



American Arachnology

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Table of Contents

American Arachnological Society Annual Meeting.....	1
AAS Travel Grants	1
Student Paper Award Guidelines.....	1
Project Report: The Spider Day 2019, Serbia.....	2
Spiders in the Classroom: A Graduated Approach.....	4
AAS Outreach Committee.....	10
<i>Common Spiders of North America</i> Update	11
Status of the Wolf Spider Genus, <i>Tigrosa</i> , in Kansas	11
In Search of Tiny Female Spiders (Linyphiidae, Erigoninae).....	15
Request for <i>Lophomma depressum</i>	15
Walk a While With Me.....	15
AAS Website Update & Introduction to the Webmaster.....	16
Society Archives News.....	16
Deadline for Next American Arachnology Submissions.....	17

American Arachnological Society Annual Meeting

The American Arachnological Society and the 2020 AAS meeting hosts, Jason Bond and Joel Ledford, have made the very difficult decision to cancel the AAS meeting scheduled to be held at the University of California, Davis. It is our sincere hope that, in retrospect, canceling the meeting will seem like an overreaction, but we feel that at this time, given the concerns surrounding the coronavirus pandemic, this decision is in the best interests of the health and well-being of all the members of our Society.

AAS Travel Grants

Given the cancelation of the 2020 AAS annual meeting, the society is not offering travel grants.

Student Paper Award Guidelines

The Student Paper Presentation Awards recognize outstanding work from students presenting oral papers and posters at the annual AAS Meeting. Students wishing to participate must be a member of AAS. Students should refer to the [Student Paper Guide](#). Although the 2020 meeting has been canceled, we encourage students to review the Student Paper Guide since it provides great advice about giving effective presentations regardless of the venue.

Project Report: The Spider Day 2019, Serbia

By Gordana Grbic



Event Overview. The Spider Day was established as a one-day event in 2017 by myself and colleagues in Novi Sad, Serbia. That first event was focused on spiders. The main goal was to increase spider popularity and to develop an interest in arachnology. For adults, there were some popular lectures, as well as photo and art exhibitions. For children, workshops and competitions were organized. After the official part, there was a cocktail party with spider motives. And internal and external balloon decorations were installed.

On November 16, 2019, a new event was organized at the premises of the Institute for Nature Conversation of Vojvodina Province in Novi Sad, Serbia. The concept was almost the same. Beside lectures and workshops, we held an organized poetry contest for primary school children, and the best poems about spiders were awarded prizes and performed at the event. The art competition was organized for high school children, and the most interesting works were presented at an art exhibition during the event. Furthermore, as a part of the lectures, a mini violin concert of the traditional Italian music “Tarantella” was performed and some decorations and snacks with spider motives were provided.

The lectures were intended primarily for adults and young people. They were held in the congress hall, with a capacity of 100 seats. All seats were occupied. The literary competition was organised for elementary school students. 173 participants sent their poems, from all over the Balkan region. The art competition was organised for high school children. Two gymnasiums from Novi Sad participated, and around 100



children sent their work. The 80 best works were chosen to be part of the art exhibition. Since the exhibition was open for 10 more days, two groups of high school children of around 2x20 children guided by their professors visited the exhibition setting. The event workshops were intended for elementary school students. The capacity of the workshop was 50 to 60 participants. These workshops were full.

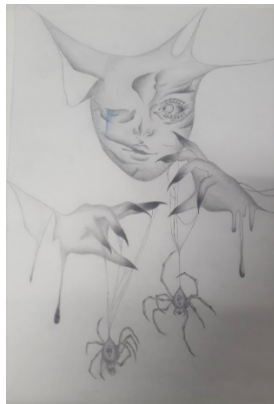
Decorations. We installed internal and external balloon decorations, spider-themed decorations for the presentation desk, and other interesting balloon sculptures to attract attendees.

Poetry contest. This was a contest for primary school children held from 15 September – 15 October. We received 173 poems, and the contest became international, since poems came from all over the region, not only from Serbia. Participants were mostly from ex-Yugoslavian countries such as Macedonia, Montenegro, Bosnia and Hercegovina; the evaluation committee had 3 members and decisions were difficult since so many good poems were received. However, at the end the best poems were announced in two categories: for children of ages 7 to 10, and 11 to 14. The best poems were read as part of the event program, and their authors were awarded prizes.





Popular lectures for adults. There were 5 lectures on different topics. Jan Beccaloni (England) talked about different strategies of spider courtship and maternal care; Martina Pavlek (Croatia) presented on cave spiders and their characteristics; Igor Gajic (Serbia) talk about mimicry, what and why spiders can mimic; Luka Katusic (Croatia) explained why spiders are not dangerous although they are venomous; and Gordana Grbic (Serbia) revealed what is hidden behind the Italian dance “Tarantella” and how it is connected with the spider *Lycosa tarantula*. After the lectures, an ensemble of the private music school “Muzicki atelje” from Novi Sad, performed the “Tarantella.”



