirely to the wonderful world of birds seemed at first fairly unusual, but the Parc des Oiseaux de Villars les Dombes - Villar des Dombes birdpark - created in 1970 and located a few kilometres (miles) from Lyon (France's second largest city) was up to the challenge and within a few years became one of the most beautiful and interesting animal parks in France. Today, it houses more than 2,000 birds of 400 different species on a 35 hectares (approx. 86 acres) site located in the centre of a legally protected area of natural marshes and lakes known as Les Dombes.



Pierre de Chabannes

Australian Shoveller.

The tour of the park begins by a pond surrounded by aquatic vegetation, which is home to a large breeding group of Caribbean Flamingos *Phoenicopterus ruber*. The flamingos share this with a number of other species which occur in the Caribbean and South America, such as White-faced Whistling Ducks *Dendrocygna viduata*, Fulvous Whistling Ducks *D. bicolor*, Bahama Pintails *Anas bahamensis*, Chiloe Wigeon *A. sibilatrix*, Ruddy Ducks *Oxyura jamaicensis* and the most prolific breeding group of Argentine Ruddy Ducks or Lake Ducks *O. vittata* in any zoological collection in France



Philippine Cockatoo.

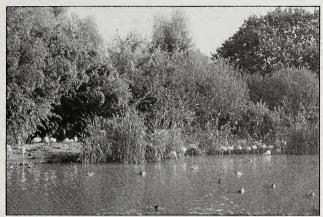
Pierre de Chabannes



Pierre de Chabannes

Interior of tropical house.

A wooded walkway takes visitors past the pond to La Maison des Oiseaux - the House of Birds. This is a tropical house with a dozen (12) nicely landscaped aviaries housing various tropical birds, including some rarely seen species. The first of these aviaries houses a group of Bluebellied Rollers Coracias cyanogaster and a pair of d'Arnaud's Barbets Trachyphonus darnaudii. A female Black-tailed Trogon Trogon melanurus - a species not kept anywhere else in Europe - a Blue-crowned Motmot Momotus m. momota, some Blacksmith Plovers Vanellus armatus and a pair of Red-flanked Lorikeets Charmosyna placentis occupy the second aviary. Living in the third aviary are Stella's Lorikeets C. papou stellae, some Pekin Robins or Red-billed Leiothrix Leiothrix lutea, Blue or Western Crowned Pigeons Goura cristata, some Orange-cheeked Waxbills Estrilda melpoda and a group of Timor Sparrows Padda fuscata, the last named a species kept in fewer than 10 zoos around the world. The fourth aviary houses a pair of Black-naped Fruit Doves Ptilinopus melanospila, some Crested Wood Partridges Rollulus rouloul, a group of Painted Quail Coturnix chinensis, Heck's Grassfinches Poephila acuticauda hecki, Gouldian Finches Erythrura gouldiae, a few Red-headed Parrotfinches E. psittacea, some Diamond Firetails Stagonopleura guttata, Diamond Doves Geopelia cuneata and Pacific Parrotlets Forpus coelestis. In the fifth aviary visitors can see Black-necked Stilts Himantopus mexicanus, African Montane or Broadringed White-eves Zosterops poliogastrus eurvericotus (misidentified as



Pierre de Chabannes

Caribbean Flamingo enclosure.

Kikuyu White-eyes), a large breeding flock of Black-and-white Mannikins Spermestes (Lonchura) bicolor, Namaqua Doves Oena capensis, Speckled Mousebirds Colius striatus and the only Black Crakes Amaurornis flavirostris displayed in a French collection.

On the other side of the house there are three larger aviaries showcasing other tropical birds such as Collared Warbling Finches Poospiza hispaniolensis, Red Bishops Euplectes orix, Red-billed Queleas Quelea quelea, the Sahel Paradise Whydah Vidua orientalis - which in the wild parasitises the Green-winged Pytilia or Melba Finch Pytilia melba, Lilacbreasted Roller C. c. caudata, White-headed Buffalo Weaver Dinemellia dinemelli, Cut-throat Finch Amadina fasciata, Fischer's Turaco Tauraco fischeri, Cape Thick-knee Burhinus capensis, African Olive Pigeons Columba aquatrix, Pheasant Pigeons Otidiphaps nobilis, Blue-grey Tanagers Thraupis episcopus, Croaking Ground Doves Columbina cruziana, Redcowled or Pope Cardinal Paroaria dominicana, Silver-beaked Tanager Ramphocelus carbo, Red-crested Turacos T. erythrolophus, Golden Tanager Tangara arthus, Pileated Finches Coryphospingus pileatus, Hoopoe Upupa epops and many more.

In 2009, a new building was opened housing the largest collection of toucans, toucanets and araçaris seen in France since the Jardin d'Oiseaux Tropicaux at La Londe Les Maures in southern France decided to no longer keep most of its toucans, toucanets and araçaris and instead began breeding



Pierre de Chabannes

Australian Thick-knee.



