

**NEW DATES FROM OLD COLLECTIONS:
THE ROUNDTOP SITE AND MAIZE-BEANS-SQUASH
AGRICULTURE IN THE NORTHEAST**

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ABSTRACT

The Roundtop site located in the Upper Susquehanna River Valley of New York has long been held to contain the earliest evidence for maize-beans-squash agriculture in the Northeast. In his reports on this site, Ritchie linked charred maize, beans, and squash remains with a radiocarbon date of A.D. 1070 \pm 60 and pottery associated with the early Owasco Carpenter Brook phase. Recent AMS dating of the domesticates indicates that there is no evidence for maize, beans, and squash co-occurring at the site before A.D. 1300. The dates are supported by pottery collections and Ritchie's lab notes. These results emphasize that site descriptions in the literature are interpretations not observations. These interpretations need to be carefully assessed before their incorporation into new analyses and syntheses. This can only be done if collections of artifacts, botanical and zoological remains, and field and lab notes are maintained by museums.

INTRODUCTION

There is a simple proposition that goes to the very heart of the reasons that the symposium leading to this publication was organized. That is, the descriptions, discussions, and summaries of archaeological sites in the literature are interpretations, not observations. There is nothing startling about this proposition, but it is perhaps not widely understood by the lay public, non-archaeological administrators, politicians, and others who can influence debate on collections issues. Why continue to accession new collections and/or continue to curate old ones?

The simple answer is that because without them we lose the opportunity to question and evaluate the interpretations of our predecessors and to create new data to address new questions that arise as methods and theories change. In what follows I relate how this proposition was driven home to me when I began to investigate an old collection housed in the New York State Museum (Hart, 1999). I also summarize how the results of those investigations led me to additional collections-based research that fundamentally changed our knowledge of the history of maize-beans-squash agriculture in the Northeast (Hart and Scarry, 1999). Without the presence of collections that had been curated for a few years to several decades, this research would not have been possible.

THE ROUNDTOP SITE

In 1964 a field crew from the New York State Museum, under the direction of William A. Ritchie, began excavations at the Roundtop site in the upper Susquehanna River valley in southern New York State (Figure 1). The site was well known to avocational archaeologists, who had excavated large areas of the site (Laccetti, 1965, 1966, 1974) and brought it to the attention of Ritchie when it was threatened by development of a town park (Ritchie, 1973). Ritchie obtained permission to excavate, and his crew had a great deal of success. They exposed several hundred post molds and seventy pit features, although only eighteen of the pit features had not been excavated previously by avocational archaeologists. During the following two summers, additional areas of the site were excavated by the State University of New York (SUNY) at Binghamton field schools under the direction of William Lipe. The field schools exposed an additional 152 features and many additional post molds. As with the features Ritchie's crew exposed, many of those exposed by the SUNY field crew had been the subject of previous avocational excavation (Ritchie, 1973).

Ritchie published two summaries of the site, the first in his preface to the 1969 edition of *The Archaeology of New York State* and the second in 1973 as a chapter in his volume with Robert E. Funk *Aboriginal Settlement Patterns in the Northeast*. The collections from Ritchie's excavations, most of the collections from the SUNY field schools, and some collections donated by avocational archaeologists are curated at the New York State Museum.

In both of his publications, Ritchie discussed the recovery of maize (*Zea mays*), beans (*Phaseolus vulgaris*), and squash (*Cucurbita pepo*) remains, which is one reason why the site is so well known today. Small amounts of maize and beans were recovered during the SUNY excavations. However, it was the recovery of maize kernels and cob fragments, beans, and squash seeds together in Feature 35, a large storage pit, by the Museum crew that Ritchie emphasized in his publications. As a result, it was this find that captured the attention of the archaeological community. The find occurred about two decades before flotation was used widely in the Northeast (with Mueller (1992) being an obvious

