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Millipeds from the eastern Dakotas and western Minnesota, USA, with an account of *Pseudopolydesmus serratus* (Say, 1821) (Polydesmida: Polydesmidae); first published records from six states and the District of Columbia

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Abstract. The diplopod orders Callipodida and Polydesmida, and their respective families Abacionidae and Xystodesmidae, are initially recorded from South Dakota as is Polydesmidae from North Dakota. Other new records of indigenous taxa include *Abacion* Rafinesque, 1820/*A. texense* (Loomis, 1937) and *Pleuroloma*/*P. flavipes*, both by Rafinesque, 1820, from South Dakota, and *Pseudopolydesmus* Attems, 1898/*P. serratus* (Say, 1821) from Alabama, Connecticut, Delaware, New Hampshire, North Dakota, South Carolina, and the District of Columbia. New records of *Aniulus garius* Chamberlin, 1912, *A.* (*Hakiulus*) *d. diversifrons* (Wood, 1867), and *Oriulus venustus* (Wood, 1864) (Julida: Parajulidae) are provided for western Minnesota and/or eastern North Dakota. Published records from these states are summarized, and the introduced taxa, Julidae/*Cylindroiulus* Verhoeff, 1894/*C. caeruleocinctus* (Wood, 1864) and Paradoxosomatidae/*Oxidus* Cook, 1911/*O. gracilis* (C. L. Koch, 1847), are newly recorded from the Dakotas. The distribution of *P. serratus*, which extends from Maine to South Carolina and the Florida panhandle, west to Texas, and north to Fargo, North Dakota is described and discussed. This distribution exhibits a prominent southeastern lacuna which we hypothesize suggests replacement by younger, more successful species, as postulated for a similar distributional gap in *Scytonotus granulatus* (Say, 1821).

Keywords. Cass County, diplopod, distribution, Fargo, lacuna, North Dakota, South Dakota, Plains, *Pleuroloma flavipes*.

Introduction

The most poorly known diplopod faunas in the 50 United States (US/USA), including Alaska and Hawaii, are those of North and South Dakota. Aside from the forested Black Hills in southwestern South Dakota, no investigations have been conducted in these states, so records from other regions represent incidental samples taken by non-specialists. The states' locations in the northern Plains, with predominantly grassland ecosystems, dry, hot summers, and harsh winters, militate against diverse, indigenous faunas because millipeds primarily inhabit moist deciduous leaf litter in warmer climates. Based on known distributions, little besides the Parajulidae (order Julida) is anticipated in most of the Dakotas, and the three widespread representatives of Aniulini [*Aniulus garius* Chamberlin, 1912; *A.* (*Hakiulus*) *d. diversifrons* (Wood, 1867); and *Oriulus venustus* (Wood, 1864)] plus the subboreal *Underwoodia iuloides* (Harger, 1872) (Chordeumatida: Caseyidae) are either known from, or expected in, one or both states (Gardner and Shelley 1989; Hoffman 1999; Shelley 1993, 2000a, 2001a, 2002a; McAllister et al. 2009). RMS and associates have investigated the Black Hills and found a depauperate fauna despite favorable habitat, but the states' eastern and southeastern peripheries, particularly that of South Dakota, contain a number of rivers and forested patches that conceivably harbor additional taxa. The occurrence of *Pleuroloma flavipes* Rafinesque, 1820 (Polydesmida: Xystodesmidae) near Fargo, Cass

County (Co.), North Dakota (Shelley 1980, Hoffman 1999, Shelley et al. 2003), coupled with known localities of it and other species in adjoining parts of Iowa, Minnesota, and Nebraska, suggest that targeted sampling in the eastern Dakotas could yield additional orders and families. Polydesmida, the largest and most speciose diplopod order, is unknown from South Dakota, but *P. flavipes* surely inhabits the eastern periphery (Shelley 1980, Shelley et al. 2003) and the moist southeastern corner, which extends between the Missouri and Big Sioux rivers. This region logically also harbors *Apheloria virginiensis* (Drury, 1770) (Polydesmida: Xystodesmidae) as well as *Narceus americanus* (Beauvois, 1817) (Spirobolida: Spirobolidae) and *Abacion texense* (Loomis, 1937) (Callipodida: Abacionidae) (Shelley 1984, 1986; Shelley et al. 2006; Shelley and McAllister 2007; McAllister and Shelley 2010). Less likely, but still plausible, is *Eurymerodesmus mundus* Chamberlin, 1931 (Polydesmida: Eurymerodesmidae), occurring in adjacent northeastern Nebraska. Shelley (1990) thought the family was probably absent from South Dakota because it is unknown north of the Missouri River anywhere, but rafting events could establish reproducing populations on the opposite sides of the watercourse.

We therefore hand sampled for chilognath millipeds in southeastern South Dakota in August 2011, and RMS investigated southeastern North Dakota and examined samples at NDSU (see ensuing codens), Fargo, which contained significant material from the Dakotas and neighboring western Minnesota. Flooding hampered field efforts in South Dakota and more collecting is needed, particularly in the extended southeastern corner, but from these activities, the few literature records from that region of the US, and repository samples examined by RMS, we record the following native and introduced millipeds from these states; occurrences of indigenous species other than parajulids are depicted in Fig. 1. Most Dakota samples come from the eastern fringes, east of highway I-29, and those from western Minnesota extend three tiers of counties eastward. The NDSU holdings contained a sample of the eastern polydesmid, *Pseudopolydesmus serratus* (Say, 1821), from Fargo, which constitutes astonishing generic and specific range extensions with the closest published record being Minneapolis (Bollman 1893, Withrow 1988), around 320 km (200 mi) to the southeast. We therefore include an account of this species and its overall range to document that a milliped on the Outer Banks of eastern North Carolina is also native to eastern North Dakota, some 2,086 km (1,310 mi) to the northwest.

Taxonomically, *Pseudopolydesmus* Attems, 1898, is the most poorly understood of the widely distributed eastern North American genera. Withrow (1988) revised it unofficially as part of his Ph. D. thesis at Ohio State University, and subsequent authors have avoided *Pseudopolydesmus* in deference to this study, although Hoffman (1999) had to address it in his continental checklist. Nearly a quarter-century later, Withrow's taxonomy is obsolete, so it is timely to begin meaningful contributions on this common genus in eastern woodlands. The discovery that *P. serratus* occurs as far north and west as Fargo renders its overall distribution germane to the present topic and an appropriate introduction to formal studies on this neglected taxon.

Materials and Methods

Missing data in the following records were not provided on vial labels. Individuals were counted but not sexed in some samples, in which cases numbers of individuals follow institutional codens; they were neither counted nor sexed when these were unnecessary for determinations. Repository codens are as follows; unless otherwise stated, all are in the US. Geographically plausible records of *P. serratus* in Withrow (1988) are accepted and, though unofficial, are cited by county under published records. • **AMNH**, American Museum of Natural History, New York, New York; **BMNH**, Natural History Museum, London, England; **BYU**, Monte L. Bean Life Science Museum, Brigham Young University, Provo, Utah; **CMNH**, Carnegie Museum, Pittsburgh, Pennsylvania; **CNC**, Canadian National Collection, Ottawa, Ontario, Canada; **FSCA**, Florida State Collection of Arthropods, Gainesville; **GSNP**, Great Smoky Mountains National Park Natural History Collection, Gatlinburg, Tennessee; **INHS**, Illinois Natural History Survey, University of Illinois, Champaign; **MCZ**, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; **MEM**, Mississippi Entomological Museum, Mississippi State University, Starkville; **MHNG**, Muséum d'Histoire Naturelle, Genève, Switzerland; **MNHN**, Muséum National d'Histoire Naturelle, Paris, France; **NCSM**, North Carolina State Museum of Natural Sciences, Raleigh; **NDSU**, Entomological Museum, North Dakota State University, Fargo; **PMNH**, Peabody Museum of

Natural History, Yale University, New Haven, Connecticut; **ROME**, Entomology Department, Royal Ontario Museum, Toronto, Ontario, Canada; **SIUC**, Southern Illinois University, Carbondale; **TMM**, Texas Memorial Museum, University of Texas, Austin; **UAIC**, University of Arizona Insect Collection, Tucson; **UCDC**, Bohart Entomological Museum, University of California at Davis; **UCMC**, University of Colorado Museum, Boulder; **UCMS**, University of Connecticut, Storrs; **ULKY**, University of Louisville, Kentucky; **UMRM**, University of Missouri, Columbia; **USNM**, United States National Museum of Natural History, Smithsonian Institution, Washington, DC; **VMNH**, Virginia Museum of Natural History, Martinsville; **WVDA**, West Virginia Department of Agriculture, Charleston; **ZSM**, Zoologische Staatsammlung, Munich, Germany.

