

FROM FIELD AND STUDY

Watching Long-crested Jays.—Until this present year my only acquaintance with crested jays has been in California where my observations have been limited to chance meetings with these handsome birds in the seclusion of pine forests. It was therefore with interest and not a little pleasure that during the month of January, 1929, which I spent at "Cragmor," near Colorado Springs, Colorado (elevation 6300 feet), I found the Long-crested Jay (*Cyanocitta stelleri diademata*) to be the tamest and most abundant bird inhabitant of the open, landscaped grounds of this institution. I have learned that these beautiful jays may commonly be seen in the parks of Colorado's high-lying cities, but to me, a newcomer, their constant presence was a novelty and a never-failing source of entertainment. At Cragmor, they make themselves so thoroughly at home that they pay practically no attention to the passing motor-car or pedestrian, and settle as readily on buildings or electric wires as on the branches of trees.

At a certain ground floor window, a bird feeding-shelf had been erected, upon which each morning surplus breakfast accumulations were placed, such as toast, cereal (cooked or dry), pancakes, stewed raisins, and even sausages. This spot was dearly beloved by the jays, who frequented it until the last scrap was gone. One snowy morning I counted no less than thirteen individuals standing on the bare branches of the trees near the shelf, awaiting the belated arrival of their feast; and this was probably not more than half of the crested jay population of the Cragmor grounds. To get the food, the jays would alight with an audible "plunk" on the shelf, one at a time, changing places apparently with a mutual understanding, and I never saw any squabbling. The little birds—juncos, house finches and English sparrows—never had a chance till the crested jays were satisfied; and even the magpies and Woodhouse jays, of which some half dozen each frequented the neighborhood, seemed to give their crested cousins the precedence.

Soft food would be gobbled on the shelf, but the roughly broken pieces of toast were invariably carried in the bill to a distance. Here, either on a branch or on the ground, the jay would place the morsel under one foot (the other foot sometimes also adding its grasp) and then with strong pecks would break off fragments. It is evident that this bird cannot swallow without raising its bill, and, also, its gullet must be surprisingly narrow. I have seen the upward jerk of the bill several times repeated, and each time the piece of toast was returned, to be whittled a little smaller, before finally disappearing out of sight.

When the morning spread is bountiful, the jays sometimes are surfeited, and I have then watched them hiding pieces of toast. In one case I observed a bird stuff its treasure into a crevice in the ground at the base of a masonry foundation, and carefully cover it with dead leaves, finally bringing two or three leaves from a short distance away and daintily placing them on top. In other instances I have seen the jay stuff morsels into crevices in trees. One time the piece fell to the ground; but the jay just cocked its eye and did not follow it. Whether they ever knowingly seek again their hidden stores, I cannot say.

When the artificial meal was meagre, and in the afternoons, I had opportunity to observe the jays' natural method of hunting food. At Cragmor, this was always on the ground, and very thorough. Hopping, hopping methodically, the bird would seem to examine every square inch over which it passed. Sometimes the head would be held high and the gaze directed downward, the long crest almost bobbing forward; at other times the attitude would be more one of sneaking and peering, with head near the ground and crest drawn back. With incomprehensible intuition, a certain spot would be selected, and a hole dug with powerful strokes of the bill, each stroke accompanied by a side motion of the head. In this way the miniature mattock would make quite a little excavation (sometimes as deep as the bird's bill was long) and something edible would be found, as the up-jerk of the bill would plainly show. Roadside cuts and rough-stone foundations of buildings were evidently regarded as promising fields for investigation, and many times I saw the handsome blue of a jay's wing and tail displayed, as it clung to such a vertical

surface, peeking into every possible nook and cranny. The bird's bill is its constantly used tool. It turns over small stones with its bill and, especially, it scratches among dead leaves with its bill. One might believe that half a dozen fox sparrows or towhees were busy under a bush, only to find a jay vigorously brandishing its bill, first to one side then to the other.

In fact, the word "vigorous" aptly fits most of the activities of the Long-crested Jay. He will alight in a tree and hop up, up, up as though ascending the rungs of a ladder, from sheer energy. He wipes his bill on the branch with the utmost vigor. He loves to "flick" his wings and tail. When he launches himself into flight from a small tree, he leaves it trembling with the force of his push-off. Even during the noon-day siesta, when I have seen the jays resting like balls of blue in the branches on all sides, the head is never still; there is no hint of sleepiness. And as for his voice—surely there is vigor! *Jay, jay, jay* he cries, in the harshest imaginable tone (though now and again in a faint falsetto). *Chek-ek-ek-ek-ek-ek*, uttered very fast, is another favorite sound. "He is calling his mate to the food," I heard someone say. However, not only could I assign no significance to the various notes, but I could see no signs, in January, that the birds were mated. A squeaky *sreek, sreek* is often heard, and a guttural clucking, almost a rattle. Then, in amazing contrast, one finds a jay sitting alone and quietly uttering a sweet little song, with chirps and trills, like a young canary learning to sing.

The Long-crested Jay must enjoy the cold of high altitudes or it would not stay there. At Cragmor, a male House Finch slept every night in my rolled-up awning, but where the jays slept I do not know. At daybreak, I have seen a jay with his crest and wing coverts (on one side) white with frost. And when the thermometer hovers around zero, the jays look cold, and no mistake. They puff out their feathers and squat down on the branch, as though to keep their feet warm. About seven o'clock one morning, after a night when the thermometer had fallen to seven degrees below zero, one of the jays was found lying on a path, with eyes closed, but still living. When placed in a warm room, it soon revived. I saw it when it was released; it flew to the branch of a tree, shook itself, and then went straight to the food-shelf. Probably that particular jay had gone to bed the night before with an insufficiently filled tummy.

Even when water is available, the Long-crested Jays seem to prefer to drink snow. I have seen one perch on a branch covered with soft snow and literally "guzzle" the snow beside him, billful after billful. On the ground, too, I have watched them gobble far more fresh-fallen snow than seemed to be necessary. After thaws, when the snow remains only in frozen patches in sheltered spots, it is a different story. I have observed a jay at the edge of such a patch hammer away with all the energy of a woodpecker, raising his whole body with each stroke, in order to add strength to his efforts, and thus break off icy fragments, which he eagerly swallowed.—CLINTON G. ABBOTT, *San Diego Society of Natural History, San Diego, California, February 15, 1929.*

Long Breeding Period in Captive Mourning Doves.—It is interesting to observe that birds which, in their native habitat, are accredited with raising two and sometimes three broods in a season, exhibit some interesting variations when in captivity and fed on a controlled diet. This is illustrated by the following extract from the log of the activities of two Mourning Doves (*Zenaidura macroura*) which were captured as nestlings in the summer of 1927 and kept under as near ideal living conditions as possible.

January 25, 1928, the first egg was laid, and the second on the 27th.

February 10, one egg hatched, the other being added, the young leaving the nest on the 24th.

February 27, the third egg was laid, and on the 29th the fourth egg.

March 5, the nest was deserted after an all-night rain.

March 8, rebuilding started. The fifth egg was laid on the 9th, and the sixth on March 11. During a light rain on the 24th the nest was deserted, leaving one added egg and one almost hatched.

The seventh egg was laid March 29 and the eighth egg on the 31st.

April 3, 7 A. M., nest deserted after a light rain.

April 8, the ninth egg was laid, and the tenth egg on the 10th.