



American Arachnology

Newsletter of the American Arachnological Society

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2022 American Arachnological Annual Meeting, Davis, California



It is our pleasure to open registration and abstract submission for the 2022 meeting of the American Arachnological Society. Early registration rates will be available until Monday, May 30. Virtual programming will be available to those that are unable to attend in-person; please see the [website](#) for details. International participants who register for the virtual program will also have the opportunity to present a poster remotely (note that this option is only available to colleagues joining us from abroad).

Our goal with this meeting was to keep costs as low as possible, with registration fees comparable to past meetings, while still providing an engaging schedule of talks and outreach, networking, and social events at a great venue at the UC Davis campus. The meeting will open with a reception on Sunday evening followed by an evening social at a local vineyard and winery (Great Bear Vineyards on Monday night) and a closing banquet on Wednesday night. Conference sessions will be held in California Hall, the largest and most modern lecture hall at the UC Davis campus.

Speaking of costs and challenges – post pandemic impacts on campus housing planning presents a number of challenges. The most cost-effective accommodation we were able to negotiate was a plan that includes lodging and two meals (breakfast and lunch). The glitch is that the lodging does *not* include linens. For some reason they were only able to do linens with a more expensive three-meal option (having folks buy a plan with dinners already provided, on most days, was not acceptable). Consequently, folks will need to

bring a sleeping bag or their linens for a standard dorm room bed. If this presents an insurmountable problem for anyone, please don't hesitate to contact us directly – we'll find a solution!

We have also added activities to promote networking opportunities including a LGBTQ+ breakfast and a “Diversify Arachnology Lunch” on Tuesday; please indicate your interest in attending these events (along with others) when registering.

In collaboration with Eileen Hebets at the University of Nebraska, we will kick things off Saturday with a community outreach event celebrating arachnids – “Eight-Legged Encounters.” Please indicate your interest in joining the event (we will be in contact with details) and note that you will need to make independent lodging arrangements for Friday and Saturday night as the campus dorms will not be available until Sunday.

The field trip is scheduled for the Thursday following the formal meeting; if you are staying in the dorms you will have the option for one additional night. We will spend the day at Calaveras Big Trees State Park (https://www.parks.ca.gov/?page_id=551) – the park preserves two magnificent groves of giant sequoias - the world's largest trees.

Registration is open at <https://ces-apps.ucdavis.edu/confreg/index.cfm?confid=1111&webid=5285>

Meeting hosts: Jason Bond, Joel Ledford, and Lisa Chamberlin

American Arachnology Erratum

Thanks to Rich Bradley for pointing out an error in *American Arachnology* issue #87. Tierney Bougie's photo (winner of Track 2 papers) is included in the first place winner photos on p. 3 of that issue but is mislabeled as Anna Holmquist. The editor of the newsletter also realized that she spelled Abel Corver's name incorrectly in the figure legend. Apologies to all the students for these errors!

Journal of Arachnology News

Upcoming changes to page charges: Currently, members of the American Arachnological Society may publish in the *Journal of Arachnology* free of charge; authors who are not members of the American Arachnological Society are charged US\$75.00 per printed page. However, no paper is rejected solely because the authors cannot cover page charges, and members are encouraged to make partial payment if they are able to. If page charges are a financial hardship, authors are encouraged to contact the Editor-in-Chief (debsmith@ku.edu) and AAS treasurer, Dr. Cara Shillington (cshilling@emich.edu) to request a full or partial waiver.

Beginning with manuscripts submitted in May of 2022, members of the American Arachnological Society will be charged US\$10.00 per printed page; charges for non-members remain the same—US\$75.00 per printed page. As before, no paper will be rejected solely because the authors cannot cover page charges, and no paper first submitted before May 2022 will incur retroactive charges.

Why are we doing this? We need the money. The cost of publishing the *Journal of Arachnology* has been rising slowly but steadily, especially the cost of producing the print issues.

Continuous publishing: An additional change to JoA business operations is continuous publication. With Volume 50 (2022), articles will be published online as soon as they are ready, rather than waiting until publication of the print issue. These articles appear on BioOne and on the AAS websites complete with final volume, issue, and pagination. This makes articles available sooner but adds an additional fee for publication of each article.

The change in page charges will allow the society to support this continuous publication model without being a burden for most authors, and it will put our *Journal* in a more secure financial position.

News to Use for Students

Ryan Jones here, your AAS student representative, reaching out to you with some new developments. Thanks to everyone who has taken the time to complete the student survey sent some time ago. I previously shared the results of this survey via Dr. Brian Patrick. Please see his email sent on April 13th to see those results. There was a lot of support for having a digital space to communicate with each other year-round, so I have made one. By popular demand, [we now have a discord channel!](#) Please join up by clicking the link, introduce yourself, and help strengthen our community connections!

