

Journal of the Arkansas Academy of Science

Volume 57

Article 17

2003

Millipeds (Arthropoda: Diplopoda) of the Ark-La-Tex. III. Additional Records from Arkansas

Chris T. McAllister

Texas A&M University-Texarkana

Rowland M. Shelley

North Carolina State Museum of Natural Sciences

James T. McAllister III

Brookhaven College

Follow this and additional works at: <http://scholarworks.uark.edu/jaas>

 Part of the [Entomology Commons](#)

Recommended Citation

McAllister, Chris T.; Shelley, Rowland M.; and McAllister, James T. III (2003) "Millipeds (Arthropoda: Diplopoda) of the Ark-La-Tex. III. Additional Records from Arkansas," *Journal of the Arkansas Academy of Science*: Vol. 57 , Article 17.

Available at: <http://scholarworks.uark.edu/jaas/vol57/iss1/17>

This article is available for use under the Creative Commons license: Attribution-NoDerivatives 4.0 International (CC BY-ND 4.0). Users are able to read, download, copy, print, distribute, search, link to the full texts of these articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author.

This Article is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Journal of the Arkansas Academy of Science by an authorized editor of ScholarWorks@UARK. For more information, please contact scholar@uark.edu.

Millipeds (Arthropoda: Diplopoda) of The Ark-La-Tex. III. Additional Records From Arkansas

Chris T. McAllister*

Department of Biology
Texas A&M University-Texarkana
Texarkana, TX 75505

Rowland M. Shelley

Research Laboratory
North Carolina State Museum of Natural Sciences
4301 Reedy Creek Rd.
Raleigh, NC 27607

James T. McAllister, III

Brookhaven College
3939 Valley View Lane
Dallas, TX 75244

*Corresponding Author

Abstract

As part of an on-going effort by the second author (RMS) to elucidate the North American diplopod fauna, we collected millipeds in 14 Arkansas counties between April 2002 and October 2003. Additional information for these species is recorded from the holdings at the University of Arkansas Arthropod Museum along with unpublished records from other institutions in the second author's files. The following species were identified: *Abacion tessellatum*, *A. texense*, *Aliulus caddoensis*, *Apheloria virginiana* ?*reducta*, *Auturus evides*, *A. louisianus louisianus*, *Brachycybe lecontei*, *Brachyiulus lusitanus*, *B. pusillus*, *Cambala minor*, *Desmonus pudicus*, *Eurymerodesmus birdi birdi*, *E. polkensis*, *E. pulaski*, *E. serratus*, *Narceus americanus*, *Oriulus venustus*, *Oxidis gracilis*, *Pseudopolydesmus pinetorum*, *P. serratus*, and *Virgoiulus minutus*. A different and potentially new species of *Pseudopolydesmus* was collected in the entrance to Searcy Cave, Independence County. Three new state and 68 new county records are documented.

Introduction

This contribution is the third in a series of works on the Diplopoda of the Ark-La-Tex area in the southcentral United States. The first two (McAllister et al. 2002a, b) documented species occurring in western, central, and southern Arkansas, and eastern and southeastern Oklahoma. In addition, Shelley et al. (2003) provided a description of *Abacion wilhelminae* (Callipodida: Abacionidae), a new species from Rich Mountain, Polk County, Arkansas. Most recently, Shear (2003a, b) described three new species of chordeumatid millipeds in Arkansas. Prior to these reports, nearly 50 years had elapsed since the last such documentation for these states (Causey, 1955), which was primarily restricted to northwestern Arkansas and northeastern Oklahoma. There are also many reports that list species of millipeds inhabiting caves of Arkansas (McDaniel and Smith, 1976; Youngsteadt and Youngsteadt, 1978; McDaniel et al., 1979; Dunivan et al., 1982; Peck and Peck, 1982). Although a consolidated listing has never been prepared, these states harbor a speciose milliped fauna as evidenced by records in taxonomic papers and range descriptions in the latest continental checklist (Hoffman, 1999). Our work in the Ark-La-Tex is part of a larger effort by RMS to document the North American fauna as a whole, and we report here additional Arkansas localities for 22 species/subspecies.

Materials and Methods

Between April 2002 and October 2003, we collected

millipeds in 14 counties of northern, western, and southwestern Arkansas: Clark, Cleburne, Conway, Craighead, Faulkner, Garland, Independence, Little River, Montgomery, Polk, Pope, Pulaski, Stone, and Yell. Most were discovered in damp areas along trails in pine and hardwood forests by overturning decaying logs and leaf litter with potato rakes. A few specimens were uncovered by peeling bark from rotting logs and stumps. At each locality, specimens were placed in individually labeled vials containing 70% ethanol and returned to the laboratory for preliminary processing and sorting. They were then shipped to RMS and identified to the lowest taxonomic level, the most important features being aspects of the male genitalia (aperture and gonopods). Voucher specimens were deposited in the North Carolina State Museum of Natural Sciences (NCSM). Supplemental material exists in the holdings of the following repositories:

