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The Old Way May Be the New Way to Local Food Security (1/2011)

I have been concerned about the cultural changes that have occurred in town during the past fifty years. The contrast in the landscapes between then and now is equal to that of night and day. Nearly everyone I knew then sustained themselves by indulging in one or several agricultural pursuits. Agricultural production including, dairy, poultry, orchards, plus fruits and vegetables, dominated the economy and culture of New Boston.

Businesses that supported the once numerous farms also thrived and contributed to the economy. Merrimack Farmers Exchange operated in the building which is now the home of Randy and Gail Parker. This company supplied seeds, feeds, and supplies such as cow halters and milking stools. Local garages and a local welder were important links in maintaining farm equipment and street vehicles. On the landscape, barns, farmhouses, equipment sheds, pastures, hayfields, cornfields, poultry houses, and woodlots were places of local employment and the home of many family owned enterprises.

The farms that I remember were all miniscule in comparison with the typical ‘factory’ farms of today. There was no single business model for these local farms; they were diverse. The majority of the smallest were vertically and/or horizontally integrated. These are terms that economists use in describing business management models. One example of a small vertically integrated farm was the one operated by Frank and Minnie Chandler on Dennison Road. Frank and Minnie raised a large family and I knew them well in their later years because of my friendship with their grandsons, the Whipple boys. Frank and Minnie produced milk and delivered it daily to their customers in town. They also raised chickens and sold eggs directly to their customers. The Chandler’s farm model could be termed horizontally and vertically integrated.

My father’s farm was also integrated horizontally and vertically. His herd of six to eight Jerseys provided milk for the family, but their primary functions were to birth calves and supply the milk to feed the calves. When the calves were a certain age, my father sold them as veal to a butcher who supplied markets with this special meat. All the milk that was not consumed by family and not fed to the calves was fed to the pigs that also were fed vegetable scraps and weeds pulled in the garden. In addition to livestock and veal production my father raised and sold potatoes on a retail basis to a network of customers that he supplied with firewood in the fall and winter season. Another aspect of his much diversified farm model was to do custom work with his small tractor mowing fields and plowing gardens for local land owners.

Don Byam and his family operated a vertically and horizontally integrated farm on the River Road for many years during the period when local agriculture was declining. He produced milk with a small herd of Guernsey cattle and delivered it in bottles to local homes. This family also bred and raised ponies for sale.

The food production system I sadly described above along with its economy and culture disappeared in a generation. The young of that era looked away from the land on the home farm and mostly away from New Boston to follow other pursuits. The landscape that supported that era is still visible to those that care to notice. Many barns stand, some leaky and leaning, some maintained for other uses. The forest has crept into fields that once were pastures and cropland. Though this change is not unique to New Boston, it is sorrowfully felt by those of us that experienced the phenomenon. The November-December issue of Yankee Magazine features a touching story by Ben Hewitt titled "Holding On" with a side bar stating "In little more than half a century, Vermont has shed 90% of its dairy farms".

In preparing to write this, I spread upon my desk a set of recent aerial photographs of the town and tried to look through the images of today to visualize the changes that have occurred. I was surprised and uplifted by my thoughts. Most of the extreme land fragmentation has happened in the southeasterly third of the town and along the Route 114 corridor. My guess is that nearly two-thirds of the town has an image that nearly reflects the land use pattern of fifty years past. Yes, there have been small scattered subdivisions, but the agricultural pattern shines through.

Over the past generation local farm production has nearly disappeared and the grocery store shelves and coolers are stocked with produce that comes from sources unknown and I can testify that this food is not as flavorful, nor as healthful, as locally grown produce. It is said that the chain store produce is grown and processed on large corporate farms and trucked here an average of 1500 miles. We do not know how much pesticide and herbicide has been used to produce the food, nor do we know how environmentally conscious the growers and processors may be. If the food from one source in this system becomes contaminated how many millions of people may be exposed to health threats? If the price of gas continues to escalate, or if foreign oil supplies become unavailable, how will this affect our grocery bills? The most frightening thought is what could happen when the long haul food supply systems fail and the grocery store shelves become empty in less than a week.

Some comfort comes from what I see happening locally regarding food supply systems. The Community Supported Agriculture (CSA) movement and the local CSA operated by the Noonan family and two other local food systems are harbingers of hope; Kim Ohlin's integrated farm market at the Dodge Farm and the local Farmer's Market. Capturing my attention recently is knowledge that the University of New Hampshire has initiated studies on the ways and means of expanding local small scale, yet economically viable farms. This trend indicates to me that our food supply systems may be on the cusp of change.

A recent UNH Agricultural Experiment Publication #2340 "Pastures of Plenty: The Future of Food, Agriculture and Environmental Conservation in New England" by John E. Carroll has instilled faith in me that the worrisome thoughts expressed above can be lulled. This book tells of the many programs at UNH that promise to support a renaissance in agriculture. The food supply system model being promoted is quite dependent upon the demand for organically produced food. The system is also based upon low input, low capital input, diverse production methods dependent upon grazing animals.

Studies at UNH are being conducted to develop recommendations for selection of animal and plant species particularly adapted to our soils, climate, and markets. Animal species being studied include American Milking Devons, Jerseys, and Guernseys, all of which are historically proven to do well on pasture with little input of expensive grain. These hardy breeds also require fewer veterinary treatments and less antibiotics than

breeds like Holstein. This food system may be economical on small integrated farms fulfilling local demand for organic produce.

In reading the UNH publication I had flash backs to my dad's farm, the Chandler farm, and the one owned by the Byam family. My observation is; what is old is new! These New Boston farms were predicated upon good grazing and low in-put management.

Will the UNH model be adopted in New Boston? I believe in it and I think there should be at least four policy and land use regulation changes made to facilitate the new paradigm.

1. The town should vote to establish an Agricultural Commission in accordance with NH RSA 673:4b to promote the movement.

2. There should be some zoning adopted that maintains the availability of soils most suited for animal grazing. Some of the landforms with such soils are on the crests and side slopes of drumlins. Other fine pasture soils are on the hilly uplands adjacent to the drumlin landforms. Fortunately, residential land use has not pre-empted much of the good pasture soils because they are not generally well suited for intensive residential use.

3. There should be amendments made to the subdivision regulations to ease the approval process for creating lease lots intended for use as agricultural land. Without this resource being made readily available to farmers their success will be limited.

4. Conservation organizations that hold lands in fee simple which have good pasture soils should adopt a policy to allow leasing to local organic farmers.

Reputable sources indicate it is inevitable that in the next couple of decades it will become increasingly important that food supply systems become increasingly and intensely local and based on small integrated farms. These farms must be sustainable and ecologically sound. The currently dominant complex systems based on the animal confinement model of management that depends on long-range transport to markets will be vulnerable. Yesterday was the time to encourage alternative food supply systems.

Adventures in a Life of Measurements (2/2011)

Hanging in my kitchen is a constant reminder of the role of measurement in the orderly progress of civilization. It is a steelyard used by my ancestors to measure the weight of important objects such as salt pork, hogs-head cheese, bags of dried beans, and lye soap. This wrought iron device consists of a 24" beam with rectangular cross-section with notches filed into the top and bottom edges to form a scale. A hook attached to the heavy end of the beam acts as a fulcrum and a means to suspend the steelyard from an iron bar mortared into the bricks on the kitchen side of the Dutch oven. A counter poise weight is moved along the beam scale until it counter-balances the weight of the object being weighed.

This antique is a wonderful expression of a blacksmith's skill in forging iron. The blacksmith may have been one of my ancestors, but I have no proof of that. Ian Whitelaw credits the Romans with the invention of the Steelyard about 200 B.C. (*A Measure of All Things*, 2007). I would guess that this technology has contributed as much as any invention to the fair exchange of goods over the past 2000 years. However, the steelyard is not a technology that has been part of my life of measurements.

My adventures have been in the realm of land measurement and the equipment room is cluttered with technology that is no longer used. In the short duration of my career more technology has become obsolete than during at least two centuries prior to my time. I look upon these changes in technology and my use of them in my career as a continuum; each tool links the past to the future.

It is this collection of un-used equipment that momentarily distracts me and puts my head in a state of nostalgia. It is not that I want to go back to using the old technology on a daily basis; it is more a yearning for a time when the task of measurement was less complex and more dependent upon the skill of the user. The measurements my office makes today are more dependent upon the skills of a long list of scientists than upon the skills of the measurer. The list of those upon which I now depend upon for the measuring instruments needed for my work includes physicists, electrical engineers, computer programmers, and geodesists, (my apologies to any that I may have left out).

Hanging on the wall of my equipment room are three magnetic compasses that I used on a daily basis when I first began my adventure. The compass needles in these instruments are pulled astray by attraction from iron in some bedrock, belt buckles, and some mechanical pencils. The instrument man had to be always aware of this complication and to use methods to correct for the attraction. High tension transmission lines were always troublesome when reading a compass bearing in the magnetic field adjacent to the transmission lines. In a period of about 25 years the magnetic compass has become a relic due to the adoption of higher measurement standards. Further, electronic instruments gather data much faster and with greater precision than was possible with the compass and tape method, or with the mechanical transit and tape method of measurement.

I lost count of the steel tapes that contribute to my collection of obsolete technology. One of these steel tapes was my choice for measuring woodland property boundaries and in measuring out lines along which sample plots were established to gather forest statistics needed to predict wood volume on properties. This tape is called a "chain" and it is 66 feet long with 100 graduations each called a "link" 7.92 inches long. I hold too much sentiment for the tool to ever dispose of it; perhaps it should be in a museum. This technology was the one I practiced with while in forestry school during the mid-1960 decade. In addition, the chain has an important lineage going back to its inventor, Edmund Gunter, about 1600.

Gunter's chain consisted of forged steel wire links looped together and there is a handle on each end of the chain so that two men could suspend the chain above ground over objects that might snag the links. The chain was used in Europe to measure land and it was particularly useful in that Queen Elizabeth I mandated that a mile should be 5,280 feet. The Parliamentary Statute of 1592 confirmed the Queen's edict and thereby standardized the mile to be in harmony with other units of measurement already in regular use. The "new mile" was equal to 8 furlongs. A furlong is equal to 40 rods, or ten chains. An acre is the measure of land one furlong long (10 chains) and one chain wide. From that time on the chain became the standard tool for laying out land.

