A NESTING OF THE ACADIAN FLYCATCHER

BY DONALD L. NEWMAN

FROM June 12, 1954, when I discovered the partly-completed nest, until August 8, when I last observed a lone bird, I watched the nesting and post-nesting activity of a pair of Acadian Flycatchers (*Empidonax virescens*) whose breeding territory was located in a small second-growth woodland in Cleveland Heights, Cuyahoga County, Ohio.

In all I made 60 individual visits to the area on 53 days, of which 49 days were consecutive. Out of the approximately 61½ hours of observation, 38¼ hours were spent at the nest site whereas the remaining time was devoted to seeking and watching the young after they left the nest. By necessity most observations were made in the evening between 7:00 and 9:00 p.m., but the birds were also studied during the day on week ends; and at the approach of critical periods (egg-laying, hatching, and departure from the nest) I made brief visits to the nest each day shortly before 8:00 a.m. The earliest observation was at 7:25 a.m., the latest at 9:25 p.m. Eastern Daylight Time. The nesting observations were made without a blind from a distance of 12 feet, with the aid of 8 x 30 binoculars.

The woodland in which the nest was located lies in a flat valley approximately 300 feet wide through which a shallow brook snakes its way. Above the steep slopes to the north and south there are broad boulevards beyond which there are imposing suburban homes. On the north side of the brook there is a fairly dense understory, but on the south side all the undergrowth has been removed, creating a sharp contrast between these two thin slices of woodland. The flycatchers confined themselves almost entirely to the shaded north side where there is a dense growth of sapling trees.

Red oaks (*Quercus maxima*), some of them 60 or 70 feet tall, predominate on the north slope and on the flat border to the edge of the boulevard, although there is also a scattering of beech (*Fagus grandifolia*), tulip (*Liriodendron tulipifera*), white ash (*Fraxinus americana*), and American elm (*Ulmus americana*). Witch hazel (*Hamamelis virginiana*) grows luxuriantly on the slope and in the valley as well. Sharing this strip of woods with the Acadian Flycatchers were Red-eyed Vireos (*Vireo olivaceus*), a pair of Eastern Wood Pewees (*Contopus virens*), Scarlet Tanager (*Piranga olivacea*), Tufted Titmouse (*Parus bicolor*), Wood Thrush (*Hylocichla mustelina*), Black-billed Cuckoo (*Coccyzus erythrophthalmus*), and Robin (*Turdus migratorius*). Common Crows (*Corvus brachyrhynchos*) and Blue Jays (*Cyanocitta cristata*) occasionally visited the area.

NEST-BUILDING

When I discovered the nest on the afternoon of June 12, it was largely

completed, the sides and rim seemingly finished but the bottom thinly woven with much light showing through. The nest was located at the outer end of a forked branch of a witch hazel bush which grew half-way down the steep north slope, and about 75 feet from the brook. By a happy chance it was easily seen from the path at the top of the slope, only about 12 feet distant. Shading the nest, which consisted of the customary loosely-woven fibers of wild grapevine bark and other fibrous strands, was a single leaf attached to a short twig on each side of the forked branch from which the nest was suspended. And from the bottom hung a streamer of grapevine bark some 8 inches long, which the flycatcher never incorporated into the nest.

Although on the first day I spent only a brief time watching the construction of the nest, on the following day, June 13, I devoted one-and-one-quarter hours in the morning observing the building activities. During this time the female made a total of 22 visits to the nest, or an average of one trip every four minutes. (In the absence of any physical characteristics to distinguish the male from the female, I must assume that all of the nest building was done by the latter, and this assumption seems to be borne out by the repetitive pattern of activity as well as by the call notes peculiar to the female, which notes I did not learn until later.) On my arrival at the nest site at 9:40 a.m., the female was absent but she soon appeared and entered the nest where she began to mold by pressing against the sides with her breast, making several 90-degree turns as she moved around the inside of the cup. She then turned her attention to the bottom on which she pressed with great vigor, tipping far forward so that her tail was at a right angle to the rim of the nest. Finally, before departing, she adjusted and drew in fibers attached to the rim. The male, nearby but out of sight, kept repeating a single call note, *wert*, and continued to call off and on for the next six minutes, during which time the female returned to the nest just once to resume her molding movements and the adjusting of the nesting material.

