Patuxent/Smithsonian Mammal Survey in Myanmar

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Figure 1. Map of northwestern southeast Asia centered on Myanmar (formerly Burma). The 2003 Mammal Survey team worked in the region surrounding Pyin-Oo-Lwin (formerly Maymo), a former hill station ca. 90 km east of Mandalay on the edge of the Shan Plateau.

During August of 2003, Neal Woodman of Patuxent's Biological Survey Unit (BSU) joined Smithsonian Institution partners George Zug and Jeremy Jacobs from the National Museum of Natural History (NMNH) to assist with a biological survey of the Southeast Asian nation of Myanmar (Fig. 1). The survey is part of a long collaboration among NMNH, the National Zoological Park (NZP), California Academy of Sciences, and the Myanmar Division of Nature and Wildlife Conservation. Previous work in Myanmar includes a three-year census of amphibians and reptiles to aid in determining what species exist in the country and the distributions of each. This study has resulted so far in the documentation of 405 species, including 56 previously undescribed species, and it has provided vital data on the impact of local market trade in reptiles and amphibians. Since 1994, NZP has been working to determine the movement patterns and monitor the populations of vulnerable Eld's Deer (*Cervus eldii*). More recently their efforts have expanded to include carnivores and wild elephants. This year, BSU joined with the NMNH to begin a preliminary survey of small mammals.

Myanmar has the greatest amount of original habitat left of any country in Southeast Asia. The vertebrate fauna of Myanmar is diverse, but poorly documented, and no authoritative compendia exist for any of the main terrestrial groups of vertebrates. As with many tropical and subtropical nations, Myanmar suffers greatly from habitat destruction and fragmentation, mainly as a result of heavy logging and charcoal production. There is an active underground economy in wild animals and animal parts, with many species exported into neighboring China. Data from biological inventories provides baseline information necessary for understanding the impact of such activities on the native fauna, the sustainability of the exploitation, and short-term and long-term effects of this trade on the local economy.

Fieldwork in 2003 accomplished two important goals. The first was a three-day training workshop on anatomy, physiology, ecology, and systematics of mammals for 14 Burmese wildlife rangers that provided them with a better understanding of the animals under their protection, particularly smaller, less well-known species that often are over-looked or ignored. The second was a combined field survey of mammals, reptiles, and amphibians in remnant forest tracts around Pyin-Oo-Lwin, Mandalay Division (Fig. 1). In addition to meeting the goals of biotic inventory, this fieldwork served to further train a selected team of wildlife rangers in survey and collection techniques (Fig. 2).

Results of the field survey provided evidence for the importance of remnant and regrowth forest patches in maintaining pools of original diversity within heavily altered landscapes. More specifically, this work documented the presence of 23 native species of four orders of mammals (Table 1). The survey provided 155 new research specimens that will be valuable for systematic and taxonomic studies, along with tissue samples for molecular studies, external parasites for studies of disease vectors, and associated information on natural history. One part of the collection now forms the core of the mammal collection of the new Myanmar Biodiversity Museum, near Mandalay. The remainder is cataloged in the NMNH, consistent with our memorandum of understanding with our Smithsonian Institution partner, and they are available for study by international researchers.

Literature Cited

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Table 1. Preliminary list of mammal species from 2003 expedition to the Pyin-Oo-Lwin region of the Shan Plateau. Taxonomy follows Corbet and Hill (1992), modified following Wilson and Reeder (1993, *in press*). Common names follow Wilson and Cole (2000).

SCANDENTIA	
Tupaiidae	
Tupaia belangeri	Northern Tree Shrew
RODENTIA	
Sciuridae	
Callosciurus erythraeus	Pallas's Squirrel
Dremomys rufigenis	Asian Red-cheeked Squirrel
Hylopetes phayrei	Indochinese Flying Squirrel
Muridae	
Bandicota savilei	Savile's Bandicoot Rat
Mus booduga	Little Indian Field Mouse
M. cervicolor	Fawn-colored Mouse
M. cookii	Cook's Mouse
Niviventer fulvescens	Chestnut White-bellied Rat
Rattus adamandanus	Adamandan Rat
R. exulans	Polynesian Rat
R. rattus	House Rat
R. sikkimensis	Sikkim Rat
SORICOMORPHA	
Soricidae	
Crocidura fuliginosa	Southeast Asian Shrew
Suncus murinus	Asian House Shrew
CHIROPTERA	
Pteropodidae	
Cynopterus sphinx	Greater Short-nosed Fruit Bat
Megadermatidae	
Megaderma lyra	Greater False Vampire Bat
Rhinolophidae	
Rhinolophus affinus	Intermediate Horseshoe Bat
R. luctus	Woolly Horseshoe Bat
R. pusillus	Least Horseshoe Bat
Hipposideros armiger	Great Roundleaf Bat
H. lyeli	Shield-faced Roundleaf Bat
Vespertilionidae	
Pipistrellus tenuis	Least Pipistrelle

Figure 2. Neal Woodman (BSU) and Jeremy Jacobs (NMNH) preparing specimens at Yangon Buddhist Monastery with Hla Naing, Wunna Kyi, and San Lwin Oo, rangers from Myanmar Department of Forestry. (Photograph courtesy of George R. Zug).

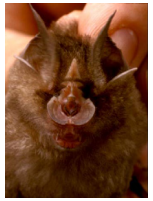
hog deer

sun bear

takin

shield-nosed bat

tupaia (tree shrew)



horseshoe bat