

The value of poles and wires also includes their use as song-perches, as sites for mating activities, and as places on which to stand guard while the mate is on the nest. Cowbirds regularly perform their courtship on wires. Upland plovers habitually perch on the top of a pole or on a wire during the nesting period. Robins, red-wings, mourning doves, and many others are characteristically seen on wires, either singing or standing guard.

The hordes of swallows which line the wires during migration may cause one to wonder what these birds used for perches before the wires were available. Possibly bank swallows, tree swallows and rough-winged swallows have increased in number in recent years, or perhaps they formerly roosted in marshes. If so, it seems fortuitous that wires replaced the marshes, which have been largely destroyed for agricultural use.

If local records were available over long periods of time for some of the relatively treeless areas of the west, it is possible that range extensions of certain birds, at least locally, could be traced to the addition of poles for nesting sites. The attraction of such sites is graphically illustrated by the following letter by H. P. Attwater, who wrote to Bendire (1895) concerning the golden-fronted woodpecker:

"A telegraph line running out of San Antonio to a ranch nine miles distance was almost destroyed by these birds; they came from all sides, from far and near, and made fresh holes every year, sometimes as many as five or six in a single pole".

Eugene Eisenmann has informed me that certain hawks in Panama, once considered rare in that locality, have increased in numbers as transmission lines have provided nesting sites, and are now common in some of the more settled areas.

What seemed to Coues to be a necessary evil seems to have proved to be a blessing in disguise. Though a certain number of birds will continue to be killed in various ways by utility lines, a vastly greater number will find such lines useful adjuncts in the business of breeding, feeding, and resting.

Literature cited

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Dept. of Biology, New York State College for Teachers, Albany, N. Y.

AN UNUSUAL KILLDEER NESTING

HAROLD D. MITCHELL

During the last week of May, 1953, Mr. Ralph H. Shone, who works in an office near my own on Wilkeson Street in downtown Buffalo, called me to look at some young birds on the roof of the building. I found the birds to be young Killdeers, about a week old. I took a short series of motion pictures of the young on June 2, and asked that the birds be watched to see if they grew to maturity. One adult was especially solicitous of the young, and

attempted to attract my attention by drooping its wing in a presentation of the injury feigning act. I was away a great deal during June, and no one else was sure that the young survived to leave the roof. However, no dead young were found on the roof in 1953.

Mr. George Gallagher reported that Killdeer had nested on the same roof in 1952, but no dates nor other data were available.

In the spring of 1954, Mr. Shone again called me on June 3, and stated that he believed that the Killdeer were again nesting on the roof. I soon located the nest with four eggs. The body of a very young Killdeer, which had been dead for some time, was found on the roof, indicating an earlier unsuccessful nesting during the cold damp days of May.

The nest was watched carefully and on June 29, the four eggs had hatched. The four young were banded by Mrs. Bradley Fisk. On July 6, I took movies of the 8-day old young. I found four young, all of which ran into corners and hid as soon as the adults called, and stayed "frozen" unless prodded. Three adults flew about, calling loudly, but no injury feigning was indulged in by the three adults during my several visits to the roof in 1954. There appeared to be plenty of sandflies (*Tricoptera*) on the roof at this time.

On July 10 only three of the 12-day-old young were found on the roof. During the day preceding this, and on this occasion, at least one adult called loudly from the ground and acted as though a young bird might be on the ground nearby. I never could find a young bird on the ground in that vicinity, but wondered if the missing young bird might have been transferred to the ground, as no dead young bird was found on the roof at this time.

On July 13, only one 15-day-old bird was found alive. Two were found dead. The next day, the last surviving young was seen in the morning, but on July 15, this bird was found dead, and the adults had disappeared. During this period the weather was hot, and the wind had changed from west or southwest to southeast, coming from over downtown Buffalo. Few sand flies or other insects were observed — very noticeably fewer than were present on my earlier visits.

It appeared to me that these flies which we often call "Canadian Flies" (as they seem to be more plentiful along the Canadian shore of Lake Erie and the Niagara River than elsewhere in our area) are most numerous when we have a west or southwest wind, which wafts them in from the lake shore areas. The young birds seemed in good shape as long as the moderately cool weather and the southwest to west winds prevailed.

Dr. Harold Axtell examined the bodies of the three young birds, with these results:

- 1) Very lean, stomach contained partially digested remains of dozens of tiny insects, mostly very small beetles and ants.
- 2) Very lean, stomach contained remains of 12 to 15 small insects such as small beetles and ants.
- 3) Very lean, stomach contents as in 1) and 2). Skull neatly broken, while skin did not appear broken.

Dr. Axtell states "Even the fullest of the three stomachs contained scarcely half of what I should judge to be capacity. The food items were of insects having large amounts of indigestible parts and little nourishment, considering the bulk. Very little flesh was present on the carcasses of the birds, an amount no greater in proportion than on the carcasses of adult birds which I have known died of starvation." In no case was a parent seen to feed the young or to place any food on the ground near the young. The young were virtually prisoners within the fire walls projecting above the roof. The adults often perched on these walls and called to the young when danger threatened.

We had a long dry spell during July, which may have contributed to the fate of the young birds. There seemed to be few succulent insects present to provide the necessary water for the diet of the young birds. It will be interesting to see if the birds again attempt to nest on the roof in 1955 or in later years.

We found one previous reference to a roof nesting of a Killdeer (Bent's, *Life History of N. A. Shorebirds*, 1929, Part 2, p. 206). In 1925 Gayle Pickwell found a nest near Lincoln, Nebraska, on the gently sloping tarred and gravelled roof of a race-track grandstand, 50 feet above the ground. The young were found on the ground near the building while yet but feeble walkers.

Recently I received the August-September 1954 copy of *Nature Magazine*, which has an article on page 328 entitled "Killdeers on the Roof", by Lloyd P. Parratt. A nest with four eggs was found on the pebble granite roof of Chaffey's Boys' Gymnasium in Ontario, California, on March 30. The eggs hatched on April 22, and the young birds disappeared from the roof during the first night. There was some speculation that the adults may have carried the young to the ground, perhaps as the Woodcock sometimes carries its young clasped between its legs. Young birds were observed on the ground at the Chaffey farm nearby shortly after the young disappeared from the roof. In early June, young Killdeers were found on the roof of South Hall. The young crowded in the corners, just as I found to be the case, and would freeze at a call note and not relax until an entirely different call was offered by the adults. This roof was raised at the sides (as was the case with our location) and the young were confined to the roof. All the young died on the hot roof and either dehydration or lack of food was found to be the cause of death.

Mr. Parratt also mentioned that Kenneth E. Stagen, Curator of Ornithology at the Los Angeles County museum, told him that Killdeers had nested on the gravel roof of their museum for many years. The young usually perished, but he had been able to transfer a number of broods to the ground, where the parents took over their care.

378 Crescent Ave., Buffalo 14, N. Y.