EUROPEAN ARTIFACTS FROM THE PLUM GROVE SITE, 40Wg17

Marvin T. Smith

This report will describe and analyze the European artifacts recovered during excavations at the Plum Grove site directed by Howard Earnest in 1978 and Roy S. Dickens in 1979. Special attention will be devoted to artifacts from burial or feature provenience. A secondary section will be devoted to European materials recovered in the general excavations, few of which appear to relate to the aboriginal occupation. Evidence will be presented to support the interpretation that the European artifacts at the Plum Grove site are the result of indirect (via aboriginal middlemen) exchange with the Spanish to the south during the period 1570-1650.

BURIAL ASSOCIATIONS

Glass Beads

Two hundred ninety two whole and three half bead specimens were classified during the course of this study. Several other beads are represented in the collections, but were either crushed or too badly weathered for analysis. Brief descriptions of the manufacture and classification of beads are followed by formal type descriptions and discussion.

Manufacture of Beads.

All glass beads recovered at site 40Wg17 were constructed by the hollow cane technique, in which a large bubble of glass is drawn out into a long tube, or "cane," which is then cut into short sections for beads. In the case of beads from Plum Grove, these sections of cane were then tumbled over heat with a polishing agent to round and smooth the beads, and are therefore known as tumbled cane beads. See Kidd (1979) for further discussion of bead manufacturing techniques.

Bead Typology.

After beads are classified according to their manufacturing technique, they

are further classified according to their structure. Simple beads are composed of one layer of glass, compound beads are composed of two or more layers of glass, and complex beads have applique or inset decorative elements (Good 1972).

Finally, beads are classified according to their colors. Since a standard color chart was not available to this author, color descriptions are general. Specific proveniences of all beads are listed in Table I.

Bead Types.

Type 1. Slightly translucent turquoise blue tumbled cane necklace bead of simple construction. The bead can vary from donut shaped to spherical to barrel shaped, but is normally near spherical. Slight variations in color are also noted. This bead is called Early Blue in the Northeast and Ichtucknee Plain in Florida. Length: 4-9mm. Diameter: 4-9mm. Number of Specimens: 84.5.

Type 2. Translucent medium blue tumbled cane necklace bead of simple construction. Normally near spherical in shape, but can approach donut. Length: 5mm. Diameter: 6mm. Number of Specimens: 36.

Type 3. Translucent dark navy blue tumbled cane necklace bead of simple construction. Normally near spherical in shape, but can approach donut shape. Length: 6mm. Diameter: 6mm. Number of specimens: 4.

Type 3A. Seed bead size of Type 3. Length: 3mm. Diameter: 4mm. Number of specimens: 20.

Type 4. Translucent blue tumbled cane bead of simple construction. This bead is darker than Type 2. Donut shaped. Length: 3mm. Diameter: 4mm. Number of specimens: 31.5.

Type 5. Translucent emerald green tumbled cane necklace bead of simple construction. Spherical shape. Length: 4mm. Diameter: 5mm. Number of specimens: 2.

Type 6. Slightly translucent turquoise green tumbled cane seed bead of simple construction. Donut shaped. Length: 2.5mm. Diameter: 3mm. Number of specimens: 8.

Type 7. Opaque black tumbled cane seed bead of simple construction. Donut shaped. Length: 2mm. Diameter: 3.5mm. Number of specimens: 1.

Type 8. Black tumbled cane seed bead of simple construction. Donut shaped. This bead appears black by reflected light, but is a deep maroon by transmitted light. Length: 2mm. Diameter: 3mm. Number of specimens: 1.

Type 9. Translucent light blue tumbled cane seed bead of simple construction. Donut shaped. Length: 1mm. Diameter: 2.5mm. Number of specimens: 12.

Type 10. Translucent light blue tumbled cane seed bead of simple construction. Tubular shaped variant of Type 9. Length: 2.5mm. Diameter: 2mm. Number of specimens: 2.

Type 11. Translucent royal blue tumbled cane donut shaped seed bead of compound construction: a thin core of white glass is covered with the royal blue exterior layer. Length: 1.5mm. Diameter: 2mm. Number of specimens: 1.

Type 12. White tumbled cane donut to barrel shaped seed bead of compound construction: a thick clear core layer is covered by a thin white layer which is finally covered by a thin clear exterior layer. This bead appears white by casual inspection. Length: 3mm. Diameter: 3-4mm. Number of specimens: 58.5.