Pierre de Chabannes

Dalmation Pelican.

hornbills in the late 1990s. Breeding pairs of several species are kept in nicely landscaped medium-sized indoor aviaries. These include the only pair of Guianan Toucanets Selenidera culik to be seen in a French collection, which shares the aviary with some Small-billed Tinamous Crypturellus parvirostris, another species which cannot be seen anywhere else in France. Non-breeding pairs of Channel-billed Toucans Ramphastos v. vitellinus and Toco Toucans R. toco are also displayed, living with Chaco Chachalacas Ortalis canicollis. There are a pair of Red-billed Toucans R. tucanus, a pair of Green Araçaris Pteroglossus viridis and a pair of Keel-billed Toucans R. sulfuratus brevicarinatus, the last two species of which are breeding. Living behind the scenes is the last known Crimson-rumped Toucanet Aulacorhynchus haematopygus in France and one of the last remaining representatives of this species in Europe. It is living in a large aviary and, the hope is, that a mate can be found for it. This species was bred repeatedly in the past in this collection.

After leaving the house, visitors arrive at one of the most impressive exhibits in the park - the gigantic Pantanal walk-through aviary - housing several South American species which move freely around the aviary and often come into direct contact with the public. The first species to be spotted is usually the Scarlet Ibis *Eudocimus ruber*, followed by the Puna Ibis *Plegadis ridgway* and White Ibis *E. albus*, all of which breed regularly. Visitors can also see Southern Lapwings *V. chilenensis cayennensis*, Roseate

Spoonbills *Platalea ajaja*, a breeding group of Blue-winged Teal *A. discors*, Ringed Teal *Calonetta leucophrys*, Chilean Flamingos *P. chilenesis* and two species of parrot, the Lilac-crowned Amazon *Amazona finschi* and Hyacinth Macaw *Anodorhynchus hyacinthinus*, both of which breed fairly well in the park.

The next stop for most visitors is La Cité des perroquets - Parrot's city. This begins with a walk-through aviary housing a large breeding group of Australian Thick-knees B. grallarius - a species rarely seen anywhere else in France - living with Eclectus Parrots Eclectus roratus polychloros. Rainbow Lorikeets Trichoglossus haematodus and a large flock of Java Sparrows P. oryzivora. There is then a series of large and nicely landscaped aviaries housing mostly parrots, along with a few other tropical birds. Most of the species are kept in breeding pairs or groups and this includes some of the park's most valuable birds. The pair of Blue-throated Macaws Ara glaucogularis used to be the only pair of this species on public exhibition in France, but is now housed behind the scenes. One of the most interesting species currently on display in this section is the Critically Endangered Philippine or Red-vented Cockatoo Cacatua haematuropygia. The park was until 2008 responsible for the European Breeding Programme for this species and continues to house a breeding group. There is also a breeding pair of Hyacinth Macaws, a group of Ecuadorian or Lilacine Amazons A. autumnalis lilacina, one of the only known breeding groups of Lilaccrowned Amazons in France, and a breeding pair of Long-billed Corellas C. tenuirostris. Other species living in these aviaries include Greater Vasa Parrot Coracopsis vasa, Black-capped Lory Lorius lory erythrothorax, Sharp-tailed Conure A. acuticauda, Green-cheeked Amazon A. viridigenalis, Peachfronted Conure A. aurea, Grey Parrot Psittacus erithacus, African Ringnecked Parakeet Psittacula k. krameri, Yellow-collared Macaw Primolius auricollis and Military Macaw A. militaris mexicanus. These aviaries also house a breeding pair of Australian Magpies Gymnorhina hypoleuca, a breeding pair of Laughing Kookaburras Dacelo novaeguineae, Black-headed Caiques Pionites melanocephalus, Galahs Eolophus roseicapillus, Barraband Parakeets Polytelis swainsonii, Red-headed or Jardine's Parrots Poicephalus gulielmi, Monk or Quaker Parakeets Myiopsitta monachus, Azure-winged Magpies Cyanopica cyana, Noble Macaws Diopsittaca n. nobilis, Greywinged Trumpeters Psophia crepitans, Greater Necklaced Laughingthrushes Garrulax pectoralis, Black-necked Starlings Gracupica nigricollis, Scarlet Macaws A. macao, Laughing Doves Streptopelia senegalensis, Wattled Starlings Creatophora cinerea and a huge breeding group of Fischer's Lovebirds Agapornis fischeri.

