

COME, FLY WITH ME

Review of:

Theodore H. Fleming 2003. *A Bat Man in the Tropics*. Berkeley: Univ. California Press 311 pp.

[36th in a series on "naturalist-in" books; see www.ckstarr.net/reviews_of_naturalist.htm]

Ted Fleming has studied the ecology of bats for more than 40 years, especially in the forests of Central America and Australia. His research unites two large questions that can be posed as "How do bats make a living?" and "How do bats impact on their environment?"

This book has 11 chapters, with two appendices on the diversity and names of bats. Fleming opens by noting that to most people bats are mysterious, ghostly -- he could just as well have said "creepy" -- creatures that fly about silently in darkness. He, of course has a radically different view and is eager to share it.

There are plenty of black-and-white photos of field biologists at work and portrait shots of bats. Most of the latter are by Merlin Tuttle of Bat Conservation International, the world's premier photographer of bats. It bears mention that Tuttle's photos are the key to the success of his organization, founded in 1982. They are elegant, up close and have great propaganda value.

As a child in the northern city of Detroit, Fleming dreamt of zoological expeditions in the tropics, and in 1966 he had the great luck to get a job studying mammals in Panama. This first time in the tropics certainly lived up to expectations. Flying to his village in a small plane, he experienced first a bumpy landing and then the very basic conditions of village life. Almost immediately, he spent several hours ascending the Jaqué River to a camp site. His task there was to collect as many mammal species as he could. The shocking diversity of the fauna was seen in the fact that at that one site he collected three-quarters as many bat species as are found in all of North America. On some days the harvest was so good that he had to work late into the night to skin and preserve his specimens.

In the 1960s, little was known about seasonality in the lives of neotropical mammals. A key tool with respect to bats was mist nets. First introduced for scientific purposes in the 1930s, these have revolutionized the study of birds and bats, as they are much better than shotguns and hand-held nets for collecting specimens, and of course these can be released alive. One night the nets yielded 160 bats of 20 species.

After a few weeks, he moved to the other end of Panama, near the border with Costa Rica, again spending several weeks at one productive site. He later set up a year-long trapping programme for small mammals -- mostly marsupials and rodents -- at two localities in the Canal Zone, planning to continue for a year.

It was very routine work that became decidedly tedious in the rainy season, when he was constantly getting soaked, but he had to keep to the daily programme. At the same time, there was the constant readiness for surprises, not knowing what might show up in the traps today. Mark-and-recapture data gave new information on

survivorship, home range and the timing of reproduction. This showed, among other things, that about half of the species are strictly seasonal breeders. And he supplemented the trapping data by finding occasional nests or burrows.

Later he spent a year in Costa Rica, again in systematic trapping, at a time when that country was the focus of a growing effort in tropical ecology, especially by American biologists. Fleming periodically returned to the Santa Rosa National Park in Guanacaste province for several years.

He was in Guanacaste at the time of the 1979 ouster of the dictator Somoza in nearby Nicaragua. (I was there, myself, a few months earlier and saw some military movements, although I heard no shots fired.) Some of the anti-Somoza Sandinistas used Guanacaste as a refuge, and it was well known that the people of Costa Rica were mostly in sympathy with them. There were fears that Somoza, with his much greater military forces, would bomb the Santa Rosa park where the Costa Rican Civil Guard was bivouacked.

One long chapter is about the short-tailed fruit bat, *Carollia perspicillata*. This is one of the commonest neotropical bats, including in Trinidad & Tobago, and the subject of a monograph (Fleming 1988). It is also one of the species in Donald R. Griffin's (1958) classic demonstration of echolocation in bats. Unlike most of the bats treated in this book, *C. perspicillata*'s social behaviour in its roosts is subject to much direct observation. There is also considerable attention to the *Piper* species on which it feeds. Fleming tells of a long, serious illness, in the course of which he knew he was recovering when he dreamt of explaining to someone why *C. perspicillata* has a male-biased sex ratio at birth.

Two other species that he studied in depth are the false vampire bat, *Vampyrus spectrum*, the largest of the New World bats, and the Jamaican fruit-eating bat, *Ariteus jamaicensis*.

Another chapter's focus is fruit-eating bats. Most of these are in two families, including the New World leaf-nosed bats, Phyllostomidae. Trinidad & Tobago naturalists will see an analogy here with David Snow's (1976) study of fruit-eating birds.

The book has a more consistent focus on the research programme than is usual in naturalist-in books. Even so, Fleming gives ample attention to the very human aspect of what it was like to be there, including the conditions of working out of a field station for months at a time and the daily routine. Sometimes he had to get up at dawn, with rain pounding on the roof, to make the rounds of his traps, and he was often soaked to the skin. Other biologists are another important aspect of field-station life, and Fleming remarks on many of them, some of whom were or went on to become well-known ecologists.

He also has many personal encounters with individual mammals, birds and reptiles, the kind of narrative detail to hold the attention of even the most unscientific naturalist. For example, he gets a good laugh at being maliciously urinated upon by a howler monkey way up in a tree. The true naturalist finds joy in some strange situations.

Nonetheless, his research programme revolved around the collection of very large population-level data-sets, with not much time spent just watching the mammals going

about their business. There is a good reason for this. Unlike birds, bats do not perch and sing, and their behaviour at roosts is not nearly as rich as that of birds at the nest. Besides, they are mostly nocturnal, so that direct behavioural observations will usually not yield very much.

My one quibble with Fleming's prose has to do with the frequent unnecessary use of spanish terms, such as *papas fritas* (french fries), *empleado* (employee) and *mercado central* (central market). Such frivolous exoticism, while quite at home in novels and travel literature, has no place in a hard-core naturalist-in book. In addition, the accents are usually omitted from proper names, which amounts to misspelling. That aside, *A Bat Man in the Tropics* is a wonderfully readable, first-hand account.

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