

An Investigation into the History of the Meeting House at Guilford Center, Windham County, Vermont (The Guilford Center Universalist Church)

Preface

Dendrochronology, the basis for the research described in this article, was developed 100 years ago by a Vermonter who migrated to Arizona Territory in the late 19th century, and it is worth a brief description of his career, the development of this science and, its somewhat belated application in New England, before proceeding with the body of the article.



A. E. Douglass ca 1915



Reverend Malcolm Douglass ca. 1880

On July 5th 1867 a boy named Andrew Ellicott was born to the Reverend Malcolm and Ann (Hale) Douglass in Windsor Vermont. The boy's father was rector of St. Paul's Episcopal Church in Windsor during the 1860s and was president of Norwich University from 1871 to 1874. His maternal grandfather, the Reverend Benjamin Hale, had been president of Hobart College in Geneva N.Y. and Douglass himself would later serve briefly as president of the University of Arizona. Undoubtedly the boy received a good education, both at home and in school and was possessed with a wide curiosity. As a chronicler of the Ellicott family observed in 1881 " Andrew E. Douglass, son of Malcolm, though only fourteen, is well versed in astronomy. In this respect he is like his ancestor, Andrew Ellicott¹, of West Point N.Y., showing how mental qualities descend from generation to generation."² The family was devoted to the 'liberal education philosophy' of the times which encouraged students to become versed in a wide array of topics.

Windsor of the 1870s was a center for manufacturing and machine tool innovation and perhaps the streak of inherited inventiveness was nourished during Douglass' boyhood years in the town.

Douglass attended Trinity College in Hartford Connecticut, as had his father, and graduated with honors in astronomy, mathematics, and physics in 1889 at the age of 22. His passion for astronomy

led him to employment with the Harvard College Observatory and a year later he accompanied an expedition to Arequipa Peru to establish the college's Southern Hemisphere Observatory. Spending three years there, he learned the ins and outs of establishing an astronomical observatory in a remote location and found time to measure and describe the movement of crescentic sand dunes in the surrounding desert, publishing a paper on the subject (check).

With his acquired knowledge and ambition he came to the attention of Percival Lowell who wished to establish an observatory in Arizona Territory for studying the planet Mars. Lowell hired Douglass who traveled to Arizona in 1894 in order to choose a suitable site. They settled on Mars Hill outside of Flagstaff and Douglass set to work designing the telescope and observatory structure and supervising their construction.

Douglass worked with Lowell for seven years, acting as director when Lowell was absent, making and cataloging observations of the Martian surface. However friction developed over Lowell's obsession with what he believed were canals constructed by a Martian civilization, and this conflict led to Douglass' dismissal in 1901. Douglass stayed on in Flagstaff until 1906 when he accepted a faculty position at the University of Arizona in Tucson teaching astronomy and physics.

While his employer was obsessed with Martians, Douglass' own scientific interest was solar variability and its potential effects on Earth's climate. The cycle of sunspots was known at the time and it was believed that this fluctuation must affect the Earth's weather, perhaps causing cycles of drought in arid regions. During the dozen years he spent in Flagstaff, Douglass had pursued this interest, but his research was hampered by the shortness of weather data available to him (perhaps a dozen years at that time). It is this vein of inquiry that led to a great insight: perhaps the long-lived pines that grew in the area preserved, in their pattern of annual growth layers, a record past droughts and wet periods stretching back centuries, and this record could be substituted for the absent weather records. Study of trees in the region confirmed that a common pattern of wide and narrow growth layers could be observed and related to the available records of precipitation. In fact, the pattern was so precise and consistent that Douglass could determine the felling date of trees cut in logging operations without reference to other records, simply by noting the relationship of wide and narrow layers to a standard he had developed.

The general notion that the age of trees could be determined by counting the 'rings' on a cut stump was well known, and indeed the idea that the growth of plants was determined in some part by environmental factors was not novel, A. E. Douglass' systematic application of these ideas in service of scientific inquiry was particularly insightful and had far-reaching influence. It is likely that Douglass was familiar with fellow Vermonter George Perkins Marsh's seminal work *Man and Nature* published in 1864³ and his observations on forest growth and tree longevity may have informed the astronomer's studies.⁴ Many scientists of the time (and previous two centuries) were widely read and studied, and possessed of wide-ranging and diverse interests. The geographer Ellsworth Huntington's interest in the rise and fall of the Mayan civilization led to collaboration with Douglass in the development of a 3,000 year-long growth curve from giant sequoia stumps in California which he combined with records of the fluctuating level of the Caspian Sea in an attempt understand and document climatic changes in Central America and their effect on peoples of the region.⁵

In a serendipitous confluence of interests, archaeologists attending a lecture by Douglass took note of his claim that he could determine the felling date of a tree from its pattern of growth rings, and following Douglass' talk asked him about the possibility of attempting to date the construction of prehistoric ruins that abounded in the region. An intense debate had developed among scholars over the age of the ruins, and estimates ranged from a few centuries to thousands of years. Douglass was intrigued, as the possibility extending his record of regional aridity with material from the ruins was attractive, and a collaboration was begun. The archaeologists would provide Douglass with sections of beams from a number of the best preserved ruins and he would attempt to match the growth patterns of the timbers with those he had developed from pines in the region. At the time this record developed from living trees extended back nearly 600 years. Initially, it was impossible to match the timbers in the ruins to the living tree chronology as a temporal gap of unknown length existed between them. A series of field expeditions funded by the National Geographic Society were undertaken to collect material that might bridge this gap, targeting specific ruins thought to contain timbers of the appropriate age. While this effort took nearly two decades of dedicated work it eventually succeeded in assigning calendar dates of construction to many important archaeological sites in the Southwest and the construction of a 2,000 year record climate for the region.⁶ This accomplishment brought to Douglass significant scientific acclaim, something that eluded him in his chosen field of astronomy and climate cycles, and resulted in the establishment of the Laboratory of Tree Ring Research at the University of Arizona in 1937.

Throughout his long academic career at the University of Arizona Douglass pursued his interest in astronomy and solar influences on climate, founding the Steward Observatory in 1916 and developing and constructing a series of 'cyclosopes'. These were optical analytical devices designed to survey tree ring time-series for periodicities of variable length and character that could be compared with sunspot cycles in a search for causative relationships. The final version of this device was built in 1936 by Stanford University and is still housed at the University of Arizona in the Arizona State Museum, while the design, operation, and research conducted was described by Douglass in a series of articles and books.⁷ It is only recently that modern computers and software have been developed that can emulate the type of analysis developed by Dr. Douglass with his cyclosopes.

