

Bifurcate Trashline Orb Weaver

Article & photo by M. Kathy Raines, Rio Grande Valley Chapter

What are those dingy greenish pearls dangling in this spider web? I wondered for years. Then, finally, this summer, I caught one, in a photo anyway—a tiny bifurcate trashline orb weaver—perfectly camouflaged among her jewels.

The aptly named bifurcate trashline orb weaver (*Allocyclosa bifurca*)—meaning, in Latin, “like a circle,” for its spherical web and “forked abdomen” for its ‘M’-shaped rear — spins its web beneath eaves and among prickly pear pads, date palms and other plants, as well as from brick and rock faces. Prevalent in the Rio Grande Valley southwards to Mexico and Central America, it also appears in Florida and the West Indies. I see these orb weavers frequently in my yard. Prior to 1999, it was in the genus ‘Cyrtophora’.



Bifurcate trashline orb weaver (*Allocyclosa bifurca*)

The moniker “trashline” comes from the spider’s linear, woven stabilimentum, or web decoration, which resembles a line of debris. In fact, the bottom half of the row, below which the spider perches, is just that—a row of discarded carcasses. Above the wee creature is her row of up to five egg sacs. Distinguishing this spider, with her tiny legs, from her egg sacs and debris requires close attention.

Male bifurcate trashline orb weavers are so rare—in one study, only two males appeared out of 350 spiders—and the female’s reproductive organs so underdeveloped that some have proposed that they are parthenogenetic, or able to reproduce without males. While females are about 1/5 to about 3/10 of an inch long, males reach about 35% that size. Only the female’s underside bears a splotch of red, and only she spins a web. The spider has a bifurcated abdomen, ending in what looks like the back of a fish.

A particular ichneumonid wasp—one whose larvae feed upon spiders and insects—*Polysphincta gutfreundi*, preys upon bifurcate trashline orb weavers. Unless the spider quickly

rides a dropline out of its web, remaining away for a few minutes, the stealthy wasp, entrapping and stinging the spider, deposits an egg on its abdomen. Then, the wasp's hatched larva, or sometimes, larvae, drills holes, attaches itself and, for about a week, feeds on spider juices. Also, it appears to inject its unwitting victim, trapped in its own web, with psychotropic drugs that alter its web-weaving behavior to the larva's benefit.

These chemicals apparently induce the spider to weave a web noticeably different from its own tidy, symmetrical insect-catcher—a sturdier, asymmetrical one designed to protect the larva's prospective cocoon, one also including linear stabilimentum to camouflage it. Then, after about a week—the spider's having done its bidding—the larva sucks it dry, killing it. However, when researchers removed larvae before they offed their victims, the spiders' behavior gradually normalized, in the reverse order that their alterations occurred.

Scientists have yet to learn precisely what the wasps' injected chemicals do to the spiders; some surmise that they reduce the volume of silk in their glands, thus altering the amount and lengths of radii and spiral loops. To read more about this fascinating phenomenon and see excellent photos of both original and altered webs, consult this site:

<https://insider.si.edu/2010/01/drugged-spiders-web-spinning-may-hold-keys-to-determining-how-animal-behavior-is-controlled/>

The bifurcate trashline orb weaver, along with a few other species, appears to have a particularly short circadian cycle, or biological clock—one that assists creatures with performing recurrent daily actions like eating, sleeping and hunting. However, these spiders' short cycles may, in fact, be useful in avoiding diurnal predation, since, usually motionless during the day, they begin web spinning a few hours before dawn.

Little information is available on this quite common but fascinating little creature. Also, though this orb weaver's abundance in the Valley suggests that the presence of *Polysphincta gutfreundi*, the closest records I've found of this wasp's appearance are in El Cielo, Mexico, roughly 200 miles south of us. I am looking forward to reading further studies on the bifurcate trashline orb weaver, especially those done by fellow residents of the Rio Grande Valley.