Art competition. This contest was organized for high school children of 2 gymnasiums from Novi Sad, and it lasted from 1 – 30 October. Students used different media and techniques and the work was evaluated by school professors who chose the best 80 works of art as part of the event exhibition. This exhibition was open to the public for an additional 10 days after the event. Ten additional works of art were sent to our NGO from one primary school from Mladenovac (city near Belgrade). Those drawings were made by little children, as a task to overcome the fear of spiders, after one individual interrupted their class

two months ago. Their school teacher was very creative and we were happy to include these drawings in the exhibition. The piece above and on the left is from a high school student and the colorful piece on the right was done by a primary school student.

Children’s workshop. We prepared several workshops for children. They were organized in the same time with the lectures, but in another part of the building. The activities included cut, color and assemble a spider from different materials; making a spider web; creating a spider-themed mosaic; and a spider coloring book for the youngest children. Volunteers worked with the children, explaining all about spider body parts and webs.

Terrarium section of live animals. Close to the children’s section, we installed a small exhibition of live spiders where experienced university teaching professors, Mladen Horvatic (Serbia) talked about spiders.

This was a hit with all participants – coming face to face with living spiders!



Cocktail party for grownups. Adults attending the event enjoyed food and drinks with spider motives.

Ending comments. I would like to express my gratitude to the American Arachnological Society for giving me an opportunity to conduct this event. It was my pleasure and satisfaction to work under the society's sponsorship. The event was a great success, more than anyone expected. Unfortunately, it was available only for people living close-by. People in Serbia have very limited resources and do not travel much. It would be more useful for knowledge dissemination to organize this kind of event in several big cities around the country. This way, we could reach more people who care about nature. That could have more impact on our future research and objective of promoting the study of spiders. Biodiversity research and outreach in my country are neglected so the importance of The Spider Day, Serbia is even bigger than it seems at first glance.

The event was also supported by the Institute for Nature Conservation of Vojvodina Province, which provided the congress hall, exhibition space, and art display boards for free as well as accommodation for the lecturers. Minaqua BB, a factory of natural mineral water from Novi Sad, Serbia provided refreshments.

More photos of this event and information about the Serbia group of researchers can be found at: <http://www.paukovisrbije.com/>

Spiders in the Classroom: A Graduated Approach

By [R.G. Holmberg](#), Emeritus Professor, Athabasca University, Athabasca, Alberta, Canada

As an arachnologist/entomologist, I find spiders fascinating. However, many people have apprehensions or even phobias about spiders. I try to get the general public to become interested, rather than fearful about spiders, and other arthropods, with school and public presentations. This article summarizes my approach, based on trial and error over 40 years, of introducing spiders to young children.

Rather than starting off with a spectacle, such as handling a large tarantula, I developed a graduated, non-threatening approach to help reduce any anxieties about spiders that may already be present. I think this approach can be adapted to other feared animals such as scorpions, bees, snakes, and bats.

This approach has four parts: plastic models, photographs, real animals, and a take-home component. What follows is an outline of a typical presentation on *Spiders* to a pre-kindergarten class, with modifications for older children (e.g., *Spiders and Their Kin*) in square brackets. For teenagers and adults (e.g., *Spiders, Scorpions, Mites and Other Things Nice*), I omit the first and fourth parts and start with the second part, photographs (supplemented with diagrams of anatomy covered with the models) and expand the diversity of specimens and vocabulary.

1. Models. I start with all the children sitting in a circle, usually around a large table or many desks. I use realistically looking, flexible plastic toys that are much larger than real arthropods. The models allow hands-on examination of normally small body parts. For pre-kindergarten classes (4- to 5-year-olds; I have found most 3-year-olds too immature for this approach), I use seven models in this order: grasshopper, butterfly, dragonfly, fly, ant, centipede, and spider. [For older children, up to Grade 4, I add other models such as a hemipteran/bug, bee, crab, and scorpion.] I pull out each model from an opaque bag one at a time, ask a few questions or give some information, and then pass the model around to each child for personal examination. Typical questions and information for each model are as follows (in abbreviated form). The questions and information vary with the qualities of the models and the ages of the audience. With larger classes, there is not enough time for all children to handle one model before I introduce another model. Thus, their attention is

divided between what they were/are/will be handling and what I am saying about another model. This focuses their attention and keeps them from getting bored waiting their turn for handling a model. I have found that even though they may be examining and perhaps talking about one model, they usually also pick up about what I say about other models.

- If the teacher has not already introduced me, I introduce myself and say that we are going to talk about spiders. I tell the children that we are first going to look at some toys, then look at some photographs and then talk some more about spiders.
- Grasshopper. What is this? Is it real? Is it alive? What is it made of? Can it hurt you? A grasshopper is an insect. How many legs does an insect have? Let us count them together – one, two ... six. What are these? Antennae/antennas.
- Butterfly. What is this? How many legs does it have? (My model has front legs that are very small, like some real butterflies, and most children initially see only the larger four.) What are these? Antennae/antennas. How many wings do butterflies have? Most flying insects have four wings.
- Dragonfly. What is this? How many wings? Antennae of dragonflies are very small and are not shown on this model.
- Fly. What is this? How many wings? Nearly all insects with only two wings are flies.
- Ant. What is this? How many legs? (Some students mistake the antennae for legs.) Insects have three body parts: head, thorax, and abdomen. Can you say thorax? Can you say abdomen?
- Centipede. Is this alive? (The model easily wiggles.) This is a model of a centipede. Is a centipede an insect? It has a head and antennae. How many legs? Many more than six. If an animal has more than six legs, it is not an insect.
- Spider. What is this? How many legs? Let us count them together - 1, 2 ... 8. What are these two things? Palps, not antennae. Can you say palp? Spiders [arachnids] also have chelicerae which are modified in spiders into fangs. Can you say chelicerae? Spiders [arachnids] have two body parts: head-thorax and abdomen [prosoma and opisthosoma].



