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New Geographic Distribution Records for Centipedes (Chilopoda: Scolopendromorpha) in Arkansas, Including the First from Crowley's Ridge and the Grand Prairie

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Within the last decade, information on the geographic distribution of scolopendromorph centipedes of Arkansas, Oklahoma, and Texas was reported by Shelley (2002) and McAllister et al. (2003, 2004, 2006). However, additional collections in the undocumented habitats west of the Mississippi River will provide an improved documentation of their overall distribution. Herein, we provide 23 new county records for 6 taxa from Arkansas, including the first from Crowley's Ridge and what is left (<1% remains) of the Grand Prairie, where very few centipedes have been previously reported.

Between May 2008 and January 2012, scolopendromorph centipedes were collected using a potato rake by overturning debris, decayed logs, and leaf litter from various sites in 17 counties. This included collections attempted in the northern (Clay County) and southern extent (Phillips County) and other sites in between (Craighead, Cross, Greene, Lee, Poinsett, St. Francis counties) of Crowley's Ridge in eastern Arkansas (Fig. 1), an unusual geological formation dominated by oak and hickory forest that rises 170 m above the alluvial plain of the Mississippi embayment in a 240 km line from southeastern Missouri to the Mississippi River near Helena (Clark 1974). This ridge is also unique in soil type as loessial hills soils capped with wind-deposited silt predominate (Foti 1974, his map 4). In addition, collections were made with pitfall traps in woods without grasses (Konecny Woods) or tallgrass prairie habitat in natural areas (Arkansas Natural Heritage Commission lands) of Arkansas and Prairie counties in southeastern Arkansas, including Downs, Konecny, Railroad, and Roth prairies. These sites were dominated by big bluestem, (*Andropogon gerardii*), little bluestem, (*Schizachyrium scoparium*), switchgrass (*Panicum virgatum*), and Indian grass (*Sorghastrum nutans*). Select specimens were placed in vials containing 70% ethanol and following preliminary identification, shipped to Rowland M. Shelley at the North Carolina

State Museum of Natural Sciences, Raleigh, North Carolina (NCSM) for verification and voucher deposition; additional specimens were deposited in the Sam Noble Oklahoma Museum of Natural History, Norman, Oklahoma (SNOMNH). Centipede taxonomy is arranged below in phylogenetic order according to the classification scheme of Shelley (2002) for members of the order Scolopendromorpha.

Centipede species collected are presented along with their distributional information (county, specific locality, latitude and longitude, collection date, collector [CTM = C. T. McAllister], remarks).

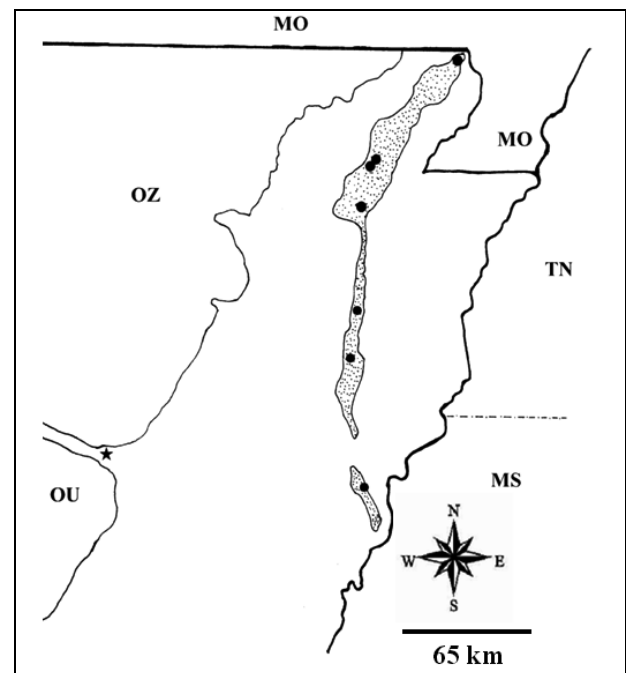


Figure 1. Seven sites (dots) where scolopendromorph centipedes were collected in eastern Arkansas along Crowley's Ridge (stipple). Abbreviations: MO (Missouri); MS (Mississippi); OU (Ouachita Mountains); OZ (Ozark Mountains); TN (Tennessee). Symbols: dots (sites); star (Little Rock).

