

Introduction

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My interest in birds goes back to my childhood and the influence of parents who encouraged a preoccupation with nature. As with so many boys who grew up before motor cars, movies, the radio, and television, one of my greatest pleasures was to roam the countryside, usually with a friend, and to visit all the wild places within bicycle range. Where I lived in Illinois sixty years ago, those wild places - virgin woods, swamp lands, and prairie creeks - are all gone now, replaced by suburban developments and parks. In that pristine environment my attention was naturally drawn to the wild inhabitants, among which in spring and summer, birds were the most conspicuous members.

Birds have always attracted man by their brilliant colors, songs and other vocalizations, and especially <sup>by</sup> their unique possession of feathers adapted to flight. The attribute of flight has had more influence on human thought and aspiration than any other animal characteristic. From Daedalus and Icarus to Leonardo de Vinci the ability to fly has excited man's envy. We have sought through the ages <sup>by</sup> myth, fantasy, and technology to attain <sup>never</sup> the freedom of birds. But we have <sup>never</sup> succeeded in surmounting our earthbound limitation. The traveler, strapped into his cramped seat, will readily concede that the airplane is a far cry from the unrestrained flight of a bird.



My love of birds, which began back during my boyhood years in northern Illinois, has never diminished. On the contrary it developed steadily along lines not usually recognized as the valid justification of a full-time profession. I have always been a great deal more affected by the beauty of birds than by the mysteries and unanswered questions concerning their classification and behavior, with which the ornithologist is primarily occupied. (Since the two lines are not completely separable, I have found myself from time to time concerned with bird behavior, but not with the single-minded dedication of the scientist. I soon discovered that the most satisfactory tool for expressing my excitement over birds was the camera, not the pencil or brush. The camera <sup>is</sup> was an instrument for immediate and quick results and its operation helped <sup>me</sup> to sublimate, by focusing my attention on the subject, the indefinable longing that close association with birds aroused <sup>is aroused by</sup> in me.

My first groping photographic efforts were exclusively with bird subjects. After many years my interest in photography became more general, until with improvements in my skill and with advances in technology I returned to birds. It was not long before I realized that the criteria of excellence applied by ornithologists to bird photography were considerably below the high professional standards of performance required of photographers in other fields, and I set about to produce photographs of comparable quality. To raise the standards of bird photography <sup>I had to</sup> required adoption of many of the innovations and techniques developed for other purposes, among the most <sup>which</sup>



important of which was flash lamp illumination synchronized with fast shutters. This <sup>technical</sup> application, though necessary, was far from sufficient. A point of view towards bird photography, equivalent to the precepts guiding the <sup>other</sup> most creative outdoor photography, was essential to raise it above the level of reportage. I realized that simply recording the bird's image on film was not enough, that the entire <sup>composition</sup> picture area was also vitally important and that ~~ideally~~ every element in it must contribute to the unity of the image if the picture were to merit inclusion in the art of photography. With these concepts in mind I went to work photographing birds and gradually accumulated a sizable collection of prints which whetted my ambition to see them published. Since I was living in Cambridge, <sup>teaching at Harvard Medical School and</sup> Mass. at the time, I took a portfolio around to a Boston publisher. The editor who observed birds as an avocation looked at all the prints, made <sup>that</sup> appropriate remarks which seemed encouraging, and at last pronounced his edict on my work: "We cannot publish these", he said, "because they are in black-and-white and the birds cannot be <sup>unequivocally</sup> identified from the photographs". I must have shown my disappointment, for he went on to say I would have to do them in color before he could publish them. I am sure he had no concept of the problems color photography of birds presented at that time, <sup>(1941)</sup> and perhaps not even whether the medium was available at all. <sup>Nonetheless</sup> But I took his remark as a sort of promise that if I were able to photograph birds in color, he would be glad to publish them.

I went to Eastman Kodak Company for advice on the use with



synchronized flash of the recently marketed Kodachrome film, and began that spring to photograph in color. Several years later, following a Guggenheim Fellowship grant to photograph birds in color, and after I had learned to make color prints by the Wash-Off Relief process, the precursor of Dye-transfer, I returned to Boston with a portfolio of color prints of which I was inordinately proud. Again I was admitted to the same editor's office, and again he looked at the collection, making appropriate and still more laudatory remarks than on the previous occasion. He said nothing about publishing, until finally in an agony of suspense I asked him straight out. Then he said, "We can't publish these, it would cost far too much".