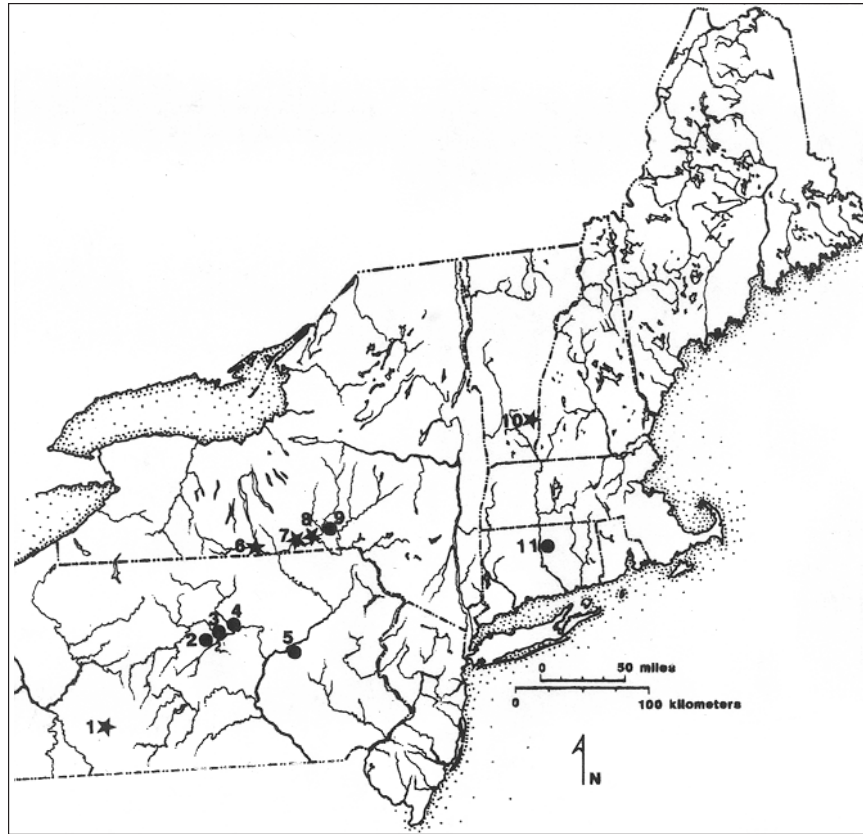


Figure 1. Locations of sites with reported early beans in the Northeast (1. Gnagey; 2. Bald Eagle; 3. West Water Street; 4. Nash; 5. Catawissa; 6. Thomas Luckey; 7. Roundtop; 8. Broome Tech; 9. Boland; 10. Skitchewaung; 11. Burhham-Shepard). Stars denote sites with AMS dates reported in Hart (1999) and Hart and Scarry (1999). Figure after Hart and Scarry (1999).

exception). Finds of domesticated remains at that time were rare in the Northeast, and to recover the three crops together in a feature was truly remarkable. Even more remarkable was that a pottery sherd of the Carpenter Brook Cord-on-Cord type was found amongst the domesticated remains. This type was associated by Ritchie with his Carpenter Brook phase of the Early Owasco period, the beginning of the Late Woodland period in New York, which he dated at A.D. 1000 to A.D. 1100 (Ritchie, 1969). Here then was potentially the earliest evidence for agriculture in the Northeast.

Despite the fact that the remains were found on a charred lining of tree bark and together with charred twigs, Ritchie chose not to obtain radiocarbon dates on the

material in Feature 35. The reason for this was that live groundnuts were found in the pit and he feared that the rootlets had contaminated the bark lining and other wood charcoal. Instead, Ritchie submitted “clean” wood charcoal for dating from Feature 30, a large pit from which abundant wood charcoal, but no domesticates were recovered. No groundnuts were found in this feature, and many sherds from a large Carpenter Brook Cord-on-Cord vessel were found amongst the charcoal. Ritchie (1973) reasoned that the presence of Carpenter Brook Cord-on-Cord pottery in Feature 30 and the Carpenter Brook Cord-on-Cord sherd found with the domesticates in Feature 35 meant that they originated from the same occupation of the site.

The radiocarbon date on the Feature 30 wood charcoal came back at A.D. 1070 \pm 60, confirming to Ritchie that his crew had indeed found the earliest evidence for agriculture in the Northeast (Ritchie, 1973). In fact, it was at that time the earliest date for beans in the Eastern Woodlands of North America (Kaplan, 1971; Munson, 1973; Yarnell, 1976). It also established the presence of maize-beans-squash agriculture at the beginning of what many accepted as the start of the Iroquoian development sequence in New York and suggested that maize-beans-squash agriculture had a long history in the Northeast prior to European contact (e.g., Winter, 1971). The date soon became a standard citation in the literature on prehistoric agriculture in the Eastern Woodlands (e.g., Brown, 1977; Ford, 1985; Riley et al., 1990; Snow, 1980; Yarnell, 1976) and has continued to be so in the Northeast through the 1990s (Bendremer and Dewar, 1994; Snow, 1995). In fact, the date became so strongly associated with the maize-beans-squash find at Roundtop that it has been misattributed to Feature 35 by some authors (e.g., Funk, 1993; McBride and Dewar, 1987).

