

NOTES ON THE LIFE HISTORY OF THE PILEATED FLYCATCHER

By J. STUART ROWLEY

When a person has learned the calls of the Pileated Flycatcher (*Aechmolphus mexicanus*), by exercising much patience and vigilance in the usually thick understory of its habitat, he will be rewarded by the observing of one of the rarest of Mexican birds. This flycatcher is a small drab bird about five inches in length, its tail contributing about half its total length. The underparts are very pale yellow and the wing coverts have two white bars. A long pointed crest, with the longer feathers lanceolate, and the jerky motion of the tail are the distinctive field recognition marks. The feathers of the crest may be held fairly flat or more often fully elevated. Male and female are alike in plumage.

The range of the Pileated Flycatcher appears to be restricted to the central plateau section of México from Michoacán to Oaxaca and from Guerrero to Morelos. I have found it only in Morelos and Oaxaca at elevations of from 4500 feet to 6000 feet above sea level. It appears to be resident and to breed wherever it is found. (A. R. Phillips, MS, obtained two specimens in Cañon de Lobos on January 24, 1962, indicating a permanent occurrence in this area of Morelos.)

This flycatcher inhabits the thick understory of semiarid barrancas and seems to prefer second-growth woodlands and thorn thickets. The mated pairs are solitary and usually forage in the broken shade of the densest portions of the thickets where they dart about catching insects low in the bushes and snapping their bills like wood pewees.

The first known example of this species, which eventually was named as the type specimen, was collected by Austin P. Smith on April 9, 1908, with the locality noted as simply "Cuernavaca, Mexico." It was originally identified as "*Myiochanes richardsonii*" and was labeled as that form. For thirty additional years, this specimen remained unrecognized until Zimmer discovered it in a tray of *Empidonax traillii* at the American Museum of Natural History in New York. After much speculation and study, Zimmer (Auk, 55, 1938:663-665) described this bird as a new genus and species.

From 1938 until the publication of part II of the Mexican check-list in 1957 (Pac. Coast Avif. No. 33), apparently some twenty additional specimens were collected from the central plateau section of México from Michoacán to Oaxaca. In 1957, Ernest P. Edwards (Pac. Discovery, 10, no. 4, 1957:24-25) reported the first discovery of the nest of this bird from Cañon de Lobos in Morelos. My studies in México began in 1958 and continued through 1962, during which time I had the opportunity to observe much of the nesting habits of this species.

VOICE

It is during the nest building time and when eggs are being laid that the male is most active in giving his distinctive call. The most common call sounds phonetically like *twhéeyu-r-r-r-whéetyu*, but often only the first accented part is uttered. When the vibrant rolling notes of the middle part are given, the tail jerks with each beat. The only note I have ever heard given by the female was a soft warning note resembling that of a disturbed nesting Vermilion Flycatcher (*Pyrocephalus rubinus*), a sort of a quiet *chiiip*, and I have most often heard it uttered after the young have hatched. When the full complement of eggs is laid and during the incubation period, the female is very quiet and secretive while the male gives his distinctive call from some hidden perch perhaps as far as one hundred feet away from the nest, but noticeably less often than when building and laying is in progress. After the young hatch, the male becomes even

more silent and devotes more time to defense of the nest area by chasing such intruders as Golden Vireos (*Vireo hypochryseus*), Greenish Elaenias (*Elaenia viridicata*), and particularly Nutting Flycatchers (*Myiarchus nuttingi*).

NEST BUILDING

By the middle of May, nest building begins in Morelos. The earliest occupied nest I have found there was on May 19, 1960, with three fresh eggs, and the latest was on July 10, 1962, with three half-grown young. Two nests were located in Oaxaca, one having fresh eggs on July 8, 1961, and the other containing an incomplete laying of one egg on July 2, 1962. These constitute the first nests of this genus to be discovered



Fig. 1. Nest of the Pileated Flycatcher (*Aechmolophus mexicanus*). 12 miles east of El Tulé, Oaxaca, México, July 2, 1962. The photograph shows the characteristic long streamers of grasses hanging from the edge of the nest. This was the only nest found with "vireo-like" suspension. Photographs by author.

in Oaxaca, the only previously known nesting locality being in Cañon de Lobos in Morelos.