Now ~~thirty years~~ <sup>thirty years</sup> have ~~over~~ <sup>over</sup> the bird portraits I have ~~worried over for almost half a century~~ <sup>published together for the first time.</sup>

Chapter 1  
The photography of birds, if seriously undertaken, soon involves one in projects a beginner could hardly anticipate.

The best time to photograph birds is while they are rearing their young, when <sup>their</sup> behavior is most predictable and <sup>their</sup> foraging areas are restricted by territorial necessity. <sup>Also by a molt</sup> Preceding

the breeding season many birds <sup>are in</sup> acquire by molt their most brilliant plumage, <sup>at that time</sup> which serves the purpose for them, just as

it facilitates, fortuitously for us, <sup>because</sup> of interspecific identification,

of display in pair formation and the <sup>observable</sup> establishment of territorial claims. Obviously before any photography can <sup>begin</sup> start, except <sup>of</sup> the

most chancy sort, the birds' nests, which will <sup>become</sup> become the center of their activities for several weeks, must be found. This

part of the photographer's work is by far the most time-consuming and, ~~perhaps~~ <sup>perhaps</sup> paradoxically, the most enjoyable, for it keeps him



out in the open in wild places for hours at a time. The number of nests found is directly proportional to the time spent searching, other things including knowledge of the birds being equal. To find bird's nests, especially the nests of particular species, the first necessity is ability to identify the birds visually. A close second requirement in importance is skill in recognition of specific songs. Singing during the breeding period has a special significance in that it makes the territory of the breeding pair and tells the observer that the bird in question has at least tentatively established itself in the region and will probably nest there. Song, in most species, is an exclusive attribute of the male. He arrives first on migration, selects the location where he will court a later arriving female, mate with her, and where she will build her nest. He roughly delineates the area by singing at various points around its circumference, indicating what he is prepared to defend against intrusion by other individuals of his species. Such information is invaluable knowledge for the photographer. But necessary as this knowledge is, it is by no means sufficient, for he must also become familiar with the habits of birds on their nesting grounds, their habitat adaptations, their manner of nesting, the kinds of sites they prefer, and the structure of their nests — the materials used and how they are put together. Before all this knowledge can be applied to the actual discovery of a nest, the photographer must be familiar with the geographical distribution of birds, their climatic preferences, their broad ecological needs and adaptations.



It would be folly to search for forest-adapted species in the arid Southwest, or conversely for desert types in New England. Even within one of these regions, time would be wasted looking for arboreal birds in meadows or for the latter in forests.

Locating the nest of a small passerine bird does not guarantee that one will obtain photographs. Many hurdles still remain to be cleared. <sup>When</sup> If the nest is found <sup>still</sup> while under construction, <sup>eggs are still being incubated, it's</sup> or during the incubation of the eggs the probability is considerable that the female will desert if she is unduly disturbed, <sup>as a result of the disturbance, the eggs may be</sup> or that the eggs will be destroyed by predators, <sup>birds, these are most often</sup> of which among their own class jays and grackles are the most ubiquitous; <sup>of</sup> whereas among mammals, squirrels and chipmunks are the greatest destroyers. <sup>also</sup> Depredations by mice, shrews, weasels and snakes are undoubtedly not uncommon causes of nesting failure. In view of all these hazards, it should be obvious that the bird photographer cannot count on obtaining photographs before he has actually taken them. Nor can he afford complacency on finding a single nest of a given species and should not cease his search for others. I have experienced a predation rate among the warblers as high as 75% of the nests found, which has <sup>and</sup> risen under certain unfavorable conditions <sup>it may rise</sup> to 100%. Such large loss rates are, to say the least, rather discouraging and should warn the novice against <sup>unqualified</sup> optimism. The time to photograph birds at their nests that promises the greatest opportunity for success is after the eggs have hatched. Then the adults are very active feeding the young and are least likely to desert <sup>the nest despite</sup> because of the presence and activities of the



photographer. This is also the period in which the search for nests is most likely to be rewarded <sup>as</sup> ~~for then~~ the parent birds' inadvertently <sup>e</sup> reveal by their frequent journeys to the nest with food its location to an intent observer. Likewise, from the photographic <sup>stand</sup> viewpoint finding a nest with young is 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 <sup>or</sup> to four days old before setting up my equipment <sup>in</sup> although this is an anxious time when all hope of securing photographs could be dashed by predation or an unforeseeable accident.

