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Early Palisaded Villages in Southwestern Ontario

William Fox,[a] James Conolly,[a] Andrew Stewart,[b] and Peter Timmins[c]

[a] Department of Anthropology, Trent University, Peterborough, Ontario K9L 0G2
[b] Principal of Strata Consulting Inc., Toronto, Ontario M5S 2P9
[c] Department of Anthropology, Western University, London, Ontario N6A 3K7

ABSTRACT
We review the initiation of palisade enclosed village communities in central southwestern Ontario, using data from a series of related early Late Woodland sites that we interpret as showing an east to west settlement sequence. New AMS dates based on samples of carbonized maize provide a revised chronology for the origin of village life, which began in the twelfth century. We show how villages developed alongside community pattern and ceramic attribute trends into the fourteenth-century middle Late Woodland period. A suite of dates from the most westerly site in the sequence on the Norfolk sand plain document the timing of an abrupt change in community pattern during the late fourteenth century.

KEYWORDS
villages; migration; AMS dating; ceramic attribute seriation; agriculture; conflict

Introduction

The lower Grand River valley and estuaries to the east around the western end of Lake Ontario were home to seasonal horticultural and fishing camps of late Middle Woodland communities defined as the Princess Point complex (Haines et al. 2011; Stothers 1977) and apparently descendant from the earlier Middle Woodland populations of the region (Boyle 1902; Fox 2004; Warrick 1996; Woodley 1996). A settlement pattern of warm-season aggregations and winter dispersals into family groups continued despite the introduction of maize by approximately 400 CE (Crawford, Smith, and Bowyer 1997:114; Crawford et al. 2006).

The transition from seasonal hamlets to settled village life in southwestern Ontario has traditionally been described as having occurred slowly, starting in the tenth century CE and developing into a more widely dispersed pattern of permanently inhabited early Late Woodland (Glen Meyer) village communities by 1300 CE (e.g., Warrick 2000:434; Wright 1966). The chronological sequence is, at least in part, based on a series of wood charcoal dates obtained in the 1980s from the Porteous village site, which calibrated to the late eighth century CE (Fox 1982a). This seemed too early, given dates for earlier "classic" late Middle Woodland Princess Point sites (Fox 1990:180, Table 6.1); consequently, by 1990, the "guess date" for the Porteous

CONTACT William Fox williamfox@trentu.ca

village occupation was sometime during the tenth century (Fox 1990:182; MacDonald 1986a:20). Wide variation in dates led Smith (1997) to suggest that the site was multicomponent; however, there was no evidence for this with regard to the community pattern or the artifact assemblage. As summarized from the current literature, the origins of village life in southwestern Ontario are correspondingly presented as having occurred over 350 years, from circa 900 CE and with the first larger year-round villages established by about 1250 CE (Birch and Williamson 2018).

In this article we provide new accelerator mass spectrometry (AMS) radiocarbon data for Porteous and other related sites as part of a pattern of what we interpret as sequential village movement to the west, from the Grand River valley into the Norfolk sand plain. The data allow us to offer a revised model of transition to the palisaded village community pattern in southwestern Ontario, which puts the critical period for village formation about 200 years later, between approximately 1100 CE and 1300 CE. The early Late Woodland settlement pattern documented in the Otter Creek drainage continues farther west into a series of Middle Ontario Iroquoian settlements and culminates in an early fifteenth-century community pattern of sprawling nonpalisaded settlements, which appear to reflect a dramatic change in the regional political climate. The wider implication is that, at least within this physiographic setting of village formation, there was a relatively rapid transition to permanent palisaded villages with increasing standardization of house design and full-fledged agricultural production following nearly a millennium of low-level food production coupled with seasonal mobility during which maize use was incorporated without having become a driver of settlement change. This community movement west onto the sand plain represents the sort of "progressive territorialization" proposed by Creese (2013:207), with all its inherent social complexity, but at a considerably faster pace than previously envisioned.

History of Research

The investigation of Ontario Iroquoian archaeological sites within the study area by antiquarians and avocational and professional archaeologists has been practiced for close to two centuries (Fox et al. 2018; Smith 1990). One of the earliest reports concerning archaeological investigation of a village site on the Norfolk sand plain is by Daniel Wilson, who describes "Indian relics" and human remains recovered from the Cayuga Quarry site (Fox 1976:170–171, Figure 5) on Patterson Creek immediately north of the town of Simcoe (Wilson 1856). Provincial archaeologist David Boyle made his first trip to the Norfolk sand plain village sites of Malahide Township in 1891 (Boyle 1892:11–12) and a second in 1897 (Boyle 1898:43–44). Subsequently, avocational archaeologist Robert Anderson documented archaeological sites in the same region and remarked on discovering ceramics displaying punctates and nodes (Anderson 1903:85). In 1903, Frank Waugh described a series of village sites in the Brantford area,

including the early Late Woodland Porteous site adjacent to the Grand River (Waugh 1903:77–78).

Following several decades of mentorship with David Boyle, William Wintemberg was hired by the Victoria Memorial Museum in Ottawa and decided to begin his illustrious career of Ontario Iroquoian village excavations at the Uren site within the study area. His substantial excavation was accomplished in September 1920, during which time he mapped the distribution and extent of middens and pit features across the entire site and acquired a representative artifact assemblage (Wintemberg 1928:2–4, Figure 1). Located along Otter Creek on the Norfolk sand plain, the Uren site is situated within a village sequence moving down the creek from east to west (Fox 1976:174, Figure 7).

Following Wintemberg's excavations at Uren, there was little professional research concerning Norfolk sand plain village sites until Tom Lee's regional surveys of the midcentury (Lee 1951, 1952), the only exception being Philleo Nash's two-year excavation of the fifteenth-century Pound village in 1938–1939 (Kapches 2010:121–123). During his 1949 National Museum survey of southwestern Ontario, Lee defined the "Glen Meyer Focus," which displayed material culture "typologically later than Owasco and earlier than Uren" (Lee 1951:45) based on a series of 10 sites located between Port Rowan and Wheatley along the north shore of Lake Erie. He noted that "the sites tend to be large, ranging up to ten acres in size. . . . Several are in good defensible positions on high ground" (Lee 1951:45). Following Lee's departure from the National Museum, James Wright used Lee's survey collections to further define Glen Meyer material culture in his doctoral dissertation (Wright 1966:24–40), including Lee's artifact collections from Norfolk sand plain sites such as Stafford, Woodsmen, Reid, Too, and the 7-acre Goessens village (Lee 1951:45), adjacent to the community of Glen Meyer.

It was not until 1969 that the University of Toronto returned to the Otter Creek drainage, investigating the DeWaele village (Fox 1969), while McMaster University spent two seasons excavating the neighboring Van Besien village in 1971–1972 (Noble 1975). Following limited site testing and an area survey, extensive excavation of the DeWaele village occurred in 1971 (Fox 1976:173–190). Subsequently, Milt Wright excavated the multicomponent Reid village site just north of Long Point in 1976 (Wright 1978) and returned to the Otter Creek drainage to reexcavate the Uren village in 1977 (Wright 1986).

Farther west on the Norfolk sand plain, Dana Poulton (1980) conducted an extensive survey of the Catfish Creek drainage in 1980 for the Long Point Region Conservation Authority; while to the south, the Ministry of Culture and Communications Long Point survey in 1984 identified 17 sites ranging from Middle Woodland to precontact Neutral (Fox 1985:Table 1). Previously, in 1982 and 1983, the Varden site (Foreman and Molto 2010; MacDonald 1986a) and subsequently the Pfingstgraef site (Fox and Molto 1994) on Long Point were salvage excavated prior to complete destruction by Lake Erie storms.

During the final decade of the twentieth century and up to the present, all archaeological excavation of Late Woodland sites on the sand plain has been undertaken on a contract basis by cultural resource management (CRM) archaeology firms. These include excavation of the special-purpose Finch site (Pihl and Cox-Thomas 1997); the large unpalisaded Tillsonburg village (Archaeologix 2002; Golder Associates 2009; Parry 2017, 2019; Spence 2011; Timmins 2009); the Tillsonburg Village 2 site, which is considered to be part of the Tillsonburg village (Timmins Martelle Heritage Consultants [TMHC] 2021); and the early Late Woodland Silvercreek 9 and 15 sites (TMHC 2013a, 2013b).

It should be noted that the terms *Princess Point*, *Glen Meyer*, *Uren*, and *Middleport* used in this article are all twentieth-century culture-historical taxa created by archaeologists primarily to describe similarities in material culture and settlement patterns and do not imply internally homogenous or ethnolinguistically distinctive population units from the past.