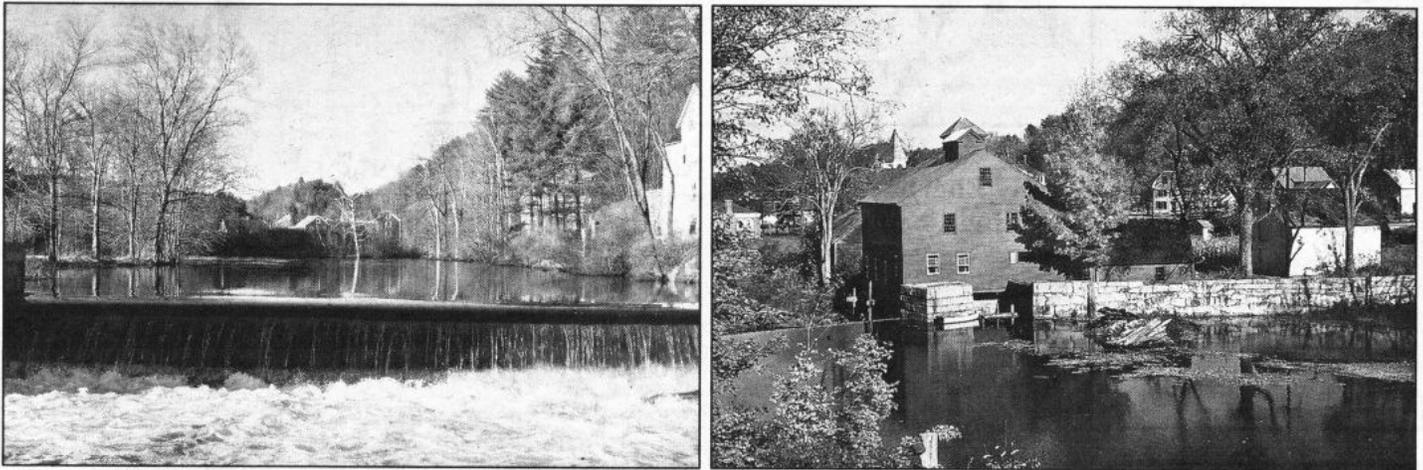
Most land division in New Hampshire was accomplished with a chain. Most of the descriptions in old deeds (1700 to 1900+) to properties were written with distances in rods (units of 16.5 feet). I have a lot of respect for the surveyors responsible for marking the boundaries of the lots laid out in townships for sale to the first settlers. The settlers then cleared their land and imprinted their boundaries on the landscape for posterity by building stonewalls. The pattern of stonewalls along original lot lines secures the integrity of the boundaries on the ground, and the corresponding distances scribed in rods upon the early deeds documents them. My chain is a continuous steel ribbon with numbers etched on babbitt metal at each link, I always felt that it was the most appropriate tool to use in recovering evidence of land lines that were described in rods and I felt a kinship with those whose footsteps I was following.

Integral to the actual measurement with the chain, or any other steel tape that is not on a reel, is the task of coiling and storing the chain. Students took pride in gaining skill which is called "throwing a tape". This is the art of taking up a length of tape with one hand, laying it over the tape gathered and held in the other hand without twisting it. As the tape is coiled it forms a figure eight. Once gathered, the leather thong in the end of the tape is wrapped around the coils of tape to hold them in place. Then by holding one side of the coil in each hand at the point where the coils cross, the hands pull the coils apart and with one twist of a wrist it snaps into a neat smaller coil and the package tied again. This is a tricky maneuver which I have poorly described. I have not done this for years and would need to practice to regain the skill.

Numerous steel tapes, some 100 feet long, others 200 feet long, some with reels, some without are in my collection. Every time I look at them there is an image that comes to mind. One occasion, 25 years ago, is remembered today as clearly as if it was yesterday. I was surveying a property in Antrim in February when there was about a foot of snow on the ground. The snow surface was crusted with a thick layer of ice that was treacherous to walk on. I had a crew of two helpers with me and we had to stamp on the crust to break through and plant our feet on safe ground. We had to shovel the snow and ice away to make a spot to set up the transit; progress was very slow. We traversed along the contour of a steep slope about 1000 feet uphill from the Contoocook River. By about noon time we had only made 5 setups with the instrument and made six distance measurements with the 200 foot long steel tape. Then, progress met calamity.

In preparing to take a distance measurement with the tape, the head chainman slipped and let go of the tape and it started to slide, as did the rear chainman as he attempted to grab the zero end of the tape as it slithered away. I did not get excited because I knew the tape would loop around a tree or get caught in a blueberry bush. This didn't happen! The tape fell down the hill without catching on anything in sight. We all had visions of it going into the river never to be seen again. It took us the rest of the day to recover our run-away tape, so we went home amid chuckles and laments.

I look forward, during the few remaining years in my career, to new technology that will create new adventures, memories, and excitement about measuring things. I know it will propel the evolution of the modern world much faster than the changes I have experienced.



For more than 100 years, the Mill Pond was an important part of the village landscape. The flood of October 1996 took out the dam.
Photos by Randy Parker, who lives with his wife, Gail, in the old Mill Building shown above.

Ice Cakes Warmed Local Economy (3/2011)

The winter of 2010-2011 will be remembered as a great ice maker. There is ice on our roofs, ice on our driveways, and ice on the roads. For all on whose appurtenances it attaches, ice poses a risk to body and mind. Lots of broken hips are suffered when feet don't stay where they are put. It is always expensive to protect or repair our homes when the ice dams cause melting snow to back up under the shingles.

When I am not dispirited by calamities described above I find excitement in seeing the natural beauty that erupts on a bright morning when the sun's rays strike the curtain of large icicles hanging from the eaves. Suddenly, the prism affect caused by the wrinkled surface of the icicles scatters the rays into a palette of colors. For a few moments I am deeply warmed; I stop what I am doing to enjoy the full show on an otherwise colorless landscape of winter.

While this time of the year may be dominated by negative feelings about snow and ice, I am inspired by memories of the good things about icy times. My earliest memories about the favorable aspects of water in its frozen state arise from the child within me. My grandfather, then in his seventies, delighted in making ice cream for his grandchildren when they visited the farm during hot summer Sundays. Of course, I was with him most of the time so I knew the drill.

I would take one of my cousins to the ice house with me, she carried the wooden tub of the White Mountain Freezer and I carried the ice pick. On the outside of the ice house there was a ladder that we climbed to get on top of the sawdust covering the ice. I used the shovel, left there by my dad, to uncover a cake of ice and used the ice pick to chip away enough ice to fill the bucket. I remember feeling the coolness of the building as we hesitated a moment to suck on some ice chips before heading back to grandpa's seat on the porch.

Grandma had previously made the mix with Jersey milk from dad's cows, eggs from the farm flock, and vanilla (sometimes there would be wild strawberries to put in the custardy mix). This mixture was placed in the metal canister within the pine tub. Ice and salt were added to make a brine. We all took turns at the crank which worked a gear arrangement that turned wooden paddles inside the can to keep the custard from freezing solid. Turning the crank became more tiring when the mix was nearly ready, but thoughts of the treats inside created endurance. When grandpa exclaimed "it's done!" he removed the paddles from the can, spooned most of the ice cream from them; the rest we took turns licking from the paddles. The wonderful taste of that ice cream has never been duplicated. This was my introduction to the importance of ice.

As I grew older, I became more cognizant of the importance of ice to the local economy. I mentioned the White Mountain Freezer brand ice cream maker. That company started making ice cream freezers in Nashua about 1865. A small sawmill in Milford cut fast growing white pine trees in New Boston for the cooperage (buckets). The pine had long internodes (the clear wood between branch whorls) prized for the staves. Grandpa wore out his freezer. I bought an electric model of the same make and wore that out. Since that time I presumed the company was out of business until I searched the internet for historical information and was surprised that White Mountain Freezer Company is still making manual and electric models for sale at the most unexpected place it would likely be found, Santa Ana, California. The use of ice in ice cream freezers is one of its links to the forest products industry.

From the storage of ice in special houses arises a second link to the forest products industry. First, sawdust was the most widely used insulation to prevent ice from melting during the hot summer months. I remember going with Dad in his 1936 Ford dump truck to the nearest sawdust pile left at the site of timber harvesting and portable sawmill operation. After shoveling up a load he paid the landowners two dollars for the sawdust.

Our ice house was constructed from locally produced rough sawn pine and hemlock lumber. The building had two walls about 12 inches apart; the space between was filled with sawdust and the roof was single boarded with battens over the cracks. This type of construction predisposed the building to rot and ice houses had to be rebuilt frequently. Most farms had a similar ice house sharing this fate. This unique use of forest products when multiplied by the occurrence of many ice houses in this community may have had a significant impact on this aspect of the economy while also linking ice to the success of another segment of the local economy; the dairy industry.

In talking with my high school classmate, Willard Dodge, he challenged his memory and told me that his grandfather, Isaac Dodge, had an ice pond and an ice house that supported the family farm, one of the largest in town. I would guess that most farm ice houses were close to a natural or man-made ice pond, others obtained ice from off the farm. My dad obtained his ice from Gordon Hart on Mountain Road in Goffstown, a most uneconomical option. Howard Towne, our best source of oral history relative to New Boston, stated that his father, Fred Towne, obtained ice from the Lang farm which is where Jay and Dot Marden now live. I called Dot and asked if she knew of an ice house ever associated with the Gregg Mill Pond next to their home. She

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said that there is still an ice house there and that they have an assortment of antique tools used in the business of harvesting ice.

The book titled “About the Farm” (1910) by the J.R. Whipple Company is a precious treatise on a momentous period in New Boston’s history. The book covers all aspects of the farming enterprise that operated from about 1889 until about 1919. Ice was so important to the farm that three ice houses were erected at a small pond constructed by the company on River Road opposite Hilldale Lane (the road to the Hillsborough County 4-H Foundation land). J. R. Whipple owned three hotels in Boston and he supplied them with fresh dairy products from his creamery, plus meat and eggs. He shipped perishables daily from the New Boston Depot in insulated railcars cooled with ice. The Whipple enterprise used large amounts of ice on the farm to hold produce for fresh delivery to the hotels. Several local men were tasked with keeping the farm supplied with ice year round.

