

# THE AUK:

## A QUARTERLY JOURNAL OF ORNITHOLOGY.

---

VOL. XLII.

APRIL, 1925.

No. 2.

---

### OBSERVATIONS ON THE DOMESTIC BEHAVIOR OF THE BARN OWL *TYTO PRATINCOLA*.

BY JULIAN K. POTTER AND JOHN A. GILLESPIE.

#### *Plates IX-X.*

AN opportunity presented itself to the authors, during the late spring and early summer of 1924, for an intimate study of the domestic life of the Barn Owl (*Tyto pratincola*). The observations and facts presented in this paper were secured during a period of approximately ten and one-half weeks, beginning May 7 and ending July 19, and comprised eleven visits, or an average of one visit per week, with a total of some thirty-seven hours spent at the scene of operations. Through laxity on our part, the observations do not cover the entire nesting period, for at the time of the first visit the young were already hatched.

The nesting site, along the Delaware River below Gloucester, N. J., was discovered by Potter on Jan. 20, 1924, at which time several pellets were in evidence, as well as a broken white egg, which was subsequently pronounced the egg of a Barn Owl by T. G. McMullen, an authority on oölogy. Two adult owls were flushed on this visit, and every indication bore evidence that the pair had nested and probably would nest there in the future, unless disturbed. This appeared unlikely, inasmuch as the locality was unfrequented, the nearest dwelling being nearly a mile distant, and also because of the fact that this species is strictly nocturnal in its habits and is very easily overlooked.

The Barn Owl is partial to "secluded towers, belfries, barns, attics and hollow trees" (Eaton.), and in this case the former was chosen—a frame building of three stories shaped like a truncated pyramid, with a water tank at the top. It was in an extremely dilapidated state of repair, and the window panes were entirely missing. It was a typical Barn Owl residence and of comparatively easy access.

Arriving on the scene May 7, a Barn Owl flew from the third story front window while Potter was making his perilous ascent. It might be mentioned that while the place was an ideal dwelling for *Tyto pratincola*, it was hardly a safe place for a human being. The stairway leading from the first to the second floor had disappeared, and it was necessary to climb from the window-sill to the top of a large closet, from which one could pull himself up to the second floor. Then one must carefully negotiate some twelve feet across rotten flooring to the stairway, and thence to the third floor.

When we arrived there we were greeted by a loud hissing noise which seemed to emanate from the walls near the open window, through which the adult bird had recently departed. This sound resembled steam escaping from a locomotive, or water being forced through a leak under pressure. Pellets were strewn everywhere. Surely the nest was close at hand! At this moment we spied a hole in the floor just in front of the stairway leading to the roof and about three feet from the open window. Getting down on all fours Potter directed a flashlight into the hole, at which the hissing doubled in intensity. After peering cautiously within, he triumphantly called, "Here it is!"

Crowding back as far to the rear as possible were five downy white objects, partly covered by an adult bird—undoubtedly the female. She had not budged from her duty, while the male had left when he suspected trouble. Evidently blinded by the flashlight, she stared with a most human expression. The nest cavity was approximately twenty inches deep, fifteen inches wide and eight inches high, the sides being formed by vertical floor beams, and the top and bottom by the floor and the ceiling of the room below. The stench of ammonia fumes issuing from this filthy hole was almost overpowering, and we wondered how any living being could exist in such an atmosphere. The hissing subsided some-

what when the flashlight was withdrawn. Was the adult bird making this noise or were the young ones responsible? The latter view, held by Potter, proved to be correct. The mother bird did not once make an audible protest. In size the young ones ranged from recently hatched to an advanced downy stage. No nesting material of any description was in evidence except a small clump of black feathers which possibly once belonged to a Starling, but for what purpose they had been brought there is mere conjecture.

On this visit we took pity on the happy family and departed, leaving them unmolested. Had the parent birds known the trials and tribulations in store for them and their offspring, they very likely would have cleared out then and there. But how were they to know that one of us was a rabid bird-bander and that the other desired numerous photographs of the fledglings?

The second visit was made May 13 with the idea of securing photographs of the young and banding several of the larger ones. The male bird flew out as we entered while the female again remained in the nest cavity. The hisses of the young Owls seemed louder than on the previous visit, and actually became deafening when we hauled one out by the feet. Needless to say we wore gloves or gauntlets on this and all subsequent visits, for the claws of the young owls were long, very sharp and encrusted with filth. The female made absolutely no protest, either by voice or action, in fact she scrambled as far back into the cavity as possible.