Also by popular demand, I will be hosting an early career panelist discussion to talk about their experiences immediately (and some years after) finishing their doctorates. We will hold this panel via Zoom on Tuesday, May 3 at 6pm Eastern. [Here is a link to add AAS scheduled events to your Google calendar](#). If you are new to AAS, I encourage you to join 15 minutes early so that you can make some digital acquaintances before this year's meeting in Davis!

Our panelists will be:

Dr. Catherine Scott - NSERC Postdoctoral Fellow, McGill University.

Dr. Carlos Santibáñez-Lopez - Assistant professor, Western Connecticut State University.

Dr. Lisa Chamberland - Postdoctoral scholar, University of California, Davis

Dr. Alexander Berry - Assistant Professor, Buena Vista University

Allan Cabrero - PhD Candidate (and soon-to-be NSF Postdoctoral Fellow), University of California, Berkeley

These five wonderful scientists have a variety of career experiences to share that may be helpful for your own navigation of career choices as you finish your program and look on to the next step!

Questions, comments, concerns? Please email me at richjones327@gmail.com

Norm Platnick Award for Taxonomic Research – Deadline April 30th

The Norman Platnick Award for Taxonomic Research is for outstanding early career researchers who are members of the American Arachnological Society and who are no more than six years post-PhD. (PhD students who have not been awarded their degree will not be considered). Award criteria can be found at: <https://www.americanarachnology.org/society/norman-platnick-award/> Nominations and applications should be emailed before 11:59 Pacific Standard Time, April 30th. Nominators and nominees must be current members of the American Arachnological Society to be eligible. Nominators should have thorough knowledge of the nominee's accomplishments and nominations must address all of the selection criteria listed on the website. Relevant career interruptions such as illness or caring responsibilities should be outlined clearly.

Interview with North American Solifugae Expert, Jack Brookhart



In January 2022, the editor of *American Arachnology*, Paula Cushing (PEC), interviewed the expert in North American Solifugae, Jack Brookhart (JOB).

PEC: You spent most of your career as a science teacher in the Cherry Creek High School system and as a football coach. How did you get involved in solifuge research?

JOB: We were on a field trip when I was working on my master's degree at Colorado College. We were in the field and I turned over a rock. There was a solifuge under the rock and the professor said, "no one knows anything about those." I was 28 and a football coach and I thought, "if no one knows anything about these, then they can't ask me too many questions!" I decided to work on them. I wasn't thinking about advancing

science; I was trying to think about an easy way to get a project done without anyone asking me too many questions.

PEC: When did you meet Martin Muma?

JOB: I looked in the literature and there were only two people in the world doing work on solifuges: Martin Muma and R.F. Lawrence in South Africa so I wrote to both and told them I was interested in studying solifuges. Both replied. Martin was very enthusiastic about it. Next summer Martin, his wife, and two daughters visited our house in Pueblo. I was teaching at Ron Calle High School (last name of some Pope) – a Catholic high school there. Martin gave me as much info at that time that he had (in 1962). At that time, he'd only published the 1951 paper, based on his PhD thesis. He was spending each summer in Portal doing research on solifuges. He stayed at the research station. He had a big camper, like a Winnebago, but was headquartered out of the Portal station with his family.



At that time, he was biological control man out of Lake Alfred, Florida for the Florida citrus industry. He was a mite man but solifuges were his “hobby.” Martin pointed me in the direction of solifuges saying, go pick up dry cow patties to find them. When Martin drove from Florida to Portal he would stop at every windmill where cattle ran and flip over cow pies, much to his wife’s dismay.

PEC: Were you teaching when you worked on your master’s project with Muma?

JOB: I was teaching high school but working on my master’s out of Colorado College. Most of my colleagues – we were all on NSF grants for science teachers (this was right during Sputnik and they were trying to support science teachers) – applied to several universities throughout the United States but I went to Colorado College because I had a family and it was close.

Martin and I decided that I’d stick to the solifuges of Colorado. The thesis was focused on diversity and somewhat on behavior and ecology (behavior did not work out well because we could not keep them alive).

Lawrence did get me onto using lights to collect. He sent a note with a drawing of a light suspended – where you could sit and wait for solifuges to come to the light. He recommended using a fly swatter to catch those that were attracted to the light. Eventually, I bought about 3-4 Coleman lanterns and used light attraction to collect them.

As it turned out, Ben Banta was running a course in field biology and was pitfall trapping. That’s how I got into pitfall trapping for solifuges. Banta had pitfalls through Phantom Canyon (from Florence, Colorado up to Cripple Creek). That’s where I got *Eremobates bantai* (in the *Eremobates palpisetulosus* species group). Banta was a herp guy and you had to be careful anytime you rode with him because anytime he saw roadkill, he’d slam on his breaks. He got a ton of solifuges out of pitfalls near Peyton Road (near Chico Basin Ranch) in southern Colorado. All his pitfalls were dry pitfalls. Banta’s team jumped out and just pulled out anything alive in the pitfalls and dumped them into alcohol. They’d collect the traps on Mondays and ID the rest of the week. I got a whole ton of material (solifuges) from Banta.

