

THE DECLINE AND PRESENT STATUS OF THE IMPERIAL WOODPECKER OF MEXICO

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THE largest woodpecker in the world, *Campephilus imperialis*, is appropriately known as the Imperial Woodpecker (Figure 1). It has frequently been called the Mexican Ivory-billed Woodpecker because of its close relationship to the Ivory-billed Woodpecker of the United States, *C. principalis*, but this name causes confusion because of other Mexican woodpeckers, especially *Phloeocastes guatemalensis*, which are often called "ivory-billed" woodpeckers. The Imperial Woodpecker's most widely used common name in Mexico is "pitoreal." In the western part of the State of Durango I found that this name was also used for *Phloeocastes guatemalensis*. Indian names for the Imperial Woodpecker include the Náhuatl name "cuahtotomomi" (Miller, 1957) and the Tarahumar name "cume-cócari" (C. W. Pennington, Univ. of Utah, letter).

The most complete description of the appearance and habits of the Imperial Woodpecker, based on observations of the species, is Nelson's (1898).

In 1962 my son David Tanner and I went to Mexico in search of the Imperial Woodpecker. My primary objective was to compare this species with the American Ivory-bill, which I had studied intensively (1942). We were not successful in finding the woodpeckers, but we did learn something about the present status of the species and about the cause of its decrease. The trip was supported by grants from the Frank M. Chapman Fund, American Museum of Natural History, and from the International Committee for Bird Preservation.

ORIGINAL RANGE AND HABITAT

Records of Imperial Woodpeckers are plotted in Figure 2. All lie in the pine-oak forests of the Sierra Madre Occidental, as mapped by Leopold (1959). Briefly, the original distribution was in such forests, above elevations of 6,500 feet (about 2,000 meters) in the northern and 8,000 feet (about 2,500 meters) in the southern part of the Sierra Madre Occidental, from northern Sonora to northern Michoacán.

Preferred habitats were forests of large pines with many dead trees. Goldman (1951) described one such area as an open pine forest with the trees commonly being 50 to 60 feet (15-20 meters) to the lowest limb. A. S. Leopold, University of California (letter), stated that the only place he saw an Imperial Woodpecker was in an area in Chihuahua with the tallest pines he had seen in Mexico. In areas once inhabited by Imperial

