PETER RYAN (2)

synthetic fibre blues

The penduline-tits (Remizidae) are a small family of 11 species in three genera allied to the true tits (Paridae). Most species construct intricately woven nests that are suspended from branches, which explains their common name. The one exception is the Verdin of northern Mexico and the adjacent USA, the sole New World member of the family. It builds a large, spherical nest around a branch and protects it by weaving as many as 2000 spiny twigs into the wall with the pointed ends protruding like the spines of a hedgehog.

The African penduline-tits build one of the iconic nests of the bird world. Their pear-shaped nests have an entrance tube near the top of the nest that automatically closes when not in use. Beneath the entrance is a small lip where returning birds perch while they reach up to open the tube with one foot. An indentation in the nest wall between this lip and the entrance tube forms a 'false entrance' to the nest and doubtless has frustrated countless snakes over many millennia.

DAWIE DE SWARDT

The nest structure, built from spider web, plant down and animal hair, is substantial, with walls up to two centimetres thick. It takes a pair about three weeks to build it and they add material throughout the incubation period. Given this investment, it is not surprising that the same nest is often used to raise successive broods, and family groups typically roost in the nest even when not breeding.

Warwick Tarboton's excellent *Roberts Nests & Eggs of Southern African Birds* describes how the diminutive tits achieve the fine, felt-like texture of the nest wall by 'repeatedly pulling at the material, teasing it and then jabbing it back into the nest wall' (page 162). I've not seen this behaviour, so I was excited when I found a Cape Penduline-tit carrying nesting material in strandveld at Groot Paternoster Private Nature Reserve on the Cape west coast in August 2022.

I hung back, waiting for the tit to lead me to its nest. However, it remained in the same bush, apparently troubled by the material it was carrying. Creeping closer, I was able to obtain images of the bird trying to dislodge the material from its mouth by scraping it onto branches or pulling it with its foot. From the images, the fibrous material seemed to be entangled around the bird's bill or tongue.

above, left and right *A Cape Penduline-tit struggles to dislodge a ball of synthetic fluff from its bill and tongue.*

below *The densely felted nest of a Cape Penduline-tit built on a fenceline.*

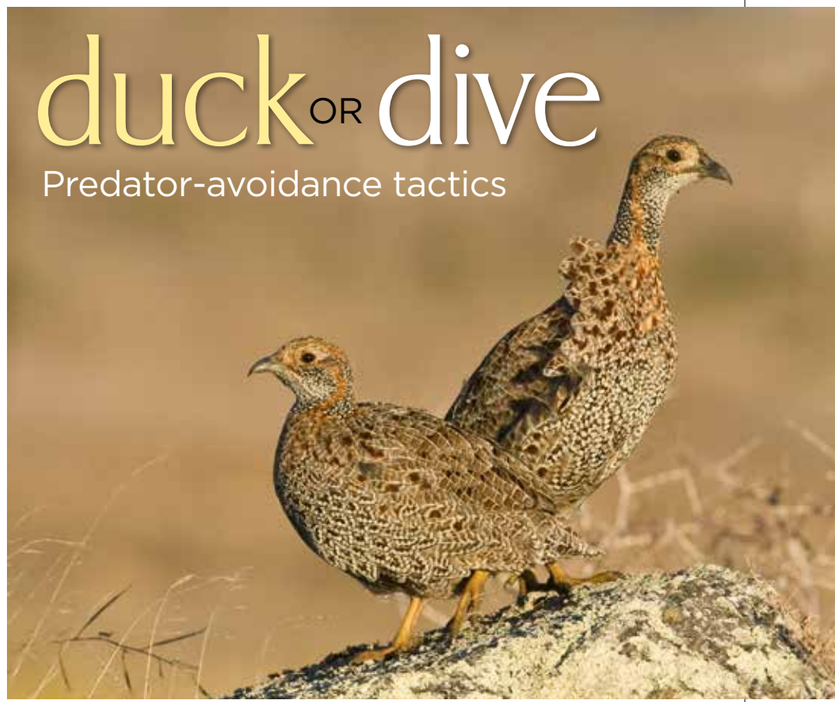
This must be a regular challenge for a bird that routinely works with fibrous materials and you might expect penduline-tits to have evolved smooth mouths to reduce the risk of getting entangled. And once moistened with saliva, most plant fibres should soften, allowing the tit to pull itself free. However, closer inspection of the images show the fibres have a sparkling appearance, suggesting that the tit had picked up a ball of synthetic material. It eventually flew away, with the fluff still stuck in its mouth.