During this part of the presentation, a few children may try to scare another child seated next to him/her with one of the models. This scare tactic usually does not work because all the children already know the models are toys. Sometimes I reinforce that the plastic models are not real and cannot harm them. This is also a time when a teacher or helper may have to intervene and stop such behavior.

As soon as each child handles all the models, I ask them to move to where the slide show will be presented. For young children, their attention span is short (less than 15 minutes). Therefore, I get the children to move locations in the same room after the first and second parts of the presentation.

2. Photographs. This part uses photographs of real spiders. In the past, I often had to lug around a 35 mm slide projector, electrical extension cords and sometimes a screen. Today, many classrooms have digital projectors or smartboards, so all I bring is a USB memory stick with a slide show (in various formats in case of conflicts with different operating systems). Usually, the students just sit on the floor. Although nearly all children are familiar with large television screens, I take the time

to explain that the photographs come from a computer. I also remind them that what they see are only big pictures of small animals and pictures cannot harm them.

The sequence of photographs that I use is as follows. I try to use as many photographs as possible that I made but acknowledge in print those that I did not make. (Some sharp-eyed older children comment on the acknowledgements and titles.) This is where I ask for hands up for questions. If time is short, I sometimes must ignore some questions or put them off until later.

- A photograph of all the models they have just handled. Where is the spider?
- What colors are spiders? A series of spiders going from drab to very colorful.
- [For older children, I skip the two points above. What is a spider? Animal. Eight jointed legs. Exoskeleton. Two body parts: head-thorax, abdomen or prosoma, opisthosoma. Four mouthparts: palps, chelicerae (fangs). No antennae. No wings.]
- How do spiders grow? Photograph of a spider and its exuvia. We have an internal skeleton under our skin and muscles. Spiders [arthropods] have outside/external skeletons which they crawl out of before getting bigger. [For older children, I use the analogy of them pretending to be in a suit of armor. Such an “exoskeleton” would stop their bodies from growing.] This shedding of the exoskeleton is called molting. Can you say molt? The molt [exuvia] is like the spider’s old clothes. The molt is not alive.
- How big do spiders get? Photographs of small (most species) and large spiders (most tarantulas). [I do not recommend that children keep tarantulas as pets because of their urticating hairs. The hairs act like miniature porcupine quills. They get into the eyes, nose and skin of potential predators and humans.]
- How do spiders see? Usually six or eight eyes. Most spiders see poorly, some have excellent eyesight.
- [How many kinds (species) of spiders are in Alberta? 601 species in the province. Our biggest species is a fishing spider.]
- What do spiders eat? Most spiders eat insects. A few occasionally eat other things, e.g., fishing spider eating a minnow.
- How do spiders kill their food/prey? Fangs and venom. Most spiders have venom. Most venoms work best on insects, not humans.
- Do any dangerous spiders live around here? Dangerous means that the venom causes severe pain, may put people, who have been bitten, in a hospital and, rarely, they may die. In southern Alberta, Saskatchewan and British Columbia there is a black widow. If you are bitten by this spider it will cause a lot of pain, but you will not die.
- Stray cat analogy. Would you pick up a strange cat? No, because it might bite or scratch you. If you see a strange spider, you can look at it but if you do not pick it up, it will not harm you. (The downside of this analogy is that I often get a number of cat stories such as “I have a cat. Her name is Fluffy.” This is especially where I ask for only questions, not stories.)
- All spiders make silk. Silk comes from spinnerets. What is silk used for? Webs to catch prey. There are many kinds of webs.



- Silk is used to cover eggs.
 - Dragline silk. Like a mountain climber uses a safety rope.
 - Spiders do not fly but they can be carried by the wind. This is called ballooning.
 - [What eats spiders? Birds. Wasps. Other spiders.]
 - [How do spiders avoid being eaten? Camouflage – color and mimicry. Spines. Fangs.]
 - [Spider life cycle.]
 - [Other kinds of arachnids.]
3. Real animals. After moving back to the initial seating, I state that we have looked at models and photographs. Now are you ready to see real, but dead, spiders? Can dead spiders hurt you? Again, I pass out specimens one at a time, but keep the momentum going.

- I pass around a few small spiders preserved in plastic or in sealed vials of alcohol.
- Here is a dead black widow (female) spider. Can you see the two triangles on the bottom of the abdomen?



- Are you now ready to see some big, but dead, spiders? I pass around a dried tarantula in a glass mount and another in a plastic block. I point out the palps, fangs and spinnerets.

- Here is a molt of a tarantula. Remember that it is not alive, just the old clothes of the spider. (I use a very large glass Petri dish and caution the children to use two hands to hold it. Adults keep a close watch.) As the exuvia moves a bit, some children are hesitant about handling it.