As the light was poor inside the tower we decided to remove the young ones from the nest and photograph them outside. As Gillespie reached into the dark, smelly hole for another fledgling, the mother bird, evidently deciding she had had enough of such treatment, scrambled out, but instead of flying through the window to freedom she ran into a dark corner. Potter made a lunge and succeeded in clutching her by one leg while she frantically clawed the air with the other, flapping her wings wildly and snapping her bill viciously. But when a firm grasp was secured about both tarsi, she gave in completely, and while being photographed and banded was as meek as a lamb.

As she flew off upon being released, a Sparrow Hawk gave chase, and we later discovered *Falco sparverius* was nesting in the same building. This is the third instance known to the authors in

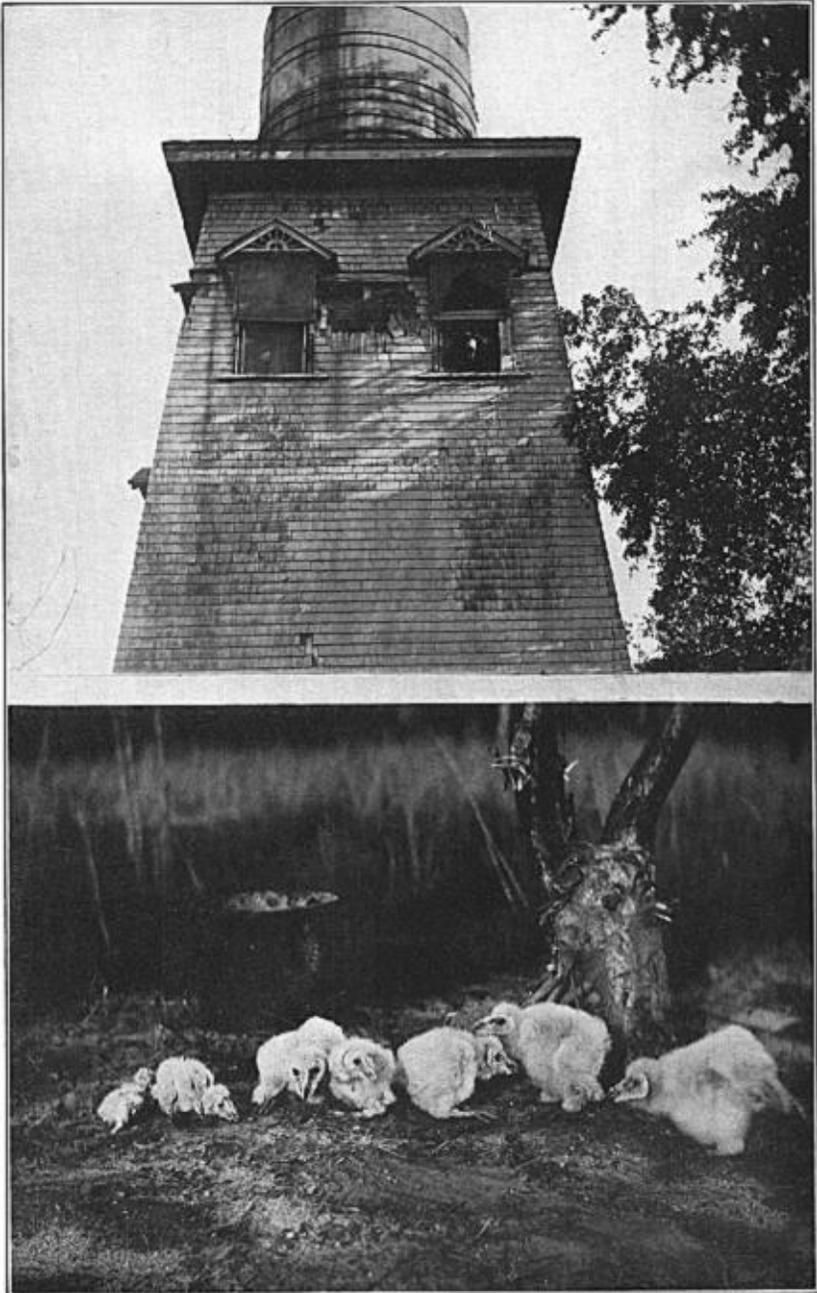
which the Barn Owl and Sparrow Hawk have nested together. A pair of Starlings were also nesting within the tower, and at a later date a House Wren was observed in the building, and from her actions it appeared quite probable that she also had a nest there. Four different species, therefore, were nesting simultaneously within the same structure in perfect harmony.