At 9:58 one of the flycatchers—seemingly the male—began to call in a loud, excited manner as the result of the appearance of a female Brown-headed Cowbird (*Molothrus ater*) which perched in an oak tree overlooking the nest site. Although the flycatcher flew directly at her, the Cowbird held her perch but soon departed, leaving him (?) to utter his single note for a minute or two more after which he lapsed into silence. He was not heard or seen again that morning, except for his *ka-zeep* song which he sang just once at 10:04, close to the nest on which the female was then working. It has been clearly shown by Brandt (1947:79) that the Acadian Flycatcher is sometimes parasitized by the Cowbird, with the young of the latter being successfully fledged.

The morning's observation revealed that the female had a definite pattern of activity. Whatever material she was gathering (I could never see anything in her bill even with

my binoculars), she obtained from or near the ground at a distance of not more than 150 feet from the nest, going and coming along the fairly densely grown slope to the east of the nest or occasionally to the tangles of wild grapevine along the border of the woods. With but three or four exceptions, she did not fly directly to the nest but instead paused first for from 10 to 30 seconds either in a witch hazel bush lower down on the slope or in one adjoining the nesting site to the east. Sometimes, however, she would perch momentarily in her own bush and then fly directly to the nest to continue her molding and binding, for that is what she was evidently doing when she reached out to pull in loose strands which she proceeded to work into the nest.

In going to and from the nest and while working on the nest, the female usually called frequently—a single note with always the same inflection. This note appears in my field notes variously as *whit*, *pit*, *wert*, and *swert*, but it is probably equally well transliterated as *peet*, which is the spelling chosen by Saunders (1951:86).

When I made a brief inspection at 7:45 a.m. on June 14, the female, which was calling nearby, came to the nest for a moment and then flew away; the male was calling from down in the valley. On the morning of the 15th and 16th I did not see either bird but did hear them during my few minutes' stop in the woodland where I examined the nest, finding it still empty. On none of these three days was I able to discover by hasty examination whether any additional work had been done on the nest.

Egg-Laying

I discovered the first egg in the nest on the evening of June 17. But as I had not visited the nest since the morning of the 16th, I had no way of knowing on which of the two days the egg was laid. At 7:30 a.m., June 18, a second egg was in the nest. The third and last egg completed the clutch on June 19, though I cannot be certain it was actually laid that day because I failed to visit the nest on the preceding evening to ascertain the number present at that time.

Incubation

For one hour and 20 minutes in mid-afternoon of June 19 I watched as the female began to incubate. (Insofar as I could determine the male did not participate in incubation.) She was absent when I arrived, but appeared seven minutes later to flycatch in the understory in the immediate vicinity of the nest site. Then she perched for a moment about 15 feet away, and then she flew directly to the nest, settling down rather high with head and bill raised so that she could look about, which she did frequently. During the next 70 minutes she left the nest four times to feed in the understory or along the brook. She seemingly did not go more than a few hundred feet, judging by the sound of her *wert* notes, uttered from time to time during her absence as well as upon her return. On one such absence a Blue Jay flew into the treetops to skulk about, seemingly in search of eggs. Thereupon one

of the flycatchers, quite certainly the female, began to call loudly though at some distance from the nest and continued to do so all the while the jay stayed in the area, and even for a few minutes after this prowler departed. Finally, having been gone for about 22 minutes, the female returned to the nest, uttered several *wert* notes, and settled down though looking about alertly.

A little later in the afternoon, almost immediately after the female's return to the nest following a five-minute absence, the male appeared to perch about two feet away on the very branch to which the nest was attached. He uttered two low, exquisitely soft, warbled phrases, *pee-tul, pee-tul,* to which his mate failed to respond and he quickly flew away. Shortly thereafter he sang his *ka-zeep.*

According to Bent (1942:190), "the period of incubation, as observed by Harold M. Holland . . . is 13 days," but my particular flycatcher incubated for 14 full days, from June 19 through July 2, the eggs hatching on the following day. During this period I spent some 17½ hours at the nest site where it soon became evident that the female had certain fixed patterns from which, however, she not infrequently deviated. These habits or routines were related to four principal activities: (1) her position while incubating; (2) her departure from the nest; (3) her return to the nest; (4) resumption of incubation.