The tree ring dating techniques Douglass developed⁸ have been widely applied in the scientific world over the past century in a great variety of research fields including ecology, climatology, geology, and archaeology. Calibration of the radiocarbon time scale with tree ring dated samples for the past 12,000 years has led to increased accuracy in published radiocarbon dates for all fields that use this method for dating organic materials.

Given its broad application and wide acceptance in the scientific community it is interesting to note that it was not until the late 1970s that dendrochronology was systematically applied in the Eastern United States. While Douglass' student, researcher Edmund Schulman, and Douglass himself made collections in New England in the 1930s and 40s, little sustained interest resulted from these early efforts. Perhaps, in part, the relative youth of New England forests, a consequence of 200 years of settlement, cutting and clearing and harvest, combined with their relatively dense and mesic character dampened enthusiasm for its use in the region. Attempts to apply dendrochronology to archaeology in the eastern United States, most notably by Florence Hawley Ellis (student of Douglass) and her student, Robert Bell of the University of Chicago, in the 1940s

and 50s met with limited success⁹.

Beginning with Hal Fritts effort to reconstruct climate on a continental scale in the 1970s¹⁰, and expanded by Edward Cook of Lamont-Doherty Earth Observatory at Columbia University N. Y. assisted by Paul Krusic and others, a network of tree ring chronologies in the New England region was developed. Largely based on samples from relict old-growth stands of red spruce and eastern hemlock, this network has provided a basis for further tree-ring work in the region.

Attention was first focused on historic structures of the region as a potential source of tree ring material in the 1990s. However a significant problem remained, because buildings constructed in the 18th and 19th centuries used timbers procured from the surrounding virgin forests composed of oak, beech, maple, chestnut, hickory, birch, pines, and a variety of other species. Spruce and hemlock, while utilized when conveniently located near settlements, were not sought out or widely used for construction until well into the 19th century. It is nearly impossible today to find stands of oak and pine, or many of the other species, with trees more than 100 years old. The forests of tall, straight pines and oaks, where trees of 250 to 400 years of age were not uncommon, as described by early settlers, had largely disappeared by the 1820s in southern Vermont and even earlier to the south in Connecticut, Massachusetts, eastern New York, and Pennsylvania¹¹. Cycles of settlement, clearing, and harvest long ago eliminated such trees from today's landscape, and constructing 'bridge' chronologies from living trees to match growth patterns in timbers from historic structures represents a significant difficulty. While spruce and hemlock share some of the same ecological requirements and respond similarly to fluctuations in local climate, these characteristics are not necessarily shared with deciduous hardwoods and pines that prefer entirely different habitats. A harsh summer drought does not have precisely the same effect on hardwood forests growing in lowland valleys as on coniferous trees growing on mountain slopes. The solving of this difficulty is one of the subjects addressed in this article.

The Meeting House



The Guilford Center Universalist Church is a typical mid 19th century meeting house such as one might find in many New England towns. Constructed in the characteristic Greek Revival style with Georgian elements and painted white with green trim and gothic screen accents over the windows it has a quiet, but simple elegance. It sits at the center of town on the _____ road that winds along Broad Brook valley from Route 5 at Algiers¹² and proceeds on west toward Green River and the town of Marlboro up on the shoulder of the Green Mountains. Measuring roughly ___' by ___' and ___' at the roof peak, a square bell tower sporting a bronze bell cast in 1837 rises another ___' in two steps. The roof is sheathed in Guilford slate, mined in the quarry over by Route 5. It has a two storey interior with a choir loft opposite the pulpit and separated by rows of boxed pews, hymnals neatly stowed in pockets on the bench backs. Two entry doors allow men and women to enter separately into the foyer and either ascend to the choir loft by separate stairs at either end, or enter the meeting room where there are spaces for about 200 worshipers. A narrow closeted stair ascends from the choir loft to the attic providing access to the bell-ringer's platform and three tiers of steep stairs that climb up into the bell tower. A high arched, plastered ceiling, and rows of tall glazed windows provide an open, airy, well-lit meeting space. Central heating installed in the 1990s has replaced the wood stoves that once fended off the chill of Vermont winters, but otherwise the appearance and atmosphere is much as it would have been a century ago. It was added to the National Historic register in 1982.

The south fork of Broad Brook flows peacefully down its channel behind the meeting house, the one room brick school house built in 1797 and the town library. The Town hall, built in 1822 according to town records and now a historical museum, sits across the road flanked by a number of 19th century homes. Meadows still line the valley by the brook, but steep forested slopes cover the ridges that define the landscape of this southeastern corner of Vermont.

Today's quiet atmosphere of a small rural village hidden away amongst the hills and ridges along the Massachusetts border makes the din and tumult that accompanied the birth of Vermont at the end of the Revolutionary War seem but a distant echo mostly drowned by the sounds of the brook and the rumble of the occasional vehicle, heading toward the city of Brattleboro perhaps. For at that time, following the final resolution of the conflict between the 'Yorkers' and their enemies, the Hampshire Vermonters, Guilford became the most populous town in Vermont and remained so for a generation.

In 1998 I was approached by a Guilford resident¹³ who had heard about my interest in using dendrochronology to date historic buildings in the area. He wished to know if I would be interested in investigating a bit of local history regarding the origin of the Guilford Center church. Feeling it might be a simple matter to visit the building and obtain samples toward this end I agreed.

The Guilford town history¹⁴ states that:

On Dec. 5, 1836 the proprietors of the Old Congregational Church on the hill were asked if they would agree to remove the House to some more convenient place. Jan. 21, 1837 they voted to sell "Old Congregational Church" on the hill, at auction Feb. 18, so as to move to a more central location. On Feb. 25th the Guilford Center Meetinghouse Society was organized. The land was given by Edward Houghton May 6, 1837, the present edifice, containing timbers of the original, was erected the same year. The completed cost was \$2409.21 including \$205 paid for the old church, and \$320 for the bell.¹⁵

The "Old Congressional Church on the hill" was locally known as "The White Meeting House" and a subject of local lore, it reputedly having had a role in the battle of ___ 178_ between the Yorkers and the Republic of Vermont militia. The 'hill' referred to is the crown of the ridge to the east, directly behind the current location and near the center of the Town as it was laid out by the early proprietors in the 1760s.