In 2008, an area behind the parrot aviaries was designed where in late

spring and summmer bird shows are held up to three times a day. These feature several exotic birds, ranging from parrots to ibises, geese and pelicans, flying free. Also in 2008, a new area of the park was opened dedicated to birds from the temperate and cold regions of South America. After walking through an area reminiscent of volcanic landscape in Argentina, visitors come to a fairly large enclosure housing Upland Geese *Chloephaga picta* and some Lesser or Darwin's Rheas *Rhea (Pterocnemia) pennata* bred at Parc Zoologique et Botanique de Mulhouse (Mulhouse Zoo). Then there is a huge exhibit with a large pool housing the park's breeding colony of about 60 Humboldt Penguins *Spheniscus humboldti*, which began breeding the first year that the exhibit opened. As is customary with most penguin exhibits these days, the pool has a side window through which the birds can be seen swimming underwater. At the end of this area there is a huge aviary occupied by a breeding pair of Andean Condors *Vultur gryphus* and a group of Harris's Hawks *Parabuteo unicinctus harrisi*.

After returning to the main pathway, visitors arrive at a group of very long enclosures with pools in them, and in these enclosures live most of the park's cranes along with various species of waterfowl. The most recent addition to the collection in this specific area is a pair of Wattled Cranes Bugeranus carunculatus sharing an enclosure with Cape Teal A. capensis. Other species to be found in these enclosures include Sarus Cranes Grus a. antigone, Greater Rheas R. americana, Southern Pochard Netta erythrophthalma brunnea - a duck which is rare in Europe - Laysan Teal A. laysanensis, Whooper Swans Cygnus cygnus and Andean Geese C. melanoptera.

At the far end of the park is an Australian section with, in the first enclosure, Emus Dromaius novaehollandiae, Australian Shelduck Tadorna tadornoides, Radjah Shelduck T. radjah, Chestnut Teal A. castanea, some Cape Barren or Cereopsis Geese Cereopsis novaehollandiae, a breeding pair of Black Swans C. atratus and some Maned Ducks Chenonetta jubata. The other, and most interesting part of the Australian area, consists of a very large walk-through aviary housing a diverse collection of birds, including a breeding group of Australian Shoveler A. rhynchotis variegata - a species which is very rare in European collections - Maned Ducks, a breeding group of Little Pied Cormorants Phalacrocorax melanoleucos - probably the only specimens in France - a group of Pennant's Parakeets Platycerus elegans, Emerald Doves Chalcophaps indica, Common Bronzewings Phaps chalcoptera, Diamond Doves Geopelia cuneata, Masked Lapwings V. m. miles, Eyton's or Plumed Whistling Ducks D. eytoni and a group of Strawnecked Ibis Threskiornis spinicollis. Also living in the aviary are Garganey A. querquedula - a northern migrant that occasionally reaches Australia - Eurasian Teal A. c. crecca and some Grey Partridges Perdix perdix.

On leaving the Australian zone, visitors find themselves a short distance from an observation deck from which it is possible to spend hours watching the local wild birds, especially waterbirds such as herons, ducks and grebe, roaming about, feeding and breeding on and around a lake and marsh known as - La petite Dombes. It is part of a large area of protected natural habitat which is a stronghold for many wild birds, including Red-crested Pochard N. rufina, Common Pochard Aythya ferina, Tufted Duck A. fuligula, Northern Pintail Anas acuta, Great Crested Grebe Podiceps cristatus, the rarely seen Black-necked Grebe P. nigricollis, and the European White Stork Ciconia ciconia. The Parc des Oiseaux is currently the only public animal park in France in which visitors can see such a wide variety of the local wildlife in its natural environment.

The main path leading out of La petite Dombes takes visitors to the birds of prey. A few large aviaries are visible from inside a building which has many posters, panels and other pedagogical (teaching/educational) devices. These aviaries are occupied by Great Grey Owls Strix nebulosa lapponica, Kestrels Falco tinnunculus, Himalayan Griffon Gyps himalayensis and Great Eagle-Owls Bubo b. bubo. Then there is a huge walk-through aviary in which several diurnal birds of prey are flying free and in which many of them breed. Birds in this aviary include Red Kites Milvus milvus, Black Kites M. migrans, Eurasian Black Vultures Aegypius monachus, Eurasian Griffon G. f. fulvus, Short-toed Eagles Circaetus gallicus, Common Buzzard Buteo buteo, Long-legged Buzzards B. rufinus and Egyptian Vultures Neophron p. percnopterus.

Almost half of the park's surface is occupied by a huge lake on which many wild birds can be seen, including Great Crested Grebe, Common Pochard and many other local species of duck, as well as Grey Herons *Ardea cinerea* and White Storks. This fantastic lake can be seen from almost everywhere in the park and the wild birds have become used to the presence of humans and are often very tame. Flower and fruit gardens have been created in which the wild birds come and forage. The park's efforts to promote and protect local wildlife are among the best of any of the large zoological collections in France.

