

OBSERVATIONS OF DUCK HAWKS NESTING ON
MAN-MADE STRUCTURES

BY HORACE GROSKIN

THE Duck Hawk, *Falco peregrinus anatum*, usually nests on high cliffs in wild country, but it has also been known to nest on small, low cliffs only 75 feet above ground. It is rather a rare occurrence for Duck Hawks to nest on man-made structures, and so far as I am aware, there are only six records up to 1949 of Duck Hawks nesting successfully on man-made structures in North America east of the Rocky Mountains. One pair was reported to have made an attempt to nest on a skyscraper in New York City for over two years, courting and copulating in season, but no eggs were laid (Herbert, Kassoy, *in litt.*). One pair of Duck Hawks in 1939 nested successfully on an abandoned stone-bridge pier which was isolated in an adjacent river (F. and J. Craighead, 'Hawks in the Hand,' Boston, 1939). A second pair of Duck Hawks nested successfully in 1940 and raised young, under management, on a skyscraper in Montreal, Quebec, Canada (J. D. Cleghorn, C. E. Hall, and E. W. Pfeiffer *in litt.*). A third pair nested and raised young successfully in May, 1943, on top of a hotel building in New York City. The young Duck Hawks were later destroyed. A fourth pair of Duck Hawks nested successfully in a steeple of a church in Harrisburg, Pennsylvania. A fifth pair nested and raised young successfully in 1946 on the city hall tower of Philadelphia, Pennsylvania (Groskin, Auk, 64: 312-314, 1947). A sixth pair of Duck Hawks nested successfully in 1949 on a man-made structure in Philadelphia. The male of this last pair of Duck Hawks may have been the same bird that nested on the city hall tower in 1946, but the female was probably a new mate as was evidenced by the fact that the plumage on her upperparts was dark brown on the mantle instead of gray, indicating she was a comparatively young bird. (All Philadelphia skyscrapers and city hall buildings, including city hall tower, referred to in this paper are located in the business center of Philadelphia.)

In 1946 the Duck Hawks nested on a ledge 361 feet up on the city hall tower, whereas in 1949 they selected a nesting ledge only 100 feet above the street pavement, on one of the low buildings of the city hall. This nesting ledge is 12 feet long and 3 feet wide, faces south, and connects at right angles with another ledge of about the same size facing east.

The scrape was in the corner, against the wall of the building, and where there was some debris which had been deposited by the winds

(Plate 3, *Top*). The location of the scrape protected the eggs, and later the fledgling, from the cold north and west winds. Hickey (Auk, 59: 176-204, 1942) states, "The Peregrine appears to possess an absolute requirement in that the eggs must be laid in a hollow which is scraped out of dirt, gravel, or similar material." The scrape on the ledge of the city hall building did not quite meet these requirements, as the scrape was on a ledge of hard smooth concrete, but the debris in the corner of the ledge appeared sufficient to prevent the eggs from rolling off the ledge.

Observations of the activities on the nesting ledge were not difficult. There was a clear view of the nesting ledge from my office windows on the sixth floor of the Land Title Building, about 380 feet south of the nesting ledge. Another opportunity for observation of the activities on the nesting ledge was available from the ninth floor window of the Lincoln-Liberty Building, which was located about 100 feet across the street from the nesting ledge and about 60 feet above it. Observations were made with 8 by 30 Zeiss and 8 by 50 Hensoldt binoculars.

On May 6, 1949, Edward J. Reimann, who was interested in the nesting of Duck Hawks, was the first one to inform me of the exact location of the nesting ledge. I then called Mr. Max Lieberman who has an office on the ninth floor of the Lincoln-Liberty Building. Mr. Lieberman informed me he had been observing the nesting ledge from his window for some time and gave me the details of what he had observed.

On March 21, 1949, he observed three Duck Hawk eggs on the nesting ledge. Thirty days later, on April 19, he noted that two of the three eggs had hatched; two days later, April 21, one of the fledglings had died and one egg still remained unhatched. According to Hickey (*in litt.*) about one egg in every set fails to hatch.

My first observation was made on May 6, when the fledgling was 18 days old and in pale grayish-white downy plumage. The fledgling was somewhat active, moving a few inches from time to time and stretching its wings. The infertile egg was still on the nesting ledge immediately in front of the fledgling. The tercel (male) flew in and perched on the edge of the ledge and then moved in close to the fledgling but brought no food.