At this point I ~~should emphasize~~ that the photographer bears a great responsibility to avoid at all cost to himself jeopardizing by his activities, by carelessness and by inconsideration ~~the successful rearing of the young birds.~~ If while operating his equipment he observes that <sup>things</sup> circumstances 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 <sup>at once</sup> immediately. He may be able to return later, but he should do so with the utmost caution. Insert

Birds like people behave as individuals. They do not <sup>re</sup>act automatically <sup>either</sup> to common or unusual situations, but respond to circumstances in a broad variety of ways determined by past conditioning and experience just as we do. Redwinged blackbirds have an established reputation for preferring cattail bogs for their nesting colonies, although when bogs are filled they move



The degree of care necessary to protect the overall welfare, or in some extreme situations ~~may even~~ even the lives of birds, can take up more time than the photography itself, for which the involvement with them was undertaken in the first place. At the Kanawha State Park near Charleston, West Virginia, in June 1971 I set out early one morning to photograph hooded warblers at their nest in a greenbrier vine. <sup>Since</sup> Because the young birds were only three days old it would have been advisable to <sup>want</sup> postpone photography two or three <sup>for Maine</sup> days, but <sup>I</sup> since I was leaving the next day <sup>I</sup> I could not wait. However, although I anticipated no difficulty, in order to allow time for unforeseen circumstances I set up <sup>I was</sup> my camera and flash <sup>was</sup> equipment at eight-thirty. While thus occupied the female had <sup>ed</sup> been scolding nearby. When all was ready I sat down in the woods at what seemed a reasonable distance off to watch her reaction before I loaded the camera or turned on the power to the flash lamps. She flew around behind the nest in great agitation, flicking her wings and tail and chipping constantly, but <sup>no</sup> never going closer than ten feet to the greenbrier vine except <sup>once</sup> on one occasion when she landed on it above the nest, only to jump away immediately. A male hooded <sup>warbler</sup> sang in the distance but none appeared near the nest. <sup>The female's</sup> Her behavior <sup>did</sup> seemed to indicate that my presence alarmed her more than the camera, and so to eliminate myself as a factor in her reaction I set up a blind, but still she would not go to the nest. Even after I removed the camera and lights, leaving only the tripod, she remained as fearful as ever.

The time was now 10:30. I was beginning to be concerned <sup>the young birds</sup> for the welfare of her offspring; for the day was cool and they had been unattended for more than two hours. <sup>then</sup> So I removed all equipment from near the nest, carrying it one hundred feet away into



the woods. <sup>But thus</sup> This complete removal <sup>of</sup> all <sup>the</sup> strange objects from the vicinity of the nest (the blind was seventy-five feet <sup>away</sup> from it) did <sup>had</sup> not significantly <sup>little effect on</sup> alter the behavior of the female, <sup>she</sup> who continued to flutter nervously around the <sup>greenbrier</sup> nest vine, approaching <sup>a bit</sup> perhaps somewhat closer <sup>she</sup> but not daring to go to <sup>the</sup> her nest. At last <sup>she</sup> - it was now noon, <sup>and when at last</sup> the male came with food and tried to feed the young birds, <sup>but</sup> they were so cold and lethargic <sup>two</sup> they were unable to open their mouths, and after repeated <sup>by</sup> attempts to elicit the gape response by poking at them, he flew away. <sup>Meanwhile</sup> While this was going on the female fluttered up to the vine without alighting, <sup>and then flew</sup> only to fly off with her mate <sup>when he</sup> when he left.

At this point my conscience told me I should give up all further attempts at photography, especially in view of the apparent hopelessness of the situation. However, <sup>being</sup> <sup>now</sup> morally responsible for the lives of the young warblers whose <sup>apparent desperation</sup> present <sup>caused</sup> condition I had inadvertently brought upon them, I was obliged to do everything within my power to assure their survival. I could not simply walk away abandoning them since I would forever after be concerned that they had died because of what I had done. I had acquired an obligation to see the events which I had set on course through to their ultimate conclusion, whatever that might be.

If the female did not soon return to brood her young, they could die of cold and exposure. <sup>Thus I played</sup> so it behoved me to play the part of a surrogate mother until she came back. I removed the four naked nestlings, cold and nearly lifeless, and holding them in the hollow of my hand, <sup>by breathing on them</sup> I warmed them back to life with my breath. For ten minutes I applied this treatment until they had <sup>when</sup> become quite lively, once more, whereupon I replaced them in the nest and resumed my <sup>ultimately</sup> anxious vigil from the blind. When the female <sup>ultimately</sup> returned, she fluttered hesitatingly about



the nest, alighted ~~on~~ <sup>returned</sup> ~~on~~ <sup>came back</sup> ~~on~~ <sup>and</sup> immediately flew off, ~~came back~~ <sup>and</sup> and ~~to~~ <sup>to</sup> unresponsiveness. ~~She~~ <sup>She</sup> tried repeatedly to feed her young who had ~~become~~ <sup>become</sup> chilled again/ ~~She~~ <sup>She</sup> swallowed at last the food she had brought and left, ~~She~~ <sup>She</sup> did not seem to realize <sup>in</sup> that they would have to absorb some of the warmth of her body before they could accept any nourishment.

