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ADAPTABILITY IN THE CHOICE OF NESTING SITES OF SOME WIDELY SPREAD BIRDS

By CLARENCE HAMILTON KENNEDY

WITH THREE DRAWINGS BY THE AUTHOR

ONE OF the most interesting things I have had the pleasure of observing while residing in the treeless intermountain region of the West, was the adaptability in manner of nesting of various kinds of birds. Birds which in the mesophytic Mississippi Valley were seldom known to nest except in trees, nested in the western desert almost wherever they could get a safe site. Robins on this frontier of their habitat nested in vines by the house door or even on rafters in the barns. Doves nested on the ground, while Flickers nested in telephone poles, and there is hardly a desert home but shows in its perforated gables the Flicker's attempts to nest. Indeed it is reported that in central Oregon, in the region of Vale, Flickers nest even in holes in the banks as do Kingfishers.

It is interesting to note in passing that these few birds, which have such plastic habits, are also those which are most widely spread across the continent. It is also interesting to note that each of these birds in its own group has a rather wide range of diet, another point of elasticity permitting it to outrange its immediate relations. These are species which have but little sensitiveness toward the encroachments of man. In fact, in the West the Doves, Robins, and Flickers, especially in the irrigated sections, have cast their lot with man in the newly conquered wastes and have given their assistance in the conflict for the mastery of those weed and insect pests which have always threatened agriculture. Perhaps it is imagination, but I have many times felt, as I have watched these semi-domestic species in their tireless work about barnyards and orchards, that they had a more plastic mentality than those of their relatives which depend on shyness, concealment, and speed to protect

themselves. They certainly cannot be as rigidly instinct-bound as are their less adaptable relatives.

Confined to the drier western half of the continent are certain species which formerly lived in the mesophytic strips along the streams, but which since man's advent have more or less adapted themselves to the new conditions and have taken up sides with man. Two of especial note are the Brewer Blackbird and the Arkansas Kingbird. As for the first species, it is a peculiarly western bird, also of plastic habits and fearless mind, and so is widely spread. The Brewer Blackbird, formerly confined to the greasewood thickets and rose bushes along the desert streams, is now one of the ranch assistants, and builds its nest in any bush or vine that is convenient to its work about the garden or orchard.

