2001 NSS Convention

A Cave Odyssey

July 23-27, 2001

Mount Vernon, Kentucky

Program Guide

Editor
H.J. Kalnitz

NATIONAL SPELEOLOGICAL SOCIETY, INC.
DEDICATED TO THE EXPLORATION, STUDY AND COONSERVATION OF CAVES

Archaeology (cont.)

A Step in Time: Footprints, Torches, and Mud Mining in Mother May I Spring Cave, Alabama

Kelly Norwood

Donna K. Cobb

The Bone Dome: Archaeology and Paleontology in Fern Cave N.W.R., Alabama

Jennifer Pinkley

Donna K. Cobb

Archaeological Investigations of Hubbards Cave, Warren County, Tennessee

Erin Pritchard
University of Tennessee

Hubbards Cave, located in Warren County, Tennessee, contains evidence of a prehistoric gypsum mine. Archaeological investigations conducted thus far have focused on the systematic documentation of all prehistoric material found within the cave. Information gathered thus far will be presented. It is anticipated that research conducted at Hubbards Cave will help further our knowledge of prehistoric mineral mining in the Eastern Woodlands.

Biology

Tuesday 2:00 - 5:00 p.m.

One Eye but No Vision: Troglomorphic *Astyanax fasciatus* (Pisces: Characidae) with Regenerated Eyes do not respond to light

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One of the most intriguing questions in evolutionary biology is the degree to which behavior can be viewed as a consequence of morphology. We explore this issue by examining behavior associated with the loss of phenotypic structure and its presence, using responses to light by characid blind cave fish, *Astyanax fasciatus*, that are eyed and eyeless. Our experiments examine subjects that are epigean (eyed surface) and troglomorphic (blind cave) forms. We compare their photoresponsiveness with blind cave fish with restored eyes. These are produced transplanting the lens from an epigean fish into the optic cup of a blind cave form. The lens from the surface fish stimulates growth and development of the eye, restoring optic tissues lost during cave fish evolution. Fish were placed in an aquarium with one half illuminated with dim or bright white light or infrared light, the other half dark. Their photoresponsiveness was examined by scoring their presence in the illuminated or dark half. Our results strongly suggest that both the blind subjects and those with restored eyes are indifferent to the illumination whereas the surface forms are not. Deactivation of the genes responsible for scotophilic behavior and/or lack of appropriate neurological connection may account for these results.