One by one the fledglings were dragged from the cavity despite their angry hisses of protest. We were surprised to find seven of them, whereas we could account for only five on the first visit, although a careful survey of the nest had not been made at that time. Very likely the female had been sitting on one egg, at least, during our previous visit, for the smallest of the brood was not more than three days old, with eyes not fully opened. He was a pitiful, bedraggled and filthy little fellow, having evidently been trampled on by the others. In size he was little larger than a baby chick, and at times he uttered a faint, tremulous whine. The rest were of assorted sizes, the largest about the size of a Pigeon. Dark colored pin feathers were in evidence in the wings of the two largest.

All seven were placed in a discarded bucket and conveyed safely to the ground, where they were photographed and the larger ones banded. Prior to replacing them in the nest, the cavity was inspected and was found to be in an exceedingly filthy condition,—the floor covered with a layer of casts powdered into a furry mass by the feet of the young. Yet in such unsanitary surroundings the fledglings, with the exception of the smallest, were clean, except their feet, which were quite filthy.

Nine days passed before we were able to visit the Owl family again. Both adults flew out as we climbed up,—the female evidently had not relished her experience of the preceding visit. The welcoming hiss of the young ones was noticeably louder than heretofore, with more of a throaty quality. A few of the many regurgitated pellets were examined and all contained the skulls and hair of small rodents,—presumably meadow mice. A survey of the nest disclosed but six young. The smallest had, no doubt, been trampled to death and devoured by the others.

The largest fledgling and a medium-sized one were removed from the cavity and several photographs taken. The former had grown considerably. Wing and tail feathers had sprouted. The



1. TOWER WHERE BARN OWLS NESTED.  
2. FLEDGLINGS, THREE DAYS TO TWO WEEKS OLD.

latter was still in the complete downy stage with pin feathers showing only in the wings. Both Owls swayed their heads from side to side continually, their mandibles almost scraping the ground. This action is similar to that employed by caged animals. The heads were lowered apparently in an attempt to avoid the sunlight to which they were unaccustomed. The larger bird showed a good deal of fight and lunged forward when a foot was pointed at him. After placing bands on their legs, we returned them to the nest. A lively free for all fight seemed to be in progress as we departed.

June 2, eleven days later, found us again at the home of the Owls. The smaller ones had grown considerably. They were still downy, but the wing and tail pin feathers had begun to sprout. A marked change was also noticeable in the two larger. The primaries were fully developed as well as the tail. The facial discs were more pronounced than before; the mandibles and feet larger. It was noticed on this visit that they hissed less on our arrival. However, when one was hauled from the cavity, the sound of protest was deafening.

The shouts of youthful fishermen approaching cut short this visit. After banding the last fledgling, we hastily departed in order to avoid detection, which in all probability would have upset our future plans.

A week later as we climbed up the rickety building, only one adult Owl flew out, closely pursued by the Sparrow Hawk. No hisses greeted us when we reached the third floor. Had something happened to the young ones? Turning the flashlight into the cavity our fears were promptly dispelled, for the six hissed loudly in unison. We had our hands full in fetching them from the nest, for they crowded back as far as possible, and when a gloved hand was thrust in the cavity, twelve armored feet struck out in anything but cordial fashion!

Anyone who has taken fledgling group photographs can attest to the difficulties one might experience with six half grown Barn Owls. Placing them on a horizontal limb was one thing, but keeping them there was another! They had a habit of placing their heads down between their legs and remaining motionless, or perhaps they would sway from side to side, lose their balance and drop to the ground. When plates and films were exhausted, the young

ones were returned to the nest. The two larger were well feathered except for a little down on the back and breast. They resembled adult birds. The middle-sized ones had more down in evidence, while the smallest one was all downy with the exception of wings and tail. The ammonia fumes were hardly noticeable during this visit, probably because of the drying out of the nest cavity. On previous visits this had been found to be quite damp from the rain which had swept in the window opening.

Having decided to remain there that evening to witness, if possible, the feeding of the young by the adults, we stationed ourselves, at seven-thirty, at the head of the stairs leading to the roof. Thus we were situated about ten feet above the nest-hole, and faced the window through which we presumed the adults would come bringing food. Should either of the adults enter it was our plan to turn on the electric flashlight, hoping it would blind the bird to the extent that it could not see us, and that thus we would be afforded a good view of the Owl.

Dusk was falling, but it was still light at eight p. m. when one of the young ones made the initial call for food. This is a rasping, sucking noise, and can readily be imitated by drawing in the breath sharply through the corner of the mouth, keeping the teeth closed. This is, no doubt, the "snoring" call described by Dresser (Knowlton, 'Birds of the World,' page 516). It might also be likened to the sound made by an ill-mannered person eating soup! It actually sounds as if the bird's mouth were watering in anticipation of food, and it kept sucking back the saliva. The others soon joined in the call, which by eight-fifteen was very insistent. Needless to say, the mosquitoes were present in numbers, much to our discomfort. Conversation was dispensed with, for at the slightest noise the food calls would change to hisses of alarm.