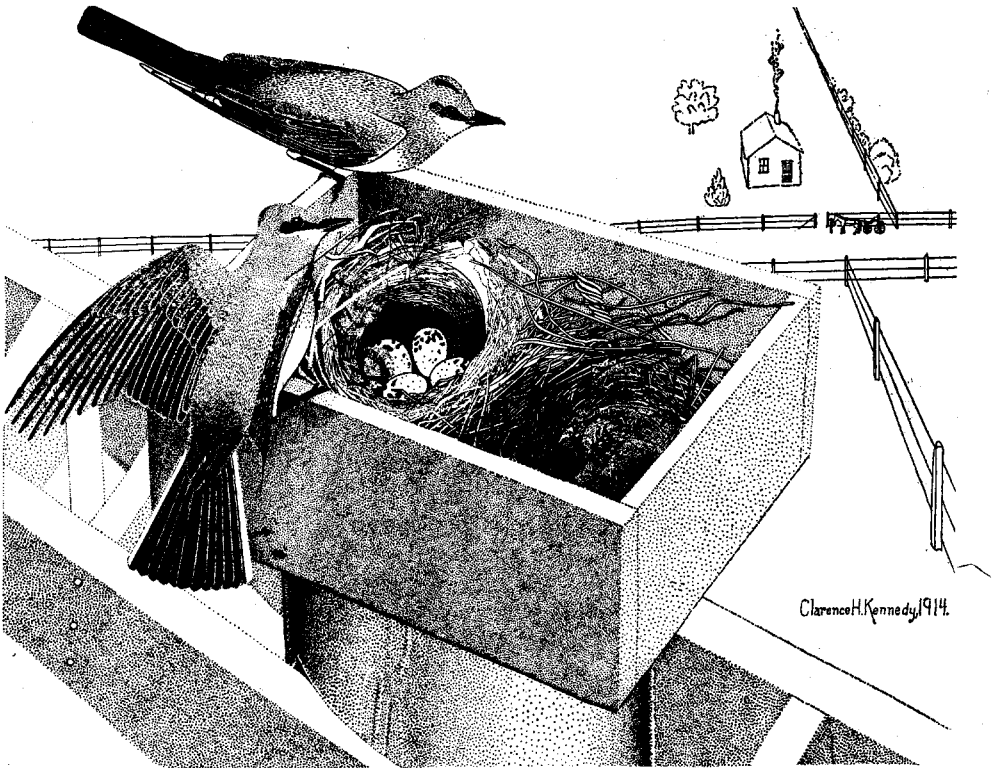


Fig. 19. AN ARKANSAS KINGBIRD'S NEST ON TOP OF A HAY DERRICK, SHOWING THE POSSIBILITY OF ENCOURAGING THESE BIRDS BY PLACING BOXES IN PROMINENT PLACES

Perhaps one of the most striking adaptations shown by any of these bird pioneers is exhibited in the nesting sites chosen by the Arkansas Kingbird (*Tyrannus verticalis*). The Yakima Valley, eastern Washington, is especially suited to showing its preferences and range in choice of sites. The valley is long and narrow, and irrigation started many years ago in its upper end.

By an intermittent development the area under cultivation was gradually extended downward until now it is irrigated for approximately forty miles of its length. In the upper parts, where irrigation has long since developed large trees, these birds seldom nest except in the larger forks of the taller

trees, while in the lower valley, where because of the alfalfa and other cultivated crops food is as abundant as in the older sections, the Kingbirds, in spite of the lack of the usual nesting sites, patrol the alfalfa fields for food, but are compelled to use the hay-derricks and telephone poles for nesting purposes. Because telephone poles are as abundant as ever in the older sections, and because the poles are practically deserted as soon as the trees become large enough to offer suitable sites, one would infer that the use of a pole for nesting was only a temporary expedient.

Almost all my observations were made during the season of 1912, my time during 1913 being entirely occupied with other work. Perhaps the following list with the accompanying remarks will show best the habits of this bird.

June, 1911. A pair built a nest at the base of the lowest horizontal limb of a five-year-old cottonwood in my door yard. No larger trees were within two miles of this. The nest which contained three fresh eggs was blown out June 3.

June, 1911. Nest on arm of electric pole in front of my home. Nest blown out June 28, 1911, probably containing eggs at the time.

June, 1911. Nest in hay-derrick on a neighbor's ranch destroyed June 28 during haying; contained young.

June 23, 1912. This day was devoted to a trip twelve miles up the valley to Granger, going on the Outlook road and returning on the hill road, with the sole object of locating Kingbird nests. These were easily located because of the open country and the noisy restless habits of the adult birds, which stay at some high outlook point near the nest and keep up a constant chattering.

The first part of this trip was along the electric line between my ranch and Sunnyside. This is a section which has been under extensive irrigation for less than ten years, and as stated previously, contained no trees large enough to suit Kingbirds. In the two miles of this line were six Kingbird nests, always next the pole, and variously placed on the cross arm, behind a converter, or even balanced behind a wire bracket. One of these nests was of the Eastern Kingbird (*Tyrannus tyrannus*). Observations at this time and on following days indicated that these nests contained at this date either eggs in advanced incubation or young birds. One of these nests blew down during a wind in the middle of July a few days after the young birds had left.