I think we started using wet pitfalls from Martin. Martin was using antifreeze that he’d put into his van for pitfalls (RV antifreeze – propylene glycol). So we switched over to propylene glycol traps.

Muma came out two years later and I had bought at an auction a three-wheel motorcycle from the Colorado Springs police department. I took him out to my best pitfall site in Boone, Colorado. We bounced around and Muma swore never to go out with me again.

PEC: What was Muma like?

JOB: Martin had to sleep in a bed every night – he would never camp. Martin was a stout guy, very even-tempered and calm. A good family man. A very capable biological control guy. He took the Florida citrus industry down from 26 pesticide applications to 15 via integrated pest control and what we call Integrated Pest Management and via changing watering schedules, etc. He was always called upon when there was a fruit fly infestation in the Caribbean. They would send him to the site to control the infestation. He was the go-to guy for these situations. He was very kind. He did not teach and did not support grad students.

My advisor was Dick Bidelman, a professor at Colorado College, and F. Martin Brown (a world-renown Lepidopterist) who taught biology at Fountain High School. They just gave a bit of advice and suggestions but Martin was the primary person who guided me in the research.

PEC: What was Muma like in the field? What were some of your favorite memories?

JOB: Martin was very thorough and very careful in the field. He got a three year NSF grant to study solifuges. We started in east Texas and ended up in San Francisco. The first summer was all Texas. The next summer was in New Mexico and Arizona. The third summer was in California. The focus of the NSF grant was a biodiversity survey of solifuges.

We would drive maybe 200 miles, set up our light just before dusk (we just had Coleman lanterns at first). We didn't have much luck so we took a bit of a hiatus. We were using his RV at first. We had four 4 X 8 pieces of plywood that he painted white. We'd put the Coleman lanterns in front of that – that didn't work well. Then he bought a Jeepster and put a rack on top and attached four floodlights and drove that into the habitat – sometimes we got permission and sometimes we didn't. If we were near the border, we'd always tell the Border patrol where we'd be but they would always come out and check on us anyway. I think they wanted to see if we were legit. We did a lot better with those kinds of lights.

Our typical collecting routine: we would set up just at dusk and collect at light until 1-2 in the morning. I had a UV and also a florescent light and would scour around the edges. We would return with our catch, such as it was to the motel (Martin would not sleep in the field, which was OK with me). We'd rise around 7-8, eat breakfast, and head for the next spot, stopping at all windmills to turn over cow patties. Arriving at the location we might inquire of the rancher if we might set up for the night, then let the local law authorities know where we might be. Usually we had set up our destination before we began the summer collecting season. But sometimes we might just pick a spot that looked suitable and set up hoping no one would mind.

Martin also loved his beer. Lo and behold, during the first year of our first trip, we ended up in dry counties in Texas and were two days without a beer. Martin used to get a six pack every day – I'd drink one and he'd drink the rest. That third day, we drove to Eagle Pass (not dry) as fast as we could go! Martin was not happy not having his beer. We would set the vehicle, turn on the lights, I'd walk the perimeter and use a light to look for active solifuges. Martin would sit at the lights and wait for solifuges (with beer in hand) – Martin was not a physical guy.

Also in regards to my summer fieldwork, I used glass baby jars to store my catch. I'd use dry 5 quart oil cans as pitfalls, set up every 0.2 mile apart along a fence line so I did not ask permission. Being at a Catholic school, baby food jars were not hard to come by. An *Eremorhax puebloensis* male was brought in by a student, one of my football players, who spotted it while walking home under a brightly lit billboard. I had explained what I was doing to my classes. I returned several times that summer to that billboard and finally got the female allotype and another male.

The best night we ever had was in Tehachapi in California – we got 12 males, all the same species.

PEC: On your travels and during your research, did you have the opportunity to meet other arachnologists? Who were they and what were they like?

JOB: A bunch of Muma's early types and other material were deposited AMNH when Willis Gertsch was the curator. Martin and Willis Gertsch were really tight. He stopped giving material to the AMNH because

he did not like Platnick at all. Platnick took over from Gertsch when Gertsch died. At that point, Martin started donating his material to Florida or to California Academy of Sciences.

The first guy we met was Ed Schlinger – we may have met him in Portal or Texas. He was a character and a half – he was nuts. In Portal we met Willis Gertsch and then Vince Roth. Willis was kind of calm and reticent – I did not find him to be very outgoing. Martin was very outgoing. Martin and Kay (Martin's wife) used to drive to Silver City every Saturday night to go dancing. When we got to California, we met Warren Savary, Darrell Ubick, and Harriet Exline (I think).

