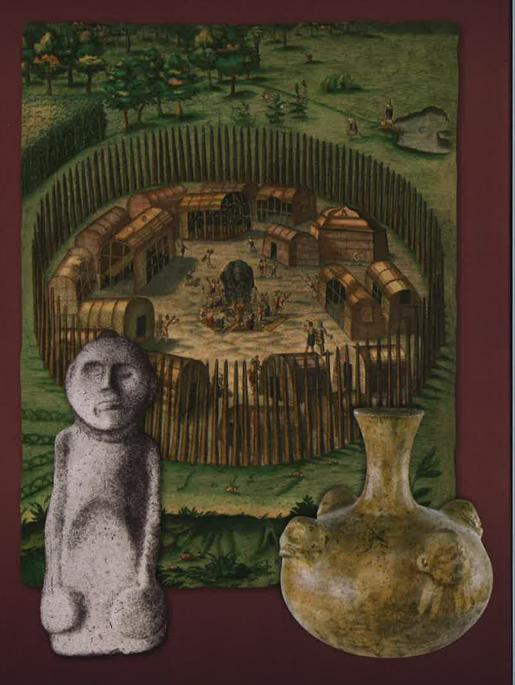
The Archaeology of Villages

IN EASTERN NORTH AMERICA



Edited by Jennifer Birch and Victor D. Thompson

The Archaeology of Villages

IN EASTERN NORTH AMERICA

Edited by Jennifer Birch and Victor D. Thompson

UNIVERSITY OF FLORIDA PRESS Gainesville

Copyright 2018 by Jennifer Birch and Victor D. Thompson All rights reserved Printed in the United States of America on acid-free paper

This book may be available in an electronic edition.

23 22 21 20 19 18 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Names: Birch, Jennifer, 1980– editor. | Thompson, Victor D., editor.

Title: The archaeology of villages in eastern North America / edited by Jennifer Birch and Victor D. Thompson.

Other titles: Ripley P. Bullen series.

Description: Gainesville: University of Florida Press, 2018. | Series:

Florida Museum of Natural History: Ripley P. Bullen series \mid Includes bibliographical references and index.

Identifiers: LCCN 2018000535 [ISBN 9781683400462 (cloth: alk. paper)

Subjects: LCSH: Indians of North America—East (U.S.)—Antiquities.

Woodland Indians-East (U.S.)-Antiquities. | East (U.S.)-Antiquities.

Classification: LCC E78.E2 B57 2018 | DDC 977/.01-dc23

LC record available at https://lccn.loc.gov 2018000535

University of Florida Press 15 Northwest 15th Street Gainesville, FL 32611-2079 http://upress.ufl.edu



UF PRESS

UNIVERSITY OF FLORIDA

Initial Northern Iroquoian Coalescence

JENNIFER BIRCH AND RONALD F. WILLIAMSON

Northern Iroquoian societies experienced two phases of community coalescence. The first, in the late thirteenth and early fourteenth centuries, brought previously semisedentary groups together into the first permanent villages in the Lower Great Lakes region. The second occurred in the late fifteenth and early sixteenth centuries, creating large, heavily palisaded villages that were catalysts for the formation of nations and confederacies. Here, we are primarily concerned with the first "wave" of village formation and the changes in social and power relations that accompanied the transition to sedentism.

In this chapter, we employ the rich corpus of archaeological settlement data available for southern Ontario and New York State to examine the processes associated with village formation. This includes the establishment of maize-based agricultural economies, the emergence of village-communities and the longhouse-based residential pattern, and the development of social institutions that served to integrate village residents within local and regional social networks. These are some of the sociopolitical hallmarks that signal the transformation of local Middle and transitional Woodland populations into a cultural pattern that is historically recognized as Iroquoian (Trigger 1976:91-104). These developments necessitated more complex social and power relations both within and between communities. One key observation is that females, as the primary contributors to the agricultural economies of early villages and keepers of the domestic realm, may have been the principal drivers of the transition to sedentism. Conversely, it could be argued that male taskscapes changed little between the preceding Middle and Late Woodland periods, although males were critical in extending the social networks of households and villages across the region.

Transition to Agriculture

The adoption of an agricultural way of life in the northeastern woodlands was gradual and multilineal, unfolding over many generations across a wide and differentiated landscape (Hart and Lovis 2013; Williamson 1990). Phytolith evidence indicates maize was used more than 2,300 years ago in central New York (Thompson et al. 2004). Isotopic analysis of dentin and enamel of human teeth, together with dental caries in permanent dentition in burials from the Kipp Island site in north-central New York, indicate it was a considerable component of the diet by the middle of the cal. seventh century AD (Hart et al. 2011). Hart and colleagues (2011:38) note, however, that this likely seasonal uptake of maize in the diet had little or no impact on regional settlement patterns. Only centuries later did large nucleated villages appear in the archaeological record.

