

*S. platycercus* probably does not qualify as a recent addition to the bird fauna of the Chiricahuas since it ranges from Central America to southern Montana (Bent 1940). Though *Eugenes fulgens* and *Lampornis clemenciae* are too large to fit the conditions of the schema, the ranges of both reach their northernmost extension in southern Arizona (Marshall 1957), illustrating how, under the right bird-flower conditions, range extension alone might serve as the initial impetus as indicated in the schema. The schema would also apply to situations in which bees, birds, and their respective flowers were already present if, instead of or in addition to range extension, environmental changes occur. For example, Cruden (1972) suggests that increased daily periods of inclement weather, which substantially decrease bee activity but have little effect on feeding activity by hummingbirds, increase hummingbird pollination relative to bee pollination.

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## UNUSUAL ATTACK OF INTRUDING MALE ON A NESTING PAIR OF PILEATED WOODPECKERS

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The following observations were made on Sapelo Island while I was a guest of the Marine Institute of the University of Georgia. Although they are concerned mainly with an attack in which an intruding male (IM) drove an established pair of Pileated Woodpeckers (*Dryocopus pileatus*) from their nearly completed nest hole, events during the days preceding and immediately following are given to gain perspective. Recognition of individuals was by behavioral differences.

The nest hole was located about 22 m high in a dead pine. It was deep enough on 15 March 1972 for the resident male (RM) to roost in it at night. He continued excavating, however, over the next week. When I approached the pine at 06:45 on 21 March, RM was resting on another dead pine not far from the nest tree, but 3 m from an intruding Pileated Woodpecker that was drumming. After a few minutes, the intruder flew to the nest tree. The female woodpecker, who was inside the hole, then flew at and attacked the intruder. There was much flapping

of wings, both while in the air and while clinging to the trunk of the pine, as the two birds circled to strike each other. When this ended, the female left to fly in an apparent attack on her mate who had been perching higher up in the nest tree. He flew off and she followed. The intruder was then alone. It perched almost motionless for the next 15 min until 07:05 when the RM returned and hitched upward toward it in a bill-waving threat dance (Kilham, *Condor* 61:377, 1959). I then heard the female drumming. The intruder flew toward her and this was the last time I saw it. Unfortunately, I was unable to be sure of its sex against a dark grey sky.

The work of excavating the hole, carried on almost entirely by RM, continued over the next few days. On 23 and 24 March, it appeared that events were close to the time of copulation and egg-laying, for the female entered the nest hole soon after sunrise and I heard tapping and low *woicks* (Kilham, *Condor* 61:377, 1959) when the male looked in at her. The male remained in trees not far from the hole on 24 March. When he flew toward the nest at 07:35, I noted an IM flying toward it at the same time. At first, the two males flew at each other while circling in a combination of flying and clinging to the trunk 3 m below the hole. IM, however, broke away to ascend to the hole, where he met the female. The two jabbed at each other in the entrance. After a few moments, the intruder backed down to attack RM as before, then flew back to the hole. The jabbing of bills was more intense as the intruder forced

his way inside. He emerged immediately, returning to attack RM. Within a minute, however, he climbed to attack the nest hole a final time. The female struck so forcefully that breast feathers floated downward. IM, however, forced his way into the hole in spite of her defense and on this occasion, after nearly a minute of cackles and sounds of scuffling, the female emerged. Her mate had meanwhile flown to another tree. She flew at him as if in an attack and he left on a long flight through the pines. The female then preened her disordered plumage. The intruder remained in the hole and was still looking out from the entrance when I left.

When I came by the nest at 06:25 the following morning, RM was clinging to the outside of the nest cavity preening in the quick ineffective manner characteristic of displacement activity (Kilham, unpubl. data) while drumming at a rate of three bursts a minute. He had not behaved this way on previous mornings. At 06:30 he flew away. He returned in 13 min to perch nearly motionless for 20 min above the hole before entering at 07:15. At 07:25 his mate flew in to a dead pine nearby. RM tapped inside the hole (Kilham, Condor 61:377, 1959), then flew to her. There was an exchange of low *woicks* as she moved out on a limb, took a crosswise position, and copulation followed. Two days later, I witnessed a second copulation. After each of these, the female entered the nest and it seemed likely that egg-laying and incubation had begun. I left the island at this time and hence made no further observations.

