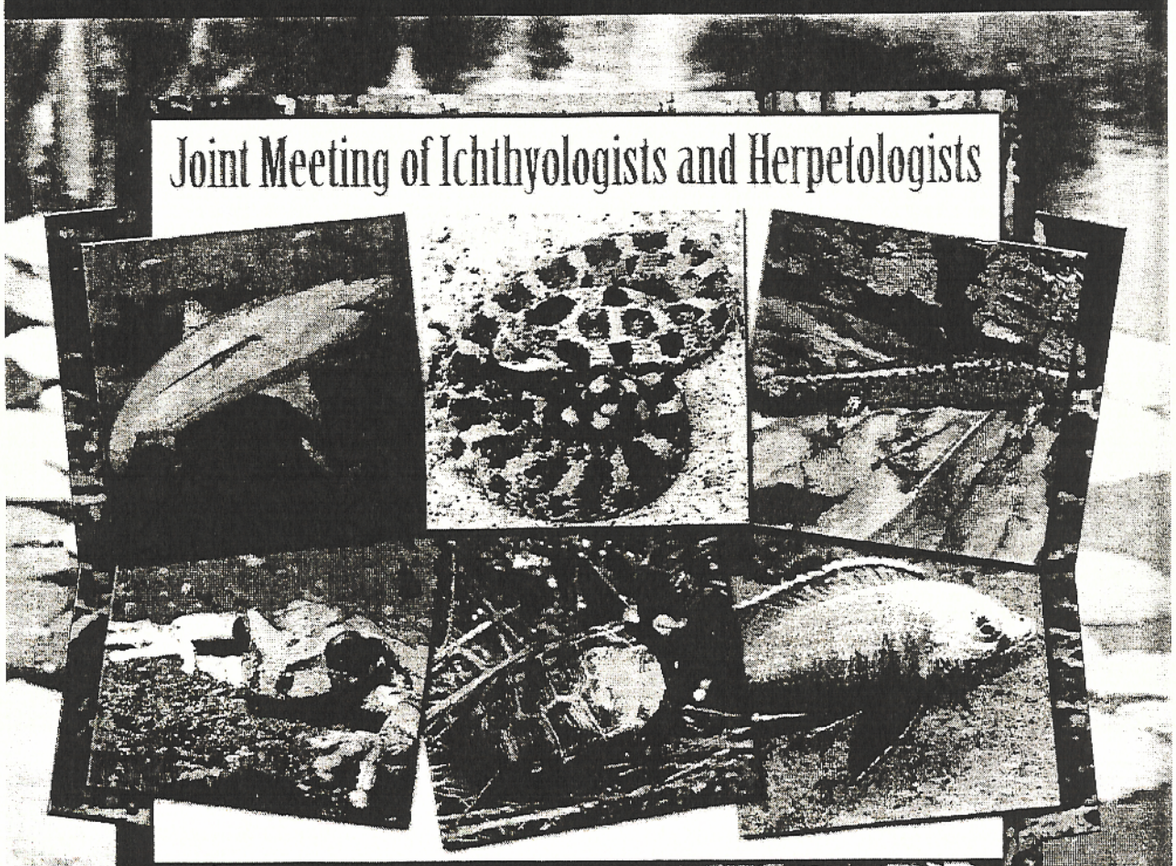
Program Book and Abstracts



Joint Meeting of Ichthyologists and Herpetologists

81st annual meeting of the American Society of Ichthyologists & Herpetologists
17th annual meeting of the American Elasmobranch Society

PENNSTATE

Hosted by The Pennsylvania State University
State College, Pennsylvania, USA

July 5–10, 2001

*Romero, Aldemaro, Green, Steven M., Romero, Andrea, Jeffery, William R., Yamamoto, Yoshiyuri
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One eye but no vision: Blind cave Astyanax fasciatus with regenerated eyes do not respond to light.

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. Preliminary results suggest that both the blind subjects and those with restored eyes are indifferent to the illumination whereas the surface forms are not. (Session 34, Tuesday, July 10, Penn Stater, Room 207, 8:30)