There are a few walk-in enclosures in which there are some more waterfowl, many of which breed in these enclosures. Visitors can see Pink-footed Geese Anser brachyrhynchus, a species which cannot be seen in any of the French zoos, Philippine Ducks A. luzonica, Gadwall A. strepera, Carolina or American Wood Ducks Aix sponsa, Mandarin Ducks A. galericulata, Lesser White-fronted Geese A. erythropus, Red-breasted Geese B. ruficollis, Lesser Canada or Cackling Geese B. hutchinsii minima, Ross's Geese A. rossii, Spot-billed Ducks A. p. poecilorhyncha, Marbled

Teal Marmaronetta angutirostris, Brazilian Teal Amazonetta brasiliensis, Ferruginous Ducks Aythya nyroca, Common Goldeneye Bucephala clangula, Common Eider Somateria molissima, Common Shelduck T. tadorna and many other species.

On the other side of the main path is a large enclosure which is landscaped, in which a female Southern or Double-wattled Cassowary *Casuarius casuarius* used to live until mid-2011, when she was transferred to the zoo at Mulhouse, to be paired with its lone male. The design of the enclosure, which currently houses Parma Wallabies *Macropus parma*, has been changed to accommodate Abyssinian Ground Hornbills *Bucorvus abyssininicus*.

The Jardin des oiseaux - Garden of birds - shows different ways of attracting and feeding local birds and encourages the public to care for and protect local wildlife.

The park's latest creation is an area called Terres de calaos - Lands of hornbills - consisting of a large enclosure which has been landscaped with artificial termite mounds, etc., to resemble an African savannah, along with two rows of medium-sized aviaries, each with a heated house. Living in the enclosure is an adult pair of Southern Ground Hornbills B. leadbeateri. a species which is now common in zoos and breeds well. While housed in the aviaries are African Grey Hornbills Tockus n. nasutus, Von der Decken's Hornbill T. deckeni, the Trumpeter Hornbill Bycanistes (Ceratogymna) bucinator, Silvery-cheeked Hornbills B. (C.) brevis, Blyth's or Plicated Hornbills Rhyticeros plicatus, Great Hornbill Buceros bicornis, Javan Rhinoceros Hornbill B. rhinoceros silvestris, Wrinkled Hornbills Aceros (Rhyticeros) corrugatus and Malayan Black Hornbills Anthracoceros malayanus, the last two being kept in France only here and at the Jardin d'oiseaux tropicaux. Red-crested Turacos and White-cheeked Turacos T. leucotis are also displayed in the hornbill aviaries. The park has France's second largest collection of hornbills - the largest collection being that of the Jardin d'oiseaux tropicaux at La Londe les Maures on the Mediterranean coast

Parc des Oiseaux de Villars les Dombes is currently financing two in-situ conservation programmes, one for the Abyssinian Ground Hornbill and the other for the reintroduction and management of the population of Oriental Pied Hornbills *A. albirostris convexus* on Pulan Ubin, an island off the north-east of Singapore.

Another highlight of the park's conservation work is its successful breeding colony of Dalmatian Pelicans *Pelecanus crispus*, which breeds each year on islands in the lake on which it lives. The Parc des Oiseaux currently houses the largest captive breeding colony of this species and it is

among the most productive, annually producing young birds from which to develop a breeding programme for this species.

The next destination for visitors is a group of three aviaries housing Ocellated Laughingthrushes *G. ocellatus artemisiae* living with a pair of the rare Salvadori's Pheasant *Lophura inornata*, a pair of White-throated Laughingthrushes *G. albogularis* which are currently the only specimens on display in France, a pair of Edwards's Pheasants *L. edwardsii*, a group of Pied Imperial Pigeons *Ducula b. bicolor* and Black-throated Laughingthrushes *G. c. chinensis*.

The final exhibit and one of the most impressive is the huge and beautifully landscaped walk-through aviary called - Krabi - in which one finds a variety of waterbirds and some pheasants from Africa, Asia and Europe. The main theme of this exhibit is the protection of wetlands around the world. The list of species showcased in this amazing aviary includes: Great White Egret Casmerodius a. albus, Little Egret Egretta g. garzetta, Cattle Egret Bubulcus ibis, Himalayan Monal Lophophorus impejanus, Eurasian Spoonbill P. leucorodia, Carolina or American Wood Duck, Mandarin Duck, Mallard A. platyrhynchos, Grey Heron, Northern Bald Ibis or Waldrapp Geronticus eremita, Falcated Teal A. falcata, Madagascar Teal A. bernieri and Yellow-billed Stork Mycteria ibis.

This bird park - 'Made in France' - has not only the best avian collection in France, but is among the most beautiful bird parks in Europe, set as it is in an amazing landscape that includes a large nature reserve which gives the public the opportunity to observe many different species of wild birds, including some locally endangered species. The conservation and pedagogical (educational) work of the park's employees is certainly among the best known of any of the public animal collections in France.