Physiography

The settlement region described here consists, in very broad terms, of two areas of contrasting ecology based on differences in surface geology (Figure 1). To the west, the Norfolk sand plain consists of pure sand, originating as deltaic and glaciolacustrine shallow water deposits of the early postglacial lakes (Barnett 1978; Chapman and Putnam 1984:154). Sand was subsequently modified by wind to form dunes, built to over 12 m high. Aeolian redeposition occurred across this area in the early postglacial period, and driven by prevailing westerly winds, shallow deposits extended eastward to form local veneers of sand and silt across the western part of the adjacent Haldimand clay plain. In the Norfolk sand plain, cropping in the nineteenth and early twentieth centuries was limited by scarcity of organic material (humus) and the ease with which the sand surface eroded once cleared. Early European observers noted "oak plains" with "small pine with sassafras," and a century or so later, following cultivation, it was described as "waste land" (Riley 2013:212–213).

The Grand River and its tributaries flow through this region and continue into the Haldimand clay plain to the east. Alluvium in the floodplains and former floodplains, particularly along the Grand River and Fairchild Creek, is dominated by sand and silt but also includes clay and gravel (Cowan 1972).

Most of the Norfolk sand plain is drained by smaller rivers—such as Big Creek, Big Otter Creek, and Catfish Creek—flowing in a southwesterly direction into Lake Erie. The larger of these have cut deep valleys. Big Creek has cut a 20–25 m deep valley containing up to four terraces. Modern alluvium along these streams is thick compared to that along streams on the Haldimand clay plain, where shallow bedrock tends to limit net deposition of alluvium (Chapman and Putnam 1984:154).

East of the Norfolk sand plain and on either side of the Grand River valley, the Haldimand clay plain presents a different set of ecological conditions. Originating as glaciolacustrine deep-water sediments (Barnett 1978), the clay plain supports

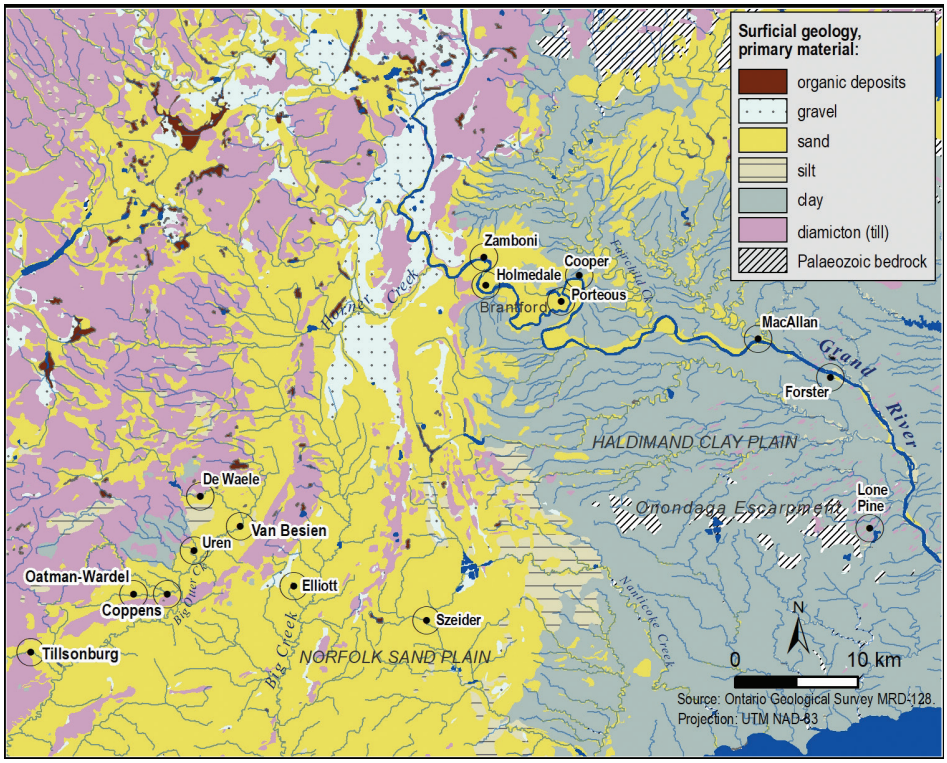

Figure 1. Archaeological village distribution in relation to surface geology and drainage.

heavier-textured, more poorly drained soils. Subdued morainal and beach ridges east of the Grand River provide small areas of lighter soil, but much of this area is level, with deep deposits of poorly drained clay containing wet sloughs, especially north of the outcropping Palaeozoic bedrock (Onondaga Escarpment) shown on the map (see Figure 1; Chapman and Putnam 1984:156). This clay plain, in contrast to the Norfolk sand plain, supported swamp hardwoods like white elm, black ash, pin and swamp white oak, silver maple, willow, and cottonwood (Waldron 2003:43).

Regional Settlement Pattern

The distribution of select early Late Woodland village and late Middle Woodland campsites within the study area is presented in Figure 1. As reported by Stothers (1977) and researched by Crawford and colleagues (1997), Fox (1984, 1990), Pihl (1999), and Smith and Crawford (1997), a substantial late Middle Woodland Princess Point complex occupation of the lower Grand River valley flats has been documented, followed by an early Late Woodland Glen Meyer occupation of the valley edge (Noble and Kenyon 1972; Smith and Crawford 1997; Warrick 1983; Woodley 1994; Woodley et al. 1992). To the east of the valley, the closest early Late Woodland settlements are situated in the regional municipality of Hamilton, some 40 km distant (ASI 2004, 2007; Donaldson 1964; Fox 1967; Haines et al. 2011:238, 251;

Robert 1996; Rozel 1979; Stothers 1977:29; Welsh and Williamson 1994). To the west of the valley, the only occupations on the Norfolk sand plain producing late Princess Point-like ceramics are the Varden fishing camp on Long Point (Fox 1976:168, 1985; MacDonald 1986a, 1986b) and the Silvercreek 9 and 15 sites on Silver Creek (Mather 2015; TMHC 2013a, 2013b), but a widespread distribution of Glen Meyer and Uren-Middleport villages has been documented (Fox 1969, 1976, 1985, 1986; Lee 1951; Poulton 1980; Williamson 1990:304, Figures 9.1, 9.2; Wright 1966; Wright 1978).

The relatively high percentage of exterior punctates characteristic of Princess Point ware on ceramics recovered from Glen Meyer sites immediately west of the Grand River, such as Szeider, suggests there was population movement west, out of the river-valley flats and onto the Norfolk sand plain. This movement westward is also represented by Village II at the Elliott site on Big Creek and by the pioneering Van Besien village in the Big Otter Creek drainage, where the "late Princess Point" neck motif of "opposed filled rhombi" (Stothers 1977:93, Plate VIII, Item 2, Plate XI) is represented (see Figure 1; Noble 1975:72, Figure 21, Item 9). Similar early Glen Meyer ceramics displaying "nested L-shaped or right-angled line design" equated with "filled rhombi" among the Porteous ceramics (Mather 2015:86) have been reported on small nut-harvesting and deer-hunting camps producing Western Basin Younge phase ceramics to the west on the Silver Creek drainage (Mather 2015).

Up to 15% of the sand plain was covered by prairie and oak savanna (Bakowsky and Riley 1994:10), which would have been attractive to a population increasingly invested in corn horticulture because the amount of requisite forest clearance was limited. Bakowsky and Riley (1994:10) provide the following quote from William Pope's 1834 journal describing the plains west of Brantford as "[t]imber scattered in single trees and small patches in mostly oak. Indians formerly accustomed to set fire to the brushwood in order to clear the land that grass might more freely grow which furnished plenty of food for deer. Thus these animals were enticed from all the surrounding forest." This strongly suggests that the Norfolk sand plain constituted prime deer-hunting habitat.

Early Late Woodland Community Patterns

The eleventh-century terminal Princess Point complex Holmedale site community pattern (Figure 2) describes a few small ephemeral lodges and what would best be characterized as a single-post line wall aligned to protect against winds from the north and northwest (Pihl 1999). Such a windbreak would protect structures behind it from the winds predominating in the winter season, as well as from snow squalls, a function previously suggested for the palisade surrounding a thirteenth-century village (Reid 1975:40).