The earliest evidence for maize in Ontario, in the form of carbonized plant macroremains, comes from sites in the Grand River valley, dated to cal. AD 400-600 (Crawford et al. 1997; Crawford et al. 2009). As in New York, maize initially supplemented rather than dramatically altered traditional Middle Woodland hunting, fishing, and gathering patterns (Hart and Lovis 2013). Isotopic analyses of human bone collagen and carbonate from sites in southern Ontario suggest that maize did not become a nutritional staple until at least AD 1000 (Harrison and Katzenberg 2003:241) and that it likely comprised 10-20 percent of the diet until the end of the thirteenth century (Harrison and Katzenberg 2003:241; Katzenberg et al. 1995; Schwartz et al. 1985), when it came to constitute some 50 percent of the diet (Pfeiffer et al. 2014; Pfeiffer et al. 2016). Current archaeological data suggest a south-tonorth dispersal of maize, allowing for the development of cold-adapted varieties (Hart and Lovis 2013). In both Ontario and New York, the incorporation of maize as even a minor component of subsistence regimes corresponded to a major shift to upland well-drained locations amenable to successful maize agriculture by AD 900 (Beales 2014).

When considering evidence for the uptake of maize and its contribution to diet, we must be cognizant of the more ephemeral social practices that appear to have accompanied the transition to farming life. An increasing investment in crops, however minor at first, would have included changes in attachment to place (Creese 2013; Timmins 1997), allocation of labor (Schneider and Gough 1961; Trigger 1976:135), and the production of surpluses for facilitating group ceremonials and feasts (Hayden 2014). Indeed, Bruce Trigger (1976:133) suggested some 40 years ago that the emergence of agricultural economies and early villages was rooted in efforts to maintain the year-round cohesion of social groups, in this case the macroband aggregations of the preceding Middle Wood-

land, and eliminate the need for winter dispersal. This would have also helped to reduce regional political tensions and brought about greater economic security through shared work parties (Trigger 1976:135–136).

Early Village Life: AD 900-1250

The earliest settlements with evidence for semisedentary habitation have been characterized as transitional between the preceding Middle Woodland and subsequent Late Woodland communities of the region (Crawford et al. 1997; Fox 1990). They appear at approximately AD 1000 in both Ontario and New York. The earliest and best-known examples of these sites occur in floodplain environments and include the Holmedale (Pihl et al. 2008), Auda (Kapches 1987), and Porteous (Stothers 1977) sites in southern Ontario. In New York, at least one house (the smaller House B) at the Maxon-Derby site (Ritchie and Funk 1973) and one house identified at the Port Dickinson site (Prezzano 1992) have been characterized as transitional Middle–Late Woodland (Hart 2000).

These "base camps" featured small, circular or elliptical house structures containing clusters of hearths and pits. Neither in Ontario nor New York did these sites include what we would recognize as a typical Iroquoian longhouse (Hart 2000; Warrick 1996). Large, deep pits were used for storage. The ubiquitous presence of maize on many of the Ontario sites suggests that it was consumed by all social units, even if it was only a minor contributor to the diet.

Between the base settlements of the tenth and eleventh centuries and the appearance of the first year-round villages at the end of the thirteenth century, there is a robust record of evolving early village life. In Ontario, settlement-subsistence patterns are characterized by multiple clusters of geographically discrete, semi-permanent settlements, together with smaller camps and special-purpose sites (Timmins 1997; Williamson 1990). There is enough internal differentiation among these site clusters that the transition to village life was clearly a multilinear process, with the adoption of settlement and subsistence strategies and social, political, and economic developments occurring at slightly different times in different subregional localities (Williamson 1990).

Villages of this period include Miller (Kenyon 1968), Van Besien (Noble 1975), Reid (Wright 1978), Elliott (Fox 1986), Tara (Warrick 1992), Ireland (Warrick 1992), Lightfoot (D. R. Poulton and Associates 1996), and Calvert (Timmins 1997) in southern Ontario, and Kelso (Ritchie and Funk 1973), Sackett (Ritchie and Funk 1973), and the later occupation at Maxon-Derby (Ritchie 1965; Hart 2000) in New York (Figure 6.1). These sites are generally small in size, covering approximately 1 acre, or 0.4 ha (Williamson 1990), and encompass multiple structures,

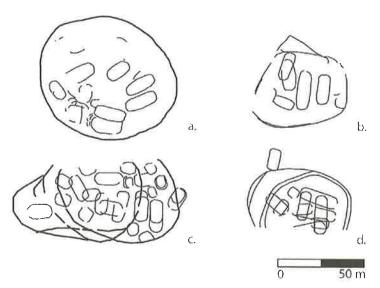


Figure 6.1. Early Iroquoian village plans, ca. AD 1000–1250: (a) Miller (Kenyon 1968); (b) Ireland (Warrick 2000); (c) Elliott (Fox 1986); (d) Calvert (Timmins 1997).

averaging 10–20 m in length and 7 m in width (Warrick 1996). These include the first true longhouse forms, traditionally defined as being at least twice as long as they are wide. Some of the sites were encircled by one or two rows of palisade. It has been argued that these palisades were too flimsy to have been defensive, perhaps serving as fences or windbreaks, but they nevertheless defined a community precinct (Ramsden 1990).