- Are you now ready to see some small, live spiders? They are in bottles (usually stout glass or plastic vials with a small piece of wet paper to prevent dehydration) and cannot hurt you. I pass around 2-3 spider families that I collect locally. Sometimes I have a live black widow for passing around.



- Are you now ready to see a large spider? I pass around a tarantula in a small plastic cage that the children can pick up and put their faces close to the animal without any danger to the children. I give a pet name for the spider and state its common name and where the species is from. I mention that little spiders drop like feathers, but big spiders drop like eggs, so they must be careful. (In all my presentations, I have never had more than a few vials of spiders dropped and only one broken glass vial.) By this time, most children are excited to see the tarantula, but a few may wish to bypass handling the cage. Some teachers like taking photographs of each child with the tarantula and give the photographs to the respective parents. Any photographs taken of children need parental permission. This is usually done with a form at the beginning of the school term.

4. Take Home Materials. I made two pages of spider outlines for children to color. I remind the children that spiders come in all colors so they can use any colors they wish. I also encourage them to cut the pictures out and make a simple mobile for their room. Rather than duplicating the images

myself, I usually give “originals” for the teachers to photocopy and distribute. Many teachers keep copies and use them year after year.

Before ending the presentation, I give plastic spider rings to each child and supervising adult. Such rings are commonly sold around Halloween when I stock up. A package of 40-50 rings only costs a dollar or two. Nearly every child and most adults will take a ring and wear it. (Cutting the bottom of the ring with scissors will allow the rings to fit larger fingers.) In effect, each participant who wears a ring is holding a spider.



At the very end, I have a question period. Before I leave the teacher usually asks the students to say thank you. Sometimes, the students later send thank you drawings and notes.

Catch and Release Activity

Occasionally, I run a field trip in or near the school grounds after a presentation for children to collect spiders and examine them. Methods include sweep nets and hand collecting. Equipment includes buckets of plastic vials (e.g., pill vials with non-child resistant caps), a few sturdy sweep nets, and a few magnifiers or stereoscopic microscopes.

Anxiety, Fear and Phobia

Some believe that human fear of spiders is innate. In my experience, such fears are learned. In young children, very few are afraid before I start my presentations. In older groups, the probability of fearful individuals increases.

Some children feign fear of spiders for attention. In case they are really afraid, I usually get them to sit near me or another adult and perhaps remove him/her to the periphery of the group. I still try to ensure they get a chance to physically handle or bypass the models and the real animals.

It is also important to prevent “I am afraid” of one child being spread to other children. Usually “I am afraid too” behavior can be quickly stopped by having an adult pay a little more attention to a child who seems to be afraid. Only rarely has a child had to leave the room (other than needing a restroom break) during my presentations. On one occasion, I had two Grade 6 students leave the classroom before I started my presentation. I wondered if they were afraid of spiders or just wanted to skip class.

Phobias are, by definition, irrational fears. Logical arguments cannot stop them. Overcoming phobias takes a lot of time and effort. My presentations cannot reverse an established phobia. However, I hope such presentations can prevent the establishment of phobias.

Tips for Dealing with Teachers

Most schools have curricula that teachers have to cover in a set time. Often, there is little time for activities outside the curriculum. Especially in older grades, teachers may not have time for guests speaking about things not in the curriculum. On the other hand, if arthropods are in the curriculum, many teachers know very little about these animals. In Alberta, spiders are in the Grade 2 curriculum and most teachers appreciate learning more about them. If you are interested in doing such presentations, I suggest checking your local school curricula to see where a talk on spiders or other arthropods may fit. Otherwise, library and youth groups may appreciate learning about these animals.

Some teachers suggest pooling several classes together to save time. I do not do this because I do not want to miss identifying a child who is afraid. In a class of 25-30 children with a teacher and myself, there is at least one adult to 15 children. If there is an aid or a parent, the ratio is even better. Indeed, I usually bring along someone to assist me. If a child is fearful, I try to pay a little more attention to that child or ask one of the other adults to sit with that child. I also try to ensure that the adults in attendance are comfortable

enough with spiders. If I will be doing several presentations in one school, I ask for a spare room to be used and have the classes come there. I also request doing the classes back to back (but with a short break in between) so that set up is minimized. Having school help with computers, data projectors, or smart screens is usually necessary.

To reduce potential anxiety, I ask teachers to only indicate, at most, that the class will have a guest speaker but not to say that he will speak about spiders. Even the expectation of a stranger in their class may cause anxiety. However, this “only a guest speaker” scenario seldom happens because teachers usually try to prepare their students for the topic. If the teacher does not indicate the topic, the students usually notice my spider T-shirt when I enter the classroom.

My presentations are normally very disruptive to classroom routine. The children are usually very excited because they have a guest who brings in unusual things. I also ask the children to say body parts out loud and in unison, rather than asking the children to raise their hands before speaking. I find saying new words together helps to keep their attention focused. I also think that if most of their fellows are excited, the reluctant ones will usually join in. The passing around of models and animals causes much animated discussion. The noisy commotion may be disturbing to teachers who prefer that students talk one at a time and only after they raise their hands and get permission to speak. Thus, I inform teachers in advance that my presentations will be noisy and that I encourage the children to talk to one another about the specimens.