Given the importance of the Feature 35 domesticates in the literature and the now standard use of accelerator mass spectrometry (AMS) to directly date domesticated remains in the Northeast (e.g., Bendremer et al., 1991; Cassedy and Webb, 1999; Crawford et al., 1997; Hart and Asch Sidell, 1996, 1997; Petersen and Asch Sidell, 1996), I thought it would be a good idea to directly date them. This would, I thought, help to confirm the timing of the maize-beans-squash association and clarify the temporal relationship of the Roundtop maize relative to maize from other sites in New York that had yielded earlier dates (Bendremer and Dewar, 1994; Cassedy and Webb, 1999). With the help of C. Margaret Scarry of the University of North Carolina at Chapel Hill, I sent four samples from Feature 35 for AMS dating. One sample was a bean cotyledon, two were maize kernels, and one was a twig fragment.

Much to my surprise at the time, the bean, twig, and one of the maize dates clustered around cal A.D. 1300, while the other maize date was a few centuries younger (Table 1; Hart, 1999). It was at this point that I thought it would be a good idea to go back to the pottery collections from features 30 and 35 to determine if the Feature 35 A.D. 1300 dates were in error, Ritchie’s original date was in error, or features 30 and 35 really represented different occupations of the site.

The pottery collection from Feature 30 is almost identical to Ritchie's 1973 description (Figure 2). It consisted mostly of the sherds of a large Carpenter Brook Cord-on-Cord jar. The collection is consistent with the original radiocarbon date. The pottery collection from Feature 35, however, was a different story. I was able to find the small Carpenter Brook Cord-on-Cord sherd that was found amongst the domesticates but the assemblage as a whole was dominated by rim and shoulder sheds from two Owasco Corded Collar jars (Figure 3). This is generally considered to be a late Owasco type and is consistent with the A.D. 1300 dates obtained on the domesticates (Prezzano, 1992). All of this pottery was found either on Layer 5 from which the domesticates were recovered, or in Layer 7 above.

In his 1973 publication Ritchie identified the pottery from Feature 35 as consisting of three Carpenter Brook Cord-on-Cord rim sherds and two rims of Owasco Corded Horizontal. The Owasco Corded Horizontal type was associated by Ritchie with the entire Owasco period and so would fit with the A.D. 1070 date (Ritchie and MacNeish, 1949). However, given that the sherds are collared, they cannot be of this type. Interestingly, in Ritchie's lab notes is a hand-written table initialed W.A.R. that assigns pottery types and cultural ascription by feature (Hart, 1999). In this table, Ritchie identified these sherds as Levanna Corded Collar and Owasco Corded Collar. He assigned Layer 5 from which the maize, beans, and squash remains were recovered to the late Owasco period (A.D. 1200 to A.D. 1300) and Layer 7, above Layer 5, to the middle Owasco period (A.D. 1100 to A.D. 1200). In separate lab notes, Ritchie indicated that Feature 35 contained both early and Late Owasco pottery and refers to the rims as "O.C. Corded," by which he presumably meant Owasco Corded Collar (Hart, 1999).

In summary, then, the pottery assemblage itself, and Ritchie's own lab notes are at odds with his published descriptions of the pottery collection from Feature 35. Whereas the published summary is consistent with his A.D. 1070 date, the collection itself and his lab note identifications are consistent with the A.D. 1300 dates obtained on the domesticates from the feature. As a result, it can be stated unequivocally that Ritchie's date has no association with the maize, beans, and squash from Feature 35. There is no evidence for maize-beans-squash agriculture at Roundtop before A.D. 1300, although an AMS date on maize recovered from a different context is earlier at cal A.D. 1225. Other maize and bean dates range from cal A.D. 1446 to cal A.D. 1636 consistent with later Iroquoian pottery found in a number of pit features (Hart, 1999).

COMMON BEANS IN THE NORTHEAST

Since Ritchie's publications on Roundtop there has been widespread acceptance of the presence of maize-beans-squash in the Northeast by A.D. 1000 to 1100 (e.g., Snow, 1995). This acceptance has been based in large part on Roundtop, although beans, whether in association with maize and squash or not, have since been reported from pre-A.D. 1300 contexts from at least eight other sites in the