Julida: Julidae

Cylindroiulus caeruleocinctus (Wood, 1864)

Published records. None.

New records. Minnesota: *Norman Co*., 7.2 km (4.5 mi) E. Borup, 12 September 1999, M. Dahl (NDSU-1).

North Dakota: *Cass Co*., Fargo, North Dakota State University campus (46° 53' 34" N, 96°48' 5" W), 31 August 1999, BW Poeches (NDSU-1), 8-9 September 1999, J. Grove, M. Grady (NDSU-4), 20 September 1999, J. Krel (NDSU-1). *Cavalier Co*., Munich, 23 September 1999, J. Bittner (NDSU-1). **New State Record for the Species, Genus, and Family.**

South Dakota: *Lincoln Co*., Newton Hills State Park (43° 13' 29" N, 96° 34' 51" W), 2FF, juvs., 7 August 2011, RM Shelley, BA Snyder (NCSM). *Minnehaha Co*., Palisades State Park (43° 41' 26" N, 96° 30' 58" W), 6FF, juvs., 8 August 2011, RM Shelley (NCSM). *Roberts Co*., 8 km (5 mi) N. Roshalt, 23 September 1999, DL Heitkamp (NDSU-1). **New State Record for the Species, Genus, and Family.**

Remarks. This native European species was the only introduced milliped we encountered in the field. While Palisades State Park, Minnehaha Co., is near Sioux Falls and allochthonous species typically predominate in urban areas, Newton Hills is isolated among farmland on the western side of the Big Sioux River; for an introduced species to be prominent in such a place is unusual. Somatic and gonopodal illustrations are available in Blower (1985).

Julida: Parajulidae

***Aniulus garius* (Chamberlin, 1912)**

Published Records. Minnesota: Minnesota in general (Causey 1952a). *Itasca Co*., Lake Itasca State Park (Shelley 2001a).

North Dakota: North Dakota in general (Causey 1952a, Chamberlin and Hoffman 1958, Kevan 1983, Hoffman 1999 [as *A. bollmani* Causey 1952a]). *Grand Forks Co*., Turtle River State Park (Causey 1950, Shelley 2001a, McAllister et al. 2009). *Richland Co*., H.R. Morgan Nature Preserve (=Mirror Pool) (McAllister et al. 2009).

South Dakota: *Lincoln Co*., Newton Hills State Park (McAllister et al. 2009).

New Record. North Dakota: *Cass Co*., Fargo, North Dakota State University campus, 6MM, 8-9 September 1999, JD Matson, S. Arta, PS Gunderson, M. Carlson (NDSU).

Remarks. Published illustrations are available in Causey (1952a [as *A. bollmani*]), Shelley (1988 [as *A. bollmani*], 2001a), and McAllister et al. (2009).

***Aniulus* (*Hakiulus*) *diversifrons diversifrons* (Wood, 1867)**

Published Records. Minnesota: Minnesota in general. *Polk Co*., 16 km (10 mi) E Grand Forks, ND. (Chamberlin and Hoffman 1958, Hoffman 1999, Shelley 2000a).

North Dakota: *Grand Forks Co*., Grand Forks, Arvilla, and Turtle River State Park (Shelley 2000a).

New Records. Minnesota: *Norman Co*., Agassiz Dunes Scientific and Natural Area (47° 29' 48" N, 96° 20' 7" W), oak savanna, M, F, 11 September 1998, PP Tinerella (NDSU).

North Dakota: *Cass Co.*, Kindred, Sheyenne R. at ND hwy. 46, 2MM, 6FF, 30 July 1986, S-K Wu (UCMC). *Cavalier Co.*, 9.6 km (6 mi) W Walhalla, Pembina R. at co. rd. 55, M, F, 31 July 1986, S-K Wu (UCMC).

Remarks. Gonopodal illustrations are available in Shelley (2000a).

***Oriulus venustus* (Wood, 1864)**

Published Records. Minnesota: *Clearwater Co.*, Itasca State Park (Shelley 2002a).

North Dakota: *Cass Co.*, Fargo (city and North Dakota State University campus); *Grand Forks Co.*, Arvilla, Grand Forks (city and University of North Dakota campus), Larimore, University of North Dakota Biology Area near Inkster. *Richland Co.*, H.R. Morgan Nature Preserve (=Mirror Pool). (Shelley 2002a, McAllister et al. 2009).

New Record. North Dakota: *Cass Co.*, Fargo, North Dakota State University campus, M, 7 September 1999, B. Kjörstad (NDSU).

Remarks. Gonopodal illustrations are available in Shelley (1988, 2001a [as *Aniulus carolinensis*], 2002a).

Spirobolida: Spirobolidae

***Narceus americanus* (Beauvois, 1817)**

Published Record. Minnesota: *Lyon Co.*, no further locality (Shelley et al. 2006).

New Records. None.

Remarks. Aside from this record, *Narceus* has never been reported from Minnesota, although localities in Wisconsin and Iowa (Keeton 1960; Watermolen 1995a, b; Shelley et al. 2006) indicate occurrence in the southeast along the Mississippi River. Shelley et al. (2006) thought that it might represent an allopatric population and suggested occurrence in the eastern fringe of South Dakota, which still seems plausible though we did not encounter the milliped. Gonopodal, cyphopodal, and somatic illustrations are available in Keeton (1960), Shelley (1978, 1988, 2002b), and Filka and Shelley (1980).

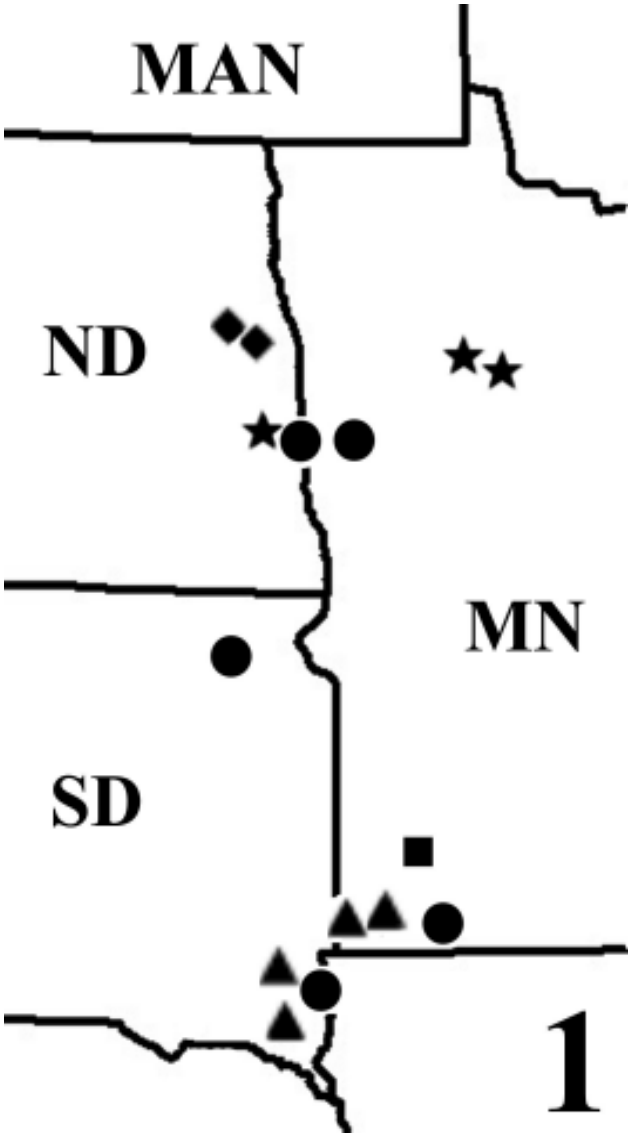

Figure 1. Occurrences of indigenous, non-parajulid diplopods in the eastern Dakotas and western Minnesota. Square, *Narceus americanus*; Triangles, *Abacion texense*; Diamonds, *Underwoodia iuloides*; Dots, *Pleuroloma flavipes*; Stars, *Pseudopolydesmus serratus*. MAN, Manitoba, Canada; MN, Minnesota; ND, North Dakota; SD, South Dakota.

