Berylline Hummingbirds Nest in Arizona

JAMES O. ANDERSON AND GALE MONSON

Will this Neotropical hummingbird establish itself as a regular breeder within the U.S.? Here is a progress report

THE Berylline Hummingbird *Amazilia beryllina,* previously unknown as a nesting bird in the United States and indeed not even recorded in this country until 1967 (Sheppard 1968), has recently nested twice in Arizona: at Cave Creek Canyon in the Chiricahua Mountains in 1976 and at Ramsey Canyon in the Huachuca Mountains in 1978. The species has been detected almost annually since 1967 at Ramsey Canyon, and was first found at Cave Creek Canyon in 1971.

Little is known of the breeding of this hummingbird in the adjacent Mexican state of Sonora. A male with enlarged testes was taken in June 1953 in the Sierra Huachinera only about 100km into Mexico (Marshall 1957). The species was "abundant" in June 1937 at Rancho Santa Barbara northeast of Alamos in extreme southeastern Sonora, about 460km south of the U.S. border (van Rossem 1945).

The Cave Creek nest was discovered on the grounds of the Southwestern Research Station of the American Museum of Natural History on 13 July 1976 by Scott Terrill, Salome Demaree, and Helen Longstreth. This followed the first sighting of an adult on the grounds on 20 June by William von Bergen and Eugene and Steven Cardiff. Feeding of young in the nest was noted on 22 July (C.S. Lawson, pers. comm.). The last feeding was observed on 10 August (Fred Ranson, pers. comm.). At the next observation 6 days later the nest was abandoned and it was speculated that a heavy rainstorm, or possibly predators, had destroyed the young (Ranson *op. cit.*). It was never clear that more than one young bird was in the nest. The nest was later collected and is deposited in the American Museum of Natural History, New York, N.Y. (Vincent Roth, pers. comm.). It was built on a slender branch of an Arizona sycamore *Platanus wrightii* in a riparian situation, and was about 7.5m above the ground. The site is about 1634m above sea level.

The Ramsey Canyon nest was found on the Ramsey Canyon Preserve of The Nature Conservancy on 8 August 1978 by a visitor but was not identified as being a Berylline Hummingbird nest until it was shown to Susan Anderson who recognized the sitting bird as such. Identification was later confirmed by James O. Anderson and

by Carroll and Joan Peabody. Adults had been seen on the Preserve regularly since 9 June that year. Nestlings first became visible on 20 August. One of the young fledged on 30 August and the other on 1 September. Both the young and the female were observed on the Preserve frequently in September until the last sighting, of a young bird, was made on 28 September by Dean Anderson. The nest was saddled in the crotch formed by two small Arizona sycamore branches, and was about 5.5m above the ground (which in this case was the bed of the stream in Ramsey Canyon). The site is about 1722m above sea level.

Both nests were in sycamore trees in riparian canyon sites, at similar elevations above sea level. Both were constructed of a thin-bladed grass, completely dried and held together with spider webbing. They were secured to their supporting branches with spider web material. The exteriors of both nests were decoratively and completely covered by green leaflike lichens *Parmelia hypoleucites,* a fairly common species in Arizona on rocks and trees. The nests when viewed from above were oval and measured 40 x 50mm with a cavity depth of 15mm.

THE RAMSEY CANYON NEST

Following its discovery, the senior author and Susan and Dean Anderson and Carroll and Joan Peabody were able to maintain some surveillance of the nest. The Peabodys observed the nest on 10 August for an extended period. The sitting bird appeared to be pushing something about in the bottom of the nest cavity, an action which was interpreted as possibly rolling eggs. From time to time, over a period of an hour, the bird would rise from the nest cavity, poke her bill into the depths of the nest, and slowly move her head from side to side. For more than 4 hours the bird did not

Adult female Berylline Hummingbird at nest with two nestlings in the Ramsey Canyon Preserve, Huachuca Mountains, Arizona, August 1978. Second documented U.S. nesting for the species. Photo by James O. Anderson.

leave the nest for longer than 3 minutes and upon returning settled down with just the slightest movement of her bill in the bottom of the nest. She would then assume the usual pose of an incubating bird.