Concerning the White Meeting House the Guilford town history relates the following information about its history and construction as recalled by local residents:

*The White Meeting House: At a meeting of the proprietors of the town of Guilford held at Brattleboro on Sept. 14, 1763, it was voted to choose a committee to view house lot No. 40, for the purpose of finding a convenient place for a meeting house and burying place. This was a fifty acre lot in the geographical center of the town, which had not then been sold, but was owned in common by the several proprietors. The location was nearly one mile south of lot No. 100, where the meeting house and cemetery were afterward established on the hill east of Guilford Center village. We find no evidence that this committee ever filed a report, and are unable to fix the exact date of the erection of the meeting house, **but it was apparently prior to 1773**, as the town meeting held June 15 of that year was adjourned to meet the "third Tuesday in May, next, at the meeting house." At that time the land was owned by Hezekiah Stowell, who sold to Elihu Field, and it was twenty years before the land was deeded to the proprietors of the meeting house. This was done by Mr. Field on*

July 1, '1793, for the consideration of eleven pounds. [legal description of the property omitted] The cemetery was not established there until 1796, when Rev. Elijah Wollage conveyed one half acre and 28 rods for a cemetery. This adjoined the meeting house tract on the westerly side, and has since been enlarged and now includes the site of the meeting house.

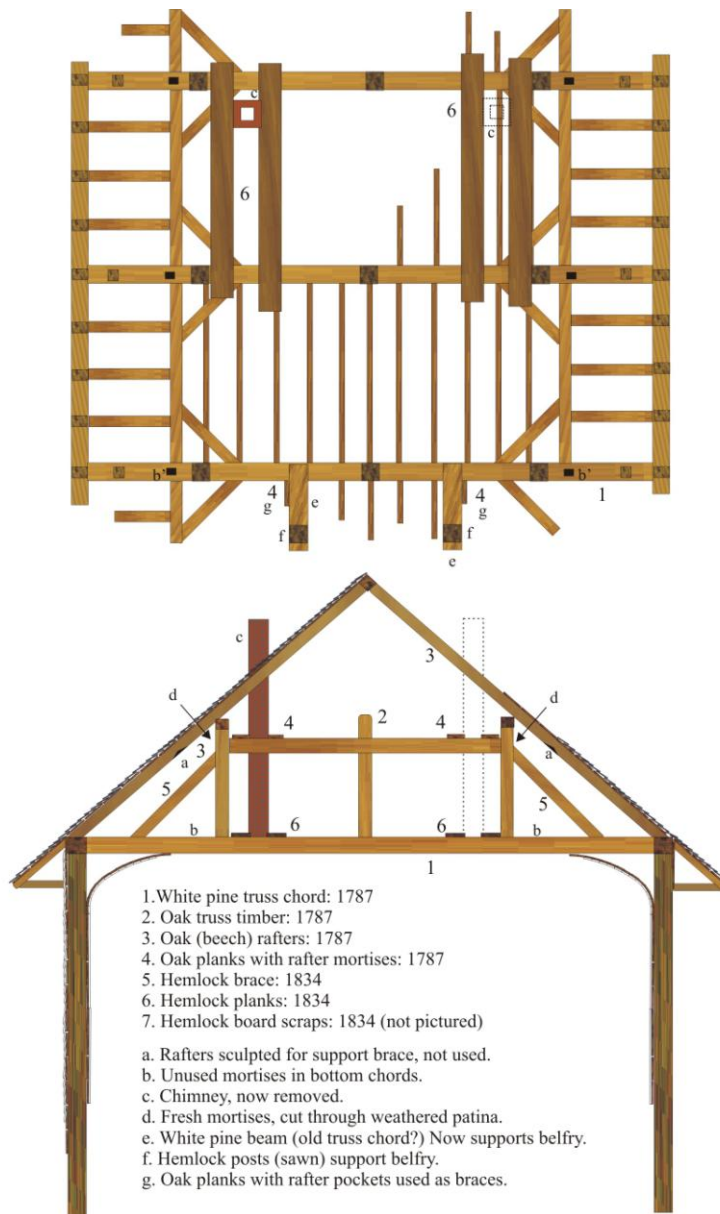
The architect of the White Meeting House was ' as William Shepardson, more familiarly known as "Uncle Bill." It is related that the frame being finished, ready for erection, a large concourse of the townspeople were called together for a "raising bee" - an institution very popular in the early days when timber was plentiful and buildings were made as they should be. After every mortise and tenon had been knocked together, the rafters securely placed and fastened by six inch pins of white oak, and the entire framework completed, staunch and square and plumb, Uncle Bill Shepardson, with the agility of a gray squirrel, climbed to the lofty ridge pole, stood erect, threw his left foot over his neck and hopped nimbly on the other foot the whole length of the ridge pole from end to end.

There is no record of the dimensions of the edifice, but it was a large two-story building, painted white. It had no steeple, there were circular windows in the gable ends. Its greatest dimension was from east to west, the front door being on the south side and a smaller door at the center of the east end. A broad aisle led from the front door to the pulpit, which was in the center of the north side and was reached by a narrow stairway. There were two rows of body pews, and wall pews on three sides. There was also a gallery on three sides, with pews. The seats were hung upon hinges, and were tipped up "while the congregation stood at prayers. At the conclusion of the prayers the seats were allowed to fall back with a tremendous clatter. There was no provision made for heating the house, and those who could do so brought foot stoves during the cold weather.

People came from all over town to attend the meetings, often filling the house to overflowing, and in warm weather would be grouped about the doors outside during services. Many came on foot, some on horseback, singly or on pillions, some with ox carts, as no light wagons were used in town until after 1800, and it was many years before they came into anything like common use. As good shoes were expensive, wholly made by hand, and all wished to be decently clad while attending religious services in their honored sanctuary, some of those who traveled on foot carried their "go to meeting shoes" with them, which they put on just before entering the place of worship. Boys and girls usually went' barefooted in summer time, not only when about their homes, but while attending school as well. Their worthy parents saw to it that they did not enter the meeting house without shoes. Pity the poor young ones who had to stop at the "last brook", wash off the road dust and confine liberty loving toes in 'Sunday shoes. The girls had the added chore of buttoning on starched pantalettes.

Given the quoted text above, the matter at hand was to determine if, in fact, the current structure contained timbers that could have originated from the White Meeting House of local lore, and if so, to settle the matter of its date of construction.

A visit to the Meeting House was arranged in order to obtain samples. The floor of the structure had originally been supported by oak timbers, but some years before these had been removed as part of a renovation project, and while two sections had been saved neither preserved the outer portion of the trees from which they had been cut - the bark surface or wane. Thus even if their rings could be dated successfully a cutting date could not be obtained. Since it was believed that the rafters and trusses that were exposed in the attic might contain elements of the earlier structure, a visit to the attic the narrow stairs from the choir loft was next.