Type 13. Translucent blue tumbled cane donut shaped bead of compound construction: a dark translucent blue core is surrounded by a translucent blue-gray exterior layer. Length: 2-3mm. Diameter: 3-4mm. Number of specimens: 13.

Type 14. Translucent medium blue tumbled cane donut shaped bead of compound construction: a medium translucent blue core is covered by a very thin layer of clear or translucent blue glass. Length: 2mm. Diameter: 4mm. Number of specimens: 17.

Type 15. Opaque turquoise blue tumbled cane donut-shaped bead of compound construction. A turquoise blue core layer is covered with a thin layer of clear glass giving the exterior a green appearance. Length: 2mm. Diameter: 3mm. number of specimens: 1.

Type 16. Translucent blue-green spherical tumbled cane bead of complex construction: the exterior has eight alternating red and white stripes placed parallel to the perforation. Length: 5mm. Diameter: 5mm. Number of specimens: 1.

Bead Discussion.

Table II contains comparative data for the sixteen glass bead types present at the Plum Grove site. The beads are compared to late sixteenth and early seventeenth century bead assemblages from sites along eastern North America from Florida to New York.

Comparison of monochrome beads, like most of the 40Wg17 specimens, is extremely hard using only the literature. It should be noted that a type collection of beads from the Bradford Ferry site was available to the author for comparisons. Likewise, he has personally analyzed the collections from Terrapin Creek and 9Ge948, and thus these comparisons should be valid. Other comparisons made from the published literature, usually through conversions into the Kidd classification system (Kidd and Kidd 1970) are potentially less reliable, but probably accurate.

The assemblage as a whole appears to be most closely related to sites in Alabama, Georgia, and Florida dated to the period ca. 1560-seventeenth century - areas dominated by Spanish trade goods at this period. In studying collections of beads for several years now, this author has noted that assemblages from the late sixteenth - early seventeenth century Southeast tend to be dominated by the beads here classified as Type 1 and Type 2. Type 1 beads are commonly referred to as "Early Blue" beads in the Northeast, or Ichtucknee Plain beads in Florida. This is the most common trade bead in the Southeast, and is present roughly from 1560 to 1780. This author has observed that there is a tendency for the early examples of this type to be spherical or donut shaped (i.e. the length is equal to or less than the diameter). Specimens from the eighteenth century may be

spherical, barrel shaped, or olive shaped (i.e. the length is frequently greater than the diameter). While a suitable collection of eighteenth century beads has not been available to this author to test this hypothesis with actual measurements, such experiments could be conducted.

In the Northeast, John Witthoft says of the Early Blue bead type: "Despite the long period over which this type appears, it is a good, sensitive dating device. When it is predominant - even in a small sample - the date is close to 1600"(Witthoft 1966: 206). In addition to the sites listed in Table II, a necklace of Type 1 beads has been reported from a protohistoric Dallas burial at Great Tellico, 40Mr12 in eastern Tennessee to the south of Plum Grove.

Strangely enough, the common "white" seed bead (Type 12) appears to be of some use as a dating device. Early (ca. 1560-1630) white seed beads are made up of thick clear layers with thin white overlay (some then have an additional clear exterior layer - such as those found at 40Wg17). Beginning sometime after 1630, white seed beads are constructed of predominantly white glass with thin clear overlay layers for added gloss (for example, those at the Cooper Farm site with an estimated occupation ca. 1630-1670). This latter type continues throughout the eighteenth century.

Polychrome beads are usually the most reliable time indicators, but unfortunately the 40Wg17 sample includes only six types. Type 11 does not appear in any of the sites chosen for comparison, but does appear in Peruvian collections believed to predate 1560 (author's unpublished data). Type 12 has been discussed above. Type 13 could only be located at one site in the literature - the Blowers Oneida Iroquois site with an occupation date estimate of 1600-1630 (Bennett 1979). A similar, if not identical bead was reported from the Oneida Cameron site, 1570-1600 (Bennett and Clark 1978). Types 14 and 15 could not be found during an extensive search of the comparative literature.

Finally, Type 16, the striped bead was definitely present at the Terrapin Creek site in Alabama (Smith 1976; 1977). Similar beads, although navy blue, were present at the Onondaga Pompey Center site 1600-1620 (Bradley 1977) and Oneida Cameron site 1570-1600 (Bennett and Clark 1978). Generally beads of compound construction (multiple layer beads) like Types 12, 13, 14, and 15 are more common during the sixteenth and early seventeenth century.

Brass Artifacts

Beads.