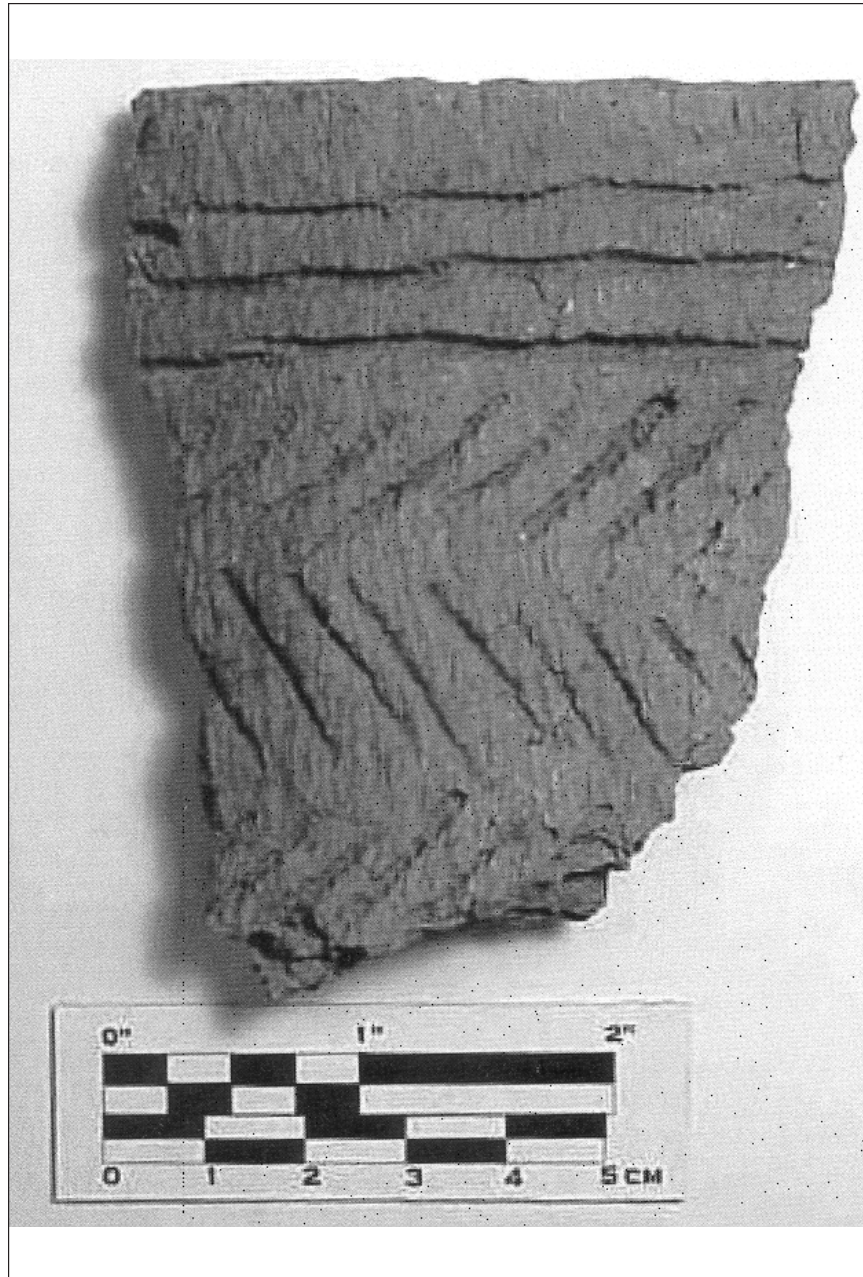


Figure 2. Carpenter Brook Cord-on-Cord rim sherd from Feature 30 at the Roundtop site.