By the twelfth century, Porteous village was surrounded by a substantial double palisade and contained a variety of lodge forms (Figure 3; Stothers 1977:125). The contemporaneity of the two lines of palisade post molds cannot be proven,

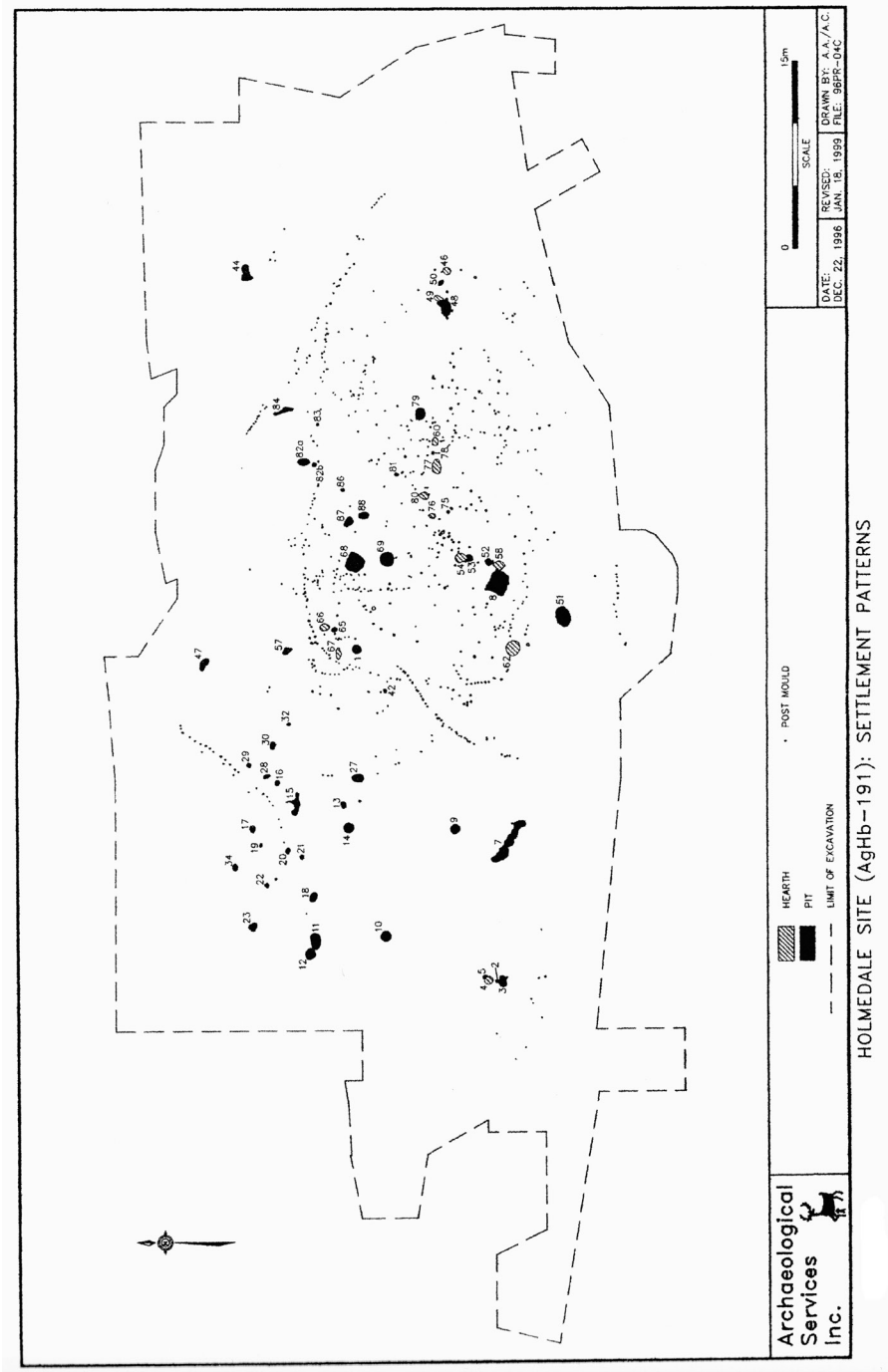

Figure 2. Holmedale community pattern (Pihl 1999:7, Figure 1.5; used with permission).

and the site is no longer available for investigation. It should be noted that the tightest alignment of the two lines parallel the northwest abrupt break in slope and the greatest exposure to winter winds. Short lodges measuring 8.5 m to 14.6 m in length and 6.1 m to 7.3 m in width were documented, as was a round structure (Stothers 1977:124). House rebuilding is evidenced by overlapping structures (see Figure 3, Houses 3 and 4), as well as possible in situ reconstruction (Houses 3 and 5), similar to what was found in the Elliott villages. *In situ reconstruction* refers to parallel sidewall lines, which reflect rebuilding, and may represent a contraction in width and living area, as in House 4 on the Elliott II village. The Porteous rounded ends may display central doorways (House 4), again similar to Elliott, but there is no evidence of house-length extensions. Finally, among the eight ancestral remains from the site, a leg bone "exhibited a ground and polished surface (Burns 1977:276), representing the earliest occurrence of a possible human bone artifact on Northern Iroquoian sites" (Williamson 2008:203).

The thirteenth-century Van Besien village on Otter Creek contains a range of lodge forms and a double to triple palisade, with evidence of village expansion (Figure 4; Noble 1975:9). While the north end of House 2 is poorly defined, the lengths of House 1 (23.8 m including vestibules at both ends) and House 3 (15.8 m) are greater than those in the Porteous village and in Elliott Village III, where the longest structure measures 14.3 m (House 18). The Van Besien longhouses display a standard Iroquoian internal organization, particularly House 1, with a line of central hearths and associated "ash pits" (Fox 2021; Noble 1975:Appendix A) and lines of larger-diameter internal support posts on either side of the central walkway. The latter are assumed to be longhouse structural elements supporting the roof and providing sleeping platforms raised above the house floor (Kapches 1990:51). The ends of House 1 and perhaps 2 display central entranceways similar to those in the Porteous structures.

The Elliott site community pattern in the upper Big Creek drainage is highly complex and displays a variety of lodge forms with a series of single palisades (Figure 5; Fox 1986). This complexity is due in part to one village (Village III) being built over an earlier one (Village II), following an occupation hiatus of approximately a quarter to half a century.

The earlier Village II outlined in blue is contemporaneous with the pioneering Van Besien village to the northwest in the Otter Creek drainage. Houses in this village range in length between 5.7 m and 18 m (Houses 8 and 6), with the same houses being 4 m and 7 m in width, respectively. Village III house lengths, outlined in purple, vary from 8.6 m to 14.3 m in length and 6 m to 7 m in width (Houses 22 and 18, respectively). Unlike the Van Besien site, but similar to the earlier Porteous village, both Elliott villages display in situ reconstruction of houses (see Figure 5). The only extension to an existing structure occurs in Village II with House 6, the longest in the village. Standard Iroquoian internal longhouse architecture is evident in houses from both Elliott villages, particularly in the longer structures, while central end entranceways are the norm.