Roof structure and basic framing of Guilford Center Meetinghouse.

Not to scale, drawing based on field notes.

The structure of the building consists of a timber frame with large posts supporting queen post timber trusses that span the building allowing the meeting chamber to be completely open. Purloin timbers laid upon the outer corners of the roof trusses provide support for the rafters in mid span. Pairs of oak and hemlock planks laid on the truss chords originally provided a base for two brick chimneys that had served a pair of stoves used for heating the chamber. The belfry had its own timber framework resting upon timbers mortised into the trusses beneath it. Many of the large timbers exhibited a weathered patina, as if they had lain exposed to the weather for a time. Bracing mortised into them showed no such patina. Samples were obtained by locating the wane or bark surface on a timber and using a small tubular hole saw to cut a dowel, or core, through the wane toward the center of the timber. Such samples, when polished, show the growth rings in sequence from the oldest near the center to the terminal ring at the wane, the “cutting date”.

The roof trusses were found to consist of hewn white pine chords that span the building from side to side, hewn oak queen posts and upper tie, and hemlock bracing. Split and hewn oak rafters completed the roof framing. The presence of large oak and pine timbers immediately suggested that in fact an 18th century building had been their source, as by the 1830s most construction in the region made almost exclusive use of hemlock and spruce timbers, boards and framing. However, this also presented a problem due to the lack of dating chronologies for these species. A white pine chronology from New York State might be of some utility, but no oak reference chronologies existed at the time. Hemlock chronologies had been developed in both neighboring New Hampshire and New York in the 1980s and these had been tested and proved useful in dating timbers from the Dummerston covered bridge over the West River and the courthouse in Newfane.

Initial analysis gave cutting dates of the winter of 1834/5 for hemlock boards and braces consistent with the town records stating construction in 1837. Comparison of the white pine samples from the truss chords with the NY pine chronology suggested they had been cut during the winter of 1787/88. However, given that the town history inferred an earlier date of construction and the fact that the match was rather suggestive rather than definitive left more considerable doubt about this early date. While the oak samples showed consistency among themselves they could not be dated without a reference. So there the matter rested until further information could be brought to bear.

History of Guilford

So how is it, as the town history recalls, that many years of town records are missing during the period when the White Meeting House was likely constructed and exactly why was this town, occupying as it does a rural corner of the state, the most populous in Vermont in 1790? To provide some historical context a brief review of the circumstances that lead to Vermont becoming an independent state is required. While this ground has been covered in numerous histories of the various townships, in addition to various compilations for the state as a whole, I think it worthwhile to review the subject here, paying particular attention to those aspects that shed light on the development of Guilford, and to offer some perspective that the passing of time can provide.

The territory that now comprises Vermont was granted by King Charles the Second of England to

James, the Duke of York in 1664. While the precise geography of the region was unknown at the time, this grant of land clearly states that it is bounded on the east by the Connecticut [Conectecutte] River. The fact that much of the granted territory was occupied by the Mohawk, Abekenai, Squekheag and _____ peoples who considered it their own, or that the French also had designs upon the region, was of no particular concern to the King of England in his considerable generosity. The limits of early colonial geographical knowledge can readily be appreciated in that the Colonies of Massachusetts Bay and Connecticut, by the language of their charters, supposedly extended west to the Pacific Ocean and the northern boundary of Massachusetts was ill defined. These conflicting and poorly described boundaries set up a series of disputes that played out over the next 130 years. When one issue had been settled others arose as a consequence, and those parties who felt their interests had been harmed by a settlement often attempted to sue for redress.

English colonial settlements in the mid 17th century were largely confined to the coastal areas and the lower Hudson River Valley so and the settlers, being otherwise occupied, were in no particular hurry paddle up the Hudson or Connecticut Rivers toward the Green Mountains and dispute the current occupant's title to their homeland. It was not until the settlers at Deerfield Massachusetts were herded by their Indian captors up the river and over the mountains to Canada in 1677 that Europeans got a firsthand view of the region. This exercise was repeated in 1704 and the subsequent periods of conflict between the French and English and their Indian allies gave English soldiers and militia the opportunity to explore the upper Connecticut valley and its environs.

The town of Northfield [originally Squakheag] Massachusetts was first chartered in 1672 and came to include portions of what are now the Vermont towns of Vernon and Brattleboro. Although periods of conflict with the Indians prevented lasting permanent settlement until 1714, clearing and development occurred in this area during lulls in the fighting. A fort was built here in 1685, but had to be abandoned several times. A parcel of land in the vicinity of Brattleboro and Vernon was purchased from the resident Squakheag Indians in 1687 on behalf of the Northfield proprietors.

An old boundary dispute between Massachusetts and Connecticut was settled in 1713 with townships chartered by Massachusetts within the boundary of the latter granted to Massachusetts and an equivalent area in currently unsettled regions claimed by Massachusetts was granted to Connecticut in exchange. While Connecticut obtained title to the land, it was to be administered by Massachusetts. Known as the "Equivalent Lands", one parcel of about 44,000 acres was laid out above the town of Northfield within what later became Putney, Dummerston, Vernon, and Brattleboro. This parcel was directly sold at auction by its Connecticut proprietors to a number of investors including Lieutenant Governor of Massachusetts William Dummer and William Brattle after whom the town of Brattleboro is named.

Fort Dummer was established in the neighborhood of Brattleboro in 1724 in an effort to protect the settlements down river from attack by tribes allied with the French and marks the first permanent settlement along the upper Connecticut in what is now Vermont. It had a military garrison from that time, and its presence attracted the first European permanent settlers to the area around Guilford, Vernon, and Brattleboro.

Explorations along the river led to awareness that tall white pines suitable for ship masts and spars grew in abundance along the river. Particularly large stands of pine timber occupied areas below

what were then known as the 'Little Cowass Intervals', or flats, between the present town of Windsor Vermont and Hanover New Hampshire and also below the 'Great Cowass Intervals' near the current towns of Newbury and Ryegate. In 1733 a contract to provide masts for the Royal Navy was fulfilled with timber cut near Hanover and Brattleboro and floated down the river. This enterprise persisted for a number of years but was likely interrupted by periods of renewed territorial conflict between France and England in the 1740s through the late 50s.