<sup>then</sup> I warmed the young birds again ~~was before~~ <sup>as before</sup>, ~~and~~ <sup>and</sup> when I went back to the blind once more, ~~it was two o'clock~~ <sup>it was two o'clock</sup>. Then ~~quite~~ <sup>soon afterward</sup> unexpectedly the female returned for the third time ~~since my~~ <sup>since my</sup> ministrations ~~began~~ <sup>began</sup>, this time without food, and following a few ~~hesitant~~ <sup>hesitant</sup> and seemingly awkward attempts to ~~cover~~ <sup>cover</sup> her young, she settled over them and ~~wriggled down at last~~ <sup>wriggled down at last</sup> to brood. An hour later she left the nest, ~~came back~~ <sup>She</sup> ~~soon~~ <sup>soon</sup> with food, fed one of her offspring, ~~and settled on them again~~ <sup>and settled on them again</sup>, ~~again~~ <sup>again</sup>. ~~The young birds~~ <sup>The young birds</sup> had ~~recovered~~ <sup>recovered</sup> their normal reactions ~~ness~~.

At 3:30 I began to set up the camera and lights, ~~piece by~~ <sup>adding one</sup> ~~piece~~ <sup>at a time</sup>, whenever the female left the nest to forage. The reappearance of the equipment ~~caused a momentary~~ <sup>caused a momentary</sup> ~~recrudescence~~ <sup>recrudescence</sup> of her former agitation. ~~The male showed up~~ <sup>The male</sup> during this process ~~and without~~ <sup>and without</sup> displaying noticeable anxiety ~~fed the young~~ <sup>fed the young</sup>. The female spent most of ~~her time now~~ <sup>her time now</sup> brooding and the male would come ~~and feed her on the~~ <sup>and feed her on the</sup> nest. At four o'clock I took ~~the first picture~~ <sup>the first picture</sup>, which ~~two hours~~ <sup>two hours</sup> before I had given up all hope of obtaining; and by seven, when I finally left, I had ~~taken ten pictures~~ <sup>taken ten pictures</sup>.



to bushy pastures or alfalfa fields. Cliff swallows have readily accepted the shelter afforded by the eaves on New England buildings as a satisfactory substitute for rocky cliffs. Barn swallows have adjusted to barns as a convenient alternative to caves. Swifts now use chimneys in preference to or in lieu of hollow trees. I once found a mountain bluebird occupying an abandoned gopher hole in the sandy bank of an arroyo, far from its usual haunts in the aspen forests of higher altitudes, where it selects ~~old woodpecker holes~~ <sup>of familiar</sup> for its nest. The style of nest building ~~that some birds have followed for all the time we have known~~ <sup>can</sup> ~~their habits~~ suddenly change or adapt to new situations. A redstart I knew 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 <sup>in the</sup> within a curling sheet of birch bark a good eight feet from the ground. It was empty and its builder was no where in evidence. I immediately thought of <sup>a</sup> ~~a brown creeper~~ <sup>that</sup> because ~~this bird~~ 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 when one day two weeks after finding it I <sup>reacted</sup> felt inside and my finger touched two eggs. Clearly the creeper had begun to lay. Two days later I returned and gently tapped the covering bark to see if an incubating bird would fly out. Immediately



