

Red-tailed Hawk Feeds on Crickets.—On January 14, 1957, William B. Bradford of the California Department of Fish and Game brought a Red-tailed Hawk (*Buteo jamaicensis calurus*) to the California Academy of Sciences. The bird had been shot the previous day by an unidentified person near Castle Rock, Corral Hollow, San Joaquin County, California. It was an immature female, just beginning to assume adult plumage, and it proved to be unusually fat, weighing 1098.5 grams. An examination of its digestive tract revealed the remains of 49 Jerusalem crickets (*Stenopelmatus fuscus*). Seventeen of these were in the crop and 32 were in the stomach. No other food material was present. All of the crickets were fairly intact, indicating that they had been ingested not long before the bird was shot.

Although Red-tailed Hawks are known to capture crickets occasionally (Bent, U. S. Nat. Mus. Bull. 170, 1938), the presence in the crop and stomach of a diurnal bird of prey of such a large number of nocturnal insects that live fairly deep in the ground during the daytime seemed rather unusual. Correspondence with William Bradford revealed that he had observed concentrations of Red-tailed and Marsh hawks, on January 13, in the vicinity of alfalfa fields near the town of Tracy which is 7½ miles northeast of Castle Rock. Many of these fields had recently been flooded with irrigation water to offset the drought that prevailed through much of the mid-winter in California. Since flooding generally forces crickets from their subterranean hiding places it appears possible that these man-made inundations may have been responsible for unearthing these insects, thereby providing certain hawks in the vicinity with a type of food that is usually inaccessible to them.—ROBERT T. ORR, *California Academy of Sciences and University of San Francisco, San Francisco, California, October 23, 1957.*

Repeated Attacks by a Sharp-shinned Hawk on a Pileated Woodpecker.—Seven attacks made within 10 minutes by a Sharp-shinned Hawk (*Accipiter striatus*) on a Pileated Woodpecker (*Dryocopus pileatus*), observed near Seneca, Maryland, on October 5, 1957, were interesting from the point of view of the behavior of both birds involved. At 8:00 a.m. I approached a dead elm by the Chesapeake and Ohio Canal, on the look-out for Pileated Woodpeckers. In previous months, I had seen at least one of them come to drum on a hollow portion of the elm, or to rest and preen in early morning sunshine. On October 5, there were two Pileated Woodpeckers. One flew away, but the other, a male, crossed over to an oak on my side of the canal. Then I saw him fly back across the canal closely pursued by a Sharp-shinned Hawk. The woodpecker returned to the elm, hammered on some bark, then hitched to a high limb and drummed not too loudly; he then preened his feathers. The Sharp-shinned Hawk was perched 10 feet away on another dead limb. It suddenly flew at the woodpecker and a short pursuit followed, but the woodpecker again returned to the elm and drummed once more, this time lower down. The hawk also returned. It sat upright and motionless except for side-to-side motions of its tail. Then it attacked the woodpecker for a third time. The woodpecker dodged around the trunk but the hawk, with amazing control, banked so as to cut around the trunk also. Another chase now took place through the woods. At one point the woodpecker swooped low to the ground and the hawk, well above him, dove nearly vertically downward through the trees. Four more attacks took place in succession, hawk and woodpecker alighting, between attacks, not far apart on trees adjacent to the elm. In the last encounter, the woodpecker gave loud *cuk, cuk* notes as he circled more widely than previously but alighted near his starting point. Following the report of a shotgun, he finally flew downstream. Farther along the canal I saw two more Sharp-shinned Hawks. It seemed probable that a migratory flight of these birds was taking place.

Discussion.—Some aspects of the attacks described were surprising to the observer. The Sharp-shinned Hawk was swift and agile, banking, diving, and reaching when close with long legs and talons outstretched. In comparison the woodpecker was large and slow. This appearance, however, may have been deceptive. The Pileated Woodpecker seemed to drop out of reach at critical moments and it was not sufficiently frightened by the attacks to leave the vicinity of the elm or to refrain, in interim periods, from such activities as drumming and preening. A similar lack of concern in a Pileated Woodpecker has been described by Michael (Condor, 23, 1921:68) who watched one of these woodpeckers drilling with apparent unconcern while a Cooper's Hawk (*Accipiter cooperii*) perched within a few feet of it. In this instance, the woodpecker finally drove the hawk away. There is no reason to believe that the encounters which I witnessed by the canal were simply play, for seven attacks, driven close