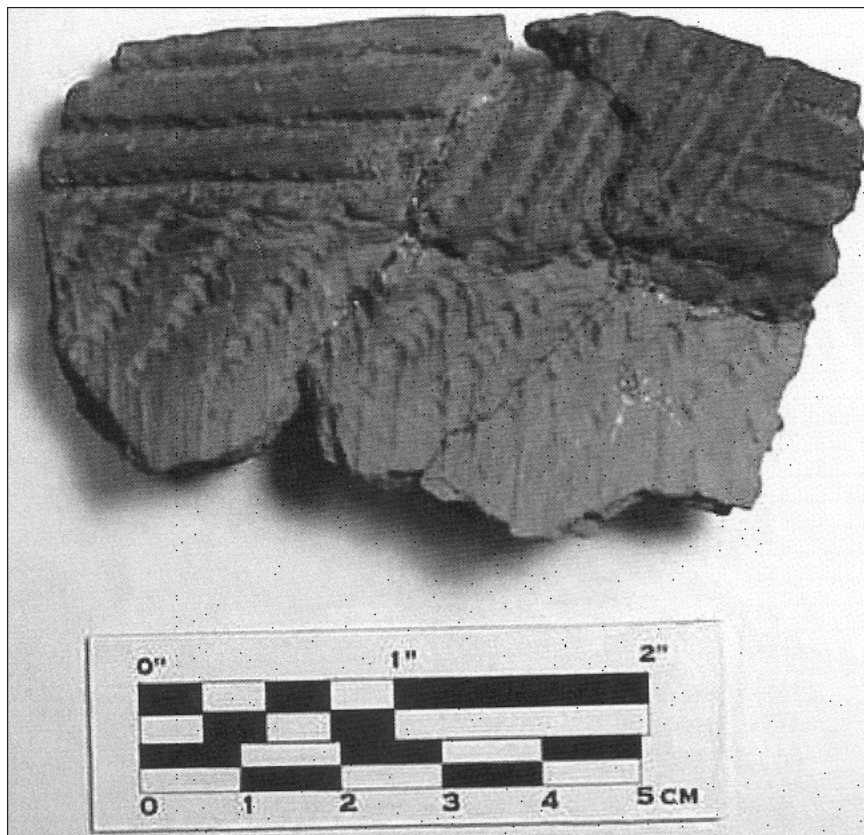


Figure 3. Owasco Corded Collar rim sherd from Feature 35 at the Roundtop site.

Northeast (Hart and Asch Sidell, 1996; Hart and Scarry, 1999). The only other AMS date on beans in the Northeast at the time the Roundtop AMS dates were obtained was from the Burnham-Shepard site in Connecticut, which returned a date of cal A.D. 1400 (Bendremer et al., 1991).

Given the Roundtop AMS dates, C. Margaret Scarry and I set out to date bean samples from as many of the Northeast sites in purported pre-A.D. 1300 contexts as possible (Hart and Scarry, 1999). We were able to obtain samples from four sites. First was the Skitchewaug site in the Connecticut River Valley of Vermont (Heckenberger et al., 1992). Beans were recovered from features at this site that have wood-charcoal radiocarbon dates as early as A.D. 1100 (cal A.D. 1200). Second was the Thomas Luckey site in the Chemung River Valley of southern New York (Knapp, 1996). Wood charcoal radiocarbon dates from this site range

from A.D. 590 to 1490 (cal A.D. 662 to cal A.D. 1439). Beans were recovered at this site from undated features. Third was the Gnagey site in the upper Ohio River basin of southwestern Pennsylvania (George, 1983). Published radiocarbon dates for the two components at this site average about A.D. 1000 and A.D. 1100. Beans were recovered from features assigned to both components. This site is near the watershed of the Ohio and Susquehanna drainages and has some Clemson Island-like pottery that suggests its inhabitants interacted with populations in the Susquehanna basin. Fourth was the Bald Eagle site in the West Branch of the Susquehanna Valley of north-central Pennsylvania (Hay and Hamilton, 1984). Beans had been reported from this site in features dating to as early as A.D. 850. Scarry determined that the samples contained no beans, suggesting that the earlier identifications were erroneous (Hart and Scarry, 1999).

We submitted a total of six bean samples from the sites for AMS dating, three from Skitchewaug, one from Thomas Luckey, and two from Gnagey. The calibrated dates on these samples range from A.D. 1275 to A.D. 1368 (Hart and Scarry, 1999). These and the earliest Roundtop bean date are not significantly different from one another at the 95% level of confidence. What these results very strongly suggest is that beans do not become archaeologically visible in the Northeast until right around A.D. 1300. Additionally, maize-beans-squash intercropping did not become established in the Northeast until about that same time, some 250 to 300 years later than has been generally accepted.

CONCLUSION

What is important in this story for the theme of this collection of articles is first that this new understanding of the timing of maize-beans-squash agriculture in the Northeast was only made possible because the collections from Roundtop, including botanical remains, artifacts, and notes have been curated for the past 36 years. These provided the first clue that something in the accepted history of the triad might be amiss. Second is that collections made some 25 to a few years ago from other sites were available to further investigate the issue and build a strong case for a new interpretation. Third is that it emphasizes the proposition I made in the introduction to this article, that site descriptions in the literature are interpretations, not observations. Why Ritchie published the interpretation of Feature 35 and its contents that he did in the face of contradictory evidence never will be known fully (see Hart, 1999). But we do know that if his collections had not been curated and maintained, we would not have had the opportunity to examine and question his interpretation based on the creation of new data.

ACKNOWLEDGMENTS

I thank Bernard Means for inviting me to participate in the symposium leading to this publication. I thank C. Margaret Scarry for her help in the two studies summarized in this article.

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