Governor Belcher of Massachusetts, who at that time also oversaw the New Hampshire Colony, granted 9 townships along both sides of the river above Ft. Dummer in the mid 1730s, but only 'Number 4' now known as Charlestown New Hampshire was successfully settled, likely due to the presence of a military garrison also stationed there. Thus this town was established with a Massachusetts charter. Bernardston Massachusetts, lying just south of Guilford, was also chartered and settlement begun at this time.

In 1740 the turmoil of colonial politics led to Belcher's removal as governor in conjunction with the settlement of its disputed northern boundary with New Hampshire. A new governor was appointed for Massachusetts and at the same time Benning Wentworth was appointed Governor of New Hampshire, clearly dividing administration of the two colonies for the first time. Wentworth was also appointed surveyor general of the Kings woods for New England, a position that oversaw the provision of pine timber for the Royal Navy through the White Pines act of 1722. Although bankrupt at the time due to a failed timber contract with Spain, Wentworth had important, politically powerful sponsors in England and his family was well entrenched in New Hampshire Colony and the colonial timber trade. Grants of undeveloped land for settlement were a common way for colonial governors to raise funds, reward friends political allies, provide compensation for military service, and acquire real estate themselves. Wentworth's position as Surveyor General allowed him to administer and encourage the economically important timber business including his brother Mark's partnership with his brother in law Theodore Atkinson and their contract trade with the Royal Navy.

Governor Wentworth may have had some knowledge of the lands around the upper Connecticut prior to his appointment, however the ongoing conflict with the French meant that he had to supply troops for defense of his western lands and become familiar with its geography. New Hampshire was asked to provide support for Ft. Dummer, now nominally within the bounds of the Colony. Wentworth was in favor of such assistance, his eye perhaps already on the potential value of the unsettled lands. However the New Hampshire Assembly felt the region too remote and refused, insisting that Massachusetts continue to do this as its settlers were the ones benefitting from the presence of the fort.

The failure of New Hampshire to provide the requested assistance led to concern among the holders of the Massachusetts patents issued just prior to the settlement of the boundary dispute that New Hampshire might refuse to validate their claims. These towns, including No. 4, with its garrison at Charlestown NH, were eventually allowed to re-confirm their charters with New Hampshire by submitting a request to the Governor. Although the Massachusetts towns laid out on the west side of the river had not been settled with the exception of No. 1 (Westminster), some of their proprietors also petitioned for and received new charters from New Hampshire. The Westminster proprietors first appealed to Massachusetts to retain their title, but failing to receive

satisfaction, they petitioned for and subsequently received a New Hampshire charter in 1752.

By the late 1740s Governor Wentworth had had sufficient time to become acquainted with the lands along, and west of the Connecticut and prepared to survey and grant townships of his own both east and west of it. Surveyors were sent to the area and more accurate maps of the region produced. As the western boundaries of Connecticut and Massachusetts had been set, not at the west bank of the Connecticut as the grant to the Duke of York had specified, but 20 miles east of the Hudson River, it seemed reasonable and appropriate that the boundary of New Hampshire would also be set along this same line. Beginning with the charter of Bennington in 1749 near the south western corner of his assumed lands, he had granted charters to 14 new townships on lands west of the Connecticut River by 1754 including that for the township of Guilford in April of that year.

Wentworth's charters followed a standard format based largely on colonial custom. Townships were laid out roughly six miles square thus typically comprising approximately 23,000 acres. This was to be divided into 64 equal shares (~360 acres each). Reservations were made for a place of worship (1 share), the first preacher (1 share), the Church of England (1 share), and the governor himself (500 acres in one block). Unique to Wentworth's charters was the stipulation that

“all White & other Pine Trees within sd. Township fit for Masting our Royal Navy, be carefully preserved for that Use, and none to be cut or fel'd without his Majesty's Especial License for So doing first had & Obtained, upon the Penalty of the Forfeiture of the right of Such Grantee his Heirs or Assigns to Us our Heirs & Successors: As well as being subject to the Penalty of any Act or Acts of Parliament that now or hereafter shall be Enacted.”

It was incumbent upon the proprietors to arrange for settlement and cultivation of a portion of their shares within five years, to pay rent of an ear of corn for five years (if lawfully demanded), and to pay a tax of 1s per year per 100 acres of land.

A majority of proprietors were invariably investors, speculators, or friends of the Governor who had no intention of settling tracts of wilderness land. Shares were sold and subdivided, often multiple times before ending up in the hands of those who actually intended to settle. Wentworth's intent was clearly to assert control of the territory through grants of land while retaining for the Crown rights to the most valuable timber in the region, thus profiting both from land speculation and timber contracts.

Following his charter of Bennington he informed the Governor of New York of his act and requested a response. In April of 1750 the New York Assembly responded that Crown should please acquaint Governor Wentworth with the letters of patent provided to the Duke of York specifying the boundary of that Province, and therefore the western boundary of New Hampshire, was the west bank of the Connecticut River. No doubt, given the resolution of the western boundary for his southern neighbors and the strong support of his patrons in England, Wentworth believed he could prevail in this dispute.

The outbreak of a new round of hostilities with France, the Seven Years War, meant that

settlement along the Connecticut was put on hold until the fall of Montreal to the British forces in 1760. Patents granted during the 1750s had to be re-granted because the proprietors had been unable to fulfill the settlement requirements due to the hostilities. The simmering dispute with New York came to a head between 1760 and 1763 with both sides petitioning the Crown and advocating their claims. Over this period Wentworth's claims lost favor and the acting Governor of New York, Cadwallader Colden, conducted an unceasing campaign to assert New York's claim to the territory. In the spring of 1765 word finally came that the Crown has decided in favor of New York, invalidating all of Governor Wentworth's patents. By this time however, Wentworth had granted more than 150 townships west of the Connecticut River – more than 5,700 square miles of land in total.

While the issue of colonial boundaries had been officially settled, the very large number of New Hampshire patents and the fact that settlement of the new towns had already begun in earnest was a recipe for trouble. Additionally overpopulated towns in Connecticut and Massachusetts were providing a steady stream of immigrants to the New Hampshire grants seeking land, and timber operations were already active in the pine stands along the river.¹⁷ While New York made arrangements to re-grant the New Hampshire patents, the terms offered were generally considered difficult for the cash-poor proprietors to meet without deeding title to significant portions of their claims to raise capital. Having already paid once for their lands there was a general reluctance to do so again, and while a number of towns petitioned for New York charters only four actually received them before a moratorium on settlement of claims and new grants was enacted in 1767. Adding to the confusion New York had already begun granting new patents, some of which overlaid the earlier New Hampshire grants. Meanwhile the flow of settlers to the region continued to increase.