Annotated List of Species**Scolopendromorpha: Scolopendridae**

Hemiscolopendra marginata (Say).— **Calhoun Co.**, 1 km N of Calion off US 167 (33.346160°N, 92.530804°W), 2 Jan. 2012, M. B. Connior. **Clay Co.**, Chalk Bluff Natural Area off co. rd. 368 (34.47809°N, 90.16495°W), 19 Nov. 2010, CTM. **Franklin Co.**, off St. Hwy. 23, 4.8 km SW of Cass (35.645998°N, 93.839207°W), 15 Apr. 2011, CTM. **Greene Co.**, Crowley's Ridge State Park on Spider Creek Trail (34.042652°N, 90.664261°W), 26 Feb. 2010 & 19 Nov. 2010, CTM. **Lee Co.**, Bear Creek Recreation Area at Bear Creek Lake Nature Trail (34.704364°N, 90.692482°W), 27 Feb. 2010, CTM. **Union Co.**, El Dorado (33.638775°N, 93.005791°W), 26 November 2007, T. Ratliff. Three of these sites (Clay, Greene and Lee counties) are on Crowley's Ridge (Fig. 2),

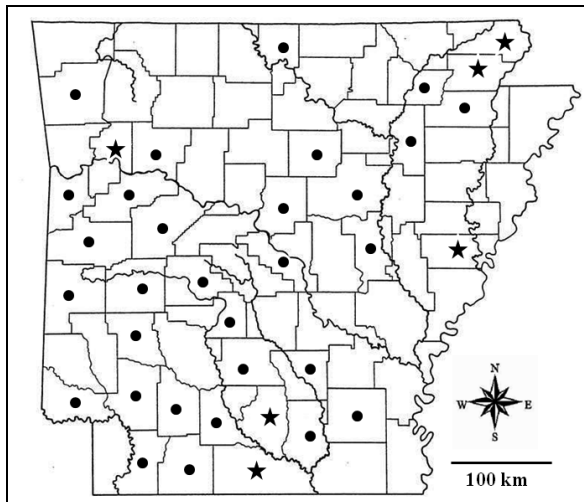


Figure 2. Records of *Hemiscolopendra marginata* in Arkansas. Symbols: dots = historic records; stars = new records.

where the flora and fauna seem more closely related to the Tennessee hills to the east rather than to the Ozark Mountains to the west (Clark 1974; Foti 1974). Dominant forest types can be regarded as White–Oak–Red–Oak–Hickory with beech (*Fagus grandiflora* var. *carolina*) and some shortleaf pine (*Pinus echinata*) (Clark 1974). This centipede was previously reported from 30 Arkansas counties (Shelley 2002; McAllister et al. 2003, 2006) and much of Tennessee (Shelley 2002, his Fig. 71); we document 6 new county records for *H. marginata* (Fig. 2). In addition, this is the first report, to our knowledge, of any scolopendromorph centipede species from Clay County, Arkansas. Interestingly, this site overlooks the St. Francis River bordering the boot heel of Missouri, where there are no

previous records; however, *H. marginata* is nonetheless expected in the southeastern corner of that state (Shelley 2002).

