



Household Archaeology. A Transatlantic Comparative Approach

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► To cite this version:

Claude Chapdelaine, Adrian L Burke, Karim Gernigon. Household Archaeology. A Transatlantic Comparative Approach. *P@lethnologie*. *P@lethnologie*, 8, 2016, 10.4000/palethnologie.370. hal-02074962

HAL Id: hal-02074962

<https://univ-tlse2.hal.science/hal-02074962>

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GROUPE DE RECHERCHE ARCHÉOSCIENCE / ARCHÉOSOCIALE
UNIVERSITÉ DE MONTRÉAL

Proceedings of the International Symposium, October 24-25 2014

2016 # 8

<http://www.palethnologie.org>

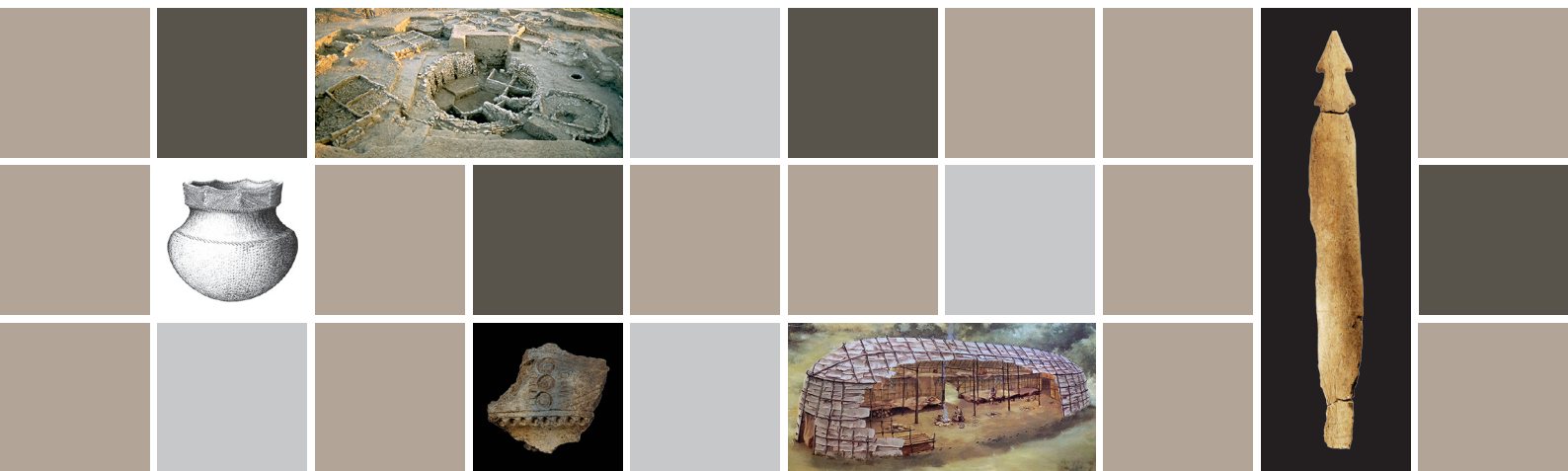
ISSN 2108-6532

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HOUSEHOLD ARCHAEOLOGY

A Transatlantic Comparative Approach



Review published by the P@lethnologie association, created and supported by the TRACES laboratory, Inrap and the Ministry of Culture and Communication.

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This digital publication received support from





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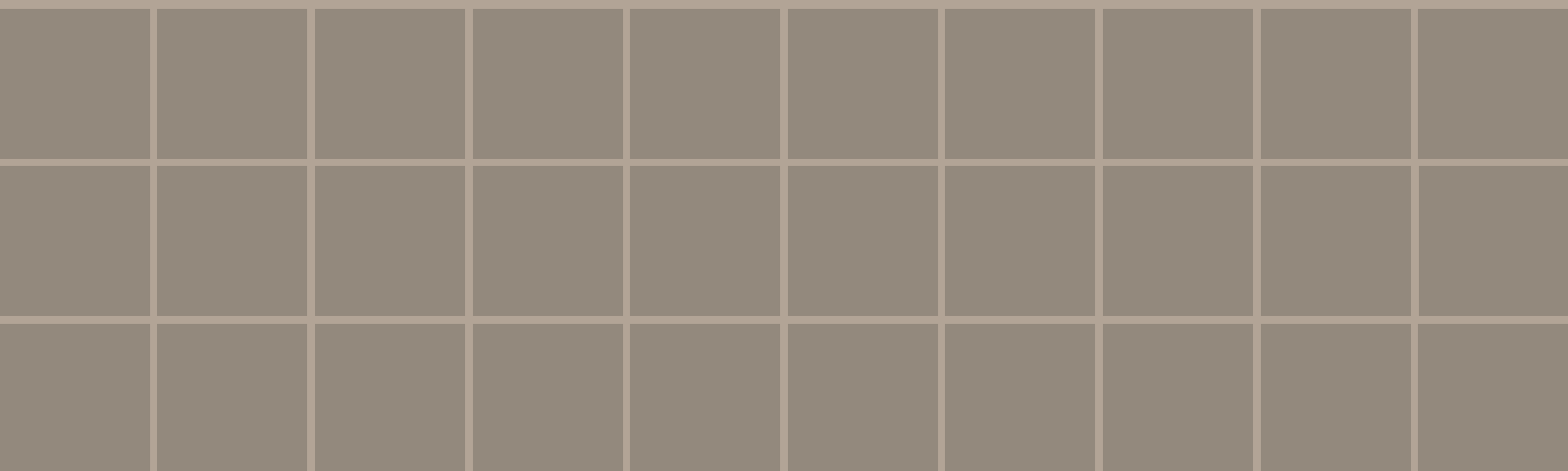
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HOUSEHOLD ARCHAEOLOGY

A Transatlantic Comparative Approach

Adrian L. BURKE

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To cite this article

Burke A.L., 2016 - Household Archaeology – A Transatlantic Comparative Approach, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 5-10.

HOUSEHOLD ARCHAEOLOGY

A Transatlantic Comparative Approach

Adrian L. BURKE

1 - The conference

The papers in this issue of *P@lethnology* are the product of a conference that was held at the Université de Montréal on October 24 and 25, 2014. The conference was entitled “Household Archaeology: production, ideology and social inequality” and was organized by Claude Chapdelaine and Adrian Burke. A total of eleven papers were presented by fourteen authors from France, Canada and the USA. The conference was set up as a symposium which allowed authors to present more detailed and lengthy presentations (45 minutes), and to allow for more time for questions and discussion among the participants. The primary focus of the conference was the comparison of the archaeological record of Iroquoian longhouses from northeastern North America with Neolithic houses from Western Europe. One additional paper that was not presented orally at the conference is included in this issue (Halperin and Foias) in order to expand the geographic coverage on households to Mesoamerica.

Our motivation to organize this conference arose from two factors. The first factor was and is a primary research theme of our archaeology research team Archéoscience / Archéosociale (As²) based at the Université de Montréal. One of the four main research axes or themes of our As² research team is the archaeology of households; specifically, the social organization of Iroquoian households during the period from 1000 to 1550 CE. This has been a focus of research for our team since its inception in 2009 and reflects the fact that the household represents an ideal focus for archaeological research in that it is, among other things, a physical reflection or manifestation of social organization. The archaeological record of Iroquoian villages and longhouses therefore holds incredible potential for a social archaeology that is based on a solid empirical foundation (cf. Meskell, Preucel 2004).

The second factor that motivated this conference was the long-standing relationship between the archaeologists of the Archéoscience / Archéosociale research team (Département d’anthropologie, Université de Montréal), and the archaeologists of the TRACES research team (UMR 5608, Université Toulouse - Jean Jaurès). Our collaborations date back more than a decade, to 2004. Since that time the archaeologists on both sides of the Atlantic have organized sessions at international conferences, workshops, and invited lectures. This exchange of professors, researchers and students has been extremely productive and has encouraged the continued collaboration and exchange between these two francophone archaeology research poles. One of the many aspects that underscore our continued collaboration is a shared interest in the comparative approach. This has already led to two specialized publications that include researchers from Montreal and Toulouse (Bon *et al.*, 2011; Bressy *et al.*, 2006). While the comparative approach is not the most popular method of analysis and interpretation in archaeology these days, it is in fact a very useful starting point for a socially oriented archaeology (Trigger, 2003, 2007).

The similarities between Iroquoian longhouses and the Neolithic longhouses of Western Europe seem to naturally invite comparison. As we exchanged data and publications with our colleagues across the Atlantic, it became apparent that both our methods and our research questions were convergent. Moreover, the long term diachronic view from Europe provides much needed time depth to explore questions of continuity / stability or instability / discontinuity in the longhouse social organizational model. On the other hand, the incredibly rich ethnographic and ethnohistoric record of Northern Iroquoians has added a much needed social and political dimension to the archaeological longhouse. In both cases, European and North American, it seems that the data provided by horizontal excavations of longhouses is ideally suited for the kind of questions we wish to ask and for a comparative approach.

2 - The papers

The papers in this issue can be divided into two general groups. The first grouping is primarily descriptive in nature, taking time to describe in detail the empirical data (architecture, hearths / pits, fauna, bone tools, ceramics) related to archaeological households. The spatial analysis of the archaeological data is an important aspect of these papers as might be expected. This group includes five papers that describe the households of Saint Lawrence Iroquoians who occupied the Quebec portion of the Saint Lawrence Valley, and Iroquois (Mohawk) households from Eastern New York (Chapdelaine, Gates St-Pierre *et al.*, Plourde, St. Germain and Courtemanche, and Rieth). All of the sites studied date to the Late Woodland or Late Prehistoric period, between 1000 and 1550 CE. We can add to this first group the paper by Guilaine on Neolithic households around the Mediterranean Basin. His paper is an overview of the evolution of Neolithic households, starting with some of the oldest excavated examples in Cyprus at the eastern end of the Mediterranean, passing through southern Italy, and finishing in France and the end of the Neolithic. Guilaine covers a large time span, from the 9th to the 3rd millennia BCE, in order to give a diachronic perspective on Neolithic households. The usefulness of the household as a unit of analysis is clear in these papers, as is their utility in synchronic and diachronic comparative (cross-cultural or intra-cultural) analyses.

The second group of papers comprises four papers which can be seen as more theoretical in their approach to households and household archaeology (Gernigon, Creese, Birch, and Halperin and Foias). All four papers are firmly grounded in empirical data and spatial analyses such as the variability of Neolithic households across Mediterranean Europe and Anatolia (Gernigon), the architectural remains of Iroquoian villages and longhouses (Creese, Birch) or the refuse disposal patterns within Maya communities (Halperin and Foias). However, the greater preoccupation with theoretical aspects of households, primarily based in anthropological theory, leads to a more dynamic image of these households and the larger community. The changing social and political dimensions of households are apparent in these papers, and all five authors make it clear that households should not be strictly conceptualized as static units of analysis. The relationships between and among households are nonetheless systematically addressed by all of the authors in this issue, but using different types of data recovered from within households and the larger community.

3 - Definitions and uses of the term household

The word household in English is often used as synonymous for both a physical structure, the house, and a social unit, usually the family. As a result it has also become a metaphor for our own conceptions of the typical or iconic social unit living under one roof. It is in fact a standardized

unit of measure for government census takers. Statistics Canada defines the household as “a person or a group of people occupying the same dwelling” (Statistics Canada, 2015). This is essentially the same definition as many English dictionaries which systematically combines a group of people plus a dwelling or house. The question of the family however is not always explicitly included or defined, even though it is often presumed to be the basic social unit and therefore coterminous with the household. The dynamic reality of families and households today and in the past obviously makes this a minimalist and simplistic definition, but it will have to suffice for the time being. In French the equivalent of household is *maisonnée*, or preferably *ménage* according to the Office québécois de la langue française. For the purposes of this publication we have used *maisonnée* since this is the most widely used term among French speaking archaeologists for household. Finally, it is interesting to note that the word hearth (*foyer* in French, *hogar* in Spanish) is often associated with the household, which should provide some comfort to archaeologists.

It should be clear by now that from the outset, the organizers of the conference have treated the household as a valid unit of analysis in anthropology and archaeology. In addition, we believe it is a useful unit of analysis for cross-cultural comparison. The real challenge, both theoretically and methodologically, is how to go from the detailed spatial and artifactual data of *houses* to the social archaeology of *households*. In other words, how can we operationalize the vast theoretical corpus on the social, political and economic organization of households in order to interpret the rich empirical data produced by archaeologists in the field? As a first step, it is important not to simply conflate the family or kin group with the household in terms of analysis (cf. Joyce, Gillespie, 2000). This has been a recurrent theme in Iroquoian archaeology which has often relied on the ethnographic and ethnohistoric record to understand and interpret the social organization of the longhouse. While this direct historical approach may seem reasonable to most Iroquoianists, and even many Mesoamericanists (cf. Wilk, Ashmore, 1988), it cannot be applied to the Neolithic of Europe for example. As a possible solution, Netting, Wilk and Arnould proposed thirty years ago that we should focus on what households *do* (Netting *et al.*, 1984), and most archaeologists seem to have followed suit.

In a recent volume on households in the Americas, Douglass and Gonlin (2012) reiterate the usefulness of the household as an analytical unit and the focus on what households do. They also reprise Wilk and Rathje’s 1982 definition of the household:

“... we can define the *household* as the most common social component of subsistence, the smallest and most abundant activity group. This household is composed of three elements: (1) *social*: the demographic unit, including the number and relationships of the members; (2) *material*: the dwelling, activity areas, and possessions; and (3) *behavioral*: the activities it performs. This total household is the product of a domestic strategy to meet the productive, distributive, and reproductive needs of its members (Wilk, Rathje, 1982: 618, italics in original)”.

Douglass and Gonlin (2012) also return to the five functions of the household as proposed by Wilk and Netting in 1984: production, distribution, transmission, reproduction (includes biological reproduction and cultural / social reproduction), and coresidence (Wilk, Netting, 1984). This focus on what households do, and what the functions of a household are, seems to still be useful for operationalizing the issue of household archaeology. What is perhaps more interesting is that along with some of the more traditional research questions in household archaeology such as craft production (Hirth, 2009), Douglass and Gonlin point out that household archaeology today can and does address many of the issues that are central to social archaeology such as gender, inequality, differentiation, or the social context of production and specialization (Douglass, Gonlin, 2012). The papers in this volume address these issues and others by using diverse datasets that show the analytical value of the household.

Finally, it is perhaps telling that the only case study from northeastern North America in the Douglass and Gonlin volume concerns the archaeology of Iroquois longhouses in late prehistoric New York (Snow, 2012). This points to the basic fact that not all archaeological contexts provide the ideal spatial or architectural data that will enable an archaeologist to excavate both houses and households. In fact, other excellent examples of this type of household archaeology exist in Canada and northern USA (e.g. Ames, 2006). We have been very fortunate in this volume to gather examples from Southern Europe, Anatolia and the Mediterranean, northeastern North America, and Mesoamerica that allow unique insights into households in the past, but also permit a certain level of comparison. We hope that the reader will find these case studies useful as an addition to the growing body of archaeological data on households and that it will encourage further debate and research.

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EXTENDING THE RAFTERS:

The Iroquoian Longhouse as a Sociotechnical System

John L. CREESE

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To cite this article

Creese J.L., 2016 - Extending the Rafters: The Iroquoian Longhouse as a Sociotechnical System, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 11-30.

EXTENDING THE RAFTERS:

The Iroquoian Longhouse as a Sociotechnical System

John L. CREESE

Abstract

A better understanding of the role of domestic dwellings in shaping past social relations is needed. Here, Northern Iroquoian longhouses are studied as sociotechnical systems, following Pfaffenberger (1992). This approach allows us to appreciate how social relations were generated and contested in the very activities of building and living in houses. I examine a sample of pre-Columbian longhouses from southern Ontario, Canada. Variation in aspects of house construction, spatial layout, and ritual indicates that sociotechnical networks associated with different houses were variable in scale, durability, and organization. What emerges is the sense that a dynamic, driving tension between forces of collectivization and atomization, inclusion and exclusion, lay at the heart of longhouse life.

Keywords

Longhouse, sociotechnical system, vernacular architecture, Northern Iroquoians.

Introduction

In light of the failures of stage-based evolutionary thinking (e.g., Feinman, Neitzel 1984; Pauketat, 2007), the time has come for a more dynamic approach to the study of domestic dwellings in middle-range societies. The recognition of houses as active historical phenomena is a necessary counterpart to a more flexible, non-linear understanding of non-state societies (cf. Crumley, 1987). One way to achieve this is to think about domestic dwellings as *sociotechnical systems* (Pfaffenberger, 1992). Placing the study of Iroquoian longhouses in this framework allows us to appreciate the ways in which social relations were produced and challenged in the very activities of creating, maintaining, and rebuilding houses. Here, I examine longhouses drawn mainly from 13th to 15th century Northern Iroquoian villages in southern Ontario (figure 1). Heterogeneous patterns of house construction, internal spatial organization, and ritual activity indicate that the sociotechnical networks associated with different houses were surprisingly variable in scale, durability, and organization, even within the same village. What emerges is the sense that a dynamic, driving tension between forces of collectivization and atomization, inclusion and exclusion, lay at the heart of longhouse life.

1 - The Longhouse in Anthropology and Archaeology

During the Late Woodland period (ca. 900-1650 AD), timber-frame, bark-covered longhouses were commonplace across much of Northeastern North America (figure 2). Prototypical longhouses first appeared in southern Ontario as early as the 10th century, and were widespread

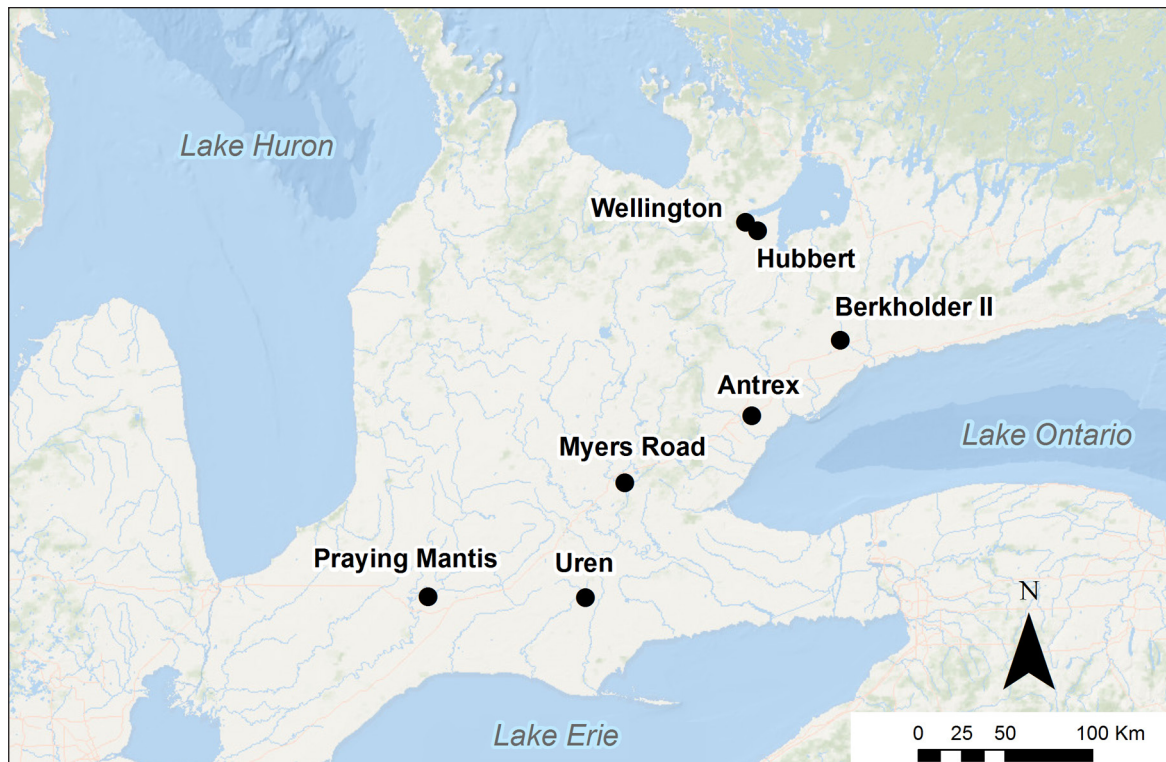


Figure 1 - Location of sites mentioned in the text.

in the region by 1300 AD (Creese, 2011). They were constructed from a framework of relatively slender wall posts and more substantial interior supports (Kapches, 1994). Measuring from 6 to 8 m in width, they varied in length depending on the number of resident families, up to a maximum of about 100 m (Tuck, 1971: 82). Among Northern Iroquoian peoples, longhouses were typically inhabited by a core of related women and, variably, their in-marrying husbands and children (Morgan, 1881). The interior of the structure was organized around a row of central hearths. Pairs of nuclear families occupied space on either side in a modular arrangement sometimes delineated into compartments (Snow, 1990, 1997). Along each wall, a row of benches ran the length of the building. These remained open to the central corridor, encouraging collective work and communal consumption (Richter, 1992: 19). Entrance vestibules at both ends of the structure doubled as granaries in historic times (Prezzano, 1992; Kapches, 1993, 1994).

Since Lewis Henry Morgan's pioneering ethnography, the Iroquoian longhouse has been seen as an ideal reflection of the tribal society. For Morgan (1881), longhouse form was a natural corollary of the Iroquois place in social evolution. It epitomized his state of "barbarism", wherein kinship and "communism in living" defined the social order. With its row of shared central hearths, communal storage, and resident families linked through the maternal line, the longhouse seemed a perfect image of this fundamental order. As village-dwelling horticulturalists, Iroquoian societies continue to be characterized as "tribal". In the classic anthropological model of the tribe, the major social problems facing small-scale agrarian societies are resolved by *being tribal* (Sahlins 1968): social integration is achieved through the warp of kinship and the weft of pan-residential institutions. For scholars influenced by mid-century anthropological theory, the tribe's archetypal structuring principals – flexible segmentary organization and a domestic mode of production (Service, 1971; Sahlins, 1972) – appeared to be the primary correlates of longhouse form (Engelbrecht, 1974; Trigger, 1976; Snow, 1994). As lineages grew, matrilocality and a sharing ethic combined to make the longhouse an organizational imperative.

This iconic vision of the longhouse has, unfortunately, had a dulling effect on the archaeological imagination. The archaeological record of these buildings is extraordinarily robust, with hundreds of houses excavated over the last 50 years. In spite of the huge potential of such a sample, however, archaeologists have felt little need to pay close attention to variation in house layout and architecture. The bulk of research has been concerned with tracing the origins of Iroquoian post-marital residence patterns and clan organization (Warrick, 1984; Kapches, 1990; Birch, 2008) – in other words, with finding the material correlates of Iroquoian tribalism. Where variation between houses has been studied, it has been mainly for culture-historic, dating, and demographic purposes (Dodd, 1984; Warrick, 1989; Kapches, 1994). Perhaps for this reason, the rich archaeological record of Iroquoian longhouses has been undervalued. Architectural variation that fails to conform to a normative tribal model has often been ignored (Creese, 2012b), while important anthropological questions about social dynamics in acephalous societies are neglected.



Figure 2 - Reconstructed Iroquoian longhouse, Ska-Nah-Doht village and museum, London, Ontario (Photo: John L. Creese).

2 - Longhouses as Sociotechnical Systems

We would do better to turn back the clock and attempt to look forward, with the Iroquoian people of the 13th to 15th centuries, at a future that was not at all fixed, but full of competing visions for how people should form enduring and productive communities (cf. Harris, 2014). An analytical framework that provides some purchase on these issues is that of the *sociotechnical system* (Lemonnier, 1986; Pfaffenberger, 1992). This concept has been developed by sociologists of science and technology, but is having an increasing influence on the direction of archaeological theory (e.g., Hodder, 2012; Pauketat, 2013). In essence, it rejects the familiar distinction between technology (as material) and culture (as mental) that sits at the heart of modern thought. In its place, complex assemblages like electrical power grids (Hughes, 1983), and sailing vessels (Law, 1987)

are analyzed as structured webs of human and non-human actors. These webs, to operate as people want them to, take effort to build and maintain (Hodder, 2012: 88). Consequently, they tend to draw people into dependencies, or entanglements, as Hodder has called them, in which the coordination of labour, techniques, materials, knowledge, and power becomes a structuring force in human history. The whole assemblage expresses emergent capacities distinct from its component parts (DeLanda, 2006), that is, an agency of its own (Bennett, 2005). This agency is not only instrumental or utilitarian, but socio-genic. As Pfaffenberger (1992: 502) puts it, sociotechnical systems “produce power and meaning as well as goods”.

With this in mind, I suggest that a more productive way to approach the longhouse is as a kind of sociotechnical assemblage. Rather than a closed entity – a *fait accompli* – I should like to view the house as an open, uncertain, and contested social project. We might think of it as a kind of net or trap, an assemblage of heterogeneous things and beings – wood and bark, pottery, drying fish, tobacco, animals, the dead, masks, and spirits – that collectively worked to entangle people within dynamic relationships (cf. Deleuze, Guattari, 1988). Rather than viewing the archaeological remains of a house as a simple reflection of a stable tribal order, we must grasp its past involvement in social work – the labour by which such orders were tenuously composed and ceaselessly tested and contested (cf. Bourdieu, 1977; Foucault, 1975, 1977).

In what follows, I examine three fields of Iroquoian domestic practice: house construction, spatial organization, and ritual. The relevant question in each case will be how these practices allowed Iroquoian subjects to draw people and resources into enduring relationships, and how competing visions of what those relationships might be were negotiated.

3 - Building Houses; Building Relationships

The house was a complex technology, and making one required a diverse array of skills, resources, intergenerational know-how, and cooperative labour. Houses had to be built rapidly, and at the correct season, so successful building depended on fast work by many hands. Of the construction process, Sagard, a Recollect missionary to the Wendat nation in the early 17th century, paints a harmonious picture of joint action. He informs us that “when any one of their fellow townsmen has no lodge to live in, all of them with one accord lend a hand and build one for him” (Wrong, 1939: 79). However, this rosy portrayal conceals a messier reality of conflict over who should be expected to work for whom. Simmering resentments existed just below the surface. Sagard relates that “a young lad who was not working at it [building the missionaries’ house] with goodwill complained to the others of the trouble and pains they were taking in building a lodge for people who were *no relatives of theirs*” (Wrong, 1939: 78, my emphasis). Building a longhouse was not only an occasion for action by cooperative social groups, but, crucially, a field for testing and disputing the grounds on which those relations might be defined. In agreeing to build a house for the Recollects, the builders were simultaneously redefining them as “friends and relations”, though they were strangers (Wrong, 1939: 78-79).

This episode encourages us to take a fresh look at archaeological variation in house construction. During the 13th century, longhouse lengths rapidly expanded in villages all across southern Ontario, from an average of 12 m in Early Iroquoian (900-1280 AD) settlements, to 38 m in Middle Iroquoian (1280-1400 AD) times (Dodd, 1984; Creese, 2011: 246). Rather than a simple response to population growth, house expansion at this time should be seen as an arena for politics (Varley, Cannon, 1994). Houses could not be effectively extended unless the necessary alliances could be made and maintained – both internally, defining an extended family of occupants, and externally, defining more distant relations and friends who could be called upon when help was needed.

Site	House	Original Length (m)	Maximum Length (m)	Original Width (m)	Maximum Width (m)	Maximum Perimeter (m)	Maximum Area (m ²)	Wall Construction
Wellington	House 1	21.6	36.4	6.6	6.6	81.1	234	single
Wellington	House 2	21.0	21.0	6.2	6.2	53.5	140	single
Berkholder 2	House 1	52.0	52.0	7.5	7.5	112.8	340	paired predominant
Berkholder 2	House 2	31.5	31.5	7.0	7.0	74.0	217	paired predominant
Berkholder 2	House 3	47.3	47.3	7.7	7.7	103.6	349	paired predominant
Berkholder 2	House 4	45.7	45.7	7.4	7.4	99.8	326	paired and single
Myers Road	House 1	48.5	60.0	7.1	8.5	128.4	455	paired predominant
Myers Road	House 2	34.2	34.2	8.1	8.1	78.6	265	paired predominant
Myers Road	House 3	54.8	83.6	7.7	8.0	175.0	640	paired predominant
Myers Road	House 4	38.5	49.5	6.5	6.5	106.6	344	paired predominant
Myers Road	House 5	12.5	12.5	6.8	6.8	33.5	75	single
Myers Road	House 6	17.0	25.0	7.2	7.2	58.1	168	single
Myers Road	House 7	36.1	36.1	7.2	7.2	80.2	249	single predominant
Myers Road	House 9	85.9	85.9	8.0	8.0	180.9	701	paired predominant
Myers Road	House 10	25.0	25.0	8.3	8.3	63.0	202	single

Site	House	Undisturbed Wall Post Density (posts/m)	General Wall Post Density (posts/m)	Mean Support Post Diameter (cm)	Max Support Post Diameter (cm)	Wall Straightness	Renovation Score
Wellington	House 1	3.3	4.4	17	38	0.997	2
Wellington	House 2	2.4	1.9	17	25	0.960	0
Berkholder 2	House 1	5.0	4.4	18	27	0.997	0
Berkholder 2	House 2	6.7	7.3	21	48	0.999	2
Berkholder 2	House 3	6.0	3.9	21	41	0.995	0
Berkholder 2	House 4	4.0	3.3	19	30	0.997	1
Myers Road	House 1	4.5	8.5	na	33	0.999	3
Myers Road	House 2	3.3	2.6	na	29	0.992	0
Myers Road	House 3	4.7	6.8	na	34	0.996	4
Myers Road	House 4	5.3	4.4	na	37	0.994	3
Myers Road	House 5	4.8	3.8	na	30	0.994	1
Myers Road	House 6	3.4	3.0	na	30	0.991	1
Myers Road	House 7	4.0	4.0	na	28	0.988	1
Myers Road	House 9	4.1	5.3	na	32	0.995	2
Myers Road	House 10	2.9	2.1	na	26	0.990	0

Site	House	Total Pits	Central Hearths	Sweat Lodges	Burials	Ritual Score
Wellington	House 1	25	8	2	0	2
Wellington	House 2	22	3	1	1	3
Berkholder 2	House 1	20	2	0	0	0
Berkholder 2	House 2	9	1	0	0	0
Berkholder 2	House 3	26	5	0	0	0
Berkholder 2	House 4	13	2	0	0	0
Myers Road	House 1	69	4	6	3	9
Myers Road	House 2	11	3	1	0	1
Myers Road	House 3	103	12	6	0	6
Myers Road	House 4	20	3	2	1	3
Myers Road	House 5	1	0	0	0	0
Myers Road	House 6	5	5	0	0	0
Myers Road	House 7	8	2	2	1	3
Myers Road	House 9	10	8	2	0	2
Myers Road	House 10	9	2	0	0	0

Table 1 - Summary data on longhouse dimensions, construction attributes, and internal features from three Iroquoian village sites in southern Ontario. Houses were measured from plans published by Robertson, 2005, and Williamson 1998, and 2005. Note that wall straightness was measured by dividing the straight-line distance of a side wall (between taper ends) by the actual wall perimeter. Thus, the closer the value to 1.0, the straighter the wall. Renovation score is the sum of instances of wall repairs, replacements, and extensions / contractions for a house. Ritual score is the sum of all human burials, animal burials, and sweat lodges found in a house.

