

Out of Africa: A Special Place in Time

You've driven over the "saddle" through both sides of Woodmont Orchard lots of times. It's Silver Lake Road (Route 122). What you may not realize is that when you make this drive "over the hump", enjoying the view of the rows of lovingly tended fruit trees, passing the ice house and pond, is that you've driven across the Atlantic Ocean - or what used to be, and could have become so, again.

You've always known that New England was a human melting pot. Since the prehistoric journeys of Norse and Basque fishermen, European seafarers have met native Americans, whose ancestors were immigrants from Asia, sailing or hiking across the Bering Strait thousands of years earlier, settling the American continent. Waves of people coming from both directions ever since have mingled in what became New Hampshire. Now, it has been convincingly proven by analysis of human mitochondrial DNA evolution that whether we're black or white, native American or immigrant descendant, genetically, we all came out of Africa.

New Hampshire is also a geologic melting pot, and certainly, so is what became known as Hollis. Should you stop your car at the top of the "saddle" on Silver Lake Road and get out and take a walk heading north up that dirt road that climbs through the apple trees, the sound of cars going up and over the rise fades behind you as you walk a half a mile or so up that winding road. As you climb, the gravel road beneath your feet turns to earth, then to grass, as you climb until you find yourself in a place you never knew existed, at the top of your little world. Wandering around, you're not sure you've found the very top until you stand where there's no direction to go that isn't down a little. There always seems to be a breeze up here, and some bird or another singing. You notice broad sheets of bare rock protruding from the grass, weaving among the young peach trees. Up high is the last place to get nipped by a late spring frost, and peaches bloom early. To the northeast, high trans-Atlantic jet contrails off the Maine coast converge on Logan. To the southeast are the south Nashua hill developments of Ledgewood and Sky Meadow. If you brought binoculars and it's a clear day, you can look at the horizon between them and see the Boston skyline and spot the Prudential tower. At night it's even easier. To the south rises the Hollis town hall bell tower. To the southeast you can see Mount Wachusett, thirty miles away in Massachusetts, and at night in the winter, its ski runs lit up. To the west, between the nearby humps of Birch Hill on the edge of Hollis topped by the cell tower which looks like a fire tower and Federal Hill in Milford topped by its old fire tower, are Temple Mountain and Pack Monadnock, twenty five miles away. This is the only place in Hollis I know where you can stand on solid ground and enjoy three hundred

and sixty five degrees of unobstructed horizon. Other than that, Woodmont Orchard is pretty much like any other undeveloped high, open farmland left in Hollis.

Note: the eastern side of Woodmont Orchard is now private property. At the time that this article was written in 2003, it was an orchard which was open to the public.

Until, you look down at that rock under your feet. You're standing on a geologic junction. The bands of rock exposed at the top of the orchard remind me of folds of human brain exposed through a craniotomy, or the coral heads of a mid-ocean atoll protruding above the surface of the sea between swells. Standing on this bedrock at the top of our local world, I get a feeling of primal connection. And one should, because this granite ridge constitutes a line of intercontinental plate fusion three hundred million years old, where the western corner of the north African plate bulldozed into the north American plate and buckled it to the west, forming the mighty Appalachians, during the Permian period. The grain in the rock under your feet follows the alignment of the exposed rock ridge atop the orchard, running southwest to northeast, parallel to the Wapacks and the Appalachians west of you, parallel to the Atlantic coastline east of you, the edge of the continental shelf two hundred miles beyond that, and fifteen hundred miles beyond that, the mid-Atlantic ridge, where this all starts to make sense. A corner of north Africa remained here, stuck to north America when the merged continental plates rifted and tore apart and the current Atlantic Ocean began to form in the Jurassic period, a hundred million years later. The bedrock south and east of the orchard underlying most of Hollis is the same five hundred million year old Silurian rusty schist found in the Atlas Mountains of western Morocco. If Hollis has a geologic sister city, it's Casablanca - now a foot or two farther away from us than when they made the movie. Since our Jurassic era breakup, we've put two hundred million inches of ocean between us, on opposite sides of across the ever-upwelling basalt seafloor of the mid-Atlantic ridge. Mother earth may move in geologic time and at a tectonic pace, but she never stops.