Scolopocryptopidae

Scolopocryptops rubiginosus L. Koch.— **Crawford Co.**, 0.5 km W of Natural Dam on Natural Dam Road (36.214104°N, 92.682745°W), 19 Nov. 2011, CTM. **Marion Co.**, 0.8 km SW of Yellville off St. Hwy. 235 (36.214104°N, 92.682745°W), 6 Nov. 2009, CTM. **Nevada Co.**, 7 km SW of Bluff City at Arkansas Oaks (33.696494°N, 93.165607°W), July 2011, M. B. Connior. **Searcy Co.**, 29 km SW of Yellville off St. Hwy. 235 (36.061450°N, 92.862110°W), 6 Nov. 2009, CTM; vic. Mull, 3 km S jct. St. Hwy. 14/Ramblewood Trail (36.071320°N, 92.582495°W), 22 Mar. 2011, M. B. Connior. **Washington Co.**, 3.2 km W of Savoy off St. Hwy. 16 at Lake Wedington trail (36.096749°N, 94.371841°W), 22 Sept. 2011, CTM. This centipede had only previously been reported from 2 counties in Arkansas, Drew in the southeastern part and Madison in the northwestern corner of the state (Shelley 2002; McAllister et al. 2006). However, the Madison County locality (i.e., historic record of *S. rubiginosus* in Arkansas) is incorrect and should be listed as Blue Springs Village, Washington County (not Blue Springs State Park, which does not exist) (Fig. 3). We add 3 new county records for northern part of state (Ozark Mountains, Springfield Plateau subdivision), 1 for southwestern Arkansas and confirm Washington County as a valid locality (Fig. 3).

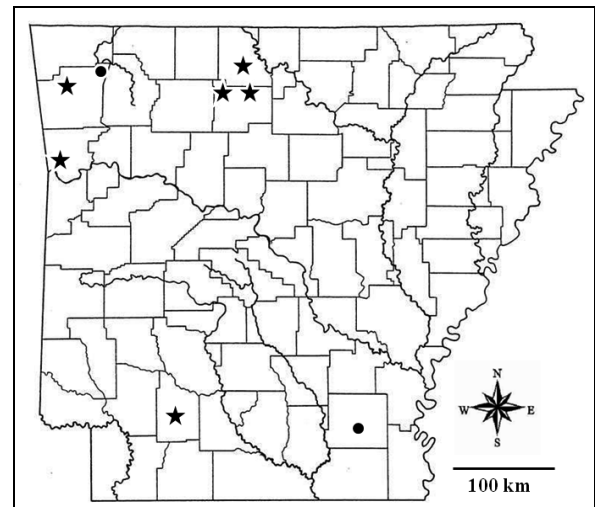


Figure 3. Records of *Scolopocryptops rubiginosus* in Arkansas. Symbols: dots = historic records; stars = new records.

Scolopocryptops sexspinosus (Say).— **Arkansas Co.**, Arkansas Post National Monument, Post Bayou

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Nature Trail, 9 Apr. 2011. **Clay Co.**, Chalk Bluff Natural Area off co. rd. 368 (34.47809°N, 90.16495°W), 19 Nov. 2010. CTM. **Greene Co.**, Crowley's Ridge State Park on Spider Creek Trail (34.042652°N, 90.664261°W), 26 Feb. 2010 & 20 Nov. 2010, CTM; Lake Frierson State Park on Blue Heron Trail (36.023831°N, 90.393646°W), 20 Nov. 2010, CTM. **Lee Co.**, Bear Creek Recreation Area at Bear Creek Lake Nature Trail (34.704364°N, 90.692482°W), 27 Feb. 2010 & 21 Nov. 2010, CTM. **Marion Co.**, 0.8 km SW of Yellville off St. Hwy 235 (36.214104°N, 92.682745°W), 6 Nov. 2009, CTM. **Union Co.**, vic. El Dorado, 0.3 km S of jct. St. Hwy. 63 and Grady Bell Road (33.216978°N, 92.585893°W), 26 Jan. 2012, M. B. Connior. This centipede is expected over much of Arkansas, with 37 previous records (Fig. 4) from various counties of the state (Shelley 2002; McAllister et al. 2003, 2006). We document 6 new county records (Fig. 4), including the first, to our knowledge, from Crowley's Ridge.