Martin gave a talk for the San Francisco arachnologists. Warren Savary was involved in that group. Warren was still working on his master's at that time. Martin was very encouraging with Warren because he wanted to get Warren involved in solifuge research. He was disappointed when Warren got a job with the Food and Drug Administration. Martin recognized Warren's interest and talent for research.

Two guys who Martin really tried to get involved in solifuge research – one was Oscar Francke. Martin was very disappointed when Oscar decided to take over his dad's business. The Francke family had a distribution company for Coca Cola. The other was James Cokendolpher. I met Cokendolpher when I was down at Texas Tech for a football game and took a look at some of his material.

Muma took early retirement (I think when he was about 55) so he could devote his life to solifuge research. He built a house in Silver City. Muma's wife, Kay, was much like Irene (Jack's wife) – kind, pretty, and she put up with his research interests. Muma found he could not live off his retirement so he bought the general store in Silver City and managed it for four or five years. I think by then he was old enough to get social security and retirement from Florida. We visited him there once – we were on our way to Mexico in our camper. We stayed there at Silver City with all five of our kids in our pop-up camper.

He had a boy and a girl early in his marriage and then later on had two girls – he called them his 2nd family.

PEC: Did you continue to collaborate with Muma after you completed your master's thesis? I know you did, but how did you maintain that collaboration?

JOB: I finished my Master's in 1964 or 1965. I was a really good football coach. The NSF had these fellowships or grants for science teachers to get their advanced degrees. I applied to about 10 different universities and got into all of them – Colorado College was close and convenient. They also were giving grants for research after I graduated. Ken Zelo got a grant to do research on pseudoscorpions. Everywhere he went, he collected tuff and sifted for pseudoscorpions. No idea where his collection ended up because he ended up President of Chicago Teacher's Association.

I put in a grant to collect solifuges in Colorado. The first year, I went to San Luis Valley, because it was more desert habitat; the second year, I collected in the Arkansas Valley in southeastern Colorado. The third year, I went to northwest Colorado near Craig. We ended up as far west as Grant Junction. We set pitfalls outside Colorado National Monument.

I convinced my principal to have a field biology class for high school so every year I had about five students to help me.

Muma and I kept in contact after I finished my thesis work. He would send me his manuscripts and ask me to comment on them. And I continued doing fieldwork.

I got my own family involved – Irene helped me, digging pitfalls, looking under cow pies. And my kids helped, too.

One of the things I did when I was working on my master's – my father-in-law built me five or six ant colony "houses" – with the glass and the soil. I'd cover both sides with black construction paper and add a solifuge so I could watch them build a burrow. It was tough keeping the solifuges alive. I'd try to collect cowpies and add them to the habitats and sometimes would extract the termites from cowpies and add these as food.

Muma came out two or three times and we did some mating studies, very much like you and I did. He published that.

PEC: Tell me about the privately published papers you and Muma did.

JOB: Martin wanted to get his research published but did not have funding to cover costs. At that time, I was teaching at Cherry Creek school system and they had a printing office – they said they’d be happy to get the work printed. Martin was impatient and wanted the research published – I don’t know why he was concerned because no one else was working on solifuges.

PEC: You continued your research on solifuges long past Muma’s death. How did you balance teaching, family life, and research?

JOB: There were times when we (family) didn’t do much fieldwork. But when I retired from teaching, I started a landscape maintenance company and we did not do much then.

I also collaborated with Sandy Brantley. Sandy sent me material to identify. I went down to New Mexico to meet with Sandy and to survey the area. That’s how I got involved with that collaboration.

Then I heard that an arachnologist was hired at the museum (Denver Museum of Nature & Science – at that time Denver Museum of Natural History) and I got in touch with you (PEC) to see if I could volunteer and start working on solifuges. Once I started volunteering for you, I asked you to make drawings for some solifuge papers because Martin used to do all the drawings for our papers. That’s how we started collaborating.

[Note from PEC: Jack (JOB) and Paula (PEC) ramped up our collaboration when we heard, probably from Warren Savary, that Lorenzo Prendini was going to submit a huge NSF grant focused on solifuges. Paula reached out to let Lorenzo know about the Cushing/Brookhart collaboration and our interest in getting involved in the solifuge grant project. Cushing became co-PI on that five-year grant (2007-2012). She then subsequently got a second four-year NSF grant focused on the solifuge family Eremobatidae with co-PI Matthew Graham. That subsequent NSF grant is still ongoing and Jack is heavily involved in student training.]

PEC: What do you hope for in terms of future research on this group of arachnids?

JOB: I would hope that we end up with well-trained researchers who are interested and enthusiastic about furthering our understanding of this group.