Callipodida: Abacionidae

***Abacion texense* (Loomis, 1937)**

Published Records. Minnesota: Minnesota in general (Hoffman 1999, Stoev et al. 2008, Stoev and Shelley 2009, McAllister and Shelley 2010). Southern Minnesota (McAllister and Shelley 2010). *Rock Co.*, Luverne, Beaver Creek (Shelley 1984).

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New Records. South Dakota: *Lincoln Co.*, Newton Hills State Park (43° 13' 29" N, 96° 34' 51" W), 2FF, 7 August 2011, RM Shelley, BA Snyder (NCSM). *Union Co.*, Union Grove State Park (42° 55' 20" N, 96° 46' 29" W), 2FF, 7 August 2011, RM Shelley, BA Snyder (NCSM). **New State Record for the Species, Genus, Family, and Order.**

Remarks. All four individuals were discovered under bark of decaying logs. While no males were encountered, the slender bodies and known occurrence in Rock Co., in southwestern Minnesota (Shelley 1984, McAllister and Shelley 2010), indicate *A. texense*. Shelley (1984) suggested that the species might occur in central and southwestern South Dakota, perhaps even the Black Hills, but recent data show that it does not. McAllister and Shelley (2010) stated that occurrence in southeastern South Dakota was plausible because of its moist, verdant habitats and location between Minnesota and Nebraska sites, and we confirm this prediction. Illustrations are available in Loomis (1937) and Shelley (1984).

Chordeumatida: Caseyidae

***Underwoodia iuloides* (Harger, 1972)**

Published Records. North Dakota: *Grand Forks Co.*, University of North Dakota Biological Area, Forest River Valley near Inster, and Arvilla State Park (Shelley 1993).

New Records. None.

Remarks. In their familial distribution map, Gardner and Shelley (1989, fig. 219) placed two symbols in eastern North Dakota representing *U. iuloides*, but the genus and species were then unknown at these locations. Gonopodal illustrations are available in Shelley (1993).

Polydesmida: Xystodesmidae

***Pleuroloma flavipes* Rafinesque, 1820**

Published Records. Minnesota: *Nobles Co.*, Worthington (Shelley 1980).

North Dakota: North Dakota in general (Hoffman 1999). Eastern North Dakota (Shelley et al. 2003). *Cass Co.*, stockyard 8 km (5 mi) from Fargo (Shelley 1980, Shelley et al. 2003).

New Records. Minnesota: *Clay Co.*, Blue Stem Prairie adjacent to Buffalo River State Park (46° 50' 30" N, 96° 28' 9" W), M, F, juv., 23 July 1996 (NDSU).

South Dakota: *Day Co.*, Pickerel Lake State Park (45° 30' 6" N, 97° 16' 58" W), in house, 2MM, F, 3 September 1975, A. Friskep (NDSU). *Lincoln Co.*, Newton Hills State Park (43° 13' 29" N, 96° 34' 51" W), M, 5 juvs., 7 August 2011, RM Shelley, BA Snyder (NCSM). **New State Record for the Species, Genus, Family, and Order.**

Remarks. Occurrence in Clay County, Minnesota, across the Red River from Cass County, North Dakota, confirms the record from Fargo. The northernmost localities in central North America, they are approximately 224 km (140 mi) south of the International Border, so in Canada, *P. flavipes* may inhabit southeastern Manitoba as well as Essex County, Ontario (Shelley 1988, 2002c). Shelley et al. (2003) predicted that *P. flavipes* surely occurs in the eastern periphery of South Dakota, along the Missouri and Big Sioux rivers, and the Lincoln Co. site confirms this prediction. The Day Co. locality is slightly west of I-29 and intermediate between Fargo and Lincoln Co. Published illustrations are available in Shelley (1978 [as *Pleuroloma* sp.], 1980, 1988)

Polydesmida: Paradoxosomatidae

***Oxidus gracilis* (Koch, 1847)**

Published Records. None.

New Record. North Dakota: *Cass Co.*, Fargo, 2FF, 28 August 1978 (NDSU). **New State Record for the Species, Genus, and Family.**

Remarks. The common, introduced, Asian paradoxosomatid is ubiquitous in southern Canada and the lower 48 states. It should be expected in municipalities and urban environments throughout both Dakotas and Minnesota. Gonopodal and somatic illustrations are available in Shelley (1978), Blower (1985), and Shelley and Lehtinen (1998).

Polydesmida: Polydesmidae

***Polydesmus inconstans* (Latzel, 1884)**

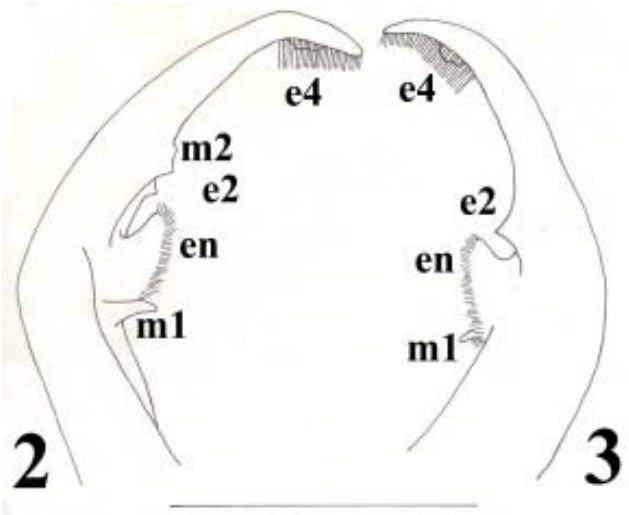
Published Record. North Dakota, *Grand Forks Co*., Grand Forks (Causey 1952b, Chamberlin and Hoffman 1958, Hoffman 1999).

New Records. None.

Remarks. Another European species that has been widely introduced in North America, *P. inconstans* should also be expected in municipalities and urban environments in these states, though not as commonly as *O. gracilis*. Gonopodal illustrations are available in Blower (1985) and Shelley (1988).

***Pseudopolydesmus serratus* (Say, 1821)**
Fig. 2-4

Diagnosis. A large-bodied species of *Pseudopolydesmus* possessing acropodal processes m1, m2, e2, and e4 in addition to the endomerite (Fig. 2-3) (Withrow 1988).



Figures 2-3. Acropodite of left gonopod of *Pseudopolydesmus serratus* male from Fargo, Cass Co., North Dakota. **2)** Mesal view. **3)** Ectal view. en, endomerite; e2, e4, m1, m2, ectal and mesal processes as defined by Hoffman (1974). Scale line = 0.50 mm.

Variation. Hoffman (1974) proposed a terminology for the maximum of four processes on both the mesal (m) and ectal/lateral (e) surfaces of *Pseudopolydesmus* acropodites. Species are defined by the processes that are present, and *P. serratus* is the only one specifically possessing m1, m2, e2, and e4, and lacking the others (Fig. 2-3); gonopod illustrations of eastern males are available in Wood (1865), Williams and Hefner (1928), Verhoeff (1931), Attems (1898, 1940), Johnson (1954), and Shelley (1978, 1988). The North Dakota male possesses these projections, but they vary in both configurations and positions from those in eastern males, as represented by Shelley (1978: 60, fig. 54-55, and 1988: 1651, fig. 28). In the North Dakota male, the endomerite, or pulvillus/hairpad, located on the mesal surface, seems slightly longer in proportion to overall acropodal length, and m1, which is proportionally longer, stronger, and positioned slightly more distad, overlaps its basal corner; m1 is more proximal and does not overlap the pulvillus in eastern males. Process m2 is at the same position as in eastern males but appears more proximal because of the proportionally longer endomerite; m2 is also smaller and slightly bilobate, whereas it is stronger, acutely triangular, and projects farther from the acropodal stem in eastern males. On the lateral surface, e2 is sharply triangular, as in eastern males, but slightly more proximal and not directly opposite m2; however, e2 is in the same position relative to the endomerite as in eastern males, at the latter's distal extremity. Process e4, located distad and partly obscured in both perspectives by the bristle-like apical setae, is a linear, inconspicuous, bilobate flange rather than triangular. These differences constitute intra-specific variation that may warrant subspecific recognition if additional males from the Dakotas and Minnesota exhibit these conditions. Variation of this magnitude in peripheral populations is typical in millipeds with such large distributions.