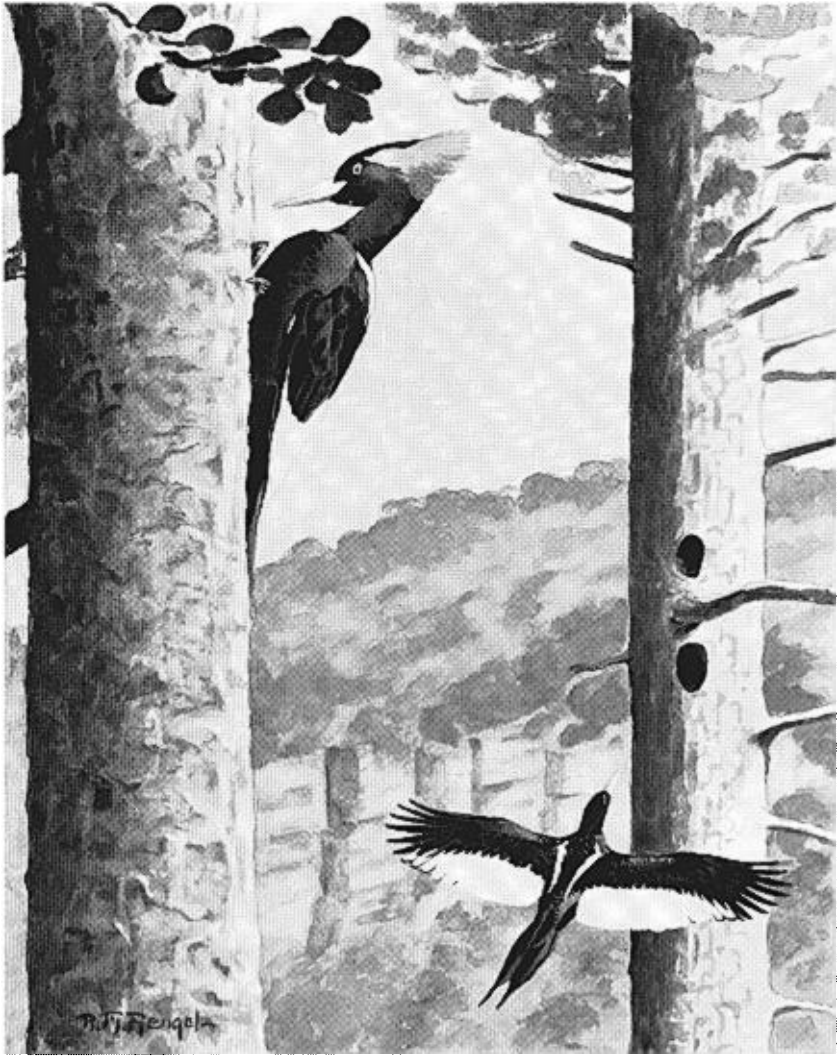


Figure 1. The Imperial Woodpecker (*Campēphilus imperialis*). From a wash drawing by Robert M. Mengel. The holes are based on a Kodachrome by the author.

Woodpeckers that I visited in 1962 in mountains of southern Durango, the dominant trees were large pines with trunks up to 30 inches (75 cm) in diameter. The commonest were *Pinus durangensis*, *P. lutea*, *P. ayacahuite*, and *P. Montezumae* (identified with keys of Martinez, 1945). The biggest pines in these mountains grow at higher elevations.

The habitat of the Imperial Woodpecker differs markedly from that of

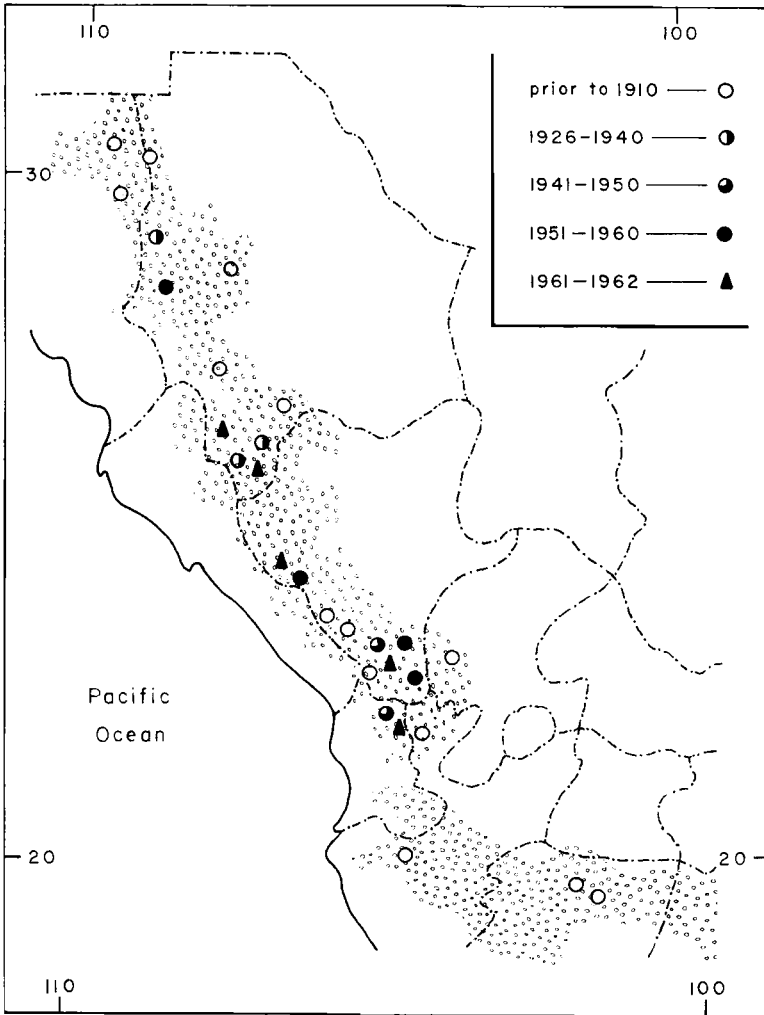


Figure 2. Part of northwestern Mexico with the locations of records of the Imperial Woodpecker. The pattern shows the distribution of the pine-oak forest (Leopold, 1959). The triangular symbols are the locations of some unconfirmed reports of Imperial Woodpeckers made since 1960.

the American Ivory-bill, which fed to some extent in pine, especially in Florida, but generally preferred swampy forests. The Cuban Ivory-bill (*C. principalis*), however, according to Dennis (1948) and Lamb (1957), was found in pine forests in hilly country.

