

MOUNTAINS

Dykeman namesake among 3 new Smokies spiders



Word from the Smokies
Frances Figart
Columnist

Although the word “spider” may elicit a “yuck” or an “ew” from many readers, the true nature of these oft-feared critters is not as icky as one might suppose. Arachnids provide essential services for humans and play key roles in balancing our ecosystems by keeping herbivorous insects in check.

At the dawn of 2023, it had been 14 years since a new-to-science species of spider had been discovered to live in Great Smoky Mountains National Park. But that changed in February when Marshal Hedin and Marc Milne published their comprehensive study of one Appalachian spider genus: *Nesticus*, a group commonly referred to as the scaffold web or cave cobweb spiders.

In their 130-page scientific paper tracking the evolution of the *Nesticus* genus, Hedin and Milne describe a total of 10 spider species that are new to science — never documented before. Three of these exist in the Smokies, and one is a creature they named *Nesticus dykemanae* to honor Southern Appalachian writer Wilma Dykeman.

“We were generally inspired by her books and then, upon further research, her life and work in environmental and social justice in the region,” says Hedin, a professor of biology at San Diego State University and director of the SDSU Biodiversity Museum. “Apropos because Dykeman focused on water, this species is restricted to just a few locations in the direct vicinity of the headwaters of the West Prong of the Little Pigeon River.”

The paper’s etymology entry on *Nesticus dykemanae* reads: “Named to honor Wilma Dykeman (1920-2006), a writer, speaker, teacher, historian, and environmentalist who spent most of her life in western North Carolina and eastern Tennessee. Mrs. Dykeman was devoted to social justice and environmental integrity, discussing Appalachian water pollution in her classic 1955 book ‘The French Broad,’ and sharing a social justice award in 1957 for her co-authored book ‘Neither Black Nor White.’”

The other two new Smokies discoveries were also named for people who inspired the authors. *Nesticus binfordae* honors Dr. Greta Binford, an arachnologist recognized for her spider research and her leadership in making the American Arachnological Society more diverse and welcoming. *Nesticus cherokeensis* was named to honor the larger Cherokee Nation and can be found near the Qualla Boundary, home of the Eastern Band of Cherokee Indians.



Prior to the recent *Nesticus* discoveries, the last new record of a spider in the Smokies was found by a park intern named Kelly van Assendelft in 2021. That species, the starbellied orbweaver, is seen here along the Foothills Parkway in Maryville, Tennessee. PROVIDED BY INATURALIST USER KEVA28



Author Wilma Dykeman spent her early years at her family’s home just outside Asheville — a formative experience that later inspired and informed her writings and helped establish her central place in Appalachian literature. PROVIDED BY STATE ARCHIVES OF NORTH CAROLINA



A recent study by Marshal Hedin and Marc Milne identified three new-to-science species of the spider genus *Nesticus* living in Great Smoky Mountains National Park. This photo shows an adult female *Nesticus nasicus* carrying her egg sac. PROVIDED BY MARSHAL HEDIN



Nesticus spiders are commonly referred to as scaffold web or cave cobweb spiders. This species, Carter’s cave spider (*Nesticus carteri*), is found primarily within the Appalachian mountain range, where it makes its home in dark, subterranean crevices. PROVIDED BY MARSHAL HEDIN

“These discoveries are thrilling,” says Will Kuhn, director of science and research for Discover Life in America, which has been studying and recording all Smokies species and their relationships for a quarter of a century. “The last new-to-science spider found in the park was *Oreonetides beattyi*, described in 2009, and the last new-record spider, *Acanthepeira stellata* or the starbellied orbweaver, was found by a park intern named Kelly van Assendelft in 2021.”

Park entomologist Becky Nichols, who supervised van Assendelft, was also excited to read Hedin and Milne’s study.

“These are commonly known as scaffold web spiders or cave cobweb spiders, which are not just found in caves but can also live in moist, rocky areas,” she says. “These spiders have a comb of serrated bristles on their hind tarsi (or feet) that are used to pull silk bands from their spinnerets or silk-spinning organs.”

Kuhn and Nichols say that Hedin and Milne’s discoveries bring the total count for the park up to 553 spiders known to the Smokies, including 274 that have been discovered since the All Taxa Biodiversity Inventory began cataloging species 25 years ago. There is now a whopping total of 43 new-to-science spiders in the park.

