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Birds, like people, behave as individuals. They do not react automatically to either common or unusual situations, but respond in a broad variety of ways determined by past conditioning and experience. For example, although red-winged blackbirds have a reputation for preferring cattail marshes for their nesting colonies, they move to bushy pastures or alfalfa fields when the marshes are filled. Cliff swallows have readily accepted the shelter afforded by the eaves of New England buildings as a substitute for rocky cliffs. As an alternative to caves, barn swallows have become accustomed to nesting in farm buildings. Swifts now use chimneys in lieu of, and perhaps even in preference to, hollow trees. I once found a mountain bluebird, far from its usual haunts in the aspen forests of a higher altitude, occupying an abandoned gopher hole in the sandy bank of an arroyo. A redstart I observed shingled the outside of her nest with tiny scraps of white tissue paper in place of gray plant fibers.

In the summer of 1969 I discovered a nest built largely of twigs, cunningly concealed inside a curling sheet of birch bark a good eight feet from the ground. It was empty, and the builder was nowhere in evidence. I thought immediately that it must be a brown creeper, since this species invariably tucks its nest behind loose hanging bark. Moreover, brown creepers are known to work on their nests intermittently for several weeks before finally taking up residence. I kept the nest under observation, but never saw its owners and began to think it had been abandoned—until, one day two weeks after finding it, I ^{felt} reached inside and touched two eggs. Two days later, I returned and gently tapped the covering bark to see whether an incubating bird

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would fly out. Immediately a small brown head appeared, far back in the shadow of the entrance, and then quickly withdrew--so quickly that I had no time to identify the bird I still supposed was a brown creeper. When I returned later in the day, no bird appeared in response to my tapping. ^{Feeding} Reaching inside, I found four eggs. To establish the owner's identity without a trace of doubt, I sat down nearby to watch for her return. After a short while, a winter wren appeared in a thicket near the nest tree. My mind was so set on the identification of the nesting bird as a brown creeper that I first thought the wren must have a nest not far away. I lost sight of her, only to see her reappear at the foot of the nest tree, make her way up a small spruce that grew beside the birch, and enter the nest. When I tapped the bark again, out popped the same brown head as before. How mistaken I had been! Here was a winter wren's nest made mostly of sticks. Could it be that she had adapted a brown creeper's nest for her own use?

These tiny wrens, the smallest of all North American birds except the hummingbirds, are reputed to be shy and furtive. That reputation, however, is less a product of natural secretiveness than of their preference for the thickets and boggy underbrush through which they move unperceived, close to the ground. A winter wren apprehended on its own terms, by patiently moving on hands and knees under fallen trunks and through tangled vegetation, is no less approachable than many other birds. It may then be observed in attitudes characteristic of all wrens. With its skimpy, reddish tail, uptilted at such an angle that the bird seems almost unbalanced, it bobs restlessly about, chirring hoarsely, attending to no particular business other than scolding the invader of its privacy. When there are fledglings in the vicinity, they make their location known to the adults by a constant subdued

chirping, which to human ears has a ventriloqual quality that makes the birds hard to find. The confusion is compounded by the dispersion of the brood throughout the undergrowth, so that their chirps never seem to come twice in succession from the same place. If one is lucky enough to spot a young bird, it turns out to be quite unafraid, and so approachable that it might be possible to capture by hand if one chose. Young wrens just out of the nest are fluffy, tailless mites who stare out at the world with the innocent, endearing expression typical of all baby birds. This impression of docile trust, however, is largely misleading. Fortunately, in most species the escape reaction is easily triggered. Not only can young wrens fly surprisingly well--as can other young birds--but they are equally agile in escaping capture on the ground when alarmed.

When young birds are not there to make their presence known, the movements of an adult winter wren can be elusive, and the nest itself may be impossible to find. No ground-nesting woodland bird conceals its nest more successfully. A few years ago, on Great Spruce Island off the coast of Maine, I spent many hours searching for the nest of a winter wren after I first noticed the bird--a brown, silent, mouselike creature moving about through a ground cover of skunk cabbage, low-hanging alder stems, and fallen branches. As it bobbed in and out of sight, its interest seemed to be concentrated on a brushy patch surrounding the upturned roots of a fallen tree. Knowing that winter wrens favor just such a habitat, I was ready to bet that the nest was there. Fortunately no one was near to bet with me. I knew just what to look for--a bunch of moss stuffed into a recess behind dangling roots, with no visible point of entry--but when I searched the place inch by inch, I found nothing. After this disappointment, I went back to my original position but saw nothing more that day.