At least three observers have reported that the Imperial Woodpecker was "common" or "relatively common" (Bergtold, 1906; Goldman, 1951;

Ridgway, 1887). Nelson (1898) said the distance from one group of 5 to another group of 5 or 6 was "a mile or so," and that approximately 10 miles away was a group of 8 or 10. If the average size of these three groups is taken as 6, and the average distance between them as 6 miles, and the assumption is made that the groups inhabited hexagonal areas with centers 6 miles apart, the calculated density is approximately 6 per 30 square miles (80 square km). Since the birds were usually observed in pairs, this density is better expressed as 1 pair per 10 square miles. I estimated (Tanner, 1942) the maximum density for the American Ivory-billed Woodpecker to be 1 pair per 6 square miles.

That these birds were not exceedingly rare in their proper habitat is suggested by other observations. When talking with natives of the Sierra in southern Durango, I found that almost all but the youngest adults knew the "pitoreal." Long ago, in west-central Chihuahua one man killed 17 Imperial Woodpeckers in a few months (Smith, 1908). If the birds had the density calculated above, this man would have had to hunt over 85 square miles, which is not unreasonable. In southern Durango, around a new lumbering operation, the inhabitants claimed in 1953 to have shot 12 of the big woodpeckers within about a year (F. K. Hilton, Univ. of Louisville; letter).

HABITS

The voice of the Imperial Woodpecker was described by Nelson (1898) as "nasal penny-trumpet-like notes," and Lumholtz (1902) wrote of its "plaintive trumpet sound." A. A. Allen, Cornell University (letter), wrote that the single bird he saw and heard sounded like an American Ivory-bill.

Except that Imperial Woodpeckers forage primarily on dead pine trees, little is known of their feeding habits. W. L. Rhein, Harrisburg, Pennsylvania (letter), watched a female knock off big chunks of the outer bark of a big pine tree, and also saw one or more birds work over fallen logs. R. H. Baker, Michigan State University (letter; See also Fleming and Baker, 1963: 287), was told by Mexican hunters that the woodpeckers tear big pieces of wood from the dead pines to obtain large insect larvae in the dead trees. Lumholtz (1902) wrote that these birds would "feed on one tree for as long as a fortnight at a time, at last causing the decayed tree to fall." The American Ivory-bill obtains most of its food by knocking the bark from recently dead trees to obtain the insects that live between the bark and the wood. The observations quoted above indicate that the Imperial Woodpecker feeds to some extent in this manner, but differs from the Ivory-bill in feeding extensively in long-dead, decaying trees.

Nelson (1898) made the only definite nesting records. In Michoacán, one nest found in February contained two eggs, and another on the first

of March contained newly-hatched young which "in April . . . had flown." Salvin and Godman (1895) described a young male killed on 18 May, and since it apparently was well-feathered, this also indicates an early nesting date. Lumholtz (1902) mentions that the species had one or two young. The young probably stay with their parents at least until the next nesting season, and perhaps longer, because Nelson (1898) and Lumholtz (1902) reported flocks of 5 to 8 or 10. Each family group returns each night to its roosting area (Nelson, 1898; K. Simmons, letter).

KILLING BY MAN

Imperial Woodpeckers have been killed by man for food and for their supposed medicinal powers. Lumholtz, who traveled through the country of the Tarahumar Indians in the Sierra Madre of Chihuahua, between 1890 and 1900, wrote (1902) that this woodpecker was "on the point of being exterminated, because the Tarahumares consider his one or two young such a delicacy that they do not hesitate to cut down even large trees to get at the nests. The Mexicans shoot them because their plumage is thought to be beneficial to health." According to C. W. Pennington (letter), the Tarahumara also sought the woodpecker because they valued its feathers; these were singed and the resulting fumes sniffed as a stimulant for women in labor pains. Bennett and Zingg (1935) studied the Tarahumara in the region of Samochique, Chihuahua, but found that the Imperial Woodpecker had been exterminated in that region by Mexicans who "think that its feathers, used as ear muffs, are potent in preventing air from entering the head—a cause to which they attribute all aches and pains of the head!" Two persons in Durango told me of a local belief that the bill of an Imperial Woodpecker would "draw" sickness from the body, and that the birds were shot to obtain the bill. W. L. Rhein wrote (letter) that in 1955 an Indian shot the parent woodpeckers located by Rhein the previous year in southern Durango.

