

New Species of Owl Monkey Re-Discovered ... 30 Years Later

Like many zoo visitors, Roger Brumback's trip to the San Diego Zoo earlier this year drew him to the primate exhibits. What developed after that, however, was unlike any experience shared by the rest of us. Brumback found himself in front of the owl monkeys and it reminded him of research he conducted some 30 years ago. The name of the monkey in San Diego, *Aotus nancymai*, was not one he recognized from the past, but he knew it must be associated with Nancy Shui Fong Ma, a cytogeneticist who had studied *Aotus* in the 1970s. Brumback now wondered what had become of his own work on owl monkey genetics. When he returned home, he searched the Internet and came upon the University of Wisconsin's Primate Info Net. As he scanned the current taxonomic classification of owl monkeys, Brumback was startled to discover details of "Brumback's Owl Monkey" (*Aotus brumbacki*).

Feeling honored and humbled that a species was named for him, Brumback continued his quest for more information. He learned that, like many primates, *A. brumbacki* is threatened by rampant destruction of its Colombian habitat. It is listed as vulnerable in IUCN's 2000 Red List (A. Rylands, personal communication). Brumback knew he had to do something to help; he felt an obligation to save "his" monkey.

In his search for additional resources, Brumback consulted the American Society of Primatologists' web site and sent an email message to John Capitanio, ASP President-Elect and web site creator. He told his story in a series of email exchanges with Capitanio, who then forwarded the story for publication in the *ASP Bulletin*. The following is extracted from Brumback's own words:

"In 1968, during the freshman Spring quarter at the Pennsylvania State Medical College in Hershey, PA, I was looking for a research project. I talked with one of the instructors in Anatomy, Dennis Staton, who was originally trained in geology and had developed an interest in anthropology and primatology. Staton and his former colleague (Neil Todd) from his days at Harvard University had been using the relatively new technique of chromosome analysis to identify evolutionary trends in primates. One of the missing data points in those studies was the karyotype of the South American owl monkey. Thus, Staton suggested a project to investigate the karyotype of this animal. I then discussed the project with Steve Benjamin and Max Lang who both were supportive. However, I needed to learn the technique of chromosome analysis (tissue culture, etc.). The person that knew something about this was John Kreider who showed me the techniques, and let me use his culture facilities. I studied not only some animals we purchased at Hershey, but also traveled to Boston and got tissue and blood samples from a lot of monkeys in the zoo and from a Boston supplier. Then I spent the next several years collecting the data. I then cut out and pasted thousands of karyotypes from all these animals. Finally, I had the results and found what I suspected to be species differences. Max Lang helped me to prepare a manuscript and I sent it to Folia Primatologica. In the paper, the statistics for our analysis were so good that I was sure no one would believe they were not made up, so I sent all the raw data for reviewers to see. The paper was accepted immediately and without revision and, in retrospect, that is remarkable for a first manuscript—I have never had that happen again."

Several additional publications resulted from this work. In 1975, as Brumback's career turned to new directions, he visited primatologist Philip Hershkovitz and gave him all the research materials. Brumback published a letter in the *Mammalian Chromosome Newsletter*, stating that he had deposited the materials with Hershkovitz at the Field

Museum, urging others with *Aotus* specimens to do the same. At that point, Brumback lost contact with the primatology community, but his work was not ignored. After examining the deposited specimens, Hershkovitz confirmed the earlier suspicions and named one species *Aotus brumbacki*. According to Hershkovitz, "The taxonomic revisions proposed by Brumback were not generally accepted. His urgent appeals to biological investigators for precise identifications of night monkeys they used in scientific research went largely unheeded" (p. 210).

The name Hershkovitz is recognized and well-respected by members of the American Society of Primatologists. In 1991, he received the Society's highest honor of being named Distinguished Primatologist. From an obituary appearing in the *Laboratory Primate Newsletter*:

"Philip Hershkovitz, 87, died Saturday, February 15, 1997 after a distinguished career. At the time of his death he was emeritus Curator of Mammals at the Field Museum. He was named Curator in the Department of Zoology in 1956 after serving as Associate Curator and having been on staff since 1947. Mr. Hershkovitz retired in 1971 but continued doing research and writing. He wrote more than 300 scientific, popular and encyclopedia articles as well as the classic Living New World Monkeys (Platyrrhini). Mr. Hershkovitz is credited with finding 75 new species and subspecies of mammals in South America, including monkeys, marsupials, rodents, and tapir. About a dozen species have been named for him. His research in 1963 saved hundred of lives in the Amazon region of Bolivia by helping end an epidemic there of hemorrhagic fever carried by a species of field mice."

It is unknown whether Hershkovitz attempted to inform Brumback about the new species name. If he did, it may have been difficult in the pre-Internet world to keep track of the latter's whereabouts. Upon completion of his medical training in Pennsylvania, Brumback went on to develop his own distinguished career. He accepted appointments at Washington University School of Medicine in St. Louis (1975), NIH (to 1977), University of Pittsburgh (to 1978), University of North Dakota (to 1982), University of Rochester (to 1986), and finally University of Oklahoma (since

1986). He is now David Ross Boyd Professor and Interim Chairman of the Department of Pathology in the University of Oklahoma College of Medicine, specializing in the study of Alzheimer's disease.

When John Capitanio forwarded this story for publication in the *Bulletin*, I was struck not only by this exciting re-discovery, but the realization that Brumback was at *the same institution as me*. I contacted him immediately to learn more about this story, recruit him as a new member of ASP, and tell him about the Society's conservation activities.

As a self-described "born again conservationist," Brumback has recently given the American Society of Primatologists' Conservation Fund a substantial donation, which will be targeted for the study and protection of Brumback's Owl Monkey. - *Janette Wallis, ASP Bulletin Editor.*

Selected References

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A Brumback's Owl Monkey (*Aotus brumbacki*) shown cradled in the hands of the "original" Brumback. (Photo courtesy R. Brumback)