Reed McLane, another prominent New Boston businessman, saw opportunity in starting an ice business soon after J. R. Whipple died. Town reports indicate that in 1916 Mr. McLane owned an ice house at the edge of the mill pond. Gail and Randy Parker live an ice chip throw away from the foundation of the McLane ice house. Henry Friedrich owned this ice house from 1936 through 1948, presumably operating a local ice business during most of that period. Howard Towne says that Henry built a gas-powered saw to cut ice into cakes on the mill pond. Oliver Bailey, a long time employee at Dodge’s Store peddled the ice from the Friedrich ice house to homes in town. Every home had an ice chest to keep foods from spoiling and the job of supplying this important commodity was back-breaking labor.

To my knowledge the Friedrich ice house was home of the last commercial ice business in town. I remember playing in the huge cool, damp, darkness of this seemingly supernatural structure in the final days of its existence. At that time I was not aware of the role it played in the local economy of ice. All that remains today are pieces of the concrete foundation.

Suddenly, the ice business met its destiny; away in a wisp went the culture and economy it sustained. Electric energy and technology replaced labor and ingenuity. About 1948, my parents and grandmother purchased electric refrigerators and the old ice chests were taken to the dump. In 1950 H.P. Hood gave all its milk producers an ultimatum, install electric tanks to cool milk, or sell milk elsewhere. A lot of dairies went out of business. My Dad changed from dairy to raising veal, but kept on farming. In 1964 I tore down the remains of the rotting ice house. I think I will buy one of those California made White Mountain Freezers and make ice cream this summer using ice cubes purchased from Dodges Store; that taste and the memories of that era will never go away.

Same Date - Different Centuries: July 24 in the Lives of Three Surveyors, 1754-1971 (published 4/2011)

During my career, spanning 39 years this spring, I have followed the footsteps made by a lineage of surveyors spanning 217 years. This story compares and contrasts the careers of three prominent surveyors that lived and worked in this area during three unique eras within that period.

On my bookshelf is a history chronicling the life of Mathew Patten, a surveyor from Bedford. Mathew diligently noted his daily professional activities and journaled his personal accounts. It is incredible that his records from 1754 to 1788 survived until the Town of Bedford appropriated funds to publish them in a book (*The Diary of Mathew Patten of Bedford, N.H., 1754-1788*, Rumford Printing Co., 1903). I have read this book several times over the years and picked it up again today for reference.

July 24, 1763. Mathew worked in many surrounding towns, but I shall discuss only his work in New Boston on this benchmark date. He worked for the proprietors of New Boston on this date in the year New Boston
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Boston was incorporated by the Province of New Hampshire. His contract was to select a site for a meeting house. The site he chose is in the middle of the cemetery on Cemetery Road. Mathew made a survey of the site, employing his brother as an assistant, and drew a plan that was accepted at a meeting of the proprietors. Patten did much more work in the town after it became a body politic throughout his career.

The major problems he faced recur as threads in the tapestry of his life's story. His daily activities were expressed in personal and professional contexts on the same page. It seems that managing his accounts with others in the community took an inordinate amount of time and attention. He paid his bills and received payment from others for his services in all forms of exchange. Gold and silver were rarely mentioned. Currency issued by each province in existence during that period must not have been on a par and negotiations between debtor and creditor are commonly mentioned. Commodities were frequently mentioned in exchanges. At the top of the list is rum. Corn, beef, pork, animal pelts, and labor were other commodities frequently exchanged in a bartering context. I was surprised to read about the use of notes, (I.O.U) papers taken and traded to third parties as payment. I can not imagine how much time and attention was necessary for Mathew to keep accounts of his debits and credits.

Mathew's greatest difficulty was in going from Bedford to Plymouth, N.H. and other remote places to survey township boundaries. Roads were non-existent and he had to consider his lodging and meals. Horse-back travel over vaguely marked trails was the norm, acquiring lodging and meals in settlers' cabins was uncertain, and sleeping under the stars in a blanket roll is not my idea of a comfortable night.

Other diary entries expressed sorrow. He watched a neighbor die after being struck in the head by a falling beam at a barn-raising. The details he wrote were chillingly graphic. In Patten's time the standard cure-all for all maladies was blood letting; as applied to the injured man it was to no avail. In a much later diary entry Mathew austere expresses his sorrow over losing his son who died following wounds he suffered in a Revolutionary War battle.

Service to the Province and to Bedford was a large part of Mathew Patten's life. He served on the Governor's Council. He was a Probate Judge, Justice of the Peace, and he also served as a legislator. Many local deeds conveying real estate can be traced to his hand.

July 24, 1899. The second surveyor for whom I hold much respect is George P. Hadley of Goffstown. George's footprints are fresher than those of Mathew Patten and I follow them with confidence when retracing boundary lines he established. A tie that binds me to this man is the fact that I have his tattered survey field notes on my shelf for reference. On the date common to the lives of my subjects, George's field book documents a trip to New Boston to perform services to settle a dispute between some prominent people in town.

George was contracted by the Reed Brothers to re-establish a boundary line common with David Butterfield. The Reeds claimed that Butterfield trespassed on their land and cut and removed a quantity of timber. George's field book entry intrigued me because timber trespass appraisal is a major part of my services and what he recorded that day seemed like a case of déjà vu. Mr. Hadley surveyed the true line, measured 21 stumps, and identified their species while on site. In his office he calculated the board foot volume of the timber and appraised its value.

I believe that George P. Hadley's career in surveying was at the end of the period in which civil engineers answered the call to serve the public's need for surveying services. Could it be that the training offered by schools of engineering focused on skills directly related to building the nation's infrastructure such as roads, bridges, tunnels, and dams? Surveying may have been taught, not as a career, but as a skill incidental to the career of a civil engineer.

In New Boston George P. Hadley surveyed road layouts, perambulated town lines, and surveyed portions of the cemetery. He surveyed the water line elevations for the J.R. Whipple Co. when it installed the hydrant system in the village. George understood the principles of land boundary law and was respected by those he served. This talented individual also taught in the New Boston High School during its first years.

George P. Hadley was born in 1846 and died in 1938. He was a graduate of Francestown Academy, Kimball Union Academy, and he attended Dartmouth College. George practiced as a Civil Engineer for 40 years and distinguished himself in service to his town; having served as a Justice of the Peace, Selectman, School Board member, Town Moderator, and Representative in the Legislature. I believe he is most notable in the public eye as the principal author of the Goffstown History, published in 1928; one of the best histories as a reference for surveyors.

I have a hard time characterizing a single hardship that challenged George, in retrospect his time in practice may have been in the gilded era portrayed in the movies and described in books. However, I would point to some challenges in travel and communication, plus the drudgery of doing survey calculations with a slide rule and/or by use of logarithms to be George's biggest.

July 24, 1959. I searched the field books, also in my possession, of Gerald R. Hyde of Bedford for a record of his activity on the benchmark date. Book 51 indicates that Gerry worked for Leon Daniels of New Boston to lay out a lot on Daniels' Lake in Weare. The Daniels' Lake project was a major part of Leon and Ella Daniels' lives and Gerry Hyde provided a lot of the survey work needed to facilitate development of the project and to market the lots.

I consider Mr. Hyde to be one of the surveyors that stepped out of one era and transitioned into another. His practice began when people had little respect for or knowledge of land surveying. Most people did their own measurements for conveying land and the deed descriptions of that era reflect a poor standard of care. Gerry had to compete with that prevailing attitude.

G.R. Hyde was born about 1911 and died suddenly in 1971 after returning from an American Congress of Surveying and Mapping meeting in San Francisco. He graduated from the University of New Hampshire with a degree in forestry and he earned a masters degree in forestry from Harvard University. His field books indicate that his service as a surveyor began in 1944 and he practiced over most of the southern portion of the state.

Hyde's work was based on thorough research of land records and he was skilled in locating and recognizing the evidence of property boundaries. His clients often served as assistants and the precision of his measurement suffered. Gerry recognized the need to bring land surveying in to the modern era and worked hard to make it happen. He was instrumental in lobbying for licensing of land surveyors and was appointed to the first Board of Licensure for Land Surveyors and became LLS #5.

I knew Gerry Hyde well. I worked for him during my college vacations and on a part-time basis on weekends after graduation. From this experience I gained an understanding that his greatest challenge was dealing with frustration over the public's negative attitude about the surveying profession and his inability to earn a fair income for the work he loved to do. Unfortunately he died at the beginning of the current era in which a surveyor stands as a true professional.

Planning a Family Reunion (5/2011)

Members of my immediate family, cousins, and distant cousins, have been suggesting that it is high time for another family reunion. Their most persuasive argument was clearly based on the fact that nearly a generation has passed since the last Todd Family reunion was held. Another of their heart wrenching pleas was that only a few of those that attended the last are still with us in flesh and blood. Those, now gone, were our link to the past. Those who come will not be able to re-live old memories spoken by elders. One of my own family said, "Dad, only you and your cousins can do this and help members of the 'now' generation learn about their roots and create new memories of their own."

This discussion spread among the local relatives and even my wife, Laura, began to talk seriously about the idea with me. I think a lot of this energy erupted after I had casually mentioned that 2014 will be the bicentennial of the Todd Homestead at Todd's corner on Route 136. Hmm, three years is just about the length of time it takes to plan a major family reunion and what better hook is there to draw relatives to the Old Homestead. Two reunions have been hosted here by the local family during my lifetime, one in 1981 and the second in 1985. Both of these were weekend events attended by 100 to 125 relatives and in-laws and two to three years of planning preceded them; I still feel the strong bonds that were then stitched with relatives that I have not seen since. It is reasonable to assume that another reunion would draw the same number and take nearly as much effort, though it may be minimized by the use of the internet.

Lately, I have been building my own motivation. I asked myself hypothetical questions about the benefits of family reunions. Why bother? Who cares and why should they care? I surprised myself by how quickly I prepared the following list of reasons I think reunions are important:

1. Families members yearn to strengthen bonds with others of the same lineage and by so doing forge their own identity;
2. Reunions answer questions from the heart bringing continuity to one's life, past, present and future;
3. Knowledge of one's legacy is gained at reunions from which springs feelings of security and faith in the future;
4. Reunions strengthen bonds to place (community, state, and country) which builds pride and patriotism;
5. Lastly, I feel a twinge of conscience and admit that it may be the duty of local family members to reconnect our distant cousins with this place and this community.

