

CAVE SCIENCE NEWS

CANON NATIONAL PARKS SCIENCE SCHOLARS PROGRAM

The Canon National Parks Science Scholars Program will award scholarships to eight doctoral students in 2000. Each student selected will receive \$25,000 per year for up to three years to conduct research in the national parks. The 2000 competition will focus on four research topics within the biological, physical, social, and cultural sciences. The research topics are of critical importance to the management of the National Park System and selected by the National Park Service. Students applying for 2000 scholarships must submit dissertation proposals that address these topics.

Visit <http://www.nps.gov/socialscience/waso/acts.htm> for an application and guidelines, or contact Dr. Gary Machlis, Program Coordinator, Canon National Parks Science Scholars Program, Natural Resource Stewardship and Science, National Park Service, 1849 C Street, NW (MIB 3127), Washington, DC 20240, <mailto:gmachlis@uidaho.edu>.

Applications are due 1 June 2000. Winners will be announced in early August 2000. Canon U.S.A., Inc. underwrites the program in collaboration with the National Park Service, National Park Foundation, and the American Association for the Advancement of Science.

LIFE SCIENCES EDITOR NEEDED BY JOURNAL

The *Journal of Cave and Karst Studies* is looking for a new Associate Editor of Life Sciences. The present Life Sciences Editor, Dr. David Ashley, would like to step down as soon as a replacement is identified. The responsibilities of Associate Editors are to solicit articles, arrange for appropriate reviews of papers in their fields of expertise, work with authors to prepare their manuscripts for publication, make recommendations concerning acceptance and rejection of submitted papers, and assist the Editor in gathering material for the non-refereed section of the *Journal*. Advice from the Associate Editors, along with the *Journal's* Advisory Board, is commonly solicited on editorial policy decisions, making an Internet address highly desirable.

The *Journal* seeks a pro-active biospeleologist with contacts in the scientific community and experience in scholarly publishing. Interested candidates are asked to send a letter of interest by January 20, 2000 to the editor at: HoseL@jaynet.wcmo.edu.

NEW CAVE CRAYFISH SPECIES FOR MISSOURI

The Missouri Department of Conservation has determined that a stygobitic (aquatic, cave-adapted) crayfish from Ozark County is new to science. MDC cave biologist Bill Elliott, Ken Lister, and Melissa Shiver studied caves in the Caney Mountain Conservation Area, owned by MDC, on August 16, 1999. Their trip was part of a field project, funded by the U.S. Fish & Wildlife Service, in search of the Ozark big-eared bat and another rare cave crayfish, *Cambarus aculabrum* (neither was found in Missouri).

They followed up on an old report by visitors that crayfishes inhabit one of the caves at Caney Mountain. MDC found a small population of blind crayfish in a muddy stream passage, and Lister collected one adult male and one adult female for identification by an

expert taxonomist (cave biologist Horton H. Hobbs III). Elliott extensively photographed the specimens and the "first form" (mature) male's gonopods (mating appendages), which are important in identifying different species. Tissue from the female was deep frozen for DNA work by a geneticist, and both specimens were preserved for study.

A small population of crayfish live in the cave, but they are difficult to census because of the muddy water. Biologists from the Shedd Aquarium had observed several adults and juveniles two years ago. For conservation reasons, the cave name will not be announced to the public and access will have to be restricted for scientific studies. Fortunately, the cave is inside a protected "Natural Area" inside the Conservation Area, and is far from any development or known pollution sources. It is not a pretty cave and will not be missed by most visitors.

Elliott suspected that the species would be new since no cave-adapted crayfish were known from Ozark County. He was thrilled when he studied his photos and realized that this was a species of the genus *Orconectes*, instead of one of the two known cave crayfishes in Missouri, which are *Cambarus hubrichti* (Salem cave crayfish) and *Cambarus setosus* (bristly cave crayfish from the Springfield Plateau). Ozark County was in a gap between the known ranges of these two species.

Five species of blind *Orconectes* inhabit caves from Indiana to Alabama. "Beep" Hobbs said he just about fell off his chair when he examined the specimens and realized that this was the first blind *Orconectes* from west of the Mississippi River. Missouri has 19 epigeal (surface-dwelling) *Orconectes*, but had no cave species until this one. A photo of the new species may be seen on the Biospeleology web site at:

<http://www.utexas.edu/depts/tnhc/.www/biospeleology>.

Finding a new species of cave crayfish is a rare event. In Missouri *Cambarus setosus* was described in 1889 and *C. hubrichti* was described in 1952. The latest American cave crayfish, *Orconectes sheltae*, was described in 1997 from Shelta Cave, Alabama, but only after years of study by John Cooper. That species was found to have an extremely slow growth rate, low reproductive rate, and long life span; males mature after the age of 40, and individuals may live to 100 years. Other cave-adapted crayfish may have similar life histories, so it is important to carefully study and conserve cave crayfish populations.

Bill Elliott will be leading field studies of the new crayfish, and hopes to find other populations in the area. Cavers can help the scientific effort by reporting sightings of cave crayfish to Elliott. Some cave streams contain pale, but eyed, epigeal crayfish. Either way, they are difficult to see when you are wading through streams and a cloud of mud is advancing in front of you. Please do not collect animals unless you have a MDC Wildlife Collector's Permit. Good macrophotos of crayfish may help, but they are of limited use because of the microscopic characters that must be examined.

It is still quite possible that other new cave species remain to be discovered in the Ozarks. The following Missouri karst counties have no identified populations of blind crayfish but are good candidates: Stone, Taney, Douglas, Webster, Wright, Texas, Polk, Dallas, and Laclede.