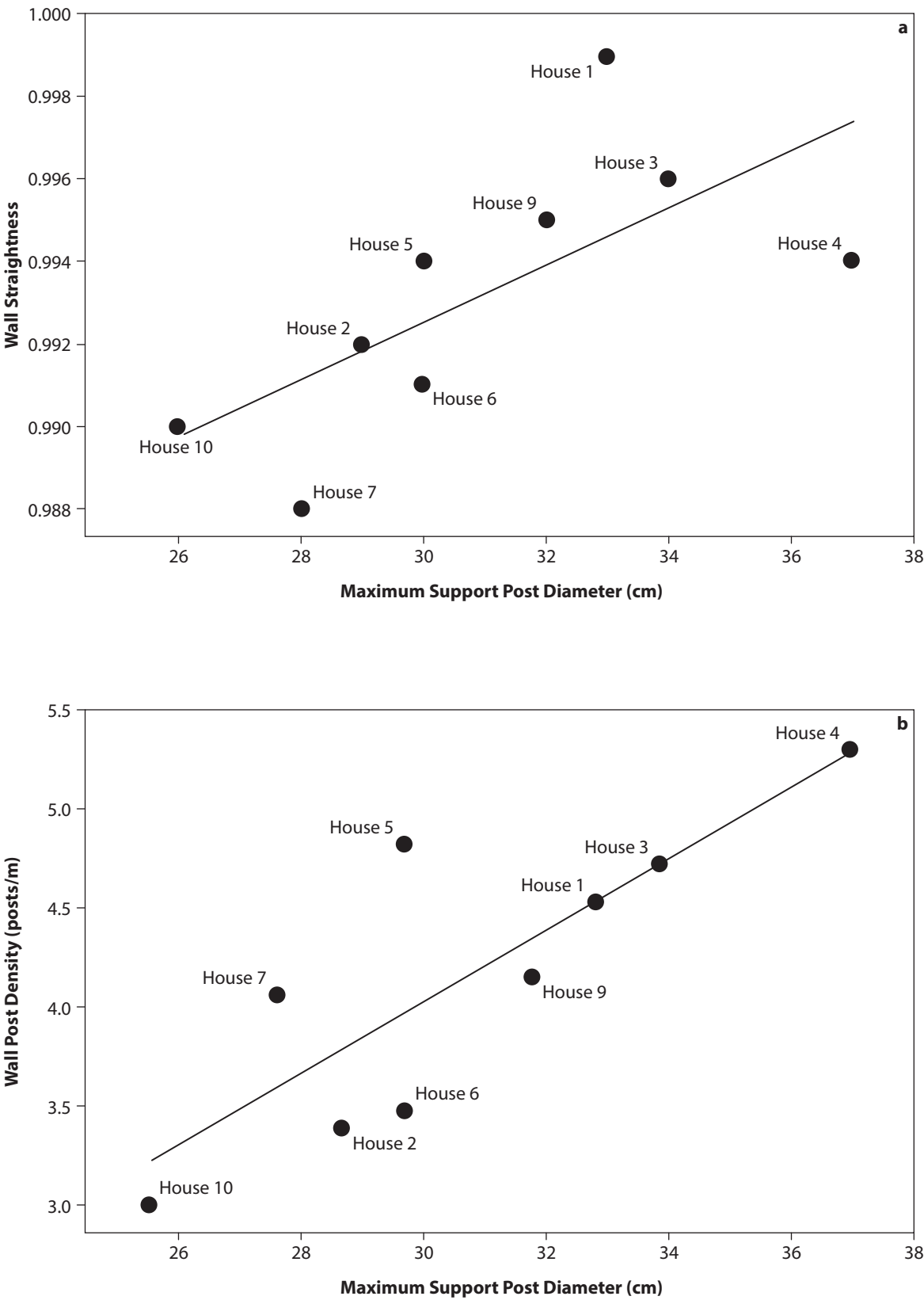


Figure 3 - Scatterplots of longhouse construction attributes at the Myers Road site (ca. AD 1280-1340). Regression lines show positive relationships between maximum support post diameter and (a) wall straightness ($R^2=0.48$, $F=6.38$, $p=0.04$), and (b) wall post density ($R^2=0.69$, $F=15.74$, $p=0.005$) in undisturbed portions of well-preserved wall. These patterns indicate that houses with larger interior supports had straighter walls that were built more robustly, repaired more over time, or both.

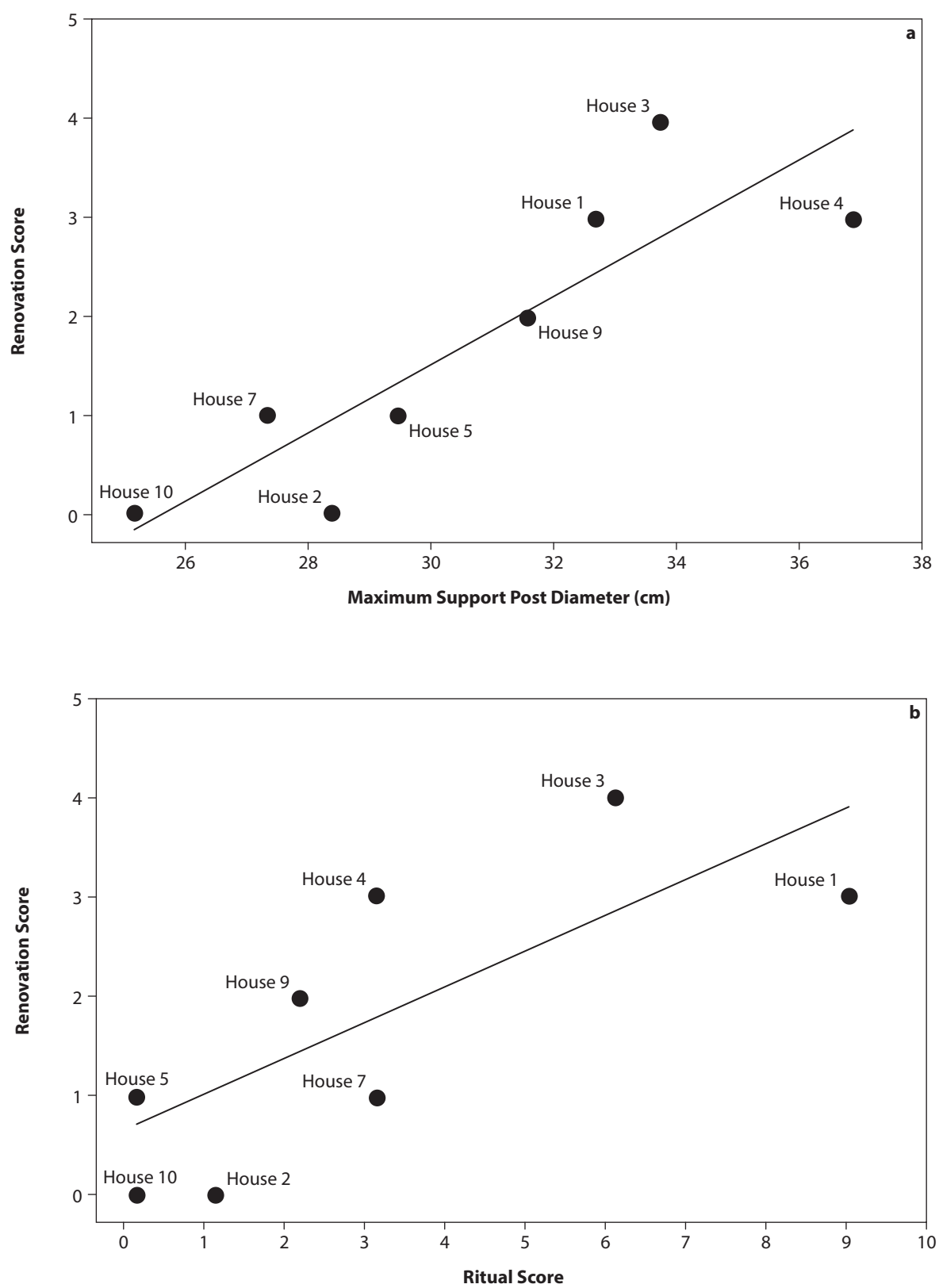


Figure 4 - Scatterplots of longhouse construction attributes at the Myers Road site (ca. AD 1280-1340). Regression lines show positive relationships between (a) maximum support post diameter and renovation score ($R^2=0.76$, $F=21.72$, $p=0.002$), and (b) ritual score and renovation score ($R^2=0.60$, $F=10.48$, $p=0.01$). These patterns indicate that houses with larger interior supports had more episodes of repair, wall reconstruction, and extension/contraction during their lifetimes than those with smaller interior supports. Houses with more evidence of renovation also had higher numbers of human burials and semi-subterranean sweat-lodges (e.g. Houses 1, 3).

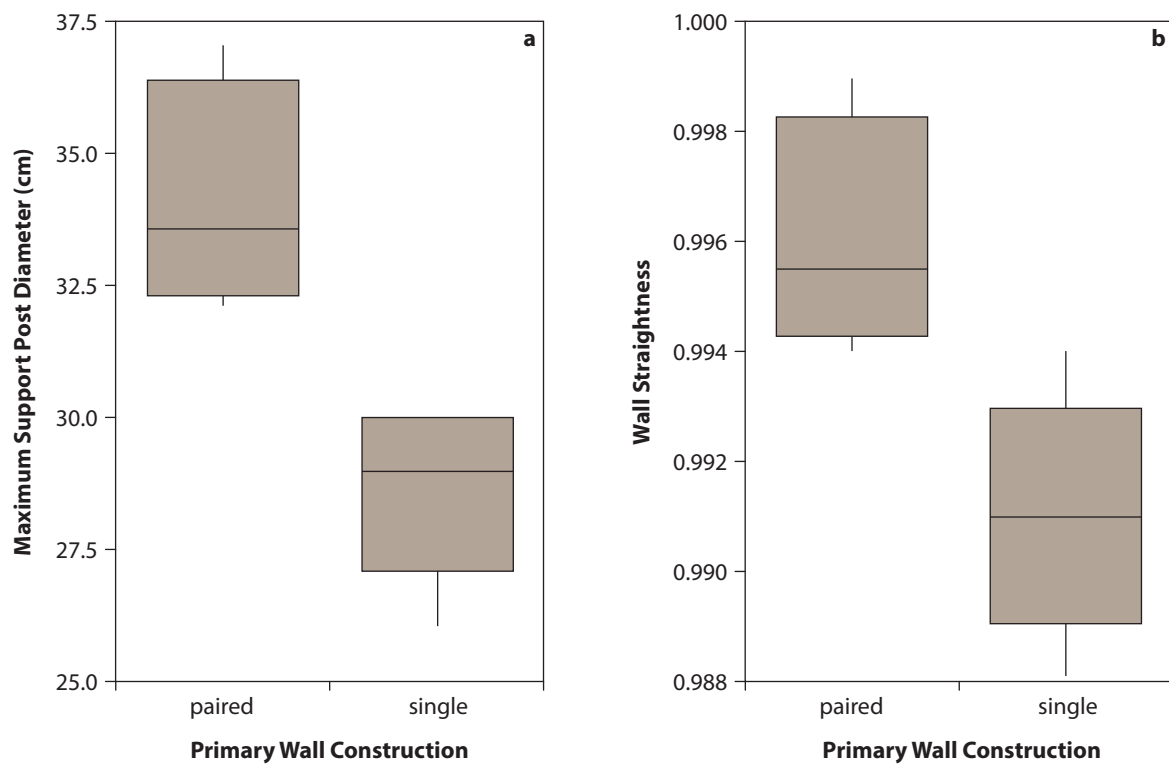


Figure 5 - Boxplots of longhouse construction attributes at the Myers Road site (ca. AD 1280-1340). Maximum support post diameter (a) and wall straightness (b) are significantly higher for houses constructed mainly using the paired and staggered post technique. Single-row constructed houses have smaller supports and more erratic walls.

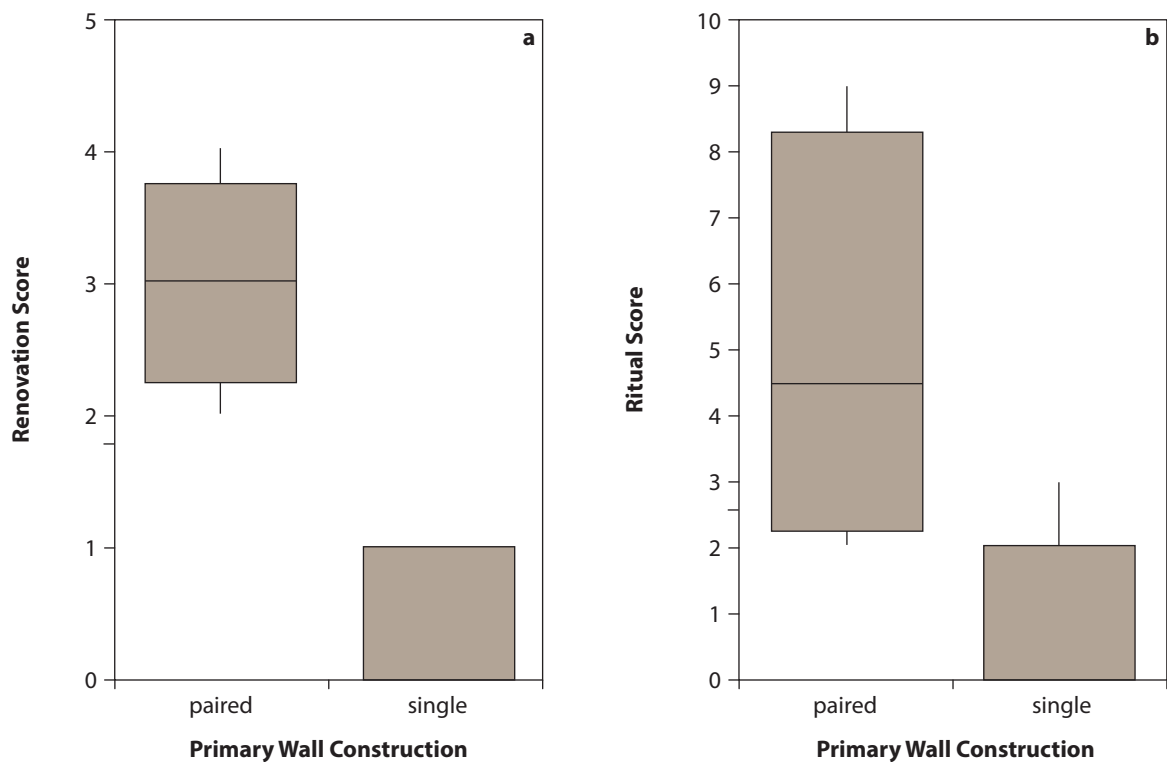


Figure 6 - Boxplots of longhouse construction attributes at the Myers Road site (ca. AD 1280-1340). Renovation score (a) and ritual score (b) are significantly higher for houses constructed mainly using the paired and staggered post technique. Single-row constructed houses have fewer rebuilds and extensions / contractions, and fewer intramural burials and sweat lodges.

Thus, the 13th century was a critical period in which questions of social alliance would have been brought to the fore. Building houses and “extending the rafters” (Foster *et al.*, 1984) to accommodate newcomers were projects of sociotechnical system-building, producing distinctive forms of domestic dwelling, but also structuring Iroquoian notions of power and personhood in the process (Creese, 2012a).

Not all households were destined to be equally successful in these projects, and those differences are revealed archaeologically. Longhouse wall construction methods, for instance, varied between two main types: (1) single row, and (2) paired, staggered-row techniques. Single-row construction required fewer wall posts per meter (table 1), and can be seen as a low-investment option that was also probably less durable. Paired-post type construction used more posts per meter (table 1), and was likely more demanding in terms of technical complexity, labour, and resources.

Wall straightness also varied between houses, even between structures located just meters apart and on similar terrain. In houses averaging nearly 40 m in length, straight walls would have been difficult to achieve. Where present, they attest to the coordination of large numbers of workers by experienced master builders. Similarly, the average and maximum size of support posts would have had implications for labour costs and the long-term durability of structures. Evidence for house longevity and refurbishment in the form of wall reinforcements, renovations, and extensions, may reflect the ability of residents to sustain the house in the face of demanding reciprocal obligations to provide labour and expertise to peer groups.

Summary data on these attributes is provided in table 1 for a sample of 13th to 15th century longhouses from the Wellington, Berkholder 2, and Myers Road sites (Williamson, 1998, 2005; Robertson, 2005). Strong patterns are evident in the data. Across the sample, houses with larger internal support posts were also likely to have straighter walls ($R^2=0.48$, $F=6.38$, $p=0.04$; figure 3a). Extra support would have facilitated higher storage loads for foodstuffs like maize, which historically was braided and hung from the rafters to dry. Support post size and wall straightness were also positively associated with wall post density ($R^2=0.69$, $F=15.74$, $p=0.005$; figure 3b) and renovation intensity ($R^2=0.76$, $F=21.72$, $p=0.002$; figure 4a), suggesting that high-investment buildings had longer lifespans and were more likely to be reinforced and extended. Houses with single-row wall construction had smaller maximum supports, more erratic walls, lower wall post densities, fewer interior features, and fewer extensions and repairs than houses with paired-post wall construction (figures 5-6). Moreover, at Myers Road, high investment, long-lived houses were more likely to contain intramural burials and semi-subterranean sweat baths ($R^2=0.60$, $F=10.48$, $p=0.01$; figures 4b, 6b). The association of these ritual activities with renovation intensity may indicate their importance in memorializing important events in the life of the house (see below). Together, these patterns illustrate significant variation in households’ ability to draw upon reliable allies and kin over the lifespan of the house. Some families were clearly more successful than others, and disputes over who would be defined as appropriate kin and friends were probably endemic.

4 - Spatial Order and the Domestic Economy

The spatial arrangement of everyday activities about the house provides additional perspective on these issues. As part of my doctoral research I used a method for examining patterns in the organization of interior space known as kernel density estimation. I digitized the plans of 45 hearth areas from longhouses dating between AD 900 and 1500. Hearth areas were defined by a sampling square proportional to house width centred on the hearth. For each hearth area, kernel density estimation algorithms were used to extrapolate probability surfaces that represent general trends in feature distribution (Creese, 2012b).

Putting this data together it was possible to come up with a model hearth area plan showing the typical arrangement of space about the central hearth (figure 7). Equally uniting and dividing, the hearth formed a critical axis for the organization of domestic space. It mediated symmetrical social relations between paired nuclear families in the lateral dimension, and asymmetrical relations between residents and outsiders in the longitudinal dimension. As I have argued elsewhere, these patterns both reflected and reproduced a characteristic Iroquoian ontology of social wholes as potent alliances of parts (Creese, 2012a).

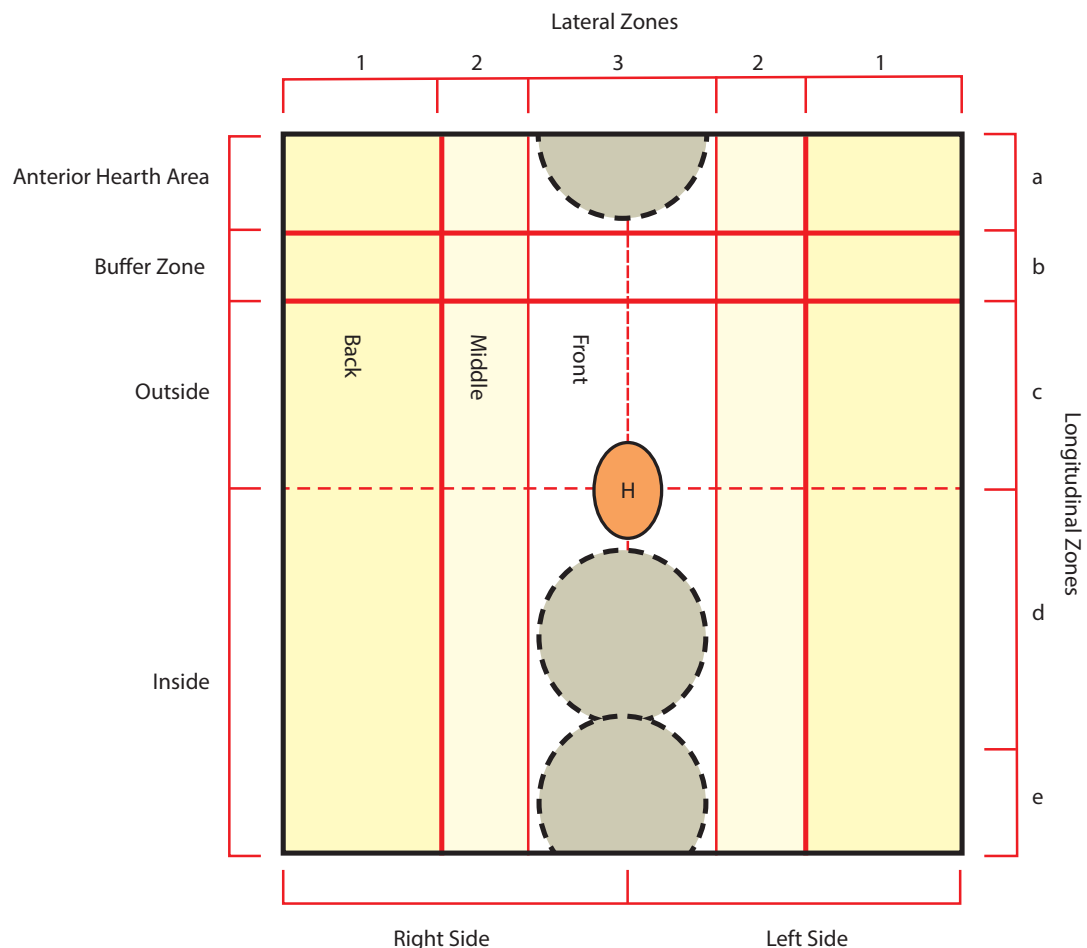


Figure 7 - Model of activity zones around an ideal central hearth based on a kernel density estimation analysis of 45 hearth areas from longhouses in southern Ontario. Note that the hearth defines two overlapping orthogonal axes of spatial activity. Activity zones of symmetrical size and content occur bilaterally (zones 1-3), while those of asymmetrical size and content occur longitudinally (zones b-e). Dotted circles represent the position of dense post clusters. Details are published in Creese, 2012a, b (CAD: John L. Creese).

However, these regularities belie the tensions and contradictions through which they emerged. This is especially evident during the Early Iroquoian period. At this time, deep cylindrical storage pits can be found in a variety of contexts, both inside and outside houses (Williamson, 1985; Fox, 1986; Timmins, 1997). In some cases, we see them located beneath bunk-lines, suggesting that nuclear families controlled associated production and consumption. However, in other cases, storage seems to have been organized at larger scales extending beyond the house itself (Fox, Salzer, 1999). With the rapid growth of longhouses in the 13th century, end vestibules tripled in area on average (Creese, 2011: 246), and became areas for collective above-ground storage for large cooperative groups (Dodd *et al.*, 1990; Kapches, 1994). Most likely, the longhouse as a whole was established as the primary institution for the communal appropriation of surplus.

Revealingly, however, this development did not put an end to variation in storage solutions. Deep pits continued to appear in some houses and not others. Their real-world distribution was sporadic, not regimented according to patterns of bilateral symmetry. Moreover, smaller pits, used by the Wendat to conceal items from common view (and from the demands of a sharing ethic) were unevenly distributed across hearth areas. [Table 2](#) lists feature counts and total pit volume

Site	House	Hearth Area	Area (m ²)	Pits (n)	Features Left Side (n)	Features Right Side (n)	Feature Symmetry (min/max)	Total Pit Volume (l)	Pit Volume Left (l)	Pit Volume Right (l)	Pit Volume Symmetry (min/max)	Inter-HA Storage Distribution (min/max)	Inter-HA Feature Distribution (min/max)	Inter-HA Support Post Distribution (min/max)
Wellington	House 1	1 East End	42.3	4	5	1	0.20	4174.0	57.8	4116.0	0.01	0.05	0.75	0.86
Wellington	House 1	2 East Middle	42.3	3	1	2	0.50	197.5	172.1	25.4	0.15	0.05	0.75	0.86
Wellington	House 2	1 East End	33.6	7	7	3	0.43	338.6	153.9	120.9	0.79	0.99	0.64	0.83
Wellington	House 2	2 West End	42.3	11	8	7	0.88	335.1	303.9	31.2	0.10	0.99	0.64	0.83
Berkholder 2	House 1	1 East End	57.8	4	2	2	1.00	275.4	168.2	107.3	0.64	0.04	0.25	0.76
Berkholder 2	House 1	2 West End	56.3	1	1	2	0.50	10.3	0	10.3	0	0.04	0.25	0.76
Berkholder 2	House 2	1 East End	49.0	4	3	4	0.75	119.3	48.4	70.9	0.68	0.04	1.00	0.62
Berkholder 2	House 2	2 West Middle	51.1	4	4	2	0.50	3060.1	1125.7	1934.4	0.58	0.04	1.00	0.62
Berkholder 2	House 3	1 East End	58.5	7	3	8	0.38	477.1	197.3	279.8	0.71	0.28	1.00	0.42
Berkholder 2	House 3	2 West End	58.5	7	4	2	0.50	1682.8	1119.2	536.9	0.48	0.28	1.00	0.42
Berkholder 2	House 4	1 East End	51.8	1	0	0	na	230.2	0	0	na	0.11	0.50	0.93
Berkholder 2	House 4	2 West End	54.8	2	1	0	0	2003.1	111.3	0	0	0.11	0.50	0.93
Mean			49.9	4.6	3.3	2.8	0.51	1075.3	288.1	602.8	0.38	0.25	0.69	0.74
SD			8.1	2.9	2.5	2.5	0.29	1361.6	399.5	1233.0	0.32	0.36	0.28	0.18
Min			33.6	1	0	0	0	10.3	0	0	0	0.04	0.25	0.42
Max			58.5	11	8	8	1	4174.0	1125.7	4116.0	0.79	0.99	1.00	0.93

Table 2 - Summary data for 12 hearth areas from six longhouses at the Wellington and Berkholder 2 sites. Hearth areas were delineated by placing a square with dimensions equal to house width over each central hearth. Feature symmetry is the proportion of feature counts from one lateral side of the hearth relative to the other (min/max). Pit volume symmetry is the proportion of total pit volume on one side of the hearth relative to the other. Inter-HA storage distribution is the proportion of total pit volume in one hearth area relative to another in the same longhouse (min/max). Values close to 1.0 represent an even distribution of pit volume between hearth areas, while low values represent an uneven distribution. Pit volume was calculated from dimensions reported in Robertson, 2005, and Williamson, 2005 and should be considered approximate.

for left and right hand sides of a sample of 12 hearth areas at the Wellington and Berkholder 2 sites. At the whole-house level, features were, on balance, symmetrically distributed on either side of the central axis. However, *within* any given hearth area, the distribution was markedly asymmetrical, with an average of 2.5 times the storage volume on one side of the hearth as the other. Even more striking, total storage volume varied widely between different hearth areas, ranging from 10 to 4174 litres, with a standard deviation of 1362 litres (table 2). Among contemporary hearth areas there was an average *four-fold* difference in total pit volume between any two hearth areas within any given longhouse (average inter-HA storage distribution = 0.25, table 2). This pattern is unlikely to be the result of differences in hearth area occupation duration or post-depositional disturbance, as interior support posts were relatively evenly distributed across the same hearth areas (table 2).

The high degree of unevenness in subterranean storage among hearth areas at Berkholder 2 and Wellington is telling. It indicates that the ways in which social groups within the longhouse routinely cooperated for activities such as food processing, storage, and consumption varied significantly. The use of communal storage in house end vestibules alongside unevenly distributed subterranean storage in family spaces suggests that tensions existed between the demands of communal production and consumption at the house level, and the interests of resident subgroups in withholding or concealing certain goods and activities from collective appropriation. The vision of daily life that emerges from this analysis is not one of harmonious egalitarianism, but rather of constant negotiation between competing scales of social and economic cooperation.

5 - Ritual and Social Memory

Ritual provided a third arena in which projects of sociotechnical network-building were pursued in the house. Like house construction and the rhythms of the domestic economy, ritual sweat bathing and mortuary processing were opportunities for extending social relationships through acts of literal and figurative body bundling (cf. Pauketat, 2013).

From the very beginning, longhouses were settings for interactions between the living and the dead (Spence, 1994a). In many Early and Middle Iroquoian houses, bundle-burials were interred in multiple graves beneath house floors or in semi-subterranean lodges (see below). These activities served to articulate social wholes through the bundling of bodies and bones. At the Miller site (Kenyon, 1968), seven widely scattered graves were discovered in various parts of the settlement, both inside and outside the palisade, and within a house. These graves held from one to 13 individuals, with most including three or four secondary bundle burials. At Praying Mantis, a secondary burial containing the remains of at least eight individuals was located in a pit at the east end of House 2 (Spence, 1994b; Howie-Langs, 1998). The pit was also used for other activities, probably initially storage and later for refuse disposal. The human burials marked a closure of the activities of production and consumption associated with the pit, and directly linked them with a specific social group through the bundling and deposition of human remains. Nearby this burial, another distinctive pit contained the near-complete remains of numerous mammals – a deer, two otters, and nine racoons. This parallel act of body bundling perhaps was intended to define the human social group through its connections with animal relations.

By the late 13th century, multiple secondary burials were increasingly located outside village boundaries (Williamson, Steiss, 2003). However, select burials and funerary processing activities continued to occur in the house. Human remains could be used to mark building and renovation events. At the Uren site, Wright (1986) reports the recovery of a human long bone from a support post foundation. At the Antrex site, a longhouse was rebuilt along a new orientation, but in a manner

that maintained an area of overlap with a multiple burial feature located beneath one of its central hearths (Thomas, Robertson, 2010). As noted above, intramural burials at the Myers Road site were positively correlated with house construction quality, durability, and renovation intensity. This pattern indicates that groups that were more successful in assembling enduring sociotechnical networks about the house memorialized these efforts through special mortuary treatments for certain individuals. If it is appropriate to view such practices as articulating and memorializing social groups connected with the house, then this variation indicates that competing visions of the nature of these social units co-existed, often within a single community.

Semi-subterranean lodges, probably specialized facilities for sweat-bathing (MacDonald, 1988, 1991), are often closely associated with intramural human and animal burials. They first appeared in the late 13th century, at the very time that longhouses were rapidly becoming monumental constructions. They are key-hole-shaped in plan, with a sloping entrance ramp leading to a small chamber dug into the ground and surrounded by posts that would have supported a roof. They often have complex use-lives, with primary floor activities leading to the formation of a greasy, black organic layer, sometimes associated with ritual deposits of animal faunal elements and artifacts. Many were later used for waste disposal as well as mortuary purposes (MacDonald, 1991).

If we view communal sweat-bathing as another context for social bundling, we find that the distribution of lodges within and across longhouses is telling. I quantified the orientation and location of semi-subterranean lodges across a sample of 157 longhouses from 23 sites in southern Ontario. Entrance ramps to semi-subterranean lodges built within longhouses normally faced in one of two directions. They were either aligned parallel or perpendicular to the long axis of the house. In this large sample, both orientations were equally popular at a regional scale of analysis. Of 108 sweat lodges in this study, entrance ramp orientation was almost perfectly evenly divided between parallel and perpendicular alternatives. If we look at the distribution of lodges across categories of house space, we find that a gradient of accessibility vs. depth was marked out. Just 5 % of lodges were located in end vestibules, 15 % in the central corridor, and fully 80 % in side platform areas or appended externally (Creese, 2011: 285).

These patterns in location and orientation were not coincidental, but a matter of ritual concern. At the Hubbert site's House 2 (MacDonald, Williamson, 2001), bilateral pairing and orientational contrasts reinforced basic structural relations between social parts and wholes. Two longitudinally-oriented lodges were later replaced by lateral facing structures. Further, a central lodge faced in the opposite direction of the first two lodges (figure 8). Its central position seems an intentional counterpoint to the paired lodges to either side. Similar bilateral arrangements have been excavated at Alexandra, Day, Dunsmore, and Myers Road (MacDonald *et al.*, 1989; Robertson, Williamson, 2003, 2008).

At first blush, these spatial patterns appear to affirm a vision of the house as a balanced and harmonious union of allied sides. But here again, the normative pattern only tells part of the story. When we look at dimensions of variability in the distribution of sweat lodges, we are confronted not by inclusion and equal access, but by exclusion and preferential access. Sweat lodges were distributed very unevenly between houses. In my sample, 53 % of Middle Iroquoian houses lacked sweat lodges entirely. Moreover, there was no statistical relationship between the size of a house and the number of sweat lodges it contained (Creese, 2011: 259-260). This suggests that the size of the social groups that controlled and used particular sweat lodges varied tremendously, and, given their predominantly restricted location within houses, indicates that these rituals were as important for who they excluded as who they included.