(1) *Position while incubating.*—The branch of the witch hazel in which the nest was located grew on the outer side of the bush away from the slope so that the apex of the fork to which the nest was attached pointed inward toward the slope. When she was incubating, the female either sat facing the slope with her head at the apex of the crotch or sat roughly parallel to the slope; on only three occasions do my notes indicate that she sat facing away from the slope and looking out over the valley. The high canopy of oaks kept the sun from penetrating the understory, which was largely in shadow during the day, but was brightly illumined for brief periods in the evening by searching fingers of light from the slowly-setting sun. During these minutes of illumination she always sat facing away from the sun, but on one occasion during the tenth day of incubation she left the nest while it was spotlighted by the sun's rays and was absent for eight minutes, returning after the nest was again enveloped in shadow. Throughout the entire 14 days of incubation she was highly alert, frequently looking from side to side or inspecting the leaves overhead and occasionally peering down over the side of the nest. In the early stages and again in the late stages of incubation, she was quite restless and shifted her position frequently, sometimes rising onto the rim of the nest to look inside and, seemingly, to reach in to move the eggs.

(2) *Departure from the nest.*—When she left the nest, which she did without making any vocal utterance, the female, with but one exception on the first day of incubation, invariably departed from the east side of the nest close to the apex of the fork. At times it appeared that she sprang *up* and off through the combined use of her wings and feet, whereas at other times she seemed to pitch off over the side, and with set wings would glide down to the base of the slope and on through the understory to the east to a distance of perhaps 85 to 150 feet. Not infrequently, however, she would simply drop to the base of the slope where she would perch for a moment and then move on to flycatch in the more open woods beyond or along the near bank of the brook. Only once

during the incubation period did I observe her feeding in the wooded border above the slope, and on that occasion she had first flown off along the slope to a distance of about 85 feet and then had worked her way up and back through the border of the woods.

On the morning of the second day of incubation she suddenly left the nest to fly to a tangle of dead branches lying on the slope about 30 feet away where she snapped up an insect and immediately alighted on one of the branches in order to swallow her prey, after which she returned to the nest in a moment to resume incubation. This was the sole instance of this unusual behavior.

It was not uncommon for the female to leave the nest after 8:30 p.m., when the woods was already cloaked in a dim half-light, to flycatch in her customary area. Her latest hour of departure was recorded on the twelfth day of incubation, June 30, when she flew off at 9:10 p.m., the sun having set although the western sky was suffused with the afterglow. Although I waited until 9:25 p.m. I could not detect her return in the darkness which now enveloped the woods, and at that late stage in the incubation period I was unwilling to go down to the nest for fear that my intrusion would in some way interrupt the nesting activity.

(3) *Return to the nest.*—After the female left the nest to feed she usually remained silent for several minutes but sometimes she started to call *wert* just seconds after her departure, continuing to call for a minute or two and then lapsing into silence. Her return to the nest was made gradually, in stages, and was almost invariably accompanied by much calling, sometimes continuous but more often fitful. Coming back through the understory at or just below the base of the slope, the female would drop into a large hazel bush at the foot of the slope and about 12 feet below the nest site. From there she would advance to a second hazel bush just to the east of the nesting bush, pause for 15 to 30 seconds, and then fly directly on to the nest; rarely she would perch for a moment in the nesting bush itself before flying on to the nest, thus adding a third stage to her return. There was a certain branch in the second hazel bush which she favored, and at times it seemed she alighted on the exact same spot. Not always, however, did she keep to her routine, for not uncommonly when she paused in the hazel bush at the bottom of the slope she sallied out after insects and then resumed her bush-by-bush approach to the nest. Even on those rare occasions when she returned to the nest along the upper half of the slope, coming through the oaks at a height of 12 to 15 feet, she always dropped into the witch hazel at the base of the slope and worked her way back up. The only marked deviation from this habit pattern occurred on the evening of July 1, the 13th day of incubation, when the female, which had been feeding along the brook, came onto the nest in what my notes describe as "a long upcurving glide which seemed to originate outside of the cover of the hazel bushes but carried her in and thru."

Judging by the sound of his voice, the male sometimes joined the female when she left the nest to flycatch, but only once during the incubation period, on the afternoon of June 26, did I actually see the two together. On that occasion they were darting out from a beech tree overhanging the brook, about 100 feet from the nest. A few moments later the female perched in the second hazel bush where she was soon joined by her mate which executed a brief flight about her while uttering the sweet *pee-tul* phrase. He then flew away and she settled on the nest without uttering a note, but in a moment he sang his *ka-zeep* close by, repeating it two minutes later from a perch along the brook.