The next part of the trip followed the electric line from Sunnyside through Outlook to Granger. This low strip was one of the earliest irrigated sections, and now contains many windbreaks of lombardy poplars and black locusts. No nests were seen on poles until within two miles of Granger, where near Liberty the ground is higher, more rolling and has fewer wind breaks. Here were two poles each with a few straws hanging on its arm, the wreck of a nest blown down during a gale of the previous week. The other nests along this road were as follows: In the open country east of Outlook the nest shown in figure 19 was found on the top of a hay-derrick. The old nest in the same box showed that it had been used similarly the previous season. Three pairs of birds were seen near Outlook, the nests of which remained undiscovered. Two were in poplar windbreaks. An Eastern Kingbird's nest was found twenty feet up in a black locust east of Outlook. This nest, contrary to the habits of the Arkansas Kingbird, was well concealed by foliage. Thirteen other nests were seen, six in poplars, two in black locusts, three in hay-derricks, each of which stood in a large alfalfa field and each of which had been destroyed dur-

ing haying, and two in mulberry trees. These were the lowest nests found, one being only eight feet off the ground, while the other eleven ranged from twenty to forty feet up. Also one of this last two was built in a last season's Oriole nest. Such a site is recorded by Dawson in his "Birds of Washington". This nest is shown in figure 20. The new material of stems, hair, wool and feathers put in by the new tenants made a striking contrast to the blackened exterior of the old nest. This nest contained but one young bird, less than a week old. As mentioned previously, a violent storm had passed over this region the week before, and this nest, made too shallow by recent padding of the Kingbirds, saddled as it was to a slender upright branch, had evidently dumped the other young during the gale.



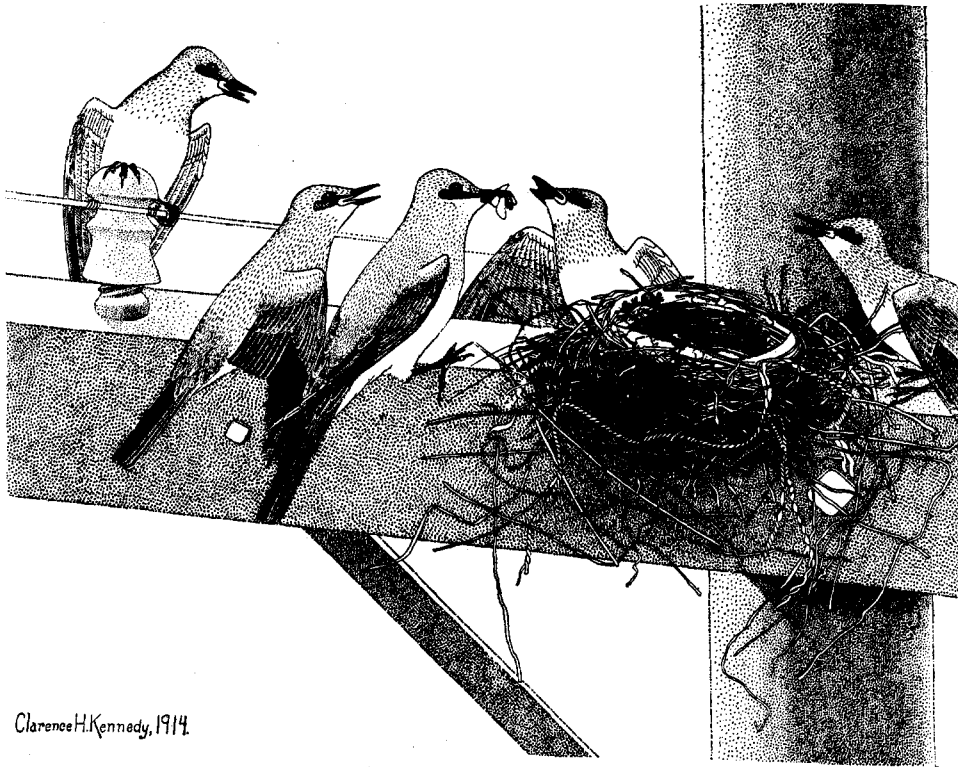
Fig. 20. AN ARKANSAS KINGBIRD'S NEST IN AN OLD NEST OF THE BULLOCK ORIOLE

On the return trip past the Outlook school, three nests were found in the black locusts bordering the school grounds, one of these that of the Eastern Kingbird. At three other poplar windbreaks birds were seen, but their nests remained undiscovered.