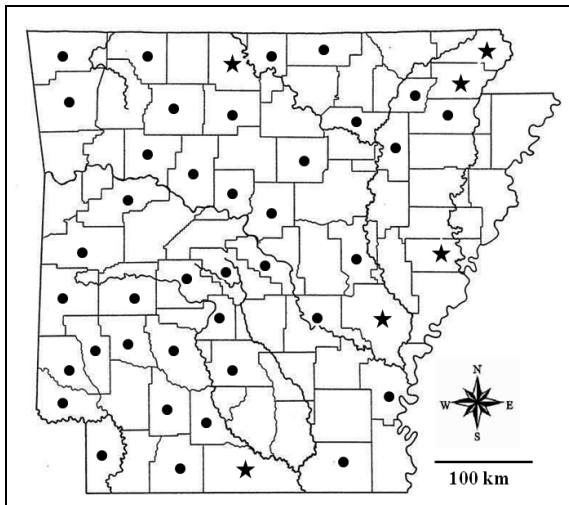


Figure 4. Records of *Scolopocryptops sexspinosus* in Arkansas. Symbols: dots = historic records; stars = new records.

Cryptopidae

Theatops posticus (Say).— **Garland Co.**, Hot Springs, 102 Brown Street (34.457685°N, 93.097031°W), 20 May 2008, CTM. **Union Co.**, El Dorado, vic. El Dorado, 0.3 km S of jct. St. Hwy. 63 and Grady Bell Road (33.216978°N, 92.585893°W), 23 Jan. 2012, M. B. Connior. *Theatops posticus* is another scolopendromorph with projected statewide distribution; however, genuine voucher specimens were previously available for only 7 of 75 (9%) counties of the state (McAllister et al. 2006) (Fig. 5). We add 2 new county records for *T. posticus* in Arkansas (Fig. 5).

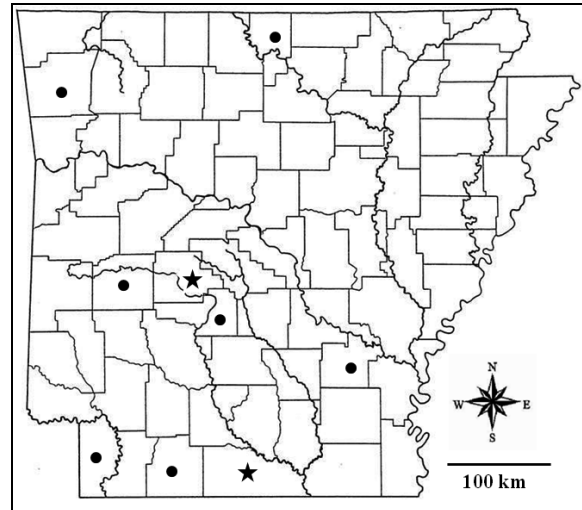


Figure 5. Records of *Theatops posticus* in Arkansas. Symbols: dots = historic records; stars = new records.

Theatops spinicaudus (Wood).— **Calhoun Co.**, 6.4 km E of Harrell off US 278 (33.548262°N, 92.304382°W), 3 Dec. 2008, CTM. **Marion Co.**, vic. Mull, 1 km E of jct. St. Hwy. 14 and St. Hwy. 268E, 22 Mar. 2011, M. B. Connior. **Pope Co.**, 11.3 km N of Bayou Bluff Recreation Area off St. Hwy. 27 (35.497015°N, 92.969055°W), 22 Apr. 2010, CTM. In Arkansas, *T. spinicaudus* has been previously reported from 29 counties (Shelley 1997, 2002; McAllister et al. 2003, 2006, their Fig. 2). We document 3 new county records, one from southern Arkansas (Mississippi Alluvial Plain) and 2 from the northern part of the state (Ozark Plateau) (Fig. 6). Note absence in far eastern and extreme southern Arkansas counties (Fig. 6).

