The Estill County Tribune, October 5, 2016, Page 13



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ing their fall colors. The inas the genetic makeup of approaches, influences in-

geographic area.

source of the carbohydrates slowly unmasked and begin needed for the tree's growth to show through. and development.

Fall is here! Many trees cess, chlorophylls break which result in brilliant yeland shrubs will begin show- down and are continually lows and oranges. Some "used-up". However, the tree trees where carotenoids are tensity of fall color and time replenishes them all through conspicuous include ash, of peak color vary and are the growing season. As long maple, aspen, birch, black determined by complex en- as replacement remains high, cherry, cottonwood, tulip vironmental factors, as well the leaves stay green. As fall the plants themselves. These side and outside of the plant ments, called anthocyanins, factors vary by plant and by cause the chlorophylls to be

replaced at a slower rate. been present in the leaf all What happens to leaves Shorter days cause a layer season. Instead, they dein the autumn? In summer, of cork cells to form at the velop in late summer in the leaves are green because of a base of each leaf, gradu- sap of the leaf cells. Their group of pigments known as ally closing off the flow of formation depends on the chlorophylls. Chlorophylls water and minerals into the are vital to the tree's food- leaf. This is the location making process, called pho- where the leaf will eventutosynthesis. Leaves manu- ally separate from the tree facture simple sugars from and fall to the ground. As water and carbon dioxide, the supply of chlorophylls using energy captured from dwindles, other pigments the sun by the chlorophylls. that may have been pres-These sugars are the sole ent in the leaf all along are

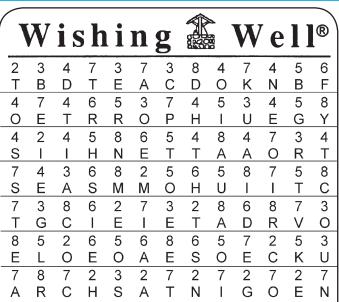
What Makes Fall Colors?

pigments Unmasked In the food-making pro- include the carotenoids, tree, and sycamore.

Another group of pigare responsible for the reds, the Kentucky Cooperative purples, and blended com- Extension Service serve all binations of these colors. people regardless of race, Unlike the carotenoids, color, age, sex, religion, disthese pigments have not ability or national origin.

breakdown of sugars in the presence of bright light while the level of phosphate in the leaf is reduced. Phosphate is at a high level during the growing season, but in autumn it moves out of the leaf and into the stem of the plant. When this happens, the sugar breakdown process changes, leading to the production of anthocyanin pigments. The brighter the light, the more anthocyanins are produced and the more brilliant the color. The brightest colors develop when autumn days are sunny and cool, along with nights that are chilly but not freezing.

Educational programs of



HERE IS A PLEASANT LITTLE GAME that will give you a message every day. It's a numerical puzzle designed to spell out your fortune. Count the letters in your first name. If the number of letters is 6 or more, subtract 4. If the number is less than 6, add 3. The result is your key number. Start at the upper left-hand corner and check one of your key numbers, left to right. Then read the message the letters under the checked figures give you.

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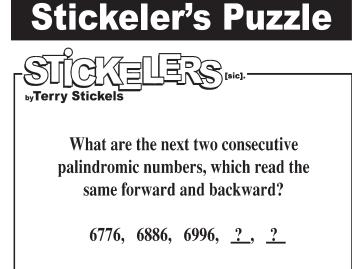
This is a simple substitution cipher in which each letter used stands for another. If you think that X equals O, it will equal O throughout the puzzle. Solution is accomplished by trial and error.

Clue: U equals S

DU D UCBOAIM PFI'U HABX OIIK DY BAJIHWMO JDBLU SAGY GBIJ PICMKU, GISLU SWLA YI UDX W'J D URDB JARFDMWR. © 2016 King Features Synd., Inc. CryptoQuip puzzles \$3.50 • 24 Volumes • Order at: rbmamall.com CryptoQuote AXYDLBAAXR is **LONGFELLOW** One letter stands for another. In this sample, A is used for the three L's, X for the two O's, etc. Single letters, apostrophes, the length and formation of the words are all hints. Each week the code letters are different. GZ KROIG LWIFL JUMUWXUM

TFISZOZ AUZNIWJF

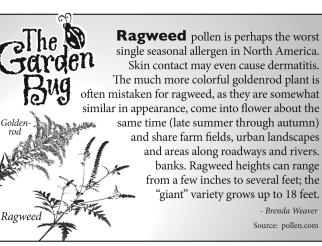




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Stickeler's Answer on Page 11





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