(4) *Resumption of incubation.*—Upon returning to the nest the female would utter a sharp, incisive *wert* either just a moment before alighting or more commonly at the precise instant she settled on the nest. Out of the 35 returns to the nest which I observed

during the incubation period, only twice did she resume her position on the nest without uttering a sound. Usually the first emphatic *wert* (or *wist* or *wirst* as it sometimes sounded) was followed by from two to perhaps six more subdued notes which were muttered rather than enunciated crisply. Sometimes, however, she would call at great length, as on the evening of June 25 (the seventh day of incubation) when she uttered 44 *wert* notes in all, at about three-second intervals, until a loudly cawing Crow flew into the woods to perch in the crown of an oak overlooking the nest. Thereupon the flycatcher ceased her calling and did not resume even after the Crow's departure a minute or so later. On the morning of the second day of incubation, after an absence from the nest of 2½ minutes, the female returned and called *wert* 14 times, the first few notes at intervals of several seconds with the speed gradually decreasing until at the last the calls were 10 seconds apart. On several other occasions she called for periods of from two to three minutes, her voice becoming softer and gradually dying away.

While this calling by the female during her return to the nest and immediately upon her alighting may have been a signal to her mate, the male did not utter any responsive call and, indeed, he was usually silent when the female was calling on her flight back to the nest; nor was he heard on those occasions when the female called at great length after resumption of incubation.

Hatching

Upon my arrival in the woodland at 1:45 pm.. on July 3, the female was on the nest and the male was singing his *ka-zeep* from the trees on the slope to the east of the nest. Five minutes later she left the nest and I hastened down to discover that it contained two young just hatched, the third egg unhatched but scored around the center, and the half of an empty shell. The two nestlings, naked except for a bit of white down on the crown and the median line of the back, were a dull pinkish color and were about the size of a large jelly bean. Their eyes, extremely large in proportion to the head and body, were covered with a black membrane that gave the birds a grotesque appearance, indeed.

It was not until 4:32 p.m. that I again inspected the nest, when the female left to feed, and discovered that in the intervening 2¾ hours the third egg had hatched—the last nestling, pinker than the other two, seemingly just emerged, though not yet fully out of the shell, which was split in half. The half of the other shell was still present, too. Simultaneously with the return of the female a brief shower of rain broke suddenly, causing me to depart hastily from the nest, fearful that the unprotected nestlings might be harmed by the pelting drops. Nor did I revisit the nest later that day.

On the afternoon of the day the eggs hatched, the female spent the larger part of her time brooding the young, and she left the nest only seven times in 2 hours, 47 minutes for periods ranging from 30 seconds to as much as 13 minutes. On her departure from the nest she was utterly silent but during her return she called *wert* frequently as she followed the flight pattern she had established during the incubation period. Twice during the afternoon after settling down to brood, she uttered a long series of *wert* notes,

once consisting of 29 repetitions, the second time of 20 repetitions, the final notes in each series much weaker and at greater intervals than the first dozen notes. For the first time, too, she uttered a new note: a drawling or slurred and rather plaintive *suh-ree*, which she called once while on the nest and again about 45 minutes later just as she flew off the nest.

In addition to being more restless and alert, possibly the natural consequence of her new responsibilities, the only appreciable change in the habits of the female was that she did not go as far from the nest to flycatch, usually remaining within a radius of about 75 feet. On one occasion (2:16 p.m.) she darted off the nest to a distance of perhaps four feet and then dropped to the hazel bushes at the bottom of the slope, but in a moment she returned to the nest with something blackish in her bill. Standing on the rim she worked this catch in her mandibles and then appeared to feed just one of the two young, after which she settled down high on the nest and facing west. On another occasion about an hour later she flew off toward the side of the slope, hovered in the air while she snapped at a flying insect, and again dropped to the bottom of the slope to continue her flycatching for two minutes. Then she returned to the nest and apparently fed both young.

Only once during the time I watched did the female display any special interest in what was going on within the nest. At 3:27 she arose from her brooding position, stood on the rim, and, bending down, moved her head and bill about inside the nest in the area where the unhatched egg was lying. Most of the time, however, she was sitting so that her breast was seemingly in direct contact with the egg rather than with the bodies of the newly-hatched young.

The male apparently played a minor role on the day the eggs hatched because he was not seen at the nest or near the immediate nest site, but he did sing his *ka-zeep* frequently and called *wert* emphatically for many minutes at a time. At 3:57 both birds were calling from along the brook where I glimpsed the female flycatching. I suspect she was accompanied by her mate because a few minutes later they had moved into the trees on the slope though on opposite sides of the nest site and 100 to 125 feet apart, both birds calling vigorously, the male even introducing a single *ka-zeep*.

Later in the summer I found fragments of egg shell on the narrow path along the edge of the slope about 80 feet beyond the nest, and in the woodland border some 150 feet distant I found a complete half shell lying on the ground. Both were unmistakably portions of the eggs of the Acadian Flycatcher.