To quote from our notes:

"8:20 P. M. We hear a peculiar call outside, a soft 'ick-ick-ick-ick-ick-ick.' Possibly a parent Owl. Moon shines brightly, but we must strain eyes to see clearly the window opening.

"8:25 P. M. A huge dark form with wings spread appears at the window, and with a thump lands on the sill. The young call wildly and the parent bird drops to the floor at the nest entrance, apparently feeds the young, then hops to the window and flies out.

Does not look in our direction although we sit only ten feet away. We did not turn on flashlight, but decide to do so next time.

"8:55 P. M. A half-hour has passed since first visit. Did she possibly see us and become frightened?"

"9:00 P. M. Adult Owl drops on window-sill and then to floor as before. We flash light on her. She stands at entrance to nest peering down. Either a pine or short-tailed field mouse hangs from her bill by the back of its neck. She appears to be waiting for the young to take the mouse, but they are raising a great racket under the floor, apparently afraid of the light. The adult bird disappears into the cavity, feeds the young and reappears. The light seems to daze her as she looks toward us with black, blinking eyes. Her facial discs appear small and contracted, giving her a 'monkey look.' Suddenly she jumps and flies directly toward us, lighting on the stairs about seven feet from where we sit. The band on her leg glistens brightly, proving this is the female, for we had banded her, but not the male, on a previous visit. Then she seems to spy the window and silently glides out into the night."

The question now arose—was the food brought in held in the bill or talons while the Owl was in flight? Therefore we decided to turn on the flashlight the moment an adult landed on the sill.

"9:18 P. M. Owl passes close by window uttering 'ick-ick' note. This call is not unlike the squeaky Flicker call heard at a distance. It also resembles the call of a bat. The young answer with vigorous cries and a moment later an adult Owl settles on the sill. We turn on flash the moment the bird lands. She stands facing us with a short-tailed field mouse hanging from her bill by the back of neck. The band on her leg shows plainly as she turns, stretching her wings as if to fly off. The young call vociferously! She turns, drops to floor and enters nest. A few seconds later she reappears, hops to sill and flies off. She seems less disturbed by the light than before."

At this point we decided to adjourn, having quite a distance to travel before reaching our respective homes. As we departed, the young ones set up a terrific snapping and hissing, not unlike a pack of cheap firecrackers going off! A loud, rasping screech greeted us a moment later in the open, and looking up we saw *Tyto pratincola* flap silently by, resembling an enormous bat in the moonlight.

Quite likely this was the female, for the male was not seen at any time during this visit. Does he take no part in the feeding, has he been frightened off, or has misfortune befallen him? Then and there we decide to spend a whole night with the Owl family and see if we can find out these and other things.

On June 14 we arrived on the scene prepared for an all-night vigil. If we attempted to narrate all that happened it would take as long as that night actually seemed! Accordingly, extracts from our combined notes are submitted instead.

"6:30 P. M. We arrive on the scene armed with two cameras, flashlight equipment with which we hope to secure pictures of adults bringing food, and plenty of enthusiasm. Neither adult flies out on our arrival, and this, together with the sight of fresh footprints of a man outside the tower, gives us some concern. The six young are all right however.

"7:35 P. M. Cameras are set up, one focused on window and the other on nest hole. We take our positions.

"8:00 P. M. Young Owl starts food call. (They started at this identical moment on last visit.) We hear distant thunder. Lightning soon flashes and wind blows. Rain starts to fall. As we sit almost directly beneath a large hole in the roof, we rig up a piece of tarpaper above us for protection. This helps, but cuts off ventilation, and it is a stifling night. The mosquitoes enjoy a feast! Rain continues nearly an hour. Young call incessantly for food, but get no response.

"9:15 P. M. We are both plainly worried. Rain has stopped, but there is no sign of parent Owls. Perhaps someone has shot them both. If so, what is to become of the young ones?

"9:25 P. M. Female lands on sill without warning, and we come to life. She flies off the moment the electric flashlight is turned on, but lands again a few seconds later. We refrain from flashing light and she sits on sill, looking about and taking in everything. Her suspicions are undoubtedly aroused. Through the dim light Potter observes her place a mouse on the sill. The young stop calling when she snaps her bill several times. (This sounds like a dog crunching a bone.) It is quite evidently a communication of warning. For fully two minutes she sizes up the situation. The place is silent as a tomb and we hardly dare breathe. Suddenly she utters a harsh blood-curdling screech!"