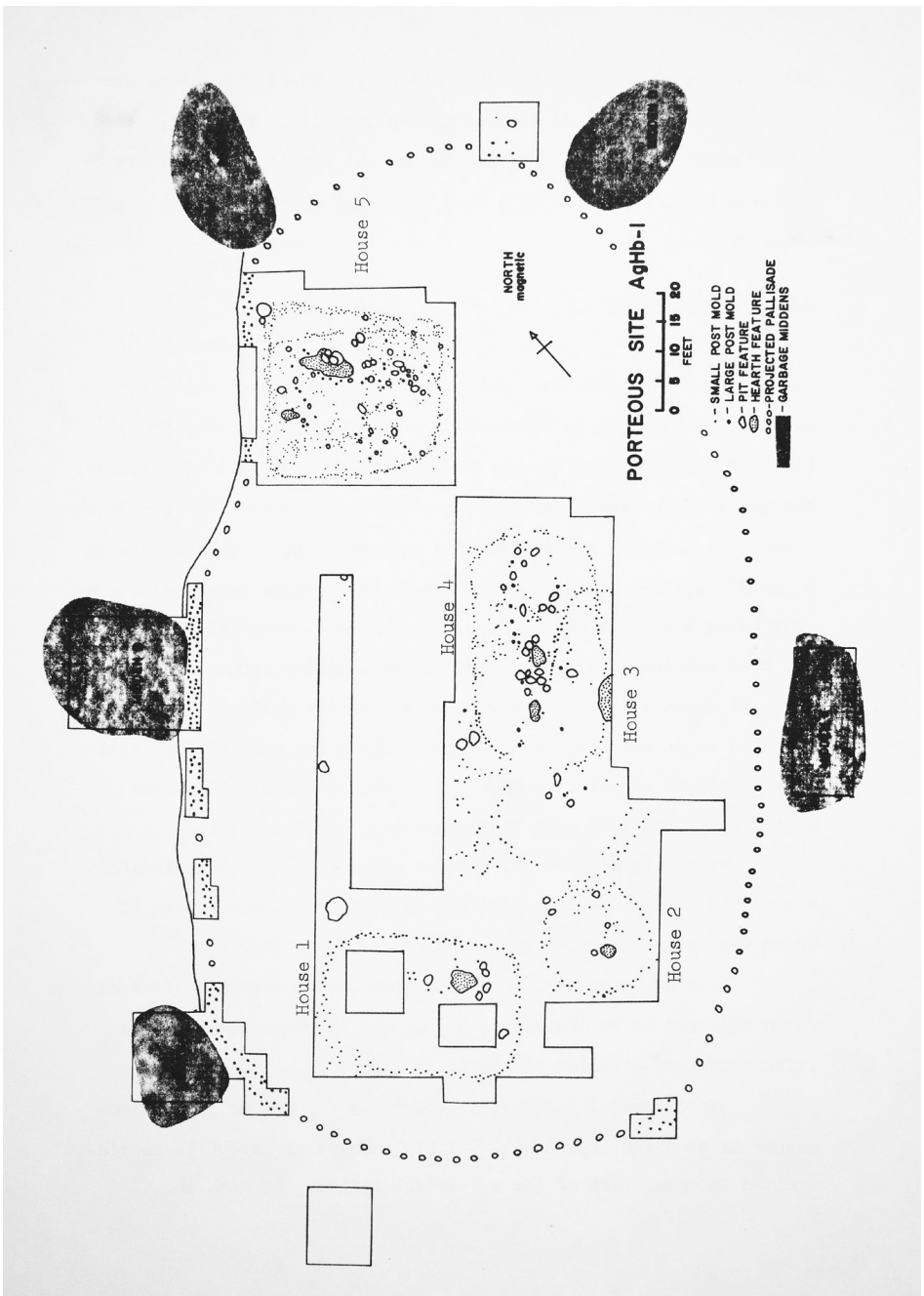

Figure 3. Porteous community pattern (Stothers 1977:125, Map 8).

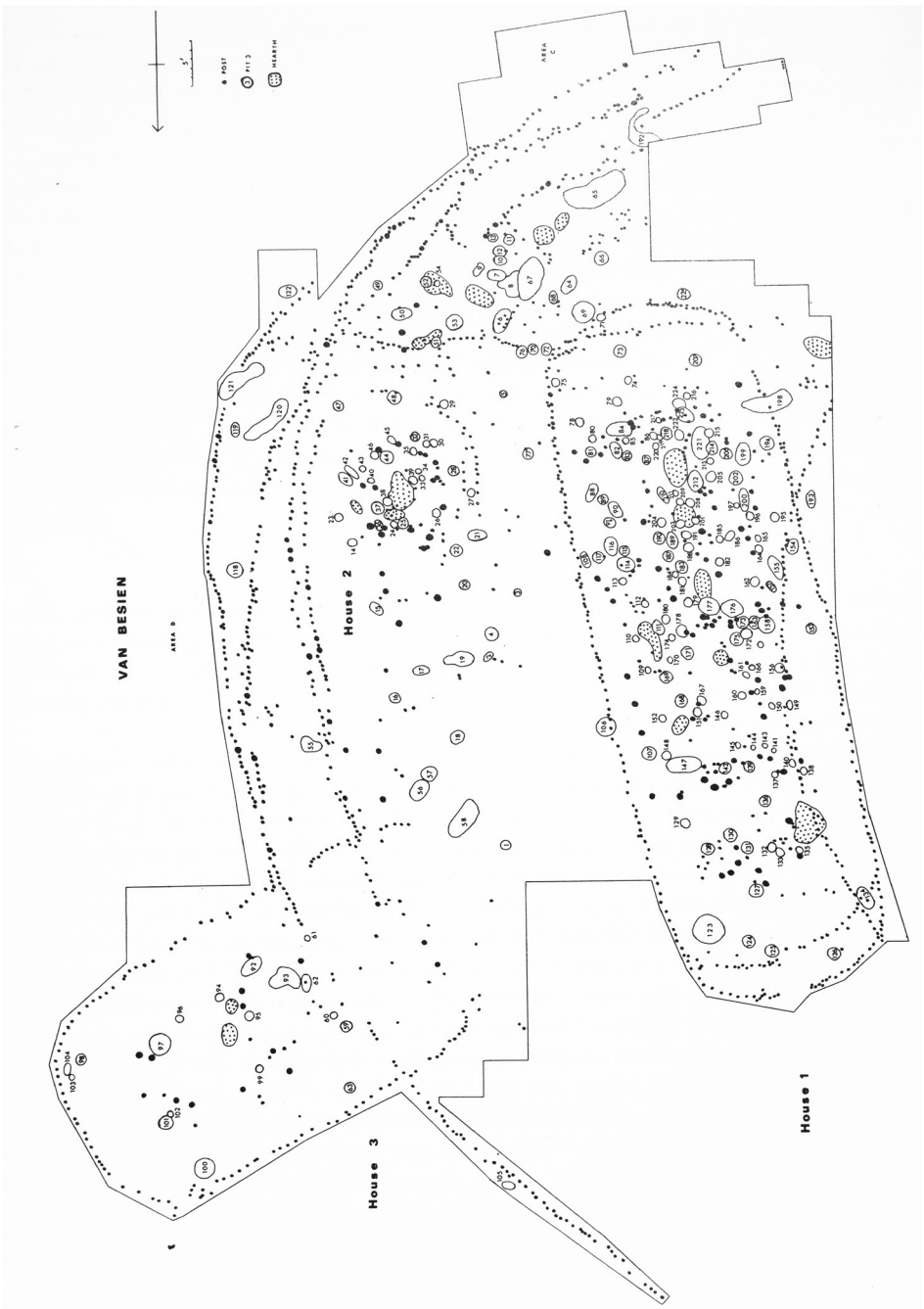

Figure 4. Van Besien community pattern (Noble 1975:8, Figure 2).

Figure 5. Elliott villages (after Fox 1986:15, Figure 4). Green: Village I palisade; Blue: Village II; Purple: Village III.

Toward the end of the thirteenth century in the Otter Creek drainage, the complex DeWaele community pattern (Fox 1969, 1976)—containing a variety of lodge forms, some unusual corporate structures, interstructural walls, and a double to triple palisade (Figure 6)—emerged. Unfortunately, no longhouses were completely exposed, but we do know that House 4 exceeded 19 m and that House 1 was over 15 m in length, with both displaying widths of 6.8 m, as does House 5. Again, the internal organization of these houses is consistent with the Iroquoian standard, and Houses 1 and 4 have central end entranceways, although there also appear to be two openings along the northeast sidewall of House 1.

Two structures are, so far, unique to the DeWaele village site. House 3 has been proposed as having served as a communal storehouse (Fox 1976:180–185, Figure 9). At the north end of the site, a possible village gatehouse displaying wall trenches encompasses what appears to be an entranceway at the north end of the palisade (Fox 1976:178, 180, Figure 8). A double wall line connects House 1 to House 3 and House 1 to a possible oval structure to the northwest (Figure 6).

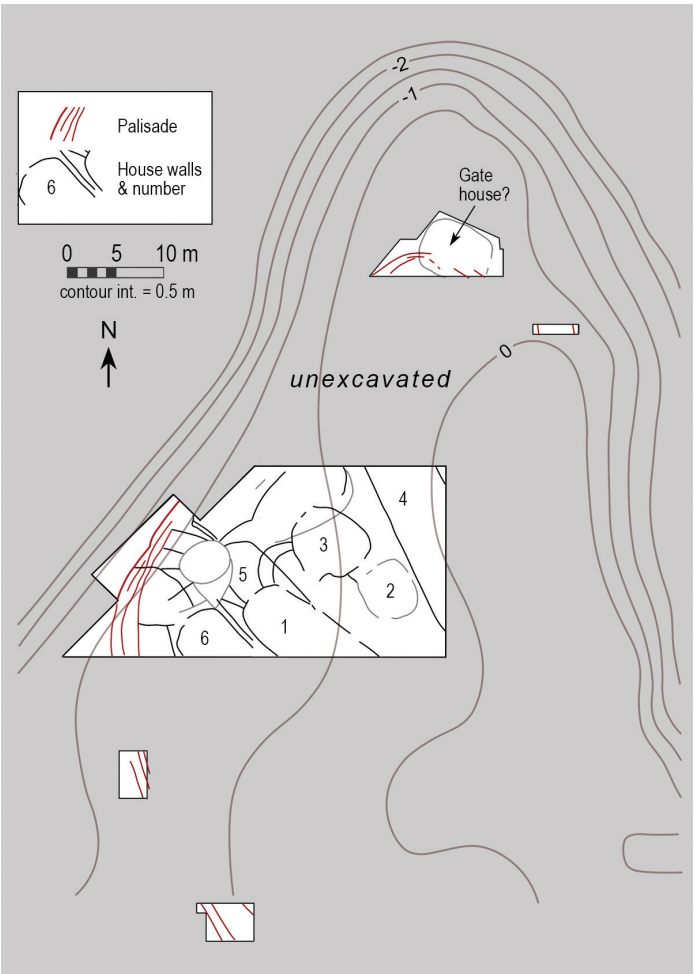

Figure 6. DeWaele community pattern.

Such walls are argued to have been defensive in nature, compartmentalizing the village (Fox 1976:178, 187). Similar single to triple walls connected structures on the Elliott site (see Figure 5).