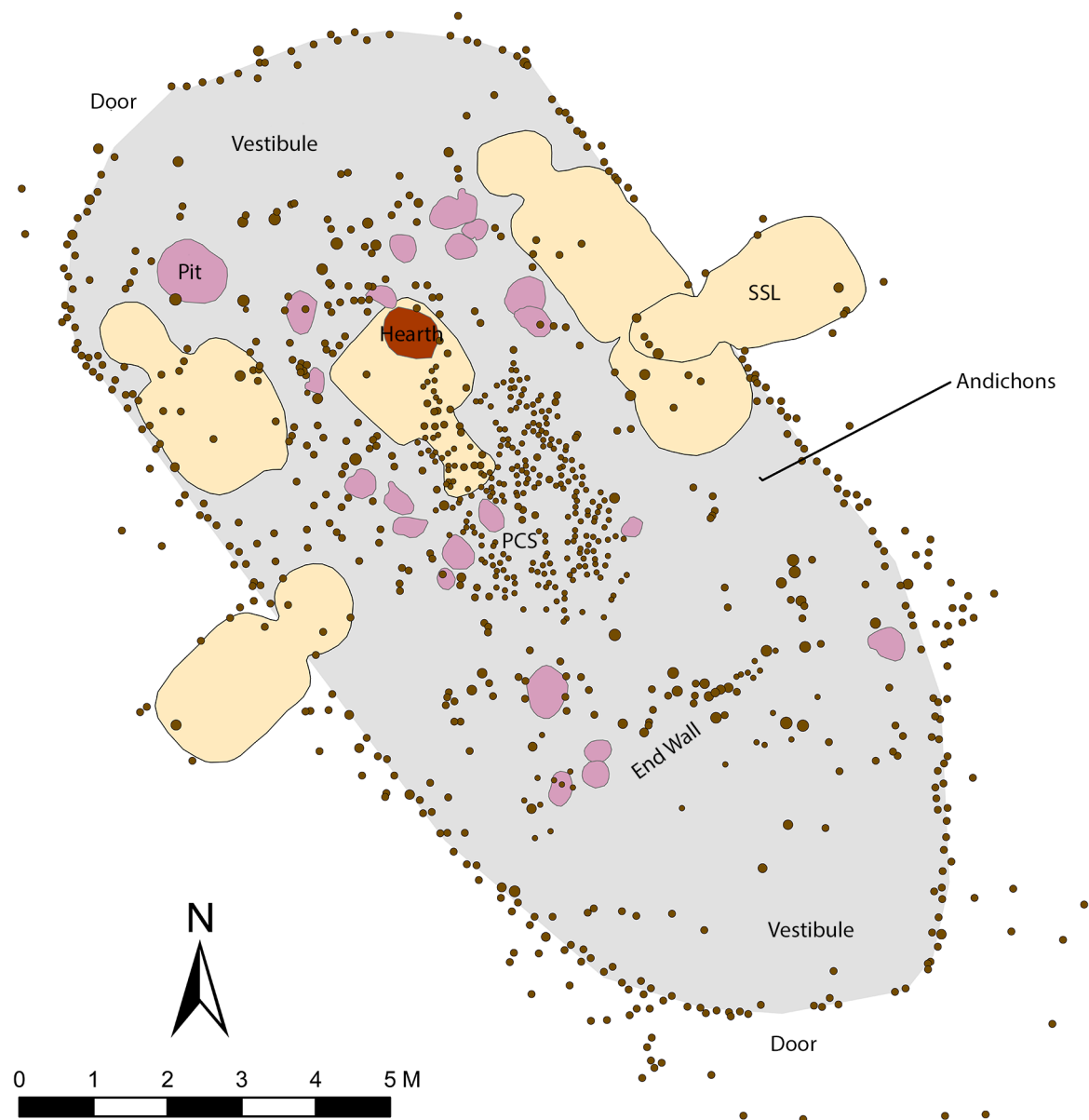


Figure 8 - Floor plan of House 2 at the Hubbert Site (ca. AD 1425-1475), showing bilateral pairing of semi-subterranean lodges (SSLs). These flank a central hearth that overlaps an earlier central SSL (after MacDonald, Williamson, 2001).

6 - Reassembling the Longhouse

So how does this way of looking at the longhouse change our understanding of its role in Iroquoian history? Viewed as an unfolding project of relationship-building, what can we say about how the longhouse constituted the social world of its builders and inhabitants? At the most general level, the house can be seen as the nexus of a series of social and economic accumulations and redistributions that negotiated a tense and sometimes conflicted relationship between social parts and wholes, individuals and collectives. As a sociotechnical system, the longhouse drew people and materials together for building and repairing the house itself, routine consumption

about the common pot, feasting and dancing, games and rituals. Moreover, the temporalities of house life structured these patterns of social gathering and dispersal according to distinct rhythms – daily as women departed to work in the fields and returned to eat and tell stories, seasonally as men followed the war-path and returned bearing captives or trophies, and generationally, as houses were established, grew to incorporate new families, and eventually contracted, broke apart, or were abandoned.

These patterns helped establish an enduring Iroquoian logic of social extension (cf. Foster *et al.*, 1984). Within this system, power and well-being were understood to flow from the expansion of social entities through alliance-building and adoption. This way of structuring demographic growth was a critical move that enabled people to increase their investments in productive activities while limiting the effects this might have had on social and economic equality. It ensured that surplus labour and resources could be extracted by and directed toward collective social institutions rather than individuals or nuclear families, where differences in wealth and status might begin to accrue (Trigger, 1990). At the same time, following Johnson's theory of sequential hierarchy (Johnson, 1982), expanding longhouse size limited village organizational scale, buffering social interaction stress and promoting consensus decision-making (Creese, 2011).

This reading leads us back to the problem of portraying the longhouse as an idealized and unchanging reflection of the tribal society. A closer look at this “logic of extension” has revealed it to be the outcome of an ongoing struggle. As Trigger (1990) has shown, the relative social equality typical of Northern Iroquoian communities was the product of an internal struggle against perceived selfishness, hoarding, and witchcraft – practices that threatened to undermine the benefits that might be gained by collectivizing production and consumption. Accordingly, if the longhouse seems ideally suited to promoting egalitarian economic and social relations, it is not because it mechanically reproduced those values, but because it emerged as the critical terrain of a contested project of social assembly.

Conclusions

The Iroquoian longhouse, then, was anything but the stale reflection of a transcendent social order dictated by a tribal imperative. Rather, it was the medium by which competing projects of sociotechnical assembly were enacted. Here I follow Barrett and Ko (2010), who, in discussing megalithic monuments of Neolithic western Europe, suggest that they were not erected with an intent to project conceptual schema onto the landscape. They argue instead that through the material engagement of builders with the process of building, new fields for social conceptualization and objectification were opened up: “monuments were not initiated to inscribe a cultural order on the landscape, but by their very construction they were the medium that revealed how an order of categories might have operated” (Barrett, Ko, 2010).

So it was, I believe, with the longhouse. Understood in this way, the analytical focus for archaeology shifts to material practices within and about the house that served to assemble or articulate particular kinds of social relationships. In the Iroquoian case, enduring themes for social contestation within the house seem to have surrounded the nature of the relationship between social parts – especially individuals and families – and wider institutional collectives, probably the house, clans, and villages. If something approaching an ideal “tribal” structure was ever reflected in the longhouse, it was only as a consequence of people's creative use of bodies and buildings to experiment with different ways of knitting people together.

Acknowledgements

Special thanks to Claude Chapdelaine and Adrian Burke for inviting me to participate in the colloquium for which this paper was prepared. Much of the work was completed during my dissertation at the University of Toronto, and so I owe a great debt of thanks to David G. Smith for his enthusiasm and encouragement in this line of research. I also benefited greatly from discussions with Astrid Van Oyen, Chris Watts, and Oliver Harris. Funding was provided in part by the Social Sciences and Humanities Research Council of Canada.

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RELATIONS OF POWER AND PRODUCTION IN ANCESTRAL WENDAT COMMUNITIES

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To cite this article

Birch J., 2016 - Relations of Power and Production in Ancestral Wendat Communities, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 31-48.

RELATIONS OF POWER AND PRODUCTION IN ANCESTRAL WENDAT COMMUNITIES

Jennifer BIRCH

Abstract

During the late 15th and early 16th centuries AD, the Iroquoian societies of northeastern North America experienced widespread conflict and the coalescence of small village-communities into densely populated settlements. Regionally, these processes resulted in realignment of the geopolitical landscape and the emergence of distinct nations. To assess how coalescence unfolded at the household level, insights from one well-studied ancestral Wendat community relocation sequence will be presented. These data are interrogated within a multi-scalar analytical and theoretical framework which places the community at the center of processes of cultural change. The reconfiguration of domestic space, palisades, middens, and activity areas, together with their associated material culture suggest that coalescence resulted in the development of a significant degree of organizational complexity. This included the development of asymmetrical power relations and centralized decision-making, together with changes in the social means of production, increased demands on male and female labor, centralized management of household activities, and changes in social learning. The fine temporal resolution of these data demonstrate how these processes affected each generation as individuals and households responded to the challenges and opportunities of life in large co-residential village communities.

Keywords

Northern Iroquoian, Wendat (Huron), community, household, political organization.

Introduction

Eastern North American household archaeology has benefitted from increasingly historicized and politicized approaches which locate households within larger socio-political landscapes, rather than treating them as bounded and isomorphic entities (Pluckhahn, 2010). Examining household dynamics in terms of practice theory, “what people do as members of a domestic group” (Hendon 1996: 46, emphasis mine) allows us to understand how changes in the material record of households articulate with, and help to explain, the history of a people (Pauketat, 2001).

The archaeological record of Northern Iroquoian societies is ideally suited to exploring how daily practices relate to long-term processes of social and cultural change. After the transition to settled village life, ca. AD 1300, sites were occupied for approximately 15-30 years before being relocated (Heidenreich, 1971; Jones, Wood, 2012). New villages were usually constructed within 5 km of the previous site, although longer migrations also took place. Numerous site relocation sequences have been reconstructed which represent centuries of occupation by contiguous community groups. Studying site sequences allows archaeologists to observe genealogies of practice (Brumfiel, 2000; Pauketat, Alt, 2005), which can in turn be articulated with broader regional socio-cultural phenomena.

In the 15th and 16th centuries AD, settlement aggregation led to the formation of large, densely populated towns. As people came together, changes in routinized practices transformed social, political, and economic life, including the elaboration of consensual, asymmetrical power structures and the intensification and differentiation of production. These coalescent communities provide new insights about the relationship between scale, integration, and complexity (e.g., Blanton *et al.*, 1993; Feinman, 2013) that challenge the limitations of traditional conceptualizations of segmentary societies (Birch, Williamson, 2013a).

A brief discussion of Wendat households and communities is presented, including how relations of power and production have traditionally been constructed based on ethnohistory and archaeology. Data from one well-documented site sequence provides insights into how coalescence transformed socio-political and economic practices. These observations are then related back to larger-scale processes of political complexity and confederacy-building in the late prehistoric Northeast.

1 - Wendat Households and Communities

At the time of sustained European contact, Northern Iroquoian speakers inhabited southern Ontario, south-western Quebec, the Finger Lakes region of New York State, and the Susquehanna Valley (figure 1). Archaeological remains dating back to AD 900 which include Iroquoian cultural traits are thought to represent ancestral Iroquoian-speaking peoples, though the relationship between material culture, language, and ethnicity is far from clear. The Wendat (Huron) and their ancestors occupied south-central Ontario until AD 1650, when they dispersed from their homeland in the context of Haudenosaunee (Iroquois) aggression, epidemic diseases, and complex colonial entanglements.

The Wendat household consisted of the members of a co-residential longhouse. Each household was occupied by a core of related females and their children, belonging to a matrilineal clan segment, together with their husbands, who claimed membership in and responsibilities to another clan. Some households may not have been strictly matrilineal, as men belonging to influential or “chiefly” lineages remained in their natal longhouses (Richards, 1967; Trigger 1978). Household composition may have also varied in the context of long-distance relocation, adoption, and extended stays by kinsmen and trading partners (Birch, 2008; Snow, 2007). Rules of clan exogamy meant that each household was enmeshed in relationships with other households through ties of marriage, kinship, and obligations to residential and natal kin and clan segments. As Carballo (2011: 149-150) has noted in the context of highland Mesoamerica, the relationship between domestic economies and household composition should be viewed as “recursively entangled”. It has generally been thought that Wendat households were discrete economic units in which related women formed corporate work-groups. Vestibules at the ends of longhouses suggest that storage took place at the household level. However, the scheduling and pooling of simultaneous productive labor (e.g., Wilk, Netting, 1984) often extended beyond the household group. As such, analysis at the single household level is of limited value for most of the questions we might ask about power and production in Wendat society.

For many Native peoples in eastern North America, the town or community was the center of social and political life, and formed a core component of personal identity. Most definitions of community are informed by the phenomena that we seek to understand. In Iroquoian archaeology, the community is generally defined in socio-spatial terms (e.g., Yaeger, Canuto, 2000) as multiple co-residential households, articulating neatly with archaeological sites. My conceptualization of Iroquoian communities sees them as both flexible residential loci and fields for the negotiation

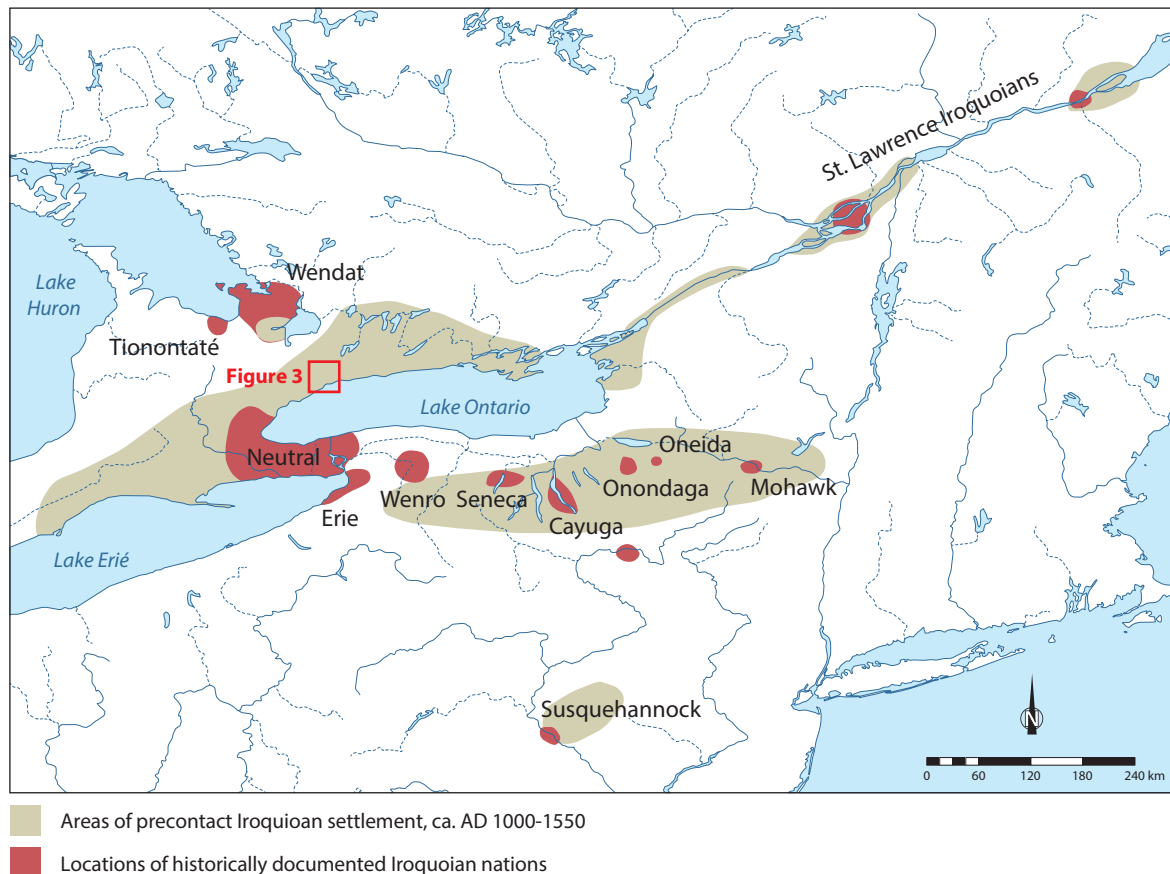


Figure 1 - Location of precontact and contact-era Northern Iroquoian societies in the Lower Great Lakes region (CAD: J. Birch).

of social identity and collective memory (Isbell, 2000; Pauketat, 2007: 107). Such an active definition injects agency and intentionality into community membership, permits the recognition of cooperating and competing interests, and helps to explain change over time, including within the occupational histories of individual settlements.

2 - Power and Production in Wendat Society

Iroquoian societies are commonly thought of as “tribal” and lacking complex forms of political and economic organization. Contemporary approaches to political organization eschew overly simple evolutionary frameworks of socio-political organization, embracing the multidimensional nature of power and authority in middle-range societies (e.g., Feinman, Neitzel, 1984; Cobb, 2003; Grinin, Korotoyev, 2011). Conceptual frameworks informed by collective action (e.g., Blanton, Fargher, 2008; Carballo, 2013) have demonstrated that ranked political structures may be generated from the bottom up, whereby power is relational, contextually specific, and negotiated in the context of fluctuating social, material, and historical conditions (Thomas, 2002; Brück, Fontijn, 2013).

Wendat culture included both influential leaders and powerful leveling mechanisms which reflected the importance of cooperative behavior (Tooker, 1964; Trigger, 1976). Ethnohistorically, representatives of each clan segment within a community were responsible for civil functions and external affairs. Ethnohistoric accounts name leaders with exceptional influence who represented their nations and, in at least one instance, the confederacy as a whole in their relations with foreigners (Trigger, 1985: 223-224). For the Wendat, power was gained by consensus-building,

rather than structural or wealth-based inequality. Some individuals who attained leadership positions possessed characteristics which met the requirements of the position or the community at particular moments in time. Certain chieftainships were also inherited, and the names, duties, and embodiment of key traits passed down within specific lineages (Thwaites, 1896-1901, 10: 235; Tooker, 1964: 43).

Archaeologists studying the Wendat have at times confused notions of hierarchy and rank (Jamieson, 2011: 1). This is particularly so when the archaeological record is interpreted in the context of Trigger's (1976, 1990) construct of Wendat society. While Trigger promoted the egalitarian ideals of Wendat society, he recognized that institutionalized and informal inequalities were also present, with Wendat chiefs and their families constituting an "economically and politically privileged group" (1990: 99).

Women wielded significant power in Wendat affairs (Lafitau, 1724: I: 66-67; Brown, 1970). Senior women of the clan selected and unseated leaders. Women also arranged marriages, binding clans, households and communities together to particular ends. Domestic structures, property, field systems, and the harvest all belonged to women; they produced the vast majority of a group's food, and were in command of the domestic economy. Women's status may have been asymmetrical in the same way that men's was. As consensus builders, mediators of conflict, transmitters of skills, and those in control of the domestic means of production, women's power was exerted in domains not always considered to be explicitly political. Discussions of Iroquoian political systems have predominantly focused on a top-down approach to classification and structure. My approach is decidedly bottom-up, focusing on how settlement aggregation, social integration, and changes in the production and consumption of the necessities of life, led to the development of new forms of organization and leadership in one Iroquoian community.

3 - Settlement Aggregation in 15th and 16th Century Iroquoia

Through six centuries of agricultural intensification and population growth, Iroquoian settlements evolved from small semi-sedentary bases where maize was grown on a small scale – to larger and more sedentary settlements where the contribution of maize to the diet reached 50-60% (Katzenberg *et al.*, 1995; Birch, Williamson, 2013b: 25-44; Pfeiffer *et al.*, 2014). A 14th-century population increase meant that by the early 15th century much of the north shore of Lake Ontario was populated by villages with populations of some 200-500 persons clustered along the major tributaries draining into Lake Ontario (Warrick, 2008).

Between 1450 and 1500, village sites became fewer in number, larger in size, and more widely spaced during a process of regional settlement aggregation. Some of the resulting settlements contained more than 1500 inhabitants (Finlayson 1985; Birch, Williamson 2013a). Connections engendered by the proximity of early fifteenth century communities – common resource extraction areas, trails, kinship, ceremony, and trade – influenced the amalgamation of groups sharing drainage-based territories. Heterogeneous ceramic assemblages suggest that aggregated villages also included people from farther afield (e.g., Ramsden, 1978, 1990; Birch *et al.*, 2017). Aggregated settlements contain abundant evidence for conflict, including defensive palisades, butchered human remains in middens, and burials exhibiting violent trauma (Engelbrecht, 2003; Williamson, 2007). Formative aggregates have palisades that were extended to accommodate new clusters of longhouses (figure 2). The extension of palisades suggests that aggregation occurred rapidly, within the average 15 to 30-year lifespan of settlements. The creation of large social aggregates generated significant organizational challenges for managing, ordering, and integrating populations (Birch, Williamson, 2013b).

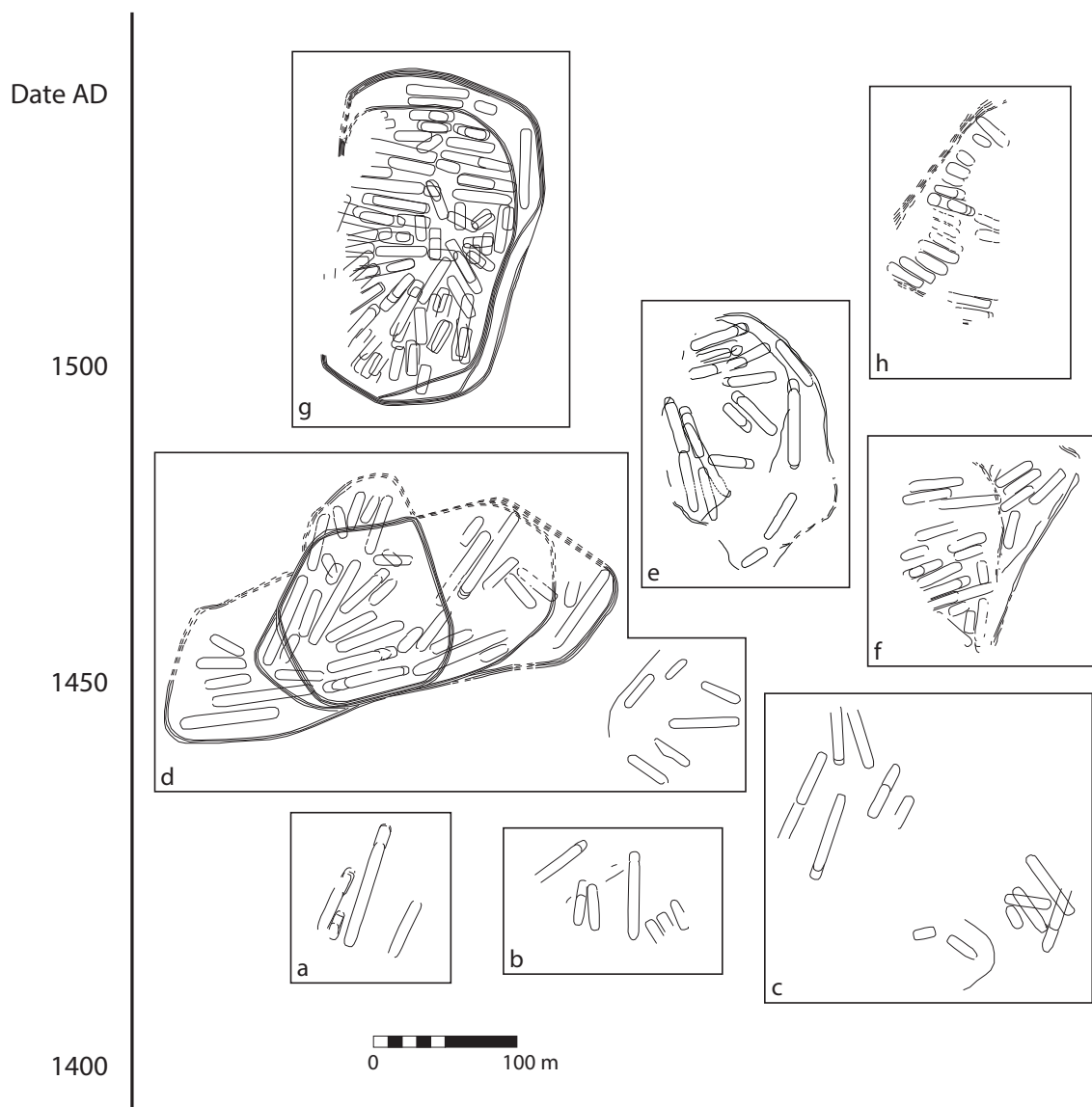


Figure 2 - Selected site plans, ca. AD 1400-1550. Pre-coalescent sites: a) Baker (ASI, 2006), b) Over (DPA, 1996); c) Hope (ASI, 2011). Formative coalescent sites: d) Draper (Finlayson, 1985); e) Keffer (Finlayson et al., 1987); f) Damiani (ASI, 2012). Consolidated coalescent sites: g) Mantle (ASI, 2014); h) Seed-Barker (Bugar, 1993).

4 - The West Duffins Creek sequence

In the mid-to-late 15th century, eight small village communities came together at the Draper site (Finlayson, 1985; Warrick, 2008: 136-137; Birch, Williamson, 2013b: 78). This community then relocated as a whole at least twice, to the Spang and Mantle sites, before continuing north to occupy later sites in the Holland River drainage (figure 3) (Birch, 2012; Birch, Williamson, 2013b). Of these, Draper and Mantle have been completely excavated and provide insights into how these communities were transformed during the process of coalescence.

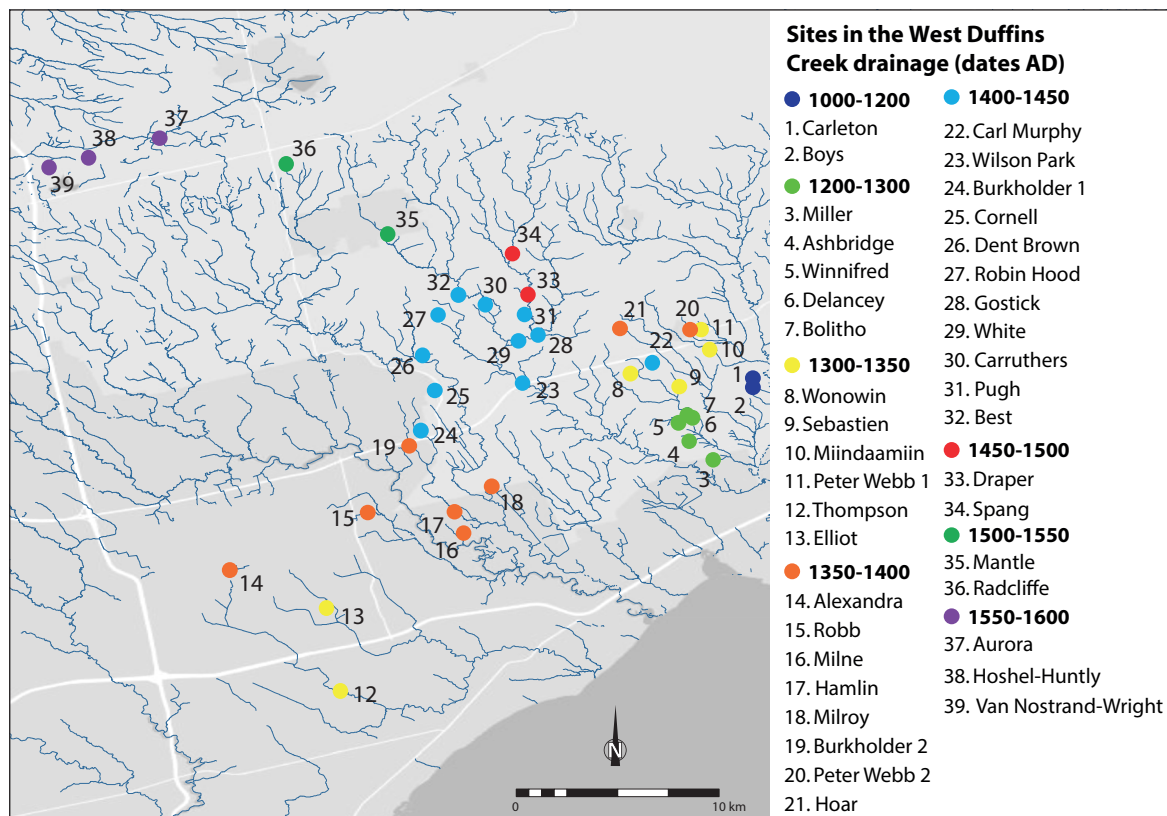


Figure 3 - West Duffins Creek site relocation sequence (CAD: J. Birch).

The Draper village began as a single cluster of aligned houses surrounded by a multi-row palisade. Over approximately twenty-five years that palisade was expanded on five separate occasions to incorporate new clusters of aligned longhouses and a maximum estimated population of some 1800 persons (Finlayson, 1985) (figure 4). Each of these longhouse groups retained a distinct spatiality, and likely a distinct identity within the village aggregate (Birch, 2012; Birch, Williamson, 2013ab). Historical documents indicate that the longest houses in a settlement belonged to community leaders and served as venues for council meetings and other gatherings (Trigger, 1976). Since each house cluster at Draper contains one such 'long' longhouse, each group may have retained distinct social and political functions. At the same time, while each longhouse cluster may have remained relatively autonomous, more formal means of social and political organization would have been required.

With aggregation, it is inferred that community segments and their representatives entered into negotiations over the configuration of infrastructure and space in densely packed enclosures, construction and maintenance of defenses, access to hunting territories, trade routes and trading partnerships, land tenure, participation in and control of feasts and ritual activities, internal ranking and selection of spokespersons, and other issues that required complex decision-making (Birch, Williamson 2013a). In pre-coalescent communities these functions were most likely managed by lineages or households (MacDonald, 1986; Warrick, 1996). At Draper, a village council would have been required to coordinate decision-making and resolve disputes between community segments.

The Spang site was occupied intermediately between the Draper and Mantle sites. It has only been subject to surface collection and limited excavations which revealed portions of five long-houses and a multi-row palisade. While the ceramic assemblage is consistent with its temporal and spatial occupation intermediately between Draper and Mantle, ca. AD 1475-1500, little is known about the spatial configuration of the settlement.

The community relocated again, as a whole, from Spang to Mantle, ca. AD 1500. While the Mantle community plan exhibits a more cohesive layout than Draper, the settlement had a dynamic occupational history. In the early phase of the site's occupation, houses were arranged in a more or less radial alignment around a single, open plaza (figure 4). Cross-culturally, plazas are socially integrative facilities and the Mantle plaza may have served both ritual and secular functions (Adler, Wilshusen, 1990).

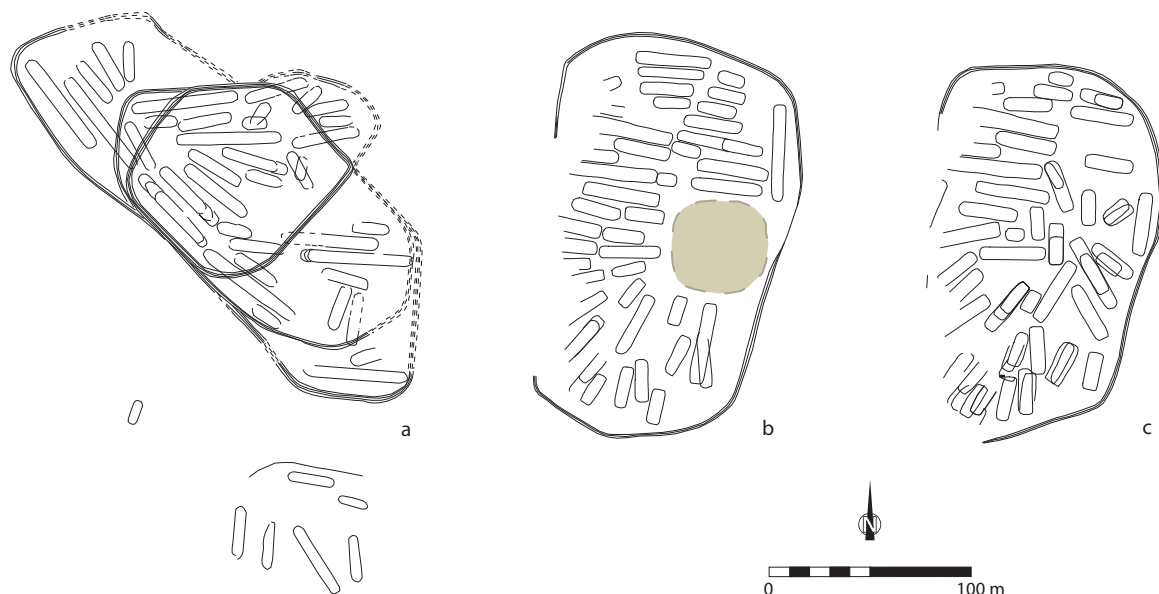


Figure 4 - Draper and Mantle site plans. a) Draper, maximal extent (after Finlayson, 1985); b) Mantle, early village; c) Mantle, late village (after Birch, 2010; ASI, 2014) (CAD: J. Birch).

At Draper, there are no material correlates that would suggest the existence of centralized political organization; however, we can infer that such practices must have existed or were developing. If we accept that the organization of space cognitively precedes its material expression (Rapoport 1994; Ingold, 2000: 186), we can infer that the negotiation of the integrated Mantle community plan was generated at Draper or at Spang. Indeed, one of the more insightful conclusions that can be drawn from this site sequence is that institution-building both preceded and continued to develop concomitantly with aggregated communities.

