

PROGRAM BOOK AND ABSTRACTS

Joint Meeting of Ichthyologists and Herpetologists

AMERICAN ELASMOBRANCH SOCIETY

18th annual meeting



AMERICAN SOCIETY OF ICHTHYOLOGISTS
AND HERPETOLOGISTS

82nd annual meeting



HERPETOLOGISTS' LEAGUE

50th annual meeting



SOCIETY FOR THE STUDY OF
AMPHIBIANS AND REPTILES

45th annual meeting

Hosted by the
University of Kansas
at the Westin Crown Center Hotel
in Kansas City, Missouri

July 3 through July 8, 2002

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When cave fish see the light: reaction norm to light exposure during development in epigean, troglomorphic, and hybrids of *Astyanax fasciatus*

The study of phenotypic plasticity among hypogean (cave, karst, and artesian) fauna has been virtually ignored. Yet, anecdotal accounts have suggested that the development of troglomorphic features such as blindness and depigmentation could be influenced by exposure to light. We conducted a series of experiments to ascertain the reaction norm to light on eyes, pigmentation, and behavior among epigean (eyed, pigmented), troglomorphic (blind, depigmented), and hybrids (epigean X troglomorphic) individuals of *Astyanax fasciatus* (Pisces: Characidae). Results show that light (or lack thereof) can strongly influence the development of pigmentation in the regressed eye and swimming behavior among different stocks of this fish species. These results may have important implications in the understanding of the phenomenon of reduction and/or loss of features during evolution. The ability to respond to changes in light regimes may explain the different phenotypes among many taxa that can be found in the hypogean environment. Further, this phenotypic plasticity may be construed as an adaptive feature on which natural selection acts and determines survivability in the cave environment. (148: 7 July; Shawnee/Mission (AM); Fish Morphology)