Care and Feeding of Nestlings

During the 13 days the young occupied the nest, the female was responsible for the larger part of their care, both brooding and feeding. The male did no brooding whatever, at least during the 15 hours, 11 minutes I watched the nest, but he did assist in the feeding of the young, albeit in a fitful and irregular fashion. Out of a total of 200 trips to the nest made by the parent

birds collectively, the male made only 36 trips, or 18 per cent. Yet on only half of these trips was it clear that he fed one or more of the nestlings, while in one instance he fed his mate. Thus there were 17 times when he simply came to the nest, perched momentarily, and then flew away. It is quite possible, however, that on these occasions the young were surfeited and gave no begging response, without which the male was not stimulated to transfer the food he may have carried in his bill (see Herrick, 1935:290). This assumption seems to be borne out by the record for July 11, the ninth day of nest life, when in four out of the five non-feeding visits by the male, the female had fed one or more nestlings within two minutes or less just prior to his arrival.

On exactly half of his 36 visits to the nest the male uttered his sweet, warbled *pee-tul* phrase either just before or as soon as he alighted. On 21 occasions the female was absent from the nest when he arrived, and only on six of these occasions did she return after he had called.

On July 4, the second day of nest life, during 1¾ hours of observation the male came to the nest just once. His mate had fed one nestling and had settled down to brood when he alighted in the nesting bush on a branch about two feet distant from the nest. He uttered the low, sweet *pee-tul* phrase and within a few seconds flew to a twig which placed him within reach of the female. Again he uttered *pee-tul* but she gave no response, and after 30 or 40 seconds he flew off.

Not until the third day of nest life did I actually see the male feed the young. On two visits in less than a minute (both times while the female was away) he perched on the rim, looked in the nest, yet did not feed. About one hour later he reappeared on the nesting branch and uttered a soft *pee-tul* whereupon his mate flew off. But again he merely looked into the nest, did not feed, and immediately departed. In a few seconds, however, the female returned and while she was feeding the young, her mate also returned, uttered his customary phrase, and when she left he, too, made a quick feeding jab at one of the nestlings. It was on that same day that the male after advancing to the rim of the nest paused a moment and then fed the brooding female.

During the first few days of nest life it appeared that the male's activities were not harmonized with the female's, and he seemed a stranger to and uncertain of his parental role. Gradually, however, his seeming confusion wore off while more and more his efforts to provide food for the nestlings blended in with those of his mate. Later, as the needs of the young increased, the parents sometimes appeared at the nest together, perching on opposite sides and feeding the nestlings either simultaneously or successively.

In the first few days following the hatching of the young, the female held largely, though not as consistently, to the pattern established during the incubation period. Thus she usually uttered the *wert* note immediately after departing from the nest (which she

had not done before), during the course of her return, and upon resuming brooding. Generally, too, she returned to the nest along the same route she had followed earlier, using the same stopping places in the witch hazel bushes. Sometimes, however—and this became increasingly evident as the nestlings grew larger and more demanding in their food requirements—she came directly to the nest without any intermediate stops and without uttering any calls whatsoever. She also began to enlarge her feeding area, even in the first days of nest life, to include the wooded border above the top of the slope where I had not seen her feeding previously. Only rarely did she do any flycatching along the slope to the west of the nest. Her feeding area was probably not more than 200 feet from the nest site in any direction, with most of her flycatching done to the east, especially along or near the brook.

When brooding, the female generally faced in toward the apex of the crotch which held the nest. She was always alert, often peered about, and on a few occasions darted directly off the nest to snap at a flying insect and then flew on to continue her feeding elsewhere. Although it was impossible to discover the identity of the insects captured, I did notice, particularly in the later stages of nest life, that the parent birds sometimes had crushed or amalgamated their tiny insect prey into ball-shaped masses about the size of the head of a safety match. On two occasions, however, their prey—seemingly a cranefly (Tipulidae) with transparent wings at least one inch long—could not be reduced to a form acceptable by the young. In the first instance, in July 9, the sixth day of nest life, the female arrived at the nest with the insect in her bill but was unable to compress the long wings. Upon failing to jam the insect down the throat of one nestling, she attempted to work her catch about in her bill in order to break up the wings, but after four more attempts to feed it to her nestlings she gave up and flew off with the oversized morsel still in her bill. The next day the male, which had come to the nest while my attention was diverted, flew off carrying a similar large insect in his bill and perched on a dead branch of a nearby oak where he labored with the insect, trying to break up the stiff, membranous wings by rubbing them against the wood. Failing in this, the bird flew back toward the nest, suddenly veered off, and disappeared from view with the insect still in its bill.

