PETE OXFORD

THE MORE THINGS change...

The Aldabra White-throated Rail *Dryolimnas [cuvieri] aldabranus* is the only flightless bird that still survives in the Indian Ocean. Other flightless species of *Dryolimnas* rails used to occur on Reunion and Mauritius, but like the Dodo, Rodrigues Solitaire, Reunion Flightless Ibis and several other flightless rails, they went extinct soon after the Mascarene islands were colonised by Europeans. The Aldabra Rail is typically regarded as a subspecies of the White-throated Rail *D. [c.] cuvieri* from Madagascar, although some authorities treat it as a distinct species.

As its name suggests, the rail is confined to Aldabra Atoll, one of the outer islands of the Seychelles. Other populations used to occur on nearby Assumption, Astove and Cosmoledo atolls, but went extinct in the early 1900s. Whether the rails on these islands were fully flightless remains open to debate. Rails also disappeared from several islands forming the Aldabra Atoll, including the largest island, Grand Terre, following the introduction of cats in the 19th century. In 1999, after the removal of cats, the rail was successfully reintroduced to Picard Island, significantly increasing the Aldabra population.

Rails are the group of birds most prone to evolve flightless forms, with perhaps as many as 2000 flightless species thought to have occurred on oceanic islands before the arrival of humans and their commensals drove most of them to extinction. Flightlessness is selected for among rails that arrive on predator-free islands mainly as an energy-saving mechanism; in the absence of terrestrial predators, rails that don't invest in costly flight apparatus are at a selective advantage over those that do. And losing the power of flight appears to be particularly easy for rails because they only grow their wings late in their development.

A recent paper by Julian Hume and David Martill (2019, *Zool. J. Linn. Soc.* 186: 666–672) reports how a flightless rail has evolved twice on Aldabra. Geological evidence shows that the atoll was completely submerged at least twice in the past 400 000 years: once about 340 000 years ago and again approximately 120 000 years ago. Hume and Martill report that fossil remains indistinguishable from modern flightless rails found on Picard Island date back to before the more recent event. This original flightless population must have been wiped out when the island was submerged and the current flightless form evolved from new colonists during the past 100 000 years.

Such convergent evolution has occurred among other flightless rails, such as the flightless moorhens on Tristan da Cunha and Gough Island. It suggests that common selective pressures can lead to very similar evolutionary 'solutions', although under a phylogenetic species concept the convergent forms cannot be regarded as the same species. Interestingly, several other endemic species were also lost when the atoll was inundated some 120 000 years ago, including a duck, a *Pterodroma* petrel, a horned crocodile, a giant tortoise, an *Oplurus* iguana and several skinks. The tortoise, iguana and skinks recolonised the atoll after its re-emergence, but there's no evidence of a duck, petrel or crocodile in the more recent fossil record. Sadly, the iguana and most of the island's skinks went extinct when black rats were accidentally introduced to Aldabra sometime before 1890.

PETER RYAN

YET MORE greenbuls?

KEITH VALENTINE

An Eastern Bearded Greenbul from the western population in Cameroon. A new genetic study suggests splitting this species.

For the African birder, the forest greenbuls are one of the more challenging groups to identify, so the prospect of yet more greenbuls to confuse and confound might not be entirely appealing. However, the bearded greenbuls of the genus *Criniger* are among the most striking greenbuls and their identification is simplified by their largely non-overlapping ranges.

Currently five species are recognised, with two allopatric superspecies pairs and one more widespread species. As the name suggests, the Western Bearded Greenbul *C. barbatus* is confined to West Africa, with the nominate subspecies occurring from Sierra Leone to Benin, while *C. b. ansorgeanus* occurs in southern Nigeria. It is replaced by the Eastern Bearded Greenbul *C. chloronotus* from south-eastern Nigeria throughout much of the Congo Basin. Similarly, the Yellow-bearded Greenbul *C. olivaceus* is confined to the Upper Guinea forests from Sierra Leone to Ghana and is replaced in the Lower Guinea forests and Congo Basin by the White-bearded Greenbul *C. ndussumensis* (although some authorities lump these two species). Only the Red-tailed Greenbul *C. calurus* occurs throughout the equatorial forest belt, with three subspecies recognised: *C. c. verreauxi* in the Upper Guinea forests, *C. c. calurus* in the Lower Guinea forests from south-eastern Nigeria to the Congo River, and *C. c. emini* from the eastern Congo Basin.

Jerry Huntley and colleagues (2019, *Zool. J. Linn. Soc.* 186: 672–686) obtained genetic sequences from 43 bearded greenbuls, sampling all taxa except *C. b. ansorgeanus*. They obtained strong support for the five currently recognised species. The split between *C. olivaceus* and *C. ndussumensis* was confirmed, with this species-pair sister to *C. calurus*. *Criniger barbatus* and *C. chloronotus* form another species-pair, more distantly related to the other three species.

