

November 2019 - Mother Nature's Moment

## Why Didn't the Leaves Fall Off My Trees?

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The vast majority of our tree friends in the northern hemisphere do a great job of preparing for their winter journey. They don't leave home, so their journey through time demands careful preparation for the freezing cold and weighty snows they will encounter during the winter. This year, those freezing temperatures arrived faster than normal. However, the native Illinois trees, early snows or not, go through the same cell hardening as during a balmy autumn. Thanks to a plant pigment called phytochrome, the cells that need to "harden" take their cues from the always faithful shortening of days, not our uncertain temperatures.

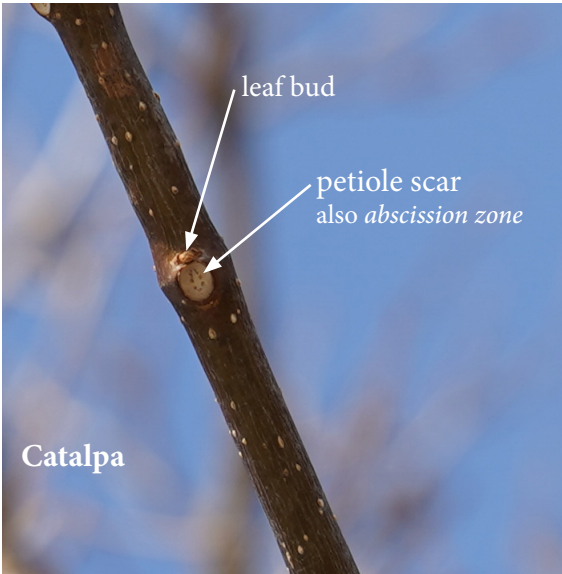


**BiColored Oak**

Why then did my Silver Maple NOT lose its leaves before the snows, and even

now still has a full crown of leaves? That is a great question. The varied Maple species that we plant in such great profusion are propagated and grown all over the United States. The Silver Maple in your yard may have started its life and have its genetic roots in the Maples of Georgia, California or the Carolinas. That means it is not an Illinois native, even though its next door neighbor, of the same species or from the same nursery, is a native. This year's VERY early record breaking freezing temps and snowy weather caught many of the trees, native or not, before their leaves had the proper cues to abscise. Abscission is the fancy scientific term that refers to the petiole cells annual job of preparing for the winter by undergoing chemical changes. Those abscission zone cells undergo chemical changes that actually change their nature and structure, hardening them which weakens their bond and cuts off their contact with the life giving free flow of water and nutrients that make up the circulatory system of the tree. Now that the leaves from this year have finished their miraculous job of creating food=sugars for the tree from sunlight, they can be gently shed leaving behind the stores of energy and leaf buds waiting to burst forth next spring.

This year things happened very quickly and so many of the trees got caught out in the snow and cold with all their leaves still on. The native trees were caught less off guard, whereas the non-natives, that rely more on temperatures for their abscission cues just had their leaves frozen. Some trees may get damage from the weight of the snow, causing branches to break, but that is less likely if they have been well cared for and trimmed in the past to help prevent storm damage. Don't worry, those leaves will eventually fall off and your trees will return from their abruptly started winter journey in the spring.



Inside the *petiol scar* are the *bundle scars* (small dots) of the ends of the veins that used to carry the water and nutrients to the leaves. Often the patterns in the *bundle scars* give us clues for winter identification of the tree.



Our neighbor's Silver Maple with a full crown of leaves in the snow of mid November. The branches of a native American Linden, on the left (which we planted for them) has let go of its leaves.