Acknowledgements

I would like to thank the Curator Eric Bureau and Mme Julie Toqué for allowing me to visit the park during the winter months and for being so helpful during the writing of the above article. I also wish to thank all of the keepers and my friend Sergio (a former keeper) for the information they provided me with and the warm welcome they gave me during my visits in 2009 and 2010. Finally, I wish to thank my dear friend Josef Lindholm, who was recently appointed Curator of Birds at Tulsa Zoo, for his help and encouragement.

The author, who lives at Le Chesnay in France, was the recipient of the 2010 Dulcie Cooke Award for the excellent photographs illustrating his articles about the bird collections at Parc de Clères, Taipei Zoo and Weltvogelpark Walsrode. E-mail: pedroyayadrums@yahoo.com

NEWS & VIEWS

NEW SPECIES OF TURACO ADDED TO COLLECTION

The World of Birds Wildlife Sanctuary, Hout Bay, near Cape Town, has added Ross's Turaco *Musophaga rossae* to its collection. Visitors to Africa's largest bird park can now see 10 members of the turaco family - the others being the Violet *M. violacea*, Knysna *Tauraco corythaix*, Purple-crested *T. (Gallirex) porphyreolophus*, Green-crested or Guinea *T. persa*, Fischer's *T. fischeri* and Hartlaub's *T. hartlaubi*, along with the Bare-faced Go-away Bird *Corythaixoides personatus*, White-bellied Go-away Bird *C. leucogaster* and Eastern Plantain-eater *Crinifer zonurus*.

To learn more about the World of Birds, which has more than 3,000 birds and other animals belonging to some 400 different species housed in more than 100 spacious walk-through aviaries in a tropical garden setting, you can visit its website: www.worldofbirds.org.za

ENDING ON A HIGH

By early October, a total of 1,223 parrots had been bred this year by the Loro Parque Fundación, Tenerife. A number of important species of lories were bred during the year, including four Violet-necked *Eos squamata*, a Red Lory *E. bornea*, a Red-and-blue Lory *E. histrio*, two Blue-eared Lories *E. semilavata* and, after a break of several years, two Blue-streaked Lories *E. reticulata*. The ringing (banding) of a further two young Purple-bellied Lories *Lorius hypoinochrous devittatus* brought the number of young reared this year to 10. These will further help the fundación in its attempt to build up a self-sustaining captive-breeding population, which is presently being hampered by a significant excess of males.

Six Hyacinth Macaws *Anodorhynchus hyacinthus* were continuing to be reared either by their parents of were being hand-reared and a Moluccan Cockatoo *Cacatua moluccensis* was also being hand-reared and another was being reared by its parents. When the latter becomes independent it will, it is hoped, be integrated into the fundación's small flock of Moluccan Cockatoos.

In the spring, customs officials at Vienna Airport seized 74 Amazon parrot eggs, which a Slovakian was attempting to smuggle into the country from Jamaica. The eggs were taken to Tierpark Schönbrunn (Vienna Zoo) and placed in incubators and 54 chicks hatched, of which 45 - 23 Yellow-billed Amazons *Amazona collaria* and 22 Black-billed Amazons *A. agilis* - were reared to independence. Following Loro Parque Fundación's collaboration with its Austrian colleagues and in appreciation of its advice and practical help, Curator Simone Haderthauer and keeper Petra Stefan took to Loro

Parque in October, three pairs of Yellow-billed Amazons and three pairs of Black-billed Amazons, as part of a breeding programme which is being managed within the zoo community.

As part of a two-week internship, 20 veterinary students from Giessen University in Germany visited the fundación, where they attended lectures and acquired practical experience of zoo medicine.

NEW CURATOR MAKES A START

Josef Lindholm commenced his duties as the new Curator of Birds at Tulsa Zoo on November 9th 2011, and expressed himself "delighted to be working with a team of seven enthusiastic and knowledgeable aviculturists." The zoo was recently transferred from the direct management of the City of Tulsa to a newly incorporated non-profit making body which has plans to expand the collection. Arrangements are already being made to acquire a number of interesting native birds to coincide with the remodelling of the zoo's famous North American Living Museum, which was opened in 1978

There are presently 69 taxa of birds in the zoo collection. Josef was delighted to find that the pair of Scissor-tailed Flycatchers *Tyrannus forficatus* - The State Bird of Oklahoma - had produced a chick in 2010. It was sent to Oklahoma City Zoo and then onto the National Aviary in Pittsburgh. Josef believes that Tulsa Zoo, which in 1980 was the first zoo to breed the Orangequit *Euneonis campestris*, a species which is endemic to the Caribbean island of Jamaica, is the only zoo to have succeeded in breeding the Scissortailed Flycatcher in captivity.