Between the DeWaele village and the mid-fourteenth-century Uren village to the west there are at least three unexcavated villages (Fox 1976:174, Figure 7), possibly representing paired or partially overlapping transitional settlements related to the nearby Van Besien and DeWaele villages. The Uren village may have included several satellite hamlets (Fox 1976:173) and displays what appears to be a less complex community pattern containing two neighborhoods, each with distinctive house orientations; a fluctuating single- to double-wall palisade (possibly seven row; Figure 7; see Wright 1986:12); and a ceramic complex dominated by horizontal motif decoration with a lack of exterior punctates.

Unfortunately, detailed community-pattern documentation is not available; however, we can say that there are again a variety of structures, including longhouses from 25 m to 50 m in length and 6.5 m to 7.5 m in width (Wright 1986:14, Table 1). Only two longhouses (1 and 5) were completely excavated. Their interiors, plus the interiors of exposed sections of other longhouses, display the standard Iroquoian layout of a central passageway with aligned hearths and associated smaller Type 2 (Fox 1976:182–183, Figure 10) pits and bilateral internal support-post lines, with some identifiable house-end entranceways (Wright 1986:14–15, 56–60, Figures 37–40). Large Type 1 storage pit features were located

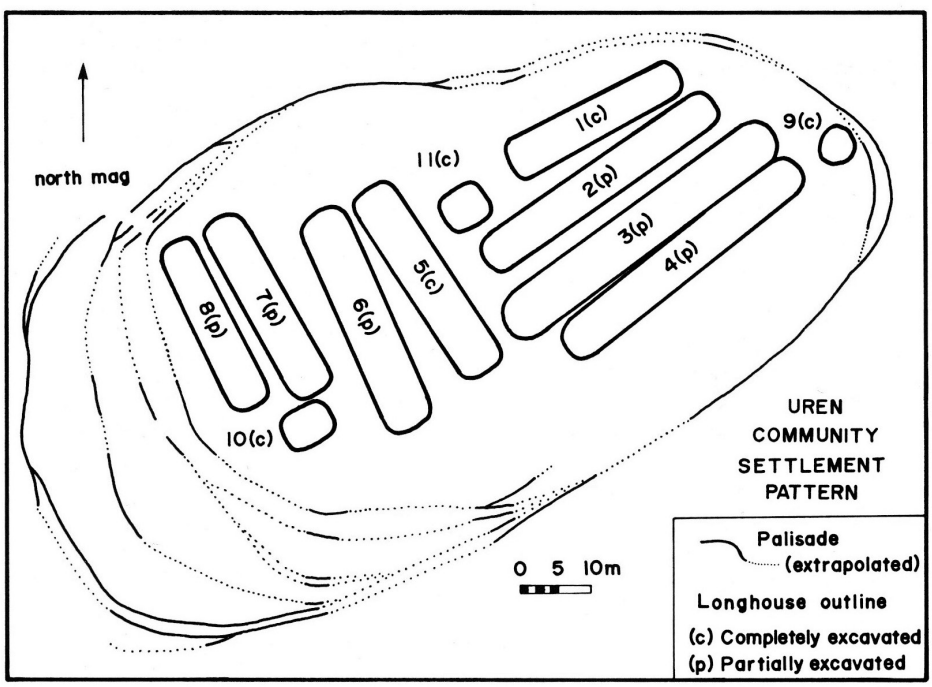

Figure 7. Uren community pattern (Wright 1986:Figure 5).

at the end of some houses, and there may be some interstructural walls between longhouses and special purpose nonlonghouse structures (Wright 1986:15).

Two characteristics differentiate the Uren community pattern from the patterns of earlier villages: the lack of overlapping replacement houses and the apparent dual neighborhood organization based on house alignments. Finally, there is a major difference from earlier villages in that 35 whole and fragmentary ancestral remains, including a partially articulated mortuary feature of three individuals, were located in pit and post features (Wright 1986:17). Some earlier villages have produced a small number of scattered human bone fragments, including Porteous (Noble and Kenyon 1972:29), Van Besien (Noble 1975:42), and Elliott Village III (Fox and Salzer 1999; Spence 1988), none of which can be considered funerary features (Spence 1988:19). These thirteenth-century ancestral remains appear to be elements rejected from bundles prepared for multiple funerary features on warm-season fishing stations adjacent to Long Point Bay to the south (Fox 1976:170–172; Spence 1994:15). Only the twelfth-century Porteous village produced what may have been a curated human-bone tool (Burns 1977:276).

A series of three "Uren substage" (Dodd et al. 1990; Wright 1966:54–55) village sites, some of them quite large and producing horizontal motif ceramics and containing mortuary features, extend the village movement settlement pattern downstream to the west. These include the Coppens and extensive 5-hectare Oatman-Wardel site (Fox 1986:15–17, Figure 10). The sprawling Tillsonburg site, with scattered longhouses and no palisades (Parry 2019), is located farthest west in this Norfolk sand plain sequence and is one of the later settlements (see Figure 1).

The Tillsonburg village consists of 16 widely dispersed houses covering an area of approximately 18 ha (Figure 8). The houses occur in clusters and include a northwestern cluster (Houses 1–6), a southwest cluster (Houses 6–8), a poorly preserved central cluster (Houses 9–10), and an eastern cluster (Houses 11–15; Golder Associates 2009; Parry 2017, 2019). Most recently, a northern area, designated Tillsonburg 2, has been uncovered about 100 m north of the northwestern cluster and separated from it by a former railroad right-of-way that now functions as a rail trail (TMHC 2021). It is represented by one excavated house (House 16) and potentially more houses in unexcavated areas beneath the rail trail and west of the single documented house (see Figure 8).

The Tillsonburg houses show significant variability in size. The northwest, central, and southwest areas were heavily affected by construction prior to excavation, and the three complete houses in the northwest cluster (Houses 1, 2, and 5) range in length from 49.6 m to 51.8 m and from 7.5 m to 7.8 m in width. Although feature and post preservation was not optimal, these houses clearly display typical Iroquoian house-interior features, with small features clustered around central hearths, interior support posts, and identifiable entrances in house ends. Houses 4 and 5 both had large features interpreted as semisubterranean sweat lodges (MacDonald and Williamson 1996) located along the inside of house walls, appended to houses, or immediately adjacent to them. House 1, the best preserved

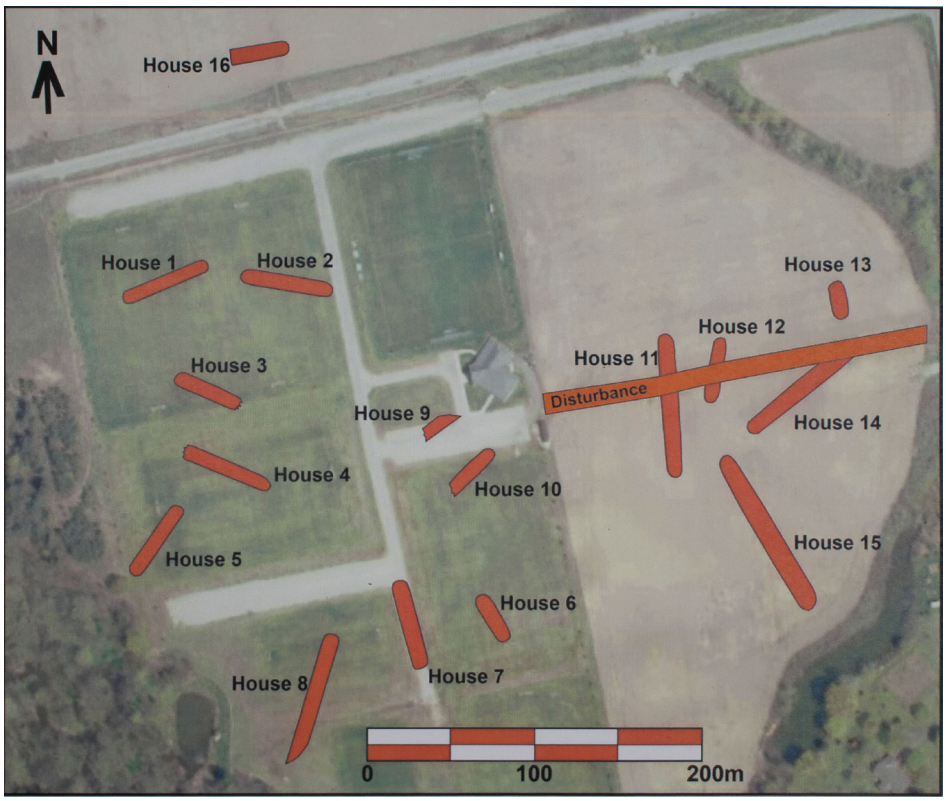

Figure 8. A composite plan of the Tillsonburg village (after Parry 2017:Figure 2) and the Tillsonburg 2 village (based on TMHC 2019:Map 9).

of this group, appears to have originated as a small structure (13.2 × 6.5 m) before having been extended to its 50.5 m length.