a small brown head appeared far back in the shadow of the entrance <sup>and then</sup> but quickly <sup>withdrew so quickly</sup> ducked back in. It all happened so fast and I was so unprepared for this reaction that I failed to identify the bird which I assumed was a brown creeper. Later in the day I returned; no bird appeared <sup>in response to my reaching</sup> on tapping so I felt inside and <sup>to a chow</sup> found four eggs. To establish without a modicum of doubt <sup>surely is</sup> the identity of the owner <sup>of the nest</sup> I sat down nearby to watch for her return. Within a short while a winter wren appeared in a thicket near the nest tree. <sup>my</sup> So set in mind was I on the <sup>last</sup> brown creeper identification that <sup>I</sup> my first thought was that the wren must have a nest ~~too~~ not far away. I lost sight of her but she soon reappeared at the foot of the nest tree and laddering up a small spruce that grew beside the birch <sup>where</sup> and entered the nest. <sup>and puffed</sup> I tapped the bark again and the same brown head as before looked out at me. How mistaken I had been! <sup>Not a wren</sup> -- a winter wren's nest made mostly of sticks. Could it be possible that she had adapted a brown creeper's nest for her <sup>own</sup> use? <sup>secretiveness than of</sup> These tiny wrens, the smallest of all the North American birds except the hummingbirds, are reputed to be shy and furtive. <sup>less</sup> The reputation is, however, <sup>more</sup> a product of <sup>secretiveness than of</sup> their preference for the thickets and boggy underbrush through which they move unperceived, close to the ground, <sup>than to natural</sup> than to natural secretiveness. When apprehended on their own terms <sup>by patient</sup> by patient pursuit <sup>by crawling</sup> on hands and knees under fallen trunks and in tangled vegetation <sup>in winter, when it is</sup> they are no less approachable than other birds. <sup>It is</sup> The wren is then seen <sup>be observed</sup> in its most characteristic attitudes as <sup>of winter birds</sup> it follows its usual behavior patterns. With its skippy,



redish tail, up tilted <sup>at</sup> such a high cocky angle that the bird almost seems to be unbalanced, it bobs restlessly about, churring hoarsely, attending to no particular business other than scolding <sup>those who invade</sup> ~~about the invasion~~ of its privacy. When there are fledglings to care for, the young birds make their presence known by constant subdued chirping, which serves to inform the adults of their location, but to human ears in the dense cover into which they retreat <sup>at</sup> has a non-directional ventriloquist quality which makes <sup>that</sup> ~~them~~ <sup>the birds</sup> very hard to find. ~~The~~ Confusion is compounded by the dispersion of the brood throughout the undergrowth so that their chirps are heard here and there but never seem to come twice in succession from the same place. If one is lucky enough to spot a young bird it <sup>turns out</sup> ~~is found~~ to be quite unafraid, <sup>so</sup> ~~very~~ approachable, and <sup>that it might be</sup> ~~possibly~~ could be captured by hand should this be attempted. Young wrens just out of their nest are fluffy, tailless little creatures who stare out <sup>at</sup> into the wide world with <sup>the</sup> ~~that~~ innocent, endearing expression of all baby birds. This <sup>typical</sup> ~~aspect~~ of young birds of ~~seemingly complete trust~~ <sup>is easily triggered</sup> is reinforced by the chinless docile appearance of their wide juvenile <sup>gapes and thickened corners of their</sup> bills, but the <sup>however</sup> ~~impression~~ is mostly misleading. Triggering of the escape reaction, <sup>however</sup> ~~fortunately~~ <sup>largely</sup> for most species, has a low threshold. Not only can young wrens <sup>as</sup> ~~or~~ can other young birds fly surprisingly well, they are equally agile in escaping capture on the ground when alarmed.

Most birds are extraordinarily adaptable, a characteristic that becomes evident when they are being photographed. Once



they have accepted a camera close to their nests, <sup>as</sup> which they may do from the start of operations without noticeable distress or fuss, <sup>on the other hand, there</sup> or the acceptance of which <sup>it has</sup> may require a gradual stepwise approach, <sup>appear</sup> they ~~apparently~~ scarcely 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. <sup>Such intimate proximity</sup> These ~~cozy~~ situations develop most often with the smallest birds, <sup>gm</sup> warblers, wrens, etc., <sup>which</sup> who behave less fearfully in the presence of large strangers near their nests than do medium-sized birds of the thrush and blackbird families. To photograph birds that nest high in trees it is necessary <sup>to the</sup> to build a platform in the branches or <sup>put up</sup> to erect a tower. The latter procedure I used, with unanticipated lack of complications, to photograph cerulean warblers forty feet from the ground. They accepted the tower, the equipment on <sup>it</sup> top, and me with <sup>unphobed</sup> such confident indifference that I could stroke the female as she brooded her young. However, for photographing birds that build nests beyond the reach of scaffolding or where the construction of <sup>or</sup> towers is not feasible, I have hit upon another technique.