Distribution (Fig. 4). *Oriulus venustus*, the most widespread native milliped species in North America, covers approximately ¾ of the continental US and southern Canada, ranging from the Atlantic Coast of Massachusetts and the Outer Banks of North Carolina to the Colorado Plateau and Wasatch Mountains, Utah, the Rocky Mountains of Idaho, Montana, and Wyoming, and the western Plains of Alberta; the southernmost records are in southern Louisiana (Shelley 2002a, c). *Aniulus garius* occupies a smaller, more northerly area extending from southern Québec, western New York, and northern Virginia to the Alberta Plains and northeastern Utah; the southernmost records in the contiguous range are in Kentucky, Missouri, and northern New Mexico, and there is an isolated site in western Mississippi (Shelley 2001a, McAllister et al. 2009). Other widespread, native, eastern species – *Virgoiulus minutus* (Brandt, 1841) (Julida: Blaniulidae), *N. americanus*, *Scytonotus granulatus* (Say, 1821) (Polydesmida: Polydesmidae), and the xystodesmids *Apheloria virginiensis* (Drury, 1770) and *Pleuroloma flavipes* – terminate varying

distances into the Central Plains (Keeton 1960; Shelley 1980, 1994; Hoffman 1999; McAllister et al. 2005; Shelley and McAllister 2007; Shelley et al. 2003, 2005, 2006) as does *Pseudopolydesmus serratus* (Fig. 3). Ranging eastward to the Atlantic Ocean and even inhabiting offshore islands – Nantucket, Massachusetts; Gardiners, New York (in Gardiners Bay at the eastern end of Long Island); and Hatteras, North Carolina – *Pseudopolydesmus serratus* extends, north/south, from the Gaspé Peninsula, Québec, the Upper Peninsula (UP) of Michigan/adjacent Ontario, and the latitude of Fargo to Matagorda Bay, Texas, the Gulf Coast from Louisiana to east of the Apalachicola River in the Florida Panhandle, and central South Carolina. Dimensions vary from 1,139-2,278 km (712-1,424 mi), east/west, and 1,402-1,986 km (876-1,241 mi), north/south. As noted by Hoffman (1999), the species has never been taken in, and is apparently absent from, the southeastern Coastal Plain south of Myrtle Beach, South Carolina, including peninsular Florida, and the entire state of Georgia, though it may occur in the southwestern corner (Seminole and Decatur cos.); occurrence cannot even be demonstrated in the southern Blue Ridge Physiographic Province of north Georgia, where the genus is common. The occupied area covers parts of three Canadian Provinces (Ontario, Québec, and New Brunswick), 36 US states plus the District of Columbia, and all of 23 states: Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Michigan, Wisconsin, Illinois, Indiana, Ohio, Kentucky, Mississippi, Iowa, Missouri, Arkansas, and Louisiana. It traverses such major rivers as the St. Lawrence, Connecticut, Hudson, Delaware, Potomac, James, Roanoke, Cape Fear, Apalachicola, Alabama, Mississippi, Ohio, Tennessee, Cumberland, Wabash, Illinois, St. Croix, Red (of the North), Platte, Missouri, Arkansas, Canadian, Red (in Louisiana), Trinity, Brazos, and Colorado (in Texas).

Figure 4. Distribution of *Pseudopolydesmus serratus* showing peripheral localities. Upper star, type locality of *Polydesmus canadensis* Newport, 1844, type-species of *Pseudopolydesmus*; Lower Star, denoted by the arrow, approximate type locality of *Polydesmus serratus* Say, 1821, on the Eastern Shore of Virginia.

The eastern- and northernmost record is the unspecified site in the interior of the Gaspé Peninsula, Québec, Canada (Chamberlin 1920a, Kevan 1983, Shelley 1988, Hoffman 1999), denoted by the question mark (?) in Fig. 4. The eastern- and northernmost specific locality, Île d'Orléans, in the St. Lawrence River east of Québec City, implies occurrence in northwestern New Brunswick, and documentation is needed from this Canadian province. The sites in Algoma and Nipissing cos., Ontario, coincide with those in the UP of Michigan, but the true northern limits, in the interiors of Québec and Ontario, are unknown. The records from Fargo and Cass and Clearwater cos., Minnesota, also coincide with those in the UP and suggest occurrence in southeastern Manitoba, Canada, only 211 km (132 mi) to the north. In addition to being the northernmost locality in the northern Plains, Fargo is also the westernmost, so the boundary turns southward there, heads into eastern Nebraska, curves southwestward to Thayer Co., and angles across Kansas to Barber Co., on the border with Oklahoma and the westernmost overall record. In addition to Georgia, no samples of *P. serratus* are available from South Dakota, Oklahoma, and Rhode Island, as well as New Brunswick, and we sampled in the projected area of occurrence in South Dakota but did not encounter any polydesmids. Connecting Barber Co., Kansas, with the westernmost Texas locality, in Coryell Co., results in ¾ of the main part of Oklahoma lying within the distribution, roughly equivalent to the area in that state occupied by *Narceus* Rafinesque, 1820 (Shelley et al. 2006). From Coryell Co., the boundary curves south-southeastward through Victoria to the Gulf of Mexico at Matagorda Bay.

Records from Louisiana, Mississippi, and the western Florida Panhandle line the Gulf Coast, but *P. serratus* terminates abruptly in Gadsden Co., east of the Apalachicola River. A plethora of records hugs the Atlantic Coast from Myrtle Beach, South Carolina, to Maine, where the border extends inland to Baxter State Park and New Brunswick, but at Myrtle Beach, it heads inland to Columbia then bends northward to Gaston and Lincoln cos., North Carolina, west of Charlotte. It then swings westward through the Blue Ridge (Mitchell Co.) and northern Tennessee, curves through the Cumberland Plateau and Nashville Basin, and angles south-southeastward through Alabama to Gadsden Co. The range thus also excludes most of eastern Alabama, the areas of Knoxville and Chattanooga, Tennessee, the entire Great Smoky Mountains National Park (GSMNP) except for Cades Cove, Blount Co., Tennessee, and all of southwestern North Carolina except for one site in Jackson Co.; the isolated records appear to represent localized allopatric populations. Withrow (1988) recorded a female of *P. serratus* from the GSMNP in Sevier Co., Tennessee, but it lacks credence without an accompanying male, and no other author has cited the species from the Park, the most recent being Snyder (2008). Therefore, the Cades Cove samples we report, primarily from the All Taxa Biodiversity Inventory (ATBI), are the first authentic records from both the Park and the Great Smoky Mountains in general. In western North Carolina, no individuals are available from the heavily sampled Nantahala and southern Pisgah National Forests or the vicinities of Mt. Mitchell, Asheville, Waynesville, Brevard, Cashiers, Bryson City, Franklin, and Highlands. The Jackson Co. locality is some 128 km (80 mi) south of Mitchell Co., which is detached by 40 km (25 mi) from the next one north in Watauga Co., after which *P. serratus* occurs continuously northward through Virginia and eastward into the North Carolina Piedmont Plateau. Consequently, the next locality south of Jackson Co., North Carolina, is that in Gadsden Co., Florida, some 584 km (365 mi) to the south-southwest.

Copious field work by numerous collectors has taken place in the Blue Ridge of northern Georgia, and RMS has sampled widely in the Piedmont Plateaus and Coastal Plains of Georgia and South Carolina; consequently, it would seem that at least one male would have been taken in these areas by now if *P. serratus* truly occurred there. Its absence creates a sizeable lacuna in the southeast that extends northwestward from coastal Georgia to Cannon and Putnam cos., Tennessee, a distance of about 656 km (410 mi); the hiatus is somewhat narrower, around 496 km (310 mi) at maximal breadth. This gap seems analogous to that of its polydesmid counterpart, *Scytonotus granulatus* (Say, 1821), which is absent from a progressively narrowing area of the Blue Ridge from northern Georgia to northern Virginia, in which it is replaced by three endemic forms. In conjunction with a generic revision, Shelley (1994) concluded that the endemics are younger and perhaps more successful, that they had displaced *S. granulatus* from the Blue Ridge, and that they were actively expanding into adjacent physiographic provinces. The lacunae in the two polydesmids are congruent in being in southern range extremities and involving at least the southernmost Blue Ridge, suggesting that the causes may be similar; at present, however, we can only note that *P. canadensis* (Newport, 1844) and *P. erasus* (Loomis, 1943) occur in the hiatus (Withrow 1988, Hoffman 1999). Another distributional congruence involves the xystodesmid genus, *Apheloria* Chamberlin, 1929 (Shelley and McAllister 2007), whose range also turns inland at Myrtle Beach, angles northwestward in South Carolina north of that of *P. serratus*, crosses into North Carolina around Charlotte and curves into the western Piedmont before heading southward into through the Blue Ridge. A modern revision of *Pseudopolydesmus* is desirable, to assess both the true number of component species and evolutionary trends within the genus. Below, we summarize published records of *P. serratus* and report significant new county occurrences along with data for prior citations.