The three houses in the southwest cluster (Houses 6, 7, and 8) showed more size variability, ranging from 27.7 m to >74 m in length and 7 m to 8 m in width. All three houses have some preserved central hearths and many small features clustered in central corridors, with entrances observable in house ends. House-end form is variable, ranging from rounded to tapered and squared (House 8). While lines of large interior support posts are evident 2–3 m inside house walls, large storage/refuse pits along house walls are few. All three houses feature classic turtle-shaped sweat-lodge features located just inside house walls.

Central cluster Houses 9 and 10 were the most heavily affected and poorly preserved structures on the site, yet they still yielded useful data. Intact excavated portions were 23 m and 33 m in length, respectively, while only House 10 had a measurable width of 7.6 m. Central hearths were preserved in both houses, and House 9, in particular, had a high density of small interior features in the central corridor and one large semisubterranean sweat lodge. The intact eastern end of House 10 displayed a well-preserved tapered and squared end and a clearly defined end cubicle delineated by an interior wall.

In contrast to the westerly part of the site, which was initially affected by construction and subsequently salvage excavated, the easterly area was subjected to a full archaeological assessment prior to development, resulting in the recovery of better-preserved community-pattern data. The houses of the eastern cluster (Houses 11–15) were variable in size, ranging from 18.5 m to 89 m in length and 7.5 m to 9 m in width. The three largest houses (11, 14, and 15) contained a high density of interior features, with multiple well-preserved central hearths and numerous small ash pits, and in contrast to the westerly houses, they had many large features classified as storage/refuse pits. Interestingly, House 15 had a very high density of features around hearths in both the northern and southern areas, separated by a 25-meter-long area of very low feature density that may have functioned as a special-purpose or communal living space (Golder Associates 2009:26). Entrances are apparent in both ends of large Houses 11 and 15. The west end of large House 14 shows two possible entrances, one at each house corner, but the east end of the house was destroyed by previous disturbance and not observable. The smaller Houses 12 and 13 appear to have entrances at only one end. House-end configurations are both round and tapered, with tapered, squared-off ends present in Houses 14 and 15. Clearly defined end storage areas are seen in all houses except for the small House 13. Semisubterranean sweat lodges occur in Houses 13, 14, and 15 but are absent in the small House 12 and large House 11. In general, the small Houses 12 and 13 have fewer features and lower feature densities than the larger houses do, but they each have numerous outside features associated with them.

The most northerly area of the Tillsonburg village is represented by House 16, which has only been partially excavated. The exposed portion of the house measures 32.8 m in length and is 8 m wide. The exposed east end has a tapered end shape. TMHC identified two possible doorways at the east end of the house: one along the north wall and one in the end wall (TMHC 2021:25). Two short single-post rows that may have functioned as windbreaks extend easterly from the house entrance (TMHC 2021:25). Hearth preservation within the house was poor, with only one hearth defined; however, several clusters of small ash pits in the central corridor probably surrounded central hearths that were not preserved (TMHC 2021:26). Intermittent lines of large support posts run parallel to the north and south walls of the house delineating "bunk lines" commonly found in Iroquoian house interiors, and a few large storage/refuse pits were located between the house walls and the lines of support posts (TMHC 2021:26–27). A storage cubicle at the east end of the house contained a large feature interpreted as an end storage pit (TMHC 2021:27). Ancestral remains were discovered in two features within House 16, leading the proponent to cease the Stage 4 investigation before all 134 potential features were excavated (77 were excavated). While no definitive sweat lodges were identified within the house, one large unexcavated pear-shaped feature located just south of the eastern house end is likely a sweat lodge.

It is likely that the formation of the sprawling Tillsonburg village was the result of an early phase of community coalescence similar to that seen in other Middle

Iroquoian site sequences in southern Ontario (Birch and Williamson 2018; Parry 2017). Parry's analysis of the Tillsonburg village (excluding the Tillsonburg 2 area) clearly demonstrated that the easterly house cluster was slightly earlier than the northwestern house cluster based on trends in ceramic vessel types and decorative complexity (Parry 2017:79–87). Further, Parry demonstrated that there are a series of decorative idiosyncrasies found in the westerly houses (northwest, southwest, and central clusters) that do not appear in the eastern house cluster (Parry 2017:88–91). Yet a pattern of overall uniformity in ceramics and longhouse attributes suggests that the Tillsonburg house clusters were largely contemporaneous, with the eastern houses having been established first and the western house clusters established as additional social groups joined the village (Parry 2017:125).

Early Late Woodland Ceramic Decorative Trends

David Boyle, in his first annual report, describes early Late Woodland interior punctate, external boss ceramics from the Balsam Lake and Port Colborne areas (Figure 9; Boyle 1888:19–20, Figures 6, 7). The variety of decorative attributes traditionally recorded include neck punctates, which can be impressed from the outside or the inside of the vessel. Round exterior punctates are characteristic of Princess Point ware, while many Glen Meyer and some Uren vessels display interior punctates, often producing exterior nodes (Figure 10; Waugh 1902:114).

Table 1 provides the frequency of vessels with interior (I) and exterior punctates (E), and Figure 11 illustrates the proposed temporal trajectory based on seriation.

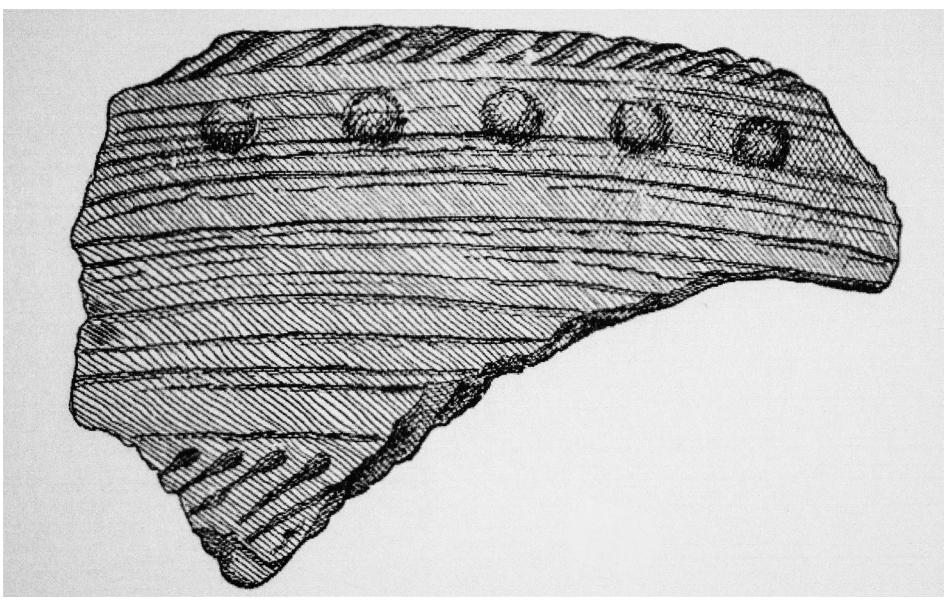

Figure 9. Interior punctate rim from "near Balsam Lake" (Boyle 1888:20, Figure 6).

Figure 10. Princess Point vessel from the Varden site (*left*) and a horizontal motif vessel with interior punctates and exterior bosses from the Uren village (*right*; Wintemberg 1928:81, Plate XV).

Table 1. Rim Frequencies with Punctate Attributes.

Site	Exterior	Interior	None	*N*
Holmedale	51	7	8	66
Porteous	94	41	176	311
Van Besien	39	161	623	823
Uren		160	589	749
DeWaele	5	19	215	239
Elliott 2	16	22	26	64
Elliott 3	6	30	15	51

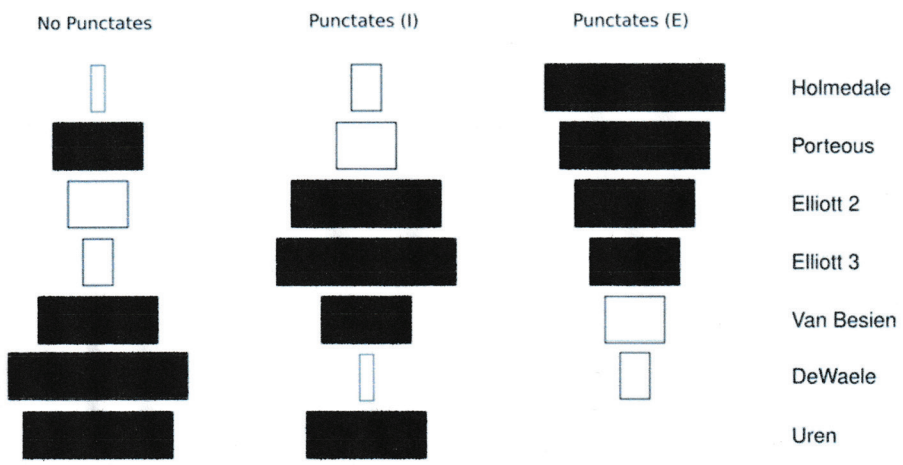

Figure 11. Seriation for the six villages based on frequency of exterior and interior punctates.