Despite my closest attention, only once was I able to detect either bird carrying off the fecal sacs deposited in the nest by the young. Yet judging from their frequent examination of the interior, nest sanitation seemed to be a responsibility of both parents, with the female, of course, assuming the larger share of the work. On a number of occasions I observed her pick up and swallow a fecal sac, especially during the first several days after the hatching of the young. Once, on the eighth day of nest life, when both parents were perched at the nest and apparently fed the nestlings, the female picked up a fecal sac and gave it to the male which swallowed it immediately.

On the evening of July 14, the eleventh day of nest life, a storm threatened. The sky grew black, the wind rose, and thunder crashed in the distance. Since the young now fully occupied the nest, which was lightly tossing about, the female stood at the high side near the apex of the crotch without actually brooding them. The wind gradually intensified, thrashing the treetops about and sending showers of twigs and dead branches to the ground. As the fury of the storm mounted, the nest began to sway and pitch in ever-larger arcs until finally with the edge of the storm almost overhead the female moved to the outer rim or low side of the nest, where her weight helped to stabilize the tossing structure, and leaned in and over the nestlings so as to shelter them with her

body. Fortunately, the storm soon passed on, only a little rain fell, and within 30 minutes the sky had begun to clear.

A comparison of the food-supplying visits of the parent birds will reveal how greatly the needs of the young increased as they neared the fledgling stage. Thus between 10:03 and 11:03 a.m., on July 4, the first day after hatching, the female brought food to the nest just three times, the male not at all. In the same one-hour period on July 11, the eighth day of nest life, the parents brought food a total of 12 times: the female on eight separate visits, the male on four.

Although I looked into the nest at least once each day, I spent only a moment there and made no attempt to examine the birds in order to study the development of their plumage. I was interested, however, to find that even on the first day after hatching when I pressed my finger on the rim of the nest, the nestlings—unlike those of other passerine species—failed to give the food response consisting of stretching out their necks and opening their bills (see Herrick, 1935:281). Instead, they remained huddled in the bottom of the nest—mute, immobile, and of course, blind. I noted that their eyes were open on July 8, the fifth day after hatching, but this did not affect their response and they continued to the end of nest life to remain absolutely inanimate whenever I looked in on them. This behavior may have been stimulated by the alarm notes of the female which always perched nearby—sometimes only five or six feet away. Her excitement frequently brought the male into the scene. He uttered the *wert* note with even greater sharpness and when highly excited, as on the last two days of nest life, broke into his *pee-tul* song. On the twelfth and final day of nest life, my appearance at the nest caused one of the parents to fly within three or four feet of me, snapping its bill loudly.

Not until the fourth day after hatching could I observe from my vantage point any movements of the young in the nest. On the evening of the next day one nestling was sitting upright, its head above the rim of the nest, and its eyes open. That same evening all three young were first seen to reach up and beg for food whenever either parent appeared at the nest. Later in the evening by dint of much straining and stretching they managed to rest their chins on the rim of the nest. The female continued to brood, though in ever-shorter periods, at least through the morning of July 11, the eighth day of nest life, when the three young almost filled the nest to the top. The next evening I first heard them utter a faint lisping cry immediately after the female left the nest; thereafter they sometimes buzzed in a subdued chorus when they were about to be fed and for a moment afterward.

Departure from the Nest

At 7:55 a.m., on July 16, when I visited the woodland to see whether the

young had left the nest, I could see only one nestling sitting upright. Thinking that the other two had already left, I bent the nesting branch down toward me to get a better look. Suddenly all three young "exploded" from the nest, fluttered to the ground at the base of the slope, and at once were lost to view against the leaf litter. Because I was fearful of stepping on them I made no search, but left the woods quickly with the alarmed notes of the adults sounding in my ears.

A few minutes after 7:00 that evening I returned to the woods and immediately heard the voice of the female as well as the peeping or *pseep* of one young bird whose whereabouts at first I could not discover. By carefully working up the slope near the nest site I eventually found this bob-tailed fledgling—obviously a runt—perched about 1½ feet from the ground in a fallen branch lying at the base of an oak tree and only some 20 feet from the nest site. The male parent, which had been calling *wert* emphatically nearby, was apparently unwilling to feed the fledgling because of my presence. I therefore moved on in search of the other two young and soon succeeded in finding one perched about 3½ feet above the ground in a sapling near the brook and perhaps 175 feet from the nest site. When I approached too close, this bird abruptly flew off in a perfectly straight line disappearing in the understory on the slope.