FMNH – Field Museum of Natural History, Chicago, Illinois,

FSCA – Florida State Collection of Arthropods, Gainesville, Florida,

MCZ – Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts,

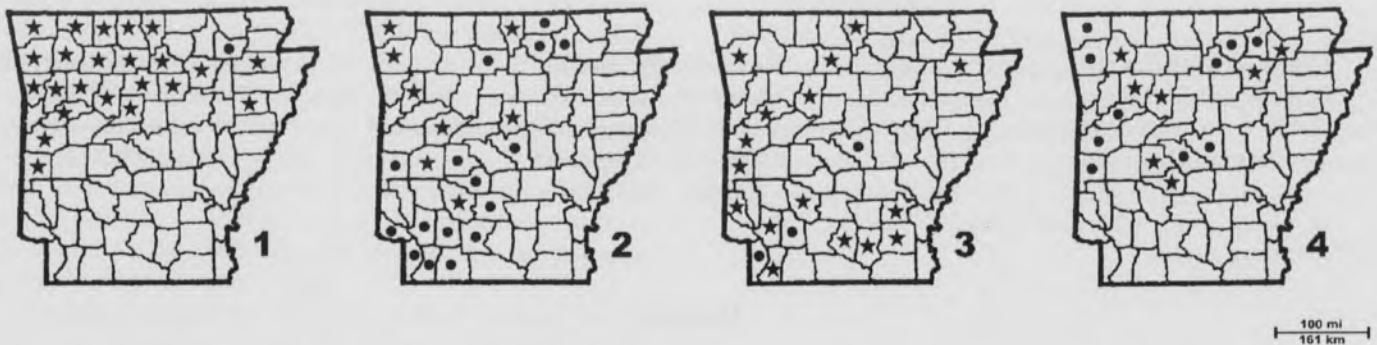
MEM – Mississippi Entomological Museum, Mississippi State University, Starkville, Mississippi,

MPM – Milwaukee Public Museum, Milwaukee, Wisconsin,

NMNH – National Museum of Natural History, Smithsonian Institution, Washington, DC,

OKSU – Emerson Entomological Museum, Oklahoma State University, Stillwater, Oklahoma,

Millipeds (Arthropoda: Diplopoda) of The Ark-La-Tex. III. Additional Records From Arkansas



Figs. 1-4. Distributions of four millipede taxa in counties of Arkansas. 1. *Apheloria virginiensis* ? *reducta*. 2. *Pseudopolydesmus pinetorum*. 3. *Virgoiulus minutus*. 4. *Brachycybe lecontei*. Stars = new records. Dots = previous records.

UAAM – University of Arkansas Arthropod Museum, Fayetteville, and Arkansas,

UCO – University of Colorado Museum, Boulder, Colorado.

Results and Discussion

Distributional information is reported for 22 millipede species and subspecies, representing 13 genera, 13 families, and six orders, including a potentially new species of *Pseudopolydesmus*. Sixteen counties are cited for *Virgoiulus minutus* (Brandt, 1841), 15 of which are from samples in the FSCA and UAAM. The species collected and examined are listed below along with pertinent distributional information. Missing locality data was not provided on vial labels, and specimens collected by the first and third authors are indicated by the initials CTM and JTM, respectively. Arkansas county distribution maps are provided for some poorly documented species (Figs. 1-4).

List of Species

Order Polydesmida, Family Xystodesmidae

Apheloria virginiensis ? *reducta* Chamberlin, 1939. Baxter Co., juv., September 1977 (UAAM); and Lake Norfolk, ♂, 2 September 1952 (FSCA) (new county record). Benton Co., juv., 23 March and 23 September 1990, D. Pope, Perona (UAAM) (new county record). Boone Co., 2 juvs., 12 March 1990 (UAAM) (new county record). Carroll Co., Lake Leatherwood, 2♀, 21 November 1950 (FSCA) (new county record). Cleburne Co., Big Creek Natural Area E of Wilburn, ♂, 6 June 1978, D. M. Johnson (NCSM); and 9.6 km SSW Drasco, ♂, juv., 20 March 1979, D. Hildebrandt, M. Plonczynski (MPM) (new county record). Conway Co., 8.0 km N St. Vincent, off AR Hwy 95, ♀, 24 June 2002, CTM

