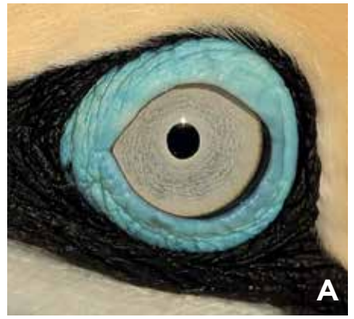

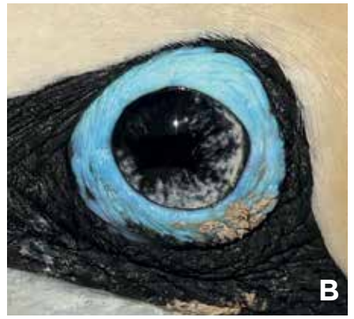

PETER RYAN (5)

eye colour variation in Cape Gannets

One of the bizarre consequences of the recent avian influenza outbreaks around the world was the discovery that adult Northern Gannets that survived the disease developed dark irises. Quite why this occurred is not known. In fact, we know surprisingly little about the mechanisms underpinning eye colour variation in birds (see *African Birdlife* 1(6): 28–34, as well as the recent review by Corbett et al. 2023. *Ibis* doi: 10.1111/ibi.13276; see QR code).

Juvenile gannets, like most if not all young birds, have dark brown irises, but by the time they return to their breeding colonies after a few years at sea they have acquired the whitish iris typical of adult birds. Australasian Gannet adults have slightly darker greyish irises than Cape or Northern gannets, but they are not as dark as the eyes of Northern Gannets presumed to have survived avian influenza (*African Birdlife* 12(1): 22).

Given these observations in Northern Gannets, I was prompted to look for eye colour variation in Cape Gannets during a recent trip to the breeding colony on Malgas Island in the West Coast National Park. Among the hundreds of birds I was able to check around the edges of the colony, I found at least seven individuals with some darker elements in their irises. This was seldom symmetrical and ranged from a few dark spots to an almost entirely dark grey iris in one bird.

Aberrant plumages are rare in gannets (Van Grouw et al. 2011. *Seabird* 24: 33), but it appears that eye colour variation is more common. In the case of Cape Gannets, I suspect it is natural variation rather than a consequence of exposure to avian influenza – partly because it is seldom symmetrical and partly because I also observed two birds with atypical dark marks on their eye-rings, indicating another form of bare-part colour variation that seemingly has not been reported before. Either way, birders need to be aware of this variation and not rely on eye colour as a key trait for identifying Australasian Gannets in southern Africa.

PETER RYAN

ABOVE, LEFT An adult Cape Gannet showing asymmetrical dark grey patterning in its irises.

ABOVE Eye colour variation in adult Cape Gannets: A = typical whitish iris; B = the darkest iris observed on Malgas Island; C = a more typical 'speckled' iris; D = bird with aberrant black marks on the eye-ring.

what's in a name?

Eleonora's Falcon
Falco eleonorae

'A falcon named in honour of Eleonora.'

Falco (Latin: *falco* = falcon, derived from *falx* = a scythe, from Greek φολκος *pholkos* = something bent). In the case of a bird, it refers to the talons, beak and/or wing.

eleonorae (Latin: of Eleonora). Eleonora of Arborea (ca. 1350–1404) was a 'judgess', or ruler, and a national heroine of Sardinia.

Sardinia's reputation as a source of valuable falcons for falconry meant that wealthy foreign rulers sought to get hold of these birds and they offered tempting rewards for chicks or young birds poached from nests. In 1392, Eleonora updated a code of laws (Carta de Logu) that, among other things, banned the removal of chicks from nests. She thus became the first ruler in history to pass legislation for the protection of birds. A statue of Eleonora holding the Carta de Logu stands in Oristano, a major city of Sardinia. She died during a plague epidemic.

Learning of this story, the ornithologist Giuseppe Gené named the falcon in her honour 400 years later.

EDDIE GERMIQUET

ARNAU SOLER

power-napping penguins

ELEANOR SCRIVEN

Periodic reduction in neural activity (sleep) is found in all animals with brains and seems to be essential to restore effective brain function. There is plenty of evidence of the adverse effects of not getting enough sleep, and recent research in humans has identified getting sufficient sleep as one of the four core pillars of living a long and healthy life.

Birds typically sleep for six to 17 hours per day, but for some birds it can be hard to rest for more than a few minutes, or even seconds, at a time. For example, birds migrating long distances or competing for mates might forgo sleep for several days, resulting in a sleep debt that has to be repaid once the birds have time to rest (see *African Birdlife* 5(1): 22–25). The challenge can be particularly severe for birds facing the constant risk of attack by predators.

