

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<sup>®</sup> 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.



**Gyrinidae**

(whirligig beetles)

***Gyrinus marginellus* Fall.** USA, Missouri: Dent County; Sinking Creek (UTM Northing: 651203 and UTM Easting: 4146987); 30 September 2004; near margin of undercut bank in rootmat habitat: M. Hodge, W. Mabee; 3 adults. Sinking Creek is a cool, clear, spring-influenced stream located in the Current River basin. The collection site is in a losing section where flows are reduced or can disappear during extended periods without rainfall. Until now, the westernmost distribution records for *G. marginellus* were from Indiana (Young 1988), Wisconsin (Hilsenhoff 1990), Alabama (Oygur and Wolfe 1991), and Florida (Epler *et al.* 2005; Epler 2010). Our record of *G. marginellus* for Missouri extends the known range for this species farther west than was previously documented.

**Hydraenidae**

(minute moss beetles)

***Hydraena indiana* Jäch.** USA, Missouri: Lawrence County; tributary to White Oak Creek (UTM Northing: 409893 and UTM Easting: 4120214); 18 September 2006; near bank margin of riffle habitat: B. Landwer, S. Dunnaway; 4 adults. USA, Missouri: Lawrence County; tributary to Spring River (UTM Northing: 429445 and UTM Easting: 4092390); 19 September 2011; near bank margin of pool habitat: S. Lanning, W. Mabee; 14 adults. Both streams are small, spring-influenced headwaters in the Spring River basin. *Hydraena indiana* was described from material collected in Indiana and also has been found in Oklahoma (Jäch 1994). Therefore, although *H. indiana* is a new state record for Missouri, the occurrence of this species in Missouri is not surprising.

***Hydraena punctata* LeConte.** USA, Missouri: Vernon County; tributary to Landon Branch (UTM Northing: 382384 and UTM Easting: 4178307); 27 March 2008; near bank margin of riffle habitat underneath overhanging native prairie grasses: R. Espeo, W. Mabee; 4 adults. This collection was from a small headwater tributary that probably completely dries annually, but maintains small pools through groundwater seepage. The site is in the Osage River basin in a managed prairie remnant with relatively intact hydrological patterns. *Hydraena punctata* is primarily known to occur in the northeastern region of the USA (Perkins 1980), but also has been found as far west as Indiana (White *et al.* 1985). Our collection of *H. punctata* is new for Missouri and

extends the known range for this species farther southwest than was previously documented.

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