(NCSM) (new county record). Craighead Co., 18 March 1990, D. Mason (UAAM); and Jonesboro, ♂♂, ♀♀, 17 March 1962, N. B. Causey, and ♂♂, ♀♀, 30 October 1966, M. Hite (FSCA) (new county record). Crawford Co., 4.8 km SW Rudy, 2♂, 3 April 1969, O. Sanders (FSCA) (new county record). Cross Co., 19.2 km N Levesque, ♂♂, ♀♀, 18 April 1957, N. B. Causey (FSCA); and 8 km N Scottsville, ♀, 6 February 1955 (FSCA) (new county record). Franklin Co., Ft. Douglas, Hurricane Cr., 2♂, 12 April 1964, P. Porter (FSCA) (new county record). Independence Co., 2.1 km W Cushman, ♂, 5 March 1973, R. M. Blaney (FSCA) (new county record). Johnson Co., 22 April 1977, R. Mays (UAAM); and nr. Yale, ♀, 17 August 1981, D. C. Arnold (OKSU) (new county record). Logan Co., Mount Magazine, ♂, ♀, 28 October 1950 (FSCA) and 16 June 1990 (UAAM); and Cove Lake, ♂, 14-20 May 1989, T. L. Schiefer, Porter (MEM) (new county record). Madison Co., Combs, ♂, April 1953 (FSCA) (new county record). Marion Co., 14 October 1990 (UAAM) (new county record). Newton Co., ♂, ♀, 25 August 1950, N. B. Causey (FSCA) (new county record). Polk Co., Rich Mountain, 4♀, 7 September 1950 (FSCA) (new county record). Pope Co., 9.7 km N Hector, off AR Hwy. 27, 2♂, 3♀, 24 June 2002, CTM (NCSM) (new county record). Scott Co., 6.4 km W “Y” City, ♀, 24 October 1963, L. Hubricht (NCSM) (new county record). Searcy Co., ♂, 24 August 1950, N. B. Causey (FSCA) (new county record). Stone Co., vic. Fifty-six, off AR Hwy. 14, ♂, 1 July 2002, CTM (NCSM) (new county record). Van Buren Co., Clinton, ♂, 16 August 1960, M. Ferguson (MCZ) (new county record). Washington Co., Lake Weddington Preserve, ♀, 11 August 1956, N. B. Causey (FSCA); and Prairie Grove, ♂, 3♀, M. Hite (FSCA) (new county record). The type locality of *A. reducta* is Imboden, Lawrence County, Arkansas, in the foothills of the Ozark

Chris T. McAllister, Rowland M. Shelley, and James T. McAllister, III

Mountains (Chamberlin, 1939). Hoffman (1999) reduced *reducta* to subspecific status under *A. virginensis*, the most widely ranging species in the genus. This species ranges from the vicinities of Milwaukee, Wisconsin, and Montreal, Quebec, to southern Virginia and Kentucky and southeastern Oklahoma (Hoffman, 1999; McAllister et al., 2002b; unpublished specimens collected and examined by the second author). We provisionally assign our specimens to this subspecies pending completion of a generic revision. *Apheloria virginensis reducta* is now known from 24 of 75 (32%) Arkansas counties (Fig. 1) and appears to be relatively common in the well collected mountainous northern and western parts of the state; the southernmost record is that from McCurtain County, Oklahoma (see McAllister et al., 2002b). Investigations are needed in the coastal plain of southern and southeastern Arkansas to determine whether this colorful milliped also occurs in that corner of the state.

Family Euryuridae

Auturus evides (Bollman, 1887). Cleburne Co., 3.7 km W Concord at Wolf Bayou Cutoff on county rd. 90, ♂, 19 April 2002, M. McCallum (NCSM). Shelley (1982) previously reported *A. evides* from Cleburne County and 14 additional Arkansas counties, mostly in the northern part of the state in the Ozarks. In addition, McAllister (2002b) reported the species from three localities in Little Rock, Pulaski County, south of the Arkansas River.

Auturus louisianus louisianus (Chamberlin, 1918). Polk Co., Shady Lane Rec. Area, ♂♂, 18 June 1953, D. Dowling (NCSM); and 1.6 km N Mena, off AR Hwy. 88, ♂, 24 December 2002, CTM, JTM (NCSM). This milliped occurs exclusively south of the Arkansas River (Shelley, 1982), and the latter specimen was taken from the East End Visitor Information Station trail in pine and oak forest. McAllister et al. (2002b) previously reported this subspecies from Polk Co., and Shelley (1982) revised the genus and summarized locality records for Arkansas.

Family Eurymerodesmidae

Eurymerodesmus birdi birdi Chamberlin, 1931. Madison Co., 3.2 km N Crosses, ♂, 7 March 1953, R. S. Chase (FSCA) (new county record). Polk Co., vic. Big Fork at Ouachita Mountains Biological Station, ♂, 21 April 2002, CTM (NCSM); Pioneer Cemetery, vic. Queen Wilhelmina State Park off AR St. Hwy. 88, ♂, ♀, 11 June 2002, CTM (NCSM); and 1.6 km N Mena, East End Visitor Center Interpretative trail, off AR St. Hwy. 88, ♂, 24 December 2002, CTM, JTM (NCSM). Yell County, Mt. Nebo State Park near summit of Mt. Nebo, ♂, 6 May 1961, M. Hite (FSCA) (new county record). In Arkansas, *E. b. birdi* is known only from western counties, as Shelley (1990)

recorded it from Benton, Carroll, Logan, Polk, Pope, and Washington counties. It also occurs in southwestern Missouri and into central and eastern Louisiana. These records suggest potential occurrence in southern and southeastern Arkansas, which is still relatively uninvestigated.