Occupied over a longer period of time than later villages, these communities reflect multiple episodes of rebuilding involving reoccupations over many decades, sometimes for a century or more. For example, Peter Timmins (1997) has reconstructed the occupational history of the Calvert site, showing how it developed from a seasonal hunting camp into a semipermanently occupied village between AD 1150 and 1250. Timmins (1997:227) argues that these long-term occupations suggest that village locations and the hunting territories with which they were associated would have been highly valued and protected. Some regional clusters of sites may have involved two or more contemporary communities that may have shared a hunting territory or other common resource base. Multiple resource extraction camps, occupied in the spring and fall, are often located within 5–10 km of early villages (Timmins 1997; Williamson 1990:312–320). Thus, both at the village level and within the wider catchment in which males and females operated, we see a greater commitment to place-making and territorialisation than is apparent in earlier transitional Middle—Late Woodland settlement forms (Creese 2013; Timmins 1997).

Populations based on site size and hearth counts indicate that the earliest villages comprised approximately 75–150 people (Timmins 1997:199), suggesting that they were derived from late Middle and Transitional Woodland yearly territorial band aggregations (Trigger 1976:134, 1985:86). It is likely that power dynamics in these communities differed little from the preceding Middle Woodland period, consisting of informal family-based decision-making structures, perhaps including individuals who also acted as spokespersons in dealings with neighboring groups (Trigger 1981:24).

Long-distance exchange in this period appears to have been restricted, evidencing the waning of extensive Middle Woodland interactions (Fox 1990:188). Evidence for the importance of local, as opposed to regional, social networks comes from ceramic data. Sequences of ceramic development were quite variable from one region to another, as was the use of specific decorative motifs or techniques (Williamson 1985:289–290). This pattern may be attributed to local endogamy whereby spouses were obtained from other communities within a regional cluster (Timmins 1997:228).

There is no evidence that suggests these first villages marked the incorporation of matrilineal descent and residence patterns (Hart 2001; Williamson 1990). Instead, the development of matrilineal descent, matrilocal residence, maize horticulture, and settled village life appears to have evolved gradually and opportunistically (Hart 2001). Ceramic (Schumacher 2013) and mortuary data (DeLaurier and Spence 2003) both point to variable origins for the female members of some early Iroquoian villages. This suggests the continued but possibly limited practice of patrilocality. In this way, early village populations may have participated in a locally based social network that involved resource procurement, spousal exchanges, defensive alliances, and trading relationships that may have served to "predispose people for the eventual decision to amalgamate into large villages" (Timmins 1997:228).

This phase of early village life, therefore, seems to have been characterized by a flexible and evolving sociopolitical structure, whereby people were free to pursue seasonal subsistence activities in either extended or nuclear family units. Such overall flexibility would explain the variations in house morphology, interior house activity, seasonally intermittent occupations, and diverse burial practices documented for these populations. Until dependence on cultigens resulted in a realignment of work tasks that separated men from women for prolonged periods, residence and descent patterns may have remained patrilocal and largely unchanged from Middle Woodland times (Williamson 1990:318–319; see also Trigger 1976:136), although incipient agricultural economies and commitment to place may have begun to encourage more cooperative behavior among village residents.

Initial Village Coalescence: AD 1250-1350

Beginning in the mid-to-late 1200s, we see the coalescence of larger settlements that were, for the first time, occupied year-round by the entire community. This shift appears to have been accompanied by a region-wide intensification of food production, decreased mobility, and increased levels of cooperation and communication among neighbouring groups (Dodd et al. 1990; Pearce 1984; Williamson and Robertson 1994). Indeed, the late thirteenth and very early fourteenth centuries seem to represent a hinge-point in Iroquoian cultural development—an "event" (sensu Sewell 1996; Beck et al. 2007) or "tipping point" (Cobb, this volume) that, within a generation or two, transformed early Late Woodland peoples into "Iroquoians."

Intensified horticultural production is reflected by a growing emphasis on the placement of villages adjacent to the most suitable soils for agriculture (Williamson 1985:326). Isotopic analyses of human remains indicate that after ca. AD 1300, maize consumption increases to comprise at least half of the Iroquoian diet (Katzenberg et al. 1995; Pfeiffer et al. 2014; Pfeiffer et al. 2016). Changes in the built environment and material culture provide evidence of the social transformations that accompanied this economic shift.

Sites typical of this period include Uren (Wright 1986), Myers Road (Williamson 1998), Roeland (Williamson 1990), Gunby (Rozel 1979), and Antrex (ASI 2010) (Figure 6.2). These now larger villages averaged almost 4 acres (1.5 ha) in extent, or twice the size of the earlier base settlements. Populations are estimated at an average of some 200–500 individuals (Warrick 2008). These larger communities are believed to have been formed through the result of aggregation of previously dispersed groups as opposed to strictly through internal population growth. At the same time, much larger longhouses appear, averaging 30 m in length and reaching lengths of up to 90 m (Warrick 1996). Organizationally, villages featured less rebuilding and structural change than did communities of the previous period and were relocated more frequently, on the order of every 20–40 years (Dodd et al. 1990; Warrick 2008:135). Former village sites were very rarely reoccupied, establishing the community relocation sequences that characterize late precontact Iroquoian archaeology (e.g., Birch and Williamson 2013, 2015; Niemczycki 1984; Snow 1995; Tuck 1971).

