

AN EXPERIMENT WITH WOODPECKERS.

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TO study the woodpeckers at short range had been a cherished desire with me for many months.

There seemed to be but one way to accomplish this purpose, and that was to take a pair of bantlings from the nest, rear them by hand, and note their conduct and development day by day. When the time came to kidnap the feathered babies, my heart almost failed, and I had half a mind to abandon the project entirely; but one must sometimes set aside one's sentiments, or remain in ignorance of many interesting facts of natural history.

I bore them home in a triumph, feeling sure that I was on the eve of some interesting discoveries. Whenever I slightly jarred the basket that held them, they uttered a peculiar complaining cry, which I cannot better describe than by saying that it was a sort of compromise between the mew of a cat and the squeal of a pig. In their fear of me, whenever I peeped in at them, they squatted close to the bottom of the basket.

On reaching home, I made a soft nest of grass for them, in which they slept during the night. In the morning, as soon as I approached them, they began to squeal in their low, half-frightened way; but after that, during the entire day, no matter how much I handled them, they never uttered a sound. It was, perhaps, the first day they spent in silence since they came from the shell. At first I interpreted the vigorous forward thrusts they made with their beaks as attempts to grasp the food offered them, but soon learned that they were not as guileless as I had supposed, for their evident intention was to pick at my hand in self-defense. Yet it was not difficult to feed them, as a slight pressure on their gonys, which seemed quite sensitive, would cause them at once to open their mandibles wide enough to allow me to thrust, food back into their capacious throats. On the first day of their captivity they did not open their mouths of their own accord for food.

A description of these gawky youngsters will prove how early the characteristics of the species proclaim themselves, and with a positiveness and insistence

that makes it difficult to believe in the evolution of flickers from any other type of life than their own.

The birds were only a little more than half-fledged, there being still several bare spots on their bodies; and yet their plumes were mottled like those of their elders; the red crescent on the nape was distinctly marked, as were also the black crescent on their chests and the black maxillary stripe called the "mustache;" the shafts of the quills and the under-lining of the wings were golden yellow; the crown was tinged with red and the rump was snowy white; all of which are markings of the adult birds.

In other respects they developed at this early age the traits of the species. The gripping power of their toes was wonderful. If they happened to grasp my hand, their sharp claws would almost penetrate the skin. Woodpecker-like, two claws extended forward and two backward, the inner pair on each foot being considerably smaller than the outer pair—a fact that must be of immense advantage to these birds in climbing. The under part of the foot—that is, the sole—was thick and cushiony.

My hulking pets were shy during the first day. When I approached them, they had a curious way of backing as far as they could and then cuddling down in the small basket in which I had placed them, often pressing their heads flat against the bottom, while their tails pointed almost straight up. One of them was more advanced than the other, and also seemed to be of a tamer and gentler disposition; for the other not only pressed his head down as close as he could, but would also pick at me quite savagely if I meddled with him. On account of this difference in their development, I called one of them Senior and the other Junior. Both would swallow food greedily, providing it was thrust far enough down into their throats.

On my return to my study after an absence of two hours, I found that Senior had clambered out of the basket, and got down from the window-sill to the floor, and was trying to hide himself in a dark closet. I put him back

into the basket, but he soon contrived somehow to get down upon the floor without attracting attention. When I went toward him he started in long, awkward leaps across the floor, just as the adult flickers amble across the meadow or the pasture field. I followed him, when he presently thrust his head into a dark crevice between a box and the wall, apparently thinking himself safe if his head was hidden. He was put back into his temporary nest, where he sat for an hour with his head cocked up, looking around on his small world with a decidedly flicker-like air. After dinner I found him clinging to the rim of the basket, his body in an upright posture. Presently he began to gallop about until he tumbled to the floor again. I caught him, and held my arm before him in an oblique position. The temptation proved too great for his woodpecker proclivities; he leaped to my arm and tried to climb it, thereby once more proving the persistence of genealogical traits, for it certainly must have been his first attempts at climbing, made without a single lesson from his avian instructors.

Another flicker propensity evinced itself on their first day under my inspection. If a bit of food happened to cling to the end of their bills, they would thrust out their long, round, viscid tongues almost like a snake, to remove the annoying particle. In common with all young birds, my two pets often had to stretch their legs and wings to get the stiffness out of their joints, and it was laughable to see them engaging in their calisthenic exercises.