Published Records. America Septentrionale (Gervais 1844).

CANADA: Ontario: Ontario in general (Kevan 1983, Shelley 2002c). Northern Ontario (Kevan 1983). *Algoma*, *Cochrane*, *Durham*, *Hastings*, *Lambton*, *Lanark*, *Middlesex*, *Niagara*, *Nipissing*, and *Parry Sound cos*. (Chamberlin 1920a, b; Judd 1967; Shelley 1988).

Québec: Québec in general (Hoffman 1999). Southern Québec (Withrow 1988). Gaspé Peninsula interior (Chamberlin 1920a, Kevan 1983, Shelley 1988, Hoffman 1999). *Argenteuil*, *Gaspé-Ouest*, *Île de Montréal*, *Montmorency*, and *Vaudreuil census divisions* (*cd*) (Kevan 1983, Shelley 1988).

USA: Alabama: *Lowndes Co*. (Withrow 1988).

Arkansas: *Craighead*, *Jefferson*, *Phillips*, *Poinsett*, and *Pulaski cos*. (Causey 1952b, Withrow 1988, McAllister et al. 2003).

Connecticut: *New Haven Co*. (Withrow 1988).

Florida: *Bay*, *Escambia*, and *Gadsden cos.* (McNeill 1887, Shelley 2001b).

Illinois: Illinois in general (Wood 1865, Saussure and Humbert 1872, Bollman 1887). *Adams*, *Calhoun*, *Champaign*, *Cook*, *Grundy*, *Jackson*, *Lake*, and *Rockford cos*. (Withrow 1988).

Indiana: Indiana in general (Bollman 1887, 1888b). *Franklin*, *Grant*, *Greene*, *Monroe*, *Owen*, *Porter*, *Tippecanoe*, and *Vandenburg cos.* (McNeill 1888, Dearolf 1938, Withrow 1988).

Iowa: Iowa in general (Withrow 1988). *Blackhawk*, *Boone*, and *Storey cos.* (Chamberlin 1942, Chamberlin and Hoffman 1958, Withrow 1988, Hoffman 1999).

Kansas: Kansas in general (Gunthorp 1921). *Coffey* and *Johnson cos*. (Gunthorp 1913, Withrow 1988)

Kentucky: *Adair*, *Anderson*, *Bell*, *Carstian*, *Carter*, *Christian*, *Estill*, *Fayette*, *Fulton*, *Holmes*, *Jackson*, *Jessamine*, *McCreary*, *Morgan*, *Powell*, *Whitley*, and *Wolf cos.* (Causey 1955, Branson and Batch 1971, Withrow 1988).

Louisiana. Louisiana in general (Chamberlin and Hoffman 1958). *Allen*, *Ascension*, *Avoyelles*, *Bossier*, *Caddo*, *Caldwell*, *Catahoula*, *DeSoto*, *East Baton Rouge*, *East Carroll*, *East Feliciana*, *Evangeline*, *Iberia*, *Jefferson Davis*, *Lafayette*, *Lincoln*, *Livingston*, *Madison*, *Morehouse*, *Natchitoches*, *Plaquemines*, *Pointe-Coupee*, *Rapides*, *Sabine*, *St. Landry*, *St. Martin*, *St. Tammany*, *Tangipahoa*, *Tensas*, *Terrebonne*, *Vermilion*, *Vernon*, *Washington*, *West Baton Rouge*, *West Carroll*, and *West Feliciana pars*. (Chamberlin 1918a; Viosca 1919; Causey 1952b, 1963; Loomis 1959; Withrow 1988).

Maine: Maine in general (Chamberlin and Hoffman 1958, Kevan 1983). *Piscataquis Co*. (Shelley 1988).

Maryland: *Allegany*, *Anne Arundel*, *Calvert*, *Caroline*, *Charles*, *Dorchester*, *Frederick*, *Garrett*, *Harford*, *Montgomery*, *Prince Georges*, *Queen Anne's*, *St. Mary's*, *Somerset*, *Talbot*, and *Washington cos*. (Chamberlin 1947, 1951; Withrow 1988).

Massachusetts: *Barnstable*, *Middlesex*, and *Norfolk cos*., and *Nantucket Island* (Blake 1931, Withrow 1988).

Michigan: Michigan in general (Johnson 1954, Kevan 1983, Hoffman 1999). *Alcona*, *Alger*, *Arenac*, *Barry*, *Bay*, *Cheboygan*, *Clare*, *Crawford*, *Dickinson*, *Emmet*, *Gladwin*, *Gogebic*, *Grand Traverse*, *Gratiot*, *Iosco*, *Jackson*, *Kalkaska*, *Lake*, *Lapeer*, *Leelanau*, *Livingston*, *Mackinac*, *Macomb*, *Manistee*, *Missaukee*, *Montcalm*, *Newaygo*, *Oceana*, *Ogemaw*, *Ontonagon*, *Osceola*, *Otsego*, *Presque Isle*, *Roscommon*, *Sanilac*, *Tuscola*, and *Washtenaw cos*. (Chamberlin 1914, Withrow 1988, Snider 1991).

Minnesota: Minnesota in general (Bollman 1887, 1893; Chamberlin and Hoffman 1958; Hoffman 1999). *Hennepin* and *Winona cos*. (Bollman 1893, Withrow 1988).

Mississippi: Mississippi in general (Hoffman 1999). *Adams*, *George*, *Hinds*, *Jefferson*, *Lincoln*, *Oktibbeha*, *Panola*, *Pearl River*, *Pike*, *Webster*, and *Wilkinson cos*. (Causey 1955, Withrow 1988).

Missouri: *Franklin*, *St. Charles*, and *St. Louis cos.* (Chamberlin 1928, Withrow 1988). Though geographically plausible, the record from St. Charles Co. was based on unidentifiable juveniles and is unreliable.

Nebraska: Nebraska in general (Kenyon 1893a). *Cass*, *Cuming*, *Lancaster*, and *Richardson cos*. (Kenyon 1893b).

New Jersey: New Jersey in general (Wood 1865, Saussure and Humbert 1872). *Camden* and *Somerset cos*. (Chamberlin 1947, Withrow 1988).

New York: New York in general (Bailey 1928, Kevan 1983). *Albany*, *Genesee*, *Greene*, *Monroe*, *Niagara*, *Onondaga*, *Tompkins*, and *Ulster cos*. (Chamberlin 1947, Withrow 1988).

North Carolina: North Carolina in general (Bollman 1887, Chamberlin and Hoffman 1958, Hoffman 1999). Mountains of North Carolina (Chamberlin and Hoffman 1958). *Alleghany*, *Ashe*, *Beaufort*, *Bertie*, *Brunswick*, *Burke*, *Carteret*, *Caswell*, *Chowan*, *Craven*, *Cumberland*, *Currituck*, *Dare*, *Durham*, *Edgecombe*, *Franklin*, *Gaston*, *Gates*, *Granville*, *Greene*, *Halifax*, *Harnett*, *Hyde*, *Lee*, *Jackson*, *Johnston*, *Jones*, *Lee*, *Lincoln*, *Mitchell*, *Montgomery*, *Moore*, *Nash*, *New Hanover*, *Northampton*, *Onslow*, *Orange*, *Perquimans*, *Pitt*, *Randolph*, *Sampson*, *Stanly*, *Stokes*, *Vance*, *Wake*, *Warren*, *Watauga*, and *Wilkes cos*. (Brimley 1938; Chamberlin 1940; Wray 1967; Shelley 1978, 2000; Withrow 1988).