Quite where the tit found synthetic fibres in a private nature reserve is a mystery, but it again highlights the pervasive entanglement threat posed by even small synthetic threads (see *African Birdlife* 7(5): 38). Maybe this sad tale will make you think twice before discarding a piece of fluff from your pocket.

PETER RYAN

duck OR dive

Predator-avoidance tactics



JESSIE WALTON

An alert pair of Grey-winged Francolins.

A basic principle of predator–prey relationships is that the prey species needs to be acutely aware of the danger of predation and to evolve finely tuned avoidance or escape mechanisms relevant to a specific predator species. The so-called pecking order among species often reflects which is the predator and which is the prey. This is well illustrated in gamebirds, which are the favoured prey of larger raptors.

While investigating the behavioural ecology and management of Grey-winged Francolins on the Stormberg Plateau in the Eastern Cape, I was interested to find out how Grey-wings react when the danger of raptor predation is imminent. To put this to the test, I invited a group of experienced falconers to bring their birds and fly them after Grey-wings. The birds of prey in the group were a mix of well-trained adult Lanner and Peregrine falcons (long-winged raptors) and a couple of Black Sparrowhawks (a short-winged raptor).

Typically, when gundogs stand on point, indicating that a covey of francolins is nearby, the falconer will release a falcon from the glove to soar above the potential flush of the francolins once they have been put up by the dogs' handler. On the other hand, a falconer with a sparrowhawk will keep the bird on the glove, but remove the hood so that the hawk is alert to the flush of the francolins for a rapid chase.

These two approaches of the falconers mimic the natural tactics of the raptors. Long-winged birds employ a speedy, short-distance stoop onto the flying gamebird for successful contact in the air. They seldom, if ever, pursue the prey into cover after an unsuccessful strike. Short-wings, on the other hand, use a surprise ambush approach, flapping heavily after the prey. This can even extend into physically chasing the quarry into the cover of a bush or the grass sward.

The reaction by the flushing Grey-wings when falconry birds were released onto them was fascinating and finely tuned to the predatory scenarios described above. When a falcon was put up and gained height to be in position to stoop onto the flushing Grey-wings, the francolins dropped from the sky, plummeting as fast as possible back into the safety of the grass sward. Conversely, when a short-winged Black Sparrowhawk was put onto them immediately after the flush, the francolins stayed in the air, turning sharply into the face of the ever-present mountain breeze. With their superb ability to fly into the wind and thus outlast the sparrowhawk, they were inevitably able to out-distance the hawk and land in cover, out of sight.

The unwavering selection of the two escape mechanisms when each threat was imposed is all about understanding the pursuit tactics of the specific raptor and, particularly in the case of avoiding the short-winged hawks, the respective wing loading difference between the francolins and the raptors. It was also fascinating to note that whichever avoidance decision was taken, the francolins would not flush twice after being pursued by a falconry bird, even to the point that they can be picked up out of the cover rather than again expose themselves to the raptor.

Another aspect of the francolin flush, perhaps not specific for avian predator avoidance but nonetheless part of their threat avoidance mechanism, is the sequence of who in the covey flushes first or last. An old saying was that 'the old cock bird flushes first'. Well, our records of hundreds of covey flushes showed that although older/adult birds flushed first and younger/first-year birds later, there was no gender bias within who flushed first or last. The significance of older birds flushing before young individuals with respect to avian predator avoidance is still uncertain, but it is abundantly clear that none of the francolins will flush, but all rather sit tight when they are aware of a raptor in the immediate vicinity.

ROB LITTLE