Twenty years ago, <sup>not long after I became a permanent resident of</sup> when I was still a relative newcomer to New Mexico, I found a Western Tanager's nest in Pacheco Canyon on the western slope of the Sangre de Cristo Mountains. It was the first nest of its kind I had found in the ponderosa pine zone typically favored by these birds. <sup>the</sup> All <sup>I</sup> others had <sup>found had</sup> been at the <sup>in orchards</sup> <sup>lower</sup> marginal limit of their habitat range, in lower



altitude orchards, where <sup>the</sup> unusual environmental situations and unaccustomed competitions <sup>the</sup> produced behavior-affecting stresses <sup>that</sup>

<sup>effects</sup> on the birds <sup>behavior and</sup> that made photography difficult. <sup>clearly obvious</sup> All birds least <sup>that have not succeeded</sup> successful in establishing territories in habitats <sup>the</sup> to which they are best adapted, <sup>the</sup> suffer the greatest breeding failure.

<sup>Such birds</sup> They are the less aggressive or less experienced members of the population and are relegated to the boundaries of their range where conditions are most unfavorable. <sup>It</sup> This nest <sup>above the ground</sup> however was situated in a thick mass of needles at the end of a ponderosa pine branch more than thirty feet high. To make matters especially difficult, the tree was growing on the steep canyon side. I was desperately anxious to obtain photographs of these birds because of the beautiful setting of the nest, <sup>and</sup> the mature nuptial plumage of the male, <sup>as well as</sup> and because both birds were very active feeding their young, <sup>as</sup> which had not been the case with the other nests I had found.

I considered building a tower, <sup>giving much thought to</sup> and thought long about the complications its construction would involve, <sup>and</sup> and the more I thought about it, the more difficult the undertaking became; <sup>and</sup> and I was on the point of giving the whole project up when <sup>it</sup> the strategy occurred to me that the <sup>logical</sup> obvious alternative to building a tower in order to <sup>bring</sup> put the camera near the nest was to bring the nest <sup>near</sup> down to the camera. <sup>The more</sup> As I mulled <sup>the more it</sup> this unorthodox idea over it increasingly appealed to me as a practical scheme. Risks to the safety of the young birds were certainly involved, but by meticulous planning <sup>and forethought</sup> of the procedure to be followed and for meeting anticipated untoward contingencies, I was <sup>confident that</sup> sure



the risks could be minimized. A determining factor in my confidence that the operation would succeed without disastrous consequences was my knowledge about the adaptability of birds.

My plan involved clamping to the nest limb a wooden bridle <sup>in such a way</sup> so constructed that when the limb was cut off it would hang by a rope in its natural orientation, or could <sup>quickly</sup> be brought quickly by other ropes into balance in this position. After the successful execution of this first critical step <sup>had been executed, and</sup> and after 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 long enough between lowerings for the birds to adjust to the new position. I was prepared, <sup>should</sup> in case they failed to adjust, to raise the nest back to its original location.

Although I was without assistance, the operation went remarkably smoothly <sup>that it was</sup> causing little disturbance to the tanagers. The first increment of lowering was the most critical step. For me it was an anxious moment while <sup>so</sup> breathlessly I watched the birds for signs of <sup>fatal</sup> extreme confusion <sup>or</sup> and indications of desertion. <sup>by the birds</sup> Had I known then what I know now I would have worried less. Judging from the way birds react to this kind of artificially created situation, with which they can have had no previous experience, it is clear that they have a well-developed faculty for special recognition. <sup>this</sup> On return to the tree following the first lowering, the tanagers flew to the empty space formerly occupied by their nest and fluttered about in obvious bewilderment, finally alighting on a nearby branch to look the situation over. They behaved just as we would, I



imagine, <sup>were</sup> ~~should~~ <sup>to</sup> we <sup>A</sup> return home after a short absence to discover that the house had vanished. We would certainly be dismayed, would rush about wildly, but would at last calm down enough to try to <sup>be able to</sup> ~~find out what had happened and would~~ then discover that the house had mysteriously been moved a few hundred yards to a new site.

The tanagers soon found the nest at its lower <sup>ed</sup> <sup>A</sup> site and accepted it without further ado. After each subsequent lowering they adjusted more quickly to its new position, as though revising their innate concepts of stability in the world to meet this unaccustomed mobility. Within an hour the branch was down to <sup>a</sup> <sup>A</sup> convenient height for photography when 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. Every day or so thereafter, I revisited the site to check for any mishap. None occurred, and the young birds fledged normally.

It should be emphasized that this technique is only adaptable to nests in evergreen coniferous trees with foliage that does not wilt. The rapid wilting of deciduous leaves will not only obviate securing natural photographs but will increase the hazards to the birds.

