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Source: The Wilson Journal of Ornithology, 128(3):676-678.
Published By: The Wilson Ornithological Society
DOI: http://dx.doi.org/10.1676/1559-4491-128.3.676
URL: http://www.bioone.org/doi/full/10.1676/1559-4491-128.3.676

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The Wilson Journal of Ornithology 128(3):676–678, 2016

House Wren (*Troglodytes aedon*) Provisions Nestlings of Northern Cardinal (*Cardinalis cardinalis*)

Katie LaBarbera[1,3] and Rae Spencer[2]

ABSTRACT.—Cases of interspecific parental care are rare and pose an evolutionary puzzle. We report a male House Wren (*Troglodytes aedon*) regularly provisioning Northern Cardinal (*Cardinalis cardinalis*) nestlings in a nest located near his own. The male wren continued to provision the cardinal nestlings after his own nestlings hatched, and provisioned the cardinal nestlings more than his own nestlings during the time that their nestling periods overlapped. The adult cardinals also provisioned their own nestlings. After the cardinal chicks fledged, the male wren provisioned only his own nestlings. This is most likely a case of nonadaptive misdirection of parental behavior on the part of the wren. That the wren provisioned both nests while both were in the nestling stage, but provisioned only the wren chicks as fledglings, may suggest that kin recognition in House Wrens is mutable rather than fixed. However, this behavior is also congruent with observations of polygynous male House Wrens transferring parental care from primary to secondary broods upon the fledging of the primary brood.
Received 24 September 2015. Accepted 12 January 2016.

Key words: adoption, *Cardinalis cardinalis*, interspecific parental care, *Troglodytes aedon*.

OBSERVATIONS

A male House Wren (*Troglodytes aedon*) was first observed nest-building on 29 April 2015. He moved twigs into three nest boxes and two gourds in RS's yard in Virginia Beach, VA, USA, but built his most elaborate nest in a nest box that hung near a *Lonisera sempervirens* honeysuckle trellis. The nest box entrance was 1.35 m above the ground. The male wren was identified primarily by his vocal behavior, as he frequently sang while foraging and when approaching the nest box. The female wren was distinguished by her brooding behavior and her lack of song. Neither of the wrens were banded. They could be visually distinguished from each other by slight plumage differences, but this was not always possible.

A female Northern Cardinal (*Cardinalis cardinalis*) was first observed bringing nesting material to the adjacent honeysuckle on 9 May. The nest was built in the densest part of the honeysuckle, 1.73 m off the ground and 1.60 m from the wren nest box. From 30 May to 17 June, observations were made daily at irregular times throughout each day, totaling 30–60 min of observation per day. Nestlings were first observed in the cardinals' nest on 30 May, and appeared no older than 1 day post-hatching. There were at least three cardinal nestlings. The male cardinal fed the nestlings throughout each day following 30 May. The female cardinal appeared to feed them only rarely, usually at dusk.

The male wren was observed feeding the cardinal nestlings every day from 30 May to 6 June. The wren fed the cardinal nestlings whenever the male cardinal was absent. The wren sometimes made 2–3 visits to the nest between each one of the cardinal's visits. The wren brought a variety of insects to the cardinal nestlings, including centipedes, moths, and caterpillars. From 30 May to 6 June the cardinal nestlings vocalized with the same intensity for the wren as they did for the cardinal, and accepted food from both. On 6 June, they ceased responding vocally to the wren's approach.

Nestling vocalizations were first heard from the wren's nest box on 4 June. The nest box was never opened, so the exact age of the nestlings is unknown. On 4 and 5 June, the male wren divided his time between feeding the cardinal nestlings and feeding the wren nestlings. During this period, he visited the cardinal nest more often than his own nest. On 6 June, he continued to visit both nests, but it was unclear whether the cardinal nestlings were accepting his offered food.

On occasions when the male cardinal arrived at the nest while the wren was feeding the cardinal nestlings, neither bird reacted with aggression. The wren retreated to a fence ~1.2 m away, waited

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while the cardinal fed the nestlings, and then returned once the cardinal had left. Neither bird scolded or made alarm calls. Both House Wrens scolded if the male or female cardinal perched directly over the nest box, but otherwise showed no aggression toward the cardinals. The cardinals showed no aggression toward the wrens. By contrast, both adult wrens scolded and both adult cardinals gave alarm calls when larger birds (Mourning Doves [*Zenaida macroura*], American Robins [*Turdus migratorius*], Common Grackles [*Quiscalus quiscula*]) perched on the trellis support or foraged under the trellis. The male cardinal attacked Brown Thrashers (*Toxostoma rufum*) more than once, and the wrens attacked squirrels in the area. Smaller birds such as House Finches (*Carpodacus mexicanus*) and Carolina Chickadees (*Poecile carolinensis*) elicited no response from either the wrens or the cardinals.