My observations were continuous from May 6 to May 29 when the hawklet left the ledge, and then the observations were continued from time to time until August 10, while the parents and the hawklet were in the air or perching on top of skyscrapers in the immediate vicinity.

May 9—Fledgling 21 days old. At 10:50 a. m. was being fed by the falcon (female) and continued feeding until 11:15. A few minutes later the fledgling attempted to stand on its feet, but it tumbled forward on its head. It tried to stand on its feet several times but fell over each time and finally gave up and squatted in the corner of the ledge. Four days later, *May 13*, after being fed by the female, the youngster hopped out to the very edge of the ledge, squatted, and remained there for about 30 minutes, apparently watching the heavy street traffic below the ledge. During the entire time the youngster squatted on the edge of the nesting ledge, the female remained on the ledge very close to the youngster as if guarding it.

May 16—Young 28 days old. During the morning observation the female was covering the youngster with her wings widely spread, protecting it from the sun. On this nesting ledge there was danger of the young being molested. The safety of the Duck Hawk, when nesting, usually requires an eyrie on high cliffs in wild country, but when the hawks nest on a low ledge of a man-made structure in the center of a large city the danger to the adults and young is greatly increased. For example, during this afternoon, while the young bird squatted in the corner of the ledge, two men suddenly appeared on top of the roof directly above the nesting ledge. One of the men carried an iron rod which he lowered from the roof to the youngster apparently intending to kill it, but fortunately the rod was not long enough to reach the bird. The man then secured a longer iron rod and when he lowered it, it was also not long enough to reach the bird. I called to the men and motioned to them to get off the roof. My calling to them made them realize they were being watched so they immediately left the roof. Later, through the officer in charge of the public buildings, arrangements were made to keep all persons off the roof.

May 18—Observation 2:30 to 3:10 p. m. Both parents came to the nesting ledge. The male passed food (a Starling) to the female and she fed the young bird. The young now has an increasing number of dark feathers on the under and upper surfaces of the wings, on the scapulars and around the eyes. There is a dark patch on the crown. The tail is dark brown and about two inches long with a buffy terminal band.

May 19—At 3 the male brought food and passed it to the female on the ledge. The female dropped the food in front of the youngster which picked it up in its mandibles, carried it around several minutes as if it did not know what to do with it, and finally dropped it. Then the female picked it up with her talons, and with her mandibles tore off several pieces and fed the youngster. At this time both parents

were in almost constant attendance, either on the ledge or close by on one of the buildings.

May 20—The young bird now has many more dark feathers on the upperparts, and the tail appears to have grown another inch. At 12:20, in Philadelphia, we had one of the heaviest rain and thunderstorms of this season, lasting several hours. During the worst part of the storm the young was standing in the center of the nesting ledge in the pouring rain for 30 minutes. During this time the young bird was continuously raising its wings, as if to ward off the heavy rain coming down on it. At times it was raining so hard I was afraid that at any moment the bird would be washed off the ledge. To make matters worse, the temperature dropped 19 degrees, from 70° to 51° F. in about two hours. The rainfall was one and one-half inches in one-half hour, and there was a strong northeast wind. At 3:10 it was still raining hard; the female came to the ledge and remained until 3:45 apparently guarding the youngster. We also had very heavy rainstorms on the two following nights. It seemed almost impossible that a young bird only 32 days old would be able to withstand such a terrific attack by the elements.

May 23—Young 35 days old. Today a considerable change in color of the plumage of the youngster is noticeable. The upperparts of the plumage are dark brown with light brown edges except three small tufts of downy light gray feathers on the back. The underparts are now buffy, streaked with dark brown, and the head is dark except the ear and cheek region which is buffy. The tail is dark brown crossed with light bars and with a buffy terminal band, and the tarsi are greenish yellow.

May 24—At 11:20 a. m. the hawklet called for food in a vigorous manner and repeated the call about 15 times, but neither the female nor the male appeared at this time. At 12:20 the male arrived on the ledge with food, dropped it in the corner of the nest, but made no effort to feed the hawklet. In a few minutes the male left the ledge. The hawklet made no attempt to feed itself. At 2:50 the female arrived on the ledge and fed the young.

