

*Critic's Choice Essay***MYRMECOCHORY**Reprinted from *Gaillardia*, Fall 1999

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As I write, rain rattles against the window, driven by a cold northwest wind. The sky is overcast and the low, scudding clouds warn that winter is still here.

Not long ago an interesting word came to mind. Let me share it with you: *myrmecochory*. What a strange and unusual word. I know you wonder why it would pop into one's head.

It was early winter and I was sitting on the edge of the porch watching birds vigorously competing for the abundant seed in the feeder hanging from the bur oak. What dumb animals! If they had any brains they would know by now that the supply is unending. However, it was another of those special Oklahoma days. Clear, warm sunlight, a gentle breeze from the south, temperatures well above those of 24 hours earlier - you know what kind of day I mean. When one is not surprised to find dandelions flowering in the lawn.

The base of the corner pillar surrounding the porch does not sit tightly against the concrete deck. The small gap on one side has been accepted with the thought the resulting ventilation might help keep the wood dry. But on that day the base was enclosed with a bright green wreath of lush, young, spring-like vegetation, a veritable garden of foliage. Examination showed it was 100% *Lamium amplexicaule*, dead-nettle or henbit - whatever name you prefer, a common, beautiful, but oft-despised prolific lawn weed. Such a mass

of young plants must have been the result of a large cache of seeds. The moment I saw that growth I thought "What a beautiful example of myrmecochory". The word means "dispersal by ants". Here the seeds of *Lamium* had been gathered by ants, laboriously transported through the grass of the lawn, across the drive, up the side of the house, across the porch, and into the hollow pillar. For what reason would ants go to all that trouble? The answer discloses an interesting story.

Myrmecochory comes from Greek, with myrmeco- meaning "ant" and -chore, "to spread". In this case in reference to seed dissemination by ants, one of many dispersal mechanisms ranging from autochory, dispersal by the plant itself, to zoochory, a variety of approaches utilizing animal agents. But there is more. One cannot help but wonder why ants go to the expense of gathering, transporting, and accumulating large quantities of seeds and then apparently abandoning them. What is in it for the ants?

At the next opportunity, gather some henbit seeds and examine them under low magnification, anywhere from 15 to 45 times. The small, brownish, hard, and apparently inedible seed is evident. Notice however, one end is capped by a mass of light-colored, fleshy tissue surrounding nearly half the seed. This lump is rich in nutritive compounds, primarily fats and proteins. These masses are

gathered and stored by animals as a future food source. As you know, botanists have a name for everything. This structure is called an *elaiosome*.

Let us not concern ourselves with what part of the plant produces this clump of food. That is another story. The fact is, ants collect henbit seeds and carry them to their nests where they gnaw off the elaiosomes for their food value. The problem the animals then face is what to do with the waste material, in this case, seeds. At my house they dumped their debris under the porch pillar, not far from the nest entrance, in a *Lamium* trash pile. It was there, under favorable conditions, the seeds germinated and produced that lush ring of vegetation.

Think a moment. Have you ever observed an ant hill surrounded by a ring of *Viola* (violet) seedlings? It is not an uncommon occurrence. If so, you have encountered the phenomenon of myrmecochory; that circle of young plants represents the colony dump. But wait. In the case of violets that is only half the story. In this genus myrmecochory serves as secondary seed dispersal. Primary dispersal is autochorous, with exploding fruits scattering seeds around the plant, frequently as far as a meter.

For you doubting Thomases, let me make a suggestion. First locate some healthy *Viola* plants. Observe them until you locate maturing fruit and then, on a calm day, to eliminate wind as a factor, spread white paper around the plants (poster or butcher's paper will do) and record the distance you find the seeds from the parent plant. If you are fortunate (and observant) you will see seeds suddenly appear as they are thrown from the capsules (fruits). Use the opportunity to examine seeds under magnification. The elaiosomes are evident.

There are other Oklahoma wildflowers with either exploding fruit or elaiosomes on the seeds. Why do you suppose we call *Impatiens*, that common member of the Balsaminaceae, "Touch me not"? Also, take time to closely examine the seeds of *Corydalis* for external structures.

I hope these comments regarding the strange word *myrmecochory* will open some eyes to one of the unusual botanical phenomena taking place in our yards. But do not stop here. There are numerous other unique events and relationships to be discovered out there. Start looking for some.

O.N.P.R.