



(picture from A. Ben-Ya'acov)

## QUETZALS AND AVOCADOS

**George A. Zentmyer**

*Professor Emeritus, University of California, Riverside*

Two remarkable denizens of the Central American forests and mountains are the spectacular, beautiful bird, the quetzal (*Pharomachrus mocinno*) and the avocado (*Persea americana*) and other species of the genus. Though not known as feeders on avocado, quetzals appear to have a fondness for one of its relatives—the aguacatillo—that is also of interest to avocado researchers for purposes other than dining. Both the bird and its preferred food are part of the lore of avocado culture.

The quetzal was well known to the Mayan Indians of Guatemala and other Central American countries. The Mayan word for this glorious bird was **kukul**. The name **quetzal** comes from the Aztec word **quetzalli**, for tail feathers—a word that later came to mean *beautiful*, or *precious*. In early times, the cocoa (cacao) bean was used as the primary currency in Central America and Mexico. The next most common currency was the tail feathers of the male quetzal.

The natives of the highlands, as in Guatemala, trapped the birds and removed the four long tail feathers of iridescent blue-green color which grow back each year. These plumes were traded to the priests and wealthy aristocracy of Tikal and the other temple-cities of Peten and the Yucatan. In Guatemala, those who killed quetzals were punished by death.

After the fall of the great Mayan cities (about 900 A.D.), the natives of the Guatemalan highlands continued to trade quetzal plumes with the Aztecs, at least until the 17th

century, with trade extending north to the capital of the Aztec Empire (Tenochtitlan)—where Mexico City is located today. When the Spanish Conquistadores invaded the Aztec capital they found Moctezuma and other rulers wearing elaborate headdresses made from quetzal feathers.

The author of a 14-page pamphlet "The Quetzal," Thor Janson (1980, published in Guatemala) presents the following description:

"The quetzals, members of the Trogon Family (Trogonidae), are without doubt some of the most colorful creatures on earth. The males of the species are birds of supreme beauty—the most beautiful, all things considered, that I have ever seen. They owe their beauty to the intensity and surprising contrast of coloration, to the elegance of their ornamentation, to the iridescent luster of their feathers, to the perfect symmetry of their form, and to the nobility and dignity of their presence.

"The entire head and upper plumage, the neck and breast, are an intense and brilliant green. The feathers of the lower breast and abdomen, and those below the tail, are of the richest carmine red. The head is adorned with stiff and erect plumes that form a crest extending from the front to the rear. The beak is small but brilliant yellow in color. ...The female quetzal is much less colorful than her companion. Her upper plumage is green but the head is dark grey and has no crest. Only the plumes on the lower abdomen and below the tail are red. The main outer plumes of the tail are pure white marked with black bars."

The quetzal inhabits mountainous wooded areas from southern Mexico to Panama but is much more difficult to find now in most of the range because of exploitation and deforestation. They are now essentially an endangered species and have found refuge in very remote, hardly accessible mountain forests. Within their range, they live at altitudes of 3,000 meters and higher. In the rainy season (May to August), they come down to 1,000 to 1,500 meters where they breed. The female usually lays two pale blue eggs about 30 by 35 mm in size that have an 18-day incubation period.

The quetzal's eating habits involve the wild avocado, aguacatillo (or aguacatio) as one of their favorite foods. This may involve several species of the small fruited species of the genus *Persea*. One of these species that we have collected in Central America is *Persea donnell-smithii*; in Honduras and Guatemala, this species has fruit slightly larger than a pea. It has moderate resistance to *Phytophthora cinnamomi*, but is not graft-compatible with the avocado.

Postcards for sale at the gift shop at the Mayan temple at Tikal show the quetzal and its favorite food, the aguacatillo.

In 1978, the quetzal pamphlet author, Thor Janson, was searching for locations to photograph the quetzal in the wild. He concentrated on Baja Verapaz in north central Guatemala where he had seen quetzals in those forests previously. He found out from a local farmer that the favorite food of the quetzal was the fruit of the avocado relative, the aguacatillo. This was the area where I had in 1954 collected fruit from *Persea donnell-smithii* trees growing in two feet of water in a large swamp.

Janson selected a promising area with several aguacatillo trees in close proximity and set up his cameras. After waiting ten days he was finally successful:

" ... I saw a flash of green across the dark backdrop of trees. As I continued to watch I enjoyed one of my most breathtaking experiences. Down from the high trees flew a large male quetzal and landed in the aguacatillo. This was one of the few animals that no description could truly capture. He was magnificent. His tail, nearly 2½ feet long waved in the breeze as he casually rested and ate the fruit."

Janson visited the same location several additional days and noted that the branches of the trees of the avocado relative bore "thousands of small round green fruits". One day, six quetzals visited the aguacatillo trees and stayed in one tree all day long, "...playing and chasing each other and getting very fat from the fruit."

Thus ends this story of the enigmatic Mayans, the fabulous quetzals, and the role of a strange avocado relative.