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A STUDY OF THE YELLOW-BILLED CUCKOO.

BY CLARA KERN BAYLISS.

ON July 24, 1916, I found a Yellow-billed Cuckoo's nest, with the bird incubating, ten feet from the ground on the horizontal branch of a small elm. Not having my "periscope" (an adjustable mirror at the top of a bamboo pole) with me, I assisted a little girl who had accompanied me, to climb the tree; and she reported that the nest contained three green eggs, one of them smaller and darker than the other two. As seen through the mirror next day I should describe the smaller as bluish-green and the others as greenish-blue.

July 29, at 6.30 P. M. the eggs were there as usual and the bird remained on the nest until I was almost under her, giving me an opportunity to note her yellow bill and her graceful, horizontal flight as she slipped noiselessly into another tree. The following day was Sunday and was exceedingly hot as was Monday forenoon. In the afternoon of Monday, July 31, there was a severe storm and the nest was not visited until the forenoon of Aug. 1, when there were three young birds in it, all black as ink, the two larger with black hairs (or quill cases) and the smaller with white

ones, on the body. A camera was strapped to the trunk of the tree and a photograph taken which shows the white "hairs" of the one.

The birds were certainly one day old and may have hatched on July 30. When jarred, they made a faint hissing or buzzing like that of a bee. Thinking the little white-haired birdling might be crowded off the frail platform, I took one of the larger birds home with me; and of that I shall speak later.

Toward evening Aug. 4, they were still there though the white-haired one was crowded to the edge of the nest with the big one lying partly upon him. At sundown Aug. 6, only the black-haired one was there, no trace of the other being discernible.

The remaining one was now larger and farther developed than his mate in my home and by this time had a few white quills on his back. He moved about uneasily and seemed to have his eyes open, but of that I could not be sure, looking through the mirror. He pushed himself to the edge and voided excreta upon the weeds below the tree where, contrary to the observations of Jean Stratton Porter, there were seven or eight droppings.

On the evening of Aug. 8 the nest was empty. The old bird was near, but manifested less rather than more of her customary anxiety, if so calm and dignified a bird can be said ever to exhibit anxiety. She called no more than usual and gradually worked her way farther from the tree instead of remaining near to watch my movements. It scarcely seemed probable that the young one could have been able to leave the nest even if, after the way of his species, his feathers had burst into bloom all in one day. He was eight and a half, and may have been nine and a half days old, and it is barely possible that he may have departed without protest and without tragedy. Among the sticks of the shallow platform which had served him for a cradle were bits of the shell that had encased him, now faded almost to robin's-egg blue. The voice of the parent was heard in the vicinity for three or four weeks longer.

The bird I took home to study was as ugly a specimen as could well be; black from tip to toe except the dark wine-colored under mandible and edges of the upper one; big bodied; stupid in the morning and voracious in the afternoon; voiding instantly after swallowing; making that faint hissing and a little *quirt, quirt*;

sleeping with head laid flat before him like an alligator, and occasionally moving it from side to side in serpent-like manner;—utterly ugly except his mouth which when wide open, was cup-shaped and red, with cream-colored knobs in it, making it look like a red flower with sessile yellowish stamens. The legs were black, the toes were black, two of them standing forward, two back, like the toes of a woodpecker. The wings were little flat, crooked sticks such as might be sawed out of a black shingle; and he let them hang down like legs, even using them to prop himself up, and two or three times fairly standing on “all fours.” When he ate he sat up as straight as a Penguin, resting on the back part of his body, tarsi flat out in front of him and toes clutching the flannel cloth in the bottom of his box, to balance himself. When he raised his head there was a perpendicular line from the tip of his bill down the under part of his body to the box in which he sat.

After three days he began to fold his wings to his sides and now and then to stretch and finally to flap them. The hissing gradually merged toward the hungry cry of young birds when being fed. The ciliæ on the edges of his wings and tail became bristles and then tiny white-tipped feather-cases; and from his chin down each side of his bare under body, curving upward to the tail, came three or four overlapping rows of minute white quills or feather cases, making him look when sitting up as if he had on a cut-away coat. These began to show Aug. 3, when he was four, possibly five days old. He uttered his little *quirt* and the buzzing sound without opening his mouth. The former he ceased to make on Aug. 4 and 5, but the latter became louder and was uttered when he ate and whenever his box was touched, whether he raised his head or not.

He lacked regurgitated food and brooding, and every morning was so dumpish that he seemed about to die. But toward night he became as lively and as hungry as ever. Yet he was not thriving as well as the one in the nest and it was my intention to exchange the two;—but he circumvented me.

At first he was fed on large caterpillars from a laurel oak; later on berries and the larvæ from cabbages. He did not seem to relish water or the white of egg and worked his bill and his black tipped tongue as if trying to spit it out. Flies were his specialty, so I secured a quantity that had been scalded and emptied out of a trap.

They were dry and hard, but after wetting them I gave him all he wanted, which was as much as a large tablespoonful. That was unwise, but he was voracious. Next morning, Aug. 6, he was only slightly more inert than usual, but could scarcely swallow a cabbage worm. When given a little juice from blackberries, much to my surprise, he lay over on his side, and died.— And he had never opened his eyes on the troubles of this world.

THE EXTRACTION OF FAT FROM BIRD-SKINS.

BY HOYES LLOYD.

MANY valuable bird-skins are rapidly deteriorating, and this work was undertaken with a view to discover a simple method to stop the decomposition of existing specimens and to enable us to prepare specimens which will not decompose from the same causes, in the years to come. If this method succeeds in preventing the imminent total destruction of type specimens and specimens of extinct species, as well as many others of value to the ornithologist I shall be amply rewarded.

The decay of bird-skins is due, apparently, to the presence of fat. This fat gradually spreads over the entire specimen and even saturates the label, in time making it illegible. The fat itself discolors the specimen and every particle of dust with which the specimen comes in contact adheres to the fat, thus increasing the discoloration. Finally, we have a dirty, greasy bird-skin; the feathers are matted and adhere to each other in groups and the specimen does not resemble the living bird in the slightest degree. Then the fat decomposes, perhaps very slowly, and the fatty acids produced slowly attack the skin itself and gradually it falls to pieces and is utterly destroyed.

Washing or wiping the specimen with solvents for fats is only a