The cardinal chicks fledged on 7 June, and two cardinal fledglings were seen near the nest. The male wren did not approach the cardinals after they fledged. By the evening of 7 June, the cardinals had left the yard. The male wren fed his nestlings through fledging on 16–17 June, though he did not visit the wren nest box as often as he had visited the cardinal nest. The female wren did the majority of the provisioning until the wren chicks fledged, when the male became more active. Both adult wrens fed the fledglings frequently during the day on 17 June. There were at least four wren fledglings. On 18 June they left the yard.

DISCUSSION

Interspecific care of young occurs most often when the heterospecific young are in the same nest as the conspecific young, as in cases of brood parasitism (Shy 1982, Literak and Mraz 2011). It is thought that an inability to distinguish heterospecific from conspecific young, combined with the high potential cost of ignoring one's own offspring, results in this type of interspecific parental care (Shy 1982). Care of heterospecific offspring in a separate nest is considerably rarer and presents a more difficult evolutionary puzzle (Lozano and Lemon 1998). Altricial birds are thought to recognize their own nestlings primarily through their presence in the parents' nest (Benedict 2007). In the case presented here, it is unlikely that the male wren mistook the cardinal nest for his own, as it was not only a different nest but a different type of nest (open cup vs the wren's cavity nest).

The most likely explanation is that the male wren, hormonally and physiologically primed for parental care, was highly sensitive to relevant cues such as begging vocalizations. The proximity of the two nests allowed him to overhear the vocalizations of the cardinal nestlings, which then triggered parental behavior (Shy 1982). Skutch (1961) suggests that such provisioning by males of heterospecific offspring, while their own offspring are not yet hatched, serves as "an outlet for repressed [parental] energy." Notably, however, the wren did not cease to provision the cardinal nestlings after his own nestlings hatched, but neither did he ignore the new nestlings: he provisioned both nests. Polygynous male House Wrens may have two active nests in their territories, but the male usually provisions just one brood at a time (Johnson et al. 1993). Dual-nest provisioning therefore does have an analog in normal nesting ecology of House Wrens, but it appears to be rare.

A similar instance of interspecific parental care by a House Wren, in which a male wren provisioned a brood of Northern Flickers (*Colaptes auratus*) in a nest near his own active nest, also involved simultaneous care of both broods by the male (Royall and Pillmore 1968). An earlier report of interspecific parental care by a House Wren differed in that the male wren appeared to have no nest of his own, but was solely devoted first to the care of a brood of Black-headed Grosbeaks (*Pheucticus melanocephalus*), then subsequently of a brood of House Sparrows (*Passer domesticus*; Hills 1924).

An additional puzzling aspect of this case is the tolerance of the wren by the adult cardinals. House Wrens are known to attack nestlings in nearby nests (Belles-Isles and Picman 1986, Johnson 2014), and so might justifiably have been viewed as a threat by the cardinals. Instead, the cardinals responded defensively only to larger birds. The low rate of nestling provisioning by the female cardinal is also unusual: cardinal nests usually show similar rates of nestling provisioning between males and females (Filliater and Breitwisch 1997, Linville et al. 1998).

That the interspecific provisioning ceased upon the fledging of the cardinal chicks, after which point the male wren provisioned his own nestlings nor-

mally, suggests one of two explanations. It may be that the male wren was able to reclassify the cardinal chicks as non-kin following their fledging, suggesting that kin recognition does not occur once and then remain fixed in the House Wren. Why the process of fledging would trigger this re-classification is unknown. This did not occur in the case of the male House Wren who provisioned the brood of Black-headed Grosbeaks: that wren continued to feed the young grosbeaks after they fledged (Hills 1924).

Alternatively, the male may have interpreted the cardinal nest as the primary of his two nests. Johnson et al. (1993) report that male wrens sometimes switch their provisioning from their primary to their secondary broods immediately before or after the primary brood fledges. Therefore, the male wren may still have considered the cardinal fledglings to be his kin but transferred his parental care to his unfledged brood in the same manner as a polygynous male. Unfortunately, the behavior of this male cannot be compared with the behavior of the male wren who provisioned Northern Flickers as well as his own offspring, as that individual was not observed long enough to report the male's behavior after the fledging of either brood (Royall and Pillmore 1968).

ACKNOWLEDGMENTS

The authors thank L. S. Johnson and E. D. Kennedy for their help in improving this manuscript.

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The Wilson Journal of Ornithology 128(3):678–680, 2016

The Valid Name of the Curl-crested Aracari (*Pteroglossus beauharnaesii*)

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ABSTRACT.—Under the International Code of Zoological Nomenclature, the valid form and source of the name for the well-known Curl-crested Aracari should remain *Pteroglossus beauharnaesii* Wagler, 1832. Although it is an incorrect subsequent spelling, its challenger, *Pteroglossus beauharnaisii,* is a nomen oblitum. *Pteroglossus beauharnaesii* Wagler, 1832 has been in universal use since 1900, and it is protected either by Article 23.9 or 33.3.1 of the Code, depending on the interpretation of the way the younger name was introduced. *Received 24 September 2015. Accepted 12 January 2016.*

Key words: aracari, Curl-crested Aracari, Johann Georg Wagler, nomenclature, *Pteroglossus beauharnaesii*, toucan.

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