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Why Paint Bats?

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“Is that a bat? Why are you painting that bat?” I had a feisty stripe-headed, round-eared bat (*Tonatia saurophila*, formerly *T. bidens*) in my left hand, where it was gnawing my leather glove. Brush in right hand, I paused to consider my answer. “Well, someone has to do it,” I said finally, and continued with my field study.



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The backpacker, unfortunately not at all put off, continued his interrogation. “Wouldn’t it be easier to paint it larger than that? Is it biting your hand? Is it a vampire? How long does it take to do that? Why not take a photo instead?” I had come to southwestern Costa Rica in search of new species to draw for my book, *A Field Guide to the Mammals of Central America* and Southeast Mexico. At Sirena Station in Corcovado National Park, I had mist-netted bats along a small creek and had caught a leaf-nosed bat (family Phyllostomidae), attracted to the net by the squeaking protest of another bat I was untangling. Several hours later, field study completed and bat released, I reflected on the backpacker’s questions. Why spend painstaking hours painting bats that few people see?

The billion-dollar bird-watching industry depends in no small measure on the production and availability of field guides, which have become basic tools for amateur naturalists and for biologists working in unfamiliar regions. Field guides are also important for bat conservation. Color plates allow scientists to quickly identify species, while naturalists and park interpreters use guides to educate visitors about local animals. In Latin America, people often have misconceptions about mammals. Many think that all bats are vampires, or that long-nosed coatis and anteaters are related. Field guides are an accessible means of providing basic information and stimulating interest in, and concern for, the region’s fauna.

Many field guides have given short shrift to small mammals by including only species “larger than a loaf of bread” on the grounds that most naturalists and travelers will not see the smaller bats and mice, or may not care to identify them. Although this may sometimes be true, the fact is, small mammals are more abundant and much more diverse than larger mammals. These are the groups that are a real challenge to identify. In Costa Rica, there are over 100 bat species and only two species of deer. Tourists may not see small rodents, but almost all will see bats, in particular the greater fishing bats (*Noctilio leporinus*) and proboscis bats (*Rhynchonycteris naso*). Numerous student groups visiting Central America use field guides in their course work. Without a fully illustrated field guide to the small mammals, these groups often misidentify the animals they find.

In one instance, an Organization for Tropical Studies course instructor showed me bats that she had prepared as museum specimens. When I asked why they had been collected she told me that her students thought that they were common vampire bats (*Desmodus rotundus*, family Phyllostomidae) and had killed them because they feared being bitten. She later keyed them out as black mastiff bats (*Molossus rufus*, family Molossidae), based on their long tails. In fact, the bats were common mustached bats (*Pteronotus parnelli*, family Mormoopidae) neither similar in appearance nor closely related to mastiff or vampire bats.

In cases such as these, a picture is worth a thousand words. For my field guide I illustrated

all the species of small mammals that could be identified in the hand. I designed the plates so that I could illustrate all the bats life size, allowing me to measure the forearm, tibia, and other body parts to check the accuracy of my rendering.

When I first arrived in Central America I had no idea that I would end up with a missionary zeal to see and catch all the bats—and mice—throughout the region. As time went on, finding new species became more challenging. I searched out roosts and devised some tricky capture methods: a hand net made from coat hangers and the end of an old mist net, with two long saplings duct-taped together, enabled me to catch the rare smoky bat (*Cyttarops alecto*) roosting high up under a coconut palm leaf. I even searched out some Central American bats in Arizona and Ecuador. My final tally was 96 species caught and drawn from life, out of 118 species included in the guide.

This was not a bad start, but only a handful of the nearly one thousand species of bats recognized worldwide. At present I am painting bats of the United States and Canada for a new *Peterson Field Guide to North American Mammals*, and hope to continue painting live bats around the world. It is a privilege to be able to examine each bat closely: to compare the tiny bumps on the chin of a pygmy fruit-eating bat (*Artibeus phaeotis*) with those of an even smaller yellow-eared bat (*Vampyressa pusilla*); to look behind the nose-leaf of the lovely Macconnell's bat (*Mesophylla macconnelli*) only to find a second small nose leaf; to compare the hairiness of the legs of closely related species of yellow-shouldered bats (genus *Sturnia*). The continuing challenge of finding these unique characteristics for hard-to-identify species, and the chance to personally get to know these marvelous night fliers, is why I paint bats.

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