Eurymerodesmus polkensis (Causey, 1952). Yell Co., Sunlight Bay Park, Lake Nimrod, 3.2 km S Plainview, ♂, ♀, 4 juvs., 24 December 2002, CTM, JTM (NCSM) (new county record). This species was previously known only from Montgomery, Polk, and Scott counties, Arkansas (Shelley, 1990). Its discovery to the northeast in adjacent Yell County suggests widespread occurrence in the west-central part of the state.

Eurymerodesmus pulaski (Causey, 1950). Pulaski Co., Little Rock, University of Arkansas at Little Rock campus, ♂, 5 April 2002, M. McCallum (NCSM); and w. Little Rock, off Asher Avenue, Rosedale Addition, 4200 Gilman St., 2 ♂, 12 December 2002 and 1 February 2003, CTM (NCSM). This milliped is still known only from Pulaski County, Arkansas (Shelley, 1990; McAllister et al., 2002b).

Eurymerodesmus serratus (Shelley, 1990). Faulkner Co., 1.6 km N Cato, off AR St. Hwy. 89 on Cato Road at Cato Apostolic Jesus Name Church, ♂, 25 December 2002; and Woolly Hollow State Park, 11.3 km NE Greenbrier, off AR St. Hwy. 285, ♂, 25 December 2002, CTM, JTM (NCSM) (new county record). The latter locality is about 40 km N of the type locality, Cato, just south of the Faulkner County line in Pulaski County (Shelley, 1990).

Family Paradoxosomatidae

Oxidus gracilis (C. L. Koch, 1847). Miller Co., Doddridge, ♂♂, 6 April 2002 and 4 October 2002, N. Solley (NCSM). Stone Co., Fifty-six, Rowland Cave, ♂♂, ♀♀, juvs., 1 July 2003, CTM (NCSM). Thousands of this commonly introduced species were observed near the entrance of this Ozarkian cave and fewer numbers were seen on cave walls into the twilight zone. However, none were found in the dark zone of the cave.

Family Polydesmidae

Pseudopolydesmus sp. Independence Co., entrance to Searcy Cave, 9.6 km N Batesville off AR St. Hwy. 167, ♂♂, 1 July 2002 and 30 June 2003, CTM (NCSM). These narrow, small-bodied males are distinct from other species known from Arkansas, particularly *P. pinetorum*, which is widespread and larger-bodied. Judging from aspects of the gonopods, they appear to represent a new species, but there are seven nominal species in Louisiana, Arkansas, and Missouri whose identities are uncertain, and perhaps one of these names applies. While *Pseudopolydesmus* has not been revised, the species occurring primarily east of the Mississippi River have

Millipeds (Arthropoda: Diplopoda) of The Ark-La-Tex. III. Additional Records From Arkansas

been defined in faunal studies (Shelley, 1978, 1988; Hoffman, 1974, 1999). Species occurring to the west of this watercourse are still poorly known, and modern drawings of the diagnostic features are not available. This genus needs comprehensive review, and lacking such, our determination of a new species is provisional.

Pseudopolydesmus pinetorum (Bollman, 1888). Baxter Co., nr. Henderson, ♂, 14 May 1982, P. R. Miller (MEM) (new county record). Benton Co., Siloam Springs, 4 ♂, 3 ♀, 9 April 1955, Hastings (FSCA) (new county record). Clark Co., 5.1 km NW Caddo Valley off AR Hwy 283, ♂, ♀, 26 October 2003, CTM (NCSM) (new county record). Craighead Co., Jonesboro, ♂, 17 March 2002, S. E. Trauth (NCSM) (new county record). Faulkner Co., Woolly Hollow State Park, 11.3 km NE Greenbrier, off AR Hwy 285, ♂, ♀, CTM, JTM (NCSM) (new county record). Franklin Co., White Rock Mtn., ♂, 23 June 1944 (NMNH) (new county record). Garland Co., Hot Springs, ♂♂, ♀♀ (NMNH); and Charleton Recreation Area, off US 270, ♂, ♀, 11 June 2002, CTM (NCSM). Independence Co., 2.1 km W Cushman, Cushman (Blowing) Cave, ♂, 30 June 2003, CTM (NCSM). Montgomery Co., ♂, 31 March-8 April 1956, S. Finkelstein (FSCA); Camp Albert, 16 km NW Langley, ♂, ♀, 1979, H. W. Robison (NCSM); Mount Ida, ♂, 28 May 2003, CTM & JTM (NCSM) (new county record). Polk Co., 8 km N Scottsville, ♂, 6 February 1955, B. Owen (FSCA). Pulaski Co., Little Rock, 4200 Gilman Street, ♂, 8 March 2003, CTM (NCSM) and Little Rock, ♂♂, ♀♀, Hutcherson (NMNH). Washington Co., Lake Weddington, ♂, 1 May 1956, N. B. Causey (FSCA); Cove Creek Valley, 6♂, 7♀, 9 January 1956, M. Hite (FSCA); Johnson, ♂, 1957 (FSCA); and Carhoerker Cave, 2♂, (NMNH) (new county record). Yell Co., Sunlight Bay Park, Lake Nimrod, vic. Plainview, ♂, ♀, 24 December 2002, CTM, JTM (NCSM) (new county record). *Pseudopolydesmus pinetorum* is the most common polydesmid in woodlands west of the Mississippi River and has been reported previously from Columbia, Dallas, Garland, Hempstead, Hot Spring, Lafayette, Little River, Miller, Nevada, Ouachita, Polk, and Pulaski counties (Fig. 2) (Causey, 1955; McAllister et al., 2002a, b); the type locality is Little Rock, Pulaski County (Bollman, 1888). The species is also known from Arkansas cave sites, including Richardson Cave (Fulton Co.), Clay Cave (Izard Co.), Davis Pit (Searcy Co.), and Center Cave (Sharp Co.) (McDaniel and Smith, 1976; Youngsteadt and Youngsteadt, 1978; Dunivan et al., 1982).