Some post–AD 1250 villages are palisaded and defensively situated above steep breaks-in-slope. While the catalyst(s) for initial coalescence has not been clearly defined, one possibility includes aggregation for defense. While it is possible that the source of this threat may have been political instability and conflict among large, complex societies throughout the Midwest and greater Southeast after AD

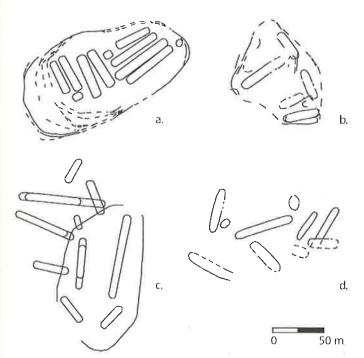


Figure 6.2. Iroquoian village plans, ca. 1250–1350: (a) Uren (Wright 1986); (b) Antrex (ASI 2010); (c) Myers Road (Williamson 1998); (d) Gunby (Rozel 1979).

1200 (Krus 2016; Milner et al. 2013), there is little evidence for direct contact between Mississippian and Iroquoian populations or influence on one another (Jamieson 1992; Williamson and Robertson 1994). Instead, this may reflect tensions between expanding agricultural populations. This may have particularly been so among communities located near the Niagara Frontier, between Lakes Ontario and Erie. Niemczycki (1984) and Emans (2007) have described the rapid nucleation and fortification of villages in western New York as a result of southward population expansion from Ontario beginning after AD 1300, although this hypothesis has yet to be systematically explored.

Social and Political Transformations Accompanying Village Coalescence

Significant social and political developments accompanied initial community coalescence. Primary among these is the development of matrilineal descent and matrilocal residence. Formal leadership and village councils were likely required to facilitate group decision-making, including negotiations over community affairs and the maintenance of external relationships (Pearce 1984:293–304; Trigger

1990:124). Sweeping cultural changes, including mortuary rites, ritual practice focused on semisubterranean sweat lodges, and the elaboration of ceramic pipes and vessels, suggest the expansion of regional interaction and signaling networks between village-communities. In the remainder of this chapter, we explore changes in social and power relations within and between village-communities, with a particular focus on the gendered dynamics involved in this transition. Our focus here is on the ancestral Wendat populations of south-central Ontario, where there is a more robust record of late thirteenth- and early fourteenth-century village life than exists in New York or the St. Lawrence Valley.

Internal Village Dynamics

Rather than viewing the archaeological remains of households and communities as a simple reflection of a social order or cultural template, we must understand how these spaces were constructed through social work—"the labour by which such orders were tenuously composed and ceaselessly tested and contested" (Creese 2016:15).

The populations of the first permanent villages were larger and would have required the development of control mechanisms and decision-making processes (Johnson 1978; Warrick 2000). The increasing importance of communal labor and stored surplus within extended family households is evident in the increasing size of storage vestibules, which tripled in area (Creese 2011:246). Expanding longhouse size suggests the creation of large corporate groups that included one or more households. These larger corporate groups would have served to buffer ing, promoting consensus and cooperation in village-communities (Creese 2011; Hayden 1977; MacDonald 1986). We expect that the rapidity with which coalescence into villages spread across Iroquoia had much to do with the alreadydeveloped social institutions and practices that crosscut communities, together with the adoption of new strategies for meeting the challenges and opportunities of village life. One of these institutions was the clan system, the antiquity and stability of which may have facilitated the transition to larger households, and changes in residence patterns, and provided a familiar structuring mechanism for powerful sociopolitical transitions that accompanied the emergence of larger villages. Trigger (1976:109-110) traces the origins of clans back to the preceding Middle Woodland period with the transformation of patrilineal bilateral bands to clan groups, which claimed a common real or fictitious ancestor. This in turn led to band endogamy and enhanced social alliances among neighbouring bands.

One of the most dramatic changes that accompanied village nucleation was the transition to a largely matrilocal residence and a matrilineal descent system (Hart 2001; Trigger 1976). The importance of female work-groups in horticultural economies has led scholars to link the adoption of matrilocal residence patterns to this transition (Murdock 1949; Ritchie 1965:296; Service 1962; Whallon 1968:236). Indeed, matrilocal residence would have favored inter- and intragenerational continuity in the "perpetuation of agricultural management traditions, innovations, and favourable maize gene complexes under all conditions more strongly than would patrilocal or neolocal residence" (Hart 2001:164). Females, as keepers of agricultural knowledge and anchors of the domestic realm, may have come to possess additional sources of power during the transition to year-round sedentism and an agricultural economy. It is their lives and taskscapes that would have been the most changed with an increasing commitment to village life. As such, we must afford them agency as influential individuals in their kin-groups who may have "pushed the process" of village formation rather than passive receptors of environmental or demographic forces.

The adoption of matrilocality and matrilineality has also been linked to expansion of populations into hostile frontiers (Divale 1984; Jones 2011) insofar as matrilocal residence and village exogamy bolster group solidarity by cultivating crosscutting ties of kinship between dispersed communities within a region. As such, cooperative efforts at the household, village, and regional levels may have more to do with the development of the Iroquoian "cultural pattern" than any one realm of practice on its own.