They also found significant differences within some species. *Criniger barbatus* from Sierra Leone and Liberia differed from those sampled in Ghana, and *C. chloronotus* from the eastern Congo Basin differed from the seemingly disjunct population in the Lower Guinea forests of Cameroon and Gabon. But the greatest differences were found within the widespread *C. calurus*, where the three taxa currently regarded as subspecies were well differentiated and with two clades within the eastern Congo population *C. c. emini*. Interestingly, there was no clear geographic signal to the two latter taxa.

Divergence within the genus started some six million years ago, well before the Plio-Pleistocene fluctuations in forest extent. However, as might be expected, the allopatric populations confined to different forest blocks all evolved some 3.5 to one million years ago, at a time when climatic fluctuations saw repeated forest fragmentation and coalescence. The authors don't make explicit recommendations about where species lines should be drawn, but the differences within *C. barbatus*, *C. chloronotus* and the primary divide between Upper/Lower Guinea and Congo populations of *C. calurus* all date to the same time as the separation of *C. olivaceus* and *C. ndussumensis* (that is, about two to 1.5 million years ago) and should probably be regarded as distinct species.

This study of bearded greenbuls has close parallels to an earlier paper by Huntley and Voelker on an equally striking genus of greenbuls, the bristlebills *Bleda* (2016, *Mol. Phylog. Evol.* 99: 297–308). Here they found strong evidence that the Yellow-lored Bristlebill *B. notatus* is indeed distinct from the Yellow-eyed Bristlebill *B. ugandae* and that there is considerable structure within the Red-tailed Bristlebill *B. syndactylus*, with four to six taxa perhaps deserving species-level status.

PETER RYAN

CONGRATULATIONS!
The winners of the book hampers kindly donated by Struik Nature in our subscriber competition in the September/October 2019 issue are: Sandy Maree, River Club, Gauteng; Fotini Babaletakis, Tamboerskloof, Western Cape; and Shaun Pead, St Francis Bay, Eastern Cape.

mix&match

Hybrid Orange-breasted x Southern Double-collared Sunbird

Hybridisation has been recorded among about 10 per cent of bird species, but the incidence varies among groups (Grant and Grant 1992). It is particularly common among ducks, where more than 40 per cent of species have been recorded as hybridising with other ducks. Hybrids have even been reported among distantly related species, such as the particularly scary combination of an Egyptian Goose x Mallard. Other families with a high frequency of hybridisation include the gamebirds (22 per cent) and hummingbirds (19 per cent).

Among the sunbirds and spiderhunters (Nectariniidae), hybrids have been recorded between 15 of the 145 species recognised by the IOC list (Murphy 2006), close to the average across all birds. Most records are among members of the highly speciose genus *Cinnyris* (eight of 56 species), especially among the confusing double-collared sunbird complex. However, the genus with the highest incidence is *Chalcomitra*, where five of seven species have been recorded as hybridising and hybrids have been recorded among two of seven *Cyanomitra* species. There have been no records among several other large genera, such as *Aethopyga* (22 species), *Anthreptes* (14 species) and *Arachnothera* (13 species).

Hybridisation generally occurs among closely related species-pairs. The only possible case of inter-generic hybridisation in sunbirds is a peculiar individual photographed at Rondevlei, Cape Town, in March 2006, that appears to be a hybrid between an Orange-breasted Sunbird *Anthobaphes violacea* and either a Southern Double-collared Sunbird *Cinnyris chalybeus* or a Malachite Sunbird *Nectarinia famosa* (Ryan 2006).

On 5 October 2019 I came across another odd sunbird at the foot of Peck's Valley on the border of Table Mountain National Park in Cape Town, but in this case its affinities were easier to infer.

On first view, when it was perched facing me on top of a low bush, I thought it was a male Southern Double-collared Sunbird. However, when it flew, it had a long, wedge-shaped tail similar to that of a male Orange-breasted Sunbird. On closer inspection, the lower breast band was tinged orange, the upper band was more purple than that of a double-collared sunbird and the vent was washed orange. Size is hard to judge, but when seen perched next to a male Southern Double-collared Sunbird, it was slightly larger and had a longer bill. It gave the typical nasal contact call of an Orange-breasted Sunbird. The bird was still in the same area the following day, when I managed to obtain some images. On both occasions, it was associating with a female Orange-breasted Sunbird.

When I returned a week later, I found that the female sunbird was busy completing lining a nest, with the hybrid male in close attendance. This made his movements more predictable and I was able to obtain a much better photograph showing the mosaic of characters that suggest his hybrid origin. Two days later, Ben Dilley and I finally managed to catch the male to collect a drop of blood, which will be used to confirm the hybrid origins of the bird and reveal which species was the mother and which the father.

