

The Dating of Tobacco Barns in St. Mary's County, Maryland: Experimenting with the Archaeology of Architecture

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PREFACE

Designated in 2004 by National Trust for Historic Preservation as among the most threatened historic properties in America, the tobacco barns of St. Mary's County face an uncertain future. In an effort to diminish the region's association with the crop of tobacco, the State of Maryland developed the Maryland Tobacco Buyout Program – a program that has diminished production levels across southern Maryland by about 80%. With the barns quickly falling into disrepair, it remains vital for architectural surveys to identify significant buildings for future preservation (**fig.1**). This essay proposes using the archaeological concepts of stratigraphy and seriation as a means for developing a dating tool and a guide in collecting data. This essay examines substantially different methodological issues that were raised during an earlier study the author conducted (Ranzetta, forthcoming)



Figure 1. Little St. Thomas Farm Barn, St. Mary's County, Maryland, early 1800s (Historic American Building Survey, Prints and Photographs Division, Library of Congress)

THE PROBLEM

Establishing the chronological order of artifact development is a key task within the field of material culture. Indeed, the link between time and event is critical to conveying an effective historical narrative about anything from a piece of stoneware to a building. When there are limited opportunities to definitively assign a date to when an object was created or modified, however, the vagaries of local traditional craftsmanship can lead to speculation, assumption, and outright error. Indeed, a whole pattern of landscape change can be thrown into question if the fundamental assumptions about dates are flawed. Without corroborating documentary evidence or oral histories, for instance, the isolated physical contexts of architectural components can be difficult to interpret. The tobacco barns of St. Mary's County, Maryland are a brilliant illustration of this problem.

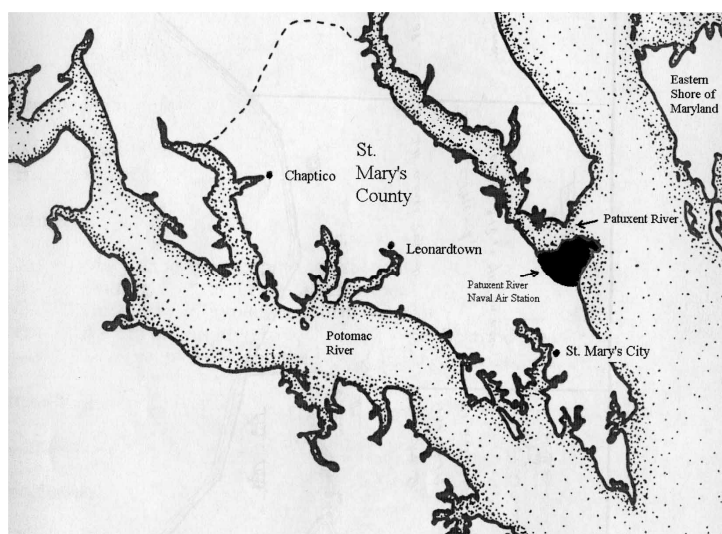


Figure 2. Map of St. Mary's County.

To illuminate the complexities of this problem, this paper applies the archaeological concepts of stratigraphy and seriation. Over the past three decades, scholars in the United States have stressed the necessity for developing better frameworks for organizing and analyzing architectural data in an effort to reconstruct cultural patterns and thus enrich historical narratives (Deetz 1979; Herman 1996). Bernard L. Herman, in particular, has advocated borrowing some of the fundamental concepts of archaeology such as seriation, stratigraphy, comparative analysis, and horizon and applying them at varying scales; from the individual building to entire cultural landscapes (Herman 1996). The attractiveness of this approach is intimately linked to how these concepts elaborate upon and chronologically bracket the historical context of the studied object. This paper experiments with these concepts through a contextual study of a restricted, vernacular building type – the Southern Maryland tobacco barn (**fig.2**).

BACKGROUND

Tobacco has been a staple crop in St. Mary's County since the 1630s when the first English settlers arrived at St. Mary's City. Situated about 60 miles south of Washington, D.C., this peninsular county surrounded by navigable rivers remained in relative isolation for much of the eighteenth, nineteenth, and early twentieth centuries. With the movement of the state capital from St. Mary's City to Annapolis in the 1690s, minimal rail connections, and the lack of large-scale industrial development, the county's economy was strictly agricultural and the population was exceptionally homogeneous. Between 1790 and 1940, for instance, the U.S. Census noted that the population of the county never went above 17,182 nor below 12,794 (United States Census 1790-1940). In 1850, the first year that the census recorded place of birth, 89 per cent of the county's white and free black population were born in the county with another five per cent born in two neighbouring counties (United States Census 1850). Up until the Civil War, black slaves constituted the county's agricultural labour force, but even these descendents of African tribesmen, were, by the mid-nineteenth century, largely American-born.