In Memoriam: Peter Weygoldt

German arachnologist, Peter Weygoldt died October 22, 2021. Peter was a member of the International Society of Arachnology and received that society’s highest recognition, the Simon Award, in 2013 for his seminal and lasting contributions to the field. Peter authored several textbooks on pseudoscorpions and whip spiders (Amblypygi) in English and contributed to standard university textbooks in German. His list of publications is extensive and includes work on arachnid phylogeny, behavior, morphology, reproduction, and development – particularly on the orders Pseudoscorpiones and Amblypygi. He was also an expert in the reproductive biology of tree frogs and poison dart frogs. A Festschrift in honor of Peter was published in 2018 in the journal [*Zoologischer Anzeiger*](#).



In Memoriam: Ed Tillinghast



Ed Tillinghast died on December 8, 2021 at home in Durham, New Hampshire. Ed was known by friends and family as “The Spider Man” and was often seen collecting spiders in local fields and barns. His published obituary is available [online](#) and is quoted in this memoriam. Ed was a zoology professor at the University of New Hampshire for decades where he served as mentor to several arachnologists including Mark Townley, currently on staff at UNH; Cathy Tugmon, now on faculty at Augusta University in Georgia; Matthew Foradori, professor at Quinnipiac University in Connecticut. He was also mentor to several master’s students. “He was a wonderful role model who inspired others to study science and to live life with curiosity, generosity, and kindness.”

“Ed grew up in Rhode Island and attended URI then got his PhD at Duke University. He lived in Brunswick Maine while teaching at Bowdoin before settling in Durham. After retirement he continued to study spiders at home. He had an impish sense of humor and delighted in the opportunity to tell a story, whether about spider web proteins or the best burger he ever ate.”

Norm Horner said of Ed Tillinghast: “He was known as Dr. T. by his students and colleagues. He was a neat fellow who dedicated his career studying spiders, mostly their silk.”

Mark Townley, one of Ed’s PhD students said of him: “Ed was certainly one of the great influences of my life and I will miss him enormously. When I arrived at the University of New Hampshire in 1980 as an undergraduate, my plan was to get my degree in botany and then go to the University of Alberta for grad school to do research on photosynthesis. Instead, I began working in Ed’s lab in 1981 and pretty quickly underwent a ‘spider conversion’ and virtually never left UNH. For each of us, there are often just a handful of people who have such a major impact like that on the course of our lives, and Ed was one such person for me. His enthusiasm and unflagging energy for research made him my kindred spirit (though I couldn’t match him energy-wise), and his kindness, compassion, and generosity were so often a marvel, and wonderful example, to me. Truly one of the finest human beings I have known.”

Petr Dolejš wrote of Ed and in response to Mark Townley: “I have just read about the death of Professor Tillinghast... You two made a great work together for understanding the function and physiology of spider silk-producing organs (and influenced my own work as well).”

Arachnids of North Carolina

By Brian Bockhahn, Carol Tingley, and Donald Zepp

The North Carolina Biodiversity Project (NCBP) (nc-biodiversity.com) is a private, nonprofit organization whose mission is to promote public interest in the state’s native species and ecosystems and to support biodiversity conservation. The project is led by a team of volunteers composed of naturalists and conservation biologists - professional, retired, and skilled amateur.

Working in partnership with the NC Division of Parks and Recreation, NCBP is designed to collect, compile and digitize detailed information on the species of North Carolina, particularly those understudied plants and animals that we currently know little about. The project is organized as a series of databases and websites that compile information on groups of species and share the information for each group. Information may come from published records, museum collections, other online records such as iNaturalist, or original fieldwork. The long-term accumulation of digitized information will contribute to national and global efforts to digitize biodiversity data, will support North Carolina conservation efforts, and will help to monitor and address biodiversity changes over time.

The NCBP currently includes websites and/or checklists for the following groups. New taxonomic groups are added as knowledgeable volunteers are recruited.

Amphibians and Reptiles	Coleoptera (Select Beetle Families)
Arachnids	Mosses, Liverworts, and Hornworts
Butterflies	Vascular Plants
Dragonflies and Damselflies	Lichens
Freshwater Fishes	Birds
Grasshoppers, Crickets, and Katydid	Crayfishes
Hemipteran Hoppers	Entognatha
Hymenoptera (Select Bee Families)	Freshwater Bivalves
Mammals	Marine Fishes
Moths	Myxomycetes (Slime Molds)

Among these is a website for [Arachnids of North Carolina](#). Spiders, harvestmen, pseudoscorpions, and scorpions are included; mites and ticks may be added in the future. Records are entered into an online database from published sources and original fieldwork. The website can generate a state checklist for any or all of the included orders, as well as lists of records for each North Carolina county. Records are mapped and most of the recent records include photographs.