Numerous hypotheses have been proposed for hybridisation, but it usually occurs where there is a shortage of potential conspecific mates, either because one species is at the edge of its range or is a rare species (Randler 2006). Neither applies in this case, although the hybrid was seen along the lower border of mountain fynbos, where Orange-breasted Sunbirds are replaced as the most abundant sunbird by Southern Double-collareds. The other factor shown to increase the likelihood of hybridisation – species that have the chicks raised by one sex only (Randler 2006) – does not apply to the sunbirds.

The Orange-breasted Sunbird is the basal member of a large group of sunbirds, including *Cinnyris* and *Nectarinia* (Lauron et al. 2015), and is usually placed in its own genus. Quite why it seems to have been involved in both instances of inter-generic hybridisation recorded in sunbirds is a mystery. These events indicate that sunbirds, like ducks, are able to produce offspring with other members of their family to which they are not particularly closely related. The apparent rarity of such events suggests that species recognition systems within the sunbirds are normally quite efficient. The fact that the Orange-breasted Sunbird occurs in an area with few other sunbird species might result in it having a less well-evolved recognition system than sunbirds from areas with a greater species richness.

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above *The hybrid male Orange-breasted x Southern Double-collared Sunbird showing a mosaic of characters.*

right *The female Orange-breasted Sunbird about to deliver a beakful of lining to her nest.*

above *The Rondevlei hybrid from 2006 was not caught, so it is not known for sure what its parents were. It appears to be an Orange-breasted x Malachite Sunbird.*

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blackout

The Canary Islands Oystercatcher re-examined

TREVOR HARDAKER

Compared to African Oystercatchers, Canary Islands Oystercatchers had longer bills, like this immature Eurasian Oystercatcher.

The Canary Islands Oystercatcher *Haematopus meadewaldoi* was confined to the eastern islands of the Canaries (Fuerteventura, Lanzarote and adjacent islets). The last specimen was collected in 1913 and the species is thought to have gone extinct sometime in the mid-20th century, although there were a couple of sightings claimed up to the early 1980s. It was considered a subspecies of the African Oystercatcher *H. moquini*, but differed in having a longer bill, shorter wings and white bases to the primaries. When it was raised to species status, it became the only one of the world's 12 oystercatchers to have gone extinct.

Phil Hockey went to the Canary Islands in search of the oystercatcher in the 1980s and concluded that its extinction was driven by a combination of overharvesting of intertidal invertebrates and human disturbance. This cautionary tale doubtless influenced his initiating the very successful programme to protect oystercatchers along the South African coast.

Now a study by Tereza Senfeld and colleagues (*Ibis* 2019, doi: 10.1111/ibi.12778) has found that genetic sequences from four skins of the Canary Islands birds are within the range of variation shown by Eurasian Oystercatchers *H. ostralegus* and concludes that the Canary Island birds were simply a melanistic form of Eurasian Oystercatcher. Even the African Oystercatcher is not very different from the Eurasian bird and probably colonised southern Africa from the northern hemisphere perhaps some 150 000 years ago. Interestingly, they also examined material from a black oystercatcher caught in The Gambia in 1938. This bird proved to be an African Oystercatcher, considerably extending the vagrancy range of this species from the previous northernmost record in central Angola.

PETER RYAN

BETTER TOGETHER

A new study has found that crows that live in large social groups are healthier than crows that have fewer social interactions.

Dr Claudia Wascher of Anglia Ruskin University and her colleagues studied a population of captive Carrion Crows over a six-year period. They monitored the behaviour of the crows in different sized groups and assessed friendship by ranking the birds using a sociality index.

At the same time, they studied the crows' droppings to measure for the presence of coccidian oocyst, a common gastrointestinal parasite that can represent an important health threat for birds. Increased exposure to parasites and disease transmission is considered one of the major disadvantages of group living. This new study, however, shows the opposite effect.

The researchers found that crows with strong social bonds, living with more relatives and in larger groups, excreted a significantly smaller proportion of droppings containing parasites than those of less sociable crows.

They discovered that male crows (33 per cent) were slightly more likely to carry the parasite than females (28 per cent).

Dr Wascher said, 'Crows are highly social and we found that the birds with the strongest social bonds excreted fewer samples containing coccidian oocyst. It is a commonly held belief that animals in larger groups are less healthy, as illness spreads more easily. We also know that aggressive social interactions can be stressful for birds and that over time chronic activation of the physiological stress response can dampen the immune system, which can make individuals more susceptible to parasites.

'The results from our study, showing a correlation between sociability and health, are therefore significant. It could be that having close social bonds reduces stress levels in crows, which in turn makes them less susceptible to parasites.

'It could also be that healthier crows are more sociable. However, as the birds we studied were socialising within captive family groups, dictated by the number of crows within that family, we believe that social bonds in general affect the health of crows and not vice versa.'

Reference

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