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Unusual Dipper Nests Found in Utah

Stephen W. Everett

Carl D. Marti

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This paper reports three nests of unusual construction that we discovered during an ongoing study of reproduction, dispersal, and mortality in the Dipper *(Cinclus mexicanus)*.

Our study is being conducted on 8 km of the Ogden River below Pineview Reservoir and on 9 km of the South Fork of the Ogden River below Causey Reservoir, Weber County, Utah. These two segments contain similar nesting habitat where artificial as well as natural nest sites are utilized. Nestlings and adults are banded with U.S. Fish and Wildlife Service bands and combinations of colored plastic leg bands for individual recognition.

A typical Dipper nest has an outer shell or dome constructed of moss tightly interwoven with short strands of grass and roots (Bakus 1959, Bent 1948, Price 1975). This dome is usually 10 to 15 cm high and 20 to 25 cm in width. An opening located toward the base of the dome allows passage into the interior which is lined with grass stalks shaped into a cup-like structure. Hann (1950) described two common characteristics for nest location: 1) placement over or nearly over the edge of a stream and 2) great inaccessibility.

Our study revealed three nests in 1977 that, unlike the typical nest of the Dipper, lacked the dome and were located in small crevices or pipe-like structures. The first nest was situated in a narrow crevice 6 cm high by 12 cm wide, located in a man-made stone wall 2.75 m above the water (Fig. 1). The crevice opened into a pocket with room for only the nest cup. Two broods of four young each were successfully fledged from this nest. The second unusual nest was located in a drainage pipe opening, 12 cm in diameter, leading from a concrete bridge support 10 cm above the waterline (Fig. 2). During a normal spring run-off for the Ogden River, this site would have been under water; 1977 was a drought year in the Ogden River watershed. A single brood of four young was fledged from this nest. The third nest was situated 45 cm into a 14 cm square opening in a stone bridge support, 1 m above the water surface (Fig. 3). One brood of four young was raised here.

Other unusual instances of Dipper nesting have been reported. Sullivan (1966) described a Dipper nest 9 m away from the bank of a creek in Montana. Although the nest was of significant distance from water, construction was typical. Moon (1923) reported a European Dipper *(Cinclus cinclus)* nest 30 m from water in England. Shooter (1969) found an undomed nest also of the European Dipper in the open near a waterfall. Unfortunately, he did not determine if the nesting attempt was successful. Dipper nests in crevices are not unusual. We discovered many as have others for both *C. mexicanus* and *C. cinclus*. However, the other crevice nests which we observed and those described in the literature have all been normally domed.

The three unusual Dipper nests we describe in which the nest cup had no surrounding dome may be significant because Dippers probably require the insulation of the dome to protect eggs and young from low temperatures and water spray of fast-moving mountain streams. Dunn (1976) presented evidence that young of cavity-nesting birds use much less of their total metabolic energy for thermoregulation than do those in open nests. Dippers breeding in our study area begin nesting in February and may have eggs as early as the second week of March. Temperatures at this time still get well below freezing at night and are cool even during the day. Although the three nests outlined in this paper did not have the dome typical of a Dipper nest, they were located in structures (all man-made) which apparently provided the same protection as the dome. Without this protection, early nesting of the Dipper may not be possible.

There are several reasons that may make it advantageous or necessary for Dippers to begin nesting early and thus require covered nests. 1) Price (1975) in Colorado, found that a decline in food availability occurred during summer with a significantly lower amount of insect biomass being

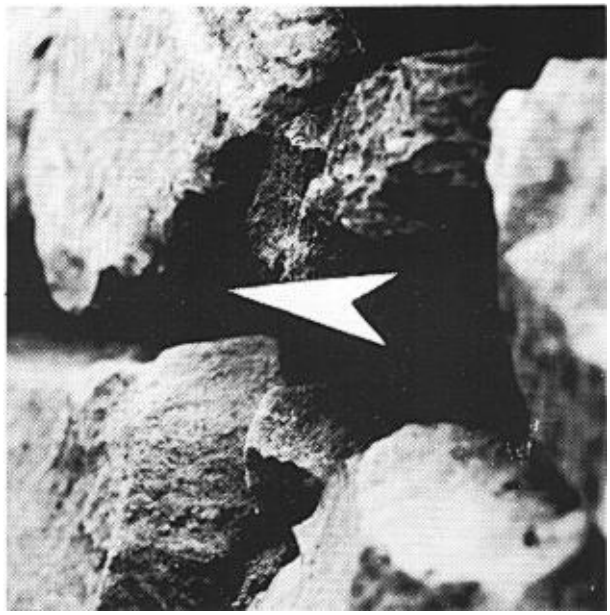

Figure 1. Crevice which contained a Dipper nest in a man-made rock wall.

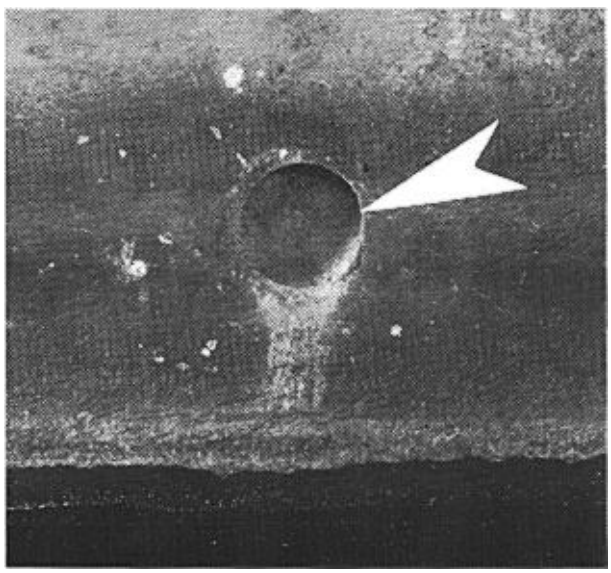

Figure 2. Drain pipe in a bridge support which contained a Dipper nest.

available in July. 2) Several studies have reported a nearly synchronous wing molt occurring in adult Dippers during August, making them flightless for 5-14 days (Balat 1960, Price 1975, Sullivan 1973). 3) High water from melting snow reaches a peak in late spring and early summer, possibly making it more difficult for Dippers to forage and provide food for young. These factors, coupled with the fact that 45% of the Dipper pairs in our area produced two broods per season — which required a total of about 56 days to complete — may make it necessary for Dippers to begin nesting early.

Figure 3. Cavity in a bridge support which contained a Dipper nest.

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Department of Zoology, Weber State College, Ogden, UT 84408