Regional Dynamics and Ideological Systems

The Iroquoian cultural pattern was characterised by a complex ceremonial cycle that included feasting, gift-giving, and world renewal (Snow 1994; Tooker 1970). Certain of these beliefs and practices will be less archaeologically visible than others. However, others, such as ossuary burial, semisubterranean sweat lodges, and an elaborate pipe-smoking complex, can be traced to the inception of year-round village life in the late thirteenth and fourteenth centuries. In Ontario, Huron-Wendat community-based ossuary burials are found at the turn of the fourteenth century for the first time. These features contain the commingled secondary remains of the dead and represent the majority of individuals who died during settlement tenure of village-communities (Williamson and Steiss 2003). They have been interpreted as representing the transition to the historically documented "feast of the dead," a multiday ceremony involving feasting, gift-giving, mourning, and internment (Wrong 1939). This practice involved both community members and other kin, trading partners, and allies from other communities.

It is also at this time that semisubterranean sweat lodges first appear in the archaeological record (Figure 6.3); they thereafter become ubiquitous (Mac-

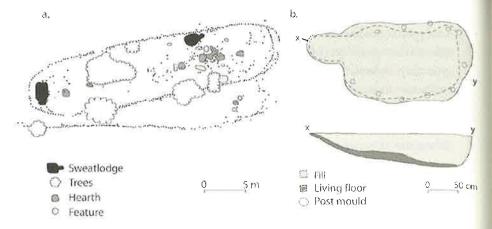


Figure 6.3. Semisubterranean sweat lodges: (a) Locations of two sweat lodges in House 4, Antrex site (reproduced after ASI 2010); (b) Plan and profile of semisubterranean sweat lodge, Feature 500 from House 9, Myers Road site (Williamson 1998:72).

Donald 1988). These features are "turtle"-shaped, covered structures that were typically excavated into the interiors of longhouses or attached to sidewalls. Items such as pipes and the elements of culturally significant animals, including the great horned owl and bear, have been found on their floors (MacDonald and Williamson 2001; Ramsden et al. 1998). They may have served dual roles as loci of ritual activity as well as venues for unrelated males to convene in common ritual practice, thereby alleviating tensions between males inhabiting matrilocal households and generating, through social and ritual practice, ties between different social groups (MacDonald and Williamson 2001). In this way, the changing built environment creates a "dialectical space" for mitigating social stress (Cobb, this volume).

While pipes and the smoking of tobacco have considerable antiquity in the Eastern Woodlands (Rafferty and Mann 2004), their presence in Iroquoian assemblages increases dramatically after AD 1300. Some feature anthropomorphic and zoomorphic effigies or complex iconographic motifs (Noble 1979; Wonderley 2005). Pipes have been linked to curing societies and other ritual or spiritual practices that accompanied increased interaction among hunters, kinsmen, and trading partners in the context of population growth, expansion, and diplomatic relations. Braun (2012) suggests that pipes may have been made by individuals or small groups for personal use, employing a wide range of materials that were personally or symbolically significant. Braun hypothesizes that this may reflect a shift from more group-oriented ritual practices overseen by shamans or religious

specialists, to a more personal or individual practice. That pipes are frequently found intentionally broken in sweat lodges (Braun 2015) links these settings and instruments of practice in meaningful ways.

In terms of ceramics, following the formation of permanent villages there was a general shift from the regional heterogeneity described previously toward increased homogeneity (Williamson and Robertson 1994). This involved rapid and dramatic increases in the manufacture of collared vessels and the use of incised horizontal motifs across most of southern Ontario and central New York State. Incised horizontals may have represented motifs with which women signaled their social networks and membership in the wider Iroquoian cultural arena. Such signaling practices may have been especially important in times of interregional tension or widespread cultural change (Roscoe 2009). Recent social network analysis by Hart and colleagues (2016) has shown that strong network ties existed between Ontario Iroquoian communities in multiple subregions during the late fourteenth century, crosscutting the territories of later nation-based groups.

Concluding Thoughts

In conclusion, the transition to year-round occupation and an agricultural domestic economy was a catalyst for major cultural transformations for Iroquoian societies. The production of surpluses by corporate groups facilitated the means to underwrite the political economy through the hosting of feasts and ceremonials that integrated village members with networks of kin, allies, and trading partners who made up regional networks. In this way, the transition to village life and what we have come to know as the Iroquoian cultural pattern involved both community- and regional-level processes.

This involved transformations in power relations within villages—including the elevation of women's roles in the community through the development of matrilocal residence patterns and, ultimately, matrilineal descent reckoned through the elaboration of the clan system. Women, as the keepers of the domestic realm, would have anchored households, communities, and the domestic economy. Clan exogamy resulted in the extension of kinship and social networks between communities, bolstering societal solidarity by cultivating crosscutting ties of kinship between communities. Indeed, within such a system, men would have been born into one village, married into another, and spent much of their time away from both engaging in hunting, trade, and perhaps war. As such, males may have formed recursive entanglements between their natal villages, villages in which they resided, and the homes of kin and clans dispersed across a wide social landscape. As such, the social and physical labor of males and females, configured through social

relations at the village and regional levels, were both critical, in equal measure, for the realization of the Iroquoian world.

References Cited

ASI (Archaeological Services Inc.)

Report on the Salvage Excavation of the Antrex Site (AjGv-38) City of Mississauga, Regional Municipality of Peel, Ontario. Report on file, Ontario Ministry of Culture, Toronto.