With the lack of industrial development and the presence of a largely insular population, tobacco agriculture in the county flourished even as adjacent regions abandoned the "sot weed" for wheat (Marks 1979; Clemens 1980; Crothers 2001). As a holdout, Southern Maryland retained the distinction for its air-cured leaf and still occupies a niche in the global tobacco market. Maryland Type 32, as it is currently known, is not only distinguished from other tobacco varieties in the United States by its colour and biological composition, it is also known for the way it is cured – by the air. For its entire history, Maryland tobacco leaf has been cured in wooden barns that are distinctive to this region of the United States (Hart and Mather 1961; Fertig 1986; Martin 1992). Grown, cured, and packed over a period of fourteen months, tobacco remains a work-intensive crop that carries with it a cultural pride in its production (Willigen 1998).

While many academic studies over the past forty years have circumscribed the socio-economic implications of tobacco as a staple crop, comparably few have attempted to understand the material cultural behind its production (King, 1997). In an attempt to correct this oversight, the Maryland Historical Trust funded a number of architectural surveys in St. Mary's County to identify significant historic resources. Beginning in 1993 and ending in 2002, the survey not only identified a wide range of farmsteads, stores, and maritime resources for it also identified dozens of tobacco barns as potentially important. This study is based upon the fieldwork that was conducted over the course of eight years. On occasion this work included measuring floor plans, framing sections, and architectural details, as well as taking archival photographs.

In driving the roads of St. Mary's County over a period of eight years, one of the greatest challenges the survey faced was the large number of barns (probably in the thousands) and the inability to date or identify a significant barn merely from looking at the exterior of the building. Site visits,

therefore, were made to only a small sample of buildings that were presumed to date from the eighteenth, nineteenth and early twentieth centuries. The data that was retrieved informs this work, but it is admittedly preliminary. Enough information was collected, however, to establish the building type's relative complexity, its place within the larger context of Southern Maryland's historic landscape, in addition to the methodological, conceptual, and theoretical challenges that these buildings pose.

TOBACCO BARN TYPES AND THEIR FUNCTION IN CURING

At a fundamental level, the structure of tobacco barns has to accommodate the compressive loads that impaled tobacco sticks create when they are "laid up" in a barn. Weighing about 45-50 pounds when they are initially hung in a barn, the tobacco-laden sticks lose approximately 80 per cent of their weight over the course of about two months. The curing process, itself, is a rather tricky one for Southern Maryland farmers to negotiate particularly during the rather humid days of August and September. Too much moisture and not enough air movement can cause the tobacco to rot. If the air gets too dry too fast, the leaves will garner a green colour and lose value and taste.

From a purely functional standpoint, therefore, barns structurally sustain the dead-loads of the tobacco sticks and facilitate air movement into and out of the building. From the seventeenth century to the present, planters framed their barns in a wide variety of ways. For much of the seventeenth and early eighteenth centuries, for instance, earthfast construction, essentially where the principal structural posts are sunk directly into the ground, was the predominant way of building (Carson et al. 1991) (**fig.3**). Braced framing appears to have predominated in the eighteenth and nineteenth centuries. Supported by a log, stone, or brick foundation, this method of framing typically featured braces that extended from post to sill and was also raised as a long wall rather than in transverse bents. Log construction was also evident in the eighteenth and nineteenth centuries. Consisting of horizontal logs that were either skinned or hewn square, these single-pen log buildings featured a variety of corner notching techniques including diamond, V-notch, and half-dovetail. In the early twentieth century, barn forms took on a much more standardized appearance and function. Lightly "plank" framed with dimensioned lumber, these agricultural buildings were larger and are often marked by gambrel roofs rather than the gable roofs of their predecessor (Hammett 1994). These buildings also featured larger barn doors to accommodate tractors.

The spatial organization of a barn's interior is largely dictated by the curing methods that farmers have refined over the past three centuries. Interior "rooms" are delineated by a series of horizontal scaffolds set four ft apart that are used to hang tobacco sticks (**fig.4**). Indeed, farmers often relate the size of their barn in terms of the number of rooms it contains. Even in the nineteenth century a large majority of barns mentioned in period documents and in the field feature longitudinal dimensions that are divisible by four (Annual Valuations 1780-1841).