Two days later I was back at the same spot. I had not been there long when I saw the wren flitting through the low, swampy vegetation. This time she was not silent, but gave voice to sporadic ticking and chirring notes; nor did she show any particular interest in the upturned stump. It occurred to me then that she might have been feeding fledglings in the brush on the previous day, and that they might now have scattered to a new location. I felt sure that if they were anywhere near, their continual chirping would have made their presence known to the parent birds. I watched while the wren worked her way warily around to the opposite side of me, grew silent, and then disappeared. After a wait, presently I saw her again, moving toward the base of a birch tree with a trunk six inches in diameter that stood not ten feet away from me. There she proceeded to drop onto a mossy mound and then vanish before my eyes. I was incredulous. Could there be a nest in what seemed to me so unlikely a location? As I went over to investigate, the wren suddenly materialized again out of the forest floor, and flew off chattering. I had no doubt any more that the nest was there, but I still could not see it. Crouching to examine the mossy mound, which looked exactly like any moss-^{overgrown rock}~~covered stump~~ or mass of decaying wood, I found that it was soft and pillow-like to the touch, and that the moss stems of which it was composed did not stand upright as they would have if they had been growing there. Then I noticed that the moss had been wedged between diverging roots of the tree. Peering at the side of the mound, I discovered a small opening under a flap of moss stems, exactly at the level of the ground. When I put a finger inside, three young wrens burst out in rapid succession, chirring as they scattered into the woods. I had propelled them into the fledgling stage.

Two years later, drawn as a criminal is to the scene of the crime,

I went back to the site and found the nest still in place, the opening now barely detectable and the interior hollow much reduced in size. The moss of which the nest had been so cleverly constructed had taken root, and was now alive and growing.

Another resident of Great Spruce Island for whose nest I spent many hours of searching in vain is the red-breasted nuthatch. This bird has never been abundant on the island, but is always present in small numbers. The name "red-breasted" is misleading—just how misleading I did not discover until recently, when I had the opportunity to photograph and observe the bird closely. In ~~the~~ ^{I observed,} one pair, at any rate, I found that the under-plumage of the male was washed with a pale buff, running patchily from the throat to the under-tail coverts but most noticeable on the flanks. On the female the buff color was still paler. Other characteristics were more useful in distinguishing the species from its white-breasted relative: its smaller size, the white stripe over the eye, and the squeaky, nasal call, higher pitched than the yank yank of the white-breasted nuthatch.

Over a number of years, during the spring and summer I hunted in vain for the nest of a red-breasted nuthatch. Time and again I would find a pair of birds feeding together, chattering ~~and~~ anking back and forth in what appears to be a habitual pattern of affectionate behavior. But I was never able to track them to a nest. They would invariably disappear into the thick spruce forest or fly off on a sudden impulse above the treetops. It was not until 1969 that I succeeded at last, and then only because of a fortunate concurrence of circumstances. That year I started looking in late May, before the birds could have begun nesting. Several pairs had already arrived on the island; I had seen them hopping along the branches of the larger trees, feeding and carrying on a steady flow of nuthatch conversation. On several different

occasions I watched one pair in particular as they worked over a large white birch tree for dormant and newly metamorphosed insects. The tree seemed to have an especial attraction, for they returned to it again and again over the course of several days. Since the birch itself appeared to be healthy and free of dead wood, I ruled it out as a nest site. At frequent intervals the male bird would ingratiate himself with his companion by returning with a particularly succulent morsel, which he would place in her open bill. She would cease her own foraging as he approached, and with quivering wings and upraised head she would assume the juvenile begging posture. All the while, they would go on making chittery, conversational sounds. It was touching to see how the male did everything in his power to please her; feeding was only part of it. One day I came upon both birds exploring the cavities made by woodpeckers in the still upright trunk of a branchless, decaying balsam fir. They crept around the trunk, poking into each of five or six holes ^{to a depth of} that had been excavated/no more than an inch or two into the trunk. One, however, was deep enough to conceal a small bird, and in it the male spent a long time excavating. He would disappear inside for a few seconds, reappear with a large chip in his bill, drop it outside, and then go back in for another. Eventually his mate came to make an inspection. Peering in, she bobbed her head a few times and flew off. Apparently the site had not been to her liking, for I never saw either of them there again.

A few days later I saw what I took to be the same pair, since they were in the same general locality, working on a dead birch stub about twenty feet tall, which had broken off at its base and fallen against a spruce tree growing a few feet away. Most of the bark had peeled away from the stub, and there was a group of shallow woodpecker holes

near the top. In two of these, one about a foot above the other, the nuthatches were busily chipping wood from the interior, each bird hidden from view except for the tip of its tail. Every few seconds one or the other would emerge, back foremost, to drop the latest chip. ^{female} ~~The~~ alternated between the two holes, ^{while} the male bird worked intermittently on the upper one, flying off from time to time to forage and invariably returning with food which he would give to his mate before going back to work. She was much more persistent in this than he, and appeared to regard his comings and goings with a somewhat lofty and patronizing air. The two holes appeared to be of the same depth, and it was impossible to predict whether one or the other would be chosen as the nesting cavity. The habit of working on unfinished woodpecker holes, which goes on throughout the month of June, appears to be an abortive activity related to pair formation and courtship rather than to nest-building in itself. When I did ultimately find a nest, the diameter of the entrance was much smaller than any of these woodpecker cavities—a strong indication that the nuthatches themselves had been responsible for the entire excavation, and had not adapted a pre-existing cavity.

