

the adults are actively feeding the young and are least likely to desert the nest despite the presence and activities of the photographer. This is also the period in which the search for nests is most likely to be rewarded, as the parent birds' frequent journeys to the nest with food inadvertently reveal its location to an intent observer. From the photographic standpoint, finding a nest with young is likewise the most favorable circumstance since photography may be initiated without delay. When I find a nest in the early stages of the nesting period, I always wait until the young are three or four days old before setting up my equipment, although this is an anxious time, when all hope of securing photographs could be dashed by predation or an unforeseeable accident.

At this point the photographer bears a great responsibility to avoid jeopardizing the successful rearing of the young birds. If while operating his equipment he observes that things at the nest are not going well for the family, that the young are not being fed frequently enough, or are exposed too long to sun, rain or cold, he should withdraw at once. He may be able to return later, but he should do so with the utmost caution.

Once again, the steps necessary to safeguard the welfare and even the lives of the subjects may take up more time than the photography itself. This was my experience in June 1971 at Kanawha State Park near Charleston, West Virginia, where I set out early one morning to photograph hooded warblers at their nest in a greenbrier vine. Since the young birds were only three days old, it would have been better to wait for two or three days, but I could not since I was leaving the next day. To allow time for unforeseen developments, I <sup>started to</sup> set up my camera and flash equipment at about 8:30. While I was thus occupied, the female scolded nearby. Before I loaded the camera or turned on the flash lamps, I sat down at what seemed a reasonable distance to watch her reaction. She flew

around behind the nest in great agitation, flicking her wings and tail and chipping constantly, but never coming within ten feet of the greenbrier vine except once, when she landed on it above the nest, only to fly away again at once. A male hooded warbler sang in the distance, but none appeared near the nest. The female's behavior indicated that my presence alarmed her more than the camera did; to eliminate myself as a factor in her alarm I set up a blind, but still she would not go to the nest. Even after I had removed the camera and lights, leaving only the tripod, she appeared as fearful as ever.

The time was now 10:30. I was beginning to be concerned for the welfare of the young birds; the day was cool, and they had been untended for more than two hours. I then removed all equipment from near the nest, carrying it a hundred feet back into the woods. But completely removing all strange objects from the vicinity of the nest (the blind was seventy-five feet away) had little effect on the behavior of the female; she continued to flutter nervously around the greenbrier vine, approaching a bit closer but still not daring to go to the nest. It was now noon, and when at last the male came with food and tried to feed the young birds, they were too cold and lethargic to open their mouths. After poking at them repeatedly without any response, he flew away. Meanwhile the female fluttered up to the vine without alighting, and then flew off with her mate.

At this point my conscience told me that I should give up any further attempt at photography. Being now responsible for the plight of the young warblers, however, I was obliged to do everything I could to make sure they survived. Since they could die of cold and exposure if the female did not soon return to brood her young, I took the part of a surrogate mother. Removing the four naked, cold, nearly lifeless



nestlings, I held them cupped in my hand for ten minutes while I warmed them with my breath. When they had once more become lively, I replaced them in the nest and resumed my vigil from the blind. While I watched, <sup>and began to</sup> the female finally returned, fluttered hesitantly about the nest, alighting, flying off and then coming back. She tried repeatedly to feed the young birds, but they had again become chilled and unresponsive. At last she <sup>had</sup> swallowed the food she brought and flew off, evidently not knowing that they would have to absorb some warmth from her body before they could eat.

I now warmed the young birds as before. It was two o'clock when I went back to the blind once more. Soon afterward the female returned for a third time, this time without food, and after a few hesitant and awkward-looking attempts to cover her young, she wriggled into place on the nest and settled down to brood. An hour later she left the nest. Soon she was back with food, and after feeding one of the young birds she settled back onto the nest. By now they had recovered their normal reactions.

It was 3:30 when I began to set up the camera and lights, a piece at a time, whenever the female left the nest to forage. The reappearance of the strange objects caused a moment's recurrence of her old agitation. But just then the male appeared and fed the young without showing any noticeable anxiety. The female was brooding by now, and soon her mate had gone off and returned to feed her on the nest. At four o'clock I took my first picture that day; by seven, when I finally left, I had ten photographs.

Most birds are extraordinarily adaptable—a trait that becomes evident when they are being photographed. Once they have accepted the proximity of the camera to their nests—as they may do from the start without noticeable distress, or, on the other hand, only by degrees—they appear scarcely to notice subsequent additions of even a formidable amount of equipment,

including tripods, flash lamps, humming power packs, electronic triggering devices, and not infrequently the photographer himself, within a few feet of the nest. Such proximity develops most often with the smallest birds--warblers, wrens, and so on--which behave less fearfully in the presence of intruders than medium-sized birds of the thrush and blackbird families.