Brass tubular beads, constructed from rolled fragemnts of sheet brass, were recovered from Burial 1 (1 specimen), Burial 11 (1 specimen), and Burial 14 (22 specimens) excavated by Howard Earnest, and Burial 33 (1 specimen) excavated under the direction of Roy S. Dickens. These beads ranged from 10-47mm in length, and from 4-9mm in diameter. Rolled brass beads are among the earliest trade materials found in North Amefica from Florida to New York. They are found in the earliest contact period sites along the Coosa River in Georgia and Alabama, with dates estimated 1540-1570 and on subsequent sites (M. Smith 1977). They are found in sixteenth century sites in Florida (H. Smith 1956). In the Northeast, brass beads are found on Onondaga Iroquois sites as early as 1525-1550 (Bradley 1979), Onieda Iroquois sites 1550-1575 (Pratt 1976) and were popular on Seneca sites during the late 1500's and early 1600's (Wray 1973) although they first appeared around the beginning of the second quarter of the sixteenth century (Bradley 1979). They are definitely known to occur on all sites listed in the Glass bead comparison (TableII) except Ge948 (small sample) and the Florida Spanish missions. These beads were thus popular from the early sixteenth century to well into the seventeenth century and indeed on into the eighteenth century. Brass beads were also found in sixteenth century context in the T.F. Nelson site in Caldwell County, North Carolina where they were assocaited with Citico style

rattlesnake gorgets and iron celts (Thomas 1894; M. Smith 1976).

Brass Gorgets.

One brass gorget, roughly rectangular in shape with rounded corners (Figure__) was recovered from Burial 14 excavated by Howard Earnest. This gorget measures 122 by 111mm and has one small perforation centered near one edge.

Table III presents comparative data for brass gorgets. The brass gorgets represented in Table 2 are circular in outline, and are thus somewhat different from the 40Wg17 specimen. As can be seen in Table III, brass gorgets were popular from early in the sixteenth century (Spruce Creek site in Florida) until the late seventeenth century (Cooper Farm, Alabama). Circular and rectangular brass gorgets are illustrated in sixteenth century engravings by De Bry (Fundaburk 1958). These gorgets seem to be more popular in the southeastern U.S. than in the Northeast, and thus appear to be related to Spanish trade.

Animal Pendants.

One sheet brass pendant, in the form of an unidentified quadraped, was recovered from Burial 33 (Figure__). This pendant measures 60mm long. The animal represented could be an otter.

Similar brass animal pendants have been recovered from several archaeological sites in eastern North America (Table III). The pendants from Citico (or Settico) and Blowers are somewhat different, having large ear or antler projections on the head. The effigies from Cooper Farm are more similar, although "fatter." Those from site Ms91 and Ms100 in the Guntersville Reservoir of the Tennessee River (Webb and Wilder 1951) appear to be nearly identical. Fleming (1976) restudied selected items of European manufacture from several sites in the Guntersville Reservoir. He assigns late seventeenth century (ca. 1670-1701) dates to Ms100, and he believes that Ms91 was occupied up until ca. 1716. My

own analysis indicates that Ms91 was the earlier site of the two, marked by the absence of gun parts (except one musket ball) while Ms 100 probably dates to the last portion of the seventeenth century and the early eighteenth century. The Ms91 assemblage of trade goods is virtually identical to that from the Cooper Farm site on the Coosa River of Alabama and I have assigned a date of 1630-1670 to this site (M. Smith 1977). Thus similar brass effigy pendants appear to be popular during the middle third of the seventeenth century perhaps into the early eighteenth century.

MISCELLANEOUS EUROPEAN OBJECTS FROM THE GENERAL EXCAVATIONS

Lead shot or bullet.

One spherical molded lead shot was recovered from the surface. It measures 8.5mm in diameter (approximately 33 cal.) and could be a large buckshot or small pistol ball. This find could postdate the Indian occupation. It is the only evidence of firearms at the site.

Bottle Glass fragment.

One very small basal fragment of a dark green square case "gin" bottle was found in the 0-20" level of square 902R752. The fragment is too small to determine the type of pontil mark, if any, but its highly patinated surface suggests extreme age. Ivor Noel Hume states that square bottles were common in the period 1625-1675 (1969: 69), but similar bottles continued to be manufactured into the nineteenth century. Generally, Bottle glass is not present on Southeastern Indian sites until very late in the seventeenth century, suggesting that this fragment may be of later origin.

Nails.