Figure 3. Earthfast post that has since been propped up by cinder blocks.
Note the interrupted sill.



Figure 4. The interior scaffolding and “rooms” at the earthfast-constructed Bond Farm Tobacco Barn.

The skin of most nineteenth century barns consisted of board-and-batten, clapboard, as well as spaced-plank sheathing. While louvered openings often pierced the gable ends of barns, a side shed was typically left “open” to permit adequate levels of air to circulate among the tobacco sticks. In the twentieth century, hinged vertical planks were propped open in order to increase ventilation. Also during this period, some gable roofs were equipped with a louvered clerestory, while others featured metal vents. The venting of air in these buildings was never automated, as farmers still regularly open and close doors depending upon the humidity and heat.

THE ARCHAEOLOGY OF ARCHITECTURE

In 1981, the seminal study entitled “Impermanent Architecture in the Southern American Colonies” ruffled the feathers of architectural historians by unseating the dates of houses and house sites throughout the Chesapeake region (Carson et. al. 1981). Using a growing corpus of archaeological and architectural data collected in the 1970s, this work thrust buildings formerly believed to date from the seventeenth century into the eighteenth century – effectively changing the historiography of the Chesapeake. It also verified that fewer than six buildings survived from the seventeenth century in the region (Carson et al. 1981, p. 135). Largely due to the ephemeral nature of earthfast construction, this conclusion also signalled a new era of collaboration between archaeologists and architectural historians.

One of the most notable spinoffs for architectural historians was the development of more rigorous data collection in the field particularly for buildings that became termed as “vernacular.” From more intensive architectural investigations and more complex inter-site and intra-site comparative analysis, the “new” architectural history became much more concerned with the notion of “context” or how a given building or buildings fit into larger patterns of cultural adaptation, social change, power relations, and even gender (Carter and Herman 1991, p. 3-4). It is by no accident, therefore, that concepts utilized by archaeologists for decades suddenly found a new utility. The concept of stratigraphy, for instance, played an especially critical role in the Chesapeake study by establishing the material context of earthfast construction through the analysis of soil layers – particularly in the post-holes of long-vanished seventeenth century buildings. Soil discolorations and the presence of pottery shards and other dated material objects in definable soil layers assisted in bracketing construction and occupation periods in addition to identifying periods of change. By linking these events together across a wider region, cultural patterns began to emerge.

For the built environment, particularly for tobacco barns, the notion of stratigraphy is very useful. Few, if any of the tobacco barns in this study, have existed unchanged from their original form. As subsequent farmers used existing buildings, alterations were inevitably made. Shed additions were constructed and interiors were reorganized. Building uses were changed and re-changed to mirror vacillations in commodity supply and demand as well as alterations in labour markets and technological improvement. These alterations, in and of themselves, are significant markers of how

farmers modified their agricultural practices in response to the changing world around them (Ranzetta forthcoming).

Any reading of these layers, however, should be informed by an analysis of a barn's constituent parts. From characteristics such as plan, framing methods, and overall size to nail types and tooling marks, each barn contains a physical summary of its construction and use over time. A general understanding of building practices and materials, particularly at the local level, helps to build a chronological sequence that can then be used for dating purposes. Also called seriation, this process of sequencing helps to plot artifact (or technological) introduction, popularity, and ultimate rejection by noting frequency (Ford 1962; Deetz 1977). Seriation is also useful for plotting a progression of form that in turn indicates a larger context of cultural change.

At the most simplistic level, for instance, the sheer volume or size of tobacco barns appears to have progressed from small to large from the eighteenth to twentieth centuries. As the barn profiles below reveal, the chronological sequence tobacco barns appears to reveal that, in general, size increases as time progressed. This relationship raises significant interpretive questions not the least of which is why? Was it because of increases in production levels, a centralizing of curing activities into larger and fewer buildings, the development of a more corporate approach to tobacco farming, or even related to changing trends in timber framing? While the answers for this evolution may lie in several if not all of these reasons, the mere collection of this information instigates the proliferation of research questions that can either be verified or challenged using other sources such as historic documents (**fig.5**).