Returning to the runt fledgling, which was calling *pseep* repeatedly, I found that it had moved into a sapling oak adjoining the large oak and was perched three feet off the ground. It was then 8:30 p.m. and darkness was fast enveloping the woods making further observation impossible.

Prior to their departure from the nest, I was unaware that one of the nestlings had been receiving less food than the other two.

Post-Nesting History

At 10:23 a.m., on July 17, when I returned to the woodland, I discovered the runt perched in full sunlight on the very branch of the oak sapling where I had last seen it the night before. During the following 45 minutes the female, which was utterly silent, fed this fledgling eight times while the male provided just one feeding. He remained in the vicinity, however, and from time to time uttered either his *ka-zeep* or his sharp *wert* note.

Between feedings the runt, which kept up an intermittent peeping, fluttered its wings, stretched its neck, and occasionally flitted from twig to twig in the oak sapling but moving only a few inches at a time. Because of its stubby tail its balance was poor, and it tended to pitch forward when it alighted. At length it resumed its original perch in the sapling and, after much peering about, fluttered forth only to fall to the ground. It soon reappeared, perching on a fallen branch near the base of the tall oak, then moved to the base itself, and finally launched into the air headed toward a sapling some six feet distant. But the runt failed to gain sufficient altitude and fluttered to the ground about two feet short of its objective. Later in the morning and again in the afternoon

I found this bird perched low in a wild grapevine tangle, on one occasion being fed by the female.

The two other fledglings were not discovered until mid-afternoon of July 17 when I located them perched side-by-side about three feet from the ground on a dead fallen branch, not far from where I had seen the second fledgling the previous evening. They were quite obviously larger, more fully feathered, and longer-tailed than the lone fledgling, and were more proficient at flying. The female fed them frequently, but later when they had flown to another part of the woodland I believe the male joined in the feeding.

On the morning of July 18, the third day out of the nest, I watched two of the young continuously for one hour and 45 minutes as they perched side-by-side about six feet off the ground on a fallen limb which lay in a small opening among a stand of tall trees. The one bird was obviously the runt, being smaller and less vigorous than its fellow. Although a pattering of rain fell for a few minutes, neither bird showed any reaction nor did either one move from its perch throughout the entire 105 minutes of observation.

Feeding periods alternated with periods of passivity, the smaller bird mute and withdrawn though the larger fledgling sometimes preened, stretched its wings, extended itself to its full height, and once even uttered a few *tseep* notes. The male parent fed these two young a few times, once appearing simultaneously with the female so that the fledglings were fed successively. But the female was the major food provider, and in the time I watched she made no fewer than 43 food-carrying trips to the young. Her most intense period of feeding was between 11:45 and 12:05, when she made 21 feeding visits, or about one per minute. So fast did she arrive and depart that I often was unable to manipulate my binoculars (I was standing about 40 feet distant), my pencil, and notebook quickly enough to discover and then record which fledgling was fed. Of those feedings I was able to record, 26 involved the larger fledgling, 11 the smaller bird, with six marked "undetermined," these last being so rapid I could not positively say which of the two young received the food.

Not only did the larger bird have the advantage of size, giving it a higher reach, but also it was simply more aggressive and demanding than its fellow. Thus in one seven-minute period involving a total of nine feedings, the larger bird was fed eight successive times, with the female on at least three occasions alighting next to the runt but then reaching past it to give the food to the other bird.

Although I had neither seen nor heard the third fledgling at any time during the morning of July 18, I discovered it just at noon as I was about to leave the woodland. It was perched in a sapling about 150 feet distant from the other two, and it was being fed by the female.

Beginning July 19, and continuing through August 2, which was the 18th day out of the nest, the three fledglings kept together in the woods, always remaining within a radius of about 350 feet of the nest site. Frequently they occupied the same treetop, bush, or sapling and often perched three in a row. At times they were extremely noisy, keeping up an almost constant "tseep-

ing," while at other times they buzzed only as they were about to be fed and for a moment afterward. As early as July 21, they uttered the *wert* note but not as forcefully as did the adults; by July 26, however, their *wert* notes were indistinguishable from that of the female. Unlike her earlier habit of uttering her call note upon her return to the nest to feed the young, the female upon her approach to the fledglings was utterly silent but occasionally voiced a single *wert* as she left them.