To photograph birds that nest high in trees, it becomes necessary either to build a platform in the tree itself or to put up a tower beside it. I used the latter procedure to photograph cerulean warblers forty feet above the ground. They accepted the tower, the equipment on it, and my own presence with such unperturbed confidence that I could stroke the female as she brooded her young. For photographing birds whose nests have been built beyond reach of scaffolding, or where constructing a tower is not feasible, I hit upon another technique twenty years ago, not long after I first moved my family to New Mexico. I had found a Western tanager's nest in Pacheco Canyon on the western slope of the Sangre de Cristo Mountains--the first nest of its kind that I had come upon in the ponderosa pine zone that is typically favored by these birds. Up until then, all the others I had found had been in orchards at the lower limit of their habitat range, where the stress of an unusual environment made them difficult to photograph. This nest, however, was placed in a thick cluster of needles at the end of a branch more than thirty feet above the ground. To make matters especially difficult, the tree itself grew on the steep canyon side. The beautiful setting of the nest, and the male's mature nuptial plumage, made me all the more eager to photograph these birds--especially since both birds were actively feeding their young, as none of the others I had thus far discovered had been doing.



After considering all the difficulties that would be involved in building a tower, I was on ~~the~~ point of giving up the whole project when it occurred to me that the logical alternative to raising the camera to the height of the nest was ~~to~~ lower the nest within range of the camera. The more I mulled over this unorthodox idea, the more it began to appear entirely practical. A risk to the safety of the young birds was certainly involved, but I was confident that the risk could be minimized by meticulous planning and forethought. Above all, my knowledge of the adaptability of birds persuaded me that the scheme could be made to work.

My plan involved clamping a wooden bridle to the nest limb in such a way that when the limb was cut off it would hang by a rope in its natural orientation, or could be quickly brought into balance in that position by the use of ropes. After this first critical step had been executed, and the adult birds had recovered from their initial agitation, I would proceed to lower the branch a foot or two at a time, allowing intervals between lowerings just long enough for the birds to adjust to the new position. Should they fail to adjust, I was prepared to raise the nest to its original location.

Even though I ~~was~~ without assistance, the operation went so well that it caused little disturbance to the tanagers. The first increment of lowering was the most critical. For an anxious moment, I watched breathless for signs of fatal confusion or of desertion by the adult birds. Had I known then what I now do, I would have worried less. From the way birds react to artificial situations of this kind, it is clear that they have a well-developed faculty for <sup>special orientation</sup> specific recognition of objects. On their return to the tree after the first stage of lowering the branch, the tanagers flew to the empty space formerly occupied by their nest and fluttered about in bewilderment, finally alighting on a

nearby branch to look over the situation. They behaved just as any of us would, I imagine, were we to return home after a short absence to discover that the house had vanished; with dismay, some wild rushing about, and finally enough presence of mind to discover the house at another location a few hundred ~~of~~ yards away.

The tanagers soon found the nest at its lowered site and accepted it without further ado. After each subsequent shift downward, they adjusted still more quickly to the new position, their innate concept of stability evidently revised to meet this unprecedented mobility. Within an hour, when the branch had been brought down to a height convenient for photography, I had no difficulty in taking all the pictures I wanted. I then raised the branch to a height where the nest would be safe from ground predators. I revisited the site every day or so for a while afterward, making sure that no mishap had occurred. None did, and the young birds fledged normally.

It should be emphasized that this technique is adaptable only to nests in evergreen conifers, whose foliage does not wilt. Deciduous leaves wilt so rapidly that besides obviating the chance of securing natural photographs, the procedure means increased hazards for the birds themselves.