Beales, Eric

A Critical Analysis of the Adoption of Maize in Southern Ontario and Its Spatial, Demographic, and Ecological Signatures. M.A. thesis, Trent University.

Beck, Robin A., Jr., Douglas J. Bolender, James A. Brown, and Timothy K. Earle

2007 Eventful Archaeology: The Place of Space in Structural Transformation. *Current Anthropology* 48(6): 833–860.

Birch, Jennifer, and Ronald F. Williamson

The Mantle Site: An Archaeological History of an Ancestral Wendat Community. AltaMira, Lanham, MD.

Navigating Ancestral Landscapes in the Northern Iroquoian World. *Journal of Anthropological Archaeology* 39:139–150.

Braun, Gregory V.

Petrography as a Technique for Investigating Iroquoian Ceramic Production and Smoking Rituals. *Journal of Archaeological Science* 39:1–10.

2015 Ritual, Materiality, and Memory in an Iroquoian Village. Ph.D. diss., University of Toronto.

Crawford, Gary W., Della Saunders, and David G. Smith

Pre-contact Maize from Ontario, Canada: Context, Chronology, Variation, and Plant Association. In Histories of Maize: Multidisciplinary Approaches to the Prehistory, Linguistics, Biogeography, Domestication, and Evolution of Maize, edited by John Staller, Robert H. Tykot, and Bruce F. Benz, 549–559. Left Coast Press, Walnut Creek, CA.

Crawford, Gary W., David G. Smith, and Vandy E. Bowyer

Dating the Entry of Corn (Zea mays) into the Lower Great Lakes Region. *American Antiquity* 62(1): 112–119.

Creese, John L.

2011 DEYUGHNYONKWARAKDA—"At the Wood's Edge": The Development of the Iroquoian Village in Southern Ontario, A.D. 900–1500. Ph.D. diss., University of Toronto.

Rethinking Early Village Development in Southern Ontario: Toward a History of Place-Making. Canadian Journal of Archaeology 37:185–218.

"Extending the Rafters": The Iroquoian Longhouse as a Sociotechnical System. *Palethnologie* 8:11–30.

DeLaurier, April, and Michael W. Spence

2003 Cranial Genetic Markers: Implications for Postmarital Residence Patterns. In Bones of the Ancestors: The Archaeology and Osteobiography of the Moatfield Ossuary, edited

by Ronald F. Williamson and Susan Pfeiffer, 263–294. Mercury Series Archaeology Paper 163, Canadian Museum of Civilization, Gatineau, QC.

Divale, William

1984 Matrilocal Residence in Pre-Literate Society. UMI Research Press, Ann Arbor, MI.

Dodd, Christine F., Dana Poulton, Paul A. Lennox, David G. Smith, and Gary Warrick

1990 The Middle Ontario Iroquois Stage. In *Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher J. Ellis and Neal Ferris, 321–360. Occasional Publication of the London Chapter No. 5, Ontario Archaeological Society, London.

D. R. Poulton and Associates

1996 The 1987–1989 Archaeological Investigations of the Meadow Ridge East Subdivision, Draft Plan 21T-91020, City of Mississauga, Ontario. Report on file at the Ontario Ministry of Tourism, Culture, and Sport, Toronto.

Emans, Rebecca J.

Tribalization, Ethnic Formation, and Migration on the Allegheny Plateau of Southwestern New York. Ph.D. diss., State University of New York at Buffalo.

Fox, William A.

1986 The Elliott Villages (AfHc-2)—An Introduction. *Kewa* 86(1): 11–17.

1990 The Middle Woodland to Late Woodland Transition. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher J. Ellis and Neal Ferris, 171–188. Occasional Publication of the London Chapter No. 5, Ontario Archaeological Society, London.

Harrison, Roman G., and M. Anne Katzenberg

2003 Paleodiet Studies Using Stable Carbon Isotopes from Bone Bio Apatite and Collagen: Examples from Southern Ontario and San Nicolas Island, California. *Journal of Anthropological Archaeology* 22:227–244.

Hart, John P.

New Dates from Classic New York Sites: Just How Old Are Those Longhouses? Northeast Anthropology 60:1–22.

2001 Maize, Matrilocality, Migration and Northern Iroquoian Evolution. *Journal of Archaeological Method and Theory* 8:151–182.

Hart, John P., and William A. Lovis

Reevaluating What We Know about the Histories of Maize in Northeastern North America: A Review of Current Evidence. *Journal of Archaeological Research* 21:175–216.

Hart, John P., Lisa M. Anderson, and Robert S. Feranec

Additional Evidence for cal. Seventh-Century A.D. Maize Consumption at the Kipp Island Site, New York. In *Current Research in New York State Archaeology: A.D. 700–1300*, edited by Christina B. Rieth and John P. Hart, 27–40. New York State Museum Record 2. University of the State of New York, Albany.

Hart, John P., Termeh Shafie, Jennifer A. Birch, Susan Dermarkar, and Ronald F. Williamson

2016 Nation Building and Social Signaling in Southern Ontario: A.D. 1350–1650. *PLOS ONE* 11(5): e0156178.

Hayden, Brian

1977 Corporate Groups and the Late Ontario Iroquoian Longhouse. *Ontario Archaeology* 28:3–16.

2014 The Power of Feasts: From Prehistory to the Present. Cambridge University Press, Cambridge.

Jamieson, Susan M.