During the breeding seasons of 1959, 1960, 1961, and 1962, a total of 16 actively attended nests were found. As a site for its frail but unique little nest the Pileated Flycatcher selects a downward sloping branch of either a live or dead shrub, usually in the shaded shelter of taller growth. It fastens the nest by the rim of the cup to two or three hanging twigs to form a weak suspended affair through which one can see the contents from below even when it is completed.

On May 24, 1961, in Cañon de Lobos I found two nests being built. One was well cupped, thinly lined, and needing more material to strengthen the entire nest, while the other was just started. In the dim light of the understory, I could not be sure that more than one bird was carrying grasses to either of these nests. In both instances, the

presumed female would sit near the uncompleted nest for several minutes after delivering a grass stalk and would often dart about the understory pursued by the male who would perch in a nearby bush and catch insects. I am convinced that the female alone builds the nest.

The inside of the cup of one nest measured 50 mm. in diameter and 35 mm. in depth whereas the outside depth was only about 10 mm. more, which fact demonstrates the frailness of the entire structure. The outside is made primarily of dried grasses attached to the suspension twigs by the use of spider webs woven around the grasses, and the lining is made of slender epiphyte rootlets, rhizomorphs, and plant fibers. Usually there are several long grass streamers hanging from the sides and protruding down from the nest for ten to twelve inches. Occasionally, a nest will be found without these hanging grasses, but it is the exception. All the nests I have found have been between five and seven feet from the ground.

EGGS

Of the 16 nests observed, 12 held full complements of eggs or young; one had an incomplete set, and three were deserted before incubation started. Ten nests held three eggs or young while the other two completed sets contained two eggs each. The following is a record in detail of the nests examined:

Completed Nests			
Date	Locality	Number of eggs or young	Incubation
May 19, 1960	5 mi. E Cuernavaca, Morelos	3 eggs	Fresh
May 23, 1960		3	Slight
May 23, 1960		3	Fresh
June 2, 1962		2	Slight
June 3, 1961	Cañon de Lobos, Morelos	3	Slight
June 7, 1960		3	Slight
June 8, 1962		3	Well commenced
June 8, 1962		3	Well commenced
June 13, 1961	5 mi. E Cuernavaca, Morelos	3	Fresh
June 16, 1959	Cañon de Lobos, Morelos	2	Fresh
July 2, 1962	12 mi. E El Tulé, Oaxaca	1	Fresh
July 8, 1961	Near Santa María Coyótepec, Oaxaca	3	Fresh
July 10, 1962	5 mi. E Cuernavaca, Morelos	3 young	One-half grown
Incomplete Nests			
May 22, 1961	5 mi. E Cuernavaca, Morelos	1 egg, deserted	
June 7, 1961	Cañon de Lobos, Morelos	2 eggs, deserted	
June 19, 1961		Ready for eggs, deserted	

The first nest of 1961 was found on May 22 at about 8 a.m., empty but ready for eggs. At 11 a.m. it was inspected again and contained one egg. However, this was all that the nest ever contained and the female apparently vanished during the night, for she was never observed again. On May 25 the nest still contained one egg, no sign of the female, and the male was vigorously defending the area against intrusion by other small birds. Two days later, the male was gone from the area.

The eggs are a brownish cream base color, marked with spots and blotches which form an almost solid belt around the larger end. These markings are reddish brown with some purplish streaks. The measurements of a set of two taken on June 16, 1959, are 19×14 and 19.5×14.5 mm.



Fig. 2. Nest and eggs of the Pileated Flycatcher, five miles east of Cuernavaca, Morelos, México.

INCUBATION

During the four seasons when this study was made, my experience with these flycatchers has been most frustrating, for the rate of nest loss has been high. Consequently, it became evident that in order to complete a study of the nesting cycle, I could not remain long at the nest during early stages of incubation or desertion would take place. Both male and female became exceedingly quiet and shy. Even when the nest was stealthily approached, it appeared impossible to watch the incubating female. My notes best describe the situation at nest no. 4:

"June 13, 1961—5 mi. E Cuernavaca—nest 4 was found here suspended from three dead hanging branches. Nest placed about seven feet up; it was located before any bird was seen or heard. After waiting about fifteen minutes, the female approached quietly uttering a very soft single *chiiip* but not getting closer than ten feet from the nest. Finally she darted the last ten feet directly to the nest in an uninterrupted flight and settled down to incubate. Nest contained three fresh eggs on this date.