I perused the paper work related to the 1981 and 1985 reunions, reading letters from relatives that came. Their words were heartfelt expressions about attending. I also reminisced over the photo collection of family gatherings in New Boston that occurred in the period of about 1900 to 1920. Such images caused me to wonder why there are no extended family reunion pictures in this memory house taken in the period of about 1920 to 1980. Members of the first generation descended from Samuel and Betsy Todd, the first to live here, had reunions in this town, they all lived close by. Many of the second and third generations descended from Samuel and Betsey moved away and held reunions at their current home places, but it seemed that connections to the ancestral home and this community were broken. It was not until the reunion here in 1981 that members of fourth and fifth generations returned to their roots. I was convinced that the bicentennial celebration of this homestead is the perfect peg on which to hang a family reunion.

Now psyched up, a state of mind brought on by reading the letters kept from the past reunions and listing the benefits of a reunion, I pulled a book from my library, never read before, titled Family Reunion, Everything You Need to Know to Plan Unforgettable Get-Togethers, Crichton, Jennifer, (1998). I found this to be a good read, witty and insightful. The author speaks with authority having gained a reputation in a family that holds annual reunions. I liked her 'to-do' lists for the many tasks that go into staging a memorable get-together. I found similarities between her lists and those our committee used in planning and implementing our two previous reunions.

Ms. Crichton admits that it is highly unlikely that family reunions, in these times, can be at a memory house (family homestead). Reunions are now held at a place where the spirit of home is generated at the reunion. When folks arrive and mingle they feel good-like this is where they belong. The author suggests that the general feeling is that family is like a force of Nature that will go on without us. However, she says, a family is a system of linked networks that survives only if we continue to physically and emotionally forge the links and make an effort to be together. I share the author's sentiment and cherish the fact that there is opportunity here to present a history lesson that can be topped only by Ken Burns.

Our local reunion committee is excited about kicking off the reunion planning at a meeting in August at the Todd Homestead. At this meeting our local committee, following a back-yard barbecue, will first plan an effort to contact members of the fifth, sixth, and possibly seventh generations descended from Samuel and Betsey Todd. How did we let so much time pass, 29 years, since the last celebration of family? We have become isolated by time and distance. I hope that the power of social media will facilitate a reconnection of lost ties between us. Our first communication will be drafted as an announcement and a request for family contact information.

As time goes on our committee will continue with communications, each one being drafted to involve folks in the planning process, seeking their advice on activities, preference for lodging and meals, length of celebration, and eventually getting their commitment to attend. In fairness to attendees, the committee will engage in early planning on this end to provide time for planning on their end; scheduling vacations, saving money, etc.

The communication process will help us make an early estimate of the number that might attend. Attendance numbers predicate the development of a program activity list and settles the logistics of securing rooms, meals, and all other incidentals necessary to accommodate the number attending. Having a picture of the demographics of attendees also seems necessary; senior citizens have different needs and interests than do adolescents.

Our local committee may model the 2014 reunion after the last which spanned two days. The base for the celebration was the New Boston Town Hall which is not now available for such functions. On Saturday morning attendees registered and were welcomed by the coordinator. Then representatives of each family gave an introduction with a short story containing facts and fibs about their family. A collection of family memorabilia was displayed in the former New Boston Historical Society building and time was allowed for just plain visiting. Lunch followed in the Town Hall, followed by a group picture posed on the grandstand at the ballfield. A popular event in the afternoon was the Historic Scavenger Hunt. Teams of attendees, comprised of not more than one local family member, were given a list of sites that were relevant to family legacy. The object was to find the site, take a tag, then go on to the next site. The team with the most tags won a prize. Some teams did not complete the circuit before time was up, but they all learned a lot and had fun. The highlight of the long day was a banquet at the Town Hall with an exciting talk on "Adventures of J.P. Todd in the Gold Rush".

The Sunday program began with a country buffet breakfast at the Town Hall, followed by church service. A chicken barbecue was enjoyed at the Town Hall and during the day many attended an open house at the Todd Homestead.

As I look forward to the 2014 reunion, I may suggest that the committee add other items to the program for selection by attendees. I feel that a genealogy work session should be included so that people can trace their ancestry to this place. Perhaps there should be family history presentations (read 'bragging sessions') by the elders for the youngest generation.

This I know: the few of us that live in the place of our parents and grandparents realize that we are the keepers of the lore and that we hold an abiding connection to this place and a commitment to this community. Those that will come may have a much different feeling about this ancestral place and we must help them gain the 5 benefits of reconnection that I mentioned above.

A Short Time Between Shoveling Snow And Using a Hoe (6/2011)

The recent weather pattern appeared as though winter leaped over about two weeks on the calendar that should have been transitioning us into spring. Even though temperatures were warm enough to melt the snow they were so below normal that they blocked the start of the growing season. Finally, normal temperatures warmed the soil causing the buds to burst instantly. I do not remember ever experiencing a spring arriving so abruptly and, frankly, the phenomenon upset the rhythm of my life.

The deadline for this column was literally sandwiched between shoveling and hoeing. Several thoughts about a subject for “In The Country” tumbled around in my head without settling on clear focus. I rejected two topics, then, Nature spoke to me while I was carefully raking leaves from the tender peony sprouts that were already several inches tall in the beds around the yard at the homestead. She said, “write about the late arrival of spring and the feelings you experience while dealing with your gardening tasks”.

At the close of this transition from winter to spring, I was struck by the sudden and very short duration of outstanding beauty displayed by the trees. Each species had a unique color while the infant leaves began to unfold shortly after the bud scales opened. Oaks exhibited a reddish orange shade. For a couple of days the Maple trees reflected a light yellowish green. The hardwood forests were nearly as stunning for a few days as they are during the fall foliage season. A cherry tree on the border of the field visible from my desk as I write this has a gold hue brilliantly contrasted against the blue sky in the background. I wondered, is the magical appearance of this color show due to the sudden commencement of warm temperatures.

Such a short time available to accomplish the yard work and completing it in an order most beneficial to the plants caused me to think about ways to reduce my labor. Instead of raking the leaves from their winter resting places into a pile on a plastic tarp laid on the lawn and then dragging the tarp to my compost pile as I usually do, I decided to rake the leaves on to the adjacent turf, not in piles, but broadcast over the lawn in a sheet. Since I had to mow the lawn anyway I combined mowing with leaf shredding using my rotary mower. This involved much less labor and the shredded leaves nestled between the blades of grass will soon be converted to minerals that promote plant growth.

Green leaves are the only organs that are capable of taking elemental carbon from the carbon dioxide compound in air and combining it with water and other minerals to build carbohydrates. The shredded leaves I placed on the lawn will be broken down by fungi, bacteria, insects, and earthworms into the basic plant nutrients including calcium, magnesium, potash, phosphorous, and nitrogen. These nutrients then enter the soil solution where they are taken up by the grass rootlets. This process is a microscopic example of the universal ecological process that sustains life on earth.

Pound per pound, leaves contain as much mineral substance as manure according to Roadale’s Encyclopedia of Organic Gardening. 2% of leaf weight is in the form of nitrogen, phosphorous, and potash which are the three principal plant nutrients. Calcium, one of the trace elements that are also essential to plant growth, is included in that 2% of leaf weight. I finished mowing the lawn with a good feeling inside that my lawn may be made happier this summer by the diet of minerals and organic matter that I just fed it with minimal labor and no out of pocket expense. The only down-side of this practice is that I will not have the usual leaf mulch available to put back on the flower beds this fall. However, I will continue composting household waste, garden waste, and some long grass that I will rake up after mowing the rough areas with my scythe.

For most of last summer a painful back ailment forced me to forego the usual work on our improved grounds and I noticed that this year I must redouble my effort to stop undesirable plants from over-running my preferred plants. How do I balance this with the imminent need to prepare and plant the vegetable garden says I. Well, I will have to find that balance some time before Memorial Day which is our long standing, climatically controlled, garden planting time.

This farm has its share of invasive plants that are eager to take over all the growing space. Some are actually listed as invasive species by the N.H. Department of Agriculture. The species that I am most hostile to is honeysuckle. Though I admit to keeping a thicket of this plant as a nesting site for the song birds, I consider the plant a menace. Ironically, I suppose that our favored birds are responsible for spreading the honeysuckle seeds around the yard as their thanks to me for providing them with secure nesting habitat. So, every spring I systematically go around the yard and hand pull the newly sprouted honeysuckle plants.

Japanese barberry is another invader. While defending my ground against this heavily-barbed shrub I have to wear my leather work gloves with the long gauntlets. In my opinion these plants are not as aggressive or as prolific as the honeysuckle and a few seasons of cutting the main stem at ground level punches them out. Barberry is quite attractive through the seasons due to the small dense leaves that are bright green in summer, then turning orange and scarlet in the fall. In the early spring the bright yellow flowers peek out between the small leaves. Their best show is in the fall when the compact shrub displays its shiny red fruits. When my children were growing up there were two groups of dense barberry plants along the shed foundation in which the kids frequently lost balls and frisbees. While pulling their balls from the tight branches the kids were jabbed and scratched by the sharp barbs. In my mind's ear I can still hear them screaming from pain after retrieving the balls.

A very fast spreading shrub that seems to make a comeback every spring despite my eradication efforts is falsespirea. I think this shrub should be placed on the invasive species list. This plant's secret of proliferation is its strong fibrous underground stem which is about the same diameter as the above ground stem. These suckers run horizontally at alarming speed to form colonies of the plant. I have become tired of pulling up these underground stems in lengths of up to several feet along with the numerous above ground plants sprouting from them. It seems that I never can pull the entire network of these stems; they break off and the remaining underground portion sends up new plants as soon as I turn my back.

Some authors recommend falsespirea for use in residential planting to create shrub borders, masses, and groups. I would not recommend it unless one is ready to stand guard over it to keep it from running over everything else in the landscape. I see its value more as an erosion control plant on disturbed slopes. So I continue to grab hold of the stems and pull. I am winning the battle while continuing my vigil.

