Crustaceans **Identifying Cave Life: Part 5 – Spiders.** **by Mick Sutton**

This is another installment in an occasional series to help those doing cave monitoring, or who are just interested in knowing what they are looking at. As always for invertebrates, a small hand lens will assist greatly when you are looking at these critters. First, how do you know you are looking at a spider? Seems obvious and usually is, but a lot of people confuse the harvestmen or daddy long-legs (aka opilionids) with spiders. They are easy to tell apart – the harvestmen have one-part body – one rounded or oblong blob with long legs attached. This distinguishes them from spiders, which have a body sharply divided into two parts – a head + thorax (the cephalothorax) and an abdomen. It is also possible to confuse small spiders with mites – again, mites have a one-part body, not obviously divided into head, thorax and abdomen. The Ozarks are home to some fully cave adapted spiders, but they are small and hard to see, and you are more likely to encounter the larger, pigmented spiders that like to hang out in the twilight zone. The commonest of these are the so-called fishing spiders of the genus Dolomedes, a large spider that is a familiar sight on the walls and ceilings near the entrance. Two species commonly show up – D. scriptus and the somewhat darker D. tenebrosus. Distinguishing these two is best left to the specialist. All spiders are carnivores, but fishing spiders are hunters not trappers, and you will never see them on a web.

Fishing spider *Dolomedes scriptus*

Wolf spider *Pirata* sp.

Wolf spiders (usually one of the Pirata species) are much less common in caves, but can be easily confused with fishing spiders. They are similar in appearance and also lack webs. The pattern on the abdomen is probably the easiest way to tell them apart for the casual observer - Dolomedes have a complex chevron pattern of light and dark brown, whereas Pirata abdomens tend to be rather plain, with at most front to back dark and light striping or rows of light spots.

Another large twilight zone spider, often extending into the dark zone, is the cave orb weaver, Meta ovalis. Unlike hunting spiders, these hang out on typical orb webs. The abdomen is strikingly patterned yellowish and black. You will also frequently see silken balls hanging from the walls in the vicinity of the

spiders – these are the egg cases. For reasons unknown, but probably related to insect abundance, Meta is much more common in caves along the rivers and larger creeks than in upland caves.

Meta ovalis

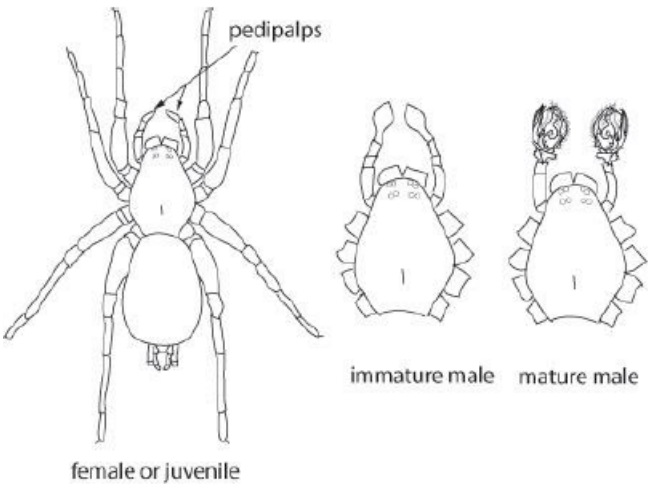
Meta with egg case

Cicurina cavealis funnel web spider

Not all spiders are confined to the twilight zone. Deeper into the cave you may well encounter one of the troglophiles. The most common are several species of funnel web spider from the genera Coras and Cicurina. As the name implies, they occupy funnel shaped webs—silken funnels often buried in sediment with only the mouth showing. They are frequently found on or in the vicinity of bat guano piles. The commonest and largest species, Cicurina cavealis has a characteristic pale tan abdomen.

Another funnel web spider that turns up fairly often is the common household species Cora medicinalis. While on the subject of household species, people are often surprised to learn that the brown recluse, Loxosceles reclusa, is very rare in Missouri caves, despite its liking for dark, damp cellars. I once dismissed Jon Beard's report of a brown recluse because in all the thousands of records generated by Bill Elliott, Gene Gardner and myself, there was not one brown recluse – they just didn't inhabit Missouri caves. The very next week I collected one from deep in the dark zone of Sluiceway Cave! Since then, several others have been recorded (and Jon's record is now accepted!)

Then there are the true cave dwellers, the troglobionts, never found outside a cave. Missouri has three species, all of them small, white, eyeless spiders from the family Lyniphiidae. They are impossible to distinguish without microscope work. One of these may be unique to Missouri – a species of Islandiana (pronounced ICE-landiana from the genus being first described from Iceland). Despite being fairly common and widespread, it has still not been described, and does not have a specific name.



Some fun spider facts: distinguishing male from female is of little importance to the casual observer but is crucial for taxonomic work since in most species, identification is easiest on a mature male. So how do you tell? There are two leg-like structures called pedipalps extending forward from the head. In females and juveniles, the tip of the pedipalp is slender and pointed. As a male matures, the tip gradually expands into a bulb-like structure, then on the final molt to maturity the bulb opens up into a byzantine complicated mess of

interlocking parts. This is a secondary sex organ, used to transfer sperm to the female. How is this done? –very carefully!

Female spiders have a well-deserved reputation for cannibalism of their mates, which are often much smaller. If the male isn't careful he will be eaten before performing, and will in any case probably get eaten afterwards. In the case of our fishing spider, the female doesn't even need to bother killing her mate – he just keels over and shrivels up all by himself.

Next time – more eight-legged fun with the spiders' arachnid relatives - pseudoscorpions, harvestmen, mites and ticks.

--Mick Sutton

Missouri Speleological