Twenty-one nails were recovered from the excavations. Although none of the ferrous artifacts have been cleaned, it was possible to identify 14 of the nails as cut nails of a type produced after 1820 (Noel Hume 1969: 252). Clearly most

nails postdate the aboriginal occupation. Only three nails appear to be possible early wrought types, but none are definite (cat. no.a 1243; m1594; a2186). Three definite cut nails occur in Feature 10, suggesting that this feature is disturbed or dates to the nineteenth or twentieth century. Two nails of indeterminant type were found in Feature 14 (Burial 23), but the presence of a common hex nut suggests that this feature was also disturbed. Perhaps some plow zone material was included in the pit fill during excavation.

Buckle.

One square iron single framed buckle, measuring 36mm on a side, with iron tongue was recovered from unit 800R750, 10-20cm. level. This appears to be a simple harness buckle, a class that Noel Hume (1969:88) states is undatable.

Eyelet.

A brass (?) eyelet or grommet of recent manufacture was found in the 20-30 cm. level of unit 900R750.

Miscellaneous unidentified iron.

Several fragments of miscellaneous iron were recovered, although much of the iron identified in the field has proved to be natural iron ore fragments. The unidentified iron objects probably postdate the aboriginal occuaption.

Summary, Interpretations, Conclusions

Based on the glass beads, brass beads, brass gorget, and brass animal pendant, the "historic" component at the Plum Grove site can be dated to the period ca. 1570-1650 or slightly later. All burials accompanied by European goods are probably contemporary, but the possibility exists that the cluster of burials excavated by Howard Earnest predates those excavated by Dickens by 25-50 years. It is difficult to be precise given the small sample size of European artifacts present, but the glass beads recovered by Earnest are quite typical of late sixteenth century types, while the brass animal pendant form recovered by Dickens is more

typical of the seventeenth century.

How were these materials obtained by the inhabitants of the Plum Grove site? The site seems to definitely be out of the range of early European explorers. Unpublished research by DePratter, Hudson, and Smith on the route of Hernando De Soto suggests that this early explorer passed south of Plum Grove, but not by the large margin formerly believed. The artifacts from Plum Grove appear to postdate the De Soto expedition. Similarly, the route of Juan Pardo in 1567 also passed south of the Plum Grove site (DePratter, Hudson, and Smith 1980), although much of the artifacts found at Plum Grove are typical of those believed to have been traded by Pardo (Smith 1976; DePratter and Smith 1979). It is possible that the Plum Grove area is the Province of Chisca mentioned in the Pardo narratives, but this cannot be conclusively demonstrated.

It should be pointed out that the Plum Grove site is not the earliest historic site known from this area of Tennessee. Excavations by Howard Earnest at site 40Wg9 have recovered burials with European artifacts that suggest a date slightly earlier than that suggested for Plum Grove (i.e. pre-1570). The historic assemblage from two burials and one feature includes two small fragments of iron, perhaps from "chisels", Three small buttons decorated with gold leaf - probably the damaskeen buttons mentioned in the Pardo documents (DePratter and Smith 1979), and a lead (Musket?) ball, partially perforated. All of these materials are types known to have been distributed by Pardo in 1567. The Plum Grove site might represent the same people slightly later in time, ca. 1580-1650, or the apparent differences in the European artifact assemblages may be due to sampling error and the two sites may be contemporary.

After the exploration of Juan Pardo, the interior of Tennessee remained free of European visitors (at least those historically documented) until 1673, when Needham and Arthur journeyed there from Virginia (Lewis and Kneberg 1946).

It is precisely during this void of exploration (or history) that the Plum Grove site was occupied. It therefore seems most likely that the European artifacts recovered from Plum Grove arrived at the site by exchange with other Indian middlemen from European settlements elsewhere. The general types of artifacts seem most like those recovered from sites to the south of Plum Grove, suggesting the ultimate origin of the European artifacts was the Spanish.

In conclusion, the European artifact assemblage from Plum Grove suggests a date of ca. 1570-1650. The cluster of burials excavated by Earnest definitely contain European artifacts of types believed to date to the late sixteenth century in Alabama, while the burials excavated by Dickens contain artifacts suggestive of the early seventeenth century. The possibility remains that these burial clusters are contemporary and the perceived difference is only a function of the small sample of artifacts. The ultimate source of the European trade goods is most likely the Spanish settlements to the south.