Finally, my list of problem plants along our lawn border includes forsythia. I only appreciate this plant in the spring, then with a jaundiced eye, while plotting my attack with a hand pruner and a machete during the fall season. Last fall I did not prune because of my sore back which is why this plant now looks like a spiked hair-do. Our forsythia plants remind us how deep the snow was during the winter. Usually, the plants blossom on stems that were below the snow depth which protected them from the severe frosts that kill the flower buds above the snow line.

My grandmother left us a wonderful legacy of her favored perennials and native shrubs and those we love. However, I wish that she did not introduce those non-native plants listed above which perturb me greatly. At the end of her life she must have realized the folly of her plant choices having seen what a nuisance they had become. When my wife and I bought the homestead from my dad in 1963 the invasive plants were widespread and we have been battling them ever since. I am happy that they are now controlled or controllable with constant effort, without the use of herbicides. Cutting and pulling are the only control practices I use. The

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lesson I have learned from managing the plants handed down from my grandmother is; AVOID PLANTING NON-NATIVE PLANT SPECIES.

Carbon Marketing: A New Dimension to Forest Economy (7/2011)

The sugar maple outside my office window was planted by myself and the kids about 1969; it was then not more than 3 feet tall. That sapling has since become a specimen of natural beauty with a diameter of 18 inches and a height of over fifty feet. Its opaque shade cools the entire west wall of the house and most of the roof giving comfort to us during the summer months. The sun's altitude, even at solstice, fails to reach over the tip of my maple's crown to cook more than a third of the side yard until well into the afternoon. Every spring several robins are fledged from the branches of my companion. Squirrels that come to the bird feeders, which Laura persists in filling with seeds during summer months, are often spooked by the cat and scurry up this tree to a secure place on a high branch. This sport is enjoyable to watch.

The maple adds to the value of my property and to the enjoyment of my life. This value is one of many values attributable to trees that I have learned to recognize during my career as a forester. Landscape trees on a residential lot provide values as single specimens or in groups while trees existing in forests provide cumulative functions and values. These include; control of storm water runoff, wildlife habitat, soil erosion control, recreational enjoyment, nutrient cycling, air purification, temperature amelioration, biodiversity, and biomass production that is marketable as raw material for wood products and energy.

During the current decade, I have become increasingly more aware of an emerging value related to the role of all trees in the carbon cycle. This role is based on the magical transformation of carbon dioxide and water to carbohydrate molecules and oxygen using energy from the sun's rays and with help from chlorophyll in the leaves. Simply stated, the carbon is bound up with hydrogen and oxygen to form nutrients that trees use to grow their massive structures, thus reducing the amount of carbon dioxide, a "greenhouse gas", in the atmosphere. It seems that there is a market demand developing for the service trees on my clients' land provide in removing carbon from the atmosphere and storing it to offset greenhouse gas emissions from human activities. This idea is exciting to me.

Getting the carbon binding potential of the forest into the market place is a very complicated and often controversial process which must pass through several hands. Further, there is more than one track to get into this market, one is voluntary and the other is regulatory; the term "cap and trade" refers to the regulatory track. I see the merit of the voluntary track because of its co-benefits and I will try to highlight the marketing process in what follows.

So, the landowner manages his forest and the trees therein accumulate carbon in their massive above and below ground structures. This mass of wood can be measured and by applying the results of scientific studies conducted by the US Forest Service and other cooperative agencies, this mass of wood can be converted to units called carbon offsets. Each of these units is equal to a metric ton of carbon that is in the wood on the forest, including dead wood, standing or down. All sizes of woody growth are included in the calculation of carbon offsets.

Carbon offsets also include the metric tons of carbon contained in the soil supporting the forest.

Who measures the carbon offsets in the forest and who sets the standards for the measurements and the basis for calculating the offsets? Measurements may be taken by the landowner's forester, but he would do so using standards imposed on him by a firm that specializes in carbon offset project development. Members of that firm, contracted by the landowner, would also closely supervise the forest measurements and assist in putting the project together.

At a recent forestry seminar, I was attentive to representatives of a firm named “Finite Carbon” (FC) speaking about the project development services they offer. Finite Carbon is one of the largest carbon project development firms in the US and it has recently worked with the New England Forestry Foundation (NEFF) assembling a carbon project on Hersey Mountain in Sanbornton, New Hampshire. NEFF manages that property which comprises 2100 acres. Representatives claim their services are similar to other project development firms and these services include: designing and implementing the initial forest inventory, quantification of carbon offsets, completion of project documentation, submission of project documentation to a carbon registry (the next station on the carbon marketing track), selection and management of third-party verification (third party folks check the figures and field work in carbon offset inventorying), and purchase or brokerage of initial vintage offsets.

I was not surprised, just a little breathless, when the FC representative spoke of project development costs; they would definitely hit six figures, said he! If I were the landowner engaging FC I would be eased by FC’s practice of amortizing the cost of their services over a period of ten years and that their payment would be deducted from revenues received from sale of additional carbon offsets. A final service provided by FC and similar firms is that of risk mitigation. That is, FC would agree, for a fee, to insure the risk of carbon reversals (forest fire, hurricane, tornado, insect infestation, floods, and trespass).

The final step in marketing forest carbon offsets is called registration. It is at this level that a carbon offset becomes an Emissions Reduction Ton (ERT). Registries have different operating procedures and the choice of one may be made by the landowner, most often it is chosen by the carbon project developer on behalf of the landowner. The American Carbon Registry (ACR) is one of several registries that deal in ERT marketing. The primary responsibilities of ACR are; screening eligibility of carbon projects developed under their strong standards for ensuring the integrity of the ERTs, ERT certificate issuance, serialization, and tracking. ACR facilitates over-the-counter transactions (a market which is conducted world-wide over the internet and telephone) while maintaining low risk and high quality in the market.

The questions that arise in my mind after gaining a limited amount of knowledge about this recently developed dimension in forest economy is what are the benefits? Net income potential ultimately determines the viability of a carbon project for individual land owners and the high costs of the marketing process is scary. FC assists the landowner with meeting the costs so that he is not faced with out of pocket costs and the company is bullish about the value of carbon offsets increasing in value dramatically over the next ten years. Currently offsets are worth \$4.50 to \$10.00 in the market. Based on the success of firms like FC, I am convinced that forest management for the carbon market can be profitable, especially when I consider that forest carbon marketing results in co-benefits that attract certain investors to this particular market rather than to projects that result in just carbon emission reduction.

Co-benefits of forest carbon projects can be attractive to conservation minded investors. Restoration of damaged ecosystems, preserving forest landscapes, wetland restoration, water quality and quantity protection, and wildlife habitat preservation are all examples of conservation practices with co-benefits that can attract investors in the forest carbon markets. It seems to me that firms like FC and conservation groups like the Society for the Protection of New Hampshire Forests and the Piscataquog Land Conservancy should collaborate on reaching common goals by promoting carbon marketing.

Marketing carbon offsets is not without its challenges. The premise of offsetting is; rather than reduce your own emissions, you pay someone else to reduce their emissions. This is a very controversial philosophy. This can only be countered by proving that the carbon marketing program results in no net increase in emissions. Particularly, the credibility of forest carbon offset projects relies on their being able to prove that carbon emission reductions or removal are in addition to those reductions or removal that would have occurred in the absence of the project.

One strike against the credibility of forest carbon projects is termed 'leakage'. Leakage occurs when carbon emissions are shifted from a preserved forest project to a location down the street. A prime example of leakage occurs when housing development projects are literally moved down the street when a preferred forest site is protected. This negative impact can not be measured or prevented.

Another strike on the program is termed 'reversal'. The consequences of fire, insect and disease damage can derail a carbon offset project in a heartbeat. The landowner's loss can be insured, but the loss to humanity can not. A climate change phenomenon is that it tends to perpetuate carbon imbalance itself by increasing the occurrence of tornados, floods, and other reversal forces that destroy forests.

Voluntarily managing forests for carbon offsets will most likely never overcome the imbalance in the carbon cycle, but increasing the forest carbon sink potential in this way will make a difference and we, as individuals, are empowered to accomplish it. Adapting to the effects of climate change is perhaps the biggest challenge humans have ever faced.

The Beat Goes On: From New Boston to The World

Music is a big part of my memories, second only to those related to sports. Even though Mrs. Bartlett, the music teacher hired by the school district to teach high school students how to sing, was never able to raise my interest in performing vocally or to play an instrument, I did pick up a strong appreciation for music when I was a teenager. I even learned how to dance and rarely missed school proms that featured live bands from the area. During my life I have also developed great respect and admiration for the local people who have developed their musical talents and have enriched our lives with their performances.

Foremost in my memory are the local Fourth of July celebrations and Minstrel shows staged by local performers, youngsters and adults. Among them is a musician that stands out in my mind. This is Bob McQuillen, now a national legend, who lived in New Boston from about 1945 to 1953. He played the accordion in the Fourth of July shows on the playground. I loved to hear his music and was excited by the energy he projected and entertained by the jokes he interjected. According to Bob's web site (take a look at this) he has been recognized for having a central position in the New England traditional dance music scene for over fifty years. In 2002 he was awarded the National Heritage Fellowship by the National Endowment for the Arts. For more than ten years Bob has again brought his great spirit and talent to New Boston as the accompanying pianist for performers at the Fiddlers' Contests staged by Frank and Susan Woodward during the Fourth of July celebrations. These have provided marvelous entertainment and a great means of perpetuating traditional music.

Other New Boston performers score high in my memory bank and some have gone on to receive prestigious accolades. Perhaps the first that I recall is Dwight Davis. Dwight and his country-western band played concerts and dances in town and in the northern New England area. I thought that he must have hit the big time because he toured in a bus like the big stars of the day.

Karen (St. John) Morgan and her Pony Express band are notable in the country-western scene in New Hampshire and New England. She has entertained us locally and made us proud of her and of her talented family. Pony Express has performed at the Gazebo on the village common in New Boston and at the Friendly Beaver Campground in New Boston. A visit to Karen's Pony Express web site reveals her busy calendar and the many awards she has garnered during her professional career which must span at least 25 years. It is not surprising that Pony Express has been admitted (2001) to the New Hampshire Country Music Association Hall of Fame. I can remember Karen and her brother Kevin performing as a duet on the playground during the Fourth of July evening celebrations; outstanding even at age 10+/-.