May 25—At 12:20 the female flew to the ledge and remained close to the hawklet for several minutes, then flew off. At 2:30 the female was perched on top of a skyscraper feeding on a pigeon. At 3 p. m. a man walked on the roof above the nesting ledge; both parents circled in the air above the roof greatly excited and screaming; fifteen minutes later the man left the roof. The hawklet at this time has the black "moustache" which appears to be complete.

May 26—Hawklet 38 days old. It made its first flight today. At 11:50, beating its wings and lifting itself up about a foot above the

ledge, it flew the entire length of the ledge, a distance of 12 feet and then landed at the other end of the ledge. Just as the hawklet finished its first flight, the male arrived on the ledge and dropped food in front of the hawklet who started eating it at once. It is possible the hawklet may have seen the parent coming from some distance with food which may have induced the hawklet to make the flight over the ledge. After the male brought the food, he remained only a few minutes and then flew off the ledge.

May 27—The parents do not come to the ledge as frequently as heretofore. They are now observed more often on top of close-by skyscrapers, probably standing guard. When the parents come to the ledge now, they usually drop the food on the ledge and leave immediately. At 12:35 the male flew in and perched on a parapet above the nesting ledge, remained there a few minutes, then flew down to the ledge, dropped a Starling, and flew off. The hawklet started eating the food at once. The hawklet now appears fully as large as the male.

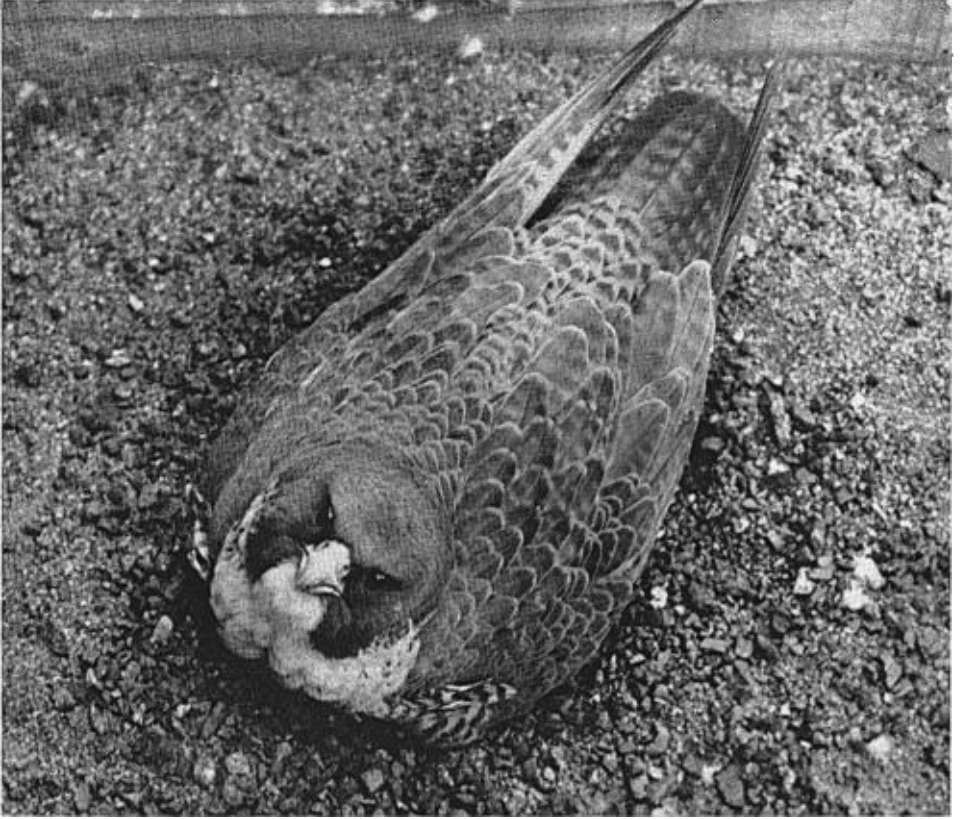
May 29—Hawklet 41 days old. Mr. William W. Lukens, Jr., informed me that at 10:30 he observed the hawklet was no longer on the nesting ledge, but had flown straight down some 25 feet to another ledge just below on the same building. Lukens stated the parents were greatly excited, flying around the hawklet who was calling continuously for food. The parents did not feed the hawklet at this time, possibly to induce it to leave the ledge and fly off with them, but it did not leave the ledge. About 15 minutes later one of the parents brought a Starling, but made no attempt to feed the bird.