Houses 15 and 20 are two very long longhouses (>50 m), situated on the highest topographic portion of the site. These structures, and the smaller houses which closely flank them, have very high wall post densities compared to most other structures in the village, suggesting more frequent rebuilding or repair (figure 5). We can thus infer that they served an important and enduring function in the community (Birch, Williamson, 2013b: 72-73). It is possible that House 21, a small special-purpose structure appended to House 20 served as a storage facility. However, while Houses 15 and 20 persisted throughout the occupation of the site, the high degree of integration evident in the village plan did not. After approximately 10-15 years, the palisade was contracted and the plaza filled with structures (figure 4). This contraction occurred shortly after the abandonment of 5 to 6 houses in the northern portion of the village, thought to represent the departure of some 400 people; a group approximately the size of a pre-coalescent community

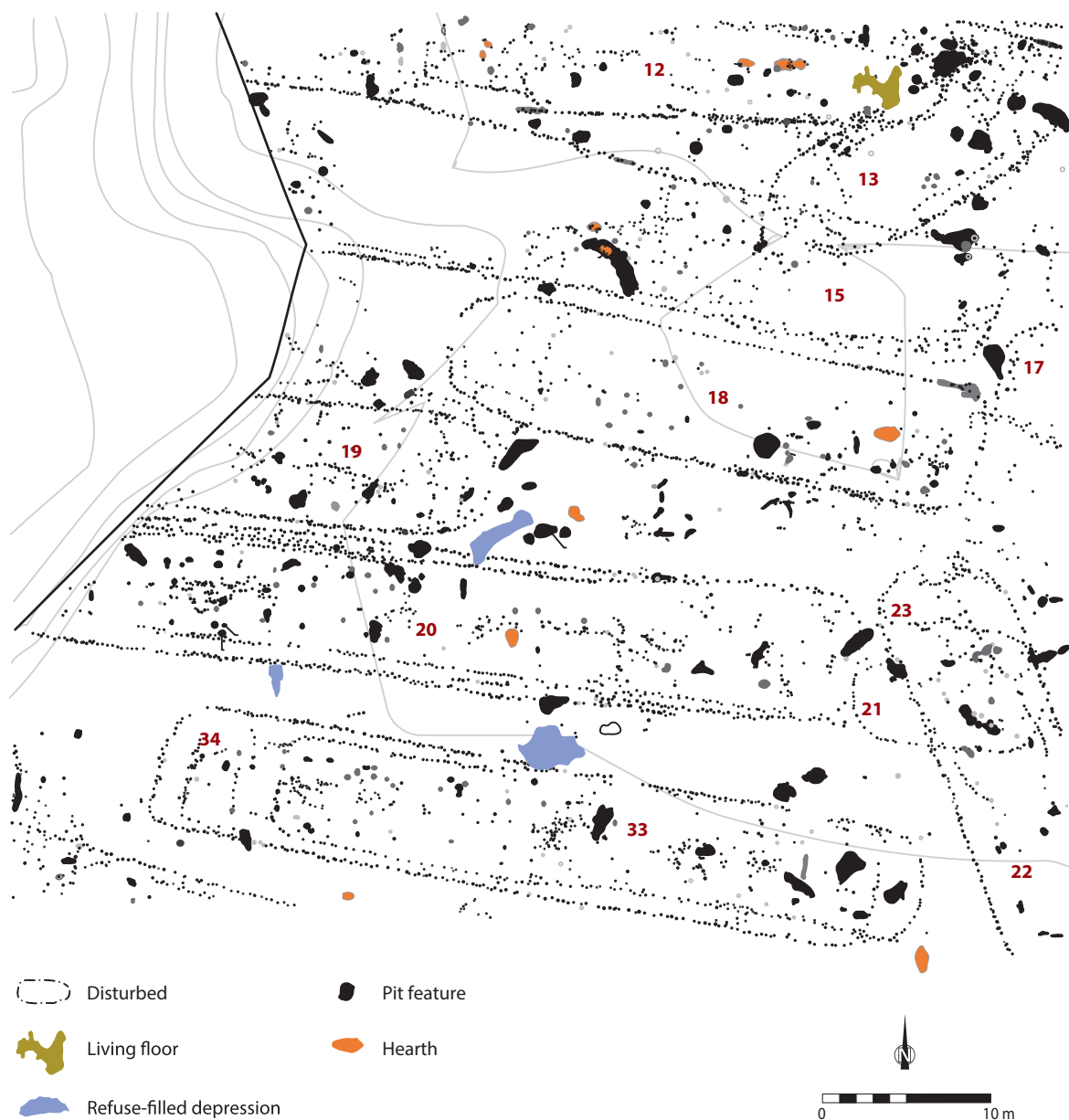


Figure 5 - Houses 15 and 20, with adjacent houses, Mantle site. Interpreted as the political center of the community (after Birch, Williamson 2013b: 70; CAD: J. Birch).

(Birch, Williamson, 2013b: 78). The palisade reconstruction also involved the creation of an earthen embankment, based on the presence of a borrow trench. While the elaboration of the palisade might suggest an increasing concern for defense, there is a dramatic decrease in human remains in non-burial contexts at Mantle compared to Draper. Evidence for an early 16th century decline in conflict is repeated across the north-west shore of Lake Ontario (Birch, Williamson, 2013b: 39).

Evidence for centralized decision making continues to be evident in the community's waste management system. At Draper, middens were deposited at the ends of houses, within the village precincts. At Mantle, an organized waste management system directed refuse out of the village. In the early phase of the site's occupation it was channeled into a large hillside midden. Later, waste was also deposited in the borrow trench. The collective adoption of this strategy implies either coordinated decision-making by the village as a whole or the imposition of the practice by those in positions of influence. Together, the central plaza, prominent residences, waste management system, and the reorganization of the community plan serve to materialize a more complex narrative of social and political relations than is apparent in earlier communities.

5 - Relations of power

Coalescence generated new political structures. While positions of leadership may have preceded coalescence, leaders who could build consensus and manage community affairs may have been especially important in larger villages. Kin groups with longer-lived ties to settlements may have achieved elevated status due to their relative emplacement within the community. In the context of population relocation in the US Southwest, Shachner (2012: 24) noted that local resources, rights, and decision-making were controlled by relatively stable individuals and groups, rather than by the community as a whole. In the case of the Draper-Mantle community, those households which formed the original core of the Draper community may have retained control of certain natural and political resources. Within the 17th-century Wendat confederacy, the founding nations of the Attignawantan and Attigeneenongnahac, with the longest historical presence in Wendake, were accorded ceremonial and political seniority compared to the Arendahronon and Tahontaerenat, who were the last nations to join (Trigger, 1969: 20).

In New Guinea, Roscoe (2009) observed that in times of conflict, leaders emerged who were able to effectively organize community defenses. In both New Guinea and in Iroquoia, offensive action was generally undertaken by clans or groups of related men who sought to avenge deaths or injuries to kinsmen and achieve personal status, while defense was the concern of the entire group. While certain individuals came to the fore as leaders respected for bravery on the warpath, individuals may have emerged who were able to effectively organize and maintain village defenses.

Hastorf (1990) suggests that incipient leaders also advocated for the organization of labor and management of resources. Group members often recognize that they have a better chance of stability and increased quality of life with increased organization; granting leaders *the power to organize* as opposed to *power over the organization* (Hastorf, 1990: 149). The development and importance of male leadership did not eclipse women's power in the community.

6 - Relations of production

The production and consumption of material goods and the rearing and socialization of children are among the primary functions of the domestic group (Wilk, Netting, 1984). It would appear that the relations of production, as well as the socialization of children and the transmission of skills,

were scaled up from the household level to the community level in the Draper-Mantle community as the intensification of production placed increased demands on both men's and women's labor.

Based on carbon isotope analysis, maize constituted 60-65 % of the Mantle community's diet (Pfeiffer *et al.*, 2014). This figure is somewhat elevated compared to either earlier or later populations in the region (Birch, Williamson, 2013b: 94-95). This intensification of agricultural production may have led to changes in the social relations of production, as has been observed elsewhere in the context of coalescence (Kowalewski, 2006).

Clearing new agricultural fields was labor-intensive and may have provided a source of wood for the construction and repair of dwellings and village infrastructure. Historically, men performed these tasks. The recursive entanglement of men's responsibilities to their wife's household, their natal household, and to the community may have helped facilitate the pooling of labor at the supra-household level. Some degree of higher-level organization involving both sexes would have been required to make decisions about which fields were to be cleared, when exhausted fields should be abandoned, and who would reap the immediate benefits of new field systems. Women were responsible for the planting, tending, harvesting, and processing of maize and other cultigens, as well as gathering firewood and other resources.

The intensification of maize production may not have led to technological innovation (*sensu* Boserup, 1965), but rather, as Morrison (1994: 128) describes: "social innovation related to the organization of labor within or between social units, of scheduling, or of the social consequences of intensification such as changes in land tenure, dispute resolution, ownership, etc." The 'scaling up' of the scheduling and sequencing of labor from the household to the supra-household or community level may have been a temporary, adaptive response to aggregation in communities like Mantle. However, just as men's power may have been linked to the ability to organize for defense, women's power may have been linked to the ability to organize efficient responses to subsistence needs, as well as their role in hosting and organizing feasts and other communal activities (Bowser, Patton, 2010).

Stored food was one of the major forms of wealth for the community. Women controlled the distribution of foodstuffs which made major male activities possible, including council meetings, diplomatic travel, waging war, as well as ceremonial feasts and festivals (Brown, 1970; Hewitt, 1933). According to Brown (1970: 164), "[t]hese economic realities were institutionalized in the matrons' power to nominate Council Elders and to influence Council decisions". Wendat nations and communities also possessed public treasuries which contained furs, worked goods, and stored foods. Historically, these goods were used to develop diplomatic and trade relations and dispensed in community-wide feasts (Trigger, 1990). If these coffers started to empty, the community would be called upon to replenish them.

Estimates of deer densities and hide needs extrapolated as annual hunting territories for contemporary 15th and 16th-century communities on the northwest shore of Lake Ontario exhibit considerable overlap, which may have been one possible source of conflict (Gramly, 1977; Birch, Williamson, 2013b: 113-118). By the early 16th century, declining local availability of ungulates may have led hunters to be away from the village for extended periods of time. Relative percentages of mammal and fish bone in middens (Needs-Howarth, Williamson, 2010), together with depressed nitrogen isotope levels in the Draper-Mantle population compared to earlier villages on the north shore (Pfeiffer *et al.*, 2014) suggests that the community ceased exploiting lacustrine resources, focusing on intensification of maize and deer as primary economic activities.

If sufficient hides could not be acquired through mass-capture expeditions, they may have been acquired through trade with other Iroquoian or Algonquian populations. Evidence for increased interregional interaction and exchange comes from the diversity of non-local ceramics, pipes, and the presence of both Native and European metals at the Mantle site (Birch, Williamson,

2013a; Birch *et al.*, 2017). The increased importance of trade and the “ownership” of certain trading routes, may have generated new avenues for prestige and influence in community affairs. Redmond (1998) and Godelier (1986) have discussed how declines in warfare among horticultural societies in the Amazon and New Guinea resulted in the intensified pursuit of exchange relations, creating alternative pathways to leadership.

7 - Social learning

The intensification of production and increasing importance of long-distance trade may have placed new demands on male and female labor which required them to be outside, or away from, home for extended periods of time. In this context, there is some evidence that another key function of the household – social learning and craft production (Wilk, Netting, 1984) – may have shifted to more centralized organization at the community level.

Juvenile vessels are small or asymmetrical, poorly-formed ceramics that exhibit uneven wall thickness and drying cracks. These functionally poor vessels are thought to represent the work of novice potters and can be interpreted as evidence for both play and the transmission of technological knowledge and skill.

The 741 fragments of Juvenile ceramic vessels identified at Mantle represent less than 1% of the total ceramic assemblage (ASI 2014: 194). However, more than 50% of juvenile vessels that were not found in midden contexts came from feature fill around the east end of House 15 and from a refuse-filled depression associated with House 16 (figure 6). Similarly, the densest concentration of lithic debitage at Mantle was identified in features associated with Houses 15 and 25, within the same portion of the site (ASI 2014). Such distributions may be explained away as the result of taphonomic processes or refuse disposal. However, considered in light of the other evidence for changes in the social means of production, it is possible that these loci were venues for the transmission of knowledge about the production of ceramic and lithic technology (Crown, 2001; Smith, 2005). The role of adults as socializing agents and teachers in this process reflects the transmission of child rearing duties from the household to the community level. The fact that concentrations of these materials were found in association with what we have interpreted as the political center of the community – large, long-lived, prominently located longhouses – links leadership (or power) and production in ways that have not previously been identified in Iroquoian settlement patterns.

Conclusions

As people came together to form large, organizationally complex communities, new relations of power and production were generated. This involved significant changes in the domestic and political economy, the pooling and intensification of male and female labor, and the shifting of some domestic functions from the household to the community level.

Settlement aggregation was a catalyst in the formation of “tribal” nations. The importance of landscape features is reflected in the endonyms of seventeenth-century groups (Hart, Engelbrecht, 2012: 335), linking the crystallization of ethnic and socio-political identities to the formation of site clusters and aggregated settlements in the late fifteenth and early 16th centuries. The negotiation of community-based identities and complex organizational structures may have galvanized communities into formative nations as they met the social and political challenges of coalescence.



Figure 6 - Distribution of juvenile ceramic vessel fragments (IDW) (CAD: J. Birch, J. Fernandez).

However, the relationship between this process and the formation of the political confederacies of the seventeenth century is less clear. We are still unsure to what degree the formation of the Wendat and Haudenosaunee confederacies influenced one another and a thorough review of material evidence for interaction and patterns of political development in both regions is needed to elucidate this issue.

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LATE PREHISTORIC HOUSEHOLD ARCHAEOLOGY IN EASTERN NEW YORK

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To cite this article

Rieth C.B., 2016 - Late Prehistoric Household Archaeology in Eastern New York, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 49-61.

LATE PREHISTORIC HOUSEHOLD ARCHAEOLOGY IN EASTERN NEW YORK

Christina B. RIETH

Abstract

Archaeological studies of households provide us with information about the interactions between past populations, the ways that they organized their settlements and the relationship of disparate segments of a community to each other. By examining the effects of households at several different scales, archaeologists can better understand the processes that underlie human behavior. This paper examines the Late Prehistoric Getman site in New York and the role of Iroquoian households as represented in the compartment, longhouse, and village contexts. Conclusions about equality, resource use, and the spatial organization of the longhouse are suggested.

Keywords

Iroquois, household archaeology, Late Prehistoric, settlement.

Introduction

Households are important units of analysis used by archaeologists to study the activities of prehistoric populations. Households not only define and link groups of people through a common lineage but facilitate and promote the general survival of the group by regulating the accumulation of subsistence items, develop social networks for inter-group trade, and provide inter-community relationships in times of economic hardship and warfare (Hayden, 1977). Cross-culturally, households provide a means of comparing the activities of these groups and the mechanisms by which such activities evolved across time and space. Finally, when linked with domestic architecture, households have the ability to provide information about the changes in the organization of space within structures and their period of use (Snow, 1989, 1995).

Northeast archaeologists have examined Late Prehistoric households at varying scales. These studies often focus on the role of the household within larger tribal or regionally diverse settlement areas or ecological zones (Finlayson, Pearce, 1989). Other studies have focused on the internal structure of villages and the multiple households contained within them (Knight, 1987, 1989; Prezzano, 1992; Archaeological Services, 2010) while a few studies have looked at individual households within these villages (Kapches 1984; Williams-Shuker, 2009). Michard-Stutzman (2009) and others argue that while these approaches provide detailed information about certain segments of use, the most fruitful approaches combine an analysis of the household at several different levels.

This chapter examines the role and activities of households at the Late Prehistoric (AD 1000-1500) Getman site in New York (Ritchie, 1973a). An examination of the activities occurring at different scales-compartment, longhouse, and village is presented and provides information about the diverse activities that were occurring. Comparisons with other villages are presented and provide us with a more detailed understanding of the importance of households among the Late Prehistoric occupants of New York.

1 - Household Archaeology

The household lies at the center of most settlement studies. Following Wilk and Rathje (1982: 618), “the household is the most common social component of subsistence, the smallest and most abundant activity group” with components linking the members, their activity areas, and the activities performed therein. These activities extend to the productive, distributive, transmission, and reproductive needs of the society and are embedded in the cultural and behavioral norms passed down between generations of kin groups. Cross-culturally, the size and composition of the household varies from a few individuals to several dozen members (Yanagisako, 1979; Bami, 2014). Some household members share a single house while other households have members who occupy spatially separated structures.

The size of the household has implications for mobility of its members and its ability to adapt to flexibility when dealing with diverse economic opportunities (Wilk, Rathje, 1986; White, 2013). Smaller households, often found in hunter-gatherer societies, have the ability to move across the landscape and make use of limited subsistence and economic resources. Large households, which are often found among sedentary groups, have the ability to exert greater flexibility in situations when the resources that were produced and consumed are diverse (Wilk, Rathje, 1986).

The production and distribution activities of a household often focus on the organizing ability of one or more leaders. The leaders are often responsible for scheduling and organizing members of the household around seasonal procurement tasks. Wilk and Rathje (1986: 624) suggest that such tasks may be associated with the pooling (distribution of goods within a particular household) and exchange (distribution of goods among households or larger corporate units) in a community. In societies with larger populations and more goods to distribute, the opportunities to redistribute such goods are increased and may ultimately serve to increase the leader’s status within the community.

Engelbrecht (2003) and others (e.g. Snow, 1994) argue that the residences and corresponding households of chiefs are often visible in the archaeological record and are marked by the largest houses which served not only as residences, but also meeting places, storage areas, and possibly even ceremonial locations for the community. Other features of these houses might include disproportionally sized internal compartments, more intensive pits for the concealment of shared goods, and higher quantities of non-household goods signaling the leader’s political and social status in the community.

Households are often organized around lineages and/or corporate groups who may have shared one or more central residences within a community. Corporate groups according to Freeman (1968: 266 as cited in Hayden, 1977: 3; see also Fortes, 1953; Nadel, 1951) “can be defined as one which has a body of collective rights and duties” that can be activated in diverse situations to meet the needs of a group. Corporate groups can be temporary and are not based on common descent. Schusky (1965: 77 as cited in Hayden, 1977: 3-4) defines a lineage as: “the unilateral descendants of a known common ancestor or ancestors” that extend several generations into the past.

In the Northeast, the longhouse was not only the main residential unit in Iroquoian villages but the metaphorical center of the community symbolizing the relationship of the various socio-economic components within and between villages. Hayden (1977) questions whether the activities in a longhouse were organized around corporate groups or lineages. He hypothesizes that given the amount of work that went into the construction of these houses their organization wasn’t haphazard but guided by a defined set of organizing principles within that society. One such organizing principle might revolve around the trade of goods and the ability of leaders to attract and sustain related kin groups to support this task (Hayden, 1977).

The activities of the household can be divided into those related to men's and women's work. Tasks normally associated with women's work include pottery manufacture, food processing, childcare, and crop harvesting. In agricultural societies and societies where women's labor is important in subsistence, pooling of labor often occurs and frees women's time for these activities (Brumfiel, Robin 2008: 3-5). Older children may play an important role in assisting with daily household and child-rearing tasks.

Men's work is often focused on the hunting of large animals, construction of residential structures, village defense, locating resources used in stone tool manufacture, and warfare. Men are more likely than women to be involved in political and religious activities (Snow, 1995; Engelbrecht, 2003) and evidence of these tasks may be reflected in the recovered artifacts.

Archaeological studies of households have been carried out at the individual household, residential, and community level (Kapches, 1987, 1990; Snow, 1989; Bamann *et al.*, 1992; Jameson, 1992; Warrick, 2000; Funk, Kuhn, 2003; Brami, 2014). Following Michaud-Stuzman (2009), approaches incorporating analyses at the level of the individual household and at the site level provide complementary analyses that contribute to our understanding of the past. Such studies allow archaeologists to study behavior related to the households' division of labor, the spatial arrangement of storage and processing features, ritual activities, and the ability of family groups to share or participate in activities organized along lineage and corporate group designations. Information about the incorporation of foreigners can also be inferred providing information about the adoption of captives, and other outsiders. Comparative approaches between households can also provide information about variation within villages.

2 - The Late Prehistoric Period (AD 1000-1500)

The Late Prehistoric Period is a dynamic time in the Northeast and represents a period in which major changes in settlement and social organization occurred. Included among these changes was a shift from a hunter-gatherer subsistence strategy to one reliant on the cultivation of corn, beans, and squash (Hart, 2000). The settlement patterns of these early groups underwent changes evolving from seasonally occupied camps located along major waterways to large multi-family villages situated atop defensible terraces. Resource processing and special-purpose sites were nearby and supported village activities (Perrelli, 2001; Rieth, Horton, 2010).

Large multi-family longhouses were at the center of life in these villages (Snow, 1984; Hart, 2000). The longhouse was advantageous in that it allowed one structure to be built to house extended households whose members cooperated in the completion of a variety of tasks. This was important particularly in times when men and other task groups were absent from the village. The longhouse was constructed with a line of hearths down the center surrounded by rows of bunks on either side for sleeping. The arrangement of the house allowed for the sharing of food and domestic resources as well as provided a communal work area for those living inside. Historic descriptions of these houses reveal that they were crowded structures filled with activity (Morgan, 1901; Gehring, Starna, 1988). Although efficient in construction and use, this house form came at a cost in that privacy was often lost and, unless hidden, one's personal possessions were in full view of the entire longhouse.

The size of these structures varied with the earliest thirteenth century longhouses in New York measuring 75 feet (22 m) long and 22 feet (6.5 m) wide (Ritchie, 1994). A house of this size may have contained close to 50 occupants. These structures grew to nearly 400 feet (121 m) in length in the fifteenth century with several hundred individuals residing inside (Tuck, 1971). Changes in the household caused by the incorporation of new members can be seen archaeologically in the expansion and reorganization of living and task areas in the structure.

Finally, early settlements were not surrounded by palisades or ditches suggesting that the location of sites atop terraces was sufficient for defense. Beginning in the 13th century, settlements contained increasingly complex fortification units consisting of single and double palisades. These structures were seemingly used for defense as well as creating a physical boundary between those “of” the village or household and those “outside” the village or household.

3 - Households at the Getman Site

The remainder of this paper examines the role of households at the Getman site, one of the largest and most extensively examined sites in the Mohawk Valley of eastern New York (figure 1). The site is located four miles from the Mohawk River in Montgomery County and archaeological investigations conducted in 1957 revealed six longhouses encircled by a double-walled stockade (Lenig, 1955; Ritchie, 1973a). Houses measured 20 feet (6.1 m) wide with a variable length (based on the portion of the house exposed) of 31 to 114 feet (9.4 to 34 m). Oval pit features, containing the remains of corn and white-tailed deer, were found both within and outside the walls of the longhouses. Ritchie (1973a) indicates that given the spatial arrangement of these structures, no more than three houses were occupied at a time.

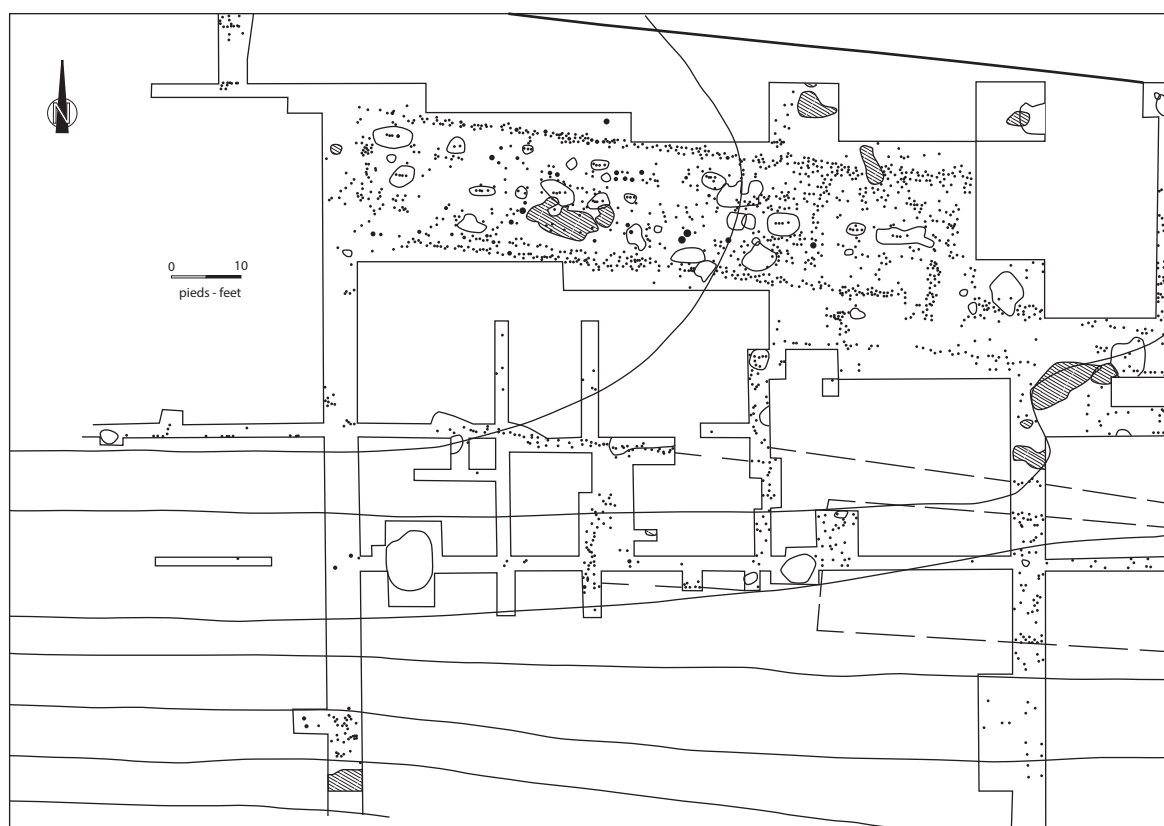


Figure 1 - Map of 1957 Excavations at the Getman Site, Montgomery County, New York (reproduced with permission of the Division of Research and Collections at the New York State Museum, Albany, New York; url: http://nysl.cloudapp.net/awweb/guest.jsp?smd=1&cl=all_lib&lb_document_id=72447).

In addition to use as a residential structure, the longhouse served as a “meeting place” for male members of the household. Unlike other matrilineal societies, Snow (1994: 39) indicates that male members of Iroquoian communities often gathered in portions of the house instead of male based “huts” or other communal structures. At the Getman site, a large central reddened spot in the center of the house and characterized by Ritchie as a series of closely spaced hearths may represent one of these gathering locations within a leader’s compartment.

While the household was a basic work group within the village, the household (and village) were tied to other “satellite” sites nearby. Snow (1994: 46-47) suggests that one of the satellite sites to the Getman site is the Otstungo site. The site is located a few miles away and may have been occupied at the same time.

A - House Size and Orientation

Six houses were identified at the Getman Site. Longhouse 1 measures 86 feet (26 m) long by 22 feet (6.7 m) wide, while Longhouse 3 measures 110 feet (33 m) long and 21 feet (6.4 m) wide. House 4 measures 114 feet (34 m) long and 22 feet (6.7 m) wide. Houses 2, 5, and 6 were not completely excavated but have a similar width as those recorded for Houses 1, 3, and 4 suggesting some regularity in the construction of these buildings. Each longhouse was arranged east-west with the ends of the houses opening onto the ends of the adjacent longhouse rather than running perpendicular to it as occurs at some later villages. The close spacing of entryways suggests that these houses may have been oriented for future joining (figure 2).

When compared with other Late Prehistoric villages, the Getman site has a greater number of houses and the placement of these houses is regular in orientation suggesting some early experimentation with the planning and standardization of village layout and the activities of the households living within them. At the Bates site, a 13th century village in Chenango County, a single longhouse was identified and likely expanded three times to accommodate a growing household residing within its walls (Ritchie, 1994: 285-287, fig. 10). The largest of these houses measures 73 feet (22.3 m) and may have accommodated up to 50 people. Although shorter than the house at the Getman site, it was a likely attempt at standardizing the longhouse form.

The Kelso site, a 14th century village in Onondaga County, produced remains comparable to those at the Getman site with a variety of widths and orientations (Ritchie, 1973c). House 3 measured 128 feet (39 m) long and 22 feet (6.7 m) wide, while House 4 measured 112 feet (34 m) long. Smaller houses measuring 20 feet (6.1 m) long existed and may have been incorporated into larger houses. The Kelso site may have had more than 300 occupants, nearly twice as Getman site (Ritchie, 1973a). Houses 3, 4, and 9 each had a central line of hearths and pits and was oriented around a series of compartments much like the Getman site.

B - Households within Longhouse 1

Longhouse 1 at the Getman Site was completely exposed measuring 86 feet (26.2 m) long and 22 feet (6.7 m) wide (figures 2-3). Ritchie (1973a) describes the structure as having “square” ends and containing a double-line of posts each measuring about 3 inches (7.6 cm) and set 8 to 15 inches (20 to 38 cm) into the ground. Larger posts 4 to 6 inches (10.6 to 15.2 cm) were also found and provide evidence of support posts. Running down the center of the structure is a corridor along which are twelve family compartments (figure 2). One additional compartment (Compartment 7) is shown in Ritchie (1973a: fig. 29) and may represent a work area associated with storage receptacles potentially found in Features 2 and 3. The presence of these features isn’t haphazard but likely signals the communal relations of the household and their need to share commonly produced goods.

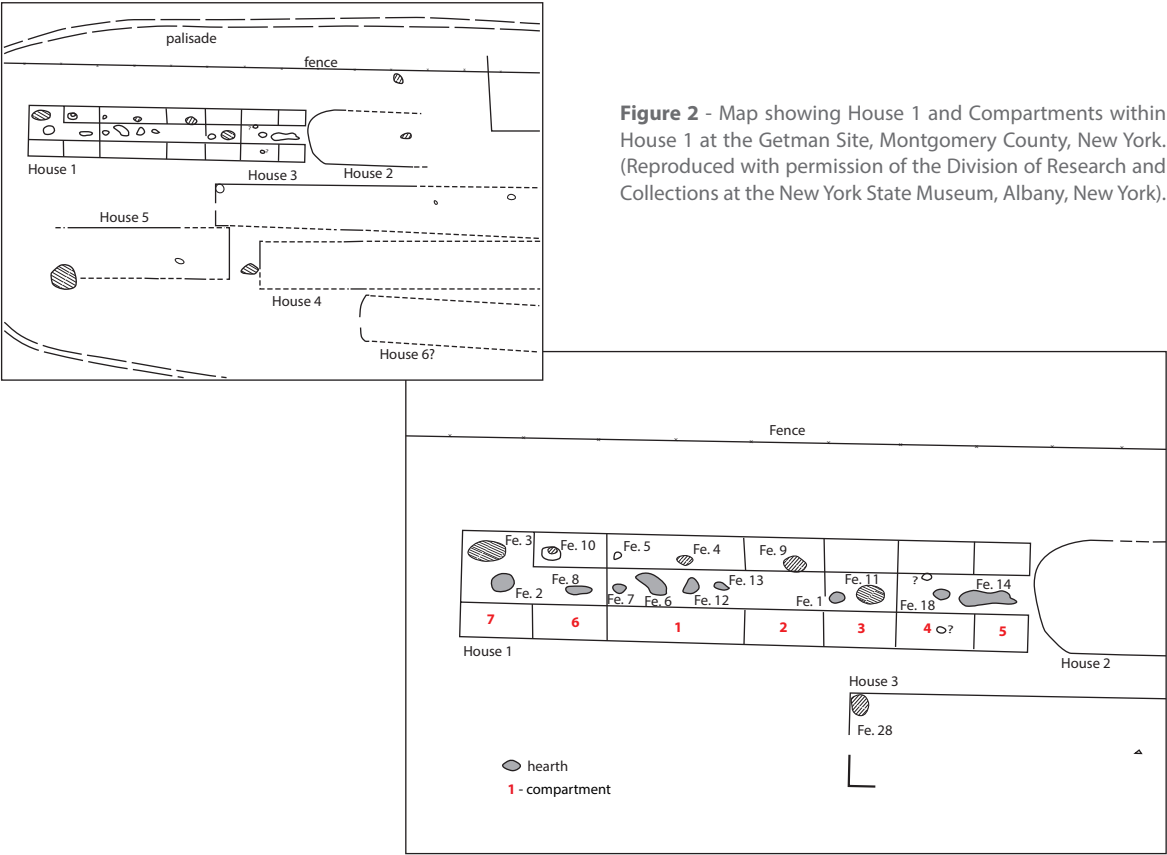


Figure 3 - House 1 at the Getman Site from western entrance (reproduced with permission of the Division of Research and Collections at the New York State Museum, Albany, New York).

East of House 1 is House 2, which is parallel and separated by a few feet (figures 2-3). The alignment of these two structures suggests that they were intended to join and create one structure similar to Houses 3 and 4 at the site (Ritchie, 1957: 51-53). As occurred at the Bates and Kelso sites, joining of longhouses may represent efforts to incorporate the members of nearby households into one structure for economic efficiency.

Seventeen features were identified in House 1. Included among these were nine hearths spread across all but one pair of compartments (Compartment 2). The occupants of Compartment 2 may have used the hearths in the adjacent compartments (figure 2). Being at the center of the longhouse, other explanations including the allocation of space for support posts is plausible as suggested by several large posts within the area of Compartment 2 (Ritchie, 1973a: fig. 28).

Household status can be seen in the size of the compartments within the longhouse. In Longhouse 1, the compartments are equal in size measuring about 10 to 12 feet (3.04 to 3.65 m) in length with a bench width of 6 feet (1.8 m) (Ritchie, 1957). At the east end of Longhouse 1, Compartment 5 (figure 2) measures 8 feet (2.4 m) in length. While the small size of the compartment may signal a reduced status of the household, the size may also be a factor of the closeness of House 2, which required the compartment to be truncated to make room for this structure.