The nest drawn in figure 21 shows the style of nest usually built on telephone or electric poles. This was situated on Main Street in Sunnyside, and was the exception that shows the fallacy of rigid rules, for several large poplars stood near and were apparently unoccupied by Kingbirds.

Some general observations might be recorded. The Kingbirds seemed to rear but the one brood. The nests were built of small light trash, straws, string, feathers, weed rootlets, and wool (this is a sheep country where every

barbed wire fence is spotted with pieces of wool torn from passing flocks), and lined with hair and feathers. Always loosely built, the nest appeared to depend on the rigidity of its support for protection from blowing down, rather than on firm attachment to its support. More nests were placed in a three or four branched fork against the trunk of the tree than in any other situation. Such a location appeared entirely safe against wind. Except in the case of the Eastern Kingbird, no attempts at concealing the nest seemed to be made. The Arkansas Kingbird, especially, seemed to desire rather than concealment a nest in an exposed place, where it could alight easily, untroubled by foliage. This latter desideratum is probably one of the factors figuring in the Kingbirds' use of electric poles and hay-derricks as nesting sites.



Clarence H. Kennedy, 1914.

Fig. 21. AN ARKANSAS KINGBIRD'S NEST ON A TELEPHONE POLE

The use of a box for a nest, as in figure 19, made me think that perhaps Kingbirds could be encouraged to nest near dwellings, and so the following year I nailed an open box on the top of my barn. A pair of Kingbirds hung about it one day, but paid no further attention to it.

To sum up, the Arkansas Kingbird seems to prefer as a nesting site a fork near the trunk or a main limb of a large tree, such a site being from fifteen to forty feet above the ground, and exposed or easily accessible on the wing. Because of the abundance of natural food in the newly irrigated sections, the Kingbirds have entered these areas from their previous haunts among the cottonwoods of the watercourses and have adapted their method of nesting to the treeless conditions. In the very new districts they have nested on hay-

derricks and electric poles, as on the two-mile electric line between my ranch and Sunnyside, but have returned to their former nesting sites in trees when possible as is shown by the absence of nests in the ten-mile electric line between Sunnyside and Granger, which runs through an older section of the valley which is now abundantly supplied with large trees.

Coincident with this adaptation, though, can be pointed out the great mortality among the young birds in the incompleteness of the adaptation, practically total in the hay-derrick nests, and high in the electric pole nests, in the latter because of the insecurity against winds. A perfect adaptation would avoid the derricks, which are death traps during haying, and would result in building a nest securely enough fastened on an electric pole to avoid blowing down during storms.

Palo Alto, California, January 29, 1915.

NESTING OF THE AMERICAN OSPREY AT EAGLE LAKE, CALIFORNIA

By MILTON S. RAY

WITH FOUR PHOTOGRAPHS BY THE AUTHOR

DURING the past season's work afield (1914) Chase Littlejohn and the writer traveled something over a thousand miles. One of the many side trips taken was from Susanville to Eagle Lake and back, in company with Mr. Frank P. Cady, the district's game warden. As we were engaged in gathering certain data for the Fish and Game Commission, in addition to our own personal field-work, Mr. Cady aided us in every way possible, besides placing his motor car at our disposal.

Although we arrived at Truxell's on the east-central shore of Eagle Lake at dusk on May 16, it was not until we reached Schuler at the northern end of the lake, at noon next day, that we saw our first American Osprey (*Pandion haliaetus carolinensis*). The occurrence of this species was of particular interest to me as Eagle Lake is one of the few points in inland California from which the bird has been recorded as not uncommon during the summer.

On account of the bad condition of the roads we left the motor car at Schuler and continued on to Spalding's, our final destination, by motor boat. At Spalding's, which lies in heavy timber on the southwestern side of the lake,



Fig. 22. NEAR SCHULER, AT THE NORTH END OF EAGLE LAKE. THE REGION HERE IS BUT SPARSELY TIMBERED, IN STRIKING CONTRAST TO THE CONDITIONS AT THE LOWER END OF THE LAKE