Various authorities refer to this sound as "a discordant scream" (Knowlton), "a startling scream" (Chapman), and a "Wild, peevish scream" (Blanchan). All are unanimous in the opinion that it is a scream, but in the authors' opinion the above mentioned adjectives are scarcely adequate in describing the call when heard at a distance of twelve feet, within the confines of a chamber about twenty feet square! It is actually "hair-raising" and "blood-curdling." We are both frank to admit that it sent icy shivers up and down our spines!

"This screech is repeated seven times at intervals of about five seconds. Cracking her bill viciously she suddenly departs, snatching up the mouse in her bill. Her cries of alarm have taken effect for a half minute later we are startled by another "thump" as an adult Owl lands on the upper frame of the lower sash instead of on the lower sill as heretofore. It is the male, for he wears no band, is taller and his face is longer. Apparently he is not much alarmed. Looks intently at nest hole, then leisurely departs. He had no food. Our previous fears are unfounded. Both adults are alive and doing their duty.

"10:10 P. M. Male arrives with field mouse. Comes in at left side of lower sill. Should have taken a flashlight picture here, but had previously decided to take the first picture of an adult Owl at nest entrance. In this case male was too quick for us and dropped into hole before flash could be set off.

"11:00 P. M. A heavy fog has settled down. Neither adult has come to window. Several times we have heard their soft 'ick-ick' call, to which young answer with vigor. Occasionally they stamp on the flooring of their confined quarters, no doubt with impatience.

"12:00 M. Young call continuously but neither Owl comes. We welcome the 'squawk' of a Night Heron. Realize we should have set off flashlight the first time the female came, instead of allowing her to carefully look us over. In our excitement we momentarily forgot the Owl could see us quite clearly in the dark!

"1:15 A. M. We are both quite stiff and somewhat chilled. Gillespie leaves building in hope that Owls will think we have gone. He is greeted on the outside by screeches from both Owls. Potter waits with flash pistol cocked and ready to operate either camera.

"1:45 A. M. Gillespie has not yet returned. Male appears with mouse and alights on upper frame of window, which is not in focus of camera. He drops into nest hole before Potter can open camera shutter and set off flashlight. Feeds young and departs.

"2:00 A. M. Young call faintly and at long intervals.

"3:00 A. M. Male has not returned since 1:45 A. M. Female not seen since her first visit at 9:25 P. M. She is, no doubt, frightened, but male acts as if unsuspecting of our presence. He brought food but twice. The fog is very dense and no doubt makes the procuring of mice very difficult.

"4:00 A. M. It is beginning to grow light. A whole night spent at the nest and not a single flashlight taken! We decide to experiment with flash-pistol and take several pictures of the larger of the young Owls, which are now almost fully feathered.

"4:30 A. M. We leave the building, stiff, hungry and ready for bed."

Our seventh visit to the familiar water tower occurred on June 19. The nest contained only four young Owls, and after an unsuccessful search for the missing two, we decided they had flown. Those in the cavity were very quiet, even when the electric flashlight was pointed in the hole. At 7:45 when we took our positions at the head of the stairs another young Owl was missing, but was promptly located behind us, sitting on a rafter just out of reach. He hissed angrily at us. Here was trouble indeed, for dusk was falling and if he kept up his noise the adults would be frightened off. This bird resembled an adult Owl except for a little down in evidence on his breast.

It was still light at 8:00 P. M. when we heard the familiar flight call—"ick-ick-ick"—of an adult Owl. A moment later the female appeared at the window, but swerved off before alighting. She had, no doubt, seen us or the cameras. The young ones in the nest called loudly for food, and there followed a hissing directly behind us. We readily discovered its source, for in a niche under the eaves, not six feet distant, crouched the two remaining young Owls. Openly defying us, the three at our rear kept up a continual hissing until we almost decided to leave them in peace. Presently all was quiet. The mosquitoes feasted royally. When a hand was raised to ward off the pests the young Owls detected the movement

and once more their protests filled the air. About this time the young Owls in the nest started calling for food and soon the hisses behind us died away and were replaced by food calls.

The minutes slowly passed, when suddenly we were startled by a crashing sound directly beneath us. A loose board had become dislodged and plunged through the rotten flooring. The ramshackle tower was actually falling down about us—but we stayed.

At 8:55 the female landed with the usual thud. We clicked open the shutters and the flash-pistol went off. At last we had a picture! Temporarily blinded by the flash, we were unable to tell whether or not the female entered and fed the young. Evidently the three young ones at our rear were blinded also, for not a sound was heard from them for some time. Cameras reloaded, we waited for an hour, but neither adult appeared, so we decided to experiment with the young ones.