Ohio: Ohio in general (Williams and Hefner 1928, Kevan 1983). *Adams*, *Ashland*, *Ashtabula*, *Butler*, *Champaign*, *Clermont*, *Columbiana*, *Coshocton*, *Fairfield*, *Geauga*, *Gallia*, *Greene*, *Hamilton*, *Highland*, *Hocking*, *Holmes*, *Jefferson*, *Knox*, *Lake*, *Licking*, *Medina*, *Montgomery*, *Ottawa*, *Pike*, *Summit*, *Tuscarawas*, *Warren*, *Washington*, and *Wayne cos*.(Morse 1902, Chamberlin 1920c, Withrow 1988).

Pennsylvania: Pennsylvania in general (Koch 1847; Peters 1865; Wood 1865; Saussure and Humbert 1872; Bollman 1887, 1893; Attems 1898, 1940; Chamberlin and Hoffman 1958; Withrow 1988). *Bedford*, *Berks*, *Bradford*, *Bucks*, *Chester*, *Delaware*, *McKean*, *Mifflin*, *Montgomery*, *Perry*, *Seward*, and *York cos*. and the *City of Philadelphia* (Dearolf 1938, Loomis 1939, Chamberlin 1947, Withrow 1988).

South Carolina: South Carolina in general (Saussure 1860; Bollman 1893; Attems 1898, 1940). *Richland* Co. (Withrow 1988).

Tennessee: Tennessee in general (Hoffman 1999). *Anderson*, *Davidson*, *Haywood*, *Humphreys*, *Obion*, *Putnam*, *Rutherford*, and *Sevier cos*. (Chamberlin 1918b, Withrow 1988).

Texas: Eastern Texas (Withrow 1988). *Camp*, *Cass*, *Harris*, *Jasper*, *Lamar*, *Nacogdoches*, *Sabine*, *Smith*, and *Tyler cos*. (Causey 1952b, Stewart 1969, McAllister and Robison 2011).

Vermont: *Bennington*, *Washington*, and *Windham cos*. (Chamberlin 1951, Withrow 1988).

Virginia: Virginia in general (Gervais 1847, 1859; Saussure and Humbert 1872; Bollman 1893). Eastern Shore in general (Say 1821, Chamberlin and Hoffman 1958, Hoffman 1999). *Accomack*, *Albemarle*, *Alleghany*, *Augusta*, *Botetourt*, *Buchanan*, *Caroline*, *Chesterfield*, *Clarke*, *Craig*, *Dinwiddie*, *Fairfax*, *Frederick*, *Giles*, *Grayson*, *Greene*, *Hanover*, *Henrico*, *Highland*, *Loudoun*, *Louisa*, *Madison*, *Nansemond*, *Page*, *Princess Anne*, *Pulaski*, *Rockbridge*, *Russell*, *Scott*, *Smyth*, *Tazewell*, *Warren*, and *Wythe cos*., and the *City of Norfolk* (Bollman 1888b, Loomis 1944, Chamberlin 1947, Withrow 1988).

West Virginia: *Barbour*, *Cabell*, *Doddridge*, *Grant*, *Greenbrier*, *Hancock*, *Hardy*, *Marion*, *Marshall*, *Mason*, *Mercer*, *Monongalia*, *Monroe*, *Morgan*, *Nicholas*, *Ohio*, *Pendleton*, *Pleasants*, *Pocahontas*, *Preston*, *Raleigh*, *Randolph*, *Taylor*, *Tucker*, and *Webster cos*. (Loomis 1944, Withrow 1988).

Wisconsin: *Clark*, *Crawford*, *Dane*, *Door*, *Fond du Lac*, *Marquette*, *Ozaukee*, *Racine*, *Washington*, and *Waukesha cos*. (Withrow 1988, Watermolen 1995b, Snyder and Draney 2008).

New Records. **CANADA**: Ontario: *Halton Co*., Milton, Rattlesnake Pt., 2MM, F, 1 November 1921, JL Oughton (ROME). *Ottawa-Carleton Co.,* 9.6 km (6 mi) W Richmond, 3MM, F, 6 May 1971, JEH Martin (CNC). *York Co*., Toronto, Rouge R., Kingston Rd., M, F, 2 June 1939, JL Oughton (ROME).

Québec: *Drummond cd*, Drummondville, 2MM, 2FF, 12 October 1975, L. LeSage (NCSM). *Hull cd*, Ironside, M, 3FF, LM Stöhr (MHNG). *Maskinongé cd*, Sainte-Angèle, M, 10 October 1980, L. LeSage (NCSM). *Pontiac cd*, Shawville, M, 20 August 1972, Bowen (CNC). *Vaudreuil cd*, Rigaud, 22 May 1981, L. LeSage (CNC).

USA: Alabama: *Lowndes Co*., 13. km (8.4 mi) NE Ft. Deposit, M, 19 April 1983, RM Shelley (NCSM). *Macon Co*., Tuskegee, M, 3 February 1980, AK Johnson (TMM). **First Published Records.**

Connecticut: *Fairfield Co*., Norwalk, M, 21 July 1943, W. Ivie (USNM); and Redding Ridge, 30 March 1964, CL Remington (PMNH). *Hartford Co*., Stratton Brook and Penwood St. Pks. 29 October 1961, CL and EE Remington (PMNH). *Litchfield Co*., White Memorial, 2MM, 2FF, NM Mbumba (UCMS). *New Haven Co*., New Haven, 27 July 1868 (PMNH) and 16 September 1974, DC Southworth (PMNH); Oxford, M, F, 17 April 1871, O. Harger (PMNH); Bethany, 9 October 1960 and 7 May 1962, CL Remington (PMNH); North Haven, March 1961, EE Remington (PMNH); Woodbridge, 4 May 1961 (PMNH); West Rock, M, F, 25 September 1963, B. Vogel (PMNH); and Seymour, M, 7 October 1973, JR Lynch (PMNH). *Tolland Co*., Mansfield, 9 May 1961, JM Skinner (UCMS). **First Published Records.**

Delaware: *New Castle Co*., 4.8 km (3 mi) E Ashland, along DE hwy 82, M, 21 April 1998, RM Shelley (NCSM); and Newark, University of Delaware campus, F, 21 April 1998, RM Shelley, CR Bartlett (NCSM). **New State Record.**

District of Columbia: 2MM, 2FF, 28 February 1967, TJ Spilman (USNM). Glen Sligo, M, 2FF, April 1898 (USNM). **New Record.**

Florida: *Bay Co*., Econfina Cr. floodplain at SR 388, M, 17 February 1994, R. Franz (NCSM). *Gadsden Co*., boat landing on Apalachicola R. S of I-10, 4MM, 2FF, 17 April 1997, RM Shelley (NCSM). *Jackson Co*., Florida Caverns St. Pk., M, 2 April 1964, AA Weaver (NCSM) and M, 15 June 1999, RM Shelley (NCSM).

Illinois: *Coles Co*., M, 26 October 1977, RC Funk (INHS). *Lake Co*., Zion, Beach St. Pk., M, 2 November 1961, Evers, Stannard (INHS). *Pope Co*., Eddyville, M, F, 2 May 1969 (INHS).

Indiana: *Crawford Co*., 6.4 km (4 mi) SW English, Hemlock Cliffs, 2MM, F, 6 June 2005, RM Shelley, JJ Lewis (NCSM). *Jennings Co*., 2MM, 26 April 1976, J. Rosenbalm (ULKY). *Lake Co*., Gary, M, 3 March 1900 (USNM). *Monroe Co*., Bloomington, M, 4FF, 1902, HW Brölemann (MNHN). *Parke Co*.,

Turkey Run St. Pk., M, F, 28 April 1945 (USNM). *Union Co.*, Liberty, M, 2FF, October 1896, JN Rose (USNM).

Iowa: *Hancock Co.*, Forrest City, Pilot Knob, M, 3 June 1960, HW Levi (MCZ).

Kansas: *Barber Co.*, Barber Wildlife area nr. Medicine Lodge, juv., 4 May 2005, CT McAllister (NCSM).

Kentucky: *Allen Co.*, junction Reels Rd. and co. rd. 482, M, F, 25 September 2004, RM Shelley (NCSM); and Long Cr. at co. rd. 100, M, 25 September 2004, RM Shelley (NCSM). *Jefferson Co.*, Louisville, M, 13 September 1975, LM Nash (ULKY). *Leslie Co.*, 6.4 km (4 mi) SSW Hyden, KY hwy. 406 at Bowen Cr., M, 10 June 2001, RM Shelley (NCSM). *Marshall Co.*, Kentucky Lake St. Pk., 2MM, 2FF, 13 October 1965, J. and W. Ivie (AMNH). *Menifee Co.*, along KY hwy. 175 at Red R., M, 29 May 2005, RM Shelley (NCSM).