"June 16, 1961—Female off nest at approach. In fifteen minutes she returned quietly and started to incubate—no sign of the male and no vocalizing.

"June 20, 1961—Incubating heavily and remained close on nest with reluctance to leave. When flushed, no sound was uttered by the female and male was not present. One-half hour at nest.

"June 24, 1961—Visited in a.m.; eggs all hatched; female brooding; young beginning to fluff out but no sign of feeding. Female seemed interested in keeping young warm as it was beginning to rain.

"June 28, 1961—Two dead suspension branches were broken by violent rains and winds—nest was tipped on its side—young were gone and no sign of either parent."

The incubation period is approximately 12 days.

THE NESTLINGS

The newly hatched young are naked but by the end of the second day they begin to fluff out, particularly around the head, with a whitish down which is gradually replaced by new feather growth about the fifth or sixth day. At one nest on the twelfth day, the two young were well feathered. Both adults were observed carrying insects to the young but the male only arrived at the nest one time to about six times for the female.

By the time the young were ten days old, the nest was completely filled and no further brooding by the female was observed. In appearance, the young differ from their parents in one distinct respect. Where the adults have prominent whitish bars on the wing coverts, the young have decidedly buffy ones. The young leave the nest at about 14 days of age.

ENEMIES AND MORTALITY

The destruction of eggs and young of the Pileated Flycatcher in the study area was frequent. Six nests and sets of eggs were collected, leaving ten for intended complete study. Of these ten, three were deserted before incubation began and the birds were no longer present in the nest vicinity. Another nest was robbed, presumably by young iguanas which were abundant near the site, after about five days of incubation had elapsed; one broken shell was found on the ground directly below the nest. Two nests were destroyed by heavy winds and rain when their supports on one side gave away, dumping out the nest contents.

From two nests found in the upper reaches of a remote ravine in Cañon de Lobos on June 8, 1962, the birds were successful in raising their six young to departure age, although one had a large larva of a dipterous fly in the front part of the throat. The fate of the last nest found on July 10, 1962, is unknown as I was unable to remain in the area after that date.

The nestlings of the remaining nest under observation were fatally infested with larvae of a dipterous fly, so badly that their heads were completely misshaped and their eyes were closed. The attending female on the thirteenth and last day of their survival tried to feed them but their heads were so heavy with the larvae they were unable to raise them to take the food. She flew to the rim of the nest with a billfull of insects and made frequent probings into the nest trying to find an open mouth. Then she sat on the rim for several seconds and tried in vain again. When this failed, she flew to a nearby branch of a bush and after a short pause, repeated the procedure. How long this went on I did not observe but the young were found dead in the nest the following morning amidst a swarming mass of the white wiggling grubs which had broken through the skin, leaving ugly gaping holes from which they had emerged.

Several specimens of these maggots were sent to Dr. G. F. Bennett, Department of Parasitology, Ontario Research Foundation, Toronto, Canada, for identification. In a letter dated November 6, 1962, he reports the following: "I regret that I cannot put a name on them for you. They are definitely not a calliphorid of any description. The body form, lack of armature and appearance of the stigmata are strongly suggestive of the muscids, perhaps either *Stomoxys* or *Musca*, but a species with which I am not familiar. As you are probably aware, several species of both genera are supposedly capable of facultative myiasis."

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CONCLUSION AND SUMMARY

The Pileated Flycatcher (*Aechmolophus mexicanus*) is one of the rarest birds of México. It nests in the thorn thickets and thick understory in the vicinity of Cuerna-

vaca, Morelos, at the 5000- to 6000-foot level, where a few pairs occur very locally and sparsely. Two pairs were found nesting in Oaxaca in similar terrain, extending their known breeding range to this state. Juveniles have been taken in Michoacán but no nests have been found there.

The nest is a frail affair and nest loss is high. The usual clutch is three eggs, laid on successive mornings, but occasionally only two eggs constitute a full set. The incubation period is apparently about 12 days and the young leave the nest on the fourteenth day after hatching.

The selection of brittle, dead suspension twigs for the nest in ten of sixteen cases was a prime factor in the high rate of nest destruction. Severe wind and rain storms break the dead twigs.

Normally high predation, the toll taken by dipterous flies, and small clutch sizes contribute to low production of young of this scarce bird.

San Mateo, California, October 17, 1962.