Some difficulty was experienced in setting on the window sill one of the larger fully feathered Owls. He hissed, clawed the air, and bit like a little demon! When held at arm's length by the outer primaries, however, he could inflict no punishment. He finally settled on the sill, but kept walking about, obviously unconscious of the twenty-five foot drop to the ground below. Before we could set off the flashlight he wandered too near the edge, and while endeavoring to get a foothold, toppled out of the window! Peering out, we expected to see him tumble awkwardly to the ground, but instead he flew off into the darkness like an adult bird. Three of the others in turn were placed on the sill, and two flashlights secured. These birds followed the example of the first, but instead of falling out, each, despite our earnest pleadings and gesticulations, peered out into the darkness and voluntarily made his initial flight. It seems strange that all three should have taken this course, for none had been in a position to see any of the others take his departure, and not once during this visit did we hear an adult "scream" or communicate with the young in an effort to lure them out into the night.

Possibly the reader has formed the opinion that these four birds were prematurely driven from their nest. The authors contend, however, that such was not the case, and that the birds were actually ready for flight, but because of the spaciousness of the structure

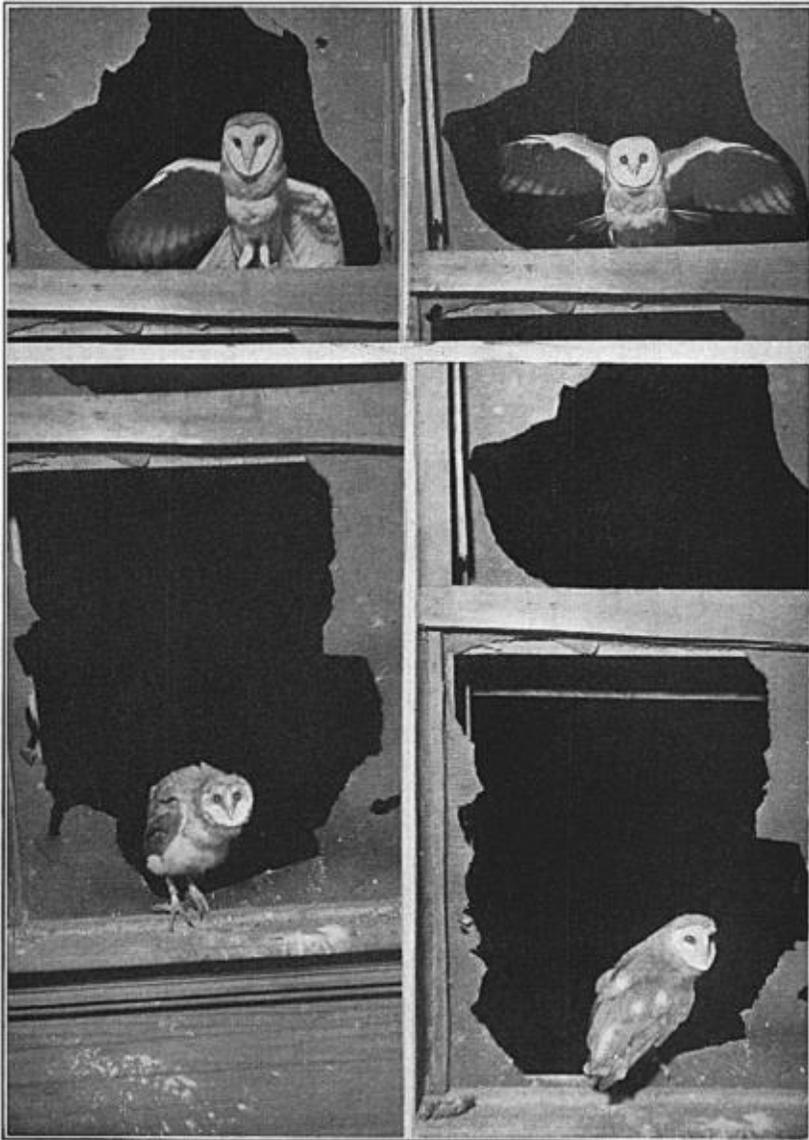
in which they dwelt, it was not necessary for them to fly quite so soon. Had this nest been in a hollow tree, several of the young would literally have been compelled to leave prior to this date, and quite likely would have been flying about by this time. As it was, three young birds had voluntarily left the nest cavity.

On the afternoon of July 4 a brief visit was made by Potter, but neither adult nor immature Owls were in evidence inside the tower or in the poplar trees nearby.