The hatching date was thought to have been between 10 and 13 August, based on the 10 August activity of the female. On 13 August the bird was more active than on previous days. She left the nest at about 20 minute intervals, after which she would return, stand in the cavity, and place her bill in such a manner as to suggest feeding young.

On 20 August the bills of two nestlings were first seen. The tips of the bills appeared as tiny points. It was interesting to note that when the female arrived at the nest the two nestlings would "rise to the occasion" by making a higher profile with heads erect. After feeding they would slump back into the nest with only the bill tips showing above the rim.

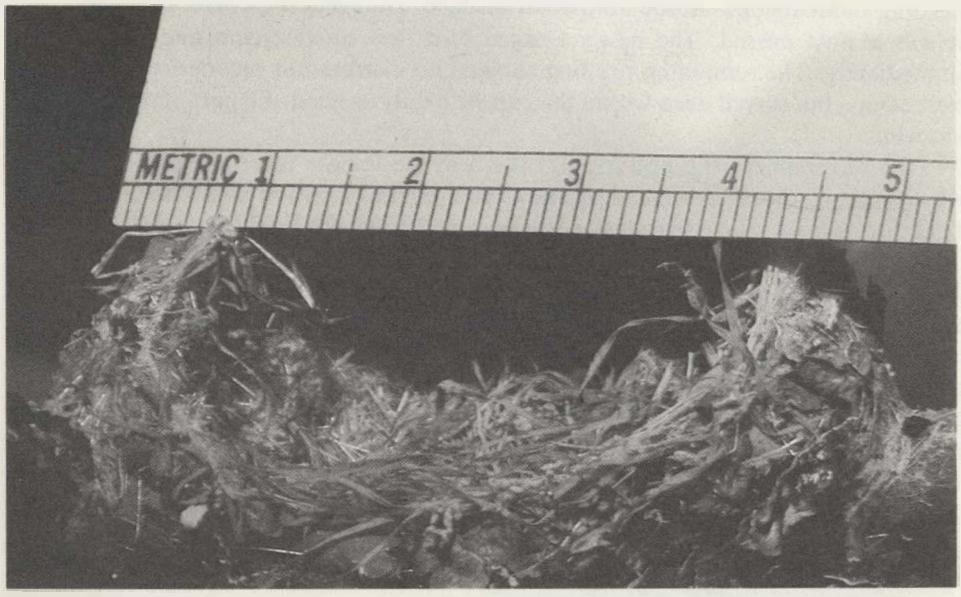
On 22 August, the Peabodys and Douglas Danforth were watching the nest at about 1000 MST when a Huachuca Mountain Kingsnake *Lampropeltis pyromelana woodini* appeared on the nest tree, making slow but sure progress in the direction of the Berylline nest. Although the watchers realized it is usually unwise to disrupt the natural course of events in the wild, the unique status of this nest prompted them to intervene. Danforth picked up a long, dead, thin sycamore limb and laid it across the branch in front of the snake's path of travel. As the snake eased onto this limb, Danforth slowly raised it and by this means lowered the snake to the ground. Anderson released the snake at an old mine site about 2.25km upstream from the Preserve. There were no apparent later interruptions to the nestlings' progress, which no doubt would have come to an abrupt end had it not been for this "unnatural" interference.

On 27 August Anderson noted an interesting association between two large, black bugs (order Hemiptera) and the hummingbirds. The bugs when first observed were slowly making their way to the nest in such a manner as to cause the nestlings to squirm about and move away as far as possible from the nearest advancing bug. At first it seemed the bugs were going to make a predatory move, but after a while it appeared they were feeding on something, possibly the droppings of the nestlings which dotted the broad sycamore leaves beneath and alongside the nest. The bugs sometimes approached to within an inch of the nestlings.