A very few teachers may treat a guest speaker as a chance to take a break or do other things. I insist that the teacher or at least the teacher’s aide always stays with the class. They know the students and who needs to be watched closely and can deal with disciplinary issues if necessary. Also, there are potential liability issues if things go wrong.

Tips for Presenters

I have an advantage over colleagues to the south. In central Alberta where I live and do most of my presentations, there are no dangerous spiders. Also, in Canada, there are no records of anyone who died of a spider bite.

It has taken me years to accumulate all the materials that I presently use. If you wish to do such presentations, do not wait until you have everything you want, take the plunge.

As I live in a cold climate, I have made an insulated box to transport live arachnids to my presentations.

For young children, I do not bring up the topic of sex but if questions arise, I answer them as straight forward as possible. For example, “Yes, some female spiders eat males after attempted or actual mating, but this does not usually occur in nature.”

Do not be surprised if one or two children will give you a hug at the end of a presentation.

Remember that the teacher and other adults present may be afraid of spiders. Such people usually select themselves out of attending but not always.

Comments on My Methods

One of my problems in any presentation is using a vocabulary that is appropriate for that audience. On the other hand, when a technical word is necessary, I use it. Since most children can reel off full taxonomic names of dinosaurs, I use words such as thorax and chelicerae.

I use group dynamics to alleviate potential or actual fears in individuals.

I use repetition a lot.

What do I get out of these presentations?

These presentations take time to prepare, deliver and clean-up. There are minor transportation and materials costs. I do these presentations for the following reasons.

One, I think that all academics should try to educate not only their students but the general public about their areas of expertise. There are many ways of doing this – public talks and debates, books and magazine articles, radio and television talk shows, newspaper articles, computer blogs, etc. I chose more students, only younger than my usual ones.

Two, in my university duties, I was not able to formally inform my students about my favorite animals, the arthropods. I was able to do so informally with the general public.

Three, I do think that I helped at least some children and adults to appreciate arthropods and reduced fear and misunderstandings in others.

Does this process work to reduce fear?

Most teachers sometimes ask themselves whether their efforts really change the mindsets of their students. I wanted a psychological before and after study about this procedure but was not able to do so. Thus, I have only anecdotal information.

Nearly all children and most adults, while apprehensive initially, did examine live spiders closely and handled them indirectly (while the spiders were in containers).

I remember one particular case. A father accompanied his son to one of my presentations for prekindergarten children. The boy was very much afraid and sat apart from the group with his father. Over the time of the presentation, his father and I tried, with only some success, to get the boy to look at the models and spiders. At the end of the presentation, I was not sure if I had accomplished anything positive. However, a couple of years later, the same boy was so confident about spiders that he acted as my assistant for his Grade 2 class.

Acknowledgements

For the past 18 years, Linda Lindballe of Science Outreach – Athabasca (<http://scienceoutreach.ab.ca/>) has helped arrange my presentations with various groups and has assisted with delivery of many of them. Linda also made most of the photographs accompanying this article.

AAS Outreach Committee

The AAS Executive Committee is working on structuring support for society outreach. This effort is a work in progress and we will reach out with more specific information in the phased unfurling of the plan.

Goal: To advance the communication of scientific information about arachnids and inform a wider audience about the importance and wonder of arachnids and their remarkable biology.

Categories of activities this committee will oversee include (expanded below):

1. Social Media
2. Resources to support hands-on public outreach
3. Citizen Science
4. Traditional media (print, web, news)

Committee Structure

Each of these will be labor intensive and we are considering subcommittees that each has a chair who is a long-term member of our community. These four representatives will communicate at least semiannually with the goal of identifying and supporting areas of synergy.

1. Social Media**

Establish regular monitoring schedule, adding appropriate society news and event content, keep up-to-date with national and international arachnid news and significant or fascinating information or images. Filter content for inappropriate or offensive material.

Platforms:

- a. AAS Facebook page
- b. AAS twitter feed
- c. (Establish) Instagram
- d. (Establish) LinkedIn
- e. (Establish) Pinterest
- f. (Establish) Snapchat
- g. (Establish) Reddit
- h. other platforms (Flickr, YouTube, etc.)

*** This subcommittee will be the first to launch. We have a list of people who are interested in participating, but please add your name to this list if you would like to participate. We will formalize structure and leadership for this group soon.*

2. Resources to support hands-on public outreach

- a. Managing open resources for informal and formal education
- b. Grants to support hands-on public outreach or develop open resources

3. Citizen Science (working closely with the hands-on group)

- a. coordinating iNaturalist efforts
- b. supporting development and coordination of other efforts

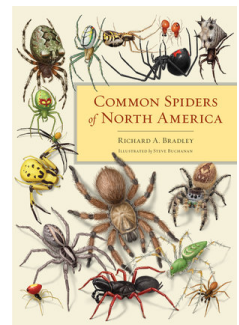
4. Traditional media (print, web, news)

- a. Coordinate official publicity for the society and its products (e.g., SNAIM).
- b. Assist the society secretary with production of *American Arachnology* newsletter, and press releases, as requested.
- c. Provide fillers and news items for *American Arachnology*

If you are interested in chairing or serving in any of these subcommittees, please contact Greta Binford (binford@lclark.edu).