The aging Benning Wentworth was forced to resign as Governor of New Hampshire in 1766 and his nephew John Wentworth was appointed to replace him. The new governor, also titled surveyor general of the Kings Woods in charge of the Crown's timber, made a final attempt to reassert New Hampshire's claim to the grants.¹⁸ Visiting the Connecticut valley in the winter of 1768/69 he and his agent confronted a Captain William Dean of Windsor who was engaged with a crew in cutting pine timber near the river without the required permission. Dean had a contract with merchants in Suffield Connecticut to provide 500,000 board ft. of timber and his crew had felled a number of pines over 30" in diameter with logs 80' to 94' in length in violation not only of the township charter but the White Pines act as well. Wentworth claimed the timber for the crown and brought suit in the New York court against Capt. Dean for violating the terms of the New Hampshire township grant. If the suit was successful and the terms of the grant upheld, New Hampshire might then claim that all of its grants were valid. While the Windsor proprietors had petitioned for a New York charter they had not been successful and Wentworth encouraged proprietors in the valley towns to believe that New Hampshire expected to be successful in its suit.

Cadwallader Colden, seeing the danger to New York's position the suit represented, sought to delay a decision until New York's jurisdiction could be assured. In this effort he succeeded as New York courts began to confirm land disputes in favor of New York claimants in June 1770 and Governor Wentworth's attempt to seize Capt. Dean's property was denied. The following year a decision came from England that New York's claim was superior to that of New Hampshire and the moratorium on grants and claims was lifted. While this decision definitively ended the question

of New Hampshire's claim, by this time the region had a population of over 7,000 and many settlers as well as those investors or speculators holding title through New Hampshire patents feared loss of any property not actually settled and occupied. On the other hand a significant number of residents in the southeastern towns, including Guilford, had previously made amends with New York or occupied land based on grants by New York. The conflicting interests of these two groups led to increasing tensions followed by outbreaks of violence, civil disobedience, and attacks on officials. A movement to consolidate opposition to New York gained strength during the 1770s, one whose adherents began to contemplate the creation of an entity separate both from New Hampshire and New York.

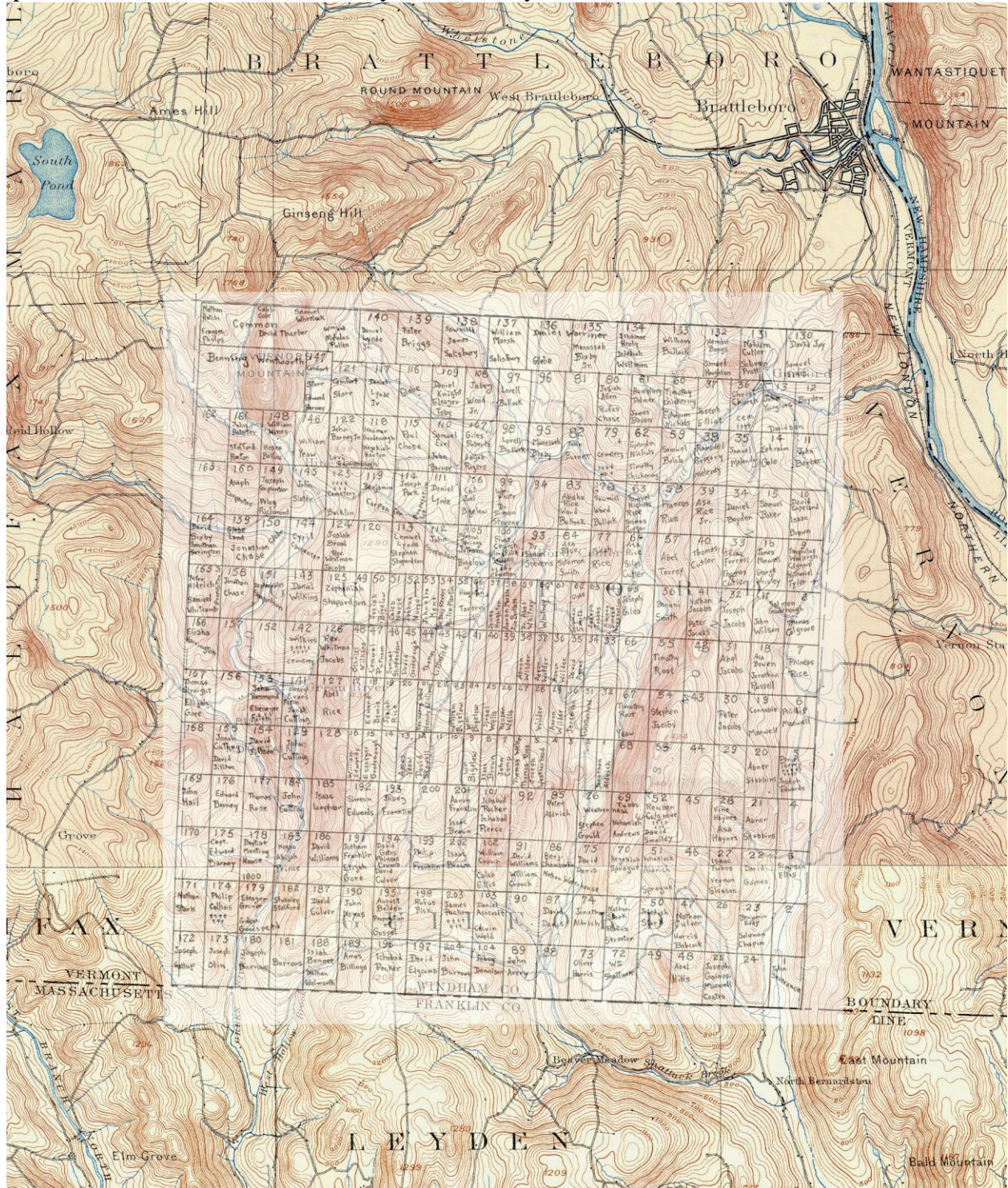
Armed resistance to enforcement of New York's claim began in 1770 when the people of Windsor freed several men arrested by the county sheriff (employed by New York) and then arrested the sheriff and his posse when they returned to serve warrants to those involved. The unrest spread and escalated across southern Vermont over the next several years as settlers tried, with considerable success, to prevent officials employed by New York from enforcing New York land claims. The movement had sufficient strength by 1777 for the adherents to gather in Windsor and declare themselves citizens of the independent Republic of Vermont. Guilford became increasingly divided during this period, so much so that rival town meetings were held and written records and deeds were hidden for protection.