Thirteen years after this first experiment in lowering a bird's nest, and following many similar successful maneuvers, I failed in an attempt to bring down a nest without accident in a situation that required a greatly modified technique. The partial disaster was caused by a structural defect which I should have detected. The birds in this case were ruby-



crowned kinglets. For days on Great Spruce Head Island, Maine, I had searched for the nest that I knew was hidden somewhere among the upper branches in a grove of red and white spruces behind my house. The male had been singing steadily for two weeks as he moved about from treetop to treetop. He stayed high, but I had little trouble finding him as he was constantly announcing his whereabouts by a loud, oft-repeated, chirrupy song. His mate on the other hand I had only been able to catch glimpses of. I rightly assumed, as was later confirmed, that she spent most of the time incubating her eggs, but would come off occasionally to feed. My hope of locating the nest rested chiefly on seeing her return to it following one of these forays. I knew that when the eggs hatched I would have a better chance to find the nest because then both birds would be busy feeding the young; and <sup>this was exactly what happened.</sup> 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, I was able to pinpoint with the aid of binoculars a spot they both visited. It was a dense clump of small branches some four feet down from the top of a spindly, fifty foot tall white spruce surrounded by but not close to taller trees. Kinglet nests are rather bulky pendent cups woven from mosses, lined with feathers and attached to the drooping twigs of a spruce branch. They are usually very well concealed, and this one, situated near the top of the tree, was close to the main trunk.



As I contemplated the site my first reaction was that here was a hopeless situation from the viewpoint 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 tree top would have to be severed and dropped down as I had once done in the Sangre de Cristo Mountains in New Mexico. But in this case nothing, no nearby higher branch or tree was available from which to lower the top. The experience <sup>then</sup> then came to mind of photographing a Cape May warbler's nest in Minnesota with my friends from Jackson, Michigan. The Cape May nest was also built in thick foliage near the top of a black spruce, smaller than this one, <sup>that was</sup> growing in a bog well separated from other trees. To lower the tree top we cut a stout pole, which we stood against the tree and lashed to the bottom part of its trunk, and with ropes rigged a sling 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 a distance equal to the heights of the remaining stump and resecured in this position. By repeating this operation the nest was gradually brought down to a convenient height for photography.

A similar maneuver, I thought, could be followed for the ruby-crowned kinglet except that the single pole scheme would not suffice for this larger, heavier tree. I remembered a tripod frame <sup>which had been</sup> used the summer before for hoisting large logs which seemed adaptable for this purpose. It could be set up so as to embrace the tree and from its peak a fall and



tackle could be rigged to the trunk just above the place five feet high where it was to be sawed through. By fastening the tree also to the top of the tripod and guying it to other trees it could be lowered and secured to its own stump, and so step by step the top would be brought down to eye level. It seemed like a safe plan, and this time I had the help of the island caretaker. We got everything in readiness, all the lashings tight, and a strain on the tackle so that the saw would not bind when we cut through the trunk. All went well at first; the tree was severed and stood on its stump, steady and straight, giving no sign of impending disaster. To make the first lowering required hoisting the tree clear of the stump and displacing it sideways about ten inches. Just as we started this maneuver one of the tripod legs cracked at a weak point I had not seen, then bent inwards, the tree swayed over slowly, and with increasing momentum crashed to the ground, scraping past another tree on the way down. I was aghast at what had happened and stood petrified for a moment, not knowing what to do. Then I rushed to the prostrate top where the nest was to learn the grim results of this seemingly ultimate disaster. The nest was in disarray but still in place. It had been partly protected by its surrounding foliage as it side-swiped the other tree in its descent. But it was empty. On the mossy ground beneath the top I found six naked young birds three or four days old. Four were alive and squirming although one of these was bleeding. A fifth was alive but apparently severely injured and the sixth was limp and motionless. I gathered them up



MILLERS FALLS  
BIRDS  
and placed them in my handkerchief in a bowl in the kitchen for warmth while I returned to the scene of the catastrophe to see what could be saved from the situation.

The only hope for survival for the young birds was to put them back in the nest after standing the tree up again. The undertaking was a formidable one and had to be done quickly before the adults deserted. They were flying around in great distress, the male chirruping wildly, in and out of the empty space not long since occupied by their tree. Fortunately their bewilderment and the persistence of their search saved the day. Goaded to the utmost exertion by the reproach of their pitiful cries and insistent scolding, we sought desperately to repair the situation. With ropes and tackle we tried in vain to raise the tree again but it was too heavy for our equipment, so as a last expedient we resorted to cutting nine feet off its lower heavy 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 including the bleeding one <sup>1</sup>/<sub>2</sub> the severely injured baby had in the meantime died.