No list of talented musicians in town would be complete without mentioning Cider Press. I called Eileen Belanger to find out when this group started and she said that her former husband, Bob Belanger, Cleve Peirce, Dan Jamrog, and Dave Mosley formed Cider Press about 1977. This band has been locally popular and has a very faithful following. Originally they played venues in the area, but they are most well known for the annual barn dance sponsored by the New Boston Fourth of July Association at the Hillsborough County 4H Youth Center.

I believe that the generation of musical performers now making their mark in New Boston and beyond was greatly influenced by Dan Jamrog of Cider Press fame. Mr. Jamrog has been a teacher at New Boston Central School for 35 years. As an adjunct to teaching, Dan has also been a professional percussionist for 38 years in theatre and for bands in New Hampshire, Vermont, and Massachusetts. I know that Dan's congenial personality coupled with his performing experience and teaching ability greatly influenced at least one boy that I am quite familiar with and am proud of his development as a professional musician. He is my wife's oldest son James Decato III.

My stepson Jamie is a professional drummer who got his start in New Boston Central School. Laura said Jamie's drum practice was relentless, lasting well into the night. Jamie's, first band, Atomic Insanity, was organized when he and a couple of buddies from school were in seventh grade. From that start he continued to test Laura's indulgence with his music interests. After high school Jamie attended Berklee School of Music. He began to play drums professionally when he was only 10 years old and along the way stood on the threshold of big-time success when he was part of a band called Angel Train.

Angel Train had a good run on a fast track and with its country flavor hooked the regional title in the Marlboro Country Music Awards in 1990 and went on to capture the national title of this award program in Nashville. Soon after that successful event the lead singer quit the band and it dissolved. Jamie took up with several bands and continues to play in this state and in Maine. These bands include Color, The Serfs, Timmy T, and Mainesqueeze. When not on a gig with these groups he rounds out his professional life teaching private lessons, teaching music at Berwick Academy in South Berwick, Maine, and performing as a session musician. During his entire career Jamie has focused on performing with percussion instruments, a preference for which he credits Dan Jamrog for the inspiration and his mentoring during the early days of Dan's teaching career. Jamie told me that he remembered seeing Dan play drums with Cider Press and that was when he began to think that drums were cool.

My second stepson is Christopher Decato, also a talented musician who grew up in New Boston. Chris is widely known as a performer, song writer, and a recording specialist. A highlight of his varied career has been his introduction to world music while working with film maker Ron Wyman on the documentary titled [Agadez: The Music and The Rebellion](#). Chris spent ten exciting days during January, 2010, with Wyman in Agadez (a town along a desert caravan route in the north African country of Niger) filming and recording the gifted guitarist, tagged Bombino, and his group as the main feature in the documentary. Bombino is of the Tuareg; a nomadic people who are masters at moving camel caravans across the Sahara Desert. The Tuareg have long resisted control and have fought to remain independent. Bombino and some of his followers have put down their arms in exchange for guitars as a way to express their ideas. Bombino's music primarily expresses the importance of education and participating in government. Bombino has released a CD called "Agadez" produced by Wyman who credits Chris with making it all happen. Wyman has arranged a world Tour for Bombino who is now in the U.S. For more on the group see: <http://www.suntimes.com/entertainment/6375296-42/bombino>.

Laura and I attended a concert at the Brighton Music Hall in Brighton on July 13 and met Bombino. It was a wonderful experience to hear Bombino and to see the bond between Chris and the group. Bombino invited Chris to perform a couple of songs with them on stage. We were very impressed by these warm-

hearted, humble people with handsome light brown skin and fine features accentuated by their colorful native attire.

Chris Decato's most recent professional engagement has been performing with Sully Erna's group on a tour through the northeast and central portion of the United States. Erna is the lead singer in 'Godsmack', an alternative metal group, and this tour was to introduce his solo CD titled Avalon. Also touring with Sully and the band was the singer, Lisa Guyer (of Mama Kicks), a favorite performer at Gravity Tavern in New Boston. Chris is planning to tour again this November with Sully and Avalon.

Since I have mentioned the popular local music venue, Gravity Tavern, a local group often performing there lately is T-Mud and The Spuds. Larry Houghton seems to be serious in pursuing his musical avocation with the group which includes other locals, Mudrick,

My life was touched by music in a big way after marrying Laura. I tagged along with her to her sons many performances where I gained a deeper love and appreciation for their various styles of music and their talent. Music is still a mystery to me, but I truly admire those people from New Boston and from the world who understand it. To those in New Boston who I did not feature in this short column I wish great success. I believe that music is the voice of the heart and that this universal voice has been expressed in music by all peoples since civilization began.

Grandpa's Historic Farming Lessons (9/2011)

The inspiration for this subject came to me from a reader in Frankestown and it could not have arrived at a better time because I had become distracted and then frustrated by not having a subject in mind sooner. Marianne McDaniel sent me a clipping from the December 1981 Country Journal by John Rezelman titled "Threshing with a Flail". On reading this article a light immediately went on and my thoughts connected with memories of my Grandfather, Perley Todd. From that connection sprang recollection of a long string of lessons I learned from my Grandfather about farming methods used by him, his father and his grandfather, on this farm. Thinking about the life my ancestors had on this farm was also fitting in light of the family reunion that will be held here in 2014 to commemorate the two hundredth anniversary of my family being on this homestead.

Perley Todd was probably of the last generation of New Hampshire farmers to use mostly hand crafted tools and traditional farming methods prior to the adoption of mechanized agriculture. Grandfather's tools were simple, yet efficient, and his use of them fascinated my young mind. Since Marianne's article was about the flail, I am prompted to reflect on Grandfather's lesson on this simple, handmade tool that has been used since at least the 17th century, according to Rezelman.

Though Perley's father and grandfather may have used the flail for threshing other crops, my lesson came with his use of it in threshing red kidney beans and the colorfully striped shell beans grown here. Of course the lesson included the tasks leading up to the actual use of the flail. First, I went with Grandfather to the garden and watched him check the bean pods for readiness to harvest. When the day of readiness arrived I helped him bring the bean poles from the barn to the garden where he set them deeply in holes, made with an iron bar, next to the bean rows.

Grandfather may have had to speak firmly to me while in the garden because I would pay attention to the friendly house cat that always accompanied us to the garden. Pulling the bean plants and handing them to Grandfather was not the most interesting task in the threshing process. However, he gently encouraged me to pay attention. I observed as Grandfather skillfully placed the bean plants on the poles with the root mass in the center of a ring of plants arranged so the bean plant branchlets straddled the bean pole and became tightly bound together as successive layers were laid one upon the other until the pole held a column of beans way

higher than my head. The bean plants stayed in the garden for a long time I thought, but it probably was about two weeks. We inspected beans from several of the poles and Grandfather declared that they were dry enough to thresh. Putting up damp beans causes spoilage according to Grandfather; mold and mildew spoil the beans. My Dad and Grandfather brought a horse and light wagon to the garden and loaded the bean poles, bean plants still attached, on to the wagon and brought them to the barn.

I may have made a nuisance of myself by each day asking Grandfather when he was going to thresh beans. Finally, perhaps during October, Grandfather asked if I would help him thresh the beans. Eagerly, I ran ahead to the west end of the barn where he had already spread a canvas on the barn floor and laid on it the bean plants from one of the bean poles.

Grandfather soon stood in readiness, flail in his hands, but first warned that I should stand back so that he would not hit me with the swingle. With some apprehension I asked him what a swingle was and he showed me that it is the wooden club-like piece attached to the staff by a leather thong. I watched as he swung the swingle around in a circle with his staff and at the end of its swing he forcefully struck the beans with its full length. This looked like fun, I thought, as Grandfather continued his rhythmic swinging and striking the swingle upon the beans. The dry pods and stems began to break into smaller and smaller pieces at each impact and the beans were flying and landing all over the canvas. It seemed to me that Grandfather was working long and hard at this task and I asked if he was tired. He replied that it was quite easy; the flail does all the work by centrifugal force. I didn't know what that meant, but did not ask. When all the bean pods appeared completely broken Grandfather declared that the beans were ready to be winnowed.

I soon learned that the red wooden contraption in the end of the barn where other tools were kept is called a winnower. This machine had a wooden drive wheel on one side with a leather strap around it which ran over a smaller wheel that drove inner workings that I could not see. The machine had a short wooden discharge chute where the beans came out at one end. An open box-shaped device was attached to the top where the beans, broken up bean plants, and soil were dumped into the winnower just as they had been shoveled up from the canvas on the floor. I can not remember the details of its inner workings, but I do know there was a wooden fan inside the winnower. When I turned the crank on the big wheel attached to its side, beans came out of the chute and dropped into a wash basin on the floor. On the other end debris was blown out clouding the air with unpleasant dust.

I recall that the beans may not have come out clean from the first winnowing and Grandfather ran them through a second time. Satisfied that the beans were clean enough he scooped them out of the wash basin into cloth bags. These bags were then hung from a beam in the house attic, safe from rodents and insects.

During the winter months Grandmother would bake the beans I helped flail and thresh. I often ate bean dinners at my grandparent's house on Saturday night and felt proud of being a part of making the delicious meal possible.

I remember watching several other historic farming methods before the death of my Grandfather in 1950. Grandfather had a team of draft horses, which were driven by my father. This team was used to pull the plow, the harrow, and the cultivator in preparing the gardens on the farm each spring. During the summer, horse drawn equipment was used to harvest hay for the dairy animals. This equipment included the mowing machine, hay rake, and hay wagon (sometimes called a hayrack). My Dad, Laban Todd, loaded the loose hay on the hayrack as it was pitched up from the haycocks on the ground by my cousin Dalton Todd who came to my grandparents house each summer to help on the farm. Father showed me how to help build a high load by tramping each pitchfork full of hay tightly into place on the load. I still remember the thrill of riding on top of the load while the horses pulled the loaded hayrack from the field up the steep ramp into the west end of the barn.

Horses were also used in the fall to haul scoots loaded with cordwood out of the forest. I was too young to be much help during these farming operations, but I was always excited and happy to watch all the busy activity and often was allowed to ride on one of the horses as the team was on its way home.