RECENT HISTORY AND PRESENT STATUS

Since 1950, the reports of Imperial Woodpeckers have been in two regions, Chihuahua and southern Durango (Figure 2). The latter area appeared to me in 1962 to be potentially the most fruitful and so was the one searched.

In 1954, W. L. Rhein found Imperial Woodpeckers about 100 km south of the city of Durango, and two years later he found one bird there. In mid-June, 1962, my son and I went to La Guacamayita, a large lumber camp about 80 km south of Durango City, near Rhein's locality. Many of the natives we talked with knew the "pitoreal," but all agreed that it was no longer present. One man who knew the area well said that there

had been none there for about five years; the lumber camp had been there little longer than that. There were several new small farms, "ranchitos," in the virgin pine forest beyond the lumber camp.

A second trip, to the west of San Miguel de los Cruces, which is about 130 km west-northwest of Durango City, likewise proved fruitless. Here again we found virgin pine forest through which were scattered ranchitos, and the natives we talked with said that the "pitoreal" was no longer present, although the time of last observations varied from 1 or more to 15 years previous.

In late June, hearing that Imperial Woodpeckers could be found in the northern part of the Sierra de los Huicholes, we flew to a lumber camp known as Los Charcos, about 130 km south of Durango City, and there obtained a guide and horses. We rode south for two days, mostly through virgin pine forest, except where Indians had built ranchitos. We finally reached a relatively high mountain (9,200 feet) with an extensive stand of large pines, and saw two trees with old nesting or roosting cavities of Imperial Woodpeckers. Our guide, who had cleared and built a ranchito on this mountain four years previously, said that "los pitoreales" were once common on the mountain but that he had seen none for three years. Other natives of the area likewise said the bird was no longer present. The return ride to Los Charcos took us over a different route, through more uncut pine forest, but with no signs of Imperial Woodpeckers.

While at first I believed that logging of the pine forest was the primary cause of the disappearance of the Imperial Woodpecker, my observations in Durango have convinced me that shooting by man is the chief cause of its elimination. The Mexicans, Indian or otherwise, living in the Sierra depend upon hunting for much of their meat. We saw men hunting for deer, turkey, and squirrel, although deer and turkey were very scarce. An Imperial Woodpecker would certainly furnish as much food as a squirrel. In all three areas we visited there was adequate habitat for the woodpeckers, in uncut pine forest and even in the areas which had been logged, for the cutting is highly selective and many large pines are left standing. But in all these areas there were people, and disappearance of the woodpeckers had followed by a year or so the establishment of a lumber camp or of ranchitos in each area. Lumber camps have brought people into the forest, opened areas to settlement, and provided employment and wages with which firearms can be purchased.

THE FUTURE

The Imperial Woodpecker will survive only if its killing by man can be stopped.

Destruction of the habitat by logging is at present not important. All

logging operations in Mexico are under direct supervision of the forestry division of the federal government. Logging in the pine forests of the Sierra Madre Occidental is at present highly selective, and compared with similar operations I have observed in the United States, cutting is light. The logged areas still contain many large pine trees, and I think that enough of these are dead or will die from natural causes to supply adequate food. If the present policies of selective cutting are continued, suitable habitat for the Imperial Woodpecker should survive.

It would, of course, be highly desirable for some parts of the pine forest of the Sierra to be preserved in their original condition, in national parks or some similar preserves. The presence of the Imperial Woodpecker might well be one criterion for the establishment of such sanctuaries, and this would certainly aid in the preservation of this species.

The crucial problem is how to stop the killing of Imperial Woodpeckers for food and other uses. Each "campesino," dwelling on his ranchito in the Sierra, obtains much of his meat by hunting the year around, and will kill anything large enough to eat. Mexico has good game laws, but they are practically unenforceable in these remote regions where the people are living at a subsistence level and dependent in part upon wild creatures. If the Imperial Woodpecker is to survive, some way must be found of convincing the natives of the Sierra that these birds must not be killed. The difficulties of law enforcement also result in commercial collectors being a threat to these birds; this threat can best be lessened by bringing persuasion or pressure to bear on individuals financing these collectors.

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