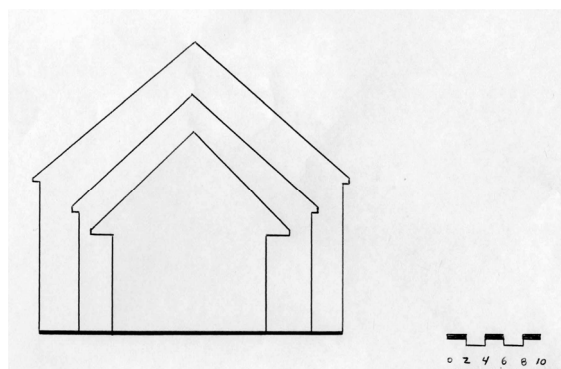


Figure 5. Superimposed gable-end profiles of tobacco barns. Beginning with the smallest they are as follows the Prospect Hill Tobacco Barn, 1790-1815; Allstan Tobacco Barn, 1840s; Tobacco Barn near Morganza, 1920s.

While the size of tobacco barns may be a general means of identifying the broadest possible period of construction, it lacks the specificity necessary to pinpoint a date. Tooling marks on timbers are

another source of evidence that can guide a fieldworker to understand the dates of barn construction and alteration. As Figure 6 reveals, barn timbers were shaped in a variety of ways including being hewn, pit sawn, circular sawn, and/or riven/split (**fig.6**). A general chronology derived from barns across St. Mary's County reveals that all of these techniques were being used during the nineteenth century, but for decidedly different purposes.

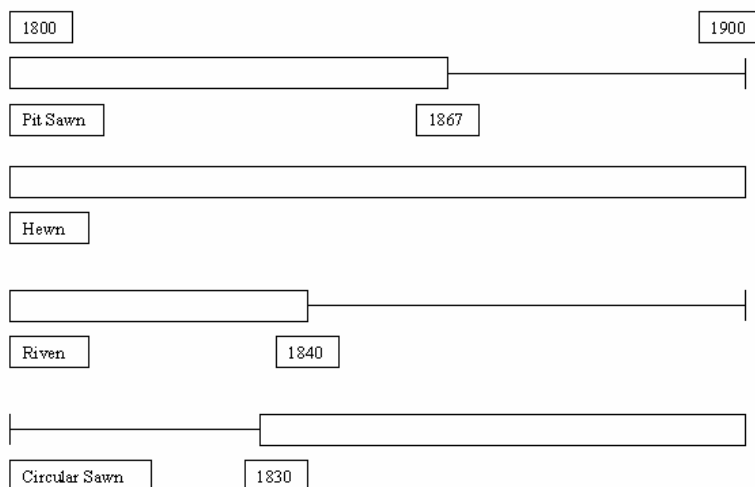


Figure 6. Saw and tool marks found on tobacco barn timbers, 1800-1900.

As Figure 7 illustrates, the practice of riving continued in the county into the mid-twentieth century, but only in the production of tobacco sticks (**fig.7**). One local farmer, Dominic Abell of Leonardtown, Maryland, was still riving his tobacco sticks into the 1940s (Ranzetta forthcoming). For the most part, however, the presence of riven components was limited to nailers for exterior clapboard as well as cribbing. The latest recorded use of riven weatherboard and cribbing in the study was observed at the Sims Tobacco Barn that was dated through dendrochronology to 1837 (Edwards 1982, p. 28). Riven nailers for exterior clapboard were never observed *in situ* on any existing tobacco barns, but they were found on a c.1790-1810 meathouse at Deep Falls Farm. No other use of riven timbers was observed in the study. By examining riven timbers in barns, therefore, the importance of context and use of a certain technology is important to consider when developing a chronological sequence.

The county's retention of riving timbers through the early nineteenth century is intimately connected to the relative lack of saw mills in close proximity to St. Mary's County and the fact that sawn timber was a valued export commodity (Lounsbury 1994 p. 317). Other somewhat antiquated methods of construction, most notably pit sawing, persisted as late as the 1860s although pit sawn

timbers were not observed in tobacco barns past the 1840s. On July 4, 1867, the local newspaper, the *St. Mary's Beacon*, reported that two African-American workmen were busy pit-sawing oak timbers to be used for a new covered bridge (*St. Mary's Beacon* 1867). The appearance of this article represents the latest mentioning of pit-sawing in local accounts and existing buildings and therefore suggests a *terminus ante quem* for this particular building technique.

