Smithsonian Institution News

Office of Public Affairs

July 11, 2005

Media only: John Barrat (202) 357-2627, ext. 119

Smithsonian Scientists Find New Beetle Family

A tiny aquatic beetle discovered living among decaying leaves in a Venezuelan mountain stream by Smithsonian scientists, represents not only a new species, but an entirely new taxonomic genus and family of beetles. So tiny that it can only be studied under a scanning electron microscope, the newly named *Meru phyllisae*, or comb-clawed cascade beetle, is the smallest member of a suborder that includes ground beetles, tiger beetles, whirligig beetles, crawling water beetles and burrowing water beetles.

The newly discovered water beetle *Meru phyllisae* is the size of a poppy seed. High-resolution, downloadable image available at **ftp://160.111.16.40/opa**

Meru phyllisae was officially named in July by Paul Spangler and Warren Steiner of the entomology department at the Smithsonian's National Museum of Natural History. Their article describing the beetle appeared in the journal Systematic Entomology, published by the Royal Entomological Society of Great Britain. The beetle was first collected in 1985. Despite repeated collecting attempts, the scientists were unable to find any eggs, larvae or pupae of this new insect that would have aided in its scientific description. Although *M. phyllisae* shares a number of characteristics with beetles of other families, it is distinct enough to be declared a member of a previously unknown family, according to Spangler and Steiner.

"The discovery of *M. phyllisae* has caused quite a stir in the community of scientists who study water beetles," Steiner said. In the last 50 years, only about five new beetle families have been described from newly discovered species.

The new family name, *Meruidae*, comes from meru which means "waterfall" in the language of the Pemon people of Venezuela. *Meru phyllisae* was discovered in a cascading waterfall at a natural "water slide," El Tobogán, in the Amazonas region of Venezuela.

"With insects, the age of discovery is far from over," Steiner continues. "We are still finding higher-level taxonomic categories of insects. These new forms of life are not related to

groups that we already know about, yet they can help us understand the relationships between known groups."

With some 300,000 known species and 165 different families, beetles are easily the Earth's most successful complex animals. They represent three-quarters of all living animals and have adapted to an incredible variety of environments. Their scientific name, Coleoptera, means "sheath wing," in reference to the hardened, protective front wings, or elytra, that cover the membranous, folded flight wings.

Meru phyllisae was given the common name "comb-clawed cascade beetle" for its unusual claws. "Most terrestrial beetles have a pair of claws on the tips of their feet that they use as tiny grappling hooks," Steiner said. "It is surprising, however, to see comb-claws on a water beetle. Perhaps they use them for swimming or clinging to roots and dead leaves under water."

Because it is not an agile or rapid swimmer and its mouthparts appear unsuited for capturing other small creatures, Spangler and Steiner believe *M. phyllisae* survives by eating fungi, algae and submerged leaves. Most water beetles are predators, eating other insects and small creatures.

Meru phyllisae was named in honor of Phyllis Spangler who worked as a volunteer in the museum's entomology department for many years and is a co-discoverer of the new beetle.

# # #