

SNAKE PREDATION ON CACTUS WREN NESTLINGS

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Empty nests which on the previous day contained nestlings are familiar but at times puzzling to ornithologists. This phenomenon is generally attributed to predation, but usually there is little direct evidence. Finding a predator at the nest site is a rare occurrence. Documented here are several instances of snake predation on nestling Cactus Wrens (*Campylorhynchus brunneicapillus*) in Pima County, Arizona.

The Cactus Wren is a common resident of the southwestern deserts. In southern Arizona, nests are generally built in cholla cacti (*Opuntia* spp.) although spinescent shrubs are also utilized (Anderson and Anderson, Condor 61:186-205, 1959). Although snake predation on the Cactus Wren has not been reported, this species often mobs snakes (Anderson and Anderson, Condor 65:29-43, 1963).

On 28 April 1970, Austin found a nest containing three eggs 1.8 m above ground in an *Opuntia fulgida* on the Santa Rita Experimental Range south of Tucson. Four eggs were present on 30 April, one had hatched on 14 May, and four nestlings were present on 19 May. At 06:00 on 23 May, a Gopher Snake (*Pituophis melanoleucus*) about 1 m long was found impaled by several cholla spines immediately adjacent to the nest. The snake was alive but could barely move. A large lump was noted near its midsection. The nest appeared undisturbed and contained one dead and one cold, live nestling (body temperature 20.2 C, ambient temperature 19.5 C). No adult Cactus Wrens were seen in the vicinity nor was there evidence of a struggle. At 12:00 the snake was dead; the nestling was still alive but subsequently died.

In the same area on 5 July 1971, at 05:45, Austin found a Gopher Snake coiled in a Cactus Wren nest in an *Opuntia fulgida* which the day before contained two 18-day-old nestlings. When disturbed, the snake descended the cholla and a large lump was noted in its midsection. The adult wrens were not seen in the area.

On 3 May 1969, a nest containing three young nestlings was found by Tomoff on the Santa Rita Experimental Range. The nest was placed 2.0 m above ground close to the central axis of a 2.3-m *Opuntia fulgida*. Shortly before sunset on 7 May, the adults were scolding loudly and fluttering near the nest cholla. As Tomoff approached, a Whipsnake (*Masticophis flagellum*) rapidly descended from the cholla. The nest was empty.

Northwest of Tucson in the Tucson Mountains, Yensen found a nest with three nestlings ready to

fledge, 2.3 m above ground in an *Opuntia fulgida*. At 10:00 on 6 July 1970, the adults were heard scolding near their nest. They moved from branch to branch in the cholla, peered into the nest from time to time, and displayed in front of the nest opening. The display consisted of fanning the wings and tail, with one or both wings. The tail was inclined slightly downward, with the head turned back over the shoulder toward the nest. The displaying bird would then flutter to a perch in a nearby cholla, scolding continuously. A display of lower intensity was also observed: a wren perched in front of the nest opening with its back to the nest, fanned its tail while flicking it up and down and to the side and peered over its shoulder at the nest opening. The bird then fluttered to a nearby perch as before. The wings were not spread in this display. The displays resembled those used for pair formation (Anderson and Anderson, Condor 59:274-296, 1957) and in an attack on a ground squirrel (Smith, Condor 72:363-364, 1970).

After about 10 min, a Whipsnake (black phase) emerged from the nest, dangled momentarily two-thirds out of the nest, swung over to the main stem of the cholla, looped around it, and dropped to the ground. A large lump was visible about 10 cm behind the head. There was no apparent injury to the snake from the cholla and the spines appeared to present no obstacle to its descent. Although the nest was empty, the adult wrens continued to scold after the snake disappeared into a nearby hole in the ground, and they returned to the nest site several times during the next 2 days.

In 1971, a pair (possibly the same pair) of wrens re-nested in the same cholla. The single nestling was nearly ready to fledge on 8 June. At 08:00 on 9 June, the adult wrens were heard scolding near the nest and displaying in the manner described above. They were joined by an Ash-throated Flycatcher (*Myiarchus cinerascens*) who was also giving harsh calls and fanning its wings and tail in a display similar to the Cactus Wren's. After a few minutes, a Whipsnake (red phase) descended from the nest and disappeared into a nearby hole. A Cactus Wren nestling was found under a nearby Palo Verde tree (*Cercidium microphyllum*) and ran from the area. A young Cactus Wren was seen in the area several times subsequently indicating that the nestling probably survived.

On 15 July 1971, from 07:40 to 07:50, a Whipsnake (black phase) was seen by Austin inspecting Cactus Wren roosts. The snake ascended an *Opuntia fulgida* to an empty roost 1.5 m above the ground, inspected the cavity, descended, moved directly to an *Opuntia spinosior* containing another roost about 2 m away, ascended this cholla (1.5 m), inspected this cavity, and descended from the cholla. Two adult wrens scolded the snake continuously and gave tail-spread displays the entire time.

Both species of snakes are well-known climbers, and their food includes birds and their eggs (Stebbins, Amphibians and reptiles of Western North America, McGraw-Hill Book Co., 1954).

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