Pseudopolydesmus serratus (Say, 1821). Pulaski Co., w. Little Rock, off Asher Ave., 4200 Gilman Street, 2♂, 1 February 2003, CTM (NCSM) (new state record). The most common species east of the Mississippi River and

particularly along the east coast, *P. serratus* occurs sporadically to the west; this is the first record from Arkansas.

Family Sphaeriodesmidae

Desmonus pudicus (Bollman, 1888). Hempstead Co., 2 juvs., 25 April 1977, R. T. Allen (UAAM) (new county record). Pulaski Co., Pinnacle Mountain State Park, ♀, 25 January 1988, R. T. Allen (UAAM). Washington Co., Fayetteville, Mt. Sequoyah, ♂, 6 October 1949, N. B. Causey (FSCA). *Desmonus pudicus* is well known from Pulaski County, as Little Rock is its type locality (Bollman, 1888). In Arkansas, it is known also from Benton, Carroll, Clark, Columbia, Conway, Johnson, Newton, Pike, Polk, Sebastian, Sevier, and Washington counties (Causey, 1958; Shelley, 2000). Even though Hempstead is a new county record for *D. pudicus* in Arkansas, its discovery there is consistent with the overall distribution, which extends southward through Texas into Nuevo Leon, Mexico.

Order Spirostreptida, Family Cambalidae

Cambala minor Bollman, 1888. Lawrence Co., Imboden, ♂, ♀, Fall 1930, B. C. Marshall (NMNH) (new county record). Little River Co., Wilton off US Hwy. 71, ♂, 22 March 2003, A. R. Shoemaker (NMNH) (new county record). Polk Co., Ouachita trail off AR St. Hwy. 88, ♂, 4♀, 2 juvs., 9 November 2002, CTM (NCSM). Previous Arkansas records for this cool weather species span the length and breadth of the state and include sites in Benton, Clay, Columbia, Garland, Howard, Nevada, Ouachita, Polk, Pulaski, Randolph, Stone (Roasting Ear Cave), Union, and Washington counties (McDaniel and Smith, 1976; Shelley 1979; McAllister et al., 2002a, b). Thus, *Cambala minor* occurs statewide in Arkansas.

Order Callipodida, Family Abacionidae

Abacion tessellatum Rafinesque, 1820. Cleburne Co., 3.7 km W Concord at Wolf Bayou Cutoff on county rd. 90, ♂, 19 April 2002, M. McCallum (NCSM). Shelley (1984, Fig. 12) previously reported the species from Benton, Cleburne, Cross, Jefferson, Polk, Stone, and Washington counties, Arkansas.

Abacion texense (Loomis, 1937). Conway Co., 8.0 km N St. Vincent, off AR Hwy 95, ♂, ♀, 24 June 2002, CTM (NCSM) (new county record). This site is the farthest east in Arkansas that *A. texense* has been reported from previously. On distribution maps, Shelley (1984) and Shelley et al. (2003) depicted its occurrence in Clark, Franklin, Hempstead, Madison, Montgomery, Newton, Pike, Saline, Scott, and Washington counties, and McAllister et al. (2002a) added a record from Miller County. *Abacion texense* also occurs in northeastern and central Mississippi (Shelley, 1984), so it should be expected in southeastern Arkansas.

Order Julida, Family Julidae

Chris T. McAllister, Rowland M. Shelley, and James T. McAllister, III

Brachyiulus pusillus (Leach, 1815). Pulaski Co., w. Little Rock, Rosedale Edition, off Asher Ave., 4200 Gilman Street, 2 ♂, ♀, 1 February 2003, CTM (NCSM) (new state record). This species is native to western Europe and offshore islands and has been introduced into Easter Island, St. Helena, Argentina, and South Africa (Blower, 1985; Hoffman, 1999). In North America it has been recorded from New York, Ohio, and four provinces of Canada: Newfoundland, Nova Scotia, Quebec, and Ontario (Bailey 1928; Williams and Hefner, 1928; Shelley, 1988, 2002), but some of these records may represent misidentifications of *B. lusitanus* Verhoeff, 1898 (Hoffman, 1999).