July 10 found us again at the spot with the intention of staying outside and observing if the adults fed the young, which we presumed were still in the vicinity. At 7:50, as dusk was falling, the familiar scream greeted our ears, and looking up, we saw a Barn Owl fly over. We judged this bird to be one of the young ones, for its tail was very short. The scream seemed higher in pitch and of shorter duration than that of an adult bird. It was not long before four Owls were circling about, presumably two adults and two young ones, although we were not positive on this point. The difference in their calls, just mentioned, was then quite apparent. Presently we heard the rasping food call of a young one, promptly joined by another. We were surprised to hear these calls from within the tower, for we presumed the two which we left there three weeks previous had flown by this time, as no trace of them was found on Potter's visit a week before. At that time the Owls must have been hidden in some niche and thus have been overlooked.

Presently an Owl, probably the adult male, flew from a tree and alighted on the upper sash of the window, at which the two young ones inside set up a loud calling for food. The Owl did not enter the tower, for he appeared to have caught sight of us standing about one hundred feet away. Another, undoubtedly an immature bird, flew down from the water tank and joined his parent. Quite likely he came for food, but we were unable to verify this point for the adult flew off, followed by his offspring.

Now and again the rasping, high-pitched screams of the immature birds were heard, but when dusk settled down the young ones in the trees commenced calling for food. We were reasonably sure we could account for three of them at various points. The fourth was probably somewhere about, hidden from view in the



FLASHLIGHT PICTURES OF BARN OWLS.

1 AND 4. ADULT MALE, ARRIVING AND LEAVING THROUGH WINDOW.

2 AND 3. YOUNG, 11-12 WEEKS AND 6-7 WEEKS OLD.

NOTE LONG FACE OF ADULT AND ROUND FACE OF YOUNG.

dense foliage of some leafy poplar. For an hour we braved the mosquitoes without making further observations. We made no attempt to enter the tower, inasmuch as our electric flashlight was temporarily out of commission, and to attempt a climb of that dilapidated structure in the pitch dark would have been suicidal. It is doubtful whether the old tower will withstand the rigors of another winter.

The results obtained from the one and only flashlight taken of the adult Barn Owl were a complete failure. Both negatives showed motion and were not worth printing. It appeared as though the Owl either had seen us or had heard the click of the camera shutters and been frightened off prior to the flashlight explosion.

A final attempt, however, was made on July 19 by Gillespie. Following an exhaustive survey of the tower, one Owl was found in a dark corner. He would readily have passed for an adult bird, garbed in complete adult plumage. When the electric light was turned on him, not a movement did he make and not a sound did he utter. In an effort to avoid detection he had "frozen" and almost with success! In fact, during this visit, not once did he call for food or hiss in alarm. Occasionally he snapped his bill.

At 8:00 P. M. (the identical time on two previous occasions) the young ones outside started their food call, and at 8:15 the soft flight call of an adult was heard. At 8:20 P. M. the female "landed" on the lower sill, but was gone before the flashlight could be set off. She had hardly disappeared when the adult male arrived, and without any apparent display of suspicion took his accustomed perch on the upper sash, and posed nicely while being photographed. The immature bird was not fed and voiced his displeasure by viciously snapping his bill.

The voice of one particular young Owl calling for food outside seemed quite loud and close at hand at times, dying away a moment later. Presently it became louder and louder, and it became evident he was calling while in flight, for he landed on the upper sash just prior to uttering a last rasping call. The flashlight cut short his visit, as well as three subsequent visits made by two young ones and the adult male again, before departure at 10:00 P. M. As previously mentioned, at least one immature Owl made it a habit

to come to the window sill for food, realizing possibly that the parent bird would enter there with food for the young one inside.

There was no doubt that the young ones, perched in the trees outside, were being fed by the adults, for on a number of occasions the "ick-ick-ick" call was heard, denoting the bringing of food. In one instance, a young Owl uttered a squeaky, throaty "ee-ee-ee," presumably just prior to the presentation of food.

It was about a month later, August 16, when the final visit was made, but no Owls were either seen or heard, having evidently sought more lucrative hunting grounds.<sup>1</sup>

#### SUMMARY.

*Nest.*—No nesting material utilized, eggs laid on bare floor in cavity as previously described.

*Plumage Development of Fledglings.*—(1) Pin feathers in wings appeared in approximately twelve days. (2) Primaries and tail feathers acquired in approximately three weeks. (3) Complete wing and tail feathers acquired in five to five and a half weeks. (4) Complete adult plumage acquired in approximately seven and a half weeks.

