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Raindrop Seed Dispersal in Drummond's and Wright's Skullcap

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Drummond's and Wright's skullcap (*Scutellaria drummondii* and *S. wrightii*) are common North Texas mints (Figure 1A) that use raindrops to disperse seeds following rains. The force of the raindrop hitting a dish-like structure, which reminded botanists of the bone commonly called the skullcap, aids in seed dispersal and gives the plants their common name. The genus name, *Scutellaria* (Latin for dish- or shield-shaped), refers to the dish-shaped upper portion of the flower (Figure 1B). When struck by a raindrop, the dish-shaped portion catapults off the plant and the resulting mechanical energy from this event causes the fruits called nutlets to be thrown from the plant. The nutlets are then carried by water currents some distance from the plant depending on the amount of run-off occurring during the precipitation event. This spreads the skullcap to new locations where the seeds can germinate and grow the beautiful blue flowers that are common in the spring. By spreading the seeds into new locations, the skullcaps

are less likely to mate with close relatives and this increases genetic diversity in the populations.

In garden investigations, we have observed the nutlets being dispersed by raindrops in potted plants that were set out during rainstorms. In a field investigation, hundreds of skullcap were tagged before a rain storm and their number of ripe fruits counted on each. Then following a rainstorm, the numbers were counted that were dispersed. There was a significant difference



Figure 1A. (Photo by Allan Nelson)

between the two groups, which provided the first quantitative evidence of this type of seed dispersal in skullcaps. The scientific article (Nelson & Goetze, 2010) was published in *The Texas Journal of Science*.

Reference

Nelson, A.D., & J.R. Goetze.
2010. Hydroballochory in two Texas species of Skullcap (*Scutellaria drummodii*, *S. wrightii*; Lamiaceae). *Texas J. of Sci.* 62(4):263-270.



Figure 1B. (Photo by Allan Nelson)

Allan Nelson is a Professor in the Department of Biological Sciences at Tarleton State University (TSU) and serves as curator of the TSU Herbarium. He has worked with Texas Parks and Wildlife, Texas and Oklahoma Regional Consortia of Herbaria, Botanical Research Institute of Texas, Flora of Oklahoma, Flora of Texas Consortium, Flora of North America, and Padre Island National Seashore during his time at TSU.

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