Brachyiulus lusitanus Verhoeff, 1898. Pulaski Co., w. Little Rock, Rosedale Edition, off Asher Ave., 4200 Gilman Street, ♂, 8 March 2003, CTM (NCSM). Sevier Co., Horatio, ♂, 11 April 1955, D. N. Griffin (FSCA) (new state record). With the most recent discovery of *B. lusitanus* in Pulaski County, and the older sample in the FSCA, Arkansas becomes the first state in which both species of *Brachyiulus* have been documented.

Family Parajulidae

Aliulus caddoensis Causey, 1950. Polk Co., Queen Wilhelmina State Park off AR St. Hwy 88, ♂, 12 September 2002, CTM, J. Kessler (NCSM). The type locality is an unspecified site in Caddo County, Oklahoma, west of Oklahoma City, but *A. caddoensis* has been previously reported from Dallas, Howard, Pike, Polk, and Sebastian counties, Arkansas (Causey, 1950, 1953), so the species occurs over a 400 km distance in both mixed prairie and forested/mountainous ecosystems. There is very little anatomical difference between *A. caddoensis* and *A. carrollus* (Causey, 1950), which occurs to the north in Benton, Carroll, Searcy, and Washington counties (Hoffman, 1999), and the two names may be synonymous, with *A. carrollus* being the type species and holding taxonomic priority. The second author is evaluating these and other names as part of a summary paper on the tribe Aniulini.

Oriulus venustus (Wood, 1864). Craighead Co., Jonesboro, ♂, 12 March 2001, S. E. Trauth (NCSM) (new county record). Shelley (2002) reported *O. venustus* from Baxter, Benton, Clay, Drew, Monroe, Pulaski, and Washington counties, so it occurs throughout Arkansas except for the southwest corner.

Family Blaniulidae

Virgiolus minutus (Brandt, 1841). Baxter Co., 2 ♀, September 1977 (UAAM). Bradley Co., ♀, 14 December 1964 (FSCA) and 2.4 km S Warren, 11 August 1977, juv., R. Chenowith (UAAM). Calhoun Co., 10.0 km E Hampton, ♀, juv., 19 February 1977, R. Chenowith (UAAM). Clark Co., 3 juvs., 14 April 1977, R. T. Allen (UAAM). Craighead Co., juv., 1 September 1977

(UAAM). Drew Co., juv., 10 August 1977 (UAAM). Hempstead Co., 5 juvs., 25 February 1977 (UAAM). Lafayette Co., juv., 25 February 1977 (UAAM). Lincoln Co., 1.4 km E Cleveland Co., line off St. Hwy 11, 4 juvs., 19 February 1977, R. Chenowith (UAAM). Logan Co., Mount Magazine, sinkhole, juv., 24 July 1990, B. Leary (UAAM). Nevada Co., juv., 25 February 1977 (UAAM). Polk Co., juv., 13 April 1977, R. T. Allen (UAAM). Pope Co., 2.4 km N jct. St. Hwys 16 and 27, 4 juvs., 21 October 1977, R. Chenowith (UAAM). Pulaski Co., Little Rock, ♀, 16 March 1962, N. B. Causey (FSCA). Scott Co., juv., 9 December 1976 (UAAM). Searcy Co., juv., December 1976 (UAAM). Sevier Co., 4 juvs., 13 April 1970, R. T. Allen (UAAM). Washington Co., Cave Creek Valley, 2♀, January 1956 (FSCA), and Prairie Cove, AR Hwy. 1, 8♀, M. Hite (FSCA). In their studies of the Blaniulidae, Enghoff and Shelley (1979) and Enghoff (1984) only gave the states of occurrence without specific localities, as did Hoffman (1999) in his summary range statement. In Arkansas, *V. minutus* was previously known only from Pulaski (Bollman, 1888), Miller, and Nevada counties (McAllister et al., 2002b). We provide a county distribution for the species (Fig. 3). The other counties listed above, except for Nevada and Pulaski counties, constitute new county records.