ABOVE A recent study has found that breeding Chinstrap Penguins have 10 000 micro-naps per day.

One way birds might compensate for the lack of sleep is to undertake a series of micro-sleeps, lasting only seconds and often resting only one side of the brain at a time. This so-called uni-hemispheric sleep allows birds and other animals to rest one side of the brain, leaving the other side to maintain vigilance and other essential functions (such as swimming and breathing in marine mammals, or flight in swifts that sleep on the wing).

Research conducted more than a decade ago showed that migrating Swainson's Thrushes use this strategy during the day to offset the sleep debt incurred by flying all night. Their power-naps average only 12 seconds, but appear to be sufficient to allow them to forage and remain vigilant during the day and to continue their migration the next night.

Now a new study of penguins (Libourel et al. 2023. *Science* 382: 1026–1031) has shown an even more extreme power-napping strategy. By equipping Chinstrap Penguins with an electro-encephalogram (EEG), the research team was able to investigate the sleeping patterns of adults attending their nests and feeding small chicks.

Although penguins can take brief naps at sea, they accumulate a sleep deficit during longer foraging trips that they repay by sleeping for several hours after returning to shore. While at their nests, adult penguins made more than 10 000 micro-sleeps per day. Each nap averages less than four seconds, but together they add up to 8.5 hours of bi-hemispheric sleep and a further three hours of uni-hemispheric sleep for each side of the brain. This power-napping strategy seems to be sufficient to prevent the adverse effects of sleep deprivation.

Surprisingly, birds on the edge of the colony were able to have longer, deeper naps than those in the colony interior, suggesting that disturbance by members of the same species is more of a challenge than the threat of predation of their eggs or chicks by Brown Skuas.

PETER RYAN

MICHAEL MASON

storm petrels in Kalk Bay

CLIFF DORSE

European Storm Petrels showing different stages of moult (left). Their presence close to shore attracted a juvenile Peregrine Falcon (above).

According to *Roberts 7*, both Wilson's and European storm petrels occasionally seek the shelter of breakwaters during periods of strong onshore winds, but this is seldom observed off South Africa. At dusk on 29 December, following several days of strong south-easterly winds, I saw six storm petrels off the northern arm of Kalk Bay harbour. The following day 20–30 Wilson's and European storm petrels were feeding alongside the harbour wall, scavenging scraps from anglers. Both species occasionally entered the harbour, the Europeans proving more adventurous and flying higher off the water and over the harbour wall, whereas the Wilson's generally flew in and out via the harbour entrance. Their numbers gradually increased throughout the day.

Both species regularly dived after pieces of bait, occasionally submerging for several seconds, to at least 0.5 metres underwater. Larger bits of fish attracted the attention of multiple birds. There did not appear to be any clear dominance hierarchy between the two species, with both seen to displace individuals of the other species from prey items. Some birds carried larger scraps away from the harbour wall, seemingly preferring to be in more open water.

All the European Storm Petrels were moulting their flight feathers. Some were just starting primary moult, having lost their inner three primaries, whereas others retained as few as two old outer primaries. This is typical of the species, which has a protracted wing moult that commences while many adults are still provisioning chicks and continues throughout the non-breeding period; half the adults returning to their colonies are still moulting their secondaries. By comparison, the wing moult of the Wilson's Storm Petrels was more advanced, with at most three old outer primaries, and most having replaced all their old primaries. This indicates that most of the Wilson's Storm Petrels were immature, because the adults would have already completed their moult ahead of the austral summer breeding season.

The occurrence of storm petrels so close to land is unusual in South Africa. None of the regular fishers recalled ever seeing them. The influx attracted not only many local birders; a juvenile Peregrine Falcon enjoyed honing its hunting skills. After chasing a Barn Swallow over the harbour area on the afternoon of 30 December, it shifted its attention to the storm petrels and finally caught one after five attempts.

There were still some storm petrels on New Year's Eve, but their numbers had diminished and they were more dispersed because there were hardly any fishers to provide scraps. The Peregrine was back and soon dispatched at least three storm petrels. By 1 January only a few stragglers remained; it is unclear whether the others had been killed or had moved back offshore. The risk of predation might explain why storm petrels seldom venture close inshore. However, after several more days of south-easterly winds, a European Storm Petrel was seen again off Kalk Bay harbour on the evening of 10 January. It will be interesting to see how regularly this happens in future.

PETER RYAN