Louisiana: *Beauregard Par.*, DeRidder, 2MM, F, 30 March 1969, A. Rheme (NCSM). *Orleans Par.*, Camp Plauche nr. New Orleans, 2MM, 2FF, 1951, DE Beck (USNM); and New Orleans, Joe W. Brown Park, M, 16 February 1986, RM Shelley (NCSM). *St. Helena Par.,* Greenburg, M, 2FF, 19 March 1940 (USNM); and Darlington, 2MM, 2FF, 31 October 1940 (USNM). *St. James Par.,* along LA hwy. 18 at Oak Alley Plantation, 2MM, 17 February 1986, RM Shelley (NCSM).

Maine: *Oxford Co.*, Norway, M, 22 July 1872 (PMNH). *Piscataquis Co.*, Baxter St. Pk., M, 25 August 1955, HW Levi (MCZ).

Massachusetts: *Berkshire Co.*, Lanesboro, M, August 1904 (USNM). *Franklin Co.*, Shelburne, F, 12 August 1978, W. Shaw (MCZ). *Hampden Co.*, Mt. Tom. M, 14 June 1937, CH Blake, Dow (MCZ). *Middlesex Co.*, Arlington Heights, 2MM, 2FF (USNM); and Pepperell, M, F, October 1970, HW, L. and F. Levi (MCZ). *Worcester Co.*, Petersham, Harvard Forest, M, 8 May 1977, L. Roth (MCZ).

Michigan: *Branch Co.*, 4.8 km (3 mi) N Quincy, 2MM, juv., 1 August 1939, JPE Morrison (USNM). *Charlevoix Co.*, Bay Shore, M, September 1911, CC Hoff (USNM). *Menominee Co.*, Powers, M, 2FF, 1 July 1910 (USNM).

Minnesota: *Cass Co.*, Backus, 4MM, F, 16 June 1957, CA Privatera (USNM). *Clearwater Co.*, Lake Itasca St. Pk., 2MM, 2FF, 24 May 1932, WJ Gertsch (USNM). *Hennepin Co.*, Minneapolis, M, 1932, WJ Gertsch (USNM).

Mississippi: *Grenada Co.*, T33N, R3E, sec. 31, around cotton field, M, 3FF, 20-31 March 1992, TL Schiefer (MEM). *Lauderdale Co.*, off US hwy. 45, 2.9 km (1.8 mi) S I-20, M, 12 March 1991, R. Jones, T. Mann (NCSM). *Noxubee Co.*, Noxubee Wildlife Refuge, M, 11 March 1981, P. Ramey (MEM). *Pontotoc Co.*, 1.6 km (1 mi) SE Ecru, M, 24 October 1980, GL Snodgrass (MEM). *Sharkey Co.*, Delta Nat. For., M, 15 June 1999, RM Shelley (NCSM). *Tunica Co.*, Tunica, M, 8 December 1981, GL Snodgrass (MEM).

Missouri: *Boone Co.*, McBaine, M, 10 October 1974, M. Hennessey (UMRM). *Jefferson Co.*, 1.6 km (1 mi) NW Selma, M, 10 May 1934, L. Hubricht (USNM).

Nebraska: *Gage Co.*, Odell, M, F, 3 September and 28 November 1981, WF Rapp (MCZ). *Lancaster Co.*, Lincoln, M, FC Kenyon (USNM). *Thayer Co.*, Gilead, juv. 20 September 1986, WF Rapp (NCSM).

New Hampshire: *Coos Co.*, Glen House, White Mtns., M, 10 June (MCZ). *Hillsborough Co.*, Peterborough, 3FF, 1962, EC Zimmerman (BMNH). **New State Record.**

New Jersey: *Bergen Co.*, Ft. Lee, M, F, 23 March 1919 (AMNH); and Ramsey, 2MM, 2FF, 9 June 1934 (AMNH). *Camden Co.*, Haddonfield, M, F, 27 October 1912, RV Chamberlin (USNM). *Monmouth Co.*, Wickatunk, M, 14 May 1974, WF Rapp (INHS). *Morris Co.*, Chatham, M, 2FF, 22 April 1944, J. Cooper (USNM); and Madison, M, F, 5 June 1905, FC Paulanier (USNM) and M, 22 April 1944, J. Cooper (USNM). *Sussex Co.*, Ogdensburg, M, 13 May 1975, WF Rapp (INHS).

New York: *Chautauqua Co.*, Jamesville, 2MM, 2FF (USNM). *Clinton Co.*, Plattsburg, 2MM, 2FF, 28 September 1904, FC Paulanier (USNM). *Cortland Co.*, Glen Haven, 2MM, 2FF, 19 September 1904, FC Baker (USNM). *Niagara Co.*, Niagara Falls, island, M, 1 August 1904, RV Chamberlin (USNM). *Ontario/Seneca Cos.*, Geneva, M, F, October 1891 (USNM). *Rockland Co.*, Lake Sebago, M, 4FF, 23 June 1934 (AMNH). *Suffolk Co.*, Gardiners I., Rogers Woods, M, F, 9 April 1976, A. Tufor (PMNH).

North Carolina: *Beaufort Co.*, 1.6 km (1 mi) NNW Belhaven, M, 22 April 1989, JC Beane (NCSM); 3.2 km (2 mi) SE Bath, M, 23 April 1989, JC Beane (NCSM); and 4 km (2.5 mi) NNE Pamlico Beach, M, F, 23 April 1989, JC Beane (NCSM). *Burke Co.*, 12.8 km (8 mi) S Morganton, M, 27 May 1972, RM Shelley (NCSM). *Columbus Co.*, Lake Waccamaw, 6 April 1931, C. Cottam (USNM). *Dare Co.*, Buxton, Cape Hatteras, 7MM, 2FF, 9 November 1980, DL Stephan (NCSM); 0.6 km (0.4 mi) SE Buxton, 2MM, F, 8 December 1984, DL Stephan (NCSM); and Roanoke Is., 4.8 km (3 mi) WNW Manteo, Fort Raleigh Nat.

Hist. Site, 3MM, 7FF, 25 September 1996 and 29 April 1997, JC Beane, LH Terry (NCSM). *Gaston Co.*, 13.6 km (8.5 mi) SW Gastonia, M, 29 April 1976, RM Shelley (NCSM). *Hyde Co.*, Lake Mattamuskeet Nat. Wildlife Ref., nr. lodge, 2MM, F, 9-10 April 1994, JC Beane (NCSM). *Jackson Co.*, 2.4 km (1.5 mi) SW Webster, 2MM, 4 January 1970, FA Coyle (NCSM). *Lincoln Co.*, 7 km (4.4 mi) SE Lincolnton, M, 31 August 1973, RM Shelley (NCSM). *Mitchell Co.*, Altapass, 3MM, 3FF, 20 May 1956, WT Keeton, Lund, RL Hoffman (VMNH). *Tyrrell Co.*, 9.9 km (6.2 mi) SSE Columbia, off NC hwy. 94, 1.3 km (0.8 mi) N SR 1307, F (fragments), 7 May 2005, JC Beane (NCSM). *Union Co.*, 4 km (2.5 mi) N New Salem, along SR 1662, M, 7 May 2000, AL Braswell (NCSM). *Watauga Co.*, along US hwy. 421, 6.4 km (4 mi) N Vilas, 3MM, 2FF, RL Hoffman (VMNH); Blowing Rock, M, 16 October 1971, RM Shelley (NCSM); 4.8 km (3 mi) NNE Boone, M, 26 April 1974, RM Shelley (NCSM); Valle Crucis, M, 11 October 1975, JC Clamp (NCSM); and 3.2 km (2 mi) NW Blowing Rock, Moses Cone Memorial on Blue Ridge Parkway, M, F, 31 May 1997, JC Beane, TJ Thorpe (NCSM). *Wilkes Co.*, Stone Mountain St. Pk., 2 July 1973, RM Shelley (NCSM); 9.6-14.4 km (6-9 mi) NW Wilkesboro, 2MM, 2FF, 23-25 July 1973, RM Shelley (NCSM); and 4 km (2.5 mi) SE Wilkesboro, M, 15 July 1976, ME Filka, FD Scott (NCSM).

