



# AMERICAN MUSEUM OF NATURAL HISTORY

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## UNTOLD DATA: A WEALTH OF NATURAL HISTORY INFORMATION GLEANED FROM THE MATSES INDIANS OF NORTHEASTERN PERU

### RESEARCH CORRELATES SCIENTIFIC LITERATURE AND LOCAL KNOWLEDGE OF AMAZONIAN PRIMATES

New research has uncovered an untapped cache of data about the natural history of Amazonian mammals: the traditional knowledge of indigenous people like the Matses Indians of northeastern Peru. In a *Bulletin of the American Museum of Natural History* published recently, mammalogist Robert Voss and linguist David Fleck, both of the American Museum of Natural History, validate local knowledge – ethnomammalogy – by directly comparing data gleaned from interviews with Matses hunters with the scientific literature. The high correlation between the two bodies of knowledge suggests that ethnomammalogy is a valid source of information for understudied species. This study is also the first systematic inventory of mammals in the remote rainforest between the Yavarí and Ucayali rivers in northeastern Peru.

“This volume, where we concentrated on the primates, was an exercise in validation because local people often know a lot about monkeys and because their natural history observations can be checked against a huge amount of scientific research,” says Voss, a curator in the Department of Mammalogy at the Museum. “We found that most Matses observations are either completely corroborated or are plausible extensions of existing knowledge.”

The current monograph was decades in the making. David Fleck, formerly a zoology student at Ohio State University, first encountered the Matses while trapping opossums up the Ucayali River from Iquitos in the 1990s. He temporarily put his project – an undergraduate honors thesis – on hold and visited the Matses community in the forest, a three-day trek from where he’d been working. Interest piqued, Fleck contacted Voss after returning to the U.S. to pursue graduate work in ethnobiology. Voss

supplied equipment and advice about specimen preparation, and Fleck then disappeared into the Amazon for two years.

“Crates of specimens began arriving at the museum,” says Voss. “It was awesome. Very little was known at the time about mammal diversity in this part of the Amazon Basin, and what David was doing, trying to find out what the Indians knew about the local fauna and how they named species, was unique.”

The project eventually morphed into a full-scale biological inventory, and by the time Voss joined Fleck in the field in 1998, Fleck’s interests switched to linguistics. A protocol was established to reduce potential bias in collecting ethnomammalogical data and to provide recorded texts for Fleck’s linguistic research at Rice University: Fleck recorded one-on-one interviews with middle-aged hunters who still retain traditional knowledge about the local fauna; such knowledge is quickly being lost in younger generations. At the beginning of each interview, Fleck would name of a species of mammal and the hunter was free to say as much or as little as he wished. Seven or eight interviews were recorded in this way for every local mammal species that the Matses recognize by name.

After all the interviews were transcribed and translated, Voss and Fleck had a huge amount of recorded detail about food preferences, reproduction, predator avoidance, and other behaviors of local rainforest mammals. The current monograph directly compares Matses knowledge of all 14 species of primates that are known to live between the Yavarí and Ucayali rivers. In order to test the accuracy of the local observations, the authors did a detailed analysis of recordings about spider monkeys (*Ateles belzebuth*)—a favorite Matses game species that is often studied by field biologists elsewhere in Amazonia. A direct comparison of 86 Matses observations about spider monkeys (physical characteristics, activity patterns, feeding behavior, etc) with published primate research results convincingly documents the accuracy of most Matses traditional knowledge about this species. In many cases, Matses natural history and the scientific literature are in complete agreement, but in others the Matses add new but plausible observations about spider monkey behavior.

For all primates, physical size and cultural importance correlate with how much the Matses know about each species. For example, in contrast to the 86 observations for spider monkeys, only nine factual observations were recorded about the tiny, nongame pygmy marmoset (*Callithrix pygmaea*). But again, Matses knowledge of this species is largely consistent with the literature in terms of diet and forest use, as it is for the other 12 local primate species (howler monkey, woolly monkey, night monkey, Goeldi’s

monkey, brown-mantled tamarin, moustached tamarin, white-fronted capuchin, brown capuchin, coppery titi, bald uakari, and monk saki).

Some natural history details provided by the Matses concern behaviors that have never been recorded or are seldom seen by primate researchers. These new insights include predator-avoidance tactics, such as woolly monkeys dropping to the ground and hiding in tree buttresses when an eagle is spotted, or the observation that brown capuchins sometimes kill and eat titi monkeys.

“We thought that it would be good to download and record Matses traditional knowledge for posterity, especially because this information is rapidly being lost,” says Voss. “Younger Matses men and boys spend less time in the forest than their elders did, and they are more interested in learning Western ways than in acquiring the hunting expertise that sustained previous generations. All of this detailed natural history information will be lost if it’s not written down somewhere.”

In future publications, the authors will document Matses traditional knowledge of other 160 to 200 species of local mammals, including marsupials, bats, armadillos, sloths, anteaters, carnivores, ungulates, and rodents. But unlike the case for primates, Voss continues, “we currently know next to nothing about the natural history of many Amazonian mammals – Kappler’s long-nosed armadillo, for example. The Matses have a lot to say about this species, and almost all of it is brand-new data.”

This research was funded by several grants and fellowships from various organizations, including the Tinker Foundation, the National Science Foundation, Ohio State University, Rice University, the National Geographic Society, and the Museum’s Center for Conservation and Biodiversity. Fleck, an affiliate of the Museum’s Division of Anthropology, currently lives in Peru with the Matses where he is expanding the literature written in Matses by teaching local educators how to use computers and to write so that there is cultural continuity in the classroom. Fleck is also recording word lists from some of the oldest women in Matses communities to research the Panoan family of languages. Until relatively recent times, women had been routinely captured from other groups and some of these women are the last remaining speakers of their birth languages.

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