TABLE I PROVENIENCE of BEADS, 40 WG 17

TYPE		PROVENIENCE: Bu 14 String 1	Bu 14 String 2	Bu 14 Seed Beads	Bu 33 2340	Bu 33 2341	Bu 33 2342	Bu 33 2354	Bu 34 2450	TOTAL
1.		3	12		7	2	46	12.½	2	84½
2.		12	24							36
3	3	2				1		1		4
3.	3a			2			3	15		20
4.				5		2	13½	11		31½
5.		2								2
6.						4	2	2		8
7.							1			1
8.				1						1
9.				12						12
10.				2						2
11.								1		1
12.						4	24½	30		58½
13						2	3	8		13
14							7	10		17
15							1			1
16		1								1

TABLE II GLASS BEAD COMPARATIVE ANALYSIS

Bead Type No.	Kidd Type Number	Bradford Ferry, Ala. 1560-1600 (Smith 1976; 1977)	Terrapin Creek, Ala 1560-1600 (Smith 1976; 1977)	Ge 948, Georgia 1560-1600 (Smith 1979)	Spanish Missions, Fla. 1633-1704 (Penman 1972)	Pompey Center, N.Y. 1600-1620 (Bradley 1977)	Blowers, N.Y. 1600-1630 (Bennett 1979)	Cameron, N.Y. 1570-1600 (Bennett & Clark 1978)	Philip Mound, Fla. ca 1550-1650 (Benson 1967; Harkums 1974)	Funk, Pa. 1550-1600 (Smith & Graybill 1977)	Cooper Farm, Ala. 1630-1670 (Smith 1977)	Trigg, Va. 1600-1625 (MacCord 1977)
1	IIA40	X	X	X	X	X	X	X	X	X	X	X
2	IIA44	X	X	X					X		X	X
3	IIA55	X	X		X	X			X	X	X	
4	IIA-											
5	IIA26	*	X		X	*		*	X		*	
6	IIA23							X				
7	IIA7			X	X		X					
8	IIA-	X										
9	IIA47	*							?	?		
10	VARIANT IIA47											
11	IVA-									X		
12	IVA11	X										X
13	IVA-						X	*				
14	IVA-											
15	IVA-											
16	IIB-		X			*		*				

* Similar Bead, different color shade

? Possible Presence, description not clear

TABLE III BRASS ARTIFACTS COMPARATIVE ANALYSIS

SITE / STATE	DATE	REFERENCE	BRASS GORGET	ANIMAL PENDANT
TRIGG / VIRGINIA	ca. 1600 - 1625	MACCORD 1977	X	
Philip md. / FLA.	16th & 17th CENTURY	BENSON 1967; HARTLINS 1974	X	
TERRAPIN CREEK/ALA.	ca 1560 - 1600	SMITH 1976; 1977	X	
BEDFORD FERRY/ALA.	CA. 1560 - 1600	SMITH 1976; 1977	X	
COOPER FARM/ALA.	1630 - 1670	SMITH 1977; LINDSEY 1964; BATTLES 1969	X	X
BLOWERS/N.Y.	1600 - 1630	BENNETT 1979		X
SPRUCE CREEK /FLA.	COIN ca. 1516	H. SMITH 1956	X	
Settaco / TN.	16-19th CENTURY	LEWIS 1960	X	X
MS 91 /ALA.		Webb & Wilder 1951	X	X
MS 100 / ALA.		Webb & Wilder 1951	X	X
Hiwassee Is /TN		LEWIS & KNEBERG 1946	X	
PISCATAWAY CREEK/md.	ca. 1640	FERGUSON 1940	X	

Added for Dissertation

Le Flore/MS mid Late 17th Century				X
Big Talassee/AL		Good - Photo of Auburn Coll		X
Hampton Place /TN		1982 TN Arch Soc Newsletter 37(6) 1		X
TALASSEE /TN	1630	Jones Dalhemm Collection UT (without head)		X
Ocoee /TN	1690 - 1715	UT coll		X

REFERENCES CITED

Battles, Mrs. Richard E.
1969 One Foot in a Grave. Journal of Alabama Archaeology 15(1): 35-38.

Bennett, Monte
1979 The Blowers Site OND 1-4 An Early Historic Oneida Settlement. Chenango Chapter New York State Archaeological Association 18(2).

Bennett, Monte and Douglas Clark
1978 Recent Excavations on the Cameron Site (OND -8). Chenango Chapter New York State Archaeological Association 17(4).

Benson, Carl A.
1967 The Philip Mound: A Historic Site. The Florida Anthropologist 20(3-4): 118-132.

