

The Refectory Guardian



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If you've ever been in the southern U.S. you've likely seen Spanish moss (*Tillandsia usneoides*) draped on oaks and other trees. Spanish moss is a classic example of an epiphyte which is a plant that uses another plant for support. Spanish moss and other plants that have evolved an epiphytic lifestyle spend their entire life without ever touching the ground. Their roots anchor them firmly in the crotch of a tree or in a fissure in the bark. Unlike parasitic plants, epiphytes don't steal water or nutrients from their host—they simply use the host plant as a place to “hang out.” Rain, runoff and the nutrients leaching from accumulated debris provide epiphytes with all of their needs. As a result, epiphytes are especially common in moisture-rich neotropical forests. These forests boast a large and diverse epiphytic flora that is dominated by ferns and members of the orchid and pineapple

families. This lifestyle, which occurs in plants in more than 80 different families, evolved as a mechanism for herbs that grow in densely shaded forests to get into the canopy to increase their exposure to sunlight.

In Minnesota and other temperate areas, epiphytes are not common – it is simply too dry for them. However, on campus you can occasionally find an epiphyte or two. Unlike

those plants with specialized adaptations that suit them only for epiphytic life, our local epiphytes are usually annual plants that are normally rooted in the soil but whose seeds got happened to get established in a location where some soil has accumulated. Just last week my plant taxonomy class was on field trip around the north end of Lake Sagatagan when we found a black nightshade plant (*Solanum nigrum*) growing on a basswood tree (Fig 1). This common garden weed was thriving in the fork of the tree and was even producing black berries.



Fig. 1. *Solanum nigrum* growing on basswood on the north shore of Lake Sagatagan.

And, have you noticed the epiphyte growing out of the bricks near the keystone at the top of the arch leading into the Refectory (Fig 2)? I first noticed this little cottonwood (*Populus deltoides*) sapling last summer. It should come as no surprise that cottonwoods are very tenacious trees that grow where many others can not. In fact, cottonwoods were one of

the few trees that greeted the settlers when they arrived on the prairie; few other trees could tolerate the dry, windy conditions of the prairie. Our “reefer cottonwood” must have gotten its start after one of its cottony seeds was blown onto the ledge and the roots found a suitable home in the cracks in the mortar. Although this little tree has tolerated weeks of drought during the past two summers and bone-chilling cold last past winter, the fate of this epiphyte isn't too good. Even if it

continues to survive our dry summers and cold winter, one day it may grow too large and the Grounds Crew sadly will need to remove it. Until then, each time I pass by I'll admire the Refectory's silent sentry and reflect on the plight of the epiphyte.



Fig. 2. Cottonwood tree seedling growing out of the brick above the entrance to the Refectory.