North Dakota: *Cass Co.*, Fargo, M, F, 14 May 1990 (NCSM [transferred from NDSU]). **New State Record for the Species, Genus, and Family.**

Ohio: *Crawford Co.*, Bucyrus, M, F, 2 October 1971, RF Wilkey (UCDC). *Knox Co.*, off OH hwy. 3, 0.3 km (0.2 mi) S Ashland Co. line, M, 14 May 2006 (NCSM). *Ross Co.*, Chillicothe, MM, FF, 20 October 1952 (USNM).

Pennsylvania: *Alleghany Co.*, Pittsburgh, M, 2FF, 30 April 1916, G. Krauterman (CMNH). *Cameron Co.*, Emporium, M, 24 August 1983, J. Burne (UAIC). *Lebanon Co.*, Lebanon, M, October 1892 (USNM). *Fayette Co.*, Ohiopyle St. Pk., M, August 1905 (CMNH). *Philadelphia Co.*, North Philadelphia, Oak Lane, M, TDA Cockerell (USNM). *Schuylkill Co.*, Tuscarora St. Pk. 2MM, F, HW Levi (MCZ).

South Carolina: *Horry Co.*, Myrtle Beach, Long Bay, F, 15 October 1940, E. Mayr (NCSM). *Richland Co.*, Pocahontas, 3MM, F, juv., spring 1963, Simpkins (VMNH). **First Published Records.**

Tennessee: *Blount Co.*, GSMNP, Cades Cove, beside Abrams Creek, 0.3 mi. upstream of Loop Road west end bridge, M, 5 June 1996, F. Coyle, Edwards, Stiles, and Wright (GSNP), ATBI old field plots, 6MM, F, 16 July 2001-1 July 2002, IC Stocks, RE Hightower, M. Williams, J. Lowe, and JH Burbank (GSNP). **First Authentic Records from the GSMNP.** *Cannon Co.*, along TN hwy. 145, 7.7 km (4.8 mi) N jct. TN hwy. 705, M, 9 May 1979, RM Shelley, RK Tardell (NCSM). *Lawrence Co.*, Davy Crockett St. Pk., M, 1 October 1971, JA Beatty (SIUC). *Morgan Co.*, 17.6 km (11 mi) W Wartburg, M, F, 6 July 1979, RM Shelley, RK Tardell (NCSM). *Obion Co.*, nr. Reelfoot Lake, M, 13 April 1945, JW Rapp (USNM). *Rutherford Co.*, 1.6 km (1 mi) NW Lascassas (nr. Murfreesboro), 2MM, F, 14 October 1985, A. Wynn, J. Jacobs (USNM).

Texas: *Angelina Co.*, 8 km (5 mi) SE Zavalla, by Graham's Cr., M, 2FF, 25 October 1979, DC Rudolph, JA Matos (FSCA). *Coryell Co.*, Mother Neff St. Pk., 2MM, 2FF, 25 January 2002, CT McAllister (NCSM). *Dallas Co.*, Cedar Hill Nat. Pres., M, F, 22 February 2002, CT McAllister (NCSM). *Harris Co.*, Houston, M, April 1940, JH Swanson (USNM). *Jasper Co.*, Jasper, 2MM, 5 February 1962, NB Causey (USNM); and Bouton Lake, 2MM, F, 16 February 1991, KJ McWest, RC Ahle (NCSM). *Rusk Co.*, 8 km (5 mi) S Mt. Enterprise, Morrow bridge on Beech Cr., M, 7 April 1994, KJ McWest, Page, Poye (NCSM). *Shelby Co.*, 3.2 km (2 mi) E Center, 2FF, 3 September 1990, KJ McWest (NCSM). *Titus Co.*, Lake Bob Sandling St. Pk., 2MM, 3 juvs., 2 October 2004, RM Shelley, CT McAllister, HW Robison (NCSM). *Victoria Co.*, Victoria, 2MM, 2FF, juv., 21-23 November 1911, OF Cook (USNM). *Wood Co.*, Yantis, M, 28 November 1968, D. Walker (NCSM).

Vermont: *Lamoille Co.*, Smuggler's Notch, M, F, 13 August 1952, RE Crabill, Jr. (USNM). *Rutland Co.*, Clarendon, M, F (ZSM); and Castleton, Bird Mt., M, F, (USNM).

Virginia: *Arlington Co.*, Rosalyn, M, 1 June 1936, I. Fox (USNM). *Bath Co.*, Donthat St. Pk., M, 14 July 1959, RL Hoffman, RE Crabill (USNM). *Dinwiddie Co.*, 11.2 km (7 mi) NW McKenney, VA hwy. 613 at Butterwood Cr., M, 26 June 1978, RM Shelley, WB Jones (NCSM). *Fluvanna Co.*, nr. Antioch, Bull Run Mts., M, 28 April 1935, Allard (USNM). *Henrico Co.*, Richmond, downtown area, M, 18 October 1978, RE Ashton (NCSM). *Prince William Co.*, Bull Run Mts. M, 22 May 1961, AB Gurney (USNM). *Rappahannock Co.*, Shenandoah Nat. Pk., Keyser Run, Little Devil Stairs, M, 3FF, 1 July 1990, RW Baumann (BYU); and Rattlesnake Pt., M, 2FF, 4 July 1936, JPE Morrison (USNM). *Rockingham Co.*,

Timberville, M, F, 15-28 March 1917, CB Savage (MCZ). *Shenandoah Co.*, 8 km (5 mi) N New Market Gap, M, F, 20 September 1941, EA Chapin (USNM).

West Virginia: *Berkeley Co.*, Sleepy Creek Hunt Area, 2MM, 2FF, May-June 1986, PJ Martinat (WVDA). *Fayette Co.*, Fayette Station, 2MM, 4 November 1989, WJ Arnold (BYU); and along US hwy. 60, 1.6 km (1 mi) below Kanawha Falls, F, 21 May 1990, RW Baumann, Clark (BYU). *Jefferson Co.*, Harper's Ferry, M, F, 16 September 1921 (USNM). *Kanawha Co.*, 8 km (5 mi) SE Charleston, Key's Gap, M, F, 23 September 1935, JPE Morrison (USNM).

Wisconsin: *Door Co.*, Washington Is., edge of inland lake, 2FF, 14 June 1971, JA Payne (VMNH). *Iron Co.*, Kimball, 2MM, 2FF, 2 September 1910 (USNM).

Remarks. The fragmented female from Tyrrell Co., North Carolina, was extracted from gut contents of a bullfrog, *Lithobates catesbeianus* Shaw, 1802, and *P. serratus* is the only species known from this part of the state. As males have been taken around 48 km (30 mi) to the north, in Brunswick Co., North Carolina, we likewise assign *P. serratus* to the female from Myrtle Beach, South Carolina.

Polydesmus serratus Say, 1821, was tentatively transferred into *Pseudopolydesmus* by Attems (1898) along with *Polydesmus canadensis* Newport, 1844, whose type locality is the Albany River at James' Bay (often erroneously cited as Hudson's Bay), Ontario. As Attems was uncertain of the identity of Say's form, he placed *Po. serratus*, the older name, under *Po. canadensis*, which became the type species by monotypy (Jeekel 1971). Over the years, *serratus* has been cited under both *Polydesmus* and *Pseudopolydesmus* and as five species – *Ps. serratus*, *Ps. canadensis*, *Ps. pensylvanicus* (Koch, 1847), and *Ps. scopus* and *Ps. planicolens*, both authored by Chamberlin (1942). Some records, particularly from the Mississippi Valley, likely refer to other species, but the only way to determine this is to examine the samples that still exist, a task for the first reviser. Only two species of *Pseudopolydesmus* occur in Canada (Kevan 1983; Shelley 1988, 2002b), *Ps. serratus* and the one known most commonly as *Ps. branneri* (Bollman, 1887), which occur sympatrically there and in the eastern US. Both names, but primarily *Ps. serratus*, have been associated with *Ps. canadensis* (Bollman 1887, 1893; Saussure 1860; Wood 1865; Kenyon 1893a, b; Attems 1898, 1940; Williams and Hefner 1928; Chamberlin and Hoffman 1958; Kevan 1983; Shelley 1988; Withrow 1988), but Hoffman (1999) formally placed *Po. branneri* in synonymy under *Ps. canadensis*, thereby settling this long standing nomenclatural enigma. Subsequent authors (Shelley 2000b, 2001b, 2002c; Snyder 2008) have accepted Hoffman's resolution.

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