In the western part of the longhouse, Compartment 1 is twice the size of the others and has twice as many hearths and pit features. The compartment measures approximately 20 feet (6.09 m) long with six features within its walls. Four features consist of hearths located within the corridor and may signal the prominent position of a lineage head within the household.

The organization of the longhouse was such that privacy was limited and household possessions were visible not only to those in their compartment but to those walking through the central corridor of the longhouse. Ethnographic accounts indicate that household members often stored goods in pits dug underneath the bed posts of their compartments to maintain some level of privacy (Ritchie, 1973a). Features 4, 5, 9, and 10 were found under the bed posts in Longhouse 1 and contained a variety of artifacts. Features 4 and 5 were found in Compartment 1 and contained twenty-two artifacts including a bone awl tip, rim and body sherds, a hammerstone, and a triangular point. The next highest concentration of artifacts was in Compartment 2 in Feature 9 with ten rim and body sherds. Feature 10, was in Compartment 6 and produced the least number of artifacts with one body sherd and one hammerstone. The large number of pottery fragments found in the features is curious and suggests that pots may have been placed in the pits to hold objects that have since deteriorated.

Finally, the shared living space within Longhouse 1 was largely void of artifacts suggesting that the occupants likely disposed of trash in a communal dump located beyond the house walls. This would not have been an act occurring in one compartment but would have been practiced among all of the members of the household. Small “depressions” identified during the excavation may have once been filled with debris as might have areas located beyond the palisade walls to limit the frequency of vermin within the houses (Ritchie, 1973a: 299).

C - Compartment 1 Households

Longhouse 1 contained thirteen compartments each occupied by a nuclear family. Compartment 1 is the largest and the subject of the following discussion. This compartment measured 20 feet (6.09 m) in length and had a row of bunks along its north and south walls. In the center of the compartment were features 6, 7, 12, and 13 located along the central corridor of the longhouse. Feature 12 is a saucer shaped-depression with a red burnt soil and a post mold on one edge. Its contents included pieces of pottery and a fragment of bone intermixed with wood charcoal. Feature 7 is a sterile ovate hearth surrounded by three post molds. Feature 6 is a depression shaped hearth with rim

and body sherds, bone fragments, and chert flakes (Ritchie, 1957: 25-38). Feature 13 consisted of a sterile patch of fire-reddened clay extending approximately nine inches below the ground surface (Ritchie, 1957: 11).

In addition to these hearths, two small pit features were identified under the bench posts on the north side of the compartment. Features 4 and 5 consist of small personal caches believed to belong to the occupants of the compartments. These features were likely constructed to hide valuable goods of importance for use as personal trinkets and for use in private religious contexts. The fact that this compartment has two such features supports the belief that the occupant(s) had a more prominent role as household leader(s).

When compared with other compartments in the longhouse, midden debris found on the floor of Compartment 1 was minimal and included the tip of a projectile point, a bone bead, a pipe stem, pottery and coil fragments, a point section, a hammerstone, and other lithic debris. Several of the pots were thin walled and may represent small storage receptacles. An examination of the pipe fragments shows that several different pipes are represented which suggests that life in the compartment was convivial among the household members.

Finally, the materials recovered suggest that resource processing was kept to a minimum with food, lithic, and pottery manufacturing occurring primarily outside the house. Of those objects recovered within the longhouse, more than 70% could be attributed to tasks associated with women. This was expected given that the longhouse interior is considered the domain of women (Snow, 1994).

4 - Discussion

Archaeological studies of households at different scales provide information about the range of economic tasks, the role of male and female work groups, social equality, and the private and public activities occurring in the past. As demonstrated by Williams-Shuker (2009) and others (Finlayson, Pearce, 1989; Michard-Stutzman, 2009), the advantages of looking at households in tandem with larger village and intra-village relations are numerous and often highlight the range of diversity found among Northeast groups. When intra-house activity areas are added, archaeological studies often transcend the public and enter the private sphere of behavior.

By the 14th century AD, Iroquoian households were part of a growing economy that was increasingly reliant on the use of corn, beans, and squash agriculture. The use of such crops required that households within a village needed to work together to produce these crops to maintain the survival of the community. The establishment of villages with multi-household residences was a mechanism by which groups could organize labor and direct work in the growing/harvesting of corn. A key component of such activities was the shared social and economic obligations to others. The distribution and communal sharing of goods at the Getman Site can be seen in the spatial arrangement of features across the longhouse and the presence of shared storage compartments (Williams-Shuker, 2009: 211). The identification of twelve compartments organized around nine central hearths reinforces the shared nature of household resources. Cooperation among households is also visible in use of shared storage cubicles at the ends of the longhouse as well as joint food storage receptacles identified in Features 3, 11, 20, and 23 in Houses 1, 4, and 5.

In addition to the use of features, construction of the longhouse itself is a communal activity in which individuals from different families participated. The collection of saplings and bark for the roof and walls were likely collected by male hunting parties while interior mats for the bunks and structure walls were likely woven by women who lived in the village. Following Snow (1994), adolescent males may have helped in the repair of structures when men were away.

Lastly, the construction of the palisade around the site represents an activity in which households from different longhouses were probably engaged. The communal effort needed to fell enough timbers for two rows of palisades was massive and required all available persons. Maintenance of the palisade was likely also completed by men from different households when not away from the village.

An analysis of the artifacts from Longhouse 1 suggests that the household groups shared a fair amount of equality as represented by the uniform size of the compartments, similar numbers of features, and the lack of variability of goods found strewn across the living floor of the longhouse. Most of the objects that were identified consist of utilitarian remains such as ceramic rim and body sherds, incised and plain smoking pipe fragments (see Ritchie 1973a: 308-310, plates 178-180) and faunal remains from a variety of local animals. Chert fragments (debitage) consisting of local Onondaga chert represent more than 95 % of the objects with a few pieces of non-local, possibly Normanskill, chert found. House floors were kept relatively clean with no evidence that Longhouse 1 contained fewer or more artifacts than the portions of other excavated longhouses (Ritchie, 1957).

When individual compartments are examined, we see that the distribution of materials across Longhouse 1 was variable and may indicate that different activities occurred in different compartments. An analysis of the types of artifacts recovered from each shows that Compartments 1 and 4 contained 33 % and 27.4 % of the artifacts from the longhouse. Artifacts recovered include pottery sherds, pipe fragments, point tips, scrapers, a muller, pieces of bone, and a hammerstone. These compartments contain tools relating to both plant and animal processing. Smaller quantities of artifacts were found in Compartments 2 and 6, each producing respectively 12.3 % and 14.1 % of the artifacts. Most artifacts found in these units consist of body and rim sherds. The features in these units contain very few faunal remains and limited evidence of plant processing. Finally, the least number of artifacts were found in Compartments 3 and 7 with each producing 4.5 % of the total number of artifacts or less. The only artifacts found in these compartments were pottery sherds and a ceramic pipe stem.

Finally, an analysis of the artifacts provides insights into the social relations and trading patterns of the village households with other contemporaneous groups. Evidence of trade at the Getman Site can be seen in the variety of local and non-local artifacts recovered in features and living floor contexts. Projectile points made from Onondaga and Little Falls chert occur and were likely from outcrops near the site.

Pestles made of greywacke and garnetiferous gneiss may have come from seasonal forays into the Adirondacks. Flakes made of quartzite may have been acquired from deposits located in the lower Hudson Valley. Finally, Ritchie (1973a) notes that pipe fragments from the Getman site resemble pipes found near Schuylerville on Saratoga Lake. Ritchie suggests that the occupants of the site might have travelled to the area to fish during seasonal spawning events. The interaction of groups living in these areas was important and likely helped to forge bonds between disparate groups in this dynamic landscape.

Conclusion

Households are important units of archaeological analysis. They are the building blocks for larger settlement studies and provide meaningful information about the relationships inherent in larger interaction, settlement and subsistence activities. This chapter has provided a brief overview of the role of households at the Late Prehistoric Getman Site in New York. Analysis of these remains suggests that the role of the household varied within individual longhouses. The analysis of the compartments within the longhouse suggests that although most households were equal,

one household (centrally located in compartment 1) may be attributed to a leader whose compartment was larger with increased numbers of features. By comparing the activities of the household with those of other sites, we can also gain an insight into the interaction patterns of this dynamic period.

Although this paper has endeavored to provide information about the household activities at the Getman site, additional research is needed to determine whether these patterns were unique to the site or represent universal trends occurring among Late Prehistoric groups. Such studies may provide useful information about the timing of such patterns and changes in the organization of households leading up to European Contact. More importantly, archaeologists need to examine the internal structure of these households and their variability within villages. Only then can we truly understand Late Prehistoric households in eastern New York.

Acknowledgements

I thank Claude Chapdelaine for inviting me to participate in this symposium and contribute to the resulting volume. The images herein were reproduced with permission of the NYS Museum in Albany. All errors are my own.

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THE HOUSEHOLD AMONG IROQUOIAN SEAL HUNTERS OF THE PROVINCE OF CANADA DURING THE LATE WOODLAND PERIOD (1000-1535 CE)

Michel PLOURDE

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To cite this article

Plourde M., 2016 - The Household among Iroquoian Seal Hunters of the Province of Canada during the Late Woodland Period (1000-1535 CE), in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 62-77.

THE HOUSEHOLD AMONG IROQUOIAN SEAL HUNTERS OF THE PROVINCE OF CANADA DURING THE LATE WOODLAND PERIOD (1000-1535 CE)

Michel PLOURDE

Abstract

During the Late Woodland Period (AD 1000-1600), St. Lawrence Iroquoians developed a seasonal transhumance between the present day Quebec City area (“province de Canada”) and the mouth of the Saguenay River, located on the margin of the St. Lawrence estuary, to hunt seals. The archaeological data highlights two types of settlements: a first type used in spring by small groups of male hunters targeting harp seals, and a second type occupied in summertime by nuclear families, when gray and common seals feed in the area. On the one hand, we find differences between the dimensions and types of spring and summer camps. On the other hand, we note that the shape of houses revealed by archaeological excavations in the Tadoussac area differ from those found in the semi-permanent settlements located in the Quebec City area and thus reflect short-term occupations related to intense seal hunting periods.

Keywords

Archaeology, Quebec, Canada, Late Woodland, Iroquoians, seal hunting, settlement pattern, household.

Introduction

Iroquoian groups occupied the entire St. Lawrence Valley lowlands at the Contact period. Those Iroquoians who occupied its eastern portion, which was named “Province de Canada”¹ by Jacques Cartier, adapted their annual cycle to the marine resources of the St. Lawrence Estuary (Fenton, 1940; Hoffman, 1961; Chapdelaine, 1993a), with seals featuring prominently in the diet (Plourde, 2012). This article deals with the shapes of the houses these Iroquoians built 200 km downstream from Quebec City, as compared to the ones they built in semi-permanent, horticultural villages along with hunting and fishing camps during the Late Woodland period (1000-1535 CE). The Tadoussac area is characterized by abundant marine species and specific environmental conditions that theoretically allow its use throughout the year.

1 - Context

The aboriginal people encountered by Jacques Cartier in September 1535 in the St. Lawrence Estuary, at the mouth of the Saguenay River, were St. Lawrence Iroquoians, an autonomous population that was linguistically distinct from other groups living in southern Quebec (Chapdelaine,

1. The Province de Canada would extend between Portneuf and Ile-aux-Coudres (Chapdelaine, 1989: 24), but its eastern limit could have been the Montmagny archipelago, located 30 km upstream (Tremblay, 1995a: 297).

1989: 13). These St. Lawrence Iroquoians were spread throughout the St. Lawrence Valley, from Kingston, Ontario, in the southwest, to Ile-aux-Coudres in the northeast, and formed distinct village clusters (Chapdelaine, 2015: 53) (figure 1). The issue of ethnic identity, which is inseparable from that of their origin, lends itself to many interpretations. These Iroquoians were sometimes identified as Huron, Mohawk, Algonquin, Oneida or Onondaga (Trigger, 1985: 202). There is now a consensus that the Iroquoian groups encountered along the St. Lawrence River by Jacques Cartier in the sixteenth century were St. Lawrence Iroquoians (Trigger, 1985: 202; Chapdelaine, 1989: 12-13; Wright, 2004: 1235). Ethnolinguistic studies have revealed that their spoken language was distinct and not derived from that of other groups linked to the larger Iroquoian family, such as the Hurons or the Mohawks (Trigger, 1966; Lounsbury, 1978: 334). The oral tradition of the Huron-Wendat of the Quebec City region in turn raises the possibility of biological links between some St. Lawrence Iroquoian refugees and Hurons who welcomed them to their villages in Ontario, at the end of the sixteenth century (Sioui, 1989; Wright, 2004: 1280 and see Tremblay, 1999).

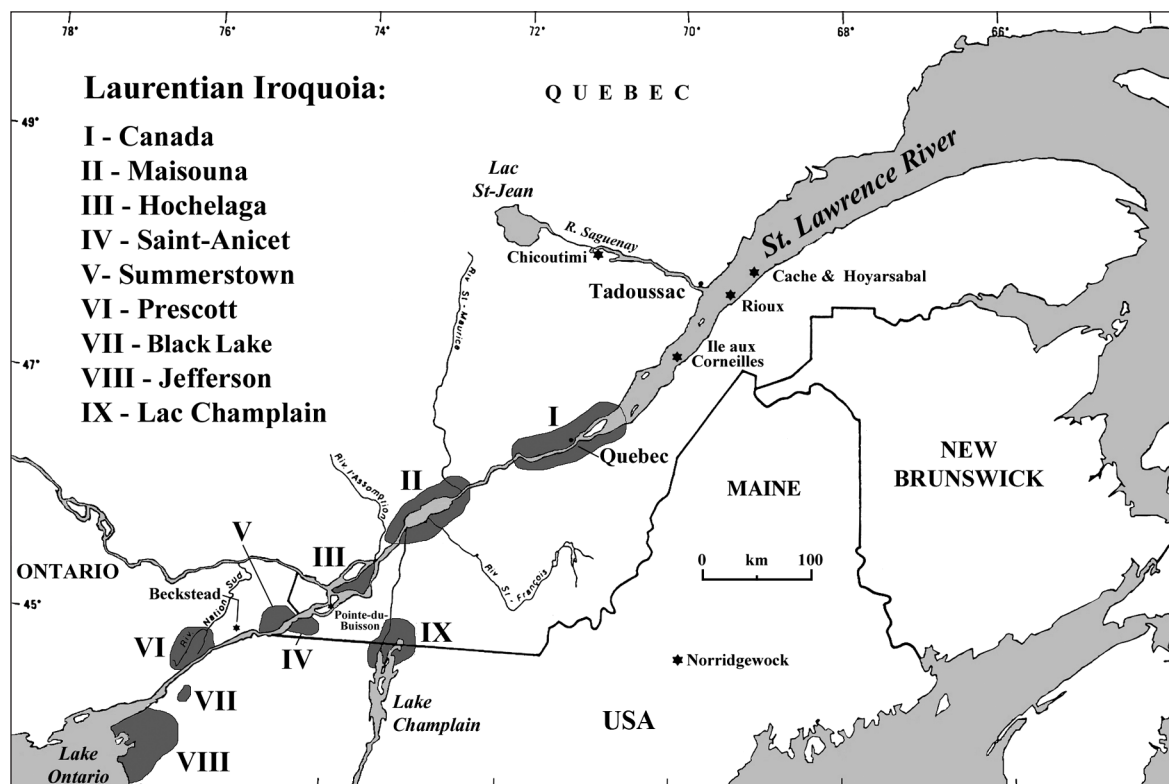


Figure 1 - Spatial divisions (village clusters) of Pre-Contact Laurentian Iroquoia (Chapdelaine, 2015: 53).

Iroquoian groups living in the Quebec City area in the first half of the sixteenth century were somewhat sedentary and were distributed into seven non-palisaded villages all located on the north bank of the river (Hoffman, 1961: 209; Chapdelaine, 1989: 24). Its capital, Stadacone, would be within the current boundaries of present day Quebec City and its location is still debated (Ferland, 1882; Wintemberg, 1936; Clermont, Chapdelaine, 1983; Plourde, 2008). Cartier also mentioned four villages located downstream from Stadacone and two upstream (Bideaux, 1986: 166).

Based on estimates generated from excavations at the Iroquoian villages of Mandeville (Chapdelaine, 1989) and Masson (Benmouyal, 1990), and studies on the population density of seventeenth century Huron villages, the Iroquoian population of the Province de Canada can be assessed to between 2 000 and 3 000 people. Its capital, Stadacone, would have counted 800 individuals while the other villages would each have housed 200 to 250 people (Chapdelaine, 1995: 178; Chapdelaine, 1998: 82). Their longhouses, whose average size could reach 25 to 30 m long by 6 m wide, welcomed eight to ten nuclear families or forty people in all. According to Tremblay (2006: 27): “The floor was dotted with pits and holes of different shapes and purposes, from storage to sanitation, and a central aisle about three meters wide ran down the center, with a line of hearths. [...] A hearth was shared by two families, living across from each other. Each such pair of family spaces, including the central hearth, formed a compartment. [...] The compartments were generally separated by dividing walls, giving each family unit some privacy”.

Dependency of these groups on cultigens was less than that of the Iroquoian groups of the current Montreal area, a fact that might be explained by the position of the Quebec City region at the northern limit for maize cultivation (Hoffman, 1961: 202). As such, Cartier indirectly emphasizes the importance of hunting and fishing at the expense of agriculture among eastern Iroquoians. Speaking about the Iroquoians from the province of Hochelaga (Montreal), he states that: “Tout cedit peuple ne s’adonne que à labouraige et pescherye pour vivre car des biens de ce monde ne font compte pour ce qu’ilz n’en ont congnoissance et aussi qu’ilz ne bougent de leur pays et ne sont ambulatoires comme ceulx de Canada et du Saguenay [...]” (Bideaux, 1986: 153). Chapdelaine reaches the same conclusion about the north shore of the St. Lawrence, downstream from Quebec City where the village of Ajoaste is possibly located: «The absence of villages in the Cap Tourmente and Côte de Beaupré region implies that the Iroquoians of the Quebec City region must have rearranged their adaptive system. They would have been less dependent on agriculture, lived in fewer villages that were concentrated around Quebec City and to the west, and they had a true transhumant economy which distinguished them from other Iroquoians.» (Chapdelaine, 1998: 87).

The success of their horticulture was not guaranteed, and we can consider that Iroquoians who hunted seals at the mouth of the Saguenay River integrated food production very late in their history compared to their upstream neighbours. The former would have perhaps cultivated the land and developed a village lifestyle starting only in the second half of the fifteenth century², while this process started in the seventh century among groups living west of Lake St. François (see Chapdelaine, 1993b: 166). And yet maize was already consumed in the St. Lawrence Valley as early as the Middle Woodland period (500 BCE) as evidenced by phytolith analyses of charred layers on domestic pottery (Gates St-Pierre, Thompson, 2015). In the region of the mouth of the Saguenay River, only two maize kernels have been discovered to date (Plourde, 1995: 16), and the chemical analysis of charred layers on the inside of pottery do not show the chemical signature of maize (Plourde, 2003: 297). Maize does not seem to have been important in the seal hunters’ diet. To sum up, the explanations for a late adoption of maize by eastern Iroquoians can be multiple and cumulative: The Quebec City area did not encourage this practice because of its harsh climate; the seal was a very profitable resource despite the energy required to get to the estuary and the risks encountered; Iroquoians of the Province de Canada could have sought to differentiate themselves from their western neighbours by maintaining a lifestyle centered on mobility.

2. No Iroquoian horticultural site has yet been discovered in the limits currently set for the Province de Canada. Masson site, located in Deschambault, just west of it is the only witness to a horticultural lifestyle amongst Eastern Iroquoians and its occupation is dated between 1450-1520 CE (Benmouyal, 1990: 228, 230).

We have proposed elsewhere (Plourde, 2012) that movements by St. Lawrence Iroquoians in the mouth of the Saguenay River area were of two types and were always motivated by seal hunting (figure 2). The first type corresponds to small groups of male hunters active in April of each year when Harp seal herds come upriver (see Rioux, Tremblay, 1999: 197). The second type involves a group of men, women and children who could reach the estuary in springtime, but whose presence was more likely in the middle of summer, during periods of whelping and molting for Gray and Common seals.

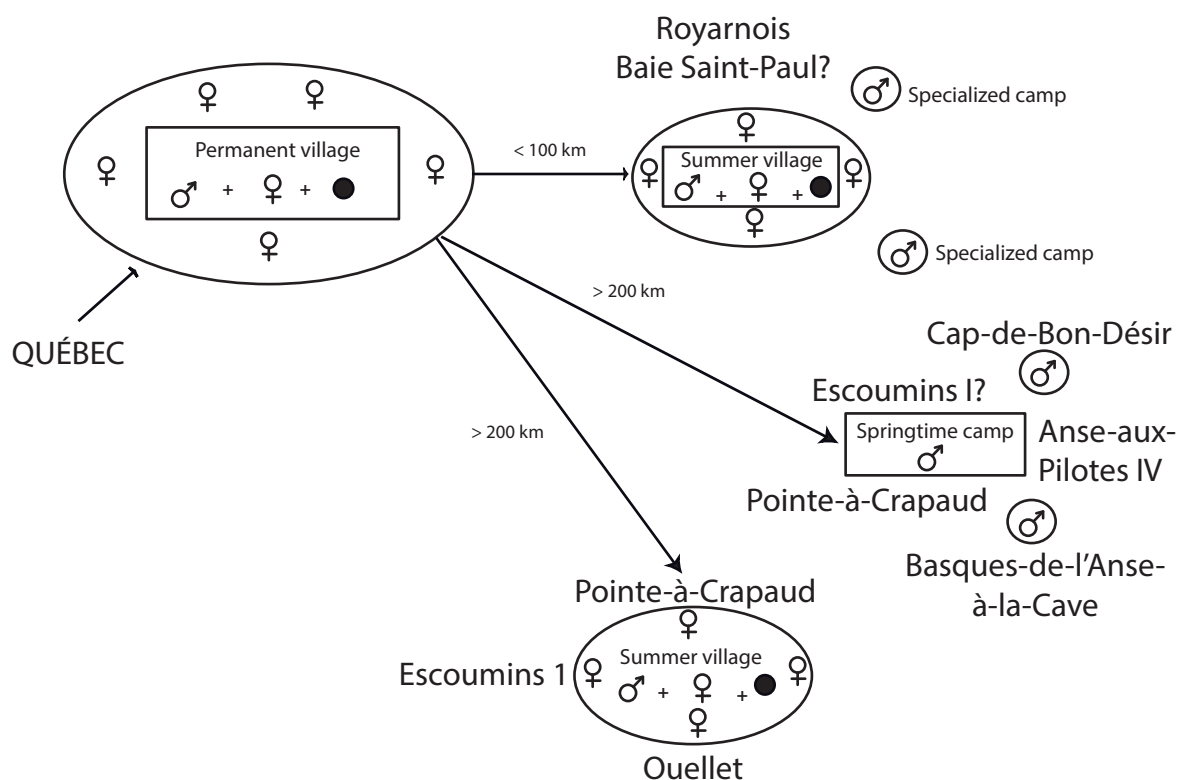


Figure 2 - Province de Canada Iroquoian transhumance model (adapted from Chapdelaine, 1993a: 28).

2 - Structuration of inhabited spaces on sites located in the St. Lawrence Estuary

Five archaeological sites have been considered in this study and they are distributed between the right bank of the Saguenay River and the Escoumins River, spreading over a 35 km long coastline. The sites are Ouellet (Daek-6), Cap-de-Bon-Désir (109G), Basques-de-l'Anse-à-la-Cave (DbEi-5), Pointe-à-Crapaud (DbEi -2) and Escoumins I (DcEi-1) (figure 3). Substantial excavations ranging between 50 m² and 270 m² were carried out on three of these sites (DaEk-6, 109G and DbEi-2). Systematic test pitting on two other sites (DbEi-5 and DcEi-1) revealed comparable occupations to those found on the excavated sites. The anatomical seal remains generally account for over 95 % of bone remains on these sites dated between 1000 and 1535 CE by radiocarbon and ceramic typology (figure 4, tables 1-2).

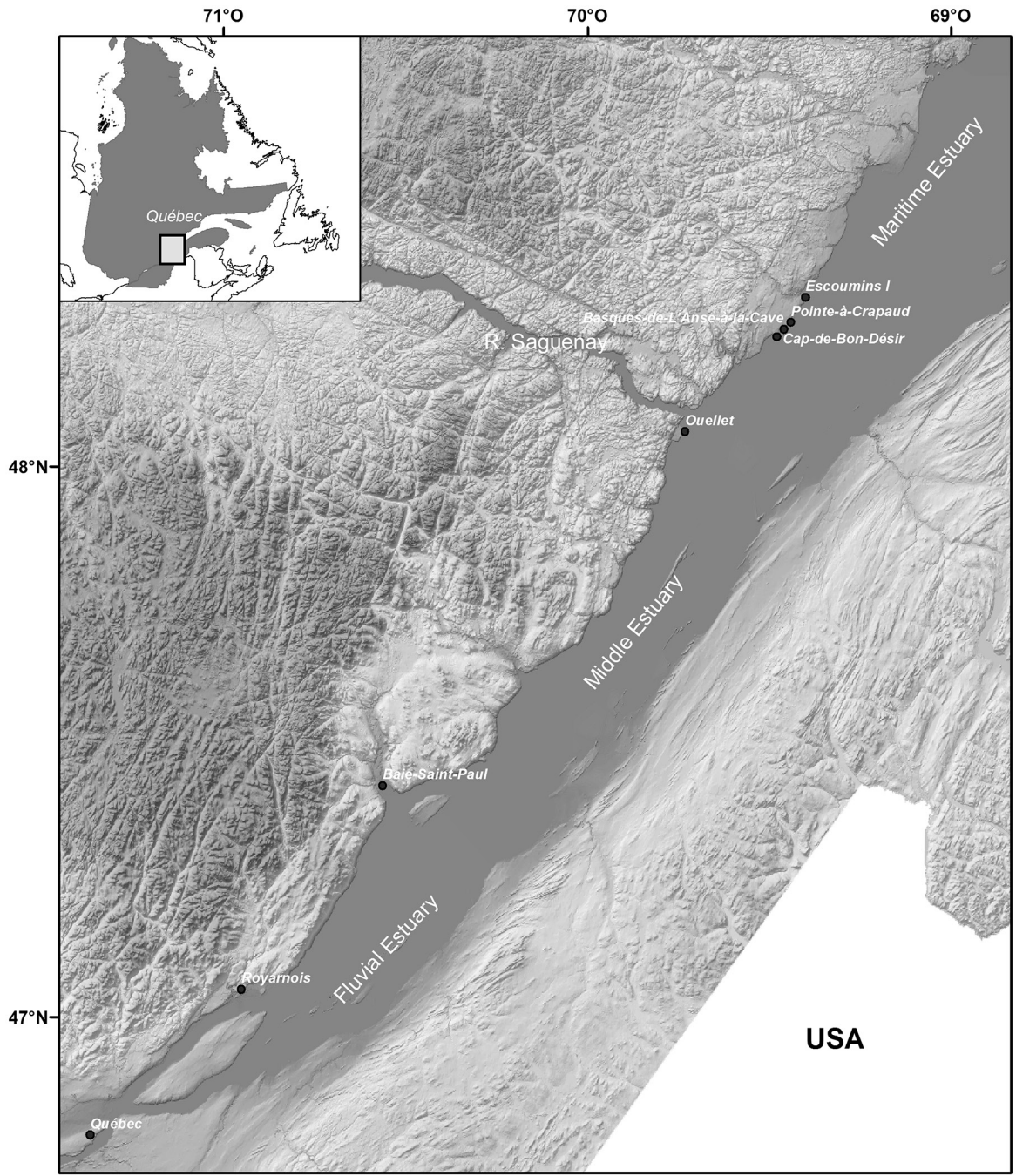


Figure 3 - Location of archaeological sites mentioned in this text.



Figure 4 - Ceramic types of the late Late Woodland period (1350-1535) at the Pointe-à-Crapaud site (photographs: M. Plourde ; CAD: J. Beardsell).

	Ouellet	Cap-de-Bon-Désir			Basques-de-l'Anse-à-La-Cave	Pointe-à-Crapaud	Escoumins I
		109G23-24	109G25-31	109G28			
Altitude MSL (m)	6	9	19	29	9	6	6
Distance from shore (m)	0-20	80	120	210	25	10-15	15-20
Topography	Flat	Irregular	Irregular	Irregular	Irregular	Flat	Flat
Drainage	Very good	Poor	Intermediate	Intermediate	Poor	Very good	Very good
Areas excavated (m ²)	270	17.5	28	9.25	11.5	> 150	20
Hearths	17	13	15	1	2	18	Some detected
Zones of bone refuse	12	4	4	0	0	22	Some detected
Pits	1	0	0	1	0	16	Some detected
Faunal remains	4663	27584	45194	4320	2318	19153	4980
Proportion of marine mammal bones (mainly seal)	94.51	96.92			98.7	90.63	89.74
Postholes	8	0	0	0	Unknown	0	Unknown
Clams	12	122	619	0	192	3650	546
Pots	46	16	10	5	6	46	10
Pipes	0	2	4	1	1	5	0
Clay wasters	12	0	0	0	0	18	2
Lithic tools	185	57	240	9	33	361	57
Lithic debitage	12912	2455	5814	137	224	13205	1179
Bone tools	0	3	0	0	3	50	9

Table 1 - Characteristics of the archaeological sites used in this study.

Site	Lab. Number	Excavation unit	Context	¹⁴ C date (BP)	CAL CE (CalPal)
Ouellet	BETA 18130	X-55	Bone refuse	890 ± 90	1129 ± 82
	BETA 18131	Z-90	Wood charcoal concentration	260 ± 80	1661 ± 135
	BETA 18132	2A-74	Wood charcoal concentration	880 ± 70	1134 ± 75
	BETA 22792	2A-68	Wood charcoal concentration	420 ± 60	1516 ± 77
	BETA 22793	2E-63	Wood charcoal concentration	700 ± 70	1307 ± 61
Anse-aux-Pilotes IV	RL-1823	7	Unknown	630 ± 100	1336 ± 59
Cap-de-Bon-Désir / 109G23-24	BETA 128348	109G23K42	Hearth	570 ± 100	1366 ± 62
Cap-de-Bon-Désir / 109G25	BETA 128349	109G25C23	Stone platform hearth	420 ± 100	1515 ± 92
	BETA 128350	109G25E17	White clam midden	470 ± 80	1470 ± 90
	BETA 137814	109G25P44	Hearth	370 ± 60	1536 ± 70
Basques-de-l'Anse-à-La-Cave	BETA 70244	4N5	Hearth	1040 ± 70	997 ± 88
Pointe-à-Crapaud	BETA 79062	6N 3E Q NW	White clam and bone refuse	910 ± 60	1117 ± 66
	BETA 79063	9S 1E Q NE	Pit	450 ± 80	1496 ± 87
	BETA 79064	9S 10E Q SE	Pit	740 ± 70	1265 ± 55

Table 2 - Radiocarbon dates.

3 - Types of environments

Seal hunters chose two types of environments. The first is characterized by rocky outcrops or uneven and poorly drained surfaces covered by moraine. Nearby, a mudflat reached at low tide allows a smooth docking and eases carrying prey inland to be butchered. Very well drained sandy plateaus facing sandy beaches characterize the second type of environment used by the seal hunters.

Despite the fact that the sites studied here are all made up of multiple and mixed components, which is far different from the semi-permanent dwellings presented elsewhere in this volume, some constants can be identified. It is postulated that the camps established on rocky outcrops or morainic deposits, which are generally located at a distance of more than 20 m from the shore (probably chosen for protection from cold winds), would be linked exclusively to spring occupations, while snow cover was present. The Cap-de-Bon-Désir (including three separate areas located at different altitudes) and Basques-de-l'Anse-à-la-Cave sites are two of these sites. They possess a rugged terrain and some poorly drained spots that would have been inhospitable during the warm season. The simultaneous presence of the Harp seal remains in hearths (females arrive with their pups at the end of winter) and sea urchin tests, molluscs offering maximum flesh in February and March, support an occupation of the area in April. White clam (*mya arenaria*) consumption, which is clearly observed in all of the components at these sites, is also synonymous with a cold season occupancy, as these can become toxic from May to August when a toxin produced by zooplankton dinoflagellates of the genus *Gonyaulax* infects the shell (Hawkins, 1985: 5).

Hearths were lit without building stone circles or platforms, suggesting the installation of camps while the ground was frozen. The absence on these four sites of clay wasters that reveal on-site ceramic production could also support an occupation outside the warm season, since this requires a malleable clay source and ambient conditions enabling open air drying of pottery before final cooking (Arnold, 1985). It therefore appears unlikely that longhouses were built in this type of environment. However, some uncertainty remains since excavated areas on these sites remain fairly limited as they were performed in contexts closer to sampling than open area excavations.