The original website checklist for spiders was created by Brian Bockhahn with the help of Alyssa Fuller. Additional species have been added to the checklist from publications and recent field work. One of our members does not go in the field as much as he used to, so he has focused on the spiders on his small property in Smithfield, NC. He has photographed, captured and/or collected 80 spider species in his house, on his house, or in his yard, including several species never before reported from North Carolina!

Following are the spider species recorded by the project so far that apparently have no previously published records from North Carolina, although there may be unpublished records. Dates, locations and photographs are on the website.

Anyphaenidae	<i>Souessoula parva</i>	Salticidae
<i>Hibana futilis</i>	<i>Tusukuru hartlandianus</i>	<i>Attinella concolor</i>
Araneidae	Liocranidae	<i>Hakka himeshimensis</i>
<i>Cyclosa caroli</i>	<i>Agroeca pratensis</i>	<i>Metacyrba floridana</i>
<i>Eriophora ravilla</i>	Lycosidae	Scytodidae
<i>Hypsosinga funebris</i>	<i>Pirata piraticus</i>	<i>Scytodes atlacoya</i>
<i>Mastophora phrynosoma</i>	<i>Schizocosa floridana</i>	<i>Scytodes longipes</i>
Dictynidae	Mysmenidae	Theridiidae
<i>Emblyna sublata</i>	<i>Maymena ambita</i>	<i>Argyrodes pluto</i>
Gnaphosidae	Nesticidae	<i>Coleosoma acutiventer</i>
<i>Camillina pulchra</i>	<i>Nesticus tennesseensis</i>	<i>Rhomphaea projiciens</i>
Linyphiidae	Philodromidae	<i>Theridula gonygaster</i>
<i>Epiceraticelus fluvialis</i>	<i>Philodromus floridensis</i>	Thomisidae
<i>Epiceraticelus mandyae</i>	<i>Philodromus minutus</i>	<i>Modysticus floridanus</i>
<i>Floricomus plumalis</i>	<i>Philodromus vulgaris</i>	Trachelidae
<i>Lepthyphantes intricatus</i>	Phrurolithidae	<i>Trachelas volutus</i>
<i>Microneta viaria</i>	<i>Scotinella fratrella</i>	

Research on *Plectreurys* (Araneae: Plectreuridae)

By David Chamé-Vázquez, María-Luisa Jiménez

Our present research concerns the genus *Plectreurys* Simon, 1893 (Araneae: Plectreuridae) in the Northwest of Mexico. All extant plectreurids are distributed in North America, from the US to Central America and the Caribbean. Furthermore, plectreurids build tangle webs with tubular retreats and are most abundant in arid environments.

The family was revised by Gertsch (1958), who did excellent work with all specimens available at that time. Since Gertsch's treatment, only two species have been described, and some researchers asserted that the diversity of the family is underestimated. Therefore, we will revise the family, and as the first step, we will study the genus *Plectreurys*.

Funding research is a challenge faced by all arachnologists. The pandemic seemed set to make things worse, e.g., the access to natural history museums was minimal, or loans of specimens were paused for a long time. Fortunately, our project was partially supported by the Herbert Levi Memorial Fund for Arachnological Research from the AAS last year. With the funds, we made five short-term field expeditions in Baja California Sur (La Paz, Los Cabos, and Loreto), Sinaloa (Ahome), and Sonora (Hermosillo). In the field, we found and collected fresh specimens of *Plectreurys valens*, *P. bicolor*, *P. tristis*, and a putative new species of *Kibramoa* Chamberlin, 1924. Luckily, we found a male of *P. valens*, which was unknown until now.

As part of the project's broader impact, we trained two students from Mexico in spider taxonomy. Karime Gomez and Jair Alcántar, both undergraduate students, made a research stay at Centro de Investigaciones Biológicas del Noroeste, S.C., Baja California Sur in July and August 2021. The research stay was successful and the collaboration led to the first short communication by Karime and two oral presentations in scientific meetings, both given by Jair.

Short communication:

Gómez-Moreno K.G., Chamé-Vázquez, D. & M.-L. Jiménez. 2021. Primer registro de la araña escupidora *Scytodes lugubris* (Araneae: Scytodidae) para Sonora, México. *Revista Ibérica de Aracnología* 39: 131–132.

Oral Presentations

Alcántar V., J.J., & D. Chamé-Vázquez. Spider diversity of Sinaloa, Mexico. LVI National Congress of Entomology 2021 (Virtual Congress).

Alcántar V., J.J., Gómez M., K.G., Chamé-Vázquez, D., Jiménez, M.L.- & C. Palacios. Spider diversity of Sinaloa, Mexico. SINERGIA, CEBIO, 2021 (Virtual Congress).