About the middle of the afternoon, Senior again clambered out upon the window-sill, almost falling to the floor; but after a wild scramble he finally succeeded in grasping the rim of the basket on the outside, where he clung for a while, bracing himself with his tail in true woodpecker fashion. He then craned up his neck as far as he could, and thrust out his tongue for no apparent reason. Later he tumbled to the floor, and having found a dark place in the closet where he thought himself unobserved, he made his toilet, preening every feather and picking off the scaly substance that adhered to his skin and plumes. Toward evening he again crept to the rim of the basket, gripping it with his claws, and looked curiously

out of the window. Presently a house martin flew past, when the young bird uttered several low notes in quick succession, and then chirped out one of the loud, familiar flicker calls, as plainly as if he had graduated from a flicker school of oratory.

Having found his voice, he uttered this call at frequent intervals, especially when a bird passed the window. At length Junior raised his head and uttered the same call, though not so loudly. Both of them would pick half-heartedly at the food offered them, first tasting it by thrusting out their spearlike tongues. Once Senior pecked quite crossly at his little brother, seemingly to make him keep still, for he was beginning to grow vociferous.

On the same day, young as he was, Senior flitted from the window-sill to the vertical wire screen, where he clung with a steady grip that made falling impossible. Like all his immediate kinsmen, he made use of his tail for a brace, pressing it against the screen to balance his body. I pulled it outward with my finger several times, but it always flew back to its place like a spring, and was quite stiff. You might almost say that the whole woodpecker tribe stand on three legs, the tail being the third. So persistent is the hereditary habit of using this appendage in the way described, that when a woodpecker stands on a horizontal perch, his tail bends inward at an obtuse angle with the lower part of his body. My juvenile flicker soon contrived to hitch up the vertical screen a foot or two, that being, doubtless, his second experiment in climbing.

The night was spent in the basket, where the two odd pets slept cozily side by side. When morning came I made another discovery. By this time Junior was hungry enough to take food without coercion; and how do you suppose he took his victuals? Instead of widely opening his mouth and holding it open, as most young birds do, until the food was pushed down his throat, he gobbled at it greedily, somewhat like a duck, jerking his head rapidly backward and forward, with the mandibles apart, though not very wide. This made it a little difficult to feed him, as I had to be quite agile to get his food between his long mandibles and push it into his throat; but when I succeeded in getting

a morsel back far enough, he swallowed it greedily, with a queer, quawking sound, that seemed to say, "It's good! good! good!" Then his slender tongue was used to lick off the crumbs that adhered to his bill. Some hours later Senior took food in the same way.

This unique method of taking their food proved beyond a peradventure that parent flickers feed their young by the process called regurgitation, the forward and backward movements of the nestlings corresponding to the successive thrusts of the old birds as they force the food from their own maws into those of the hungry bantlings. This conclusion was corroborated by some outdoor observations made a week later, when I watched an old flicker feeding her young. I was only a few rods away, and could plainly see her thrust her bill down into the throats of her nestlings (which were old enough to leap up to the edge of the orifice leading into their cavity), and then make a number of violent forward thrusts. Besides, when she came to the nest I could not see a particle of food in her bill, and yet she fed her young, proving that she must have pumped the food from her own maw.

As my cage, which I was having made for the pets, was not yet ready, I put them in a tub, the bottom of which was covered with grass; but Senior managed to get out of it by springing up to the rim and clinging there until he tumbled to the floor. Young as they were, they discriminated among the different kinds of food I offered them, rejecting some and greedily devouring others; and when their maws were full they unconditionally refused to accept another mouthful, however palatable, flicking their heads to one side with a decided "No!"

For years I had puzzled over an avian conundrum, which was: In what position do woodpeckers roost? And it was largely to solve this problem that I had undertaken my present experiment. True, I had seen red-headed woodpeckers creep into holes in trees on moonlight evenings, and remain there until long after night had come, so that I had no reason to doubt that at least some of these birds used such cavities for bed-chambers; but the question still was, What position do they assume in sleeping? The older one of my flickers answered my inquiry very quickly and

satisfactorily; he leaped up to the rim of the tub, and thence to the side of a cage containing young meadow larks and a red-winged blackbird. Here he clung in an upright position for some time, bracing himself with his tail, and at length, to my great surprise and delight, laid his head in the feathers of his back, and went to sleep, resting as contentedly as other birds do on a horizontal perch. Thus my much-puzzled-over enigma was solved.

That night, however, both birds cuddled down contentedly in the bottom of the tub and went to sleep. The next morning they were very hungry, but would not eat food until they had first "sampled" it with their tongues, and if to their taste they would eat it greedily; if not, they would flick their heads aside with a contemptuous air, which said plainly, "Don't like it!" Senior again climbed out upon the screen door, while his less active brother still remained in the tub. At nine o'clock their cage was ready for them, and to it they were transferred. No sooner had this been done than Junior, comparatively inactive hitherto, stretched up his neck and looked around, and, to my surprise, called out, "Hick-up! hick-up!" precisely as I have heard his congeners of field and forest call hundreds of times.

