

Purple Martin death by entrapment in a House Sparrow nest

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Figure 1. Multi-compartment nest box complex in Leamington, Ontario.

Photo: Justin Peter



Introduction

In the late afternoon of 12 May 2017, I was observing a multi-compartment nest box complex in Leamington, Ontario (Figure 1). This artificial structure was occupied by multiple breeding pairs of both Purple Martin (*Progne subis*) and House Sparrow (*Passer domesticus*). While studying the activities of these birds at the house, I noticed that a bird's right wing was protruding from one of the entrance holes; the wing was stationary and its entire length from the carpal joint to the tips of the primaries was visible (Figures 1, 2). Owing to its suspended appearance and angle within the entrance, it appeared to be attached to a body. Most of the hole's right half was occluded by nest material consisting of dried grass stalks, which emanated from the hole

(Figures 1, 2); it was not possible to see any more of a presumed bird inside. Based on the appearance of the wing and the fine nesting material as well as the current occupancy of the housing complex, I deduced that the wing must belong to a Purple Martin and that the nest inside had been constructed by House Sparrows. Purple Martin nests generally contain coarser dried vegetation that is deposited neatly within the cavity; if it projects from the cavity, it does so at the bottom of the hole, not along the sides, and is mixed with mud (pers. obs.) (Figure 3). The wing was not present when I observed the nest box complex approximately 24 hours prior, on 11 May 2017. I requested and received permission from the property owner to conduct a hands-on investigation.



Figure 2. Purple Martin wing protruding from nest compartment entrance, attached to a body entangled in the grass of a House Sparrow nest. *Photo: Justin Peter*

On 15 May 2017, the wing was still present and I used a ladder to gain access to the exterior of the compartment. I attempted to flex and extend the wing of the bird and I palpated just inside the compartment entrance to the base of the wing, determining that the wing was indeed attached to a body. The body's right side was positioned lengthwise along the compartment's front inside wall with the head lower than the bird's rear. The grass stalks in the entrance hole obscured the bird's head, which was wedged within them. I extracted the bird from the cavity (Figure 4). The bird was a dead adult (after second-year) female Purple Martin (Hill 2002). Its head was

cocked to the left and its tail feathers were bent towards the bird's right side. In addition, its vent feathers were soiled by feces (Figure 5). It had dabs of feces on its central breast feathers as well and had two poultry feathers adhering to its underside. Its right leg was extended with toes partly flexed, and the left foot was in a perching position with the toes extended. The bird did not have any obvious signs of external trauma. Based on the position of the right leg, it appears that the bird was attempting to thrust itself forward. Is it possible that this martin died due to its inability to exit the cavity?



Figure 3. Nest compartment in multi-cavity complex with a typical Purple Martin nest, showing coarse materials mixed with mud spilling out of the compartment.

Figure 4. Female Purple Martin extracted from the nest compartment. Grasses extruding from the entrance hole had obscured the bird's head, which was wedged within them.

Photos: Justin Peter





Figure 5. Female Purple Martin extracted from nest compartment with its head cocked to the bird's left and tail feathers bent towards its right side. Note vent feathers soiled by feces. *Photo: Justin Peter*

The House and Nest Compartments

The house contained 18 compartments. The complex's compartment entrance holes were approximately 5 cm in diameter. Based on this dimension, I estimated a cavity's interior dimensions to be approximately 15 cm x 15 cm x 15 cm. I was curious about the configuration of the nest within the compartment in question. By probing through the cavity entrance, I determined that the bottom of the nest compartment was padded with grass stalks. There were a couple of large poultry-like feathers embedded in the stalks just inside the entrance, and the grassy materials reduced the apparent

diameter of the entrance by approximately 50%. Just inside the entrance, materials were arranged in such a way that formed a tunnel that veered towards the left, obscuring the rear wall of the cavity. Presumably, the tunnel met the compartment's left wall and led to a rear chamber where a nest cup would be situated. The copious use of grass stalks dressed over the walls and roof in a way that could form a tunnel-like structure was consistent with construction by House Sparrows (Harrison 1975, Indykiewicz 1991, Lowther and Cink 2013). Based on this, it appeared that the Purple Martin had entered a House Sparrow

nest, which may or may not have been active. The orientation of the materials within the compartment would have prevented the martin from moving straight towards the rear wall after entering, and would also have prevented her from exiting the compartment by directly facing the entrance hole.