Order Platydesmida, Family Andrognathidae

Brachycybe lecontei (Wood, 1864). Garland Co., 3.7 km SE Hot Springs, 27 August 1966 (FSCA), and off Brady Mtn. Rd. vic. Bear, 4 April 2002, CTM (NCSM) (new county record). Hot Spring Co., 32 km N Arkadelphia, along AR Hwy. 7, 24 July 1982, S. K. Wu (UCO) (new county record). Independence Co., Magness, Hutcherson (NMNH), and 4.8 km SE Sandtown at Searcy Cave, 24 April 1976, D. M. Johnson (new county record). Johnson Co., 8 km N Clarksville, Kings Canyon, 26 April 1936, L. Hubricht (NMNH), and 12.8 km N Clarksville, 29 May 1982, R. L. Brown (MEM) (new county record). Lawrence Co., Imboden, 23 April 1936, B. C. Marshall (NMNH), and Ravenden, B. C. Marshall (NMNH) (new county record). Madison Co., 26 May 1985, Blackwood (OKSU) (new county record). Polk Co., Rich Mtn., 26 April 1936, L. Hubricht (NMNH), Mena, January 1956, A. L. McMillan (FSCA), and 1.6 km N Mena off St. Hwy. 88, Visitor Center, 13 August 2003, CTM (NCSM). Pope Co., 9.7 km N Hector off AR Hwy 27, 24 June 2002, CTM (NCSM) (new county record). Pulaski Co., Little Rock, C. F. Baker (NMNH). Previous county records reported for *B. lecontei* include Benton, Icard, Logan, Polk, Pulaski, Saline, Scott, Sharp (Center Cave #2), Stone, and Washington counties (Gardner, 1975; McDaniel and Smith, 1976; McAllister et al., 2002b), indicating that the species occurs from northwestern and west-

Millipeds (Arthropoda: Diplopoda) of The Ark-La-Tex. III. Additional Records From Arkansas

central Arkansas to central and northeastern Arkansas (Fig. 4). We did not record sexes because this milliped is the only representative of the Platydesmida in the state that can be authentically identified with either gender and/or with juveniles.

Order Spirobolida, Family Spirobolidae

Narceus americanus (Beauvois, 1805). Garland Co., Brady Mtn. Campground, Lake Ouachita, ♂, 4 April 2002, CTM (FMNH); and 4.8 km W Crystal Springs at Charlton Recreation Area off US Hwy. 270, ♂, 11 June 2002, CTM (NCSM) (new county record). Little River Co., Wilton off US Hwy. 71, juv., 22 March 2003, A. R. Shoemake (NCSM) (new county record). Pope Co., 9.7 km N Hector off AR St. Hwy. 27, ♀, 24 June 2002, CTM (NCSM) (new county record). Keeton (1960) recorded *N. americanus* from Faulkner, Hempstead, Lawrence, Logan, Montgomery, Pulaski, Saline, and Yell counties, and McDaniel and Smith (1976) reported the species from the twilight zone of Cushman Cave (Independence Co). McAllister et al. (2002a) reported it from Ouachita County and noted the relative rarity of specimens from west of the Mississippi River, but this milliped is nevertheless expected statewide in Arkansas.

ACKNOWLEDGMENTS.—We thank the Arkansas Game and Fish Commission for scientific collecting permit #1480 and State Park personnel for helpful assistance. We also thank M. McCallum (LSU-Shreveport), A. Shoemake (TAMU-T), N. Solley (TAMU-T), and S. E. Trauth (Arkansas State Univ.) for providing milliped specimens, H. W. Robison (Southern Arkansas Univ.) for donating a sample of *P. pinetorum* to the NCSM, and W. Wilkes for allowing CTM access to Searcy Cave. The following curators and collection managers loaned specimens from the indicated collections to the second author: FSCA, G. B. Edwards; MEM, T. L. Schieffer; MPM, J. P. Jass; NMNH, J. A. Coddington; OKSU, D. C. Arnold; UAAM, J. K. Barnes; and UCO, S. K. Wu. This study was supported by a TAMU-T Faculty Senate Enrichment Grant #200900 to CTM.

