

breeding season it was much more aggressive than other gulls in the immediate neighborhood. Its nest was on the edge of the main colony, and was more often harrassed by Northwestern Crows (*Corvus caurinus*) and disturbed by humans than other nests.

On July 4, 1966 a juvenile Northwestern Crow was killed and later eaten by this gull.

The bird appeared in good health but a few physical and color changes were noticed. The bill was a dull yellow, the normally red spot near the tip of the lower mandible was now a faded orange. The plumage looked good except for the worn greyish mirrors on the tips of the primaries. The bird's feet and legs were very similar in color to those of nearby gulls. The webbing between the first and second digit on the left leg however was missing.

The band was eroded very little, all numbers were quite legible.

Mitlenatch Island is small, only 88 acres, and topographically consists of two rocky hills separated by a small grassy meadow. One hill, West Hill, rises to 175 feet. In fissures containing soil grass and small shrub growth is luxuriant. On the east and west sides of the island the shore slope is gentle; the north and south shores are precipitous.

On the south side of the island Pelagic Cormorants (*Phalacrocorax pelagicus*), about 500 pairs, nest on available cliff ledges and about 250 pairs of Pigeon Guillemots (*Cepphus columba*) nest in rock crevices and under drift-logs around the island. Black Oystercatchers (*Haematopus bachmani*), Northwestern Crows, European Starlings (*Sturnus vulgaris*) and Song Sparrows (*Melospiza melodia*) breed in lesser numbers.

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- R. Wayne Campbell, 5536 Hardwick St., Burnaby 2, B. C., Canada; and Theed Pearse, Comox, Vancouver Is., B. C.

Dew Bathing and Related Behavior of the Cardinal.—Between 9 and 19 June 1966 in Weakley County, Tennessee, I observed four female and two male cardinals (*Richmondia cardinalis*) bathing in dew-covered leaves. The usual motions of passerine bathing accompanied the behavior in all instances: rapid shuffling of wings, lowering of head and breast, and ruffling of body feathers. Bathing occurred near the crowns of small trees and shrubs at heights of 2 to 11 meters; species included sassafras (*Sassafras albidum*), red maple (*Acer rubrum*) ash (*Fraxinus* sp.), and willow (*Salix* sp.). Bathing lasted from two to four minutes and was typically followed by preening and drying movements. Foraging behavior usually preceded dew bathing, thus it is possible that contact with wet leaves during foraging stimulated the bathing. In three cases, bathing females chipped continuously, as they frequently do when away from the nest. In one case, after bathing, the bedraggled male stopped chipping, began to sing, and flew from the tree. In the longest bout, a pair of cardinals was observed dew bathing silently.

"Many species that normally bathe in standing water will sometimes make incomplete, often clumsy, attempts at bathing in rain, in wet vegetation or even, sometimes, in snow" (Simmons in Thomson, *A new dictionary of birds*. Nelson, London, 1964: 279). Verbeek (*Auk*, **79**: 719, 1962) described 28 birds of seven species dew bathing at the same time and locality during an August drought in British Columbia. Mayfield (*The Kirtland's Warbler*. Cranbrook Inst. Sci., 1960) described dew bathing by the Kirtland's Warbler (*Dendroica kirtlandii*) and cited examples of similar behavior by three other species. Nicolai (*J. Orn.*, **103**: 125-139, 1962) suggested that lying on dew-dampened grass by the dove *Geopelia cuneata* was a rudiment of true bathing, absent in this species. Ficken (*Wils. Bull.*, **74**: 153-165, 1962) noted leaf-bathing by a Bay-breasted Warbler (*Dendroica castanea*), and on 27 December 1964 I observed a Yellow-throated Warbler (*Dendroica dominica*) bathing on a dew-covered palm frond at Flamingo, Florida.

It is notable that I did not observe dew bathing by cardinals before 9 June although I had been observing them in the field daily since 13 April. The average maximum daily temperature at Dresden, Tennessee, in June 1966 was 87.8° F, and a total of 1.24 inches of rain was recorded. In much of western Tennessee, 1966 had the driest June in 13 years, and in some locations, the driest in 30 to 35 years (U. S. Dep. Commerce, *Climatological data: Tennessee*, **71**: 59-70, 1966). In the three days preceding my first observation, 0.56 inches of rain were recorded, but no rain had fallen for 11 days prior to this and later in June rain was recorded on only one day. There was no standing water in the home-ranges of any of the birds involved.

Dew bathing may have been more readily stimulated during this period of drought, but bathing in standing water was never seen in Tennessee. Twice I have observed females bathing in shallow streams in southern Ontario, but in over 100 hours of observing male cardinals in Tennessee and Ontario, I have never observed one bathing. Caged male cardinals, however, bathe readily and frequently.

As the Cardinal frequently associates with rivers and streams, its sporadic bathing is apparently not due to lack of opportunity. Most accounts of the Cardinal omit bathing behavior. In 1599, Aldrovandus (in Christy, *Cardinal*, **5**: 173-186, 1942) reported that the Cardinal "often plunges itself into water." Christy retorted: "A bit of fable. Of all the dooryard birds the cardinal is remarkable in that it is seldom seen at the bird bath." However, it seems likely that Aldrovandus' report was based on captive birds. Laskey (*Wils. Bull.*, **56**: 27-44, 1944) noted only a few instances of cardinals bathing, while Nice (*Bird-Banding*, **13**: 187, 1942) reported that female cardinals bathed fairly often, but that she knew of only one record for a male.

I have observed rain bathing by a cardinal once in southern Ontario. A male, singing from a 15 m high branch of a dead elm (*Ulmus americana*) during a light rain shower at 0717 EST on 23 June 1965, began bathing movements when the intensity of the rain suddenly increased; he bathed for four minutes, then two minutes later for a further five. Rain bathing by passerines may be more common than realized since observation is usually curtailed under such conditions.

I can suggest no reason why bathing should be indulged in less by the Cardinal than by many other passerines, if this is, in fact, the case. It appears that incidental stimulation, contact with rain or wet leaves, may act as a releaser of bathing behavior. Considering the barren environment of the cage, the proclivity for bathing shown by captive cardinals might be consistent with this suggestion.

These observations were made during a study of habitat utilization by the Cardinal supported through grants from the National Research Council of Canada to D. M. Scott of the University of Western Ontario.—Douglas D. Dow, Department of Zoology, University of Western Ontario, London, Canada.

A Device for Examining Nesting Cavities.—In studying birds nesting in natural cavities, we have frequently encountered deep narrow cavities that defy examination using a conventional flashlight or penlight. A device designed by the authors, which is essentially a modified penlight, has facilitated the observation of eggs or nestlings in obscure, hard-to-get-at cavities. In addition to making observations on bird nests in natural cavities, we have found this technique useful in examining gourd-like mud nests and nests in nest boxes.