In my own experience, the maneuver has not been invariably successful. Thirteen years after the experiment with the tanagers, an attempt in a situation requiring a modification was a partial failure. This time the birds involved were ruby-crowned kinglets on Great Spruce Head Island, off the coast of Maine. For days I had searched the upper branches of a grove of red and white spruces near my house there for the nest I knew was hidden among them. The male had been singing steadily for two weeks as he moved from treetop to treetop. Although he stayed high, I had little trouble in locating him as he announced his whereabouts in



a loud, often-repeated, chirrupy song. On the other hand, I had been able to catch only glimpses of his mate. I assumed—rightly, as it later turned out—that she spent most of the time incubating her eggs, coming off only occasionally to feed. I hoped to locate the nest by seeing her return to it following one of these forays. When the eggs hatched, I would have a better chance to find the nest since both birds would then be feeding the young. And so it turned out. One morning I saw them both together, high up, flitting about excitedly; and as I watched I noted that their activities centered around one particular treetop to which they repeatedly returned. Concentrating my attention on this tree with the aid of binoculars, I was able to pinpoint a spot they both visited. It was a dense clump of small branches some four feet below the top of a spindly white spruce fifty feet tall, surrounded at some distance by taller trees. Kinglet nests, consisting of a rather bulky pendent cup woven from mosses, lined with feathers and attached to the drooping twigs of a spruce branch, are usually very well concealed. This one was close to the main trunk of the tree.

As I considered the site, my first reaction was that the situation was hopeless from the standpoint of photography. The nest was so close to the trunk that the branch supporting it could not be cut off and lowered without destroying its natural setting. The entire treetop would have to be severed and lowered as I had <sup>once</sup> done with ~~the ponderosa~~ <sup>a maple tree</sup> branch in New Mexico. But here no adjacent higher branch or tree from which to lower the sawed-off section was available. Then I recalled the experience of photographing a Cape May warbler's nest in Minnesota likewise built in thick foliage near the top of a black spruce—a smaller tree than this one, growing in a bog and at a distance from any other tree. To lower the top my companions and I cut a stout pole, which we stood against the tree and lashed to the bottom part of the trunk, and then rigged a rope

slings extending from the upper part of the pole to the nest tree in such a way that when the nest tree was cut off above the lower lashings it could be lowered to a distance equivalent to the height of the remaining stump and re-secured in that position. By repeating this operation, the nest was gradually<sup>ly</sup> lowered to a convenient height for photography.

For the kinglets' nest a similar maneuver might be possible, I thought, except that for this larger, heavier tree the scheme of using a single pole would not work. I remembered a tripod frame that had been used the summer before to hoist large logs, and which seemed adaptable for my present purpose. It could be set up so as to enclose the tree, and from its peak a fall and tackle could be rigged to the trunk just above the place where it was to be sawed through. The top of the tree could be brought down to eye level, step by step, by fastening it to the top of the tripod and guying it to other trees. The plan seemed safe enough, and this time I had the help of the island caretaker. Once everything was ready, with all the lashings tight and a strain on the tackle so that the saw would not bind, we began cutting through the trunk. At first all went well: the severed tree remained straight and steady on its stump. To make the first lowering, the tree had to be hoisted clear of the stump and displaced sideways about ten inches. Just as we started this maneuver, previously unnoticed, a weak point in one of the tripod legs cracked and then bent inward. Slowly the tree began to sway, and as the momentum increased it crashed to the ground, scraping past another tree as it fell. For a moment I stood aghast and petrified. Then I rushed to look at the prostrate top, to learn the grim results of what I feared was a total disaster. I found the nest in disarray but still in place. It had been partly protected by the surrounding foliage as it sideswiped the other tree in its descent. But it was empty. On the mossy ground underneath the fallen treetop I found six naked young birds



three or four days old. Four were alive and squirming, though one of these was bleeding. A fifth was alive but appeared to be severely injured, and the sixth was limp and motionless. I gathered them up into my handkerchief and placed them, handkerchief and all, in a bowl in the kitchen for warmth while I returned to the scene of the catastrophe to see what could be retrieved out of the situation.

The only hope for the survival of the young birds was to put them back into the nest after standing the tree up again—a formidable undertaking, and one that had to be done quickly before the adult birds deserted it. They were flying around in great distress, the male chirruping wildly, in and out of the empty space that not long since had been occupied by the tree. Fortunately, the persistence of their bewildered search saved the day. Goaded to the utmost exertion by their continued cries and scolding, we tried in vain to raise the tree with ropes and tackle; but it was too heavy for our equipment, so as a last resort we cut nine feet off its heavy lower end. Only then were we able to stand it up and secure it to the stump. I repaired the nest as best I could with thread and replaced in it the four surviving young birds, including the bleeding one; the fifth, severely injured one had died in the meantime.