The camps established on the sandy plateaus of the Pointe-à-Crapaud and Escoumins 1 sites would have been occupied in spring as evidenced by the consumption of clams, sea urchins and by the presence of Harp seals among the faunal remains. But these sites were also occupied during summer and fall, based on the presence of waste pits and food caches excavated in the sand, stone platform hearths, and clay wasters. While test pits excavated on the Escoumins 1 site did not allow for an overall view that is essential for longhouse detection, an open area excavation (15 × 12 m) on Pointe-à-Crapaud has revealed 18 hearths, 18 small bone refuse zones, 16 pits, and 13 small, white clam heaps, but no postmolds (figure 5). All these features result from occupations spread over 500 years, as suggested by ceramic typology and radiocarbon dating³.

The spatial analysis of the horizontal distribution of hearths 2 to 3 m distant from one another, as is the case for the well-known Lanoraie longhouse for example (Clermont *et al.*, 1983: 132), and that of sherds assumed to come from the same vessels, failed to reveal any alignment of combustion zones. Pits and small clam and / or bone concentrations were identified in the vicinity (within 2 m) of the combustion zones, but no firm associations can be confirmed. We believe that the pits were dug directly within the house floors, but it is unlikely that concentrations of clams and bones, which represent small garbage dumps, would be found inside living and sleeping areas.

3. Three radiocarbon dates from wood charcoal taken in the centre of three different hearths, one of which contained fragments of an early Late Woodland pot, another one with a unique middle Late Woodland pot sherd, and a third revealing a single late Late Woodland pot, gave inconsistent results.

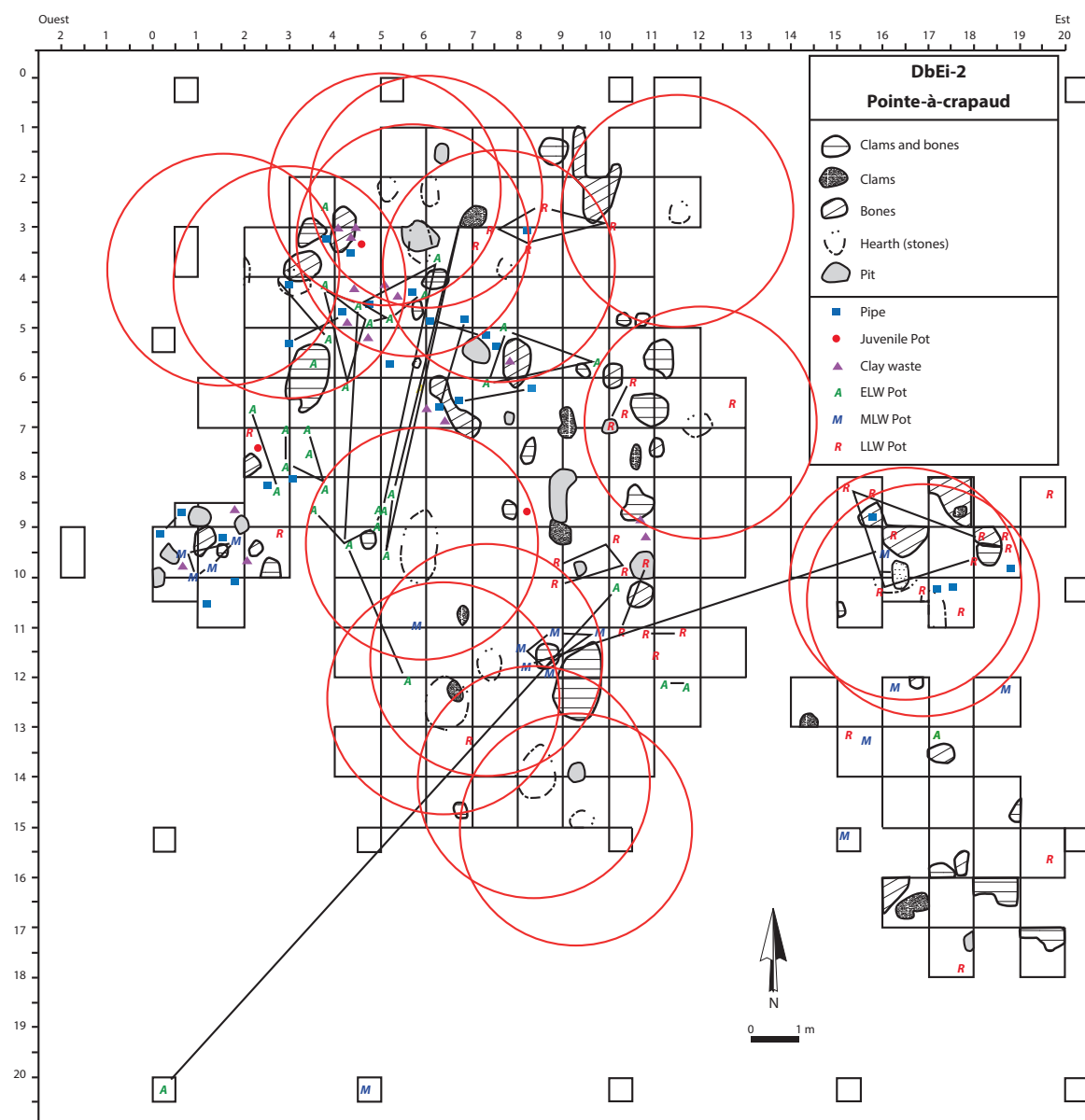


Figure 5 - Pointe-à-Crapaud site: horizontal distribution of household structures, of ceramic vase units by period (SSA=early Late Woodland; SSM=middle Late Woodland; SSR=late Late Woodland), and hypothetical limits of single hearth house (5 m diameter).

We also question the nature of concentrations of charred bones mixed with a brown matrix composed of broken and non-calcined animal bones. Could this be another type of hearth in which were rejected culinary waste, avoiding the hassle of outside disposal? This possibility remains uncertain since these features contain few or no heated rocks.

The Ouellet site, occupied mainly during the middle Late Woodland period (1250-1350), extended over a well-drained sandy plateau and faced one of the widest foreshores of the St. Lawrence Estuary providing an endless supply of soft-shell clams covering more than 3 sq. km. However, no specimens were found in the archaeological layer despite exceptional organic preservation (fragments of leather and many non-calcined bones were discovered there). The lack of white clams and sea urchin tests, the presence of a dozen clay wasters revealing ceramic production, and a high proportion of Gray and Common seal bones (which are present in the area in the warm

season) support summer and fall occupations. Excavation of a 30 m long and 10 m wide area revealed 17 hearths (defined by a concentration of stones and / or a significant concentration of wood charcoal), 12 small concentrations of culinary waste, and only one pit. Eight non-aligned postmolds of a 6 cm average diameter can be interpreted as scaffold or small structure posts rather than wooden poles used to construct a tent (figure 6). Compared to the distribution of the hearths, the horizontal distribution of potsherds from the same vessels revealed no logical patterns. Their random distribution is however notable and could be explained by the presence of children who might have used them as toys. A clay waster bearing tooth marks of a 5 or 6-year-old child has also been discovered on the site, strongly suggesting a family dwelling. The culinary refuse zones are relatively large (2-3 m diameter) compared to those observed on the Pointe-à-Crapaud site, which could be interpreted as the effect of longer occupations (several weeks to months) and a higher population density. Culinary waste found amongst two hearths zones may reveal waste inside a single house or a multiple occupancy given that the stylistic ceramic signatures span over a 500-year period, between 1000 and 1535 CE.

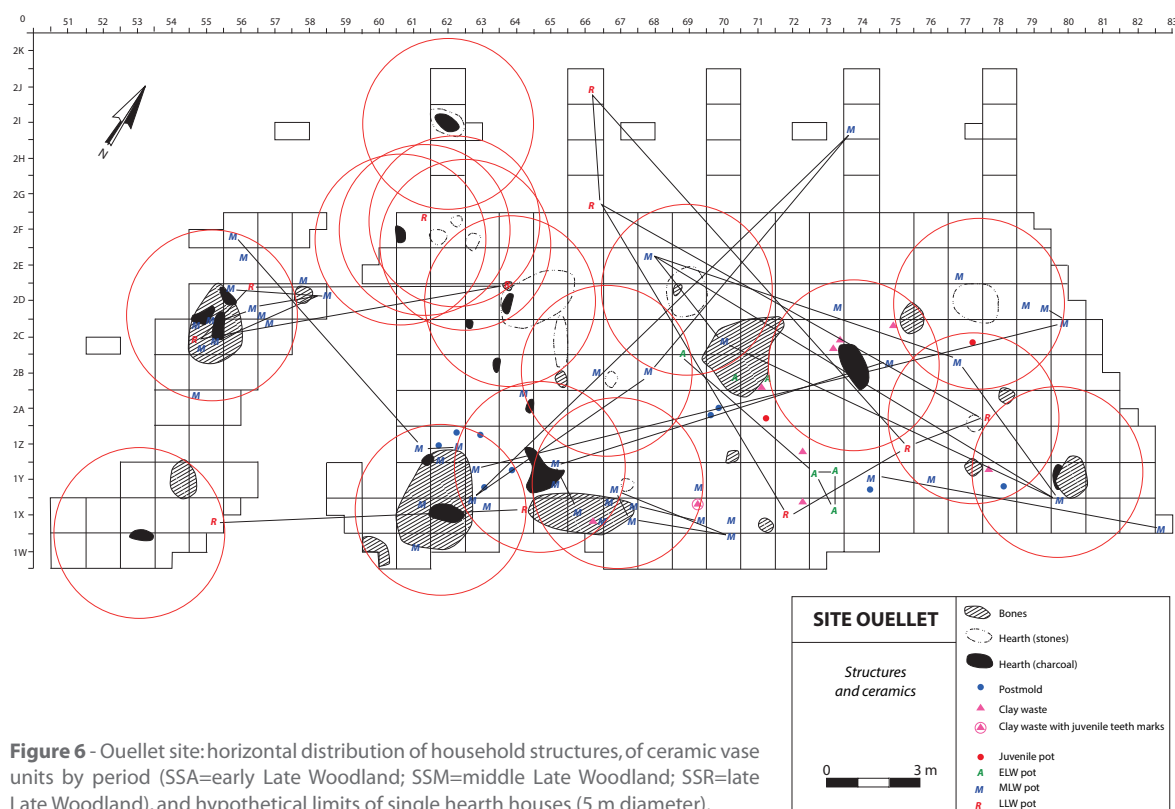


Figure 6 - Ouellet site: horizontal distribution of household structures, of ceramic vase units by period (SSA=early Late Woodland; SSM=middle Late Woodland; SSR=late Late Woodland), and hypothetical limits of single hearth houses (5 m diameter).

4 - Characterization of household structures

Our analysis of the size and configuration of presumed household structures reveals clear differences within the dimensions and layout of longhouses from village settings (table 3). In general, the structures found in the St. Lawrence Estuary are smaller than those observed in the villages upstream from Quebec City. Hearths on estuary sites are characterized by a platform made out of small granite stones (stone mean diameter of 10 cm), by wood charcoal, and sometimes by a reddened

sand matrix occupying an average area of 0.81 sq. m. (0.13 sq. m. minimum and maximum value of 4.91 sq. m.). Their shape is rounded in 55 % of cases, otherwise it is slightly oval. Culinary waste zones, which typically contain both white clams and non-calcined and charred bones cover an average area of 0.52 sq. m. (0.13 sq. m. minimum value and a maximum value of 2.0 sq. m.). Their shape is rounded in 74 % of cases, otherwise it is oval. The average diameter of the opening of the pits is 0.42 m, their shape is circular in 86 % of cases, and their average depth is 0.16 m. Postmolds show an average diameter of 6 cm.

Structures / Site	Estuary	Masson	Lanoraie	Mandeville
Mean area covered by hearths	0.81 m ²	Unknown	1.77 m ²	1.26 m ²
Mean area covered by culinary waste	0.52 m ²	None	None	None
Mean aperture of house pits	0.42 m	0.40 m	0.41 m	0.40 m
Mean depth of house pits	0.16 m	0.51 m	0.29 m	0.34 m
Mean diameter of postmolds	6.0 cm	9.4 cm	8.9 cm	12.0 cm

Table 3 - Feature morphometry on St. Lawrence Estuary sites and on three villages upstream from Quebec City.

On the Masson site (Benmouyal, 1990: 65, 73), ploughing has unfortunately destroyed all traces of house structures, and it is therefore impossible to reconstruct their dimensions. The average diameter of the longest axis of the aperture of pits is 0.40 m and their average depth is 0.51 m. Postmolds have an average diameter of 9.4 cm. On the Lanoraie site (Clermont *et al.*, 1983: 33), hearths cover an average area of 1.77 sq. m., they have an oval form and contain little or few stones. Culinary waste has been deliberately placed in pits having an average diameter of the major axis of the aperture measured at 0.41 m and an average depth of 0.29 m. The average diameter of postmolds is 8.92 cm. On the Mandeville site (Chapdelaine, 1989: 55, 58, 59), hearths comprised in house No. 1 each cover an average area of 1.26 sq. m. and are elongated, the average diameter of the pits aperture varies between 0.36 m and 0.43 m, and the average depth is 0.34 m. The average diameter of postmolds is between 9.66 cm and 15.0 cm depending on whether it is associated with the external or the internal structure one of the longhouse.

Although we cannot reject the possibility that longhouses were set up in the mouth of the Saguenay River region, we believe that the typical floor of seal hunters' houses was most likely that of a conical tent with a circular base and in the center of which was built a stone platform hearth. As a comparison, it is interesting to know that among seal hunters of the Atlantic states of New England (located more than 400 km to the southeast), the maximum diameter of the house floors built in the Woodland period is estimated at 4 m (Hrynicky, 2009: 98), creating a space of about 14 sq. m. Based on hundreds of dwellings with a single and central hearth discovered inland within the Cree territory of James Bay (located more than 700 km to the northwest), the average diameter of circular tents is estimated at 5 m (CÉRANE, 1995: 321), generating an approximate living space of 20 sq. m. Therefore, two families could occupy each a space of about 10 sq. m. One might conservatively suggest that the diameter of an Iroquoian dwelling built in the St. Lawrence Estuary could be around 5 m and could have welcomed two families.

The frame of the tents was probably made of black spruce, a dominant species in the area (Blouin, Berger, 2003: 2.7). Dead trees, still standing, although dry, were still strong and bark free and were an ideal raw material. A few axe blows would suffice to remove the knots. Seal or moose skins were probably used to cover houses, but birch bark also lent itself to this function since that

tree grows not far inland (Blouin, Berger, 2003: 2.7). At sites occupied during springtime, non-calcined or charred bone remains, white clam shells and sea urchin tests were probably thrown outside the house. Temperatures were cold enough and stays were short so that odors and vermin would not bother occupants. On sites occupied during summertime, food leftovers were probably thrown in small pits, or outside of residential areas (these areas have not been subject to archaeological excavations).

Whether men moved into the estuary in the spring, or whole families travelled there during the summer, St. Lawrence Iroquoians always used the same type of houses, namely the conical tent. This is an easy to erect structure that can be disassembled quickly, as evidenced by their use by the nomads of the tundra and boreal Eurasia and North America since at least 5000 years (Brasser, 1982: 309). We believe that the Iroquoians of the Province de Canada practiced a form of transhumance involving a small number of people at a time and we believe that these trips were not accomplished by the entire village communities of the Quebec City area. If the 800 inhabitants of Stadacone and the 200 or 250 people in each of the six other villages had come regularly to the mouth of the Saguenay area, their sites would be much larger and richer than those on which excavations were carried out. Moreover, this can be corroborated by the fact that the archaeological surveys conducted in the region have shown the absence of such sites and also the scarcity of large spaces, other than those that we know of and have tested, to accommodate such groups.

5 - Discussion

Although drawn from archaeological sites where mingled / mixed occupations spread over the period from 1000 to 1535 CE, data from the excavations at the mouth of the Saguenay River suggest that eastern Iroquoians did not build longhouses in their seal hunting areas. Although we can only count on Jacques Cartier's descriptions, and archaeological sites upstream from the Quebec City area outside of the Province de Canada to establish intracultural comparisons, we find that in the Woodland Period (1000-1535 CE), seal hunters' hearths were almost twice as small as those used in the longhouses of semi-sedentary villages and were built on rounded stone platform deposited directly on the floor and not disposed of in shallow pits. Culinary waste zones disposed of above ground were common in the mouth of the Saguenay River region, and especially on springtime sites where snow covered the ground. These culinary waste zones were absent from villages located between Montreal and Quebec City. The average diameter of pits was about the same, but the ones dug in the sandy soils of the St. Lawrence Estuary were half as deep as those of the villages. While only discovered on one site, postmolds on estuary sites are twice as small as those of longhouses and do not correspond to the wooden poles of a tent, but rather to stakes for interior facilities like scaffolds for drying meat and hides.

Irregular and poorly drained surfaces used in springtime did not lend themselves to the use of longhouses and stays were not long enough (probably a few weeks at the most). In addition, because the Iroquoian longhouse acts as mirror of kinship organization where families were related through sisters and mothers (Clermont *et al.*, 1983: 131; Chapdelaine, 1989: 123; Warrick, 2000: 425; Tremblay, 2006: 27), it was probably not well suited for social units composed entirely of men going on hunting ventures. At sites where children, and by extension families, were present (clay wasters with juvenile teeth marks, juvenile ceramic pots and ceramic production probably done by women), the environmental conditions were theoretically favourable for the construction of a longhouse, providing a flat, sandy, well-drained and wide living space. However, the size of the groups and the length of stays may not have justified the time and energy required to build such large and semi-permanent homes. And in the case of Ouellet site, which stands on a very windy

spot, such features would have been maladaptive or simply dangerous. Iroquoians of the Province de Canada therefore adjusted their “households” in terms of the local environment: longhouses in horticultural villages up to the present day Quebec City, and conical tents in the St. Lawrence Estuary to maximize time spent on seal hunting. Eastern Iroquoians would have therefore perpetuated, from 1000 to 1535 CE, a form of “horizontal” transhumance between the Quebec City region and the mouth of the Saguenay River, a settlement pattern that finds few parallels in northeastern America.

Finally, we must consider as a late phenomenon the transition of eastern Iroquoians towards a village lifestyle, dating perhaps to the second half of the 15th century, only 100 years before Jacques Cartier’s journey up the St. Lawrence River in 1535. Therefore, the longhouse was part of the landscape of the Quebec City area for only a few decades before their builders deserted the St. Lawrence Valley, around 1580. And when present in the estuary, the architectural signature of these Iroquoian groups would have been the conical tent.

Ironically, it seems that the only historically documented longhouse in the region of the mouth of the Saguenay River is related to a non-Iroquoian group. While celebrating an alliance at Pointe Saint-Mathieu on May 27th, 1603, Gragé Du Pont and Samuel de Champlain accompanied by representatives of three Aboriginal nations (Montagnais or Innu, Algonquin, and Etchemin, probably the Maliseet) that provided military assistance in the conflict with the Iroquois Five Nations met in a longhouse with a floor that had eight to ten aligned hearths: “ils avoient huit ou dix chaudières, pleines de viandes, au milieu de ladite cabanne, & estoient esloignées les vnes des autres quelque six pas, & chacune a son feu” (Biggar, 1924: 101). Here we can recognize the description of a longhouse whose length could easily have reached 30 to 35 m (six steps corresponding approximately to 4m). It must be said however that this event, which brought together nearly 100 people (Girard, Kurtz, 2001: 13), was likely an exceptional situation.

Acknowledgements

I would like to thank Claude Chapdelaine for his numerous and useful comments and suggestions and for a first revision of my translation of this paper from French. I am also indebted to Adrian Burke who made a thorough review of this translation.

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FOR A SOCIAL ARCHAEOLOGY AT THE DROULERS / TSIIIONHIAKWATHA AND MAILHOT-CURRAN SITES

Claude CHAPDELAINE

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To cite this article

Chapdelaine C., 2016 - For a Social Archaeology at the Droulers / Tsiionhiakwatha and Mailhot-Curran Sites, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 78-94.

FOR A SOCIAL ARCHAEOLOGY AT THE DROULERS / TSIIIONHIAKWATHA AND MAILHOT-CURRAN SITES

Claude CHAPDELAINE

Abstract

St. Lawrence Iroquoian social archaeology is at the center of our investigation and households will be discussed in this paper using domestic pottery and spatial analysis of cultural remains from two village sites of the Saint-Anicet area. The villages of Droulers and Mailhot-Curran will be used for this study. Droulers is a late 15th century village, which is actually the biggest known Iroquoian village in Québec with an estimated size of 1.3 ha. This settlement was probably occupied by at least 500 souls distributed over a dozen multifamily dwellings. Mailhot-Curran is a smaller 16th century village with six longhouses distributed over 0.6 ha with an estimated population of 200 persons. Selected households allow us to study social relations between its members and their clan affiliation.

Keywords

St. Lawrence Iroquoian, sedentary village, socio-political organization, household spatial analysis.

Introduction

The Iroquoian world is made of several large cultural groups sharing a language, an economy, a socio-political organization, and a system of beliefs (Tremblay, 2006). They all practiced slash and burn agriculture and lived in longhouses. During the time of Jacques Cartier's 16th century explorations, the Iroquoians living in the St. Lawrence Valley were very active in a large interaction network, although they maintained certain differences. The most intriguing aspect is the distribution of shared identity attributes over 600 km along the St. Lawrence Lowlands. This relative homogeneity cannot mask regional differences that support the idea that Iroquoian Laurentia was occupied by several tribes (Trigger, Pendergast, 1978; Chapdelaine, 1989). A second difference from other Iroquoian groups is a direct access to marine resources for the tribe living in the Quebec City region which could hunt beluga and seals at the mouth of the Saguenay River, but also cultivate fields around their villages as other Iroquoians did (Plourde, 2012 and this volume). A third aspect to consider is the distinctive St. Lawrence Iroquoian domestic pottery at the stylistic level. Their functional vessels bear a different style from neighbouring Iroquoian groups and we will concentrate on this production.

The occupation of the St. Lawrence Valley by several tribes is a very logical hypothesis when looking at the distribution of known village sites, which shows regional clusters that may represent individual tribes (figure 1). The Saint-Anicet cluster with its four villages sits in a region conducive to agriculture. Of the four identified villages (figure 2), Berry, McDonald, Droulers and Mailhot-Curran, only the last two will be used in this paper to study Iroquoian households. The Berry site (Pendergast, 1966) was already disturbed by a large sand deflation when it was found and it was impossible to verify the presence of any dwellings on the site. The site is located far inland from the St. Lawrence River and conforms to the general Iroquoian settlement pattern

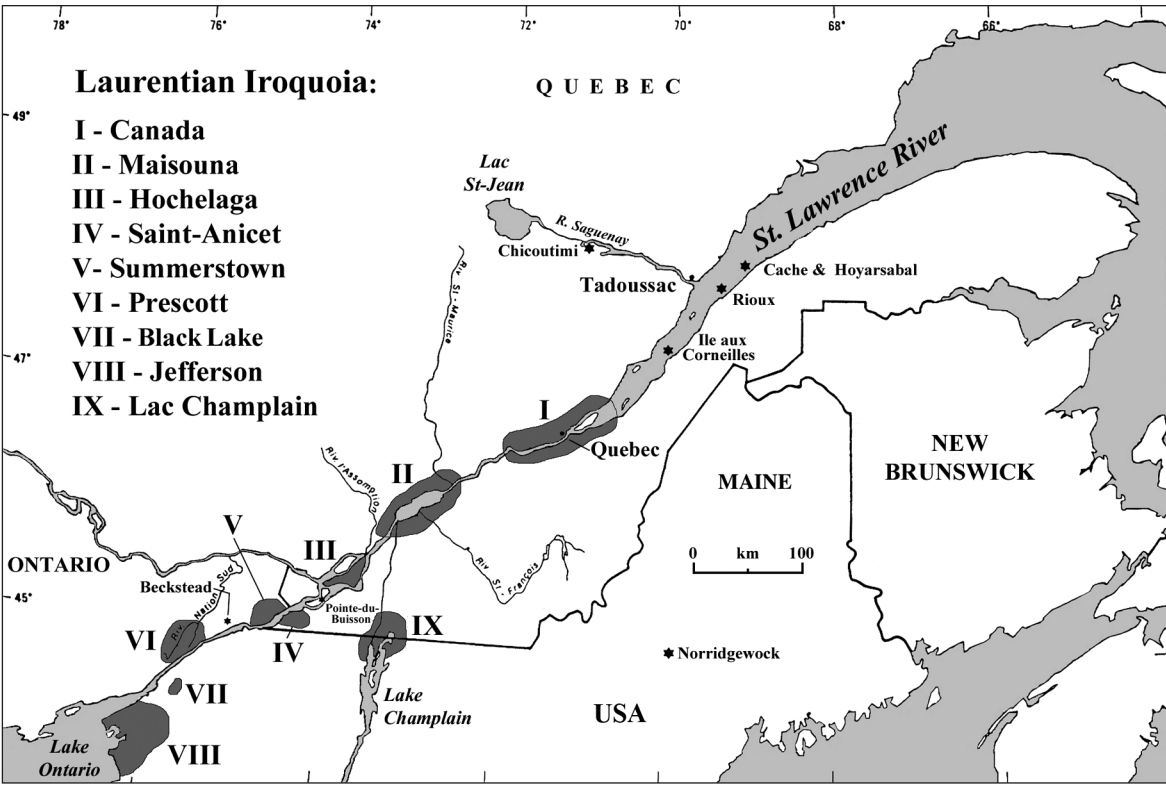


Figure 1 - Site clusters of Laurentian Iroquoia.

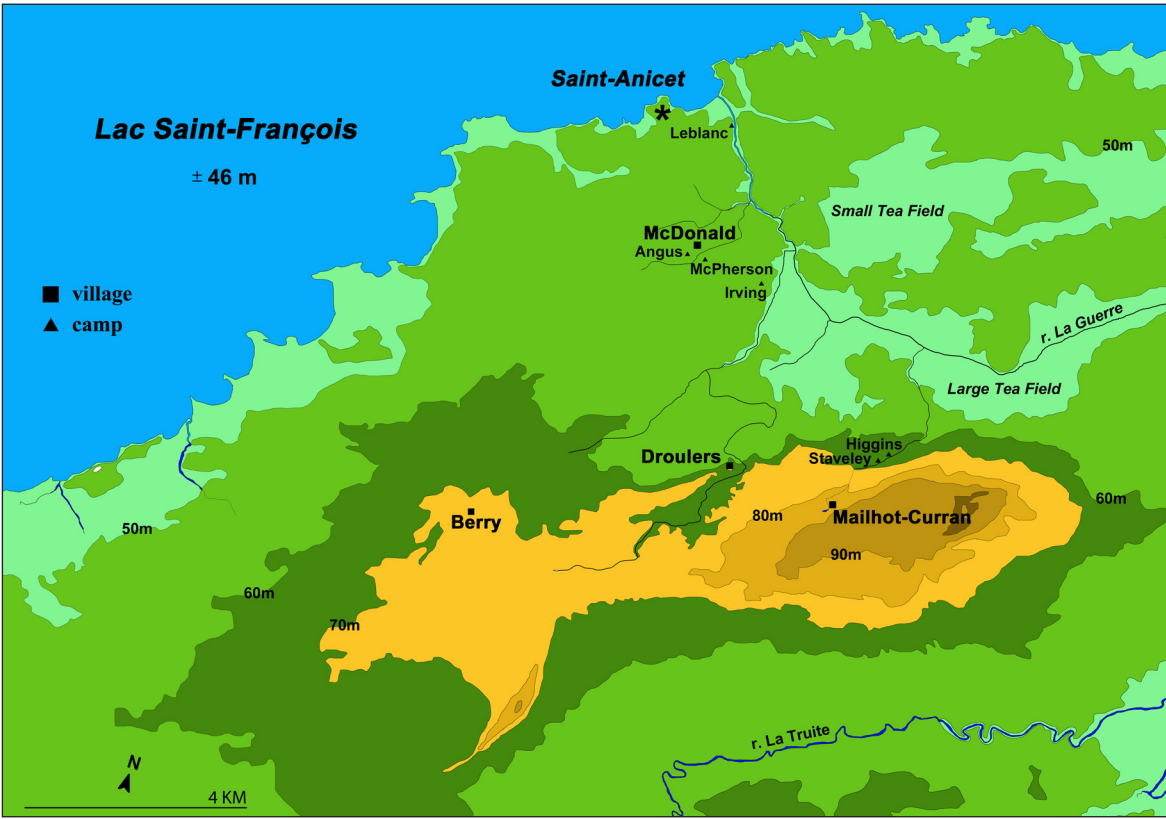


Figure 2 - Location of Iroquoian sites in the Saint-Anicet region and its four villages: Berry, McDonald, Droulers and Mailhot-Curran; the other sites are specialized camps.

(Chapdelaine, 1998). It is thus considered a village just like the McDonald site (Clermont, Gagné, 2004). The McDonald village site is considered small, with three longhouses and several small middens. Based on ceramic style, McDonald is considered a 14th century village which makes it the oldest village in the Saint-Anicet cluster.

Our scientific research project initiated in 2010 is a long-term program oriented toward a better understanding of the Saint-Anicet cluster's cultural originality. To achieve this goal, we decided to work extensively on the Droulers and Mailhot-Curran sites. After two field seasons at Droulers in 2010 and 2011, we moved to Mailhot-Curran for three seasons, 2012 to 2014. Trying from the start to understand the internal organization of these two villages, the longhouse became the focus of our attention. It is thus with the longhouse as our basic unit of analysis that we tried to achieve our goals. It is with the total horizontal exposure of the longhouse interior that we intend to compare the material culture of each longhouse in order to understand the relationships among the occupants. This approach favouring the extensive excavation of the dwelling floor in order to link the cultural remains to the internal longhouse structure has been pursued several times in Iroquoian contexts (Wright, 1974; Girouard, 1975; Dodd, 1984; Finlayson, 1985; Knight, 1987; Chapdelaine, 1989; Pendergast, 1990; Warrick, 1996; Clermont *et al.*, 2003; Kapches, 2007; Snow, 2012). This type of analysis of Iroquoian data within a social archaeology framework is frequently associated to a detailed analysis of ceramics, which is the dominant category of material culture recovered on all Iroquoian sites (Martelle, 2002; Birch, 2008; Chapdelaine, 2013). This is particularly true when dwellings are meticulously excavated. Household archaeology, which leads to Iroquoian social archaeology, was originally inspired by research carried out in the American Southwest (Longacre, 1970) and by links established between the dwelling, its occupants, the cultural remains and its social organization (Deetz, 1968; Hill, 1977; Wilk, Rathje, 1982; Netting *et al.*, 1984; Wilk, Ashmore, 1988; Santley, Hirth, 1993). Household archaeology is still a very dynamic approach that has been recently revitalized by a new generation of scholars (Canuto, Yaeger, 2000; Gillespie, Joyce, 2000; Robin, 2003; Nash, 2009; Pluckhahn, 2010; Carballo, 2011; Douglass, Gonlin, 2012; Birch, Williamson, 2015). This type of approach to the household, although it shows promising results, can also rely too heavily on the validation of a model generated by the rich ethnohistoric data for the American Northeast which in turn poses serious limits that we address in this paper.

1 - Saint-Anicet Iroquoians – the Droulers Site

At the beginning of the 1990s, the Iroquoian presence south of lake Saint François was not well documented. The Iroquoian cultural and archaeological landscape changed dramatically with the discovery of the McDonald site in 1992, the Droulers site in 1994, and the Mailhot-Curran site in 1999 (Chapdelaine, 2015).

The discovery of this new cluster of villages was made possible through the efforts of Michel Gagné (Clermont, Gagné, 2004). The Droulers site has now been excavated during two field seasons (Chapdelaine, 2010, 2012). Three longhouses are confirmed and the potential for many more has been tested within the village limits (figure 3). The site covers 1.3 ha and a large midden has been identified in the northeast portion of the settlement on the slope of a morainic ridge. The presence of a palisade around the settlement is still not confirmed and archaeological evidence is lacking to identify this defensive measure. Longhouse #1, the excavation of which was initiated by Michel Gagné, is almost completely exposed, as well as longhouse #2. These two dwellings occupy the eastern-central portion of the village and they are aligned parallel to each other. Its members may have been part of the same clan. Pottery analysis can answer this question on the affiliation of the members of the two households.

The third longhouse, although confirmed with the discovery of three aligned hearths, is not sufficiently excavated to be used in this study regarding the household social network.