I observed the activity of birds at the house for approximately 15 minutes following the removal of the dead bird. Four compartments were being attended by after-second year (i.e., in definitive basic plumage) Purple Martin males and contained nests typical for this species. Six units were attended by House Sparrows and contained nest material with copious grass stalks typical of that species. Additional compartments appeared unoccupied but all contained House Sparrow-type nests, including the compartment that is the subject of this note. It is unknown whether the ensnared female Purple Martin had been investigating the nest cavity with designs on appropriating it.

Discussion

There is a paucity of records of bird death due to entrapment in nests; however, there are instances of death at nest sites that appear related to competition or predation. An Eastern Bluebird (*Sialia sialis*) died after being stuck to the pine resin oozing around the nest cavity hole of a Red-cockaded Woodpecker (*Picoides borealis*), presumably as the bluebird was investigating the cavity as a potential nest site (Dennis 1971). A Steller's Jay (*Cyanocitta stelleri*) was ensnared by fishing line that had been incorporated into the nest of a Bullock's Oriole (*Icterus bullockii*)

possibly as the jay was investigating the nest for potential prey in the form of eggs or nestlings (Iron and Pittaway 1995).

The Purple Martin is a secondary-cavity nester and its eastern population breeds almost exclusively in artificial multi-compartment nest box complexes close to humans, effectively forming colonies in such places (Brown and Tarof 2013). Both males and females may defend multiple cavities against conspecifics of the same sex, at least early in the breeding season. In unmanaged colonies, Purple Martins may compete with introduced House Sparrows, which — while not obligate cavity nesters — take readily to artificial cavities and may also breed in loose aggregations in such places (Jackson and Tate 1974, pers. obs.). A House Sparrow nest built within an enclosed space may be a mere cup of vegetation at the bottom of the compartment or may be built up so that nest material covers sides as well as top of nest box chamber (Indykiewicz 1991), expanding to fill the available volume (Lowther and Cink 2013). Without human intervention and management of martin nest box complexes, sparrows may cause the local extirpation of martins by appropriating nest cavities and making them permanently unsuitable for martin use (Brown and Tarof 2013); this may be due to the obstructive nature of the nest itself. However, Purple Martins sometimes appropriate a compartment that contains a partly built House Sparrow nest, using grass placed by sparrows as base for their nest; these nests may contain feathers brought in by sparrows, which martins do not try to discard (Brown and Tarof 2013).

A Purple Martin's total length is 20 cm whereas a House Sparrow's length is 16 cm (Dunn and Alderfer 2017). Given the compartment's actual dimensions and the reduction in effective accessible space due to the presence of the House Sparrow nest as well as the orientation of the materials, the Purple Martin's maneuverability within the compartment would have been compromised. Furthermore, the position of the victim's head, buried as it was in the grass stalks that partly blocked the entrance hole, suggests that the reduction in the hole diameter was also a factor in the martin's death. Whereas a sparrow's nest, filling a compartment as it may, might ordinarily outright repel a Purple Martin or other larger birds, the victim in this instance made a fatal mistake by entering but not being able to exit the compartment. The soiled vent in addition to the position of the martin's legs and bent tail feathers suggest that the bird became stuck in attempting to exit the compartment but was unable to progress, and that the style of House Sparrow nest presented an obstacle to her movement. This is the first known record of a Purple Martin death by entrapment in a House Sparrow nest.

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