The discovery of a bird's nest often seems to happen just when it is least expected. I have many times come upon the nest of a particular species while I was concentrating on the search for one of another kind. Such unexpected discoveries are a reflection of the state of alertness that does not allow any sign of activity to go unnoticed. It was under such circumstances that I found the nuthatch nest—while I was actually hunting for magnolia warblers.

The date was July 3, and the setting was in the midst of a new growth of evergreen seedlings and young birches in a space opened by a blowdown a few years before. Most of the fallen trees had been cleared away for firewood soon after the storm that leveled them; but the survivors still

remained standing in scattered clumps or as solitary mementoes of the forest that had disappeared. Tall, slender and branchless below a high evergreen crown, they held a precarious footing, one powerful gust of winter wind having deprived them of the collective support afforded by their neighbors. On this day in July, olive-sided flycatchers were announcing their proprietary rights—as they had been doing since early spring and every year since the blowdown occurred—with the persistent, peremptory peep-peep-peep that is a sure sign that they are nesting. Since this bird prefers a lofty perch such as is left behind as the wreckage of a coniferous grove as a nesting habitat, the setting was ideal.

This natural clearing also contained a few gaunt, topless, broken trunks, forty or more feet tall, whose scaling bark still clung to the fungus-softened wood between the stubs of branches. While I stood waist deep in a tangle of young balsam firs and raspberry vines near one of these skeletons, I saw a small bird fly straight to it and alight near the top. Since a ~~favored~~ nesting site of brown creepers is under scaling bark, this was what I first thought of; but the action of the new arrival was unlike that species' habit of creeping up a tree trunk from below and then flying ^{down} ~~upward~~. Having lost sight of the bird, whatever it was, until it suddenly flew away, I began to examine the trunk, foot by foot, through my binoculars, without finding any sign of a creeper's nest. The bird returned shortly, and this time I was able to keep it in view long enough to identify it as a red-breasted nuthatch and to note that it was carrying food. I watched it work its way down the tree until it reached a black spot that I had taken for a knot, where it paused; then I saw the striped head of a small gray bird appear and receive a morsel of food from the bill of the new arrival. Clearly the latter was a male nuthatch. Mistaking

the other for a juvenile, I watched the feeding process for some time, wondering where the female was, and concluding that with the young so well grown, it would be hopeless to try any photography at this nest: the disturbance caused by setting up a scaffold for my camera would be sure to cause them to fledge. Then the bird inside the nest flew out and away without hesitation, and I saw that this was no juvenile but the female whose whereabouts I had been puzzling over. Clearly the breeding cycle was less far advanced than I had supposed: the nest must contain either eggs or very small young.

Compared with the woodpecker cavities with which the nuthatches had been occupied in June, the entrance hole was much smaller than I had expected. Another surprise was the nearly rectangular shape of the opening; those made by woodpeckers are almost perfectly circular. But what especially delighted me, coming as the first direct confirmation of a phenomenon well authenticated but not hitherto experienced in person--such as the first view through a telescope of the rings of Saturn, or the green flash at sunset, or the emergence of a moth from its cocoon--was the discovery that the bark around the hole was smeared with globules of pitch, with bits of dry grass and lichens clinging to them (probably as remnants of the nesting material the birds had brought to line the cavity).

After a few minutes' absence the female returned, without food, and entered the nest. Since she remained there, it now seemed most probable that she was incubating eggs. Meanwhile, ^{with touching steadfastness} the male bird went on providing her with a constant supply of food, no doubt as a continuation of his attentions during the courtship period.

The nest was at a height of twenty-eight feet above the ground. Since there were no trees near the ^{stump} ~~stump~~, which was too shaky to be

climbed, a tower would have to be built before the birds could be photographed. This I proceeded to do with the help of my son Stephen. For poles we cut slender spruce trees, using whatever scrap lumber we could scrounge ^{as a platform for the equipment} ~~to hold the tripod together~~. When it was complete, the camera could be placed ~~at~~ the level of the nest hole, at a distance of three or feet. The construction of the tower seemed to disturb the birds hardly at all, and when I sat on the platform on top to test their reaction to my presence so close to the nest, the male nuthatch took it in stride. In a remarkably short time he was feeding the female as though I did not exist. Setting up the camera, and especially the lights, called for another short period of adjustment; but these two were quickly accepted and then ignored. **Except** for the first two or three, all the photographs I took were made while I sat beside my camera. To test the reactions of the male when he returned with food, I once placed my hand over the hole—and found him trying to poke between my fingers. I ⁺ took many pictures during the last part of the incubation period, and again after the eggs had hatched. But I never saw the young birds. My stay in Maine came to an end before they fledged. I concluded that like most other hole-nesters, they must stay in the nest longer than the young of most passerine birds.