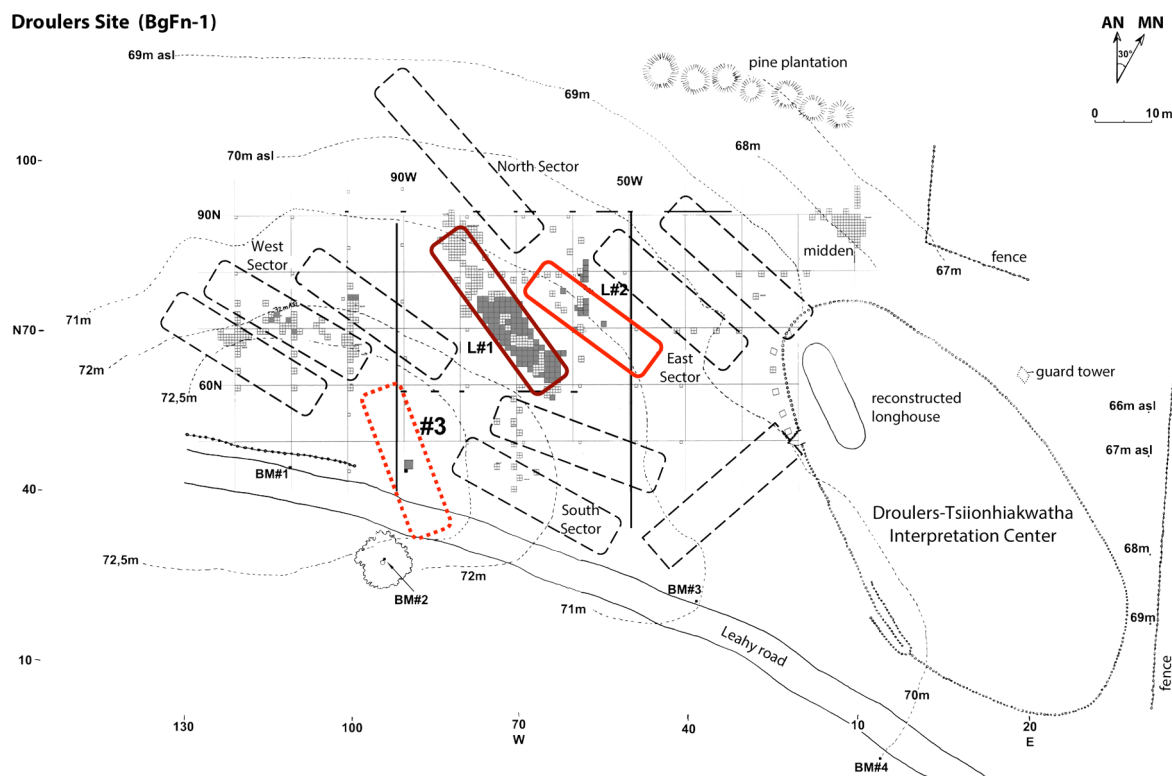


Figure 3 - Map of the Droulers site and the location of three confirmed longhouses, other potential longhouses, and the reconstructed village that serves as an Interpretation Center.

2 - Spatial Analysis of Longhouses #1 and #2 at Droulers Site

The principal characteristic at Droulers is the large amount of rocks present in the sandy soil. The consequence of the rocky nature of the habitation floor is that it is very difficult to identify postmolds in the subsoil. These features are easy to identify in sandy soils that are free of stones. The identification of a longhouse must therefore be done without postmolds, a task that is more complicated but not impossible. Our first approach is the discovery of a minimum of three aligned hearths spaced at regular intervals, generally between 3 and 5 meters. The pits unearthed around the hearths can also be used to identify longhouses, along with a high density of cultural remains within the interior of the dwelling (figure 4). Without the help of aligned postmolds to delimit the housing feature, we propose a width of 6 m for our longhouses (Dodd, 1984; Warrick, 1996; Kapches, 2007). This width is compared to the location of pits around the hearths and to the artifact density. In order to establish the dwelling's length, we examine the density of cultural remains away from the last hearths in the alignment and a clear decline of artifact density is thus used to define the longhouse limits (figure 4).

The longhouse is a living space as well as an area to consume and to produce goods. This dynamic daily life favours the creation of large amounts of garbage that must be dealt with. Several choices are available to the occupants. They can throw away their waste in a midden located outside

but near to house. They can also take care of garbage by placing it inside pits dug close to interior hearths (figure 4). A third choice relies on discarding some of the waste below the sleeping platform along the house walls. Whatever was their choice, the excavations should reveal the refuse distribution patterns that these Iroquoians selected. The interior floor of the dwelling was made of compacted earth and smaller refuse could have penetrated easily and quickly into the ground. It is thus important to point out that the number of household pits is limited at Droulers and that the use of this type of feature to discard waste was not very popular.

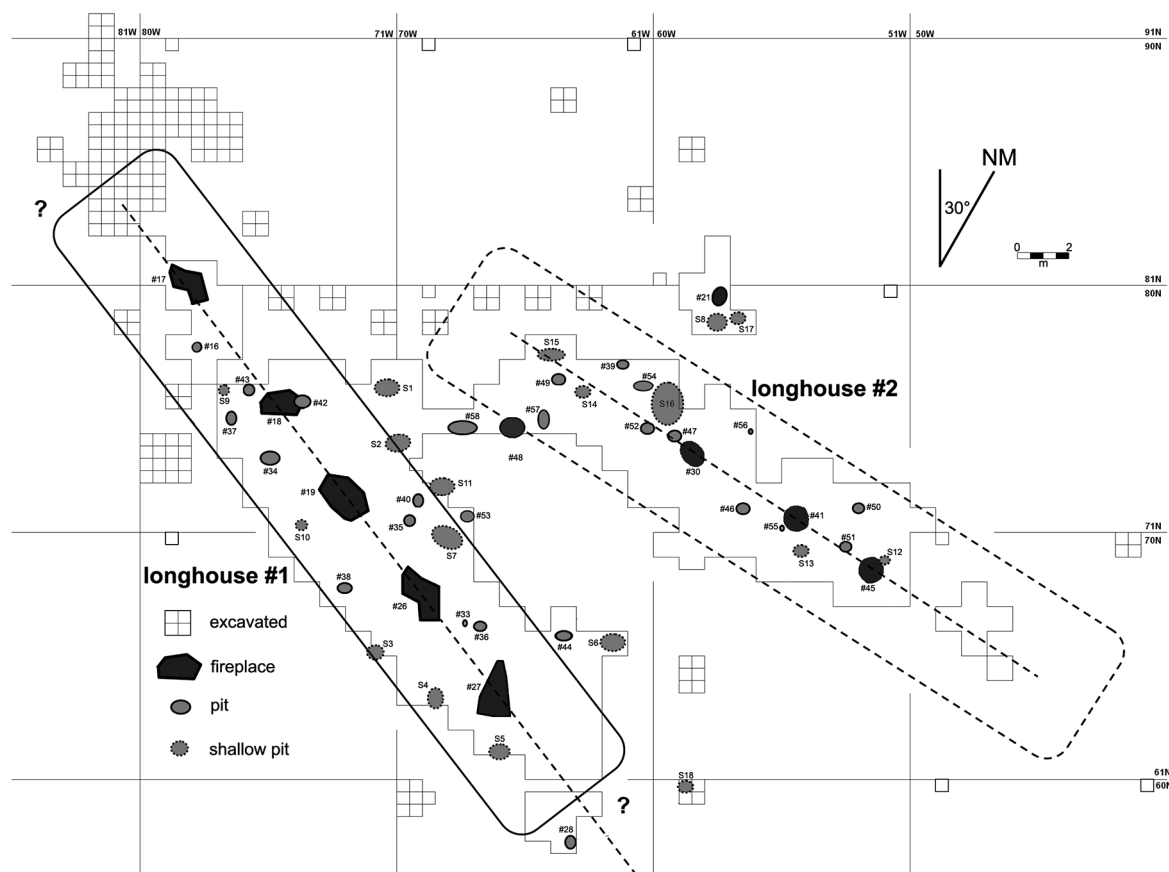


Figure 4 - Hypothetical limits of longhouses #1 and #2 at Droulers with the distribution of hearths, pits, shallow features rich in cultural remains, and postmolds.

The ceramic industry is by far the dominant category of cultural remains that archaeologists amass during excavations of Iroquoian village sites. Of this earthenware production, domestic pottery is the most prolific in numbers. Any analysis of social networks must inevitably rely on a detailed analysis of pottery. These specific vessels (figure 5) with a decorated collar allow us to ask many questions. In this study, we will limit ourselves to three interrogations. Is the ceramic production from longhouses #1 and #2 sufficiently comparable to support the hypothesis stating that members of these two households were members of the same clan? Does the central portion of the two dwellings show a higher artifact density, thus indicating that leading individuals, namely elders, occupied this area on a year-round basis? Is the St. Lawrence Iroquoian emblematic style shared by all the family units or is it in the hands of few families?

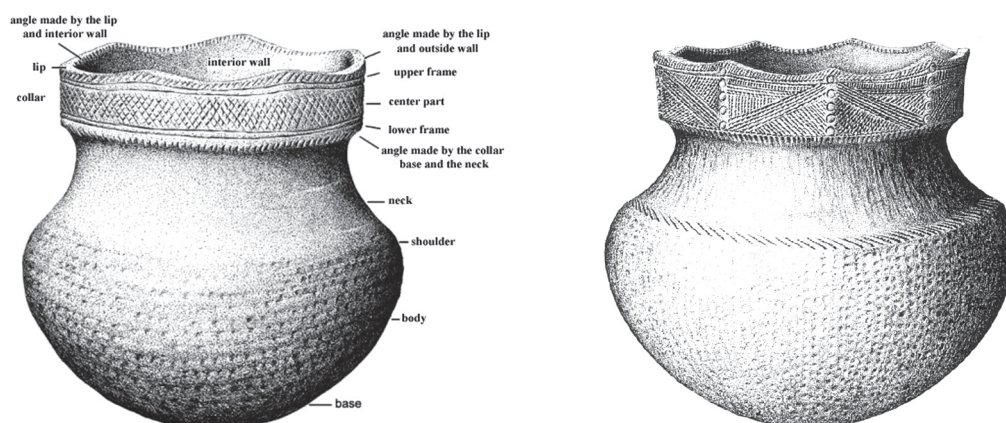


Figure 5 - Line drawing of an Iroquoian vessel with its analytical parts left) ; line drawing of a typical St. Lawrence Iroquoian vessel from the Lanoraie site with a high collar crested rim, and decorated with reed punctates (right).

Data from Droulers are not yet totally compiled for domestic pottery. At this stage of our research, it is possible to confirm that the central portion of the two households shows a high artifact density and that their members are related through a shared interest in decorating their pottery vessels with dentate stamped (Perreault, 2014). Some differences occur when examining the emblematic variables. Potters from longhouse #1 use more frequently the ladder motif on their domestic vessels while potters from longhouse #2 used reed punctates (figure 6).

Despite these small differences, it is possible to argue that members of the two households might have been affiliated and members of the same clan. This conclusion is certainly premature but we hope to study it in greater depth at the end of the new phase of excavations at Droulers in 2017.



Figure 6 - Vessels decorated with emblematic motifs. Upper row: corn-ear motif from Mailhot-Curran site, lower row: ladder motif and reed punctates from Droulers site.

3 - Saint-Anicet Iroquoians – the Mailhot-Curran Site

Excavations were carried out at this site from 1999 to 2001, revealing its potential and at least one longhouse and one midden (Gagné, 2002). Between 2012 and 2014, three field seasons identified five additional longhouses and two middens (figure 7). A total of 462 m² were excavated, which corresponds to about 8 % of the village core (Chapdelaine, 2015a). Longhouses #5 and #6 are not sufficiently excavated to be relevant for this household study; they are thus excluded from the discussion.

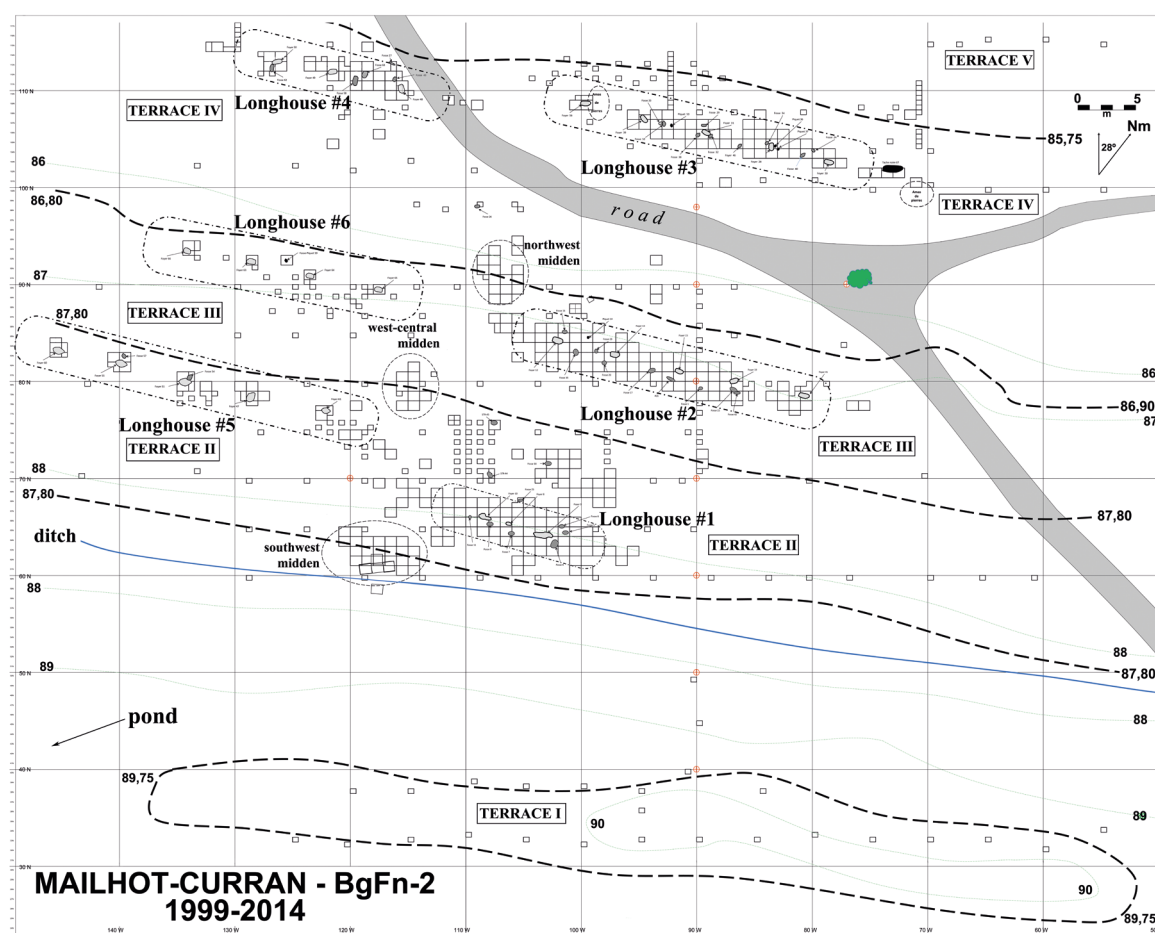


Figure 7 - Location of six longhouses, three middens, and the limits of five terraces at the Mailhot-Curran site.

4 - Spatial Analysis of Longhouses #1, #2, #3 and #4 at Mailhot-Curran Site

The same questions formulated to interrogate household data from Droulers were applied to the data from the four selected households at the Mailhot-Curran site. Is ceramic production from longhouses #1 to #4 sufficiently comparable to favour the same clan affiliation for the four households or is it different enough to support the hypothesis of two clans at the site? Does the central portion of the longhouses have a high artifact density thus supporting the presence of elders during a year-round occupation? Finally, is the emblematic style on domestic vessels typical of the St. Lawrence Iroquoians shared by all families or limited to a few families?

To offer the most detailed answers to these questions related to density and distribution of cultural remains inside households, longhouse #2 is selected because it is the richest, the longest with five hearths, and it is associated with a midden (figure 8). The central alley is organized with five hearths along its axis and it also has the highest density of cultural remains. The area between the central hearth and the next fireplace to the west is the richest, confirming in a way the importance of elders (following the ethnohistorical model) within the central portion of the longhouse. However, it must be noted that families occupying the easternmost hearth area also produced a large amount of waste. A spatial distribution analysis of collared and non-collared vessels is available elsewhere (Chapdelaine, 2015b) and we have reproduced here the distribution of collared vessels found inside longhouse #2 (figure 9). Numerous refits of the analyzed vessels allow us to reconstruct

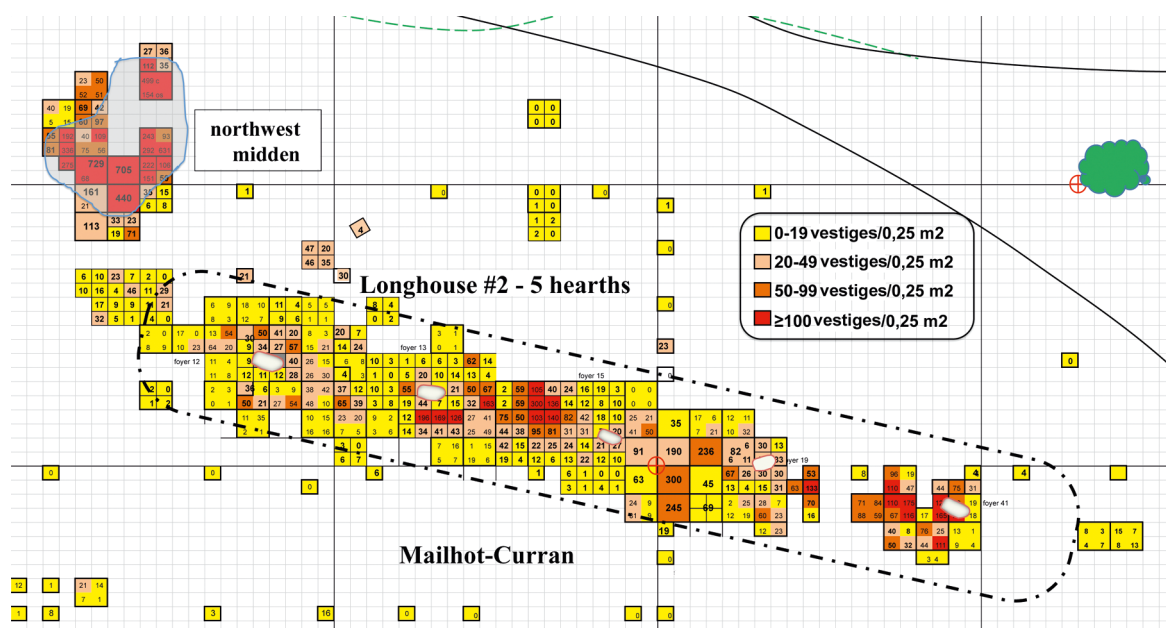


Figure 8 - Density of cultural remains within longhouse #2 at the Mailhot-Curran site.

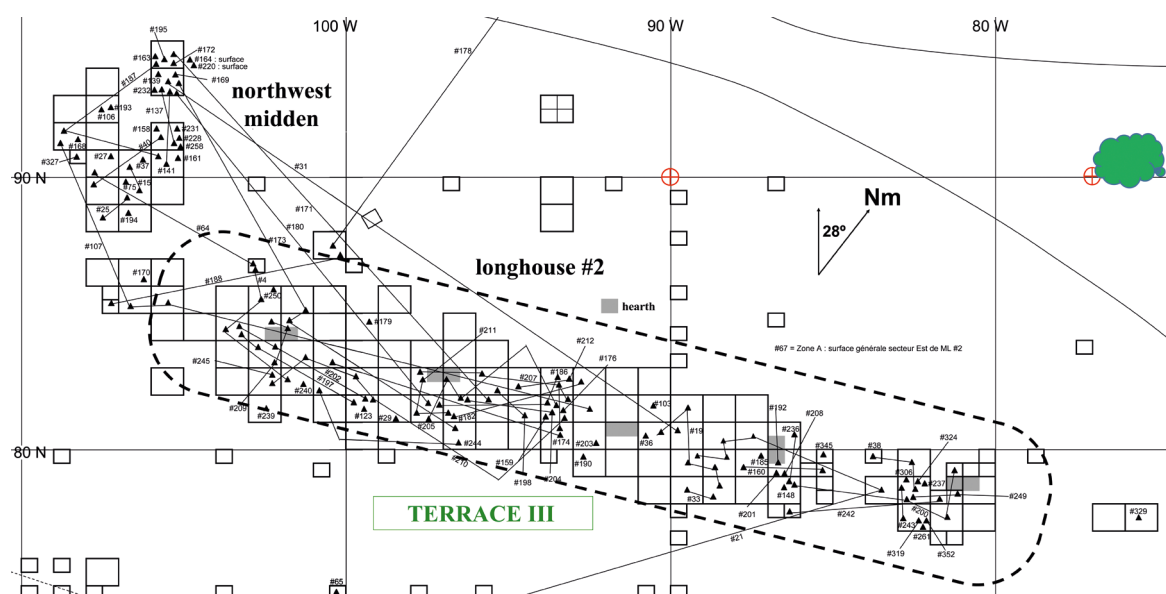


Figure 9 - Distribution of collared vessels from longhouse #2 and location of the northwest midden: triangles indicate the provenance of a pottery fragment, and lines the association between fragments of the same vessel; the number refers to the unit of analysis.

links between different family units around hearths as well as confirming the role played by members of this household in discarding their waste into the northwestern midden. An unbalanced distribution is also visible between the northern and southern halves along the central hearth axis. This impression could suggest an absence of families north of the hearths or a more efficient cleaning of ceramic waste. The horizontal distribution of artifacts and features shows first, the difficulty of understanding all the family units with the absence of a uniform distribution, and second, the lack of a plausible explanation for this irregular dispersion of cultural remains inside a longhouse.

A systematic comparison of vessel units found inside longhouses #1 to #4 has allowed us to propose with confidence that there are behavioural differences between residents of terraces #2 and #3, associated to the southern half of the village, and residents of terrace #4 associated to the northern portion (see [figure 7](#)). The internal organization of this particular village settled over three narrow terraces seems to comply with the natural terrace orientation and proximity. Longhouses #1 and #2 are close to each other and they belong to the southern half of the village, while longhouses #3 and #4 are part of the northern half. Several stylistic attributes were selected differentially by potters of these households and this allows us to propose that at least two clans are present, although we have to be cautious since the whole group shares many attributes. It is by favouring differences over similarities that we divide our four households into two distinct clans ([table 1](#)). Among the behaviours or distinctive stylistic choices made by potters of the northern half of the village, we should mention a lower percentage of high collar vessels, the scarcity of vessels decorated with reed punctates, the almost complete absence of the ladder motif and a presence of vessels showing Huron influence. There are more subtle differences regarding the choices made by potters from longhouses #3 and #4 to distinguish themselves from potters of the southern half of the village when it comes to decorating various parts of the collared vessels (Woods *et al.*, 2015: 178). With the unique discovery of a zoomorphic effigy pipe, probably representing a wolf ([figure 10](#)), we are tempted to identify the dwellers of the southern half of the village to the wolf clan. However, we must await the discovery of a similar class of object to propose a clan name for members of longhouses #3 and #4.

	High collar (> 35 mm)		Castellation		Ladder motif		Reed punctate		Human figure motif		Corn-ear motif	
	N	%	N	%	N	%	N	%	N	%	N	%
M-L #1	10/51	19.6	27/51	52.9	4/50	8	7/51	13.7	0/51	0	1/51	2
M-L #2	11/60	18.3	33/60	55.0	7/59	11.9	8/59	13.6	3/59	5.1	0/59	0
M-L #3	3/36	8.3	14/36	38.9	1/31	3.2	2/31	6.5	1/31	3.2	0/31	0
M-L #4	1/24	4.2	13/27	48.1	0/26	0	3/27	11.1	0/27	0	0/27	0
Whole site	38/256	14.8	128/262	48.9	18*/247	7.3	30*/248	12.1	6*/247	2.4	2*/247	0.8

* Toutes les unités d'analyses non comptabilisées ayant cet attribut proviennent de la moitié sud du site, ce qui inclut les maisons-longues #5 et #6, les dépotoirs nord-ouest, centre-ouest, sud-ouest ainsi que la zone au nord de la maisons-longue #1.

Table 1 - Comparison of selected morpho-stylistic attributes on collared vessels from longhouses #1 to #4 at the Mailhot-Curran site.

Regarding the last question on the typical emblematic style of the St. Lawrence Iroquoians, we must not lose sight of the fact that only 15 % of all analyzed pottery bears the distinctive attributes of a St. Lawrence Iroquoian vessel which is characterized by a high collar of 30 mm or more decorated with a complex geometric motif and frequent rim castellations ([figure 6](#)). The addition of short parallel lines resembling a ladder or the use of circular punctates to produce distinctive

motifs can be added to this definition. A corn-ear motif is also highly typical of the St. Lawrence Iroquoian style and this emblematic motif is very rare at Mailhot-Curran, being present on only two vessels. This motif is completely absent at Droulers. The two vessels decorated with the corn-ear motif were found in the southern half of the village. Even if 75 % of all the vessels identified to the emblematic style were found in the southern half, it is also present in longhouses #3 and #4. This style was thus shared at the Mailhot-Curran on the village scale, but it was highly uneven in its distribution.



Figure 10 - Zoomorphic effigy pipe, probably a wolf, from longhouse #2 at the Mailhot-Curran site.

5 - Discussion

Despite a size difference between Droulers and Mailhot-Curran villages, we think that a detailed comparison will be relevant when complete data from Droulers will be available. The possibility of identifying clan affiliation by studying pottery is intimately linked to the quality and representativity of the samples. However, it should not be forgotten that the task will be difficult (Wright, 2006). Potter's activities related to their craft could be carried out inside or outside longhouses according to the season. Each family must manage broken pots and this task could vary at the family or longhouse level. The refitting of vessels could also have an impact on their location on the dwelling floor. The results of refitting is similar on both sites we have studied, but it must be stressed that Droulers was cleared of trees and the soil plowed during the 20th Century, activities that disturbed the vertical and horizontal location of pottery fragments. The exact position of vessels on Mailhot-Curran was only affected by natural factors such as animals and tree throws, which implies movement in the soil, but probably less significant than the displacement affecting vessels at Droulers.

Regarding the question on clans, we think that a village comprising a population ranging between 400 and 600 souls should have several clans. Mailhot-Curran is a small village of about 200 individuals and there therefore a possibility of a homogeneous population belonging to a single clan. However, this small village seems to have been less homogeneous than previously thought and the presence of two clans now seems probable. The location of longhouses and their orientation within a village are two indicators mentioned by scholars to recognize the presence of several clans. It is indeed the stylistic differences found on pottery and the location of longhouses on three separate terraces that has allowed us to propose the presence of two clans at Mailhot-Curran.

As we have mentioned at the outset, several factors make it difficult to identify longhouses at Droulers and Mailhot-Curran sites, thus reducing the scope of household archaeology and our attempt to revitalize Iroquoian social archaeology. First, it must be stressed that doing Iroquoian household archaeology without identifiable postmolds is a serious handicap. The absence of postmolds makes it impossible to establish the dwelling's perimeter. A low density of cultural remains at the house extremities is used to estimate the length of the residential structure without knowing if there was a cubicle. House width is also problematic, as well as inferring the presence of sleeping platforms along lateral walls (figure 11).



Figure 11 - Interior representation of a longhouse showing the location of hearths and the sleeping platforms along lateral walls (Clermont, Chapdelaine 1986, painting by Guy Lapointe).

The strong relation between Iroquoian archaeology and the ethnohistoric record is the second problematic aspect of this research. As archaeologists, we should not neglect the historic model that was built upon ethnohistoric data, but our goal as archaeologists should not be limited to simply validating this model. It is thus a real problem when archaeology only tries to confirm the historic model, or tries to minimize the differences encountered that could be used to argue for divergent behaviours or practices in the past. In addition, the more we deal with a context that is further back in time from the Contact period, the goal of developing a model based on archaeological data should be promoted.

Another aspect adding to the difficulty of using a household approach to study Iroquoians is the integrity of cultural remains, which is directly related to the dweller's behaviours in dealing with their garbage. However, we must not neglect the fact that the majority of Iroquoian sites were single occupations, which thankfully avoids the mixing of several occupations and limits the stratigraphy to a single layer. Within this particular context, the total exposure of the dwelling floor is definitely a crucial step toward the reconstitution of the inhabitant's history.

The limits of Iroquoian household archaeology, as discussed above, also need to consider scale as a factor. What type of information can we obtain with a meticulous excavation inside a longhouse and with a highly representative material culture? Knowing that material production can be very useful to address Iroquoian identity, at what scale can we really pretend to contribute by analysing and comparing decorated vessels and smoking pipes? An Iroquoian identifies himself or herself first to his / her family and to his / her mother's lineage. From the perspective of the community, his or her membership to a longhouse is undeniable but his / her second true identity will be his / her clan, which is his / her mother's clan. Inside a longhouse, all the women are related by kinship and thus are all members of the same clan. A homogeneous assemblage of decorated vessels from a longhouse will reflect the close relations between women and their membership to the same clan. Two longhouses having strong similarities regarding their ceramic production will be considered members of the same clan. Significant differences between ceramic productions of two longhouses could be explained by the presence of two clans. Within this interplay of scale, it should be mentioned that clan coexistence in a single village over a period of 10 years, and the subsequent relocalization of this same community to a second village, will produce strong tendencies toward homogenization of the ceramic production within longhouses. A village identity could emerge that will diminish the original contrasts stimulated by clan membership. The analysis and explanation of ceramic remains thus becomes much more complex, and explaining differences more difficult.

The last scale of analysis to be discussed here involves comparing ceramic productions between two villages of the same region. It is thus possible to compare two communities by using assemblages representing a whole village or by selecting households. Of course, it is at the household level that we hope to get answers to our regionally based interrogations and in particular the ethnogenesis of communities. The Saint-Anicet cluster is seen here as a social archaeology laboratory. Will it be possible to measure differences and resemblances between members of each household at the two sites in order to answer the following question: which population segment from Droulers went on to build Mailhot-Curran? In other words, when the community at Droulers decided to change the village location after an occupation that may have lasted 10 to 15 years, did the community rebuild the new village within a distance close to a day's walk, or was it divided into two or three smaller groups, of which one will become the Mailhot-Curran community? For now, given that Droulers is the only large Iroquoian village known in the region, the first scenario cannot be excluded. In addition, Mailhot-Curran is assumed to be younger than Droulers, and it is difficult to establish a temporal gap between the two villages at this time. Mailhot-Curran may have been occupied immediately after Droulers' abandonment. However, the stylistic differences between the two sites seem to favour a span of at least one or two village relocations. These questions related to ethnogenesis illustrates the challenge that we face in refining the chronology between the two sites, a matter explored in more detail elsewhere (Chapdelaine, 2013; Chapdelaine, Woods, 2015). Despite the possibility of using several well known methods such as ceramic typology and radiometric dating, and a more regular use of optically stimulated luminescence on pottery (Forget-Brisson *et al.*, 2015), the problem of obtaining dates that are closer to the ethnographic occupations of 10 to 20 years duration will not be resolved in the near future.

Conclusion

The study of an Iroquoian community can not be studied in isolation and this is why the Saint-Anicet cluster of several villages represents a precious laboratory to integrate data from different but interrelated communities in time and space. It is the historic trajectory of a group of

Iroquoian farmers that we intend to reconstruct with our long-term project that will last ten years. Added to the possibility of identifying clans, as well as better understanding the relations between villages, it is the ethnogenesis of these communities from the same region that is driving us to a much smaller scale analysis using the micro-style study of pottery and a detailed comparative analysis of all the material culture. Our goal is to question the archaeological data within a household framework in a way that can eventually reflect social inequalities at the economic, social, political and ideological levels. Did the Iroquoians constitute an egalitarian society in which the chiefs were not allowed to accumulate goods? Bryan Hayden's transegalitarian concept is useful here to study the transition between egalitarian societies and those societies that gradually transformed into favouring a hierarchy of their members. It is not our purpose here to examine households and Iroquoian community villages in order to verify if they were close to becoming chiefdoms (Noble, 1985), but rather to stress the complexity of the Iroquoian adaptive system. Within the Iroquoian world, the number of chiefs and the sexual division of labour are two well-developed attributes of a tribal or clan based society that was maintained until the 17th Century as an egalitarian system (Trigger, 1990). It is thus our humble wish to establish the basis of a social archaeology for the Saint-Anicet Iroquoian cluster and to evaluate their cultural originality within Iroquoian Laurentia.

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USING WORKED BONES TO STUDY IROQUOIAN HOUSEHOLDS:

The Case of the St. Lawrence Iroquoians
from Saint-Anicet, Quebec

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To cite this article

Gates St-Pierre C., Boisvert M.-È., Chapdelaine M., 2016 - Using Worked Bones to Study Iroquoian Households: The Case of the St. Lawrence Iroquoians from Saint-Anicet, Quebec, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 95-109.

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Abstract

Bone tools are abundant on Iroquoian sites and are generally analyzed using a typo-functional perspective. This article will serve as a demonstration of the utility of bone tools to study the household and social organization of St. Lawrence Iroquoians through intra- and inter-household spatial analyses.

Mots clés

Archaeology, Iroquoians, Quebec, household, bone tool, bone technology, spatial analysis.