Common Spiders of North America Update

Rich Bradley and Steve Buchanan's wonderful field guide – *Common Spiders of North America* – received a glowing blog post [review by David Albaugh](#) that is well worth reading. Rich's beautifully illustrated book is now out in paperback for \$35 US. The book is available from any major book retailer and [links to these retailers](#) can be found on the AAS website.



Status of the Wolf Spider Genus, *Tigrosa*, in Kansas

By Hank Guarisco

Introduction

The genus *Tigrosa* Brady 2012 (Araneae: Lycosidae) was erected to include five species of medium to large wolf spiders found in the nearctic region (Brady 2012). These species, along with many other large wolf spiders, were formerly placed in the genus *Lycosa* Latreille 1804 until Dondale and Redner (1990) determined that *Lycosa* is restricted to the Mediterranean region. Therefore, these authors transferred them into the genus *Hogna* Simon 1885, while realizing that further taxonomic study might result in splitting this genus into more genera. Based on a number of shared characteristics, especially the dorsal color pattern of the carapace and abdomen, Brady and McKinley (1994) erected the genus *Rabidosa* Brady & McKinley 1994 to contain five species formerly placed in *Hogna*.

Members of the genus *Tigrosa* are united principally by the dorsal color pattern of the carapace. They all possess a thin, medial stripe that often widens toward the rear of the carapace, but not more than the distance between the posterior eyes. There is also a broad, wavy, pale submarginal stripe on each side of the carapace, and darker lines radiating from the centrally located cephalic groove. In *T. aspersa* (Hentz 1844), the narrow, pale line is limited to the eye region. Other important, shared, morphological characters include similar eye placement, genitalia, robust body, and long legs (Brady 2012).

There has been much confusion concerning the species identity of members of the genus due to individual and regional variation in color, and their superficially similar genitalia.

The first *Tigrosa* reported in Kansas was a female *T. georgicola* (Walckenaer 1837) [listed as *Lycosa riparia* Hentz 1844] that was entering an outbuilding in Shawnee County (Cragin 1886). In 1904, *T. grandis* (Banks 1894) [listed as *Lycosa permunda* Chamberlin 1904] was taken somewhere in Kansas (Chamberlin 1904). Males and females of *T. helluo* (Walckenaer 1837) [listed as *Lycosa nidicola* Emerton 1885] were collected in Manhattan, Riley County, and Delphos, Ottawa County in the same year (Scheffer 1904). In his revision of the wolf spiders of North America, Chamberlin (1908) includes Kansas in the range of *T. aspersa* (Hentz 1844) [listed as *Lycosa aspersa* Hentz 1844]. Natural history information was provided for Douglas County populations of *T. aspersa* and *T. helluo* [listed as *Lycosa helluo* Walckenaer 1837] (Fitch 1963).

Recent field work by the author has uncovered the presence of the fifth species in the genus, *Tigrosa annexa* (Chamberlin and Ivie 1944), in Kansas. In addition to documenting this new state record, natural history information is provided for Kansas populations of all five species of *Tigrosa*.

Species Accounts

Tigrosa annexa is a pale, medium-sized spider (average body length = 13 mm) that strongly resembles *Schizocosa avida* (Walckenaer 1837) and *S. mccooki* (Montgomery 1904) because it possesses the dark, lanceolate, heart mark that is characteristic of these two species (Fig. 1). However, it is pale underneath, and lacks the black ventral mark present in the *Schizocosa* species (Fig. 2). It also possesses two, small, white stripes just behind the posterior median eyes. *Tigrosa annexa* ranges from Delaware to Florida, westward into Ohio, Kentucky, Mississippi, Louisiana, and Texas; and occurs in cotton fields and Bermuda grass (Brady 2012). I have collected specimens from mowed lawns in the vicinity of Pensacola, Florida in Escambia and Santa Rosa Counties. The three Kansas specimens, however, were collected near water. Two males were taken from a vertical, cement wall above a canal in Baker Wetlands, Douglas County, on April 1 and November 1. A third male was discovered under a rock along the shore of Jeffrey's Energy Center Lake 1, in Pottawatomie County, on May 7. These northeastern Kansas records extend the range of this species several hundred miles to the north and west.

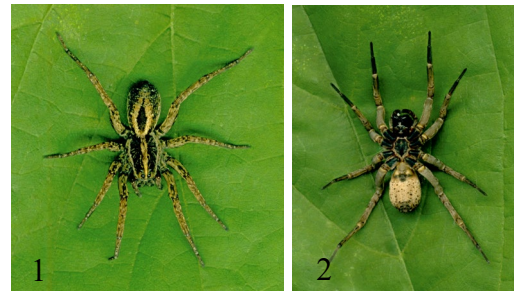


Fig. 1 *Tigrosa annexa* female, dorsal; Fig. 2 *T. annexa* female, ventral.