Bradley, James W.
1977 The Pompey Center Site: The Impact of European Trade Goods, 1600-1620. William M. Beauchamp Chapter, New York State Archaeological Association Bulletin 2(1): 1-23.

1979 The Onondaga Iroquois: 1500-1655, A Study in Acculturative Change and its Consequences. Unpublished Ph.D. Dissertation, Syracuse University.

DePratter, Chester, and Marvin T. Smith
1979 Gift items from the 1566-67 Pardo Expeditions: the documentary sources. Paper presented at the twentieth Annual Conference on Historic Site Archaeology, St. Augustine.

DePratter, Chester, Charles Hudson, and Marvin T. Smith
1980 Juan Pardo's Explorations in the Interior Southeast, 1566-1568. Paper presented at the Society for American Archaeology, Philadelphia.

Ferguson, Alice L.L.
1940 An Ossuary near Piscataway Creek. American Antiquity 6(1): 4-18.

Fleming, Victor Keith
1976 Historic Aboriginal Occupation of the Guntersville Basin, Alabama. Unpublished M.A. Thesis, University of Alabama.

Fundaburk, Emma Lila
1958 Southeastern Indians Life Portraits. Scarecrow Reprint Corp., Metuchen, N.J.

Good, Mary Elizabeth
1972 Guebert Site: An 18th Century Historic Kaskaskia Indian Village in Randolph County, Illinois. Central States Archaeological Societies Memoir II.

Karklins, Karlis
1974 Additional Notes on the Philip Mound, Polk County, Florida. The Florida Anthropologist 27(1): 1-8.

Kidd, Kenneth E.
1979 Glass Bead-Making from the Middle Ages to the Early 19th Century. History and Archaeology 30. Parks Canada.

Kidd, Kenneth E., and Martha A. Kidd
1970 A Classification System for Glass Beads for the Use of Field Archaeologists. Canadian Historic Sites: Occasional Papers in Archaeology and History 1.

Lewis, T.M.N.
1960 Editors'Notes - Settico Site on Little Tennessee River. Tennessee Archaeologist XVI(2): 93-103.

Lewis, T.M.N. and Madeline Kneberg
1946 Hiwassee Island, An Archaeological Account of Four Tennessee Indian People. University of Tennessee Press, Knoxville.

Lindsey, Mrs. E. M.
1964 Cooper Farm Salvage Project. Journal of Alabama Archaeology 10(1): 22-29.

MacCord, H. A., Sr.
1975 Trade Goods from the Trigg Site, Radford, Virginia. Paper presented at the Conference on Historic Site Archaeology, Gainesville.

Penman, John T.
1972 European glass trade beads of the Spanish Mission Period, Florida. Manuscript on file, Division of Archives, History, and Records Management, Bureau of Historic Sites, Tallahassee, Florida.

Pratt, Peter P.
1976 Archaeology of the Oneida Iroquois Vol. 1. Occasional Publications in Northeastern Anthropology, No. 1. Man in the Northeast, Inc. George's Mills, N.H.

Rice, Orlenas L.
1977 Trade Goods With Dallas Phase Burial, Salvage Archaeology at 40Mr12. Tennessee Archaeologist 33(1-2): 17-22.

Smith, Hale G.
1956 The European and the Indian. Florida Anthropological Society Publications, No. 4.

Smith, Ira F. and Jeffrey Graybill
1977 A report on the Shenks Ferry and Susquehannock components at the Funk Site, Lancaster County, Pennsylvania. Man in the Northeast 13.

Smith, Marvin T.
1976 The route of DeSoto through Tennessee, Georgia, and Alabama: the evidence from material culture. Early Georgia 4(1-2): 27-48.

1977 The Early Historic Period (1540-1670) on the Upper Coosa River drainage of Alabama and Georgia. The Conference on Historic Site Archaeology Papers 1976, Vol. 11:151-167.

1979 Analysis of glass trade beads from 9Ge948. Manuscript on file at the Department of Anthropology, University of Georgia, Athens.

Thomas, Cyrus
1894 Report on the Mound Exploration of the Bureau of American Ethnology. Bureau of American Ethnology Annual Report 12. Washington.

Webb, William S. and Charles Wilder
1951 An Archaeological Survey of Guntersville Basin on the Tennessee River in Northern Alabama. University of Kentucky Press, Lexington.

Witthoft, John
1966 Archaeology as a Key to the Colonial Fur Trade. Minnesota History, Winter:203-209.

Wray, Charles F.
1973 Manual for Seneca Iroquois archaeology and slide set. Cultures Primitive, Inc., Rochester, New York.