

October 4, 2005

Blazing Leaves

Long before autumn officially arrives each year, many plants and trees of the Kawarthas will have already begun a subtle transformation from summer green to fall finery. By late August, many of the leaves of red maples, blueberry bushes and Virginia creeper vines have already become highly visible against the green background of their neighbours. But now, with early October upon us, the changes are anything but subtle as the fall leaves are gearing up for their finest offering.

Like the order in which wildflowers bloom in the spring and summer, different species of trees reach their colour peak at different times. Although the sequence is the same every fall, there is some variation in the actual dates, depending on temperature, rainfall and the amount of sunshine. By the end of September, white ash, pin cherry and staghorn sumac are usually at their most colourful. The first half of October provides the best colour for red maple, sugar maple, American basswood, American beech and American elm. In the second half of October, the stars of the colour parade include red oak, white oak, bitternut hickory, silver maple, trembling aspen, bigtooth aspen and balsam poplar. Finally, in the last few days of October through the first week of November, tamarack and Norway maple provide the final splashes of colour.

Even within the same species of tree, fall leaf colour is sometimes quite variable. White ash, for example, can turn colours ranging from bronze-yellow to eggplant purple with every imaginable shading and mixture in between. Male red maple trees usually become vermilion red while female trees tend to be bright yellow. However, on other red maples, it looks like a frenzied artist has been at work, dabbing the leaves with splashes of purple, red, pink, orange and yellow. In terms of intensity, variety and luminosity of colour, white ash and red maple definitely steal the fall foliage show. Sugar maple comes in a close second with its flaming oranges and yellows.

Red oak is also a master in variety of colour. Its most impressive autumn apparel is a deep, long-lasting, reddish burgundy. However, oranges, brownish-yellows and rusty browns are also common. It is reassuring to note that, in all this diversity of fall colour, there is some uniformity. Bernd Heinrich, a zoology professor at the University of Vermont, compared the colour of individual trees over several years and found that they turned a similar colour each fall. A yellow maple became yellow again and a purple ash became purple year in and year out. Confirming these observations with one's own trees would be an interesting experiment.

The following table outlines the most typical colours of our common trees, shrubs and vines:

* reds, purples and burgandy	red maple, white ash, Norway maple (King Crimson cultivar), pin cherry, sumac, dogwoods, blackberry, raspberry, oaks, Virginia creeper
* pinks	maple-leaved viburnum, choke cherry, dogwood, red maple
* oranges	sugar maple, red maple, staghorn sumac, bigtooth aspen, red oak
* yellows	all of the maples including striped maple, aspens, poplars, white birch, American beech, bitternut hickory, basswood, linden, black walnut, white ash, elms, willows, tamarack, wild grape
* browns and coppers	American beech, white ash, oaks, speckled alder

In addition to the fall beauty of our deciduous trees and large shrubs, there are also spectacular colour changes happening on or near the forest floor. Virginia creeper, with its uniformly red leaves, puts on an amazing show as it spirals over cedar fences and small trees. Closer to the ground, blueberry, strawberry, wintergreen, and poison ivy leaves are aglow in luminous reds and oranges. Along cottage roads, watch for

the wonderful yellows of dogbanes, wild grape and purple-flowering raspberry. Even the fronds of the ubiquitous bracken fern add a scintillating blend of brown, yellow and gold.

As October advances, it quickly becomes apparent that many trees and shrubs in the city and around country homes are still completely green and seemingly unaware that fall has arrived. These are nearly all non-native species that still adhere to their ancestral European or Asian timetable. Some of these include Norway maple and its King Crimson and Deborah maple cultivars, weeping willow, little-leaved linden, siberian elm, carolina poplar, lilac and European buckthorn. Buckthorn has spread into woodlots, urban backyards and along fence lines. Its abundance is immediately apparent in late October, because it is still green when just about everything else around it is leafless. Although some people may feel that non-native species allow us to hang onto the greenery of summer just a little longer, these species also tend to stick out like a sore thumb in the fall and really take away from the sense of place and season that the native species provide. To me, these non-natives confer an almost schizophrenic quality to certain fall landscapes.

It is always very difficult to predict how good the fall colour show will be in any given year. As a general rule, cool nights are required in order to advance and intensify the colours. September's nights this year were anything but cool. The drought-like conditions we had over most of the summer will probably have an impact as well. The lack of rain will probably mean that many trees will shed their leaves more quickly than usually. This is already quite evident on species such as the cherries, as they try to minimize moisture loss.

It's important to remember that colour change and the shedding of the leaves are manifestations of a plants preparations for winter. About two weeks before the leaves change color, a corky cell layer forms at the base of each leaf. This stops the flow of moisture to the leaf. As a result, chlorophyll, the green pigment in the leaf which carries out photosynthesis, is not renewed. The chlorophyll breaks down and its constituents are reabsorbed by the tree. This allows us to see whatever pigments were being hidden by the chlorophyll. A pigment is basically a chemical compound that is coloured.

Depending on the chemical make-up of the tree, different colors will appear. Yellows and oranges, which come from carotene pigments, are always present in leaves but were previously masked by the green. Red pigments, however, are caused by excess sugars which form anthocyanins and seem to be brightest when there is lots of fall sunshine accompanied by cool nights. Pigments called tannins cause the brown leaves, often seen in oaks, beeches and speckled alders.

To get twice-weekly updates on the progress of the fall colours throughout Ontario, visit www.ontariotravel.net. Scroll down to the bottom of the page to find the link. Some of the best colour in our area can be seen in the northern Kawarthas, especially along County Roads 507 and 620.

What to Watch for this Week:

Fall is often the time of year when people come across bats in buildings such as schools, churches and older homes. These are usually Big Brown Bats, possibly looking for a place to overwinter. If the temperature in the building where they are hibernating drops below -4°C , big brown bats will arouse themselves from torpor and seek a warmer site. This may explain why we sometimes see bats in winter.

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