Tigrosa aspersa is a dark brown, large spider (average body length = 28 mm) that has the narrow, pale stripe on the carapace limited to the eye region. It ranges from Ontario to Georgia, westward to the Great Lakes States (Sierwald et al. 2005), Iowa, Missouri, Kansas (Fitch 1963), Arkansas and Texas (Brady 2012). In Connecticut, adult males were found from August to October, females from April to late September. Mating occurred in the fall. Females with egg sacs were observed in June and August. One egg sac was 14 mm in diameter and contained 381 eggs (Kaston 1981). This uncommon species inhabits woodlands and the edge of woods where it constructs silk-lined burrows in the ground and under rocks. An adult female was taken in a pitfall trap on the Fitch Natural History Reservation in Douglas County, Kansas on May 30. Predators include the Great Plains skink (*Plestiodon obsoletus* Baird and Girard 1852), and the five-lined skink (*Plestiodon fasciatus* (Linnaeus 1758)), which because of its smaller size, can only successfully prey upon young *T. aspersa* (Fitch 1963).



Fig. 3. *Tigrosa georgicola* female, dorsal; Fig. 4. *T. georgicola* female, ventral.

Tigrosa georgicola is a dark brown, large spider (average body length = 21 mm) that has a narrow, pale, medial line extending the entire length of the carapace (Fig. 3), and three, dark stripes on the ventral side of the abdomen (Fig. 4). Some particularly dark specimens exhibit an entirely black venter. These melanistic individuals were described as *Lycosa wallacei* Chamberlin and Ivie 1944, but Brady (2012) considers them to be conspecific with *T. georgicola*. This southeastern species ranges from Maryland to Florida, westward to Kansas and Texas (Brady 2012). In Kansas it has been collected in the following counties: Chase, Cowley, Crawford, Elk, Douglas, Jefferson, Labette, Leavenworth, Miami, Montgomery, Saline, Shawnee, and Woodson. Adult males were found in June, August, September, and October, females April through June, September and

October. Female with egg sacs were collected in May and June. Two egg sacs, 12 mm and 14 mm in diameter, contained 410 and 415 eggs, respectively. A female captured on June 3rd, produced an egg sac five days later. On July 7, 304 young emerged from the sac. This species can live for several years. I kept an adult female in captivity for over 1.5 years, during which time she produced four egg sacs. Although it inhabits woodlands, this species may also be found under rocks in pastures, in campgrounds, and sometimes in outbuildings. In Texas, its habitat includes: forests, woodlands, pecan groves, pine woods, sedge meadows, and cotton fields (Dean 2016).

Tigrosa grandis is a large (body length = 22 mm), brown spider with light brown legs and a wide, pale, submarginal band on the carapace. There are often several pairs of small white spots on the posterior half of the abdomen (Fig. 5). Males are much paler than females. The ventral side of the abdomen is light orange with many small, black spots (Fig. 6). This western species ranges from eastern Kansas and Nebraska westward into Colorado, Wyoming, Montana, and Nevada (Brady 2012). It was reported from Montgomery and Wyandotte Counties in Kansas when *T. grandis* was redescribed by Slowik and Cushing (2009). It has also been taken in the following Kansas counties: Butler, Chase, Douglas, Geary, Jefferson, and Reno.



Fig. 5. *Tigrosa grandis* female, dorsal; Fig. 6. *T. grandis* female, ventral.

Adult males and females were encountered June through October. On May 22, a female with several young was found in an open, wet area near Clinton Lake. At least half of the specimens were collected inside houses, basements, garages, in school buildings, as well as 2 meters high on the outside of buildings. It was also taken in pitfall traps in old fields and under rocks in pastures. This large spider readily bites when handled. A bite I received on the index finger resulted in a sharp, stabbing pain and swelling at the site. In several hours all symptoms disappeared.

Tigrosa helluo is a central, light submarginal *georgicola* and *T. ventral* surface eastern half of the Nebraska, been found in the



Fig. 7. *Tigrosa helluo* female, dorsal;
Fig. 8. *T. helluo* female, ventral.

dark brown, medium-sized spider (body length = 17 mm) with a stripe extending the entire length of the carapace, and narrow, bands. The abdomen is dark brown (Fig. 7), and resembles *T. aspersa*, but can be distinguished by its smaller size and its pale, with small, black spots (Fig. 8). This species occurs throughout the United States, from Maine to Florida, westward to Minnesota, Iowa, Kansas, Louisiana (Brady 2012), and Texas (Dean 2016). It has following Kansas counties: Barton, Douglas, Labette, Leavenworth, Nemaha, Ottawa, Pottawatomie, Riley, Rooks, and Wyandotte. Adult males were found in May, June, September and early November; females in February, April, and May. A penultimate female captured September 20, shed to adulthood the

following day. A second penultimate female found May 17, shed on May 27th. Two females with egg sacs containing 290 eggs and 522 larvae were found on May 29 and June 27, respectively. A female taken on July 2, produced an egg sac on July 10 that was 9 mm in diameter and contained 422 eggs. On June 15, a female carrying young on her back was found in a snake trap. This species occurs under rocks and debris in woodlands and open areas with a few trees close to ponds, lakes and streams. *Tigrosa helluo* consumes small invertebrates, including wolf spiders, and appears to routinely include Blanchard's cricket frog (*Acris blanchardi* Harper 1947) in its diet (Youngquist and Sitvarin 2015).

