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Earth Almanac: July/September 2003

By Ted Williams

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Photo by Craig Cutler

Blood of the Great Bear

In autumn, the constellation Ursa Major descends from northern skies to pad along hardwood canopies, leaving them bright as he fades into dawn. According to American Indian lore, ancient hunters killed the Great Bear, and the carcass bled on maples, sumacs, dogwoods, sweet gum, black gum, sassafras, and the like, staining them crimson. When the hunters cooked his flesh, the dripping fat stained yellow the leaves of such trees as aspens, birches, hickories, elms, beeches, cottonwoods, and willows. This explanation is no more fanciful than the currently popular notion that autumn leaves are tinted by freezing temperatures. Foliage is dulled, not colored, by Jack Frost. Reds are brightest when sunny days are followed by cool (but not freezing) nights. Under such conditions, sun-made sugars are trapped in the leaves, where they form the red pigment anthocyanin. Leaves that appear

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yellow are no less so in spring and summer. It's just that the yellow pigments—carotenoids and xanthophylls—are masked by the green pigment chlorophyll, which breaks down with diminished sunlight. Find maple leaves that are still green, and tape black paper over parts of them. Shielded from sunlight, these parts will turn yellow while the leaves' exposed parts will turn red.

Wafting South

Throughout most of our nation, buckeye butterflies are making their way south, sometimes in concentrations that rival the famous fall migration of monarchs. Look for these midsize butterflies in clearings and along meadow edges as they fuel up on the nectar of asters and other late-blooming wildflowers. Often they'll be perched on a protruding branch or the ground. If another insect passes close by, they're likely to give chase, then return to their posts. The six striking, multicolored eye spots—two on each hind wing and one on each forewing—are thought to frighten insectivorous birds. Adults live for only about 10 days, but butterflies of the season's last brood can overwinter if they make it to southern states and countries. In spring, buckeyes breed themselves back to their summer habitat, rolling north in waves of successive generations.

Flat on Their Sides

When the first nor'easters of fall send weakfish, bluefish, tuna, striped bass, marlin, and other Atlantic predator fish streaming south along the continental shelf, winter flounder—a.k.a. mud dabs, blackbacks, lemon sole—begin their own migration, easing in from deep water to bays and estuaries from Labrador to Georgia. Here, protected from frigid water by antifreeze in their blood, they'll spawn in midwinter, and their eggs will sink, unlike the buoyant eggs of most other marine fish. Winter flounder rest on the bottom, venturing higher in the water column less frequently than more piscivorous members of their order. Lying on their white blind sides and gazing up with bulging eyes that, during fryhood, have migrated to the right side of their heads, they are perfectly camouflaged against (or in) mud, sand, and weeds. The first—and only—thing you are likely to see is their eyes. Winter flounder lack the large, toothy maws of halibut and fluke, and their thick lips are permanently puckered, as if waiting for a kiss. Few fish are better eating, and now is the time to pursue them. Use small, long-shanked hooks. Sea worms work best, but garden worms are nearly as effective and easier to come by. Paint your sinkers red.

Bloom of Sea Spray

The sky is unblemished cobalt; the air, still and fragrant with the scent of tidal flats and sun-baked driftwood. So what are those curtains of blue-gray spray rolling across the Atlantic shore? They are the tiny flowers of a low, erect perennial called sea lavender, or marsh rosemary. From Labrador to Florida, they brighten salt marshes and wet meadows in late summer and autumn. Their thick rootstocks have a powerful astringent once used to treat dysentery, hemorrhage, and bad breath. Like other native plants of marine wetlands, sea lavender can be wiped out when humans, in vain efforts at storm-surge flood control, block tidal flows, thus creating monocultures of invasive phragmites.

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No Stone Unturned

When other Arctic-breeding shorebirds squat on tropical shores, ruddy turnstones patrol beaches on both of our coasts. So leisurely is their migration to southern states and Central and South America that they sometimes hang around until after Christmas, or even later. Watch them as they dash on stumpy legs after retreating waves, flipping over pebbles and snatching the invertebrates that scurry away. The ruddy turnstone dislodges larger stones as if it were a colonial farmer—straining against them with its crowbar-like beak, rolling them over by pushing against them with its breast, and, when a stone is too firmly embedded, digging out the supporting sand or even enlisting the help of a neighbor. In pursuit of burrowing crustaceans it may dig a hole larger than itself. Perched or airborne, few shorebirds are more striking. Wings and back are splashed with white, brown, black, and chestnut red; lots of white shows in flight. The species can be tame to the point of brazenness. Approach slowly, and a bird may continue its investigations within a few feet of your boots.

Swirling to Sleep

A good month before bat renderings adorn school windows and shopping-mall aisles, real bats drift southward, swirling around the entrances of their winter hibernacula—usually caves or abandoned mine shafts. Some species, such as the mothlike eastern pipistrelle (so small it can fit through a hole the size of a dime), roost or hibernate in caves and mines year-round. Others, such as the little brown bat (above, right), found throughout most of the nation except the Southeast, roost in hollow trees and buildings during warm months, entering caves and mines only to escape the desiccation and freezing temperatures of winter. Male little brown bats arrive at the entrance first, attracting females with calls too high-pitched for human ears. After mating, females store sperm in their uteri through the winter. Ovulation and fertilization occur in early spring; birth, in early summer. Bats are in trouble worldwide. In temperate regions, one of the major reasons is human disruption of hibernacula. The expenditure of energy by wintering bats roused by intruders can cause them to starve. The appearance of just one spelunker can destroy an entire colony.