The defensive behavior of the female as she chased the bugs away from the nest area was interesting. As the bugs approached she flew about the nest in an apparently agitated state. Then, as the bugs got to within an inch of the nest she pecked at them, sometimes while standing close by the nest and sometimes in flight. However, her defensive actions became confused, as when she had chased the bugs a foot or more from the nest, it seemed the chase became the most important part of the interaction as she would chase the bugs right back to the immediate area of the nest.

On the morning of 30 August Anderson spent an hour observing and photographing the nest. Later in the day, about 1330, he returned to photograph the female feeding the young. He returned a third time about 1410 when direct sunlight would be on the nest for a few moments. As he was taking the photographs he noted a great deal of movement by the larger of the nestlings. It was wiggling in the nest and slowly easing to a higher level in the cavity than its nest mate. By 1430 its activity had taken it to a point just below the rim of the nest. At no time did the bird attempt to use its wings nor did it show any signs of preparation for flight. At about 1445 the active nestling was almost perched on the rim, when the female came and fed both young, the

The adult female Berylline Hummingbird reacting to two large bugs (order Hemiptera) which were feeding near the nest. See p. 58 for a description of this odd interaction. Photo by James O. Anderson.



The Berylline Hummingbird nest from Ramsey Canyon, photographed at close range after the young had fledged. Note the leaflike lichens *Parmelia hypoleucites* covering the outside of the nest. Photo by James O. Anderson.

The Berylline Hummingbird nest built in Cave Creek Canyon, Chiricahua Mountains, Arizona, in 1976. The nest was abandoned sometime in mid-August, and it was later collected to document this first known nesting attempt in the United States. Photo by Gale Monson.

higher one first. Then, at 1455, without any indication that flight was imminent, the nestling suddenly flew off the nest. It had fledged. The event took place so quickly that it was almost missed. The newly fledged bird flew downstream and out of sight immediately. The remaining nestling showed no distress nor any desire to leave the nest cavity, but stayed deep within the cup with only its head and part of the shoulders showing.

At the moment the nestling left the nest the female returned and followed it downstream. Anderson wanted to know what communication might be taking place between the recently departed nestling and adult. The voice of the Berylline Hummingbird is almost outside of his hearing range unless he is within 4 to 5m of the bird. With the fledged bird and adult downstream he had no chance of hearing them. At about that moment Susan Anderson walked up and said she could hear the birds a short way downstream, making a series of high-pitched trumpet-like calls back and forth. The two birds were perched within 1.5m of each other on a limb of an Arizona walnut *Juglans major* about 45m downstream and about 7.5m above the stream.

On 1 September Anderson observed the remaining nestling still in the nest at 0700. At about 1000 the nest was empty. The bird apparently had fledged sometime between the two observations. A juvenile Berylline was observed at the feeders under the eaves of the Andersons' house and another at the feeders at the Preserve's headquarters throughout the rest of the day.

The two juvenile Berylline Hummingbirds and one adult female continued to be observed at these feeders until nearly the end of September, as noted earlier.

There are two distinct reasons for the success of the Berylline nest, aside from the ideal foraging conditions and other favorable habitat aspects. One was the complete protection afforded the nest from negative human disturbance and protection from

what might be observed as "normal" predation, as in the incident of the Huachuca Mountain Kingsnake. On days when summer rain storms were heavy, the Preserve's nature trail, directly below the nest, was closed to prevent anyone from inadvertently causing the female to abandon the nest and leave the eggs or nestlings exposed to weather. In addition to closing the trail during rain storms there was also a limit placed on the number of people using the trail at any given time.

ACKNOWLEDGMENTS

We wish to thank for their cooperation all those persons noted in the text as contributing data. Appreciation is due Mason E. Hale of the National Herbarium for his identification of the lichen used to camouflage the Berylline Hummingbird nests.

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The February challenge featured this small bird, photographed just after it flew from a Date Palm in a southern botanical garden. Can you identify this bird to species?

Answer to Snap Judgment 7

KENN KAUFMAN