Grandfather's most fascinating work to watch was blacksmithing. Most of the equipment used on the farm had some part constructed of iron. Even in his elder years Grandfather skillfully used his knowledge of metal working gained from a lifetime at his forge and anvil. I often watched in awe as he heated iron in his forge to a bright orange before placing it on the anvil with his tongs. He would study the piece, and then strike the sparking iron in precisely the right place. Satisfied by his measuring and testing that the piece was just the right shape, he would again heat it in the forge until it was the right color and then plunge it into a pail of water. He satisfied my curiosity about the process by telling me about tempering the iron so that it was the right hardness for the intended use.

For several years during my childhood I enjoyed helping Grandfather with the bean harvesting and flailing operations and I was awed by his skills. I learned that self-sufficient methods of farming I saw were the same as those used for two generations before my grandparents lived here. These lessons gave me deep insight about life on the homestead and instilled deep respect within me for my ancestors and for all the farm families that made this community what it is today.

Bricks: Building Blocks and Time Markers (10/2011)

In 1852 James P. Todd, my great grandfather, returned from the goldfields of Columbia California and married Abigail Loring. They settled in the family homestead of Samuel and Betsey Todd, James's parents. James, having done quite well as a gold miner, made many improvements to the family dwelling and built a large barn. He increased the original saltbox style of the homestead to a two story home with an ell that included a large kitchen and dining room.

Great grandfather's improvements to the home required many wagon loads of bricks to increase the height of the existing chimneys to rise above the new roof line. However, the greatest quantity of brick was used to make the kitchen. The massive brick structure that takes up much of the present kitchen and dining room is the unit that provided the cooking and water heating functions for two generations. It consists of a fireplace and a brick oven with a brick hearth along the full breadth of the structure. This hearth takes up 30 inches of the dining room floor area.

Projecting into and taking up a large portion of the floor space of the kitchen is the rear of the massive brick oven and the belt high brick water heating system of the 1853 era kitchen. Set into the brick top of the system are two copper kettles, side by side, each 24 inches in diameter at the top. Under each kettle there is a fire box with metal doors opening into the kitchen. Water in the kettles was heated by the wood fires under the kettles. In front of the fire boxes a brick hearth extends into the kitchen taking up 12 inches of floor space.

This brick unit is in sharp contrast with our modern kitchen dominated by stainless steel electric and microwave powered appliances and hot water delivered to a faucet over the stainless steel sink. There could not be a more pure memorial of how my ancestors lived than this brick edifice.

I have often heard my grand parents speak about the origin of the original kitchen. The story I remember is that all the bricks were made in the brickyard field, so called by my grandparents, located less than 1000' from this house. I tried to visualize what the brick making enterprise might have looked like in that field, so I used the internet to learn how brick making is done at The Colonial Williamsburg restoration.

Colonial Williamsburg has a brick making demonstration that is described as having five stages. The first step is mining the clay. At the brickyard field I believe that clay was close to the surface because of its proximity to a wet meadow and I know the soil there is so moist that it grows native cranberries. The water is likely held close to the surface in the field because of the slowly permeable clay layer. In the fall the available labor used hand shovels to remove the topsoil and subsoil to expose the clay layer. The clay was left exposed over the winter so the freeze and thaw cycle could break down the clay structure to make it soft and easy to handle in the spring.

The second step was preparation of the clay. This was done by shoveling the clay into an excavated pit that was filled with water. The clay was kneaded by hand, or by treading in it with bare feet. I think that is a process which I would have enjoyed as a youngster. I can see young boys and girls reveling in the sticky ooze in the pit and at the same time performing an important task. The experienced brick makers regularly tested the mixture of clay and water, called pug, until it was the right consistency for the third step.

The brick moulder used his hands to form the pug into a cylinder and then covered its surface with sand by rolling it in a sand pile. This was necessary to keep the clay from sticking to the mould. The moulds were hardwood boards assembled in rectangles with up to six cells, each cell having the dimensions consistent with the desired brick size. The moulder pressed the pug “clot” into the cells of the mould and then removed excess pug from the top of the cells with a wooden scraper.

Fourth, was the drying of the bricks in the moulds by placing them on a level sand surface and slipping them out of the mould on to the sand. The “sand struck” bricks, so called, were dried in the sun for two days and then turned over to allow drying of the other side for two days. Often the bricks would warp during the drying process and a person would use a “dressing tool” to reshape the deformed bricks. After four days the bricks could be handled and stacked under cover to dry for two weeks.

The last step is called burning. Burning bricks was done inside a kiln constructed of bricks fired during a previous operation. The outside walls of the kiln were daubed with clay to keep the heat from escaping. Fire holes were left in the kiln sides for refueling. The fire was kept low for a day or two until steam ceased rising out of the kiln chimney ports, this completed the drying process. After all visible steam disappeared the fire was increased and maintained night and day for a week. The fire holes were then blocked with brick and clay and the fire was allowed to cool slowly for about a week. I suspect that the brickyard field was a neighborhood attraction when the bricks were made for our antique kitchen and for the new chimneys.

A curious aspect of the brick structure supporting the copper kettles is that a particular brick on top of the most conspicuous corner has finger marks impressed in it. The brick must have been set there for a reason unknown to my grand parents, or at least they never told me the story behind the prints. Hundreds of times I have placed my fingers in the imprints, obviously made when the brick was moulded, and intentionally placed there for a reason. Often I speculate about who time marked that brick for generations to wonder about. I suspect that the culprit is one of James Todd’s nieces or nephews; his own children would not have been old enough to make hand prints that large.

Human beings have marked time since the beginning of civilization in many ways; by placing graffiti on the walls of caves and by travelers that chiseled their initials in stone along the Oregon Trail. My grandfather’s name was found written on the plaster under the old wallpaper we removed when redecorating an upstairs bedroom. In the concrete apron poured to form a new ramp at the barn door are three small hand prints made by each of my children with the date “1970”. At the bulk-head that serves as the cellar entrance to the house, the date “1973” and the paw prints of our pet dog were cast in fresh concrete when it was rebuilt. All these acts of time marking supports a hypothesis; why would James Todd not mark time by having a young relative set his or her hand prints in that brick to commemorate their role in the project. It is a shame that the name of the

person whose hand print graces that brick has been lost, though its presence continues to be the subject of interesting conversation.

In this community bricks serve as time markers and as symbols of our citizens' benevolent spirit and civic pride. Many commemorative bricks are set in the matrix of bricks forming the walkway between the Recreation Department building and the gazebo and the walkway crossing it to connect the adjacent parking areas. Each of these bricks represents a generous donation that garnered a sum making it possible for the New Boston Recreation Department to dedicate the gazebo on October 9, 1995.

Those who follow the Red Sox have certainly heard that bricks will be used to mark the 100th anniversary of Fenway Park in 2012. Sentimentality will be a driving force to make this brick program a success. A 4" by 8" brick sells for \$250 and an 8" by 8" brick costs \$475. The bricks will be used as pavers inside Gate B or C and connect many fans with that time and place.

Seeing bricks with their names moulded on the surface puts people in touch with what they cherish. They also pass on to future generations the legacy that is represented by these memorial bricks. At the same time they represent some degree of immortality of the person named on the brick.

Water Mill Sites on the Piscataquog (11/2011)

Perhaps the most important factor contributing to the settlement of New Boston is the presence of streams on a sloping landscape. This influenced decisions by the first town proprietors as they planned the settlement of this township, then known as Simpson's town. These developers were businessmen from Boston governed by the Massachusetts Bay Colony. They had a great plan to promote the development of their town, at that time it centered on a large kame delta called "the plains". They first contracted with Joseph Wright in 1736 to build a saw and grist mill on the Middle Branch of the Piscataquog River. I believe this was built on the river near the home of Jay and Dot Marden on Gregg Mill Road and it was presumably instrumental in the development of about 60 homesteads. The Wright mills were the first in town and were positioned to play a significant role in sustaining the community under a number of successive owners.

In 1741 King George made a decree which changed the provincial boundary line so that this town became part of the New Hampshire province. This adjustment resulted in the town being owned by the Masonian Proprietors. The new proprietors also understood the value of having the Wright mills continue service and they sold them to Zachariah Emery in 1741. In fairness to the first settlers, in 1748 the Masonian Proprietors confirmed most of the original grants by the Massachusetts Bay Colony and they regranted the town in 1751; then to be known as "Lane's-town".

The second mill built in town was also on the Middle Branch. A Proprietor's Committee contracted with Andrew Walker in 1753 to build a saw and grist mill at a site I believe is now owned by the Montgomery family, commonly known as Hadley's Mill. These first mills sustained the early growth of this community and were written into its history. Since their prominence there have been about 42 additional mills operated on the branches of the Piscataquog river system in New Boston. This count is from the list in Cogswell's History of New Boston, 1864, p. 217-225 which includes subsequent owners of the same mill site, so the number of mill sites is somewhat less. These mills have not been as well documented as were the first two mills, but for the persevering few the records on file at the Hillsborough County Registry of Deeds and Probate in Nashua may provide additional information on the history of mills in town. I have found in my work that the description of flowage rights appurtenant to the mill site titles tend to be an informative and interesting source of mill history.

Having lived in New Boston all my life and worked as a surveyor for nearly forty years, I have in that time span been introduced to the physical remains of mill sites in town as well as to the record of their

existence. These experiences are the most interesting and fulfilling of any. Mill records and their remains have forged a link between me and my ancestors. My Great Grandfather, James Todd, purchased an early mill site from Benjamin Dodge about 1860, a property now encumbered by a conservation easement held by the Piscataquog Land Conservancy. I visit this site often and try to visualize, from the image of stones remaining in the dam and in the building foundation, what busy activity occurred there, and to remember whose lives were benefitted by their business, powered by this river. At this site I also feel a strong attachment to the eternal flow in the river and to the watershed which sustains it; practically unchanged for nearly two and one half centuries.



Bob Todd at the picturesque mill site on Scobie Road. The beauty of this site is attributed to its superior stone work and its landscape setting.

On the Middle Branch, upstream from the mill site my Great Grandfather owned, there is another mill site located on the southerly side of Scobie Road near what is known as “Hundred Acres Monastery”. The dam associated with this mill site is one of the most picturesque of any in the watershed. Its beauty is attributed to its superior stone work and its landscape setting. Water flowing from the narrow spillway falls several feet to the river; often white water is observed over the height of its fall and for a short distance in the stream bed below. This spectacle is easily viewed from Scobie Road. This site is also connected with my family and when I pass it my sensation is intensified. This mill was built by Josiah Morgan and David Starrett and it was first used as a grist and sawmill. David Starrett is my Great-Great-Great Grandfather. My Great-Great Grandfather, Samuel Todd, married Betsey Starrett, David’s daughter, in 1814 and they moved that same year to the house I live in.