May 30—I observed the hawklet inside a large hole in the coping in the back part of the same ledge, eating a pigeon which, no doubt, had been placed there by one of the parents. After the bird finished eating, it came out of the opening in the coping to the ledge and stood looking around. In a few minutes a pigeon flew to the ledge and perched within five feet to the right of the hawklet, and a few minutes later another pigeon flew to the ledge and perched about five feet to the left of the hawklet. The hawklet appeared to be greatly interested in both pigeons, first looking at one and then the other, but the pigeons did not show any fear of the hawklet at all. Shortly thereafter both pigeons left the ledge. The female was observed early this morning when she was calling loudly from the top of the Land Title Building, apparently keeping in touch with the hawklet. The hawklet's mantle appeared bluish-gray in the sun today, similar to the color of the male.

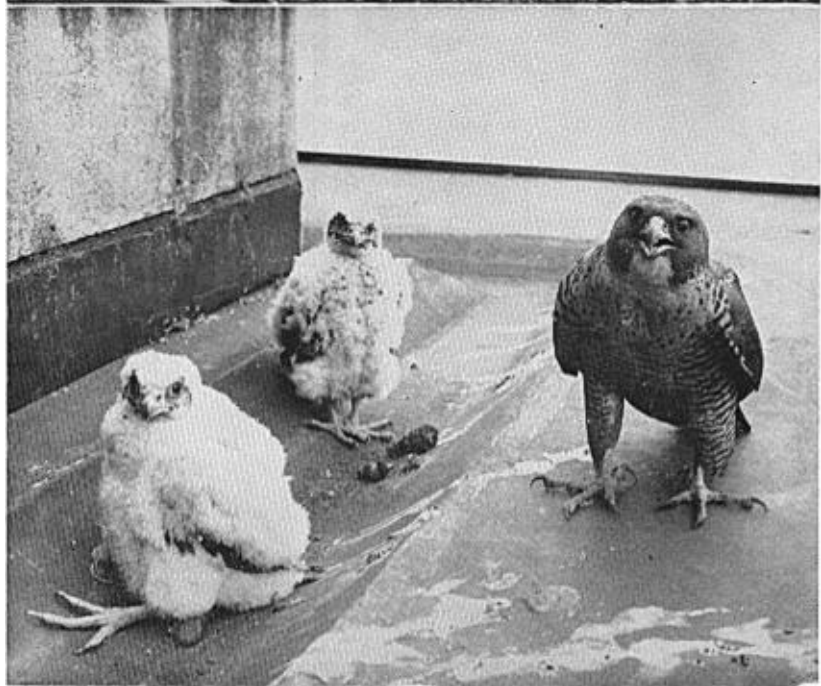
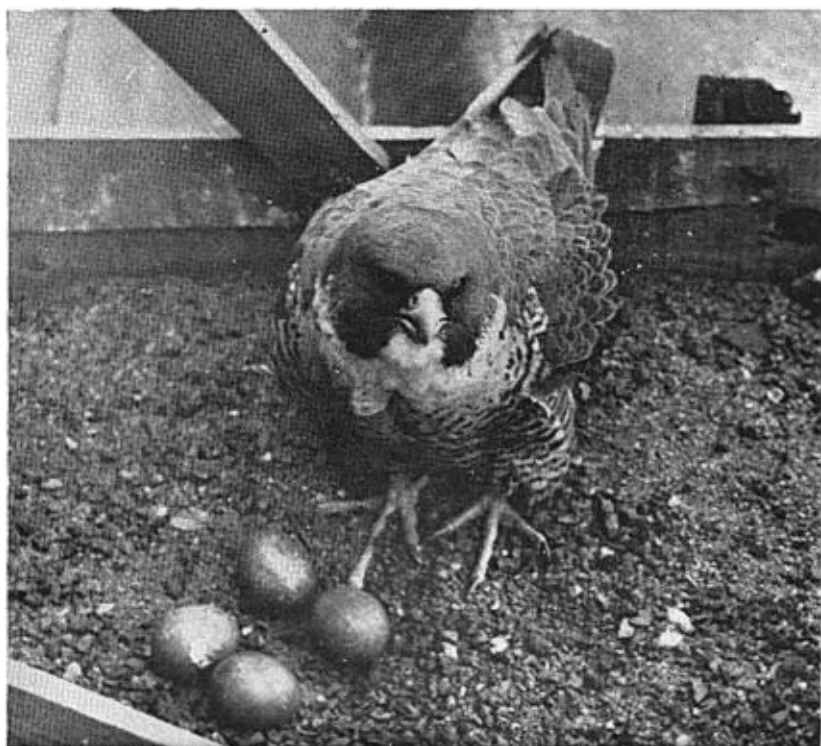
May 31—Hawklet 43 days old. Today the young bird left the city hall building, where it was hatched, and flew for the first time a distance of 300 feet to the base of the marble dome of the Girard Trust Company



