

Chemicals, Not Frost, Create Fall Colors

"It looks like someone took a brush and painted the forest!" That must be one of the most common remarks heard each fall, as thousands of people marvel at the glorious spectrum of colors in the hardwood forests of the United States. In Colorado, it's the gold of the aspen that inspires such enthusiasm. In New England, it might be the brilliant oranges and yellows of the sugar maples. And in Pennsylvania, it's the deep scarlet of the red oaks.

Despite appearances, nature doesn't paint with brushstrokes. Paint-by-number would be the more accurate comparison, because each tree has its own fall color bound up in the chemical composition of the sap, which provides the "instructions" on what color to turn.

According to Scott Kurtzman, Tree Farm Family Forester with The Glatfelter Pulp Wood Company, trees change colors ac-

ording to complex chemical formulas. Depending on how much iron, magnesium, phosphorus or sodium is in the sap, the acidity of the chemicals in the leaves, trees might turn amber, gold, red, orange, or just fade from green to brown. Scarlet oaks, red maples, and sumacs, for instance, have a slightly acidic sap which causes the leaves to turn bright red. The leaves of some varieties of ash, growing in areas where limestone is present, turn a regal purplish-blue.

What prompts the change? Although many people believe that a mischievous Jack Frost is responsible for the color change, the weather has nothing to do with it at all. As the days grow shorter and the nights longer, a chemical clock inside the trees starts up, releasing a hormone which restricts the flow of sap to each leaf. As autumn progresses, the sap flow slows and chlorophyll, the

chemical which gives the leaves their green color in the spring and summer, disappears. The residual sap becomes more concentrated as it dries, creating the colors of fall.

As the leaves die and fall to earth, the forest begins a winter-long slumber. The leaves, which through the warmer months convert carbon dioxide to oxygen, now take up another task, enriching the soil and providing the nutrients for future generations of trees. And by the time this year's leaves fall, next spring's leaves are tightly wrapped in buds ready to unravel in the soft colors of spring.

This change is paralleled, though without such drama, in the vast evergreen forests which sweep across northern-most New England and the Mid-West, dip deep into the South, and run in a thick swath down the Pacific crest. Most softwoods lose their three-year-old needles in the fall. But

some needles, plump with heavy resins and sap, drop to the earth year-round and are replaced with fresh ones. And in the Spring new, tender shoots at the ends of the limbs add a dash of emerald green to the stately and somber pine, spruce, and fir forests.

These cycles of change are sometimes interrupted by man, or more dramatically by nature. In recent years, several such natural catastrophes have been widely publicized. In the Pacific Northwest, Mt. St. Helens flattened the forests surrounding the volcano. In New England and the South, two types of predatory insects, the spruce budworm and the southern pine beetle, have decimated vast stands of valuable timber. And in 1986, forest fires have ravaged forestland in every corner of the nation.

Yet in each of these cases forestry experts say the forest will prevail. In Washington, for

example, a new forest is punching up from the heavy blanket of ash only six short years after the Mt. St. Helens eruption. In the forests recently devastated by fire and insects, shoots are already coming alive as sunlight penetrates to the forest floor for perhaps the first time in decades. Even in the Northeast, where not too long ago congestion and pollution were thought to be a threat to the trees, the U.S. Forest Service recently reported that the forests are at a 150-year peak.

Foresters say that much of this progress is due to the resilience of nature. That's true, but overly modest. Man also plays a part. Modern forestry research has provided the scientific knowledge to help "manage" forests effectively. Just as the fall trees prepare themselves for the following spring by putting forth buds, so man prepares for future generations by planting forests. Last year, over one million tree seedlings were planted, four for every man, woman and child in the United States. Today, 58,000 concerned landowners, representing a total of 88 million acres, manage their woodlands as registered Tree Farms. As long as this concern for the nation's forests remains high, Americans will have ample forestland for their recreation and timber needs, and plenty of opportunities to enjoy the glorious colors of autumn.

Local man

named on

J.I. Case

Heritage Comm.

An eight-member, broadly based "International J. I. Case Heritage Steering Committee" was established at a gathering of about 60 Case supporters from the United States and Canada during the Western Minnesota Threshers' Reunion at Rollag over the 1986 Labor Day weekend.

Jim Briden, a leading light at the annual Rollag show and a resident of Fargo, North Dakota, chaired the meeting and heads the committee. His address is Route 1, Box 16, Fargo 58103.

Other members of the committee include Otis Astle, 101 Street Rd., Oxford, Pennsylvania 19363; W. C. "Chady" Atteberry, 131 Robin Rd., Blackwell, Oklahoma 74631; Jack Beamish, Hamiota, Manitoba ROM OTO, Canada; Kevin Anderson, Box 32, Andover, South Dakota 57422; Thomas G. Lee, Route 3, Box 61, Calhoun, Kentucky 74058; Kenneth Kelley, Route 1, Box 211, Pawnee, Oklahoma 74058; and George W. Hedtke, Box 26, Davis Junction, Illinois 61020.

At Rollag, the group designated the 1987 Oklahoma Steam Threshermen's Association show at Pawnee on May 1-3 as the First International J. I. Case Heritage Exposition. The committee intends to use the Oklahoma event as a gathering point for Case heritage supporters from all over the United States and Canada to plan future expositions and other activities related to strengthening and extending the Case heritage movement, worldwide.

Persons interested in attending future meetings or participating in activities planned by the International J. I. Case Heritage Steering Committee should contact Chairman Briden or a committee member in their region. The group plans to issue its first newsletter in the near future.

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