Tulsa's first Red-fronted Macaw *Ara rubrogenys* chick appears (according to ISIS) to be the only one produced in an American zoo in 2011, as do the two Plush-capped or Plush-crested Jays *Cyanocorax chrysops*. Josef said that Tulsa Zoo has a long history of success with the Plush-capped or Plush-crested Jay. He can clearly remember seeing two young with their parents in an indoor exhibit when he first visited Tulsa Zoo in 1984. Also, (according to ISIS) the Bali Starling *Leucopsar rothschildi* was one of only five hatched in US zoos in 2011 (the others were hatched at Toledo and Minnesota).

With the arrival of a pair of Madagascar Teal *Anas bernieri* from Great Plains Zoo, Sioux Falls, South Dakota, Tulsa Zoo became one of a dozen or so US collections exhibiting this species. The birds, which remain the property of the Republic of Madagascar, are descendants of those imported in 2005 by Mike Lubbock's Sylvan Heights Waterfowl Park & Eco-Center in North Carolina.

At Dallas World Aquarium (where Josef was Senior Aviculturist prior to taking up his appointment at Tulsa) the forty-first Andean Cock-of-the-

Rock Rupicola peruviana chick hatched in November and at the time Josef wrote (December 4th 2011), several more eggs were being incubated. Guianan Cocks-of-the-Rock R. rupicola and Capuchinbirds Perissocephalus tricolor were also hatched in 2011, as well as the aquarium's first troupials - presumably the Moriche Icterus chrysocephalus. Capuchinbirds were sent to San Diego Zoo and in return the aquarium received Raggiana Birds-of-Paradise Paradisaea raggiana. A pair of White-winged Trumpeters Psophia leucoptera arrived at the aquarium from Perú some months before Josef's departure and is a species he had not previously seen in captivity.

THE USUAL ROLLER COASTER

The 2011 breeding season was, writes Bernard Sayers, the "usual roller coaster of plentiful disasters and occasional successes", before adding that on the positive side the following were all successfully reared: three Blackwinged Lories Eos cyanogenia, five Black-cheeked Lovebirds Agapornis nigrigenis, many wild-type grey Java Sparrows Padda oryzivora, two Lemon Doves Aplopelia larvata, four Sulawesi Ground Doves Gallicolumba tristigmata, 13 Triangular-spotted or Speckled Pigeons Columba guinea, two Chaco Owls Strix chacoensis, two Boobook Owls Ninox boobook, four Burrowing Owls Athene cunicularia, three White-faced Owls Ptilopsis leucotis, two Indian Scops Owls Otus bakkamoena and seven Tropical Screech Owls Megascops choliba.

NATURAL HISTORY COURSES

The Field Studies Council (FSC), an environmental charity with over 65 years' experience of providing courses and fieldwork opportunities for people of all ages, has in 2012 a number of natural history courses available at different levels and all with expert tuition throughout. These will be available at its network of UK centres, which are all in stunning locations, often with unique wildlife.

The bird courses available can be viewed online by clicking onto the following link: http://tinyurl.com/bm48elg or alternatively you can view its e-brochure at: http://view.digipage.net/?userpath=00000645/00015144/00070991

Hard copies of the brochure and further information are available from: Mel Cousins, Field Studies Council, Head Office, Montford Bridge, Shrewsbury, SY4 1HW. Tel:01743 852118/E-mail: mel@field-studies-council.org/Website:www.field-studies-council.org/Twitter:www.twitter.com/fsc_news

MY PAL STEWART PYPER MEMORIES OF A FRIENDSHIP

by Mike Curzon

I first met Stewart in the early 1970s at a talk given by George Anderdon to Frome Cage Bird Society. It was the beginning of a firm friendship which, sadly, ended with Stewart's death in October.

In the early days of our friendship, Stewart came to Rode Tropical Bird Garden every Saturday after shopping with his mother. He would pick-up day-old chicks and bananas (always on the look-out for a bargain was Stewart) and any snippets of news and gossip - or, better still, scandal. He then began coming on the occasional zoo visit with me, when I went to collect or deliver birds. Also, we used to go, together with Martin Greene, to the Avicultural Society talks and wine and cheese evenings at the Linnaean Society in London. It was great to travel there with Stewart, because he knew his way around London - in fact he always seemed to know his was around everywhere. Stewart must surely have been the prototype for the first satnav. Whenever we went anywhere together, such as to an Avicultural Society day out, he always knew unerringly which road to take and invariably we arrived half-an-hour early, as Stewart liked to ensure that we had time for coffee and biscuits before the meeting began.

On the society's European trips, Stewart always kept everyone together, apart from Colin Jackson, who he used to give up on about halfway around. Without Stewart, I doubt that Colin will make it past the first aviary. I used to call Stewart, Shep, because of his sheepdog-like efforts to keep us all together. I miss being able to phone Stewart and bounce ideas off him, and miss his calls to me asking what I thought about various things. I also miss his evening visits after he had been to his Uncle John's for dinner and then came around to us for cheese and biscuits - always complaining if there were no digestive biscuits. Then we would share a glass of red wine or port before he dashed back home to Nunney. I will really miss my pal Stewart.