Then he leaped from a small box in which I had placed him, and began a savage attack on his elder brother, who, after a somewhat vigorous defense, scrambled out of the way. His next move was to amble about on the sanded floor of the cage and investigate; but, true to his woodpecker temperament, he soon looked for something to climb, and many an awkward fall he got before practice made perfect. At length he scrambled upon the slant roof of a small box intended for the bird's larder, where he found a slight foothold for a while, but soon toppled to the floor. Then he climbed a slant board placed in a corner, with small laths nailed on its surface to afford him a foothold; but he went over everything to the top of this improvised perch, and fluttered to a scantling on the perpendicular side of the cage. However, he could not hold himself there long. Finally I took him on my hand, holding it in a slant and even a vertical position, so that he could grasp the forefinger with his claws and

brace himself below on the palm with his tail. He sat there contentedly, looking into my eyes like an innocent child. No more squatting down in the bottom of a basket for him after that! No, indeed! He suddenly seemed to look upon that position as extremely babyish.

Meanwhile, Senior, who was more active, had found a fairly good perch on a part of a sapling that I had placed in the cage. I was pained and surprised at the quarrelsome disposition my pets displayed, and, strangest of all, in every set-to Junior came out victorious, driving his more active brother about in the cage metaphorically at the point of the sword. They would stab savagely with their large beaks, sometimes striking each other in the mouth. From the time of his first defeat Senior seemed to lose heart and did not thrive, although there were times when he fought vigorously for a few moments, only to be compelled to retreat before the contest ended. The birds differed quite distinctly in temperament, for Junior was slightly larger, more obstreperous, ill-natured and headstrong, and uttered the "hick-up" call over a day sooner than his companion. His voice was coarser and stronger, and he spent most of his time uttering his coaxing, squawking call, while Senior usually remained silent, except while eating or when very hungry.

When evening came they would not remain in the box on the floor, but were determined to roost on an upright perch. At ten o'clock both of them were sound asleep, Senior on the side of the board before spoken of, and Junior on the slant roof of the feed box. In the morning Senior was still in his position, but Junior had got down into the box itself. During the day one of them drummed rapidly with the end of his tongue on the resonant roof. The branches I had arranged for perches were too small, and the bark too hard and smooth for clinging, so I cut a section of a crooked and gnarled oak sapling and placed it in the cage. Its surface was rough and soft, and the birds at once climbed it with alacrity, and seemed supremely happy, hopping from point to point and thrusting their long, flexible tongues into the crevices of the bark.

During the day Senior took his first bath. True, he went about it awkwardly as any green, gawky youngster would have done; but still he got into the

dish, squatted his body, and rapidly fluttered his wings and tail as is the habit of all birds when bathing, and then found a convenient upright perch on which to preen his feathers. Who taught him to take his ablutions in that way? At about this time the birds began to use their wings quite freely, but would sometimes miss the mark at which they aimed and get a hard fall. They also began to grow quite familiar, and would almost invariably leap on my head and creep over on my back when I bent to the cage.

At nine o'clock in the evening Senior was sleeping soundly near the top of an almost perpendicular post, his body in a vertical position, as usual. He did not wake up when I struck a parlor match and lighted the gas. Junior sat on a thick horizontal limb, but was not asleep. He became restless, and scrambled about until at last he drove his mate from his perch and took possession of it himself, soon going to sleep. Ousted from his conch, Senior had to find another. After some effort he perched on a knotty bend of the oak sapling, his feet extending obliquely downward, so that he had to sustain the principal part of his weight with his hinder toes, while his bosom had no support against which to rest. This was a new roosting position, and apparently not a very comfortable one.

The next night one of the birds slept in a vertical position, and the other, to my surprise, on a rather slender horizontal perch, his tail bent inward like the tail of a crab. The birds now became very tame, leaping on my hand or arm to be fed. When hungry, they would leap restlessly about in the cage, looking at me intently, and uttering the coaxing flicker call, "Chirr! chirr!" While on the floor Senior ran his tongue through the sand, making a little zigzag gully in it a few inches long, and also pecked three holes in the edge of the paper lying on the floor. Junior tried to take a dust bath by sliding across the graveled floor, spreading out his wings and tail and hitching about on his belly in the most ludicrous way. Much as I regretted to part with them, I soon saw that it would be cruel to keep them longer in confinement, and so, after nearly two weeks of daily, almost hourly, study of them, I took them out to the marsh and gave them their freedom.