We have a long way to go before we are finished with the project, so we will happily accept specimens at any time. We plan to make field trips to the state of Baja California in the future, targeting both *Plectreurys* and *Kibramoa* species. Also, one trip to Cerralbo Island aims to find the elusive *Plectreurys ceralbona* Chamberlin, 1924. Furthermore, we want to revise all the types held in major American museums, including personal collections. We are grateful to Michael Wall & Pam Horsley (San Diego Natural History Museum), Paula Cushing & Colleen Carter (Denver Museum of Nature & Science), and Wendell Icenogle for their willingness to send plectreurids for our study.

Feel free to contact us via email at chamevazquez@gmail.com, ljimenez04@cibnor.mx for any inquiries regarding the project or about spiders of Baja California Peninsula.



Fig. 1-6. *Scytodes lugubris*: 1, 3. Prosoma, vista dorsal. 2, 4. Opistosoma, vista dorsal. 5. Vulva, vista dorsal. 6. Detalle de la vulva, vista dorsal. 1-2, 5-6. Hembra, forma clara. 3-4 Hembra, forma oscura. Escalas: 1-4; 1,0 mm; 5; 0,5 mm; 6; 0,1 mm. Abreviaturas: ES, espermática, sc, escutula.

Scytodes atlacoya (Araneae, Scytodidae) Range Expansion and Behavioral Observations

By [Donald B. Zepp](#)

A spitting spider, *Scytodes atlacoya* Rheims et al., 2007, one of 13 species contemporaneously described from Mexico, had also been found in Texas and southern Oklahoma, with scattered occurrences of its presence in the Gulf States. Vetter (2013) collected specimens near Athens, Georgia for experiments, but otherwise the species has largely gone unnoticed.

On 29 May 2019, I collected an unknown scytodid male outdoors, on the frame of a door of my residence in downtown Smithfield, North Carolina. On 30 April 2020, I found another, similar male, freshly dead, indoors on the floor of a bathroom in the same house, where I had seen several other living spitting spiders in prior years, but had paid them little heed, assuming them to be *S. thoracica* Latreille, 1802.

Examination of the palps of these two specimens revealed that they were clearly neither *S. thoracica* nor another species thought to be in North Carolina at that time, *S. longipes* Lucas, 1844. Instead, they appeared to be *S. atlacoya* Rheims et al., 2007. An adult female superficially resembling the two males was

subsequently collected 29 May 2020 (again on an exterior door frame of my house), and the three specimens were sent to the Instituto Butantan in São Paulo, where the preliminary identification was confirmed by Señor Antonio Brescovit, one of the species' authors.

North Carolina being the furthest north that *S. atlacoya* had been reported at that time, its presence also suggested that it might be found in South Carolina, contiguous with both Georgia and North Carolina. In subsequent perusal of the Internet, I found dozens of photographs clearly showing the distinctive palps and general appearance of *S. atlacoya*, but most commonly misidentified as *S. thoracica* (Latreille, 1802). These were not only from South Carolina, but had been posted on BugGuide.net from several other states, ranging as far north as Norfolk, Virginia. Including such photographic evidence, its known US distribution would appear to comprise Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, and Virginia, with its records all being in (or very near) the North American Coastal Plain.

As I observed a thriving population on and in my house, I began making nocturnal observations and found that there were hundreds of specimens of all ages to be found on walls, porch ceilings, outbuildings, and frames of windows and doors, as well as behind loose tree bark throughout the spring, summer and fall.

Several observations of behavior are reported:

- The spiders typically leave their daytime shelters to hunt, usually within a meter or so of their retreats, and may remain continuously in the same area for weeks or months. They typically leave their retreats around sundown and return around sunup, but spiders actively feeding may remain in the open during daylight until they are sated.
- Although no discrete capture webs are built, both sexes can be found on small pads of sparse webbing, patiently waiting for prey to come near.
- Adults and juveniles were observed entering the webs of *Parasteatoda tepidariorum* (C.L. Koch, 1841), where they engaged in aggressive mimicry, plucking the webs' strands with legs I and, when the webs' denizens were close enough, "spitting" on, biting, wrapping, removing, and subsequently devouring those webs' builders (Fig 1).
- They seem to be generalists, as I have found them eating other spider species, and numerous insect species. I have, however, also found other spiders eating them.
- On 06 Jun 2020, a freshly dead female was recovered from a *P. steatoda* web along with its torn egg sac, still containing ca. 10 eggs, several of which rolled out.

I maintained the eggs, including those that had fallen out of the damaged egg sac, in a 48X55mm glass jar, at room temperatures of 20-22°C. The newly hatched spiderlings—inside and outside the sac—remained nearly motionless. After eight days they became motile. The hatched spiderlings still in the egg sac were unable to extricate themselves; a week later I teased the remnants of the sac open to release them, but all had serious leg deformities, presumably caused by their having been trapped in the damaged egg sac. Only one survived more than a few days, but despite its deformed legs, it was able to eat newly emerged *P. tepidariorum* spiderlings, though it, too, died before molting (Fig. 2).

