

# Ringling Rocks and Mariton Sanctuary Field Report

*Ring My Diabase* by Tom MacDonald

Our trip to Ringling Rocks Park in Buck's County began with a tree species identification test. Although I was not able to identify some specimens, such as spicebush (*Lindera*) and ironwood (*Carpinus caroliniana*), I was still pleased with the progression of my knowledge throughout the course. I felt that the test was made more difficult due to the height of the branches and raggedy leaves of some specimens, as well as the overly rapid pace at which we moved from tree to tree. At any rate, I did appreciate the variety of trees growing in such a small area on rather rocky soil.

After finishing our tests we came immediately to a field of diabase boulders. We learned that these boulders were formed in the early Jurassic Period (about 180 million years ago), and became exposed as time eroded away the softer material around them. Here the landscape looked like something one would imagine finding on a distant moon, and the ringing each rock exerted when struck with a hammer only increased the air of fantasy. The diabase field presented not only a fun and interesting area to explore and clamber over, but also a fascinating study of microclimates. Bordering the diabase field



were first successional tree species that thrived in the shallow rocky soil, such as black birch (*Betula nigra*), chestnut oak (*Quercus pinus*), and red oak (*Quercus rubra*). The shade cast by the trees in this perimeter area combined with vegetative transpiration to produce a moister microclimate in which lichen and moss grew in abundance. This contrasted with the drier microclimates of the diabase field's interior, where exposure to sun and wind reduced the presence of lichen and moss.



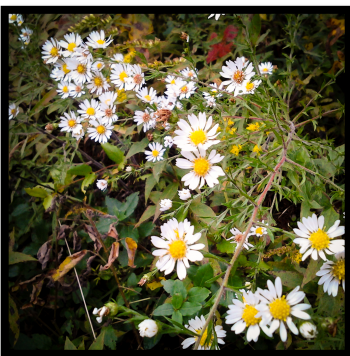
One of the next areas we visited at Ringling Rocks was a beautiful waterfall, where a soft stream danced down a rock wall into a small gorge some thirty feet below. The material of this waterfall area was composed of a rock group known as hornfels, which we learned was formed when the existing sedimentary rock of the Brunswick Formation found contact with the intrusive diabase. A metamorphic transformation of the shale ensued, resulting in a harder, more brittle rock that cleaved off to form a gorge. The brittle quality of this rock was apparent

in the way that the overhanging shelf was broken off in clean layers, lending a cantilevered architectural quality to the formation. Although the soil in this area was very shallow, trees such as American ash (*Fraxis Americana*), Canada yew (*Taxis canadensis*), and red oak (*Quercus rubra*) supported themselves through their extensive lateral root systems and good exposure to available sunlight. In a side conversation with David, I also learned that the water that frequently moves across the shale in this area bathes the tree roots with nutrients, feeding them and helping to further support them.

After leaving the Ringing Rocks area we made our way to the learning center of the Mariton Wildlife Sanctuary, a conservation project of the National Lands Trust situated in the New England Province. We learned that two passionate people took it upon themselves to establish this sanctuary and make a positive difference, which I found to be personally inspiring. Equally inspiring was the guest center building, which was partially constructed of lumber harvested from nearby tulip trees and milled on site. Many fascinating stuffed animals were on display, including local owl, bird, and fox species.



Hiking away from the guest center we promptly encountered a tulip tree forest that provided an example of how human intervention can severely alter the makeup of a forest area. This wooded landscape was dominated by towering tulip trees (*Liriodendron tulipifera*) with branchless structures that shot straight up into the 100-foot canopy. Few other canopy species were present; this was an indication of how the tulip trees had outcompeted other tree species when the agriculturally farmed land was left to return to forest some 75 years ago. Noted sub-canopy trees included chokeberry (*Aronia melanocarpa*), spicebush (*Lindera*), burning bush (*Euonymus alatus*), and Japanese honeysuckle (*Lonicera japonica*). Also present were Sassafras (*Sassafras*) and blackhaw (*Viburnum lentago*), which both showed signs of deer browsing. The soil of this area appeared to be a silty loam resting on a gneiss rock formation.



Next we moved to a meadow area, which we learned was mowed at regular six- and nine-month intervals. The regular mowing precluded the establishment of most tree species, although instances of young flowering dogwood (*Cornus florida*) and sassafras were noted. The meadows consisted of species common to Piedmont fields, including big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and white aster. The types

of vegetation growing in these fields seemed to indicate that the soil structure was relatively shallow over the gneiss substructure.

The penultimate area we visited at Mariton Sanctuary was an open field containing a few tall tulip trees. We learned that this field was mowed at frequent intervals, allowing the tulip trees room to produce a full-branching structure as they reached for sun in a non-competitive environment. This type of growth was in stark contrast to the queue-tip structures of the previously visited tulip tree forest area, and offered an interesting dialogue about how various types of human interventions can produce widely ranging versions of the same plant species. Continuing forward we paused to make sketches, and noted how the area's bordering black birch, tulip trees, and dogwoods stretched their boughs into the open field in an effort to gain access to sunlight.



Our journey ended beautifully with a descending passage through a tunnel of trees guided by a low stone wall. The stones appeared to be heaped upon one another in such a way as to make mortar unnecessary, and their mossy gray-green palette set a cool backdrop for the fiery dogwoods that reached overtop. As I proceeded down this path I reflected on how the linear space was an incision through the forest – a metaphor for the way we humans incise our presence into nature. Like the tulip tree forest and the meadow, the alterations we make to the landscape have far reaching effects, and can

permanently refashion a complex's makeup. This voluntary or involuntary terraforming can have both positive and negative effects upon ecosystems and the life forms that inhabit them, so we must proceed with understanding and respect.