*Departure from Nest.*—Seven and one-half to eight weeks subsequent to hatching.

*Food.* (1) *Variety.*—Pine or short-tailed field mice (*Microtus pinetorum* and *pennsylvanicus*) were observed being brought to the young. Examination of pellets disclosed remains of small rodents in each case. A small clump of black feathers was found in the nest cavity, probably those of a Starling. It was not determined whether this bird had been brought for food.

(2) *Method of Conveyance.*—Food carried in mouth. Mice held by back of neck, face foremost. Evidently not carried in talons as is customary with Hawks.

(3) *Presentation.*—While actual feeding of young was not observed, from the briefness of time the adults spent in the nest cavity,—from five to ten seconds,—it seemed plausible that a

<sup>1</sup>After this paper was written we visited the tower again on November 15, 1924 and captured the female bird, another Owl no doubt her mate, being also in evidence. On subsequent visits during the winter a pair was always found, never more, which seems to prove that the two adults are permanent residents at this spot.

whole mouse was fed the larger of the young, and possibly divided for the smaller ones.

(4) *Time of Feeding.*—Both adults participated in the feeding. Female an “earlier riser,” her earliest visit made at 8:20 P. M. while male put in his initial appearance at 9:45 P. M. Under normal conditions the feedings no doubt continue throughout the night, but during our observation the adults were frightened and paid fewer visits. Feedings were in the ratio of two by the female to one by the male. The first evening the bringing of food was witnessed, the female, obviously suspicious of our presence but not alarmed, brought three mice within a period of fifty-three minutes.

(5) *Weather Conditions Affecting Feeding.*—Inclement weather undoubtedly hampers the Barn Owl in procuring food for the young. A thunderstorm on the evening of June 14 delayed the first feeding an hour. Quite likely very few field mice were abroad during the rain, and later on when a dense fog settled down, the Owls in their “hunting” were at a decided disadvantage.

*Defence of Young.*—(1) By male. None. Departed at first opportunity, making no audible protest. (2) By female. The inherent trait of protecting the young was manifested by the female, who on two occasions remained in the nest cavity during inspection, although undoubtedly aware that the male had left. However, she made no attempt to shield the young ones while in the nest and uttered no protest. Subsequent to the handling she received she was very suspicious and invariably detected our presence in the tower at once, whereas the male seemed unaware of it.

*Calls.*—A. By adults. (1) A discordant scream expressing alarm. (2) A snapping of the bill expressing suspicion and alarm. (3) A flight call, resembling “ick-ick-ick-ick,” apparently signifying the bringing of food.

B. By young. (1) A high-pitched quavering whine uttered by recently hatched fledgling before eyes were open. (2) A loud hiss uttered through the open mouth, expressing alarm. As the fledglings develop in size this hiss gradually changes into a throaty, hissing screech devoid of tone, which presumably later becomes the adult “scream.”

During early visits to the tower the young Owls cried in alarm at our approach, but as time went on and they developed in size,

the hisses gradually decreased, and just prior to their departure from the nest they were silent unless being handled.<sup>5</sup> It was not that they were accustomed by this time to our presence, but that they had acquired that sense, peculiar to wild creatures, of "freezing" to avoid detection. When handled, they cried louder than ever before.

(3) A short rasping call, or "snore" (Dresser). This is the food call and varies considerably in pitch. Uttered on the wing as well as in the nest and readily heard at a distance of 100 yards (if not further), at which distance it could easily be mistaken for some nocturnal insect.

(4) A discordant scream, similar to that of the adult, but of shorter duration and higher pitch. Uttered on the wing at age of approximately ten and a half weeks.

*Methods of Handling.*—When held at arm's length by the wings, the full-grown Barn Owl is unable to inflict any damage either with bill or talons. When conveying from one point to another, the young Owls as well as the adults are harmless when held firmly by the tarsi. On one occasion five well grown young ones were carried in one hand without causing the slightest confusion. Needless to state, gloves are absolutely essential.

*Conclusion.*—The general belief that *Tyto pratincola* stands well in the front rank of beneficial birds, is well borne out by the results of the authors' observations in the particular case under consideration. Living in perfect harmony under the same roof with several other species, this pair raised to maturity six young ones from a brood of seven,—a high percentage. Available data pertaining to this species are meager indeed. The views expressed herein, based upon both conjecture and fact, are far from complete, and it is hoped that others, having the same opportunity, will make a more exhaustive investigation. The study of the Barn Owl is certain to furnish countless thrills, many a quickening of the pulse, and a greater appreciation of the economic value of this grotesque benefactor to mankind.

*Collingswood, N. J. and Glenolden, Pa.*