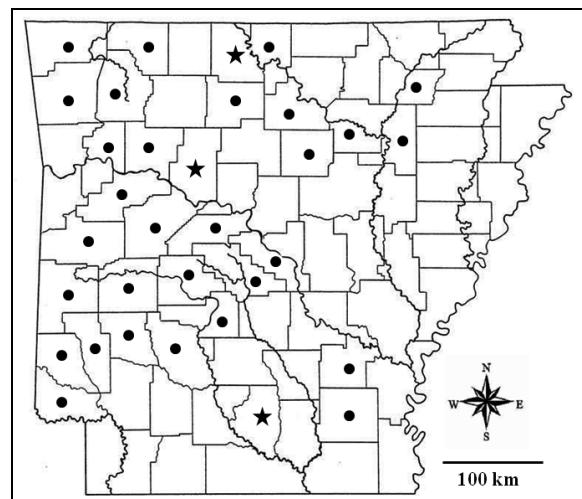


Figure 6. Records of *Theatops spinicaudus* in Arkansas. Symbols: dots = historic records; stars = new records.

Cryptops leucopodus (Rafinesque).— **Arkansas Co.**, Roth Prairie Natural Area (34.449777°N, 91.545682°W), 20 Jul. 2009, L. C. Thompson. **Prairie Co.**, Konecny Prairie Natural Area (34.627699°N, 91.582890°W), 8 Jun. 2009, L. C. Thompson. Although expected to range statewide (Shelley 2002), previous records of *C. leucopodus* have been reported from only 9 of 75 (12%) counties (Shelley 2002; McAllister et al. 2003, 2006) (Fig. 7). We document 2 new county records (Fig. 7); specimens were taken from pitfall traps in tallgrass prairie habitat of what remains of the Grand Prairie of eastern Arkansas (Mississippi Alluvial Plain).

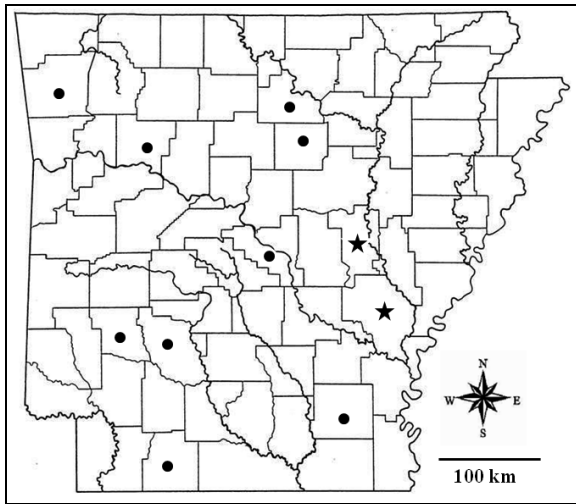


Figure 7. Records of *Cryptops leucopodus* in Arkansas. Symbols: dots = historic records; stars = new records.

In conclusion, we report several new county records for scolopendromorph centipedes in the state, including the first records for Crowley's Ridge and parts of the Grand Prairie. Interestingly, collections attempted at Railroad Prairie and Downs Prairie (both located off St. Hwy 70 between Hazen and DeValls Bluff in Prairie County) yielded no centipedes (including more commonly encountered geophilomorphs and lithobiomorphs); these sites are burned at irregular intervals while those where species of scolopendromorphs reported herein are not burned that often. Whether or not this is biologically relevant will have to await additional study. In addition, we did not find any cryptopid centipedes (*T. posticus*, *T. spinicaudus* or *C. leucopodus*) on Crowley's Ridge although Shelley (2002, his Figs. 154–155, 158) show their distribution to be statewide; however, there are still no records supported by genuine vouchers of these species from the ridge, *per se* (see McAllister et al. 2004, their Fig. 1, 2006, their Fig. 2).

Acknowledgments

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