Not without forebodings, I then sat back within sight to watch the kinglets' reaction and to discover whether they would be able to find their nest in its new location, fourteen feet below its original spot. Never before had I moved a nest so far from its original position in a single first step. For all my apprehension, I could not but marvel at the birds' unflagging perseverance. They flew back repeatedly to the point in space where their nest had been, fluttering and finding only emptiness. Then they would perch exhausted in a nearby tree to look the situation over before trying again. They would finally swallow the food they had been carrying for their missing young, fly off to gather more,

and return only to be frustrated once again. Once the male alighted in the top of his own tree, and for a moment I was filled with hope; but he failed to recognize it as his territory and flew off without discovering the nest that was so near. One, two, three hours went by, and as my fear for the survival of the young birds grew, I concluded that there was no recourse but to raise the tree back to nearly its original position. Going in search of the caretaker, I found him painting his boat on the beach. When I had told him the story, he left his painting--which could not now be resumed until the next tide--to go with me, saying philosophically that first things must come first. Then he added with wry humor, "I have chopped down many trees, but I never before tried to put one up again."

He found three stronger poles, which he fashioned into a higher, sturdier tripod; then, with pulleys and rope, we raised the tree ten feet higher and braced it into position. When it was done, I stood back to see what the kinglets would do. The day was almost over now, and if this attempt to make amends did not succeed, nothing could save the lives of the young birds. While the tree was being raised the adults had disappeared; but soon after all was quiet again they returned, carrying food. They flew out into the space where they had vainly sought their nest for so long, found the treetop, and immediately disappeared into its branches. For several minutes great excitement prevailed as they rediscovered their offspring, settling down at last to the routine of feeding. They kept at it until dark, and that night I was much easier in my mind for having at least forestalled complete disaster.

The next day the caretaker and I completed lowering the treetop, three feet at a time, without further mishap. The birds accepted each successive drop without seeming to notice the change, until the nest was only six feet above the ground. They adapted to the new situation as though it had been planned that way from the beginning. I decided not



to attempt any photography until the following day, so as to give the young birds more time to recuperate after their ordeal. The bleeding bird injured in the fall had recovered from its wounds.

Early in the morning of the second day, I went out to inspect the nest and found the kinglets flying in and out of it in a most unusual way for birds occupied with the care of their young. I saw at once that something had gone wrong during the night, and feared that the baby birds had died. But when I looked into the nest, I found it empty and torn open on one side. My first thought was that it had been robbed by a bluejay--and the thought was almost too much to bear after all that had gone before. Then, glancing down at the ground, I discovered all four of the young birds lying almost at my feet, alive and apparently none the worse for their fall. I gathered them up and held them in my hands to warm them; since they were quite active, I concluded that they could not have been exposed to the cold for long and must have dropped out of the nest only recently. Had that happened during the night, they would surely have died of exposure by now. The condition of the nest showed how inadequate my first efforts at repairing it had been. I could not put the young birds back as it was, since they would certainly soon fall out again; so, placing them once again in my handkerchief and the bowl in the kitchen, I went in search of something that could be used to make a more lasting repair than simply sewing up the friable moss. Finding no scrap of cloth for the purpose, I was about to tear up a handkerchief when I discovered a box of Kotex. Removing the cheese-cloth from a pad, I folded it into a square to fit inside the nest, and sewed the moss to it with strong thread. Then I returned the young birds to their reconstructed home and sat down once again to observe how it was received by the adults. The male came first. As soon as he had peered into the nest, he began an excited chirping. The foreign

material did not appeal at all to his sense of propriety, and he began to pull at it; but it was too securely sewn in to be easily removed. When the female arrived, she too attempted to pull away the cloth. I think its whiteness offended them, and the roughness of its structure may have been far less agreeable for their tender young than the downy feathers the parents had provided. But eventually they settled down to their domestic responsibilities, every now and then diverting their attention from them to give a tug at the coarse material.

The four surviving nestlings were successfully reared to the juvenile stage. I could not help feeling something akin to parental responsibility toward the family and I photographed them and watched over their day-to-day activities, seeing the young ones develop from naked quasi-reptilians to fluffy, bright-eyed, responsive baby birds. They became so accustomed to my presence that they showed no alarm when I stood beside the nest. When fledging took place—that traumatic matriculation into adulthood—I was there to watch. All four had left the cramped quarters of their battered home and were perched among the branches, loudly voicing their excitement as the parent birds appeared with food, and energetically exercising their little wings, which had blossomed out from the confining quills during the previous two days almost like flowers opening. The adult birds, sensing the young ones' need for encouragement, would refuse food to prod them into the maiden flight, that first great avian adventure. One by one they took off, heading straight for another tree at a distance that seemed to me remarkable on a first attempt, and landed clumsily among the branches. At last they were free and on their own.