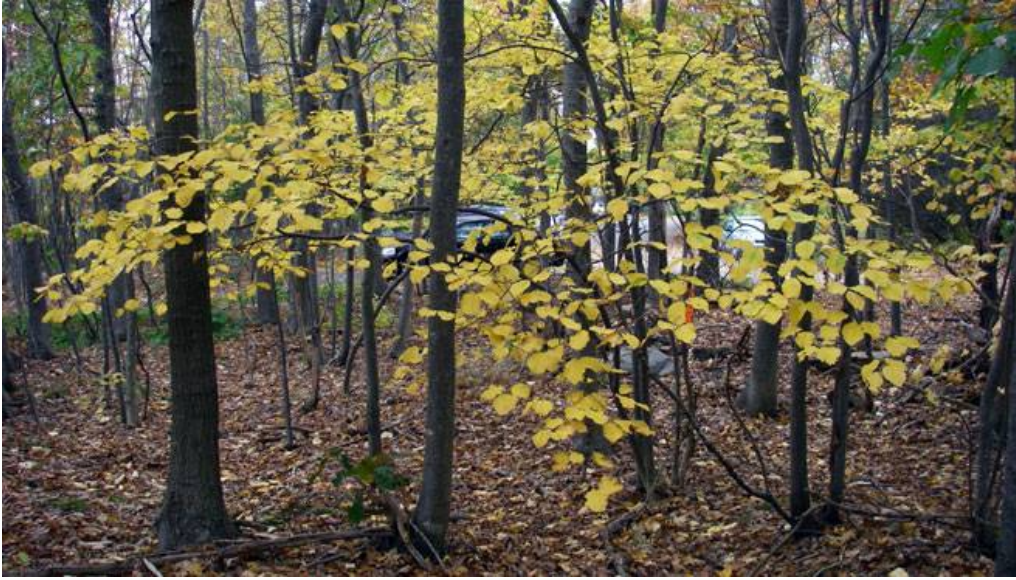


Casting a colourful fall spell in our forests

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Witch-hazel in late October at The Oaks Woods in south end Halifax, illustrating how the trunks arch gracefully over the ground at one to several metres height.

After the asters have withered and the tree leaves have fallen, one species in our forests remains in flower: the American witch-hazel (*Hamamelis virginiana*).

This small tree or large shrub is a common species in the shady understory of our mixed and deciduous forests, except in Cape Breton. It is partial to rocky woods where water is not far below the surface. The trunks arch gracefully over the ground at one to several metres height.

Witch-hazel especially stands out in the fall when the large, slightly asymmetric, wavy edged leaves turn golden yellow and hang on for a period after leaves of most of the deciduous trees have fallen. Point Pleasant Park sports many witch-hazels.

In Nova Scotia, witch-hazel flowers from mid-September to as late as mid-December. The flowers are distinctive, each with four long crinkly yellow petals. After pollination, the petals wither but the greenish-yellow sepals remain and the structure still looks flower-like until the warming days of spring when the fruit begins to develop. It takes until fall and the onset of the next flowering season for the fruit to mature as a sizable woody seed capsule with two seeds. (The first part of the scientific name, *Hamamelis*, comes from the Greek for "another plant," referring to the unusual co-occurrence of flowers with fruits produced from the previous generation of flowers.) On dryer days in autumn, capsules open with audible pops and eject seeds as far as seven metres. Some people like to collect twigs with maturing fruits and keep them indoors just to hear the pops! The split, empty pods persist on branches well into the next year.

Witch-hazel is a favoured species from which to cut Y-shaped twigs for water dowsing, a practice that has not been validated scientifically and that some consider akin to witchcraft. Indeed, the common name suggests a connection to witchcraft but "witch" is apparently derived from the Anglo Saxon "wych", meaning bending or pliable (referring to the stems). "Hazel" refers to its hazel-like leaves.

Use of witch-hazel bark or bark extracts as an astringent by both aboriginal peoples and the skin-care industry has some basis in fact and is attributed to particular types of tannins in the bark.

When we inquire about relatives of American witch-hazel, this species has even more interesting stories to tell.

There are only four species in the genus *Hamamelis* worldwide. (The first part of the scientific name for a species is the genus name the second identifies a particular species. Species with the same genus name are closely related.) Two are native to eastern North America: American witchhazel (*H. virginiana*), which is found from Nova Scotia to Texas, and the Ozark witch-hazel (*H. vernalis*), found in the Ozarks.

The other two are native to eastern Asia: *H. mollis* to central China and *H. japonica* to Japan.

The four species thus exhibit a "disjunct distribution" which refers to the same or closely related species occurring in widely separate regions but not in between. The "Eastern Asian / Eastern North America Disjunct" has been recognized for at least 65 genera of plant as well as for some fungi, invertebrates and freshwater fishes.

This curious distributional pattern was first documented for ginseng. In 1713, a Jesuit missionary in Manchuria wrote about the medicinal use of Asian ginseng and suggested the plant might be found in southern Canada because of its similar climate and forest types. In 1716, another Jesuit missionary working with Iroquois near Montreal found it after three months of searching, the first discovery of a ginseng native to North America.

A variety of evidence supports the hypothesis that the Eastern Asia / Eastern North America disjunct species or genera are relics of temperate forest that spanned all of temperate North America, Asia and Europe during the Tertiary Period (65 to 1.8 million years ago) when global climates were warmer than today and northern land bridges connected the three continents.

Formation of mountains and climatic cooling towards the end of the Tertiary drove the forests southward and separated them, while glaciations in the Quaternary (our current geological period) caused massive extinctions in the western European flora.

Today, the eastern North American species with close relatives only in eastern Asia are concentrated in the southeastern U.S., with some extending up to the Maritimes.

As our climate warms we can expect to see more of this suite of species in Nova Scotia. A number of horticultural varieties thrive here already, including those of the other witch-hazel species (one flowers in Halifax gardens in February) and our beautiful springblooming magnolias.

The genus *Magnolia* has 30+ species native to eastern Asia and 10+ to eastern North America to the south of us.

Every species has many stories to tell.

Whether originating from one's own observations, our elders or from formal scientific studies, such stories form the substance of "natural history": the description and explanation of the natural world around us.

Nova Scotia Naturally is a monthly column by Wildland Writers, a roster of Nova Scotia wilderness experts. This group includes Don Crossland, David Patriquin, Bob Bancroft, Alain Belliveau, Mark Elderkin, Matt Miller, William Martin and Jamie Simpson.

About the Author »

By DAVID PATRIQUIN

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