The anomalously low percentage of interior punctates on DeWaele vessels can be explained by the small size of the rim sherds, which averaged approximately 2–3 cm in height while punctates were often located 3–4 cm below the lip of the vessels, based on larger rim sherds and vessel sections. Further, punctates "become more widely spaced late in Glen Meyer development" (Wright 1986:42). The Van Besien assemblage is essentially contemporaneous with the Elliott village II ceramics, and its relatively low exterior punctate percentage may reflect a stylistic change established as the population moved farther west into the Otter Creek drainage. The ceramic decorative trends displayed in the application of lower rim or neck punctation during a period of two centuries present a stylistic mechanism for dating population movements and refining settlement pattern data within the study area. These temporal trends may be applicable to other populations of incipient maize agriculturalists as they colonized sand plains elsewhere across southern Ontario.

Early Late Woodland Village Chronology

A series of 41 new AMS dates is presented in Table 2 for sites in this study. Other dates are available for several of these sites, reported in the literature cited previously and in Smith (1997), but we consider them unreliable because most are radiometric rather than AMS, have large standard deviations, and are typically based on bulk carbon samples amalgamated from several features.

We derived estimates of the calendric dates for each of the villages in a Bayesian model (OxCal version 4.4) in which sites were considered as independent phases. The OxCal code for the model is provided as supplementary information. No further temporal relationship between sites was assumed in this model to avoid unduly constraining the sequence. No outliers were identified in the modeling process, and the final model is robust, with an agreement index (A) of 132.6. Table 3 provides the dates generated from this model, the distributions of which are illustrated in Figure 12.

These results substantially revise our understanding regarding the initial movement of horticultural populations into palisade-enclosed villages in Ontario. The Porteous village occupation dates to the twelfth century, and the later Glen Meyer villages all sit firmly within the thirteenth century. The Uren type site dates to the early fourteenth century, a little later than past estimates, while the Middleport Tillsonburg site dates to the late fourteenth century, consistent with Wright's original estimate (Wright 1966:64). The obvious gap between Uren and Tillsonburg reflects the fact that there are three intervening villages that have not been investigated. These new dates provide a revised temporal context for a variety of Early Iroquoian Ontario data, including subsistence, material culture attributes, and early village structure.

Table 2. AMS Radiocarbon Dates Used in This Study.

Site	Lab Code	Date and SD	$\delta^{13}C‰$	Fractionation Corrected	Method	Material	Source
Holmedale	TO-6709	1010 ± 70	Unknown	Unknown	AMS	Charred maize kernel	Pihl et al. 2008
Holmedale	UOC-16305	906 ± 30	Not reported	Yes	AMS	Charred maize kernel	This study
Holmedale	UOC-16306	878 ± 32	Not reported	Yes	AMS	Charred maize kernel	This study
Holmedale	UGAMS-59371	970 ± 25	−8.8	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Holmedale	UGAMS-59372	970 ± 20	−7.7	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Holmedale	UGAMS-59373	1090 ± 20	−7.8	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Holmedale	UGAMS-59374	960 ± 20	−8.1	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Porteous	UOC-13128	878 ± 28	Not reported	Yes	AMS	Charred nutshell	This study
Porteous	UOC-13129	841 ± 25	Not reported	Yes	AMS	Charred maize kernel	This study
Porteous	UOC-13519	876 ± 27	Not reported	Yes	AMS	Rerun of 13129	This study
Porteous	UOC-13130	888 ± 26	Not reported	Yes	AMS	Charred maize kernel	This study
Elliott II	UOC-4223	813 ± 35	Not reported	Yes	AMS	Bone	This study
Elliott II	UOC-4224	840 ± 35	Not reported	Yes	AMS	Bone	This study
Elliott II	UOC-16300	832 ± 26	Not reported	Yes	AMS	Charred maize kernel	This study
Elliott II	UOC-16301	801 ± 30	Not reported	Yes	AMS	Charred maize kernel	This study
Van Besien	UOC-13131	858 ± 26	Not reported	Yes	AMS	Charred maize cob fragment	This study
Van Besien	UOC-13132	787 ± 25	Not reported	Yes	AMS	Charred maize kernel	This study
Van Besien	UOC-13133	822 ± 26	Not reported	Yes	AMS	Charred nutshell fragment	This study
DeWaele	UOC-15868	747 ± 26	Not reported	Yes	AMS	Charred maize kernel	This study
DeWaele	UOC-15869	762 ± 26	Not reported	Yes	AMS	Charred maize kernel	This study
DeWaele	UOC-15870	710 ± 28	Not reported	Yes	AMS	Charred maize cob fragment	This study
Elliott III	UOC-4221	820 ± 35	Not reported	Yes	AMS	Bone	This study
Elliott III	UOC-4222	824 ± 35	Not reported	Yes	AMS	Bone	This study
Elliott III	UOC-16302	785 ± 28	Not reported	Yes	AMS	Charred maize kernel	This study
Elliott III	UOC-16303	803 ± 31	Not reported	Yes	AMS	Charred maize kernel	This study
Elliott III	UOC-16304	768 ± 28	Not reported	Yes	AMS	Charred maize kernel	This study
Uren	UGA-26438	580 ± 20	−8.8	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Uren	UGA-26439a	580 ± 20	−8.0	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Uren	UGA-26439b	570 ± 26	−8.0	Yes	AMS	Charred maize kernel	Jennifer Birch, pers. comm. 2023
Uren	UOC-15871	591 ± 26	Not reported	Yes	AMS	Charred maize kernel	This study
Uren	UOC-15872	586 ± 26	Not reported	Yes	AMS	Charred maize kernel	This study
Tillsonburg	UOC-19186	605 ± 11	Not reported	Yes	AMS	Charred bean	This study
Tillsonburg	UOC-19187	571 ± 11	Not reported	Yes	AMS	Charred maize kernel	This study
Tillsonburg	UOC-19188	547 ± 11	Not reported	Yes	AMS	Charred plum pit	This study
Tillsonburg	UOC-19189	586 ± 11	Not reported	Yes	AMS	Charred maize kernel	This study
Tillsonburg	UOC-19190	667 ± 12	Not reported	Yes	AMS	Charred maize kernel	This study
Tillsonburg	UOC-19269	600 ± 11	Not reported	Yes	AMS	Bone	This study
Tillsonburg	UOC-19270	565 ± 11	Not reported	Yes	AMS	Bone	This study
Tillsonburg	UOC-19271	563 ± 11	Not reported	Yes	AMS	Bone	This study
Tillsonburg	UOC-19272	583 ± 11	Not reported	Yes	AMS	Bone	This study
Tillsonburg	UOC-19273	630 ± 11	Not reported	Yes	AMS	Bone	This study
Tillsonburg 2	UOC-19191	538 ± 11	Not reported	Yes	AMS	Charred maize kernel	This study

Table 3. The Posterior Probabilities of OxCal Date Estimates for the Six Sites (cal AD).

	Date Range at 68%		Date Range at 95%	
Site	Start AD	End AD	Start AD	End AD
Holmedale	1039	1150	996	1195
Porteous	1132	1251	915	1426
Van Besien	1186	1272	1026	1435
Elliott II	1214	1262	1146	1312
Elliott III	1226	1266	1170	1314
DeWaele	1255	1295	1176	1373
Uren	1317	1405	1252	1460
Tillsonburg	1360	1415	1318	1426

Discussion

This study has considered a series of settlements that we hypothesize represent the sequential movement of a village community over a three-hundred-year period. While the occupants of these sequential villages likely consisted of descendant extended families, we are not suggesting continuous family membership, as these social units were no doubt fluid regarding relations with outside communities (Ferris 1999:44–45). Creese (2013:204) has argued that the initiation of palisade-surrounded communities marks the beginning of "place-making . . . defining households and the village community as a social whole, perhaps by opposing 'clearing' and 'forest', 'domestic' and 'wild' spaces (cf. Hodder 1990)." If this was a period of transition from patrilocal to matrilocal residence norms, as has been suggested (Kapches 1990:50; Warrick 2000:425–426), then relations with adjacent communities may have been politically complex and stressed, and if village palisades, two-walled or more in number, do reflect an evolving defensive function, this would be consistent with the increasing threat of intercommunity violence.