WE WILL MISS HIS LAUGTHER

Stewart was a well-known and popular figure at The Bear Inn at Holwell. He supported a number of charities and among his many loves was real ale and the pub provided two barrels of Funky Monkey, one of Stewart's favourites, for a "farewell party." For every pint sold, £1 (approx. US\$1.50) was donated to the Church Roof Fund. This raised £150 (approx. US\$225).

Contributors to Volume 117 - 2011

Bertagnolio, Paolo
Visually sexing the Hawk-headed Parrot Deroptyus accipitrinus51
Visually sexing the Senegal Parrot <i>Poicephalus senegalus</i> together with an example of social breeding behaviour by his species
Bralsford, Gary Breeding the Oriental Greenfinch Carduelis sinica49
Breeding the White-crowned Robin-Chat Cossypha albicapilla
The beautiful Blue-bellied Roller Coracias cyanogaster
The Chestnut-backed Thrush Zoothera dohertyi
Bruslund, Simon and Bretschek, Lech
The Southern Crested Caracara Caracara plancus, including its
breeding at Weltvogelpark Walsrode
Bruslund, Simon and Gaede, Martin
News of parrots at Weltvogelpark Walsrode
Notes on tinamous currently found in aviculture
Collen, Rose, McCulloch, Bronwyn, Butler, David and Holland, Glen
Captive care of the Friendly Ground Dove Gallicolumba stairi105
de Chabannes, Pierre
A bird extravaganza with a French accent
The Dallas World Aquarium
Daka, Alazar, Kumsa, Tolera, Borghesio, Luca, Lernould, Jean-Marc
and Bekele, Afework
New studies find challenges and opportunities for the conservation
of Prince Ruspoli's Turaco Tauraco ruspolii
Dunn, Christopher
The care and breeding of the Pekin Robin Leiothrix lutea
Edmans, Ian
The 2010 breeding season at Waddesdon Manor23
Ellis, Malcolm
The society's Special Interest Groups
Girling, Reuben, B.
On some UK bird breedings by members of the
Avicultural Society in 200952

Contributors to Volume 117 - 2011 (cont'd)

Jaquest, Dick Successfully breeding the Lilac-breasted Roller Coracias caudatus169
Low, Rosemary Lorikeet exhibits in UK zoos99
Marler, Christopher Breeding Bewick's Swan <i>Cygnus columbianus bewickii</i> at Flamingo Gardens and Zoological Park
Matthews, Simon The importance of record keeping in aviculture135
Pryke, Sarah R. Saving the Gouldian Finch <i>Erythrura gouldiae</i> 2
Santegoeds, John, Vervest, Huub and Vicentini, Gaetan The Grey Singing Finch <i>Serinus leucopygius</i>
Sierra, Miguel and Gallego, Rosana Breeding the Green Jay <i>Cyanocorax yncas</i> at Barcelona Zoo 39
Smallbones, Peter Breeding the Black-necked Weaver <i>Ploceus nigricollis melanoxanthus</i> at Paignton Zoo Environmental Park28
Stocks, Peter The Malay or Buffy Fish Owl <i>Ketupa ketupu</i> 128
Waite, Rebecca Hand-rearing a Great Blue Turaco <i>Corythaeola cistata</i> at Paradise Park, Hayle, Cornwall111
Waugh, David Action on the conservation of the endangered Swift Parrot Lathamus discolor166
Wüst, René Conserving parrots around the world87

Index to Volume 117 - 2011

bird breedings, by UK members of the Avicultural Society in 2009	52
Book Reviews	
Babbling Birds: An Anthology of Poems about Parrots	90
Extremadura, Spain	92
Rescued from the Brink of Extinction: Kakapo	91
Canary, Lemon-breasted, its care and breeding	158
Caracara plancus, including its breeding at Walsrode	122
Caracara, Southern Crested, including its breeding at Walsrode	122
Carduelis sinica, its care and breeding	49
Coracias caudatus, successfully breeding	169
Coracias cyanogaster, with some notes on its breeding	150
Corythaeola cristata, hand-reared at Paradise Park, Cornwall	111
Cossypha albicapilla, breeding	7
Cyanocorax yncas, breeding at Barcelona Zoo	39
Cygnus columbianus bewickii, bred by our chairman	11
Dallas World Aquarium, its fantastic collection of birds	59
Deroptyus accipitrinus, visual sexing	51
Dove, Ground, Friendly, its captive care in Samoa	105
Erythrura gouldiae, saving this iconic species	2
Finch, Gouldian, saving his iconic species	2
Finch, Grey Singing, its care and breeding	35
Gallicolumba stairi, its captive care in Samoa	105
Greenfinch, Oriental, its care and breeding	49
Jay, Green, breeding at Barcelona Zoo	39
Ketupa ketupu	128
Lathamus discolor, action for its conservation	166
Leiothrix lutea, its care and breeding	13
lorikeets, a critical look at their care in UK zoos	99
My Pal Stewart Pyper - Memories of a Friendship	188
News & Views	38,185