Regional Interaction and Ontario Iroquois Evolution. *Canadian Journal of Archaeology* 16:70–88.

Johnson, Gregory

1978 Information Sources and the Development of Decision-Making Organizations. In Social Archaeology: Beyond Subsistence and Dating, edited by Charles L. Redman, 87–112. Academic Press, New York.

Jones, Doug

2011 The Matrilocal Tribe: An Organization of Demic Expansion. Human Nature 22:177–200.

Kapches, Mima

The Auda Site: An Early Pickering Iroquois Component in Southeastern Ontario.

*Archaeology of Eastern North America 15:155–175.

Katzenberg, M. Anne, Henry Schwarcz, Martin Knyf, and F. Jerome Melbye

Stable Isotope Evidence for Maize Horticulture and Paleodiet in Southern Ontario, Canada. *American Antiquity* 60(2): 335–350.

Kenyon, Walter A.

1968 The Miller Site. Art and Archaeology Occasional Paper No. 14, Royal Ontario Museum, Toronto.

Krus, Anthony M.

The Timing of Precolumbian Militarization in the U.S. Midwest and Southeast. *American Antiquity* 81(2): 375–388.

MacDonald, Robert I.

The Coleman Site (AiHd-7): A Late Prehistoric Iroquoian Village in the Waterloo Region. M.A. thesis, Trent University.

1988 Ontario Iroquoian Sweat Lodges. Ontario Archaeology 48:17–26.

MacDonald, Robert I., and Ronald F. Williamson

Sweat Lodges and Solidarity: The Archaeology of the Hubbert Site. *Ontario Archaeology* 71:29–78.

Milner, George R., George Chaplin, and Emily Zavodny

2013 Conflict and Societal Change in Late Prehistoric Eastern North America. *Evolutionary Anthropology* 22:96–102.

Murdock, George P.

1949 Social Structure. Macmillan, New York.

Niemczycki, Mary Ann P.

The Origin and Development of the Seneca and Cayuga Tribes of New York State. Research Records No. 17, Research Division, Rochester Museum and Science Center, Rochester, NY.

Noble, William C.

1975 Van Besien (AfHd-2): A Study in Glen Meyer Development. *Ontario Archaeology* 24:3–95.

1979 Ontario Iroquois Effigy Pipes. Canadian Journal of Archaeology 3:69–90

Pearce, Robert

Mapping Middleport: A Case Study in Societal Archaeology. Ph.D. diss., McGill University.

Pfeiffer, Susan, Judith C. Sealy, Ronald F. Williamson, Suzanne Needs-Howarth, and Louis Lesage

Maize, Fish, and Deer: Investigating Dietary Staples among Ancestral Huron-Wendat Villages, as Documented from Tooth Samples. *American Antiquity* 81(3): 515–532.

Pfeiffer, Susan, Ronald F. Williamson, Judith C. Sealy, David G. Smith, and Meradeth H. Snow

Stable Dietary Isotopes and mtDNA from Woodland Period Southern Ontario People: Results from a Tooth Sampling Protocol. *Journal of Archaeological Science* 42:334–345.

Pihl, Robert H., Stephen G. Monckton, David A. Robertson, and Ronald F. Williamson

2008 Settlement and Subsistence Change at the Turn of the First Millennium: The View from the Holmedale Site, Brantford, Ontario. In *Current Northeast Paleoethnobotany II*, edited by John P. Hart, 151–172. New York State Education Department, New York State Museum Bulletin Series No. 512, The University of the State of New York, Albany.

Prezzano, Susan C.

Longhouse, Village, and Palisade: Community Patterns at the Iroquois Southern Door. Ph.D. diss., State University of New York, Binghamton.

Rafferty, Sean M., and Rob Mann, eds.

2004 Smoking and Culture: The Archaeology of Smoking Pipes in Eastern North America. University of Tennessee Press, Knoxville.

Ramsden, Carol N., Ronald F. Williamson, Robert I. MacDonald, and Carol Short

1998 Settlement Patterns. In *The Myers Road Site: Archaeology of the Early to Middle Iro*quoian Transition, edited by Ronald F. Williamson, 11–84. Occasional Publication of the London Chapter No. 7, Ontario Archaeological Society, London.

Ramsden, Peter

1990 Death in Winter: Changing Symbolic Patterns in Southern Ontario Prehistory. Anthropologica 32:167–181.

Ritchie, William A.

1965 The Archaeology of New York State. Natural History Press, New York.

Ritchie, William A., and Robert E. Funk

Aboriginal Settlement Patterns in the Northeast. New York State Museum Bulletin 173, The University of the State of New York, Albany.

Roscoe, Paul

Social Signaling and the Organization of Small-Scale Society: The Case of Contact-Era New Guinea. *Journal of Archaeological Method and Theory* 16:69–116.

Rozel, John R.

1979 The Gunby Site and Late Pickering Interactions. M.A. thesis, McMaster University. Schneider, David M., and Kathleen Gough

1961 Matrilineal Kinship. University of California Press, Berkeley.

Schumacher, Jennifer

Exploring Technological Style and Use in the Ontario Early Late Woodland: The Van Besien Site. M.A. thesis, McMaster University.

