

A Teacher's Favorite: *Gleditsia aquatica*

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Everyone knows that teachers should not have favorites, but I do. My favorite has muddy feet, a thorny disposition, and reddish-brown, almond-shaped eyes. Oh, and he's also a southerner. *Gleditsia aquatica* (accession 201-93*B), also known as the water or swamp locust, is a North American native, closely related to the more familiar honey locust (*G. tricanthos*). You will find the species growing along riverbanks and marshes in its natural range, stretching from South Carolina to central Florida, across Louisiana to eastern Texas, and up the Mississippi River valley to southern Illinois and Indiana. My Arboretum favorite was wild collected in southeastern Missouri.

When I introduce children to this tree at the Arboretum, I often start with, "Who here is brave, really brave? I want to show you a dangerous plant." That usually elicits excitement and a loud chorus of "Me!" I bring them to Rehder Pond, where they stand looking very closely at the tree behind me. It can take a minute before they understand what they are looking at: a profusion of three- to five-inch-long reddish-brown thorns growing both on the lower parts of the trunk and out along the branches. I often clip a sample and model how to use a one-finger touch along the edge of the thorn to compare its smoothness with the sharp prickly point. It doesn't take long before many children begin to touch the thorns and even ask if they can hold it. They remind me of times when my brothers and I would beg our parents to give us their plastic sword cocktail picks, and we would sword fight in the restaurant while waiting for our meals!

Once the children are comfortable with the thorns, we begin a conversation around function. Why would this tree have such thorns? Students quickly identify defense as the main function but then are stumped when asked what the tree is defending itself from. The most common answer is people and predators like foxes, lions, and sharks. It takes some pretend modeling of large herbivores eating before children understand how this tree, having large, thick, and sharp thorns growing at the base of each

bipinnately compound leaf might deter large mammals—whether living (deer) or extinct (mastodon)—from eating the leaves.

One season I noticed that an American robin (*Turdus migratorius*) had built a nest on a low branch. In the nest were three young chicks, and the momma was busy flying back and forth, attending to their needs. I used this opportunity to continue the thorn discussion by posing a new question: "Is that robin smart for building a nest in this thorny tree?" The group was evenly split between yes and no. Each child had to state their opinion and provide a reason for their answer. In this way, I encourage children to take what they know and what they observe firsthand to form a more complete understanding of how nature works. They also learn to debate by listening to differing views.

Aside from thorns, *G. aquatica* also produces curious eye-shaped seedpods, about 1.5-inches long and flat. Before the seedpod dries out and turns a rich caramel brown color, children can raise the fruit to the sky and see through the papery thin walls to the singular round seed in the middle. Two of these seedpods placed over my eyes elicits cries of "Owl eyes!" This fruit is unique among all *Gleditsia* species because it does not contain a sticky, honey-like pulp surrounding the seeds, and it usually has one seed, rather than ten or more like the honey locust. This difference has led some botanists to suggest that *G. aquatica* evolved to disperse its seeds via water, instead of animal digestion.

Finally, how can I resist a quick math lesson when observing the leaves? The compound leaves measure up to thirty inches long, and the small leaflets occur in six to fourteen pairs on a leaf. They are perfect for a lesson about odd and even and help facilitate counting by twos. Later, children line up in pairs, just like their leaf, and count by twos as they slowly walk back to their bus, heads full of wonder and a pocket or two hiding large owl eyes.

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