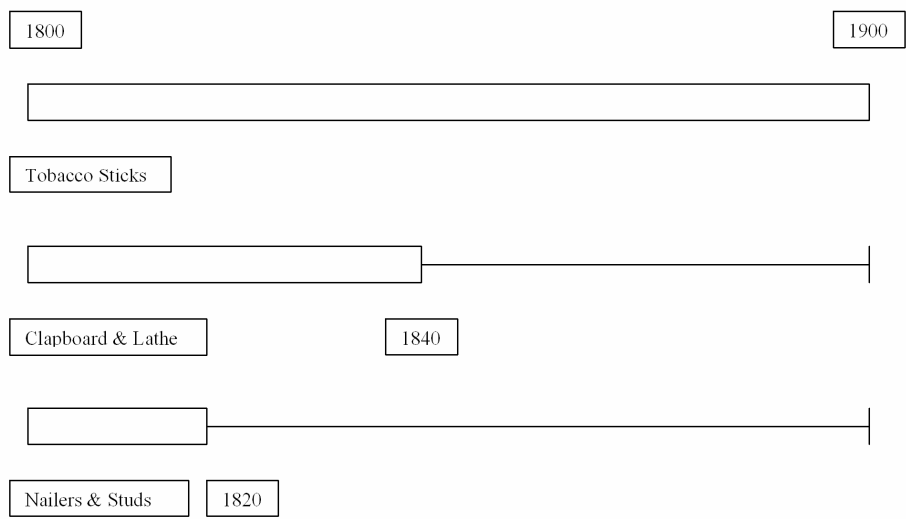


Figure 7. A proposed chronology of riven timbers found in tobacco barns between 1800-1900.

As this albeit brief analysis relates, the physical context and use of a particular technology or object can play an integral role in developing a chronological sequence. Mere presence of a pit sawn or riven beam, however, has to be correlated to the position it is in and the role it has in the construction of the larger building. This is a particularly important point when looking at the Jutland Farm Tobacco Barn constructed between 1880 and 1890. While earthfast framing of tobacco barns was commonplace in St. Mary's County since the 1630s, the use of a forked, earthfast post called a crotchet (or cratch or crutchet) has only been verified through documentary records and speculation (Carson et. al. 1981, p. 154). Despite the use of the word "crutches" in accounts from the early 1600s to as late as the 1870s, most historians largely dismissed its usage as a local colloquialism for an earthfast-constructed tobacco barn (Carson et al. 1981, p. 154; McWilliams 1871, p. 8). At Jutland Farm, however, the barn builders utilized two crotchets on the north long wall of the building (**fig.8**). Surrounded by circular sawn horizontal nailers, posts, rafters, and wall ties fastened together with mature cut nails, the crotches of this building raise significant questions about these earlier suppositions. Without the assistance of other surviving examples, however, it remains difficult to ascertain a clear pattern of crotchet use. Were these posts the product of a singular farmer's rude sufficiency and ingenuity or was it reflective of the farmer's

architectural surroundings and broad familiarity with this form of construction? While these questions are tantalizing, the stratigraphy or physical context of this barn proved critical to assigning an appropriate date.

Perhaps a more challenging application of stratigraphy can be found in barns (as well as churches and houses) that have been converted for other uses. Through a careful examination of timbers at the Brome Farm Granary at St. Mary's City, for instance, dendrochronology determined that the building was modified on at least two different occasions after its construction in 1758. As farmers followed trends in wheat and tobacco prices, the building was modified to accommodate each respective crop (Edwards 1982, p. 28). Tobacco barns constructed in the nineteenth century appeared to have followed this trend as well (Ranzetta, forthcoming). The barn at Red House Farm and its mortise-ridden timbers is a particularly good example of the patterns of agricultural reconstruction and building reuse. Even former churches and dwellings were pressed into service as tobacco barns when prices peaked (Ranzetta, forthcoming).



Figure 8. Forked post or “cratchet” at Jutland Farm.

Ascertaining the correct sequence of construction is a basic but significant step in developing a broader patterning of cultural behavior. While agricultural buildings are often dismissed as “ordinary” components of the rural landscapes, they represent important windows into the diffusion of technological advances in building. They also reflect the resilience of rural builders and their ability to negotiate and balance tradition with innovation. Indeed, the nineteenth century tobacco barns of St. Mary's County chronicle a vibrant period of experimentation and indicate that farmers were actively considering their economic prospects and altering their landscape accordingly. The use of archaeological concepts such as stratigraphy and seriation has broad applicability in the study of tobacco barns. As architectural survey methodologies are developed in the future, data collection

should be focused on construction details and technologies so that seriated relationships between buildings and landscapes can be explicated.

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