DUCK HAWKS. (*Top*) NEST WITH ONE YOUNG AND ONE INFERTILE EGG. PARENT WITH FOOD. CITY HALL BUILDING, PHILADELPHIA, MAY 6, 1949. PHOTOGRAPH BY 'EVENING BULLETIN.' (*Bottom*) FALCON TURNING TO MAKE HORIZONTAL ATTACK AT NEST SITE ON SUN LIFE BUILDING, MONTREAL, CANADA. PHOTOGRAPH BY E. HARPER HALL.



FEMALE DUCK HAWK ON EGGS. SUN LIFE BUILDING, MONTREAL, CANADA.
PHOTOGRAPH BY E. HARPER HALL.



DUCK HAWKS. (*Top*) FEMALE WITH EGGS. (*Bottom*) FEMALE WITH YOUNG 29 DAYS OF AGE. BOTH PHOTOGRAPHS MADE ON SUN LIFE BUILDING, MONTREAL, CANADA, BY E. HARPER HALL.

at Broad and Chestnut Streets, Philadelphia. The base of the dome is 90 feet above the street pavement and 80 feet across the street from my office windows in the Land Title Building. The hawklet remained on the base of the dome about 15 minutes, then flew another 500 feet south along Broad Street, and perched on top of a low part of the Fidelity-Philadelphia Trust Building, where it remained for one hour; it flew back, north on Broad Street, to the base of the dome of the Girard Trust Building, another 500 feet, having made a record on this day of flying a total distance of 1,300 feet on its first long flight. On its return to the base of the dome, it remained there for several hours and provided an excellent opportunity for observation. The female, which was now on top of the Land Title Building across the street from the Girard Trust Building dome, flew down to the base of the dome, but brought no food and left in a few minutes. The hawklet now called loudly for food. At 2:40 the male arrived on the base of the dome, but did not bring any food and left the dome within a few minutes. At 4:30 both parents arrived on the base of the dome at the same time, and the male brought a Starling and dropped it on the base; then both parents flew away. The hawklet was apparently very hungry, for he did not even stop to pluck the feathers of the Starling, but immediately tore into the body for the flesh.

June 1—At 10 a. m., the hawklet was no longer on the base of the dome. At 1 p. m., Mr. John C. Holinger stated he had observed the hawklet from the 27th floor of the Girard Trust Building perched on top of the nearby Commercial Trust Building which is about 300 feet high. The hawklet perching on the top of this building at such a height four days after leaving the nesting ledge indicates how rapidly a hawklet's flying power develops and improves.

June 2—The hawklet was observed on a ledge 361 feet high on the city hall tower. At 12:45 both parents flew to this ledge and the male brought food to the hawklet. The three birds, both parents and the hawklet, were now together on the same ledge. At 1:40 the hawklet left the ledge and made a beautiful flight, high in the air, between the city hall tower and the Commercial Trust Building, flying a distance of about 600 feet. While in the air the hawklet sailed almost the entire distance without a beat of the wing, until it was ready to perch when it beat its wings a few times. The flight appeared to be almost as perfect as that of an adult.