Independence from Great Britain did not bring resolution to the settlers of the New Hampshire Grants. The Articles of Confederation that formed the basis for a national government at the time generally gave primacy to the various state governments, and the continental congress lacked authority to effectively settle land disputes between them. Vermont sent delegates to attend the meetings and petitioned to be admitted as a state but still lacked sufficient political support...

(This section – above - is incomplete)

Several facts should be clear after the previous review. First, while the wholesale settlement of Vermont did not begin until after the fall of Montreal to the British in 1760, the area along the Connecticut River as far north as the current towns of _____ and _____ had been explored and its resources assessed over the previous 50 years. Soldiers and militia had traversed the region, survey parties had laid out towns and both groups had reported widely on what they had found. Charlestown, Westminster, Northfield, Walpole, and the area around Brattleboro had permanent settlements, and the first attempts to exploit the region's timber resources had been mounted. Second, real estate speculation, boundary disputes, competing land claims, and political rivalries were part of the fabric of colonial life and in no way unique to the territory that was to become Vermont. In Vermont's case, however, the 30 years that had elapsed between the resolution of the New Hampshire – Massachusetts boundary dispute and the final settlement in favor of New York's claim (during which New Hampshire had granted a large proportion of the disputed territory) laid the grounds for a dispute that could not be easily put to rest. The pressure by people eager to settle these lands had led to significant occupation prior to a resolution of the land claims. By the time a legal settlement was finally cemented in 1771 the outbreak of the Revolutionary War was only a few years off and the central authority was unable to effectively impose the terms of the legal resolution on the residents before this authority itself disintegrated.

Guilford, located as it was southeast of Brattleboro and northeast of Northfield was positioned for rapid settlement after 1760. Its location, not on the river but close to it and within easy distance of two settled towns with prospects for trade and the infrastructure required to sustain development, was ideal. Because it was not directly on the river it is likely that property was not as valuable to speculators, and therefore more easily affordable by actual settlers.



1894 series 15' topographic map with the township lots and the names of early residents overlaid in their approximate position.

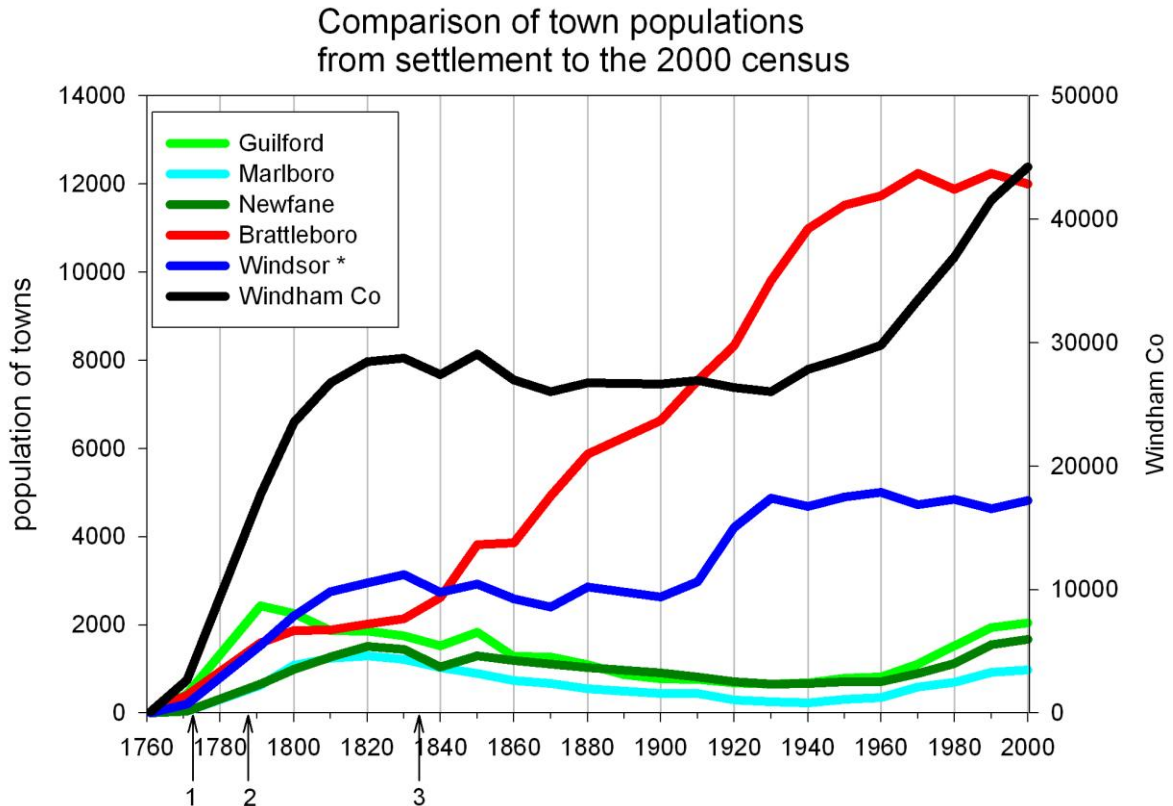
Guilford is listed as supporting a population of 436 in 1771, already nearly the largest settlement in Vermont and only one year later the population had grown to over 586. It was a divided town at this time with many 'Yorkers' whose sympathy lay with that colony and a significant minority of 'Hampshirites'.

The town had been laid out by the proprietors in the early 1760s into 204 100 acre lots surrounding a block of 64 50 acre 'house lots'. This did not include Governor Wentworth's reservation of 500 acres nor an adjacent common area of several hundred acres, both located in the northwest corner of the township and including the steep sided and untillable 'Governor's Mountain' – a fine vantage point perhaps, but one not likely to interfere with the division of lands suitable for actual settlement. Well watered by Broad Brook and its tributaries flowing out toward the Connecticut, and the Green River which exits the southeast corner of the grant toward Leyden and Bernardston, potential mill sites were distributed throughout the grant. Several broad valleys provided attractive prospects for farms and the usual practice of cutting and burning the forest to produce the salable pearlsh would have the effect of clearing the hills and ridges for pasture. While stands of pine suitable for timber were uncommon, forests of oak, beech, and sugar maple covered the hills with hemlock and spruce on heights and steeper north slopes and valleys.