Another stressor, perhaps reflected in multiple-walled palisades and interstructural walls between houses within these communities (Fox1976:178,187), may have been related to the assumed westward movement of these peoples into sand plains containing large deer populations, including sand plains associated with the Thames River drainage (Fox 1982b; Timmins 1997:219; Williamson 1990). Similar to the study area villages (Noble 1975:40; Prevec 1987:15, Tables 4, 11, 30; Wright 1986:54–57), these thirteenth-century villages and special-purpose sites (Williamson 1983), including a deer-drive enclosure (Williamson 1990:314, 316, Figure 9.10), were focused on deer procurement to complement agricultural subsistence activities (Timmins 1997:97, 104–106) and are palisaded with up to two walls. The western sites, like sites in the study area, were situated in an oak forest savanna.

Birch and Williamson (2013:169–171) have proposed that the dominance of deer remains on Ontario Iroquoian village sites was due not only to the subsistence value of this animal but also to the importance of deer hides for clothing (Warrick 2000:440–441). They calculate the annual required number of hides per family of four and project an annual requirement of 7,000 hides for the sixteenth-century Mantle (Jean-Baptiste Lainé) village Huron/Wendat community. They further

suggest that "while competition for fields is unlikely to have been a contributor to intercommunity tension, overlapping hunting territories may have been" (Birch and Williamson 2013:171). Support for their hypothesis is provided by the murdered and scalped young male burial feature discovered northwest of the Calvert village (Spence and Wilson 2015). The authors note that "the forms and materials of the points suggest that the assailants were Princess Point people or people from the early Glen Meyer period, but the identity of the victim is unknown" (Spence and Wilson 2015:123). In fact, both the wide and lenticular forms of triangular projectile points in the victim (Spence and Wilson 2015:126, Figures 2–4) are well represented on the thirteenth-century Elliott II village and fourteenth-century Uren sites (Wright 1986:25, Figure 12) in the study area, as well as on the nearby thirteenth-century Calvert village (Timmins 1997:113, Figure 7.2). Based on subsequent historically documented hostilities, this aggressive event may have been triggered by Iroquoian encroachment on Central Algonquian hunting territories, as suggested by Spence and Wilson (2015:133).

The revised dates for benchmark village sites like Porteous and Uren utilized in previous Iroquoian historical models (Stothers 1977; Wright 1966) considerably alter our perspective concerning the evolution of maize-based village life in southern Ontario. While previous archaeologically defined material-culture sequences related to longhouse architecture standardization and ceramic decorative trends remain unchanged, their history has been compacted. The time line of evolution has been foreshortened, reflecting a thirteenth-century period of rapid change following the establishment of palisade-surrounded settlements of the twelfth century. Thirteenth-century longhouse lengths and widths are consistent with the Glen Meyer and Pickering modal attributes defined by Dodd (1984:292, Figure 26), who also notes that "the least deviation around the mean is found in house width" and sagely suggests that this measure is "dependant on method of construction" (1984:297). Ontario Iroquoian longhouse architecture had become standardized by the fourteenth century, assuring "maximum efficiency in the use of space" (Kapches 1990:65).

The early fourteenth century witnessed more stable community patterns with few house replacements, possibly signaling shorter village occupations, along with a pattern of population amalgamation as exemplified by the Uren village (Warrick 2000:439). By the late fourteenth century, the Tillsonburg village displayed an unpalisaded, dispersed settlement pattern, created by the amalgamation of two or three communities (Parry 2017:125). The fourteenth century also witnessed the dominance of horizontal motif ceramics and the beginning of secondary multiple bundle and primary flexed burials within houses (Wright 1986:16–21). No longer were all curated ancestral remains transported to warm-season fishing settlements adjacent to Long Point Bay for multiple bundle burial (Fox 1976:169,1988; Spence 1988, 1994:9–12). Although the Uren village community-pattern data are not available to confirm the presence of semisubterranean sweat lodges in the Otter Creek drainage communities, contemporaneous sites to the east contain

the earliest semisubterranean sweat-lodge features in southern Ontario (Ferris 1999:47; Macdonald and Williamson 2001:67, Table 10; Rozel 1979:17, 20, Figures 3 and 4 House 1; Wright and Anderson 1969:Figure 1, pits 15, 18, 27, 28, 32, 40–42), reflecting the requirement for unrelated-male bonding in matrilocal longhouses (Birch and Williamson 2018:93–94; Kapches 1990:64–65; MacDonald and Williamson 2001:72–73; Warrick 2000:443). By the time of the Tillsonburg village in the late fourteenth and early fifteenth centuries, semisubterranean sweat lodges were common. The concurrent florescence in elaborately decorated smoking pipes also signals these sociopolitical changes and is readily apparent at the Tillsonburg village. Finally, longhouses reach unprecedented lengths in the late 1300s and early 1400s, a trend reflected at the Tillsonburg village where some house lengths exceeded 80 m, in line with large houses documented at contemporaneous Iroquoian sites (Dodd et al. 1990; Warrick 1990).

Conclusion

New AMS radiocarbon dates for the terminal late Middle Woodland Princess Point complex and early Late Woodland occupation of the Grand River valley and Big Creek and Otter Creek drainages to the west have provided a refined two-century chronology for the transition to a more sedentary village life and a fully Iroquoian cultural expression in sand-plain adapted agricultural communities west of the Grand River. This rapid transition dates from the late twelfth through fourteenth centuries in the study area, with matrilocal society being established as the norm, heralded by standardized longhouse architecture and ceramic vessels displaying horizontal rim motifs.

The westward population movement into prime deer-hunting territory appears to have generated intercommunity conflict as represented by encircling village palisades consisting of two or more rows and the construction of interstructural walls. Evidence from twelfth-century camps on the western Norfolk sand plain suggests interaction with Central Algonquian Younge phase populations occupying the Thames River drainage to the west (Murphy and Ferris 1990:242–244). Dramatic evidence from the Lafarge burial in the Thames River drainage suggests that this interethnic interaction may not always have been peaceful.

By the late fourteenth century, communities unbounded by palisades, such as Tillsonburg (Timmins 2009) and perhaps Oatman-Wardel, suggest a landscape free of conflict, an unusual political environment for Ontario Iroquoian populations. A fifteenth-century movement off the droughty Norfolk sand plain "at about A.D. 1400" (Fox 1976:190) has been proposed, with a portion of the agricultural population moving westward to join Ontario Iroquoian populations already resident in the Thames River valley. During the following century, earthwork- and palisade-defended Ontario Iroquoian villages characterize the western frontier with Central Algonquian populations (Keron 1983), including the Lawson site citadel (Fox 1980; Wintemberg 1939).

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Supplementary Material

Supplementary material for this article can be found at https://www.midwestarchaeology.org/mcja/supplemental-materials.

OxCal Run File

Notes on Contributors

William Fox published his first article in *Ontario Archaeology* in 1967 (see page in Academia.edu Website) and graduated from the University of Toronto with an MA in 1971. He then worked for the Province of Ontario between 1972 and 1991 in various archaeological management roles and was an active member of the Ontario Archaeological Society, including as president in 1979. With Parks Canada from 1992 to 2013, he began as chief of archaeology for the Prairie and Northern Region, working out of Winnipeg, and then worked in senior National Park management roles in the Western Arctic Field Unit (Inuvik, NWT), Pacific Rim NPR (Ucluelet, BC), and the Trent-Severn Waterway (Peterborough, ON). After joining Trent University as an adjunct professor in the anthropology graduate program in 2011, he served as director of the Trent University Archaeological Research Centre until 2023.

James Conolly worked for 20 years in the Mediterranean region, including on the Catalhoyuk Project (1992–2002), the Kythera Island Project (1998–2003), and the Antikythera Survey Project (2005–2010). Since 2010, his geographic interests have shifted, and he now conducts field and laboratory research mainly in the Great Lakes region. He is particularly interested in the use of the waterways between Lake Ontario and the Georgian Bay by ancestral First Nations and early European missions and explorers and the impacts of nineteenth-century European farming and mercantile colonialism on regional ecology.

Andrew M. Stewart (PhD) is principal researcher of Strata Consulting Inc. and conducts geoarchaeological investigations in Ontario.

Peter Timmins is an anthropological archaeologist with a specialization in the lower Great Lakes region and northeastern North America in general. He is a founding partner of the cultural

resource management (CRM) firm Timmins Martelle Heritage Consultants. His research interests encompass issues of current practice in archaeology, especially CRM, Indigenous peoples and archaeology, the development of Iroquoian societies, and the archaeology of hunter-foragers. Timmins teaches in the undergraduate archaeology program and the master's program in applied archaeology at Western University, in London, Ontario, and has supervised several master's students on research topics related to Ontario CRM.

ORCID

William Fox 0000-0001-7392-3699
James Conolly 0000-0001-7609-7062
Andrew McLean Stewart 0009-0001-1406-2478
Peter Timmins 0009-0004-8148-3709

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