Index to Volume 117 - 2011 (cont'd)

-			
()	h1	fua	ries

Don Merton	48
Stewart Pyper	144
Owl, Fish, Malay or Buffy	128
Parc des Oiseaux de Villars les Dombes, near Lyon, France	174
Parrot, Hawk-headed, visual sexing	51
Parrot, Senegal, visual sexing, social breeding behaviour	97
Parrot, Swift, action for its conservation	166
parrots, conserving these birds around the world	87
parrots, news of these birds at Walsrode	32
Ploceus nigricollis melanoxanthus, UK first breeding	28
Poicephalus senegalus, visual sexing, social breeding behaviour	97
record keeping, its importance in aviculture	135
Robin-Chat, White-crowned, breeding	7
Robin, Pekin, its care and breeding	13
Roller, Blue-bellied, with notes on its breeding	150
Roller, Lilac-breasted, successfully breeding	169
Serinus citrinpectus, its care and breeding	158
Serinus leucopygius, its care and breeding	35
Special Interest Groups, species and coordinators	130,131
Swan, Bewick's, bred by our chairman	11
Tauraco ruspolii, challenges and opportunities	145
Thrush, Chestnut-backed, breeding his species	102
tinamous, notes on species currently found in aviculture	75
Turaco, Great Blue, hand-reared at Paradise Park, Cornwall	111
Turaco, Prince Ruspoli's, challenges and opportunities	145
Waddesdon Manor, 2010 breeding season	23
Weaver, Black-necked, UK first breeding	28
Zoothera dohertyi, breeding this species	102

SANDPIPER MARATHON

Council member Nigel Hewston will be running the Virgin London Marathon on April 22nd 2012, to raise funds for the Spoon-billed Sandpiper *Eurynorhynchus pygmeus* conservation breeding programme. An expedition to Chukotka in eastern Siberia by the Wildfowl & Wetlands Trust (WWT) and its Russian partners succeeded in collecting eggs and rearing 13 birds, which are now housed in a purpose-built facility at Slimbridge and should reach breeding age in 2013.

This critically endangered migratory wader is hurtling towards extinction perhaps faster than any other bird. In a decade its population has crashed from thousands to possibly as few as 200 birds. It is suffering from industrial development on the mudflats which it uses as staging posts on its 8,000km (approx. 5,000 miles) migration route between Siberia and Thailand, Burma (Myanmar) and Bangladesh, where it spends the winter and may be trapped for food. The breeding project is one of a number of conservation measures involving several organisations, aimed at addressing these issues. If successful, it will buy time for other measures to have an effect and, potentially, provide birds for a reintroduction programme. Nigel says, "This is a unique bird which will become extinct very soon without our help." The WWT project is an example of the vital contribution that aviculture can make to conservation and, Nigel very much hopes, that Avicultural Society members will generously support the Sandpiper Marathon fund.

Please visit the website: www.justgiving.com/sandpiper to donate or send cheques payable to the WWT to: Sandpiper Marathon, Fundraising Department, WWT, Slimbridge, Glos. GL2 7BT, UK.

LORY MEETING

The annual lory meeting organised by Rosemary Low will take place on May 20th and this year will be held in conjunction with the parrot event being staged by *Parrots* magazine. Entitled - Think Parrots 2012 - it will be held at Woking Leisure Centre in Surrey, which is easily accessible from the M25, M3 and A3. Advanced tickets for the event cost £6. However, there will be no charge to attend the lory meeting, but those planning to attend should advise Rosemary beforehand. As usual, the meeting will start at 1.00pm and close at about 4.00pm. There will be speakers and, by popular request, this year one hour will be set aside for a questions and answers session and discussion. For further information please telephone: 01623 846430 or e-mail: rosemary.low@virgin.net

CONTENTS

New studies find challenges and opportunities for the conservation of Prince Ruspoli's Turaco <i>Tauraco ruspolii</i>
by Alazar Daka, Tolera Kumsa, Luca Borghesio,
Jean-Marc Lernould and Afework Bekele
The beautiful Blue-bellied Roller Coracias cyanogaster
by Gary Bralsford150
Pelicans of the world
by Christopher Marler154
The Lemon-breasted Canary Serinus citrinpectus
by John Santegoeds
Action for the conservation of the endangered
Swift Parrot Lathamus discolor
by David Waugh166
Successfully breeding the Lilac-breasted Roller Coracias caudatus
by Dick Jaquest
A bird extravaganza with a French accent
by Pierre de Chabannes
News & Views
My Pal Stewart Pyper: Memories of a Friendship
by Mike Curzon
Contributors to Volume 117 - 2011
Index to Volume 117 - 2011