I sat back then within sight of the nest to watch, not without many forebodings, the kinglets' reaction and to observe whether they would be able to find their nest in its new location fourteen feet below its original position. Never had I moved a nest in the first step so great a distance. Despite my apprehension I could not avoid astonishment at the birds' unflagging devotion and perseverance. They flew



repeatedly to the point in space where their home had once been, fluttering and finding only emptiness. In exhaustion they would perch in a near tree to look the situation over before trying again. They would swallow at last the food they were carrying for their missing young and fly off to gather more 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 his territory and flew off without finding the nest that was so near. One, two, three hours went by and as my fear for the survival of the babies grew to an almost insupportable anguish I concluded that the only recourse was to raise the tree back near to its original position. I then went in search of the caretaker whom I found painting his boat on the beach. I told him the story and my conclusion. Without hesitation he dropped his painting, which he would not then be able to resume on this tide, and went with me saying philosophically first things have to come first. And then with wry humor remarked, "I have chopped down many trees, but never before have I tried to put one up again."

He found three stronger poles which he fashioned into a higher, sturdier tripod and with pulleys and rope we raised that tree ten feet higher and braced it in this position. I stood back to see the effect on the kinglets. The day was almost over, and if this attempt to make reparations did not succeed nothing could save the lives of the young birds. The adults had disappeared during the raising but soon, when all



was quiet again, returned carrying food. They flew out into the space where they had sought so long in vain for their nest, found the tree top where none had been for several hours, dropped down immediately into the branches and disappeared. Great excitement prevailed for several minutes as they re-established contact with 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 having at least forestalled a complete disaster.

The next day the caretaker and I completed the lowering, 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 from the ground. They adapted to the new situation with all its different associations as though they had planned it that way from the beginning. I decided not to attempt any photography until the following day to give the young birds more time to recuperate from 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 to see how the kinglets were making out. They were flying in and out from the nest in a most unusual way for birds occupied with the care of their young. They would go to the nest but come out immediately as if baffled by what they found and top about searching among the branches that covered the nest. I saw at once that something had gone wrong during the night and feared that the babies had died,



but when I looked in the nest I found that it was torn open on one side and empty. My first thought was that a bluejay had robbed the nest and it was almost too much to bear after all that had gone before. On glancing down at the ground in search for more evidence of what had happened I saw ~~laying~~ there almost at my feet all four of the baby birds. They were alive and to all appearances none the worse for their fall. I gathered them up and held them in my hands to warm them but as they were quite active I concluded they could not have long been exposed to cold and must only recently have dropped out of their nest. Had this happened during the night they would by now surely have died of exposure. The condition of the nest showed that my first efforts at repairing it had been completely inadequate. I could not put the young birds back the way it was since they certainly would soon fall out again, so I placed them again in the bowl in my handkerchief and went in search of material for making more lasting repairs; simply sewing up the friable moss would not do. Nowhere could I find scraps of cloth from which to fashion a new nest lining and was about to tear up a handkerchief when I discovered a box of Kotex. It would provide just the material I needed. I removed the cheese cloth from a pad, folded it into a square to fit inside the nest, and with strong thread sewed the moss to it. I then returned the young birds to their reconstructed home and sat down once again to observe its reception by the old ones. The male came first. As soon as he peered in he began an excited chirping. The foreign



material did not at all appeal to his sense of propriety and he began to pull at it but it was too securely sewn in to be removed. When the female came she too attempted to pull away the cloth. I think the whiteness of it offended them, or the roughness of its structure, far less agreeable for their tender young than the downy feathers they had provided. They settled down eventually to the pursuit of their domestic responsibilities, though every now and again would be diverted from these duties to give a tug at the coarse material.

The four surviving nestlings were successfully reared to juveniles. I could not help acquiring an attitude akin to parental responsibility towards the family as I photographed and watched over their day-to-day activities and saw the young ones change from naked pseudo-reptilians to fluffy, bright-eyed, responsive baby birds. They became so accustomed to my presence, showing no alarm when I stood beside the nest, that my guilty feeling for having caused the death of two of their siblings faded under the opiate of their acceptance. I was present when the fledging -- that first traumatic matriculation to adulthood -- took place. All four had left the over-cramped quarters of their battered home and were perched about in the branches loudly voicing their excitement as their parents appeared with food, and exercising energetically their little wings which during the previous two days had blossomed out from the confinement of quills like the opening of flowers. The old ones sensing the young birds' need for encouragement would refuse food to prod them into that first important avian adventure, the maiden



flight. One by one they took off heading straight for another tree at a distance that seemed to me remarkably great for the initial attempt, and landed clumsily among the branches. They were free at last.