June 6—Hawklet 49 days old. Mr. Holinger informed me that at 7 p. m. he observed the hawklet and one of the adults together high in the air above the city hall tower, hovering and beating their wings; they were so close together that he was fairly certain the hawklet was

taking food from the parent in the air. On June 10, at 6:20, he again observed the hawklet and one of the parents above the top of the Sun Oil Building hovering in the air with wings beating, and he is certain the parent was feeding the hawklet. These observations were made with powerful binoculars. Referring to young Duck Hawks learning how to secure food in the air, Dr. Elon H. Eaton (New York State Mus. Mem., 12, vol. 2: 101, 1914) states, "As the young begin to fly the parent birds fly by with prey in their talons, and the young rise to snatch it from them in mid-air as they pass."

June 23—Hawklet 66 days old. On this day, sometime in late afternoon, and probably attempting to capture prey (perhaps a pigeon) flying low alongside one of the walls of the city hall building, where the adult hawks had often been observed chasing pigeons, the hawklet, perhaps due to inexperience, flew or dropped down into a large light-well of the city hall building. This light-well provides light to the city hall basement windows, is four feet wide, 90 feet long and 15 feet deep, and is surrounded on the three sides with an iron grating four feet high above the street pavement. The hawklet after flying or dropping into this deep light-well found itself unable to fly up and out of this narrow well; when it became dark, it started screaming and making a loud wailing noise. This attracted the attention of many persons who surrounded the light-well. The Society for the Prevention of Cruelty to Animals was called and asked to get the bird out of the well. This organization secured the hawklet and transferred it the next morning to the Philadelphia Zoo. A few days later I called Mr. John A. Griswold, Curator of Birds at the Philadelphia Zoo, explained the history of the hawklet, and suggested that since the bird was uninjured I should like to release it where I had been observing the parents and the hawklet together in order that it might make a contact with the parents. Mr. Griswold agreed to turn the bird over to me to release.

On June 28, with the assistance of J. C. Holinger and William L. Moore I transported the hawklet to the terrace of the 27th floor of the Girard Trust Building. When we opened the carton the bird came out very slowly and, much to our surprise, did not fly off at once, but stood very still for several minutes in front of us, as if it were trying to get its bearings. Suddenly it started to hop along the terrace floor, away from the group; it moved for a distance of 25 feet, then stopped hopping, beat its wings vigorously for about five minutes and at the same time made an effort to raise itself into the air. Possibly the bird was merely preparing itself for flight by exercising its wings, since there had been no opportunity for the bird to use its wings during

the past five days while it was a captive in a cage. In a few minutes, however, the hawklet flew up about four feet to the iron rail of the terrace where it remained about ten minutes, looking across the air toward the city hall tower where it had been flying for several days before it became a captive. It then flew off the rail into the air about 450 feet above ground where I had observed it a number of times before. The hawklet sailed in a circle a few times, and then suddenly we observed the female flying in to join the hawklet, and within a few minutes the male joined the party. The three members of the family circled for at least 30 minutes and then each bird flew to a separate ledge on the city hall tower.

On June 29, at 7 p. m., 24 hours after the hawklet was released, Holinger reported he observed both parents and the hawklet in the air above the city hall tower. Thereafter, from time to time throughout the entire fall and winter, I observed the Duck Hawks in the air from my office window. In 1950 the Duck Hawks were again present at the same location during the breeding season, but despite a considerable search we were unable to locate the nesting site.

Glenn Road, Ardmore, Pennsylvania, November 14, 1950.

DISTRIBUTIONAL NOTES ON SOME PHILIPPINE BIRDS

BY D. S. RABOR

SINCE 1947 I have been engaged in teaching biology in Silliman University, Dumaguete City, Negros Island, Philippines. With what time I could spare from teaching I have carried on intensive studies on the land vertebrate fauna of the Philippines, beginning with those of Negros. The Chicago Natural History Museum is co-operating with me in these studies by providing the necessary funds and equipment.

In connection with the study of the bird fauna of Negros and nearby islands, approximately 2500 specimens have been collected to date. These include both resident and migrant forms. As a result of the present studies, 229 bird forms are now known from Negros Island. Of these 36 are new additions to the avifaunal list of this locality, including one species (Rand and Rabor, MS.) and two subspecies (Rand, *Natural History Miscellanea*, Nos. 59 and 72, 1950) described as new to science. Rand (*Fieldiana, Zoology*, 31 (48): 571-596, 1951) reported previously on 14 of the forms newly added to the bird list of Negros. The present paper reports 19 additional new bird records from Negros, two from Cebu and one from Mindanao.