The bedrock underlying the northwest edge of Hollis is Massabesic gneiss, found from Maine to the Catskills. This same rock is found in the northern British Isles. Why? Because it was left from an even earlier tectonic merger of Laurentia, the first north American plate, with Avalon and Baltica, the future northern British and north European tectonic plates. This continental collision built the Adirondacks and the Green Mountains five hundred million years ago, in the Ordovician period. But, the surprise winner in this geologic demolition derby, emerging from between the smoking wrecks of Avalon and Africa, and constituting the Woodmont Orchard ridge, is a dike of light gray stone, a complex, metamorphic igneous rock called Permian two-mica granite. It was once lava which welled up between the two colliding continental rock strata three hundred million years ago, when there were volcanos in southern New Hampshire forming a mountain range and "hot gluing" southeast Hollis to northwest Hollis, among many other things.

A hundred million years or so after the Permian collision, when the continental plates began to drift apart in the Jurassic period, the basaltic "glue" held things together here, but farther north, things began to come apart and a whole lot more lava erupted, forming the White Mountains. The old Permian glue held in Hollis, the new Jurassic glue held up

north, and a chunk of north Africa remained in New England to stay, when the current Atlantic Ocean opened again but this time, farther east. An identical process of continent-splitting is now occurring in Africa along the east African rift zone. Southern Californians may deny that a similar process is taking place from east of the Sierra Nevada to the San Andreas fault shoving them out into the Pacific but, ahem, it is.

As proof of the “Two Hollis” story, consider this: mountain laurel, ferns, beech, spruce and hemlock love acidic soils and granite produces acid soils. Gneiss and schist produce neutral to alkaline soils. White pine, ash, white oak, hickory, strawberries, turf grass, sweet corn, hay and dairy farming thrive on neutral to alkaline soils. Think about where in Hollis you find each.

The same two-mica granite exposed atop Woodmont Orchard extends and surfaces northeast of Lake Winnepesaukee and again beyond that, east of North Conway, a hundred miles away. This rock glued Maine to New Hampshire, it seems. Millions of years of subterranean heat and pressure “cured” the lava into granite, and thousands of years and several cycles of glaciation wore a mile of rock off the tops of these granite mountains, grinding northwest to southeast, diagonally across the grain of the rock, leaving grooves and chatter marks on the polished stone surfaces still visible today. Cape Cod, Martha’s Vineyard and Nantucket have the glaciers to thank for their hard work, and New Hampshire and North Africa to thank for their massive contributions to their existence.

A stonecutter will tell you that each granite is unique and has a story to tell. Like a French sauce, granite results from a particular mixture of ingredients plus heat, plus time. To make Permian two mica granite a la Woodmont, infuse two parts native red hot magma into one part imported Massabesic gneiss, crumbled, plus one part imported Silurian schist, shredded, stirring in Moroccan slate, grated, to taste. Cover and simmer under pressure for one hundred million years. Let slowly cool. Deep glacial for one hundred thousand years. Uncover and let warm slowly to room temperature. Garnish with peach trees and preserve. Enjoy!

At night, under a full moon, in the exposed stone roots of what once were mountains, the black and amber mica crystals in the surface of the tortured granite sparkle in the moonlight like the stars in the sky overhead, celebrating a sort of cosmic reunion. Every

atom in every molecule composing the laminar crystals of mica in that rock was produced in a star, just as was every atom in every molecule composing the neuronal pathways and chemical neurotransmitters in your eyes and brain, seeing those stars. The moonlight and the sparkles in the rock are once and twice reflected sunlight, produced by our own home star. Here, in the silence of the night, we may grasp the oneness of this all.

Jim Canfield, May, 2003