

BOTANY  
**NATURE  
 RAMBLINGS**  
 by Frank Thome



### Life Everlasting

► GENERATIONS of poets have perpetuated a dismal autumnal picture of "melancholy days, the saddest of the year," with trimmings of wailing winds and "leaves both brown and sear."

It isn't fair. Autumn is a grand season, a time of both fulfilment and preparation. And for the trees that shed their leaves it is no more a time of doom and death than any other season of the year. The leaves die and drop off, it is true, but the trees themselves stand and survive; they are no more dead in autumn and winter than they are in spring and summer. We humans, egotists that we are, are simply reading our own feelings and reactions into beings whose lives are quite unlike our own. This kind of anthropomorphizing has a bad reflex effect upon ourselves, yet we're always doing it.

As a matter of sober scientific fact, the trees themselves are very business-like about this business of letting their leaves go. In their purely automatic, unconscious way they prepare for the coming winter and the spring that is to follow a great deal better than self-styled *Homo sapiens* manages his own future.

The first thing that happens, as the nights grow longer and chillier, is the draining back into the tree's branches and trunk of practically all the foodstuffs in the leaves. Leaves, as we all know, are the ultimate food factories, and during their active life always contain a good deal of sugar, starch and protein. That's why grazing and browsing animals eat them while they are green—nobody ever saw a deer, or even a goat, try to get a living out of fallen leaves.

After the foodstuffs have been drained out of the leaves, the green coloring matter that helps to make them breaks down

chemically, and in doing so becomes colorless. It is then that the leaves begin to glow in their autumn glory of yellows and reds and purples. These colors have been there all the while, the yellows as microscopic solid bits of pigment, the reds and purples as dissolved dyes in the cell-sap. Only during the summer there is so much more of the green pigment in most leaves that it covers up and masks the bright hues.

While the color change is going on, a double layer of cork cells forms right across the base of the petiole, or leaf-stem. It is the only common case in nature of a bandage being applied before a wound occurs. After this cork layer is formed, it splits apart, one half going with the leaf, the other covering the scar on the branch and sealing it against the entry of decay-causing germs and spores. And so the leaf drops off.

*Science News Letter, October 21, 1944*

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