The conflicts described above are unusual in that a resident pair of birds, especially if close to a nest, generally have a strong psychological advantage. An intruder, therefore, has little chance of success. In the present episode, however, IM fought both the resident male and female and succeeded, after evicting the female, in occupying the nest hole temporarily. A possible explanation is that the intruder

was an unmated male who had lost his mate, a situation which, as I have noted among other hole-nesting birds, can lead to unusual behavior. The first observations involved a pair of nesting Casqued Hornbills (*Bycanistes subcylindricus*). Here, an unmated female repeatedly attacked the nesting female, walled inside her nest, and when the full-grown young one emerged, she attacked and injured it severely [Kilham, Smithsonian Misc. Collect. 131(9): 1-45, 1956]. In a second set of observations (Kilham, Wilson Bull. 81:169, 1969), an unmated male Hairy Woodpecker (*Dendrocopos villosus*) made intrusions into the territory of a mated pair. The attacks of the intruder became increasingly successful and finally led to the defeat of the resident male. A feature common to both Casqued Hornbill and Hairy Woodpecker, as well as Pileated Woodpeckers, is a strong pair bond. An individual, therefore, that has lost its mate after the start of the breeding season may find outlet for thwarted drives in unusual agonistic behavior. Such behavior, however, need not involve loss of a mate. It may be precipitated by other obstacles to nesting, such as failure to find an adequate nest site, as I have described for Yellow-shafted Flickers (*Colaptes auratus*) in captivity (Kilham, Wilson Bull. 71:323, 1959) and for Yellow-bellied Sapsuckers (*Sphyrapicus varius*) in the field as well as in captivity (Kilham, Auk 79:31, 1962).

A further observation might be added in regard to the Pileated Woodpeckers. When I first found the nest of 15 March, I noted the fairly fresh remains (wing feathers, bones, and bill) of a Pileated Woodpecker about 5 m from the base of the nest tree. It is conceivable that IM had been the one to actually start the nest hole, but had given it up when his mate was killed by a hawk or other predator. If such events did occur, it might be that IM still had a sense of possession at the time of his attack.

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## VIRGINIA RAIL AND CAPE MAY WARBLER IN CHIAPAS, MÉXICO

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During a recent visit to the Mexican state of Chiapas, I obtained new information on the distribution of two bird species: the Virginia Rail (*Rallus limicola*) and Cape May Warbler (*Dendroica tigrina*). On 2 May 1972, while observing birds near the reservoir in the central highlands town of San Cristóbal de Las Casas (elevation 2090 m), Dennis E. Breedlove and I heard and saw at least seven Virginia Rails in a small patch of California bulrush (*Scirpus californicus*). The birds were calling loudly and frequently, and four times I saw one bird chase another out into a cleared area and back into the sedges. Venturing into the marsh, I collected a single adult female (CAS 68571) which, upon dissection, appeared to be in postbreeding condition. The ovary measured 15 × 9 mm and the largest ovum, 3 mm in diameter. The presence of several rather large corpora lutea suggested that eggs had been laid recently. The oviduct was

enlarged and appeared to be in a regressive state. The slight amount of fat exhibited by the specimen indicated, especially at this late date, a resident rather than a migrant status.

Measurements (mm) of the specimen are as follows: wing (chord), 98.0; tail, 40.9; exposed culmen, 36.0; tarsus, 32.8; and middle toe without claw, 32.0. Although these measurements fall within the extremes given for *R. l. limicola* by Ridgway and Friedmann (Bull. U.S. Natl. Mus. 50, pt. IX:92, 1941), all are well below the averages, and the lengths of the culmen and middle toe exactly match the low extremes. In plumage the underparts of the Chiapas bird are paler (grayer, less reddish) than any California specimen in our collection; this difference, however, might be the result of foxing. Even if these size and color differences are shown to be consistent within the Chiapas population, I doubt that they will prove to be of such a magnitude to warrant subspecific recognition.

During the early evening of the same day, we visited two other *Scirpus* marshes in the vicinity of San Cristóbal de Las Casas. At one marsh we noted one adult and two juvenile Virginia Rails. One juvenile was about half grown and completely covered with black down. The bill and body of the second were similar in size and shape to those of the nearby