By July 24, the ninth day out of the nest, the fledglings, except for their rather stubby and uneven tails and quite yellow bills, appeared identical to the adults; yet they were not flycatching on their own or even, it seemed, making trial sallies after insects. Indeed, while perched on a limb overhanging the brook, they completely ignored a cloud of tiny insects which hovered right in front of them. The female was still feeding them, and in a 10-minute period just at noon she made six feeding visits. On the morning of the next day, however, one of the young appeared to be flycatching on its own, while I clearly saw another fledgling leave its perch and fly to a nearby limb to snatch a slow-moving caterpillar. The following evening, July 26, all three young were making sallies from three to six feet out from their perch, though it was impossible to determine whether they actually caught the tiny prey they snapped at.

The evening of July 29 was the last time I definitely observed the female feeding the young (just two), and all three were then making feeding flights on their own. Yet on the morning of August 1, two fledglings were perched high in the crown of a tall tree when a third bird (presumably the female) arrived and put its bill toward one of the other two as if to feed it. The second bird opened its bill but the distance and position of the birds prevented my seeing whether any food was actually transferred. Quite obviously, however, the food response had not entirely disappeared. On my last day of observation, August 3, two of the young were flycatching high in the trees where the female, calling *wert* infrequently, sometimes joined them, causing their *tseep* notes to grow more insistent though she did not feed them.

Although the male remained in the territory at least until August 3, when I concluded my study, never after July 18 did I see him feed the fledglings; but on the evening of the 20th and again perhaps on the 22nd he may have participated in this activity because the feedings were so frequent—often at intervals of a few seconds—it seemed impossible that the female alone could have supplied the needs of all three young. On July 24, just at noon, the male, which had been singing his *ka-zeep* nearby, flew to the branch where the three fledglings were perched side-by-side. Yet though he alighted next to them he made no attempt to feed and quickly flew away. He sang his *ka-zeep* song each day—sometimes frequently, sometimes fitfully—through August 1, but I did not hear it on the final two evenings I visited the woods.

After a five-day absence I returned to the woods on the morning of August 8, to find just one Acadian Flycatcher, its plumage notably fresh and trim.

Since migration had not yet begun, I had to assume that this bird was one of the five that had spent the summer there.

Use of the *Pee-tul* Song by the Male

Some additional comment must be made on the varied uses of the *pee-tul* song by the male because it was obvious that these sweet, rather liquid, warbled or fluted notes were not sung solely while in the presence of the female. Apparently any state of high excitement caused the male to utter them, for he used them to express alarm on the tenth day of nest life when he perched only a few yards away as I stood peering in at the young, and again two days later when I entered the woods and took up my post of observation at the top of the slope. On July 9, at 8:45 p.m., both birds participated in a unique performance lasting perhaps 30 seconds in which one fluttered after the other just a few feet above the ground and about 25 feet from the nest site, the male all the while calling *pee-tul* but in a more subdued, almost muted, manner than was customary with him. Also, on the evening of July 15, the last day of nest life, the male on three occasions within 15 minutes uttered the *pee-tul* phrase in normal tones, once while flying in a small circle at a height of about 30 feet above the path at the base of the slope just below the nest site.

The male seemed to become more jealous of his territorial rights after the young had left the nest, and on the morning of July 17, as well as on several days thereafter, he engaged an Eastern Wood Pewee, and once, too, I believe, a Red-eyed Vireo in mad, dashing pursuit in and out among the treetops over a very limited area. During these chases and sometimes promptly at their conclusion the male often uttered his *pee-tul* song, rather louder, however, and with a more high-pitched quality than when he sang it to his mate at the nest.

Summary

A partially-completed nest of an Acadian Flycatcher was discovered in a small second-growth woodland in Cleveland Heights, Ohio, on June 12, 1954, the female Flycatcher continuing to work on it that day and the following day.

The first egg was laid between the morning of June 16 and the evening of June 17, and a second and a third egg on the two succeeding days. Incubation, in which the male seemingly played no part, continued for 14 days, through July 2. Two of the eggs had hatched before 1:45 p.m., July 3, while the third hatched during the next three hours.

The young remained in the nest for 13 days, through July 15, with the female apparently doing all of the brooding. The male did, however, take part in the feeding of the young both in the nest and on at least the first three days after their departure from the nest.

All three young, which left the nest on the morning of July 16, remained

together through August 2, the parent birds also remaining in the woodland. On August 3, when observation was discontinued, only two of the young and the adults could be found.

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