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Howard A. Rhodes 1936 – 2020.

Howard Allen Rhodes, 83, passed away January 20, 2020 in Cheyenne, Wyoming. He was born August 22, 1936 in Virginia. He served in the U. S. Air Force. He initiated a Ph.D program at Colorado State University, but left for a position with the U.S. Forest Service and retired from that agency. He loved aquatic entomology and maintained a large personal collection. He was a co-author of two papers on Plecoptera:

Rhodes, H. A. and B. C. Kondratieff. 1996. Annotated list of the stoneflies (Plecoptera) of Western Nebraska, U.S.A. *Journal of the Kansas Entomological Society Soc.* 69: 191-198.

Stark, B.P. & H.A. Rhodes. 1997. *Perlesta xube*, a new stonefly species from Nebraska (Plecoptera: Perlidae). *Entomological News*, 108: 92–96.

MEMBER NEWS

DeWalt Laboratory Work conducted in 2019 and proposed in the future.

Plecoptera of Indiana: using museum data to determine spatial distribution patterns and conservation need

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Stoneflies (Plecoptera) are indicators of water quality and have been lost in dramatic numbers from Midwest states, including Indiana. For this study, we are using over 5000 records of Plecoptera from more than 2000 unique collection events to build a list of known species from the state of Indiana. We intend to answer four questions: First, how many species are native to Indiana? Second, what is the conservation status of each native species (using NatureServe criteria)? Third, do patterns exist in stonefly species assemblages across unique HUC8 watersheds? Fourth, what are the causal agents of differences in diversity across HUC8s? Results include 1,050 positive locality records that yielded 92 species. Among these is one recently described species, a new species not yet described, and three species previously unknown to Indiana. We have also found additional locations for rare species and confirmed the presence of a few species thought to be extirpated. Eleven species were rated as extirpated or presumed extirpated, leaving 81 extant species. Of these, 17 were rated as critically imperiled (S1), 26 imperiled (S2), 25 vulnerable (S3), while only 13 species were rated as secure (S4 & S5). Watersheds and specific streams were discussed for their ability to support individual species or rich assemblages. Regarding distribution patterns, southern unglaciated drainages supported the most species-rich assemblages. Watersheds that were most recently glaciated (Wisconsinan) held fewer species. Deep ravine systems act as cold water refugia where glaciated and unglaciated areas meet. The East Fork of the White River, Tippecanoe River, and the St. Joseph River drainage (a tributary to Lake Michigan) harbor several large river species. The next step in this project is to determine which factors are most important to Plecoptera species richness and to gather data on rare species and under-collected drainages.

Molecular phylogeny of the North American Plecoptera

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The primary objective of this study is to develop a well-supported and fully-resolved phylogeny of the North American Plecoptera using multiple genes selected from transcriptomes. A total of 373 live adult specimens across 132 species and 92 genera representing all North American families, subfamilies, and tribes were collected and

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