Literature Cited

- Bailey, J. W.** 1928. The Chilopoda of New York state with notes on the Diplopoda. Bull. New York State Mus. No. 276:1-50.
- Blower, J. G.** 1985. *Millipedes. Keys and notes for the identification of the species.* E. J. Brill, London. 242 pp.
- Bollman, C. H.** 1888. A preliminary list of the myriapods of Arkansas, with descriptions of new species. Entomol. Amer. 4:1-8.
- Casey, N. B.** 1950. New genera and species of millipeds-Paraiulidae (Juloidea). Proc. Arkansas Acad. Sci. 3:45-58.
- Casey, N. B.** 1953. On five new North American millipeds and records of some established species. Amer. Midl. Nat. 50:152-158.
- Casey, N. B.** 1955. New records and descriptions of polydesmoid millipeds (Order Polydesmida) from the eastern United States. Proc. Biol. Soc. Washington 68:21-30.
- Casey, N. B.** 1958. Pill millipeds (Desmonidae, Polydesmida) in the United States. Proc. Biol. Soc. Washington 71:173-178.
- Chamberlin, R. V.** 1939. On some diplopods of the family Fontariidae. Bull. Univ. Utah 30 (2) [Biol. Ser., 5 (3)]:1-19.
- Dunivan, J. D., C. R. Tumilson, and V. R. McDaniel.** 1982. Cave fauna of Arkansas: further records. Proc. Arkansas Acad. Sci. 36:87-88.
- Enghoff, H.** 1984. A revision of the Nopoiulinae, with notes on the classification of blaniulid millipedes (Diplopoda: Julida: Blaniulidae). Senck. biol. 64:393-427.
- Enghoff, H., and R. M. Shelley.** 1979. A revision of the millipede genus *Nopoiulus* (Diplopoda, Julida: Blaniulidae). Ent. Scand. 10:65-72.
- Gardner, M. R.** 1975. Revision of the millipede family Andrognathidae in the nearctic region (Diplopoda: Platydesmida). Mem. Pacific Coast Entomol. Soc. 5:31-53.
- Hoffman, R. L.** 1974. A new polydesmid milliped from the southern Appalachians, with remarks of the status of *Dixidesmus* and a proposed terminology for polydesmid gonopods. Proc. Biol. Soc. Washington 87:345-350.
- Hoffman, R. L.** 1999. Checklist of the millipeds of North and Middle America. Virginia Mus. Nat. Hist. Spec. Pub. No. 8:1-584.
- Keeton, W. T.** 1960. A taxonomic study of the milliped family Spirobolidae (Diplopoda: Spirobolida). Mem. American Entomol. Soc. No. 17:1-146.
- McAllister, C. T., C. S. Harris, R. M. Shelley, and J. T. McAllister, III.** 2002a. Millipeds (Arthropoda: Diplopoda) of the Ark-La-Tex. I. New distributional and state records for seven counties of the West Gulf Coastal Plain of Arkansas. J. Arkansas Acad. Sci. 56:91-94.
- McAllister, C. T., R. M. Shelley, and J. T. McAllister, III.** 2002b. Millipeds (Arthropoda: Diplopoda) of the Ark-La-Tex. II. Distributional records for some species of western and central Arkansas and eastern and southeastern Oklahoma. J. Arkansas Acad. Sci. 56:95-98.
- McDaniel, V. R., and K. L. Smith.** 1976. Cave fauna of Arkansas: selected invertebrate taxa. Proc. Arkansas Acad. Sci. 30:57-60.
- McDaniel, V. R., K. N. Paige, and C. R. Tumilson.** 1979. Cave fauna of Arkansas: additional invertebrate and vertebrate records. Proc. Arkansas Acad. Sci. 33:84-85.
- Peck, S. B., and J. H. Peck.** 1982. Invertebrate fauna of Devils Den, a sandstone cave in northwestern Arkansas. Proc. Arkansas Acad. Sci. 36:46-48.

Chris T. McAllister, Rowland M. Shelley, and James T. McAllister, III

- Shear, W. A.** 2003a. *Branneria bonoculus*, n. sp., a second species in the North American milliped family Branneriidae (Diplopoda: Chordeumatida: Brannerioidea). *Zootaxa* 233:1-7.
- Shear, W. A.** 2003b. The milliped family Trichopetalidae, Part 1: Introduction and genera *Trigenotyla* Causey, *Nannopetalum* n. gen., and *Causeyella* n. gen. (Diplopoda: Chordeumatida, Cleidogonoidea). *Zootaxa* 321:1-36.
- Shelley, R. M.** 1978. Millipeds of the eastern Piedmont region of North Carolina, U.S.A. (Diplopoda). *J. Nat. Hist.* 12:37-79.
- Shelley, R. M.** 1979. A synopsis of the milliped genus *Cambala*, with a description of *C. minor* Bollman (Spirostreptida: Cambalidae). *Proc. Biol. Soc. Washington* 92:551-571.
- Shelley, R. M.** 1982. Revision of the milliped genus *Auturus* (Polydesmida: Platyrhacidae). *Canadian J. Zool.* 60:3249-3267.
- Shelley, R. M.** 1984. A synopsis of the milliped genus *Abacion* Rafinesque (Callipodida: Caspiopetalidae). *Canadian J. Zool.* 62:980-988.
- Shelley, R. M.** 1988. The millipeds of eastern Canada (Arthropoda: Diplopoda). *Canadian J. Zool.*, 66:1638-1663.
- Shelley, R. M.** 1990. Revision of the milliped family Eurymerodesmidae (Polydesmida: Chelodesmidea). *Mem. Amer. Ent. Soc.* 37:1-112.
- Shelley, R. M.** 2000. Revision of the milliped subfamily Desmoninae (Polydesmida: Sphaeriodesmidae). *Myriapodologica* 6:27-54.
- Shelley, R. M.** 2002. The millipedes of central Canada (Arthropoda: Diplopoda), with reviews of the Canadian fauna and diplopod faunistic studies. *Can. J. Zool.*, 80:1863-1875.
- Shelley, R. M., C. T. McAllister, and J. L. Hollis.** 2003. A new milliped of the genus *Abacion* Rafinesque, 1820 from Arkansas, U.S.A. (Callipodida: Abacionidae). *Zootaxa* 170:1-7.
- Williams, S. R., and R. A. Hefner.** 1928. The millipedes and centipedes of Ohio. *Ohio Biol. Surv. Bull.* 18:92-146.
- Youngsteadt, N. W., and J. O. Youngsteadt.** 1978. A survey of some cave invertebrates from northern Arkansas. *Arkansas Cave Stud.* 1:1-13.