Settlement of the town began almost immediately after the charter was re-granted in 1761. The Proprietors held business meetings in surrounding towns for the first few years – Deerfield, Northfield, and Brattleboro are specifically mentioned. However by 1762 Mica (Michia) Rice, who was charged with collecting taxes owed by absentee proprietors, suggested in a notice printed in the Portsmouth newspaper that he could be paid in person or at his house in Guilford.¹⁹ The village at Guilford Center was settled early and the site of the White Meeting House is located on the hill to the east. As the town meeting notes refer specifically to a meeting house in 1773 it is clear that some structure serving that purpose had been erected by that date, possibly in the late 1760s. The population at that time was sufficient to provide the material and labor to construct one and such buildings were considered a priority by early settlers. However it is highly unlikely that they required a structure the size of the White Meeting House that is described in the town history – a large two storey building with a gallery that might have accommodated 300 to 400 people. More likely the residents constructed one after the fashion typical for the time – single storey, perhaps 12' stud, square with a peaked roof and no steeple. While the surviving records of town meetings from the period do not mention this early structure other than incidentally this also typical for the period.

The first buildings in the new townships were invariably log structures. These were replaced with larger and more sophisticated structures as people's means and needs dictated. The construction of saw and grist mills and the laying out and clearing of roads were priorities for early settlers. However it typically took some years to attract residents with the proper skills and talents and considerable effort to build up this essential infrastructure. The first mill recorded in the town history was built in the village of Algiers in 1768, but this may well not have been the first within the township given that it already must have had a population of several hundred people by this date. It is around this time that the first meeting house near Guilford Center was likely constructed. By the time of the census in 1791 the town's population had ballooned to more than 2,400. Construction of a new, larger building to accommodate the growing population in 1788 seems entirely reasonable. The rapid rise in population can be seen in the graph below comparing several

towns in the area including the villages of Windsor and Brattleboro and Windham County as a whole.



1. Andrew Ellicott was a noted surveyor who worked for Gen. George Washington following the Revolutionary War. During a long career he surveyed lands in New York, Pennsylvania, and Florida for the new nation, laid out the boundaries of the District of Columbia and revised the street plan for the capitol city, provided the first accurate measurements of Niagara Falls, served as a teacher and mentor to Meriwether Lewis, was an avid astronomer, and professor of mathematics at West Point military academy. He designed surveying instruments that were widely used and made measurements and observations on the Gulf Stream and astronomical phenomena while on surveying expeditions.

2. Biographical and historical accounts of the Fox, Ellicott, and Evans families, and the different families connected with them (1882) by Charles W. Evans. Buffalo, Press of Baker, Jones & co. (215)

3. Man and Nature; or Physical Geography as Modified by Human Action. George Perkins Marsh New York: Charles Scribner, 124 Grand Street. 1864

4. Along with many other insightful comments Marsh observed “*Great luxuriance of animal or vegetable production is not commonly accompanied by long duration of the individual. The oldest men are not found in the crowded city; and in the tropics, where life is prolific and precocious, it is also short. The most ancient forest trees of which we have accounts have not been growing in thick*

woods, but isolated specimens, with no taller neighbor to intercept the light heat and air, and no rival to share the nutriment afforded by the soil" (ibid. 276 - 277, footnotes). Douglass, and his student Edmund Schulman, later refined this sentiment into the principal of 'longevity under adversity' as their studies had led them to search out the oldest individual trees in their efforts to extend records of the earth's climate back in time. Their search led to the discovery of bristlecone pines in the White Mountains of California up to 5,000 years in age growing under extremely cold and arid conditions.

5. The Climatic Factor as Illustrated in Arid America, by Ellsworth Huntington. With contributions by Charles Schuchert, Andrew E. Douglass, and Charles J. Kullmer. Washington D.C. Published by the Carnegie Institution of Washington. 1914.

6. See Tree Rings and Telescopes: the Scientific Career of A. E. Douglass by George Ernest Webb. University of Arizona Press, Tucson Arizona. 1983, and The Secret of the Southwest Solved by Talkative Tree Rings by A. E. Douglass. National Geographic Magazine 56(6): 736 - 770, 1929.

7. See for example Climatic Cycles and Tree Growth: A Study of the Annual Rings of Trees in Relation to Climate and Solar Activity by A. E. Douglass. Published by the Carnegie Institute of Washington, Washington D. C. 1919.

8. The article "Crossdating in Dendrochronology" by A. E. Douglass, *Journal of Forestry* 39: 825 - 831, 1941 summarizes the basic process of pattern matching that is key in all applications of dendrochronology.

9. See Tree Ring Dating and Analysis in the Mississippi Drainage by Florence Hawley Ellis 1941 and Dendrochronology in the Mississippi Valley. In: Archaeology in the Eastern United States. Robert E. Bell 1953. Edited by James B. Griffin, University of Chicago Press. Chicago. 345-351.

10.

11. Marsh, writing in the mid 19th century in Man and Nature, states "*The remaining forests of the Northern States and of Canada no longer boast the mighty pines which almost rivaled the gigantic Sequoia of California; and the growth of the larger forest trees is so slow, after they have attained to a certain size, that if every pine and oak were spared for two centuries, the largest now standing would not reach the stature of hundreds recorded to have been cut within two or three generations.*" (274) In a subsequent table copied from Dr. Samuel Williams' The Natural and Civil History of Vermont, volume I, second edition 1809, page 87 (first edition published in 1794), oak, birch, ash, basswood, hemlock, buttonwood (sycamore), and maple, four to five feet in diameter and 100 to 200 feet tall, and a white pine six feet in diameter and 274 feet tall are listed as the largest of their respective species commonly found in the region (specifically Vermont).

¹² Algeirs being the traditional name applied to the village of Guilford since the early 19th century.

13. Fred Humphry, who as a member of the Guilford Historical society was in charge of procuring funds for the care and upkeep of the meeting house, provided interest, access and encouragement

for the dendrochronological work.

14. Official History of Guilford Vermont 1678 - 1961 with genealogies and biographical sketches.
Edited by the Broad Brook Grange No. 151....

15. Ibid. 247

16. Ibid. 244 - 247.

¹⁷ High water in the spring of 1763 dislodged log booms sequestered along the banks of the Connecticut and scattered the timber down river. The town of Northfield alone laid claim to 266 logs that lodged in the meadows along the river and disputed Governor Wentworth's agents counter claim. From: A History of Northfield Massachusetts for 150 Years with an Account of the Prior Occupation of the Territory by the Squakheags and with Family Genealogies by J.H. Temple and George Sheldon, 1875 (317)

¹⁸ This bit of history is well laid out in considerable detail by Henry S. Wardner in his "Birthplace of Vermont, a history of Windsor to 1781" published in 1927 (85-141).

¹⁹ New Hampshire Gazette issue of May 21st 1762.