Schwarz, Henry P., Jerome Melbye, M. Anne Katzenberg, and Martin Knyf

Stable Isotopes in Human Skeletons of Southern Ontario: Reconstructing Palaeodiet. *Journal of Archaeological Science* 12:187–206.

Service, Elman R.

1962 Primitive Social Organization: An Evolutionary Perspective. Random House, New York. Sewell, William H., Jr.

Three Temporalities: Toward an Eventful Sociology. In *The Historic Turn in the Human Sciences*, edited by Terrence J. McDonald, 245–280. University of Michigan Press, Ann Arbor.

Snow, Dean R.

1994 The Iroquois. Taylor and Francis, New York.

1995 Mohawk Valley Archaeology: The Sites. Occasional Papers in Anthropology No. 23, Matson Museum of Anthropology, Pennsylvania State University, University Park.

Stothers, David

1977 The Princess Point Complex. Archaeological Survey of Canada Mercury Series Paper No. 58, Canadian Museum of Civilization, Ottawa, ON.

Thompson, Robert G., John P. Hart, Hetty Jo Brumbach, and Robert Lusteck

2004 Phytolith Evidence for Twentieth-Century BP Maize in Northern Iroquoia. *Northeast Anthropology* 68:25–39.

Timmins, Peter G.

1997 The Calvert Site: An Interpretive Framework for the Early Iroquoian Village. Archaeological Survey of Canada Mercury Series Paper No. 156, Canadian Museum of Civilization, Gatineau, QC.

Tooker, Elizabeth

1970 The Iroquois Ceremonial of Midwinter. Syracuse University Press, Syracuse, NY. Trigger, Bruce G.

1976 The Children of Aataensic: A History of the Huron People to 1660. McGill-Queen's University Press, Montreal.

1981 Prehistoric Social and Political Organization: An Iroquoian Case Study. In *Foundations* of *Northeast Archaeology*, edited by Dean R. Snow, 1–50. Academic Press, New York.

Natives and Newcomers Canada's "Heroic Age" Reconsidered. McGill-Queen's University Press, Montreal.

1990 Maintaining Economic Equality in Opposition to Complexity: An Iroquoian Case Study. In *The Evolution of Political Systems: Sociopolitics in Small-Scale Sedentary Societies*, edited by Steadman Upham, 119–145. Cambridge University Press, Cambridge.

Tuck, James A.

1971 Onondaga Iroquois Prehistory: A Study in Settlement Archaeology. Syracuse University Press, Syracuse, NY.

Warrick, Gary A.

Ministry of Transportation: Archaeological Investigations in the Central Region. *Annual Archaeological Report, Ontario (New Series)* 2:67–71.

1996 Evolution of the Iroquoian longhouse. In *People Who Lived in Big Houses: Archaeological Perspectives on Large Domestic Structures*, edited by Gary Coupland and Edward B. Banning, 11–26. Monographs in World Archaeology No. 27. Prehistory Press, Madison, WI.

- The Precontact Iroquoian Occupation of Southern Ontario. *Journal of World Prehistory* 14(4): 415–466.
- 2008 A Population History of the Huron-Petun, A.D. 500–1650. Cambridge University Press, Cambridge.

Whallon, Robert, Jr.

Investigations of Late Prehistoric Social Organization in New York State. In *New Perspectives in Archaeology*, edited by Sally R. Binford and Lewis R. Binford, 223–244. Aldine, Chicago.

Williamson, Ronald F.

- 1985 Glen Meyer: A People in Transition. Ph.D. diss., McGill University.
- 1990 The Early Iroquoian Period of Southern Ontario. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Christopher J. Ellis and Neal Ferris, 291–320. Occasional Publication of the London Chapter No. 5, Ontario Archaeological Society, London.

Williamson, Ronald F., ed.

The Myers Road Site: Archaeology of the Early to Middle Iroquoian Transition. Occasional Publication of the London Chapter No. 7, Ontario Archaeological Society, London.

Williamson, R. F., and David G. Robertson

Peer Polities Beyond the Periphery: Early and Middle Iroquoian Regional Interaction. *Ontario Archaeology* 58:27–40.

Williamson, Ronald F., and Debbie A. Steiss

A History of Iroquoian Burial Practice. In Bones of the Ancestors: The Archaeology and Osteobiography of the Moatfield Ossuary, edited by Ronald F. Williamson and Susan Pfeiffer, 89–132. Archaeological Survey of Canada Mercury Series Paper No. 163, Canadian Museum of Civilization, Gatineau, QC.

Wonderley, Anthony

2005 Effigy Pipes, Diplomacy, and Myth: Exploring Interactions between St. Lawrence Iroquoians and Eastern Iroquoians in New York State. *American Antiquity* 70(2): 211–240.

Wright, Milton J.

- Excavations at the Glen Meyer Reid Site, Long Point, Lake Erie. *Ontario Archaeology* 29:25–32.
- 1986 The Uren Site (AfHd-3): An Analysis and Reappraisal of the Uren Substage Type Site. Monographs in Ontario Archaeology No. 2, Ontario Archaeological Society, Toronto.

Wrong, George M., ed.

1939 The Long Journey to the Country of the Hurons by Gabriel Sagard (1632). Champlain Society, Toronto.