Discussion and Conclusions

By recently erecting the wolf spider genus *Tigrosa*, which roughly translates as “fierce like a tiger,” Brady (2012) has done much to elucidate the identities of some of the largest, common members of the family. However, due to individual color variation and similar genitalic characters, it remains a difficult task to properly identify some individuals to species. Further study is required to ascertain whether the black variant of *T. georgicola*, which occurs in Kansas, is actually a separate species currently known as *Hogna wallacei* (Chamberlin and Ivie 1944). Studies on courtship and mating behavior may elucidate the relationships in this species complex in a similar manner that was done in the *Schizocosa ocreata* complex (Stratton 1997; Stratton and Uetz 1981, 1983).

The current distribution of the genus *Tigrosa* within Kansas is presented, along with natural history information. The presence of *T. annexa* in Douglas and Pottawatomie Counties extends the range of this species hundreds of miles to the northwest of its nearest, previously reported locations, and is a new Kansas record. Further field work is needed to more accurately define the distribution of all five species within the state, and explore their ecological roles.

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In Search of Tiny Female Spiders (Linyphiidae, Erigoninae)

The tiny, often-drab females of the linyphiid subfamily Erigoninae are the only group not included in *Spiders of North America: an identification manual*. LinEpig [<https://linepig.fieldmuseum.org/>], the Field Museum's online reference to female dwarf spiders, now includes more than 320 of the 680 or so known Nearctic species. We're trying to find as many as possible of the rest - a challenge, as about half are known from only one sex, making them tough to identify. If you have reliably-identified females of any species on this list [<https://www.fieldmuseum.org/sites/default/files/linepig-looking-for-species.pdf>] - or even better, epigynal images! - please contact me at nsandlin@fieldmuseum.org.

Request for *Lophomma depressum*

Marc Milne at the University of Indianapolis is in need of specimens of *Lophomma depressum* (Emerton), in the family Linyphiidae. Anyone with specimens to loan can contact Marc at milnem@uindy.edu.

Walk a While With Me

By Hank Guarisco

Walk a while with me
On trails made by my feet through the woods;
A while, a mile,
Conjure the length later, if you must.

But now, be here,
Turn a watchful ear
To silence broken and enriched
By the sounds of crickets in the ditch,
Striped frogs by the pond,
The rustle of a pair of legless lizards
In the sun-warmed grass.
More magical things may come to pass.

Buds on trees ready to explode,
As spring gathers her springful load,
Like runners waiting at the starting line,

Ready to dash forward at the same time.

Hopping over a wide ditch
while I climb down and up the other side,
The master, my mentor, Henry Fitch
Quietly explains nature's secrets, bye and bye.

In the hollow of a rain-soaked rotten log
we find a small, brown wolf spider
with tuning fork pattern on her back
and a white eggsac trailing behind.

In 1935, Gertsch and Wallace christened her kind
With a Latin moniker, *Pirata alachuus*.
Now people everywhere address her by this name,
But to her woodland neighbors she's been the same
For thousands of years before nineteen-thirty-five,
Long before Gertsch and Wallace did arrive.

Did she fret at being nameless all those years?
Feel insecure, on the verge of tears,
Because humans never recognized
She would be unique in taxonomists' eyes?

AAS Website Update & Introduction to the Webmaster

By Daniel Gloor

It is a great pleasure to introduce myself as new webmaster for the American Arachnological Society. My name is Daniel Gloor and we - my wife and our son - live in the charming town of Oakville, ON, Canada.

During my studies at the University of Basel, Switzerland, I had the pleasure to attend the excellent course "An introduction to the biology of spiders" held by Martin Nyffeler. This course was an eye-opener for me, and I knew that I wanted to delve deeper into the science of these fascinating animals.

After graduation, I had the opportunity to work on the internet project "Araneae - Spiders of Europe", and this fueled the career shift from biology to IT. Since 2014, I have been responsible for the technical aspect of the World Spider Catalog hosted at the Natural History Museum of Bern, Switzerland. Supporting the arachnological community enables me to combine my passion for the world of spiders and IT.

In addition to these spider related internet projects, I am currently working as an independent contractor for a Toronto-based startup, where I am designing and implementing cloud infrastructure for their services.

Outside of work, I enjoy doing improv classes, tinkering with old home computers, and creating music with them.

I am looking forward to supporting the society as webmaster and helping build up the new AAS website. Last but not least, I would like to thank Jan Weaver for her excellent support during the handover process.

For AAS website related inquiries, you can reach out via email: webmaster@americanarachnology.org.

AAS website content updates or corrections can also be sent to the [AAS Secretary](#) who will work closely with the webmaster.

Society Archives News

The American Arachnological Society archives material pertinent to the society's history. This material includes correspondence, photographs, copies of annual meeting programs, and documentation related to

society sponsored projects. The society archivist is [Lenny Vincent](#). If you have material pertinent to the society's history, contact Lenny to find out how and where to send this material. Lenny ultimately sends AAS-related archive material to be held in perpetuity at the Smithsonian Institution. The Smithsonian Institution reference team can also be contacted directly about AAS-related material at osiaref@si.edu.

Deadline for Next American Arachnology Submissions

News items for the next issue of *American Arachnology* should be sent to the [society Secretary](#) by October 15th. 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](#).