I had a recent experience studying the records and the physical remains of a noteworthy mill site on the South Branch of the Piscataquog River which actually inspired me to write this column. This part of my story relates to a property across from the Freedom Crossing commercial site on the village side of the bridge where Mont Vernon Road crosses the South Branch. This is a mill site with a heritage that draws recall of boyhood memories of my enjoyment of the river environs and of a man that I admired as a mentor and community leader.

The mill that stood on this site was built by John McGlaughlin and it operated as a grain mill that provided an important benefit to the central part of town. The mill ceased operation as a grain mill in 1810 and was rebuilt by Moses Peabody who sold it to Sandy Smith. Smith operated this large mill as a saw and shingle

mill until he died and it passed from his estate to John H. Gregg and John H. Gregg Jr. in 1869. The elder Gregg is listed by Cogswell as owning other mill sites on the river.

The records do not speak about the use of the mill by the Jr. and Sr. Greggs, but it was held by the Junior Gregg after acquiring it from his father in 1871 and I presume he operated a sawmill until 1891 when he sold the property to George D. Marden.

For a period of 30 years subsequent, the mill may have remained idle. This is an assumption based upon the fact that four successive owners are familiar names that were unlikely mill operators. Osborne Sutherland purchased the property in 1921 and operated the sawmill under the name of O.A. Sutherland Company, Inc. until he sold the mill in 1941.

Walter O. Kirsch was the next mill man to purchase this property with its extensive mill site, which included a dam several hundred feet upstream of the mill and a long sluice connecting the dam with the mill wheel, or perhaps a turbine, to control the water flow. Walter used the mill to manufacture boxes and lumber. It was during his 20 year tenure that I got to know Walt through his mentoring of little league baseball. However, other teenage memories were filed away at “Kirsch’s Dam”. The pool behind this dam was a favorite swimming hole of the local teenagers and Walt always allowed us to go there. It was probably the second most favorite swimming hole in the village, the first being the pool behind the mill, now owned by Randy and Gail Parker. The advantage of Kirsch’s dam is its seclusion; it was not a problem if you did not wear a bathing suit.

Walt and Ruth Kirsch sold the mill property in 1962 after the equipment was salvaged and the building was torn down ending the life of this mill site, which I believe may be the last to operate in New Boston. The sluice and the large mill foundation remain as bones of the body which served the community long and well.

An inventory and brief history of mill sites on all branches of the river in the watershed comprised an entire chapter in the booklet written and compiled by Gordon Russell on behalf of the Piscataquog Watershed Association. This booklet nominated the Piscataquog River for designation as a protected river under the New Hampshire Rivers Management and Protection Act. The nomination was adopted unanimously by the N. H. House and Senate in 1993.

Old mill sites represent one of the several chapters in the virtual history book about the settlement and development of New Boston, not written in words, but exhibited, as in a museum, upon the landscape. That beautiful book laid out on the land also contains chapters about stonewalls, old highways, old homes, land use patterns, and the vernacular about generations of families that created the diorama illustrating these chapters. We must remain diligent in keeping chapters from being torn out of our local book, or publish a new edition of The Vanishing Landscape by Eric Sloan, Ballantine Books (1955).

There’s Less Cursing Now (12/2011)

“Ouch!”, “Run quick!”, “D***, they hit me again!” This is the usual exclamation by surveyors that have just disturbed a yellow jacket nest in late September. Ben and Rick cringe when I assign them to conduct a boundary survey in the forest during that time of year. Late summer of this year, according to Ben and Rick, brought on more encounters with these fearsome insects than any of recent memory. I admit that I felt guilty about making them vulnerable to these vicious little demons on a daily basis, knowing that they would be stung and suffer a lingering discomfort for as long as a week.

During the yellow jacket season I have lingering memories of being with associates when they were stabbed with this wasp’s barbed stinger. It is frightening to think that such a small amount of venom that a

yellow jacket is seemingly capable to dispense would cause so much pain. One of my employees, during the early 1980s, was allergic to the venom and would be stricken with dangerous symptoms without the syringe of anti-venom that he carried with him and would self inject when having been stung. He took this risk in stride and is now a licensed surveyor.

My most heart-wrenching experience with yellow jackets was the Saturday that my son Robby was helping me do a survey during mid-September, I remember that he was 10 or 11 at the most. We were in the process of measuring the distance from the instrument, where I was holding the steel tape, to a steel rod we had found driven in the ground. Robby was tightly holding the zero end of the tape precisely on the top of the rod as I had trained him to do. Coincidentally, he had stepped on or close to an underground yellow jacket nest and the females carrying their armed stinger streamed out of a small hole in the ground which was the entrance to their nest and zeroed in on Robby's arms. He screamed and swatted the insects but stood in place not knowing what to do. I hollered for him to run back toward me and then we quick-stepped away. It took him a while to calm his hysteria and replace screaming with sobbing. He was so brave that he held the zero long enough for me to read the distance off my end of the tape and we stayed on the job for the remainder of the day, however, even the deer flies caused a run reaction until I showed him what a deer fly looked like.

Considering that a surveyor's measurements are made along a series of lines over a course of a day why could this not be a way to sample how many yellow jacket nests someone could expect to encounter during a walk in the forest on a warm September day. My survey crew averages 2000 linear feet of measurement per day. Let's suppose that in taking these measurements the ground would be impacted, by footsteps and by machetes wielded in cutting brush, for a width of 4 feet on each side of the survey line. These insects are sensitive to activity on the surface. Therefore, a strip of land containing 16,000 square feet (0.37 acre) would be disturbed by their activity per day. My crew has had at least one and a maximum of three encounters per day this fall. This calculates to a ground nest density of from 2.7 to 8.1 per acre. One hiker alone in the woods may disturb only a 3 foot wide swath. So, if a hiker walks in a forest with the same relative abundance of nests encountered by my survey crew, that hiker could walk 1800 feet and expect to encounter 1 nest and by walking 5400 feet he could expect to encounter 3 nests during the mid-September season. Wikipedia says that a single yellow jacket nest may contain 4,000 to 5,000 female workers. I never felt that there was that many erupting from the nests I have disturbed during my career. Only a gravid queen survives in the nest over winter to renew the life cycle.

The yellow jacket nest is not visible and identifiable as a threat unless there are many insects coming out of the small hole in the earth serving as the entrance to the nest that is typically an abandoned mouse or chipmunk burrow. The wasps increase the size of the burrow as needed by removal of individual sand grains by all the worker wasps. In the cavity the workers build a paper nest composed of wood fibers ground up by the workers. The wasps feed on berries, fruit, flowers, carrion, and importantly, other insects. Yellow jackets are also known as bees because they resemble honey bees, however, they are actually wasps.

There is another significant flying, stinging, pain inflicting demon of the woods. This is the white tailed black hornet, as it is commonly known. I have many fearsome experiences with this insect and learned that, relative to yellow jackets, they are less abundant, more painfully venomous, more aggressive, and that they build their nests mostly in low tree branches and in shrub clumps. There is an old wives' tale that the depth of snow during the coming winter can be predicted by the height of a hornet nest above ground. I have watched this over the years and I say "hog wash". It is more likely the result of there being an ecologically appropriate place to hang their paper nest as determined by the collective wisdom of the community passed down by the hornet's specific DNA. My crew encounters these hornets during the fall while opening a line of sight with their cutting tools and when encountered, a new sight line is quickly chosen.

In addition to the flying wasps and hornets that inflict immediate pain there are other creatures that can change your life if the bacteria that they carry is introduced, unfelt, to the woodsman's body. A colleague and 2011 "*In the Country*" by Robert Todd

friend, a surveyor, who lives and practices in the southeastern part of New Hampshire recently suffered from Lyme disease. His joints became very painful and he became unexplainably fatigued early in the day. His doctor tested his blood and diagnosed the infection and explained that he had carried the bacteria for at least a year. His antibiotic treatments went on for several months before he could work as well as before the infection. Another of my friends, a forester, suffered the same infection and by it being undetected for perhaps two years he was disabled and could not continue his forestry consulting business.

Rick and Ben have returned to the office this fall, even into this past week, cursing about having picked deer ticks off their exposed skin. It has been clear that the tick population has been much greater this year than it has been in past years, but so far these numerous encounters have not resulted in my staff having any of the numerous symptoms of Lyme disease infection. I worry about this possibility and wonder if we should, as a matter of practice, have blood tests annually. But, presently our defense is to use repellents and to routinely examine our bodies for ticks. Detection is not easy because these miniature terrorists are no bigger than pin heads.

Fortunately, ticks may not always attach for blood-feeding for up to 24 hours. Upon attachment to a host blood-feeding begins, but the bacteria may not pass from tick to host for another 24 to 48 hours. Therefore, vigilant self-inspections after working in tick habitat is our best defense. Observation of the classic red target pattern on the skin should prompt one to seek medical attention. However, blood tests made soon after this symptom appears often give false positive results and follow up testing is usually prescribed.

Deer ticks are clever about covering their tracks through their complex life cycle. Deer get a bad rap in colloquial discussion because they serve as the incubator and dispersing agent of sneaky ticks. Ticks do not become carriers of Lyme disease bacteria until they fall off deer and reattach to small animals, particularly mice, chipmunks, and squirrels. While blood-feeding upon these ubiquitous backyard residents the tick becomes infected and then passes the disease to humans during the same blood-feeding activity.

Recently, I volunteered to consult with teachers and staff at the Pine Hill Waldorf School in Wilton on ways they can mitigate the vulnerability of the school by diminishing students' risk of tick bite by reducing tick habitat through vegetation management. Teachers at this institution utilize outdoor classrooms as much as possible in their programs. These "class rooms" have perimeter ecotones (borders between vegetation types) that are ideal tick habitat. I congratulated the teachers for their keen, caring insight.

During the coming months, foresters, surveyors, students, and other folks spending considerable time in the woods can stop cursing and enjoy the security of the season in their pursuits. I wish them all good health. I wonder if "Frontline" will ever be adapted for human use?