SCIENTIFIC NOTE

NEW STATE RECORDS, HABITAT CHARACTERISTICS, AND RANGE EXTENSIONS FOR THREE AQUATIC BEETLES (COLEOPTERA: GYRINIDAE, HYDRAENIDAE) FROM WADEABLE STREAMS IN MISSOURI, USA

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There is no comprehensive assessment in the published literature of the aquatic Coleoptera found in Missouri, USA. We present new state records based upon our identifications of three species of water beetles that contribute to knowledge of aquatic beetles inhabiting Missouri waters. Locality information and notes on habitat where each species was collected are provided. Missouri specimens represent range extensions for two of the three species reported.

Select physical and water quality characteristics from the reaches of streams where each species was found (Table 1) may aid in delineation of environmental parameters associated with occurrence, distribution, and autecology of the species reported. Physical characteristics of the collection sites were obtained using direct observation and methods outlined by Kaufmann et al. (1999) and Peck et al. (2006). Water temperature, dissolved oxygen, conductivity, pH, and turbidity parameters were obtained using Hach/HydroLab® quantas equipped with a calibrated sensor for each variable. Chlorophyll samples were collected by filtering a known volume of water at each collection site. The chlorophyll samples were kept in the dark at 4°C during transport to the laboratory. Upon arrival to the laboratory, the chlorophyll samples were kept frozen until processed according to methods provided by Knowlton (1984) and Sartory and Gobbelaar (1984). Data for all other water quality characteristics were obtained from grab samples of water collected in pre-cleaned cubitainers, stored and transported at 4°C to the laboratory, and processed at the University of Missouri Limnology Laboratory using methods provided by Crumpton et al. (1992), APHA (1995), Switala (1997), and Pritzlaff (2003).

Voucher specimens of each species reported are retained for use as reference material in a collection at the Missouri Department of Conservation, Central Region Office and Conservation Research Center, 3500 East Gans Road, Columbia, MO, USA. They will be deposited at the University of Missouri Enns Entomology Museum, Columbia, MO, USA upon completion of a project examining aquatic macroinvertebrates of Missouri streams.