Spiders are part of a larger group of species called arthropods that provide the life support systems that the whole terrestrial biosphere relies on. According to Kefyn Catley, who conducted research as a professor of biology at Western Carolina University in Cullowhee and has studied the evolutionary biology of spiders on four continents, “Without them it has been estimated that almost all life on land — including humans — would go extinct in nine months.”

Hedin studied Appalachian cave spiders for his Ph.D. and first became interested in arachnids through conversations with Frederick Coyle, professor emeritus of biology at Western Carolina University and a longtime member of Great Smoky Mountains Association. In the late 1990s, Coyle and his WCU students found 517 species of spiders during an intensive three-year survey funded by the National Science Foundation.

“The spider fauna of the Great Smoky Mountains National Park is better

known than the spider fauna of any other US national park,” Coyle says. “Thanks to the efforts of Marshal Hedin and others since our work, the total species count has grown considerably.”

Kuhn says that Discover Life in America doesn’t yet have a good total estimate for the number of spiders they expect to find in the park. “But I’d bet that there are at least a few dozen more species out there waiting to be found.”

Hedin is quick to point out that, basically, all spiders are harmless to people, with less than 0.1% being medically harmful. The only spider native to this area that can envenomate humans is the black widow, and fortunately, like most spiders, these are shy and retiring and do not threaten people.

“The vast majority of spiders are in fact greatly important to humans, consuming 400 to 800 million metric tons of insects per year,” he says. “Of course, many of these insects that spiders consume would be somehow harmful to people, consuming crops or vectoring disease. In this way, spiders are the ultimate predators of many pestiferous insects; this is what they evolved to do!”

As most everyone knows, spiders also make silks that are remarkable biomaterials, and with help from human ingenuity they may provide solutions to many of the problems we face today. Spider silks are already being used in biomedicine.

“In the end,” Hedin says, “spiders are in fact immensely beneficial to humans. Plus, they are just remarkable little animals, and often quite beautiful.”

Frances Figart (rhymes with “tiger”) is the editor of “Smokies Life” and the Creative Services Director for the 29,000-member Great Smoky Mountains Association, an educational nonprofit partner of Great Smoky Mountains National Park. Reach her at frances@gsmas-soc.org.

Two new admin are added to the Buncombe County Schools team

McKenna Leavens
Asheville Citizen Times
USA TODAY NETWORK

Superintendent Rob Jackson announced on July 27 two new administrator positions for Buncombe County Schools for the 2023-24 school year.

There are 22,079 students who attend BCS, according to the National Center of Education Statistics — with a total of 45 schools, according to its website.

Anna Austin

Austin is the new principal of Buncombe County Early College and Middle College and the Buncombe County Center for Career Innovation. She graduated from Mars Hill University with a Bachelor of Science degree and



Austin

received her master’s degree in school administration from Western Carolina University. Before becoming principal, Austin was the assistant principal at Buncombe County Early and Middle College since August 2022. While she was assistant principal, she was also the School Safety Team and testing coordinator. Austin was also an administrator at Johnston Elementary School from July 2018 until June 2023 and before that she was the assistant principal at Erwin High School for three years. She has taught third, fourth and fifth grades in the Buncombe County School District. Austin has been working in North Carolina public schools for 26 years, and she is replacing Donna Lanahan, who is now

the director of secondary education, according to a news release from BCS.

Michele F. Smith

Smith is the new career and technical education director. Smith earned her bachelor’s degree from UNC Asheville and Western Carolina University.



Smith

She went on to get her master’s in secondary education from Western Carolina University. Smith was named the Western Region Instructional Management Coordinator of the Year in 2018. Before starting this position, she was the BCS middle school career development coordinator and project lead for the Way, a STEM education program, since 2019.

She was also the career development coordinator for Reynolds High School for six years and the business and information technology instructor at North Buncombe High School for 13 years. Smith brings 31 years of experience to her new role, and she is replacing Taylor Baldwin, who transitioned to a position outside of Buncombe County Schools, according to a BCS news release.

Buncombe County Schools will start on Aug. 28 for the 2023-24 school year.

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