Two of the female hatchlings from eggs that had rolled out of the egg sac survived to



Fig. 1. A juvenile *S. atlacoya* wrapping a juvenile *P. tepidariorum* (top right) that had been attracted by the former's plucking of the latter's web. (The mosquito blundered into the wrapping scene, and was subsequently eaten.)

maturity: One died 10 Jan 2022 (566 days after hatch), the other is alive at this writing, 31 Jan 2022, 587days post-hatch.

- One female bearing an egg sac was captured 10 July 2020, and two gravid females were later captured on 11 and 24 August. They were held in separate 48X55mm glass jars at room temperatures of 20-22°C. Before oviposition the gravid females fed frequently on an unidentified species of psychodid fly, but none of the three was observed to capture, kill, or eat anything between production of its egg sac and the spiderlings' emergence.



Fig. 2. Deformed 2nd instar *S. atlacoya* eating freshly killed 2nd instar *P. tepidariorum*. Author can provide video from which this still photo was taken.

Table 1. Days until egg hatch and spiderling emergence

Capture Date (all year 2020)	Oviposition Date	Egg Hatch Date/Days to Hatch	Spiderling Emergence Date/Days Post- Hatch Emergence	Approximate Number of Emerged Spiderlings
10 Jul	unknown	unknown	24 Jul/ unknown	50
11 Aug	17 Aug	05 Sep/19 days	15 Sep/10 days	43
24 Aug	01 Sep	23 Sep/22 days	03 Oct/19 days	39

- Unbeknownst to me, a female had selected a hollow steel rail having internal measurements of ca. 16X16mm and located above a covered, exterior door which opens onto my covered porch as a resting place in which a clutch of her eggs hatched. I first noticed the spiders' presence 16 Jun 2020 when she and ca. 40 spiderlings began to appear each evening to hunt in a communally shared web (Fig. 3). When disturbed, most would move quickly back into their hiding spot in the rail.



Fig. 3. Adult female *S. atlatocoya* and some of her offspring hunting outside their daytime retreat.

- On the evening of 03 Sep, on the 3m high ceiling of my porch, I saw a large, irregular web occupied by at least 22 *S. atlatocoya*, comprising individuals of many ages, including adults (Fig. 4). Here, too, there were no signs of aggression or cannibalism among them, and in all my observations, they have appeared to play “well with others.”

Since these preliminary observations, this species has been recorded in a number of North Carolina locations, as shown on the [North Carolina Biodiversity Project's site](#), and is proving to be a common species on the move!

Literature Cited

Vetter, R. S. 2013. Scavenging behavior in spitting spiders, *Scytodes* (Araneae: Scytodidae). *Journal of Arachnology* 41:392-394.

Deadline for Next American Arachnology Submissions

The deadline for the fall issue of *American Arachnology* is October 15, 2022. Send notices, announcements, and short articles of interest to the society [Secretary](#). Natural history articles should be no more than four single spaced pages, 11 pt font including illustrations, tables, and literature cited. If your article is considerably longer, you must first contact the secretary before submission. The newsletters will be posted on the [AAS website](#). You can also follow society news on [Twitter](#) and [Facebook](#). And for news-you-can-use about the world of arachnology, consider joining the [AAS listserv](#).

Over a period of weeks their webbed area extended ca. 50cm from the retreat, and the young spread out each night while the mother remained in or near the web. I continued to observe the family for several months while the number of spiderlings diminished, either through dispersal, predation, or both. I saw no signs of cannibalism by the mother or among the young.

In early August, the female and five of her spiderlings, along with 4 other females and 5 males were collected, killed, preserved in 75% EtOH, and sent to the Instituto Butantan at Señor Brescovit's behest. The remaining spiderlings continued to appear each evening in gradually diminishing numbers well into late October.

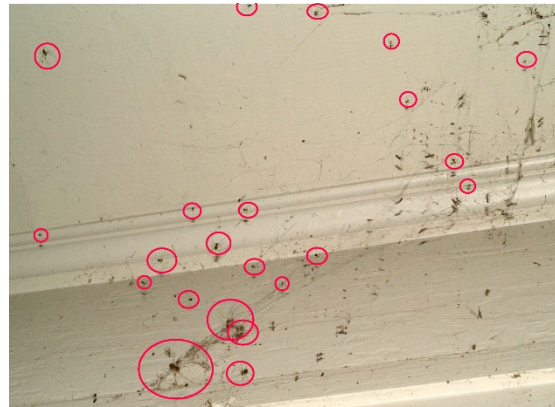


Fig. 4. *S. atlatocoya* of varied ages in shared webbing. The spider in the bottom left of the photo was either a very brave – or very foolish – *P. tepidariorum*.