Introduction

It is surprising that Iroquoian sites are rarely analyzed from the perspective of an archeology of the household, despite the fact that they are especially fit for such an approach. After all, Iroquoian villages are defined above all by the remains of large multifamily dwellings called longhouses. In addition, these sites are almost never contaminated by earlier or subsequent occupations. Moreover, ethnohistoric and ethnographic sources describing the social and spatial organization of Iroquoian households are relatively numerous. Therefore, it is not due to a lack of suitable remains and data that an archeology of the Iroquoian household has not become more common. It is simply a reflection of an old tradition in analyzing Iroquoian living spaces at the scale of the entire village, a tradition partly inscribed in the persistent wake of settlement pattern studies.

A second general observation is necessary prior to the presentation of our data, and it concerns the scarcity or near absence of technological analyses of Iroquoian bone industries (Gates St-Pierre, 2001, 2010). Indeed, Iroquoian bone tool assemblages are generally described or analyzed from a typo-functional or sometimes chronological or comparative perspective (see Beauchamp, 1902; Wray, 1963; McCullough, 1987; Jamieson, 1993; Thomas, 1998; Berg, Bursey, 2000; Cowin, 2000; Weissshuhn, 2004; Williamson, Veilleux, 2005; Walker, 2007). Manufacturing debris are almost always ignored and microwear analyses are just as rare (Gates St-Pierre, 2007; Gates St-Pierre, Boisvert 2015). No wonder then that analyses of Iroquoian households integrating data from worked bone has never been produced before. Everything remains to be done in this regard, but the present study of some collections from the Saint-Anicet area is a first step in that direction.

1 - St. Lawrence Iroquoians from the Saint-Anicet Area

St. Lawrence Iroquoians were one of the many Iroquoian nations of Northeastern North America. Their subsistence was based on the cultivation of corn, squash and beans, supplemented by the products of fishing and hunting and, incidentally, by gathering plants, nuts and berries. These horticulturalist people lived in semi-permanent villages, relocated after two or three decades, and containing a variable number of longhouses. These were large, multifamily dwellings inhabited by families related by the lineage of the mothers, as they were matrilineal and matrilocal societies.

Before the enigmatic disappearance of the St. Lawrence Iroquoians, at the end of the 16th century, their territory covered the entire St. Lawrence River Valley, between Lake Ontario and the estuary of the river, with an extension to northern Lake Champlain (figure 1). This vast territory can be divided into a number of provinces (C. Chapdelaine, 1989, 1990, 1995, 2015a; Tremblay, 2006). One of them, the province of Hochelaga, was centered on the Island of Montreal. It is in this great province that lies the Saint-Anicet region, where a concentration of Iroquoian villages was discovered consisting of the Berry, Droulers, McDonald and Mailhot-Curran sites (see Clermont, Gagné, 2004). This paper will be limited to the last two sites, since data from the Berry site, briefly investigated decades ago (Pendergast 1996), are inadequate, while those from the Droulers site, still being excavated, will be presented on another occasion.

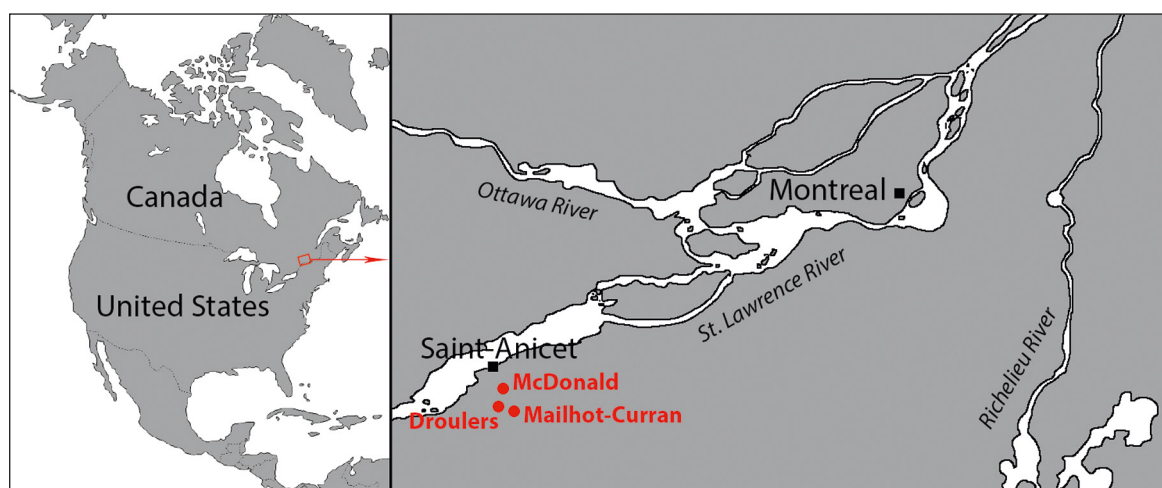


Figure 1 - Location of the sites mentioned in the text.

2 - The Iroquoian Household

The household is to some extent an alternative to the concepts of family and kinship (Wilk, Rathje, 1982: 618). The household refers to the minimal unit of socialization, production and socio-economic reproduction, consisting of members of a family living under the same roof (co-residence). This definition implies that a household is also a place for communal activities and decisions. For the archaeologist, it is through the house structure that this ethnographic concept materializes and becomes operational. The house structure and its inhabitants combine and become entangled in a “mutually constitutive” relationship (Birdwell-Pheasant, Lawrence-Zúñiga, 1999: 4); understanding the Iroquoian household thus requires us to document and analyse the house structure.

Ethnohistoric and ethnographic data can be used to reconstruct the typical Iroquoian household at the time of contact with the first Europeans during the 16th and 17th centuries. This household assembled families related through the lineage of the mother, and the lineages that share a common ancestor constitute a clan. Thus, a longhouse always shelters families belonging to the same lineage and the same clan, but these may be distributed among several longhouses. The Iroquoian longhouse is divided into compartments which can be separated by partition walls, each compartment containing its own central hearth used by two nuclear families distributed on both sides (figure 2). Every longhouse is led by a matron occupying the central compartment, usually the eldest of the household. Consequently, there is a narrow definition of the household, that of the minimal cooperation unit, and a broader definition designating the related families living in a same longhouse.

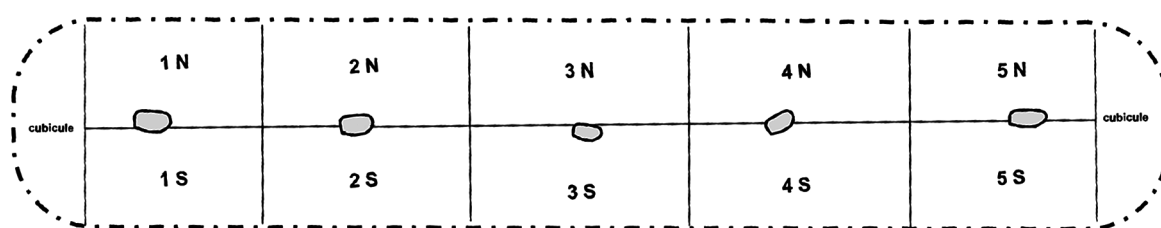


Figure 2 - Schematic division of a typical Iroquoian longhouse (modified after Chapdelaine, 2015d).

Here the entanglement of the ethnographic unit (the household) with its materiality (the longhouse) is again visible, even allowing American archaeologist Dean Snow (2012: 118) to use the neologism “longhousehold”. However, we must avoid the danger of establishing a complete synonymy between the two concepts. Moreover, the few existing comparative analyses of Iroquoian households have often highlighted the variability that existed between longhouses as well as within longhouses themselves (Clermont *et al.*, 1983; Allen, 1992; Michaud-Stutzman, 2009; Timmins, 2009; Williams-Shuker, 2009; Snow, 2012; C. Chapdelaine, 2015d; Rieth, this volume). This is clearly a valid argument for the pursuit of an archeology of the Iroquoian household.

It is by observing the spatial distribution of bone tools and manufacturing waste between, as well as within households that we will try to understand the Iroquoian households of the village sites from the Saint-Anicet area. In so doing we implicitly assume that the social organization observed during the Contact period already existed at least a few centuries earlier, following the principle of the Direct Historical Approach (Stewart, 1942).

3 - The McDonald site

Dated to the middle of the 14th century AD, the McDonald site is an Iroquoian village comprising a minimum of three longhouses (Gagné, 1993, 2010). Each of these habitats is associated with a midden or small area of domestic waste, in addition to a larger midden used by the whole community. A total of 383 bone objects have been found on the site, usually fragmented, including awls, needles, beaver incisors used as chisels, antler punches, projectile points, harpoons heads, beads and pendants, and elements of the cup and pin game, among other categories (figure 3). The assemblage from the McDonald site also contains 642 production waste products of many sorts: blanks, preforms, scraps, percussion flakes, etc. (figure 4).



Figure 3 - Examples of bone artifacts from the McDonald and Mailhot-Curran collections: awls (1-10); pointed objects that could have been used as projectile points, daggers or corn husking pins – (11-15); harpoon heads (16-17); antler punches (18); element of the cup-and-pin game from a modified deer phalanx (19-20); beads (21-22); beaver incisors used as chisels and side scrapers (23-26); projectile points (27-28); needles (29-31).

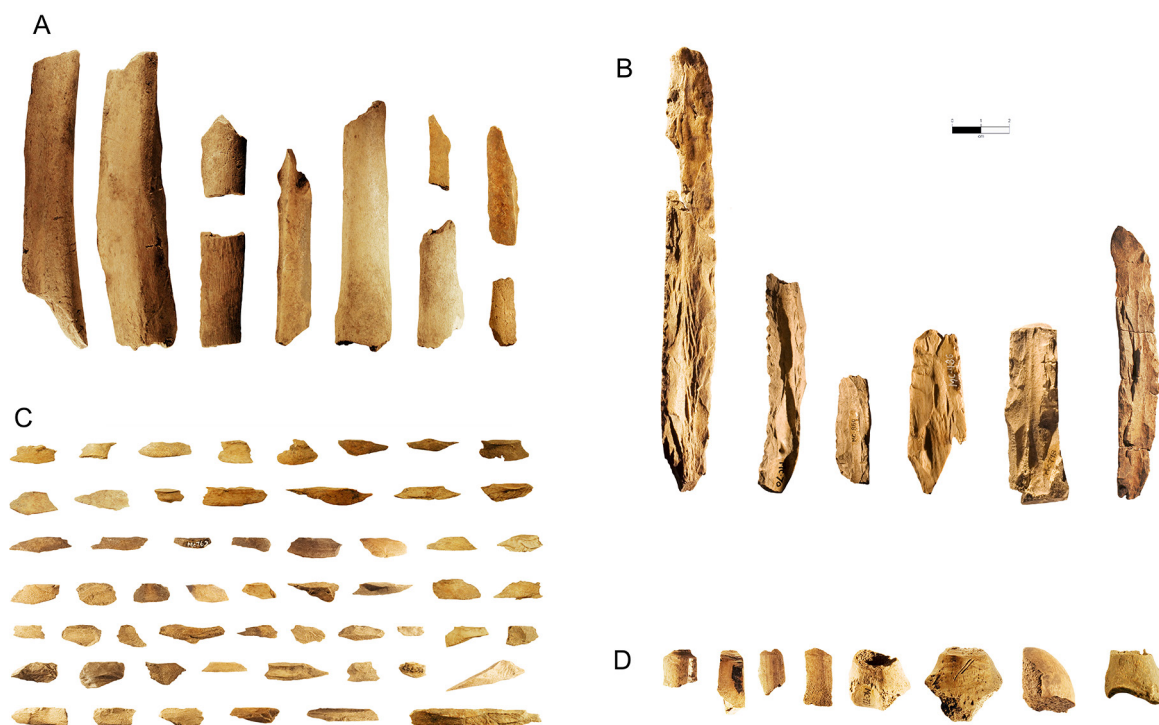


Figure 4 - Examples of bone tool production waste from the McDonald and Mailhot-Curran collections. A: linear cut-outs; B: preforms; C: percussion flakes; D: various manufacturing debris with grooves, scraping, or cutting traces.

A detailed analysis of the pottery from the McDonald site revealed the great homogeneity that exists in the ceramic production from one household to another, despite minor variations (Lévesque, 2015). But what about the bone industry? The analysis of the spatial distribution of the worked bones indicates that bone tools and manufacturing waste are much more abundant within the longhouses than outside, including the middens (table 1). The production and use of bone objects were therefore indoor activities for the most part, although a better coverage of the external areas would have been necessary to assert this with more certainty. It should also be noted that there is always more production waste than finished objects almost anywhere on the site. Hence, the ratio of bone tools per manufacturing debris varies between 0.3 and 0.8 between longhouses, with an average ratio of 0.6. This is an expected result, since prehistoric bone industries always generate more waste than finished products; however, the regularity of the phenomenon between households is intriguing and noteworthy.

	Longhouse 1				Longhouse 2				Longhouse 3				Central midden	Surface	Total
	Interior		Exterior		Interior		Exterior		Interior		Exterior				
	N	%	N	%	N	%	N	%	N	%	N	%	N	N	N
Tools	148	87.6	21	12.4	30	76.9	9	23.1	128	85.3	22	14.7	23	2	383
Waste	221	89.8	25	10.2	34	69.4	15	30.6	249	79.6	64	20.4	25	9	642
Total	369		46		64		24		377		86		48	11	1025
Ratio T:W	0.7:1		0.8:1		0.9:1		0.6:1		0.5:1		0.3:1		0.9:1	0.2:1	0.6:1

Table 1 - Distribution of the bone tools and waste products among the longhouses of the McDonald site.

Beyond these general results which give an impression of widespread homogeneity are some interesting variations. For example, it seems clear that the inhabitants of longhouse 2 produced far fewer remains from bone transformation than those of the two other longhouses. This house is smaller than the others and it certainly sheltered a smaller number of families; however, it is only one third smaller than the other longhouses, yet it contains nearly 80 % less modified bone remains. The discrepancy is not proportional to the size of the households and such a difference is best explained by a greater intensity in the production and use of bone objects in the two largest longhouses.

Observed at an even smaller scale, the spatial distribution of the bone objects and manufacturing waste indicates that they are present in all of the compartments of each longhouse (figures 5-6). Hence, there were apparently no families or households that did not produce or use such objects. Likewise, nothing indicates the existence of specialized activity areas, or concentrations of bone objects or debris, that may indicate the presence of a workshop. These artifacts are certainly more numerous around some hearths, which are areas of intense domestic activities, but this does not allow us to interpret these as specialized areas or workshops. Rather, it is as if every household included at least one member having the knowledge and experience necessary to produce the bone objects needed by his or her family. It is thus a technological knowledge that was socially shared, like all other material productions of the St. Lawrence Iroquoians.

The artifacts analyzed seem to be more numerous in the compartments located on the south side of the central alignment of hearths in longhouse 1, and on the west side of the alignment in longhouse 3. These could represent privileged spaces for the production and use of bone objects,

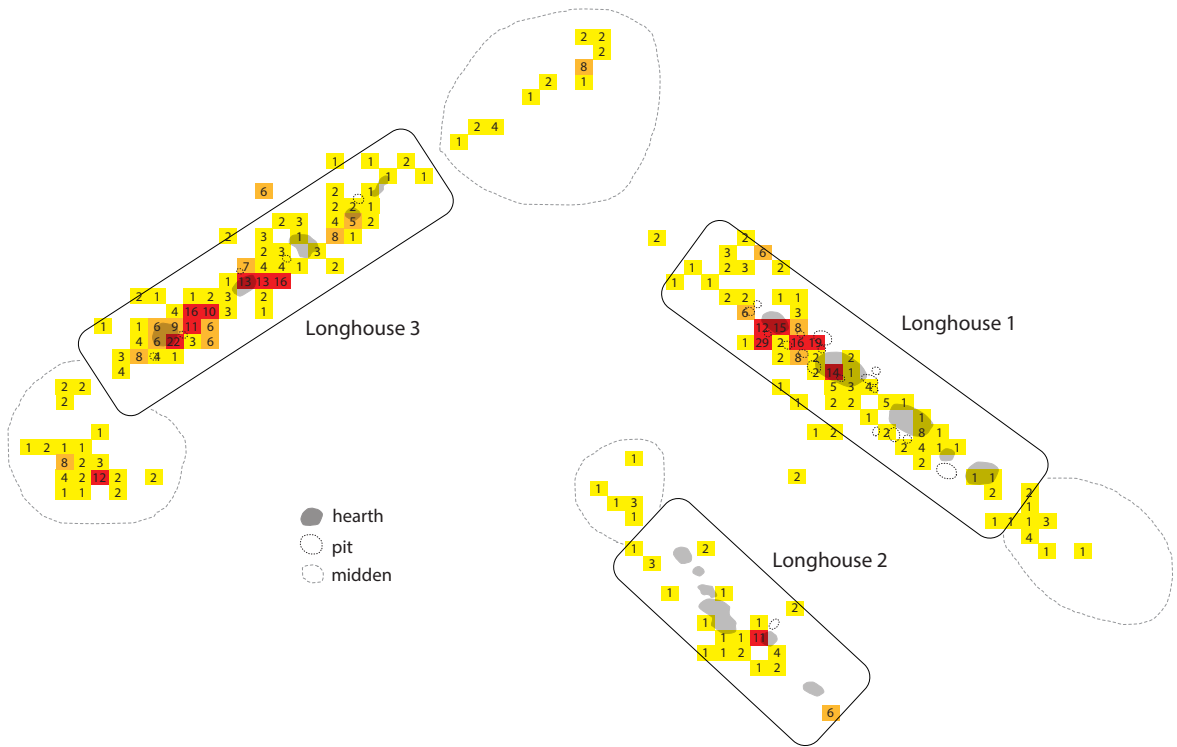


Figure 5 - Spatial distribution of bone tool manufacturing debris on the McDonald site.

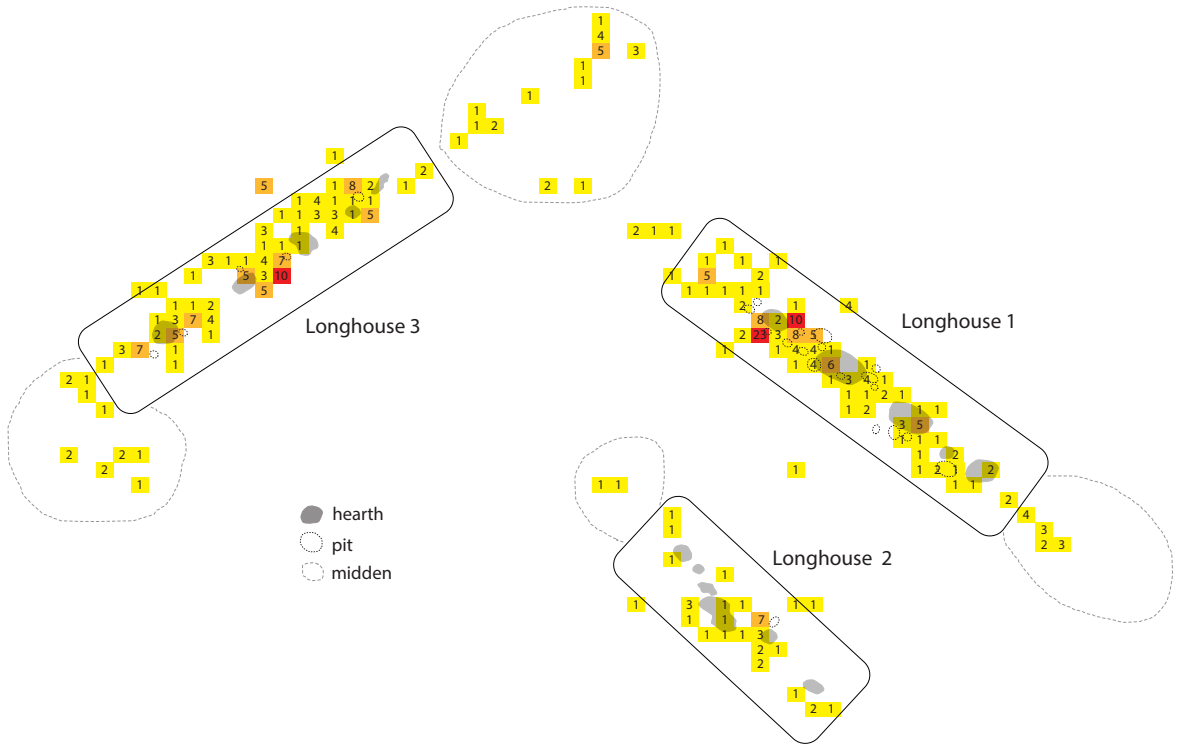


Figure 6 - Spatial distribution of bone tools on the McDonald site.

and perhaps also places of male activities since it is historically the men who produced most of the weapons and tools used among the Iroquoian nations (see Tooker, 1987; Tremblay, 2006). However, women also used some bone objects in fulfilling their domestic tasks; needles and punches for the production of clothing and fishing nets, spatulas and gravers for the manufacture of ceramic vessels, corn husking pins and other cooking utensils, not to mention necklaces, pendants and other items of body or clothing ornament. Moreover, it must be remembered that the most important concentrations of bone objects are located around the hearths, which corresponds to the main areas of production and use of these artifacts. The spatial distribution of food remains (M. Chapdelaine, 2015) and pottery sherds (Lévesque, 2015) on the same site confirms the tendency for an accumulation of debris of all kinds around the hearths.

There are no indications of larger accumulations of bone artifacts around the hearths located in the central compartments, normally occupied by the eldest woman of the household or, in some cases, by clan or village leaders (although the latter usually lived in a separate house). As a matter of fact, the other hearths of the longhouses are just as rich in bone remains, or even richer still. This is an indication that the authority and influence of the elders and leaders was not accompanied by the use or accumulation of larger quantities of material goods. To the contrary, the households of the McDonald site appear to have maintained the communitarian and egalitarian basis that characterizes their social organization.

Finally, longhouse 2 stands out once again as bone objects and manufacturing debris are here more randomly distributed, more diffuse, without any recognizable concentration. The originality of this household was also noted regarding their pottery production, suggesting that the village was occupied by two different clans, one represented by the families living in longhouses 1 and 3, the other being limited to the families sheltered in longhouse 2 (Lévesque, 2015). The latter could represent families from a more distant and culturally differentiated community who joined the core of the village at a later time. Likewise, M. Chapdelaine (2015) noted a greater quantity of food remains around the central hearth of longhouse 2, a phenomenon that is not visible in the other longhouses where hearths contain comparable amounts of ecofacts.

In summary, the data analyzed reflects the relative heterogeneity of the material production and behavior of the members of the three households at the McDonald site. However, this heterogeneity is not to be equated with a differentiation in the accumulation of material goods, nor with the early emergence of specialized artisans.

4 - The Mailhot-Curran Site

The Mailhot-Curran site is another Iroquoian village, inhabited during the years 1520-1530 AD and comprising a minimum of six longhouses (C. Chapdelaine, 2015b, 2015c). At least three middens were identified, but contrary to the McDonald site it is not easy to associate them to any specific longhouse. The analysis of the ceramics from the Mailhot-Curran site concluded that the production of the potters of longhouses 3 and 4, located in the northernmost portion of the site, on the lower terrace, differ somewhat from the ceramics produced in the other households (C. Chapdelaine, 2015d, this volume). An analysis of the spatial distribution of the faunal remains also underlined a slight differentiation in the food habits of the inhabitants of these same two longhouses (St-Germain, Courtemanche, 2015, this volume). As with the McDonald site, it was concluded that these two houses were inhabited by families at a later date that were probably affiliated with another clan, distinct from those represented in the other four longhouses forming the original core of the village.

The worked bone assemblage contains 340 objects, complete or fragmented, as well as 433 pieces of production debris. Spatial analysis of these artefacts suggests that the bone objects, as well as the debris resulting from their manufacture, were found in each and every longhouse (figures 7-8). However, these artifacts are somewhat more numerous in longhouses 3 and 4. Longhouses 5 and 6 do not allow for detailed comparisons because they have not been excavated as extensively as the other four longhouses of the site, thus providing much smaller assemblages (table 2). In addition, the most important concentrations are actually in the middens, not in the longhouses, unlike the situation previously observed on the McDonald site. The inhabitants of the Mailhot-Curran site have either cleaned their daily living spaces more regularly than at the McDonald site, or they more frequently installed themselves outside their homes, near the middens, to manufacture and use their bone objects, which would suggest a more intense summer life at the Mailhot-Curran site. We previously raised the possibility that the middens of the Mailhot-Curran site first emerged as areas of specialized activities, where the gradual accumulation of production debris would have ultimately led to the development of middens attracting even more waste products, such as pottery sherds and food remains (Gates St-Pierre, Boisvert, 2015: 279-281). This is the logic behind the “dumping ground effect” – or “Arlo Guthrie trash-magnet effect” – whereby waste inevitably attracts more waste (Wilk, Schiffer, 1979).

	Longhouse 1		Longhouse 2		Longhouse 3		Longhouse 4		Longhouse 5		Longhouse 6	
	N	%	N	%	N	%	N	%	N	%	N	%
Tools	44	63.8	74	69.2	44	37.0	18	30.5	10	41.7	2	25.0
Waste	25	36.2	33	30.8	75	63.0	41	69.5	14	58.3	6	75.0
Total	69		107		119		59		24		8	
Ratio T:W	1.8:1		2.2:1		0.6:1		0.4:1		0.7:1		0.3:1	
Density / m ²	1.2		1.2		2.3		2.3		1.0		0.7	

Table 2 - Distribution of the bone tools and waste products among the longhouses of the Mailhot-Curran site.

Also noteworthy is the ratio of complete objects versus production debris which varies considerably from one household to another; longhouses 1 and 2 show a greater proportion of bone objects compared to the four other longhouses. Regarding the density of bone artifacts per square meter (combining finished objects and manufacturing debris), it appears that longhouses 3 and 4 stand out again with densities two to three times higher than in the other households. These are also the households that contain the highest quantities of production blanks. The bone processing activities thus appear to have been led more intensively or more frequently in these two households.

Figures 7 and 8 illustrate the spatial distribution of the remains of the bone industry within households, and show that the remains are concentrated around the hearths and do not seem most abundant on either side of the central alignment. Moreover, these artifacts are present in nearly every compartment, with only a few exceptions. These rare empty spaces could correspond to compartments that were not inhabited or inhabited for short periods of time since they are also nearly devoid of pottery sherds (C. Chapdelaine, 2015d: 396). There is a comparable variability

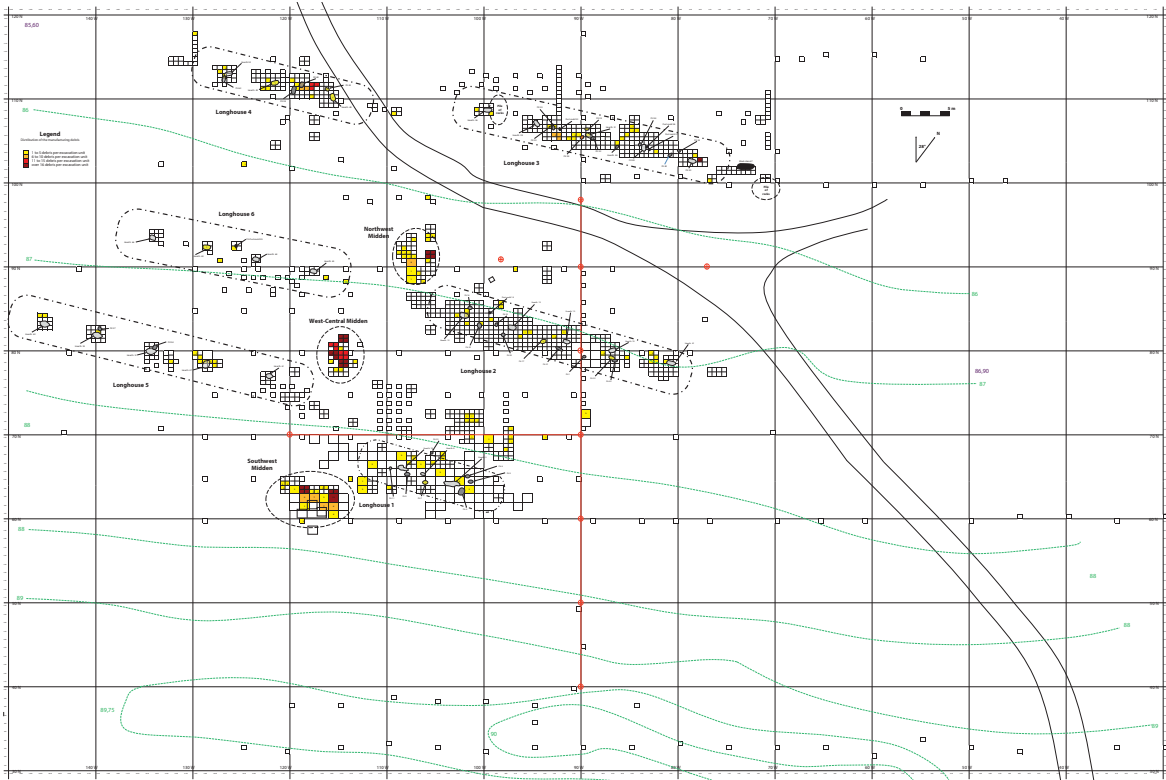


Figure 7 - Spatial distribution of bone tool manufacturing debris on the Mailhot-Curran site.

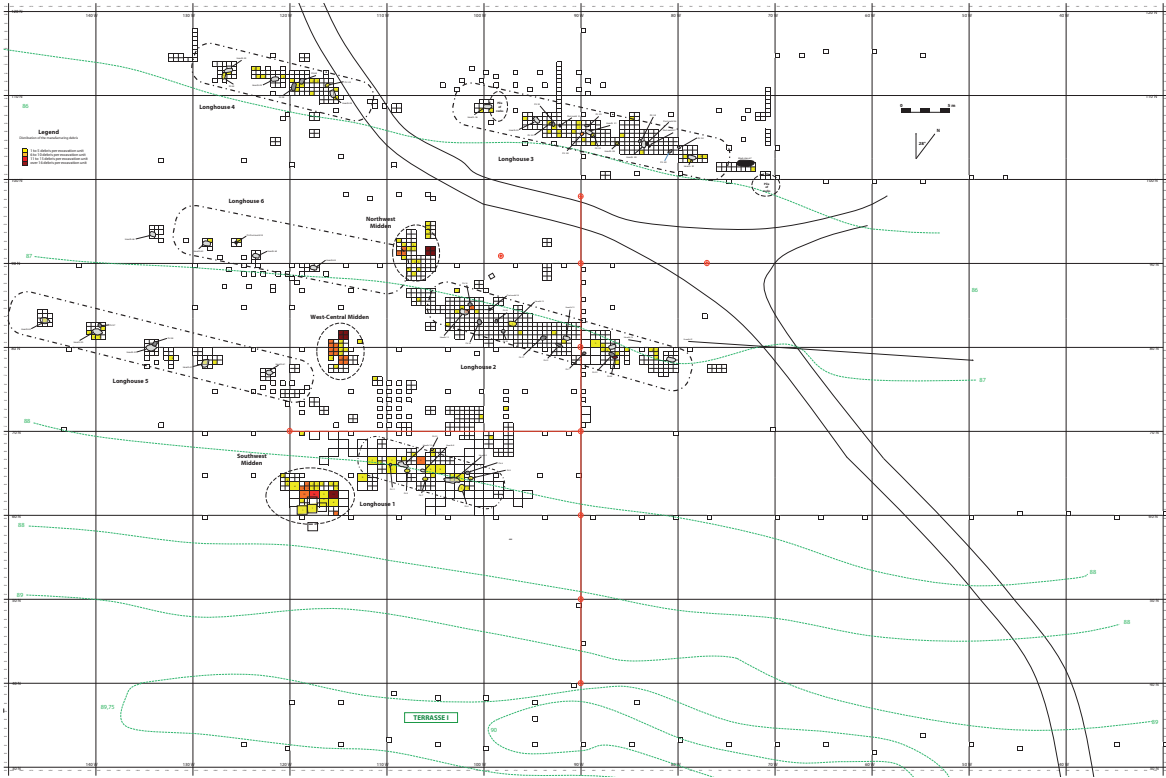


Figure 8 - Spatial distribution of bone tools on the Mailhot-Curran site.

in the distribution of modified bone remains between the compartments (figure 9). Hence, the compartment located north of the most central hearth in longhouse 1, or compartment 2 North, is the richest of the household, while in longhouse 2 it is the compartments located at both ends of the longhouse that are the richest. Within longhouses 3, 4 and 5, the compartments around the hearths of the eastern half of the habitat have the highest frequencies of such artifacts. Finally, longhouse 6 does not show any particular pattern, probably due to the very small number of modified bone remains that were found in this house. Hence, there is no general trend towards a greater accumulation of such remains in the central living areas, which were most probably occupied by the elders or clan leaders.

In summary, the households of the Mailhot-Curran site certainly reveal a minimum of variability between them, but no major discrepancies. Moreover, it is longhouses 3 and 4 that stand out from others, which could support the hypothesis of an occupation of these houses by families from more distant lineages, perhaps a different clan, having developed somewhat different habits regarding their way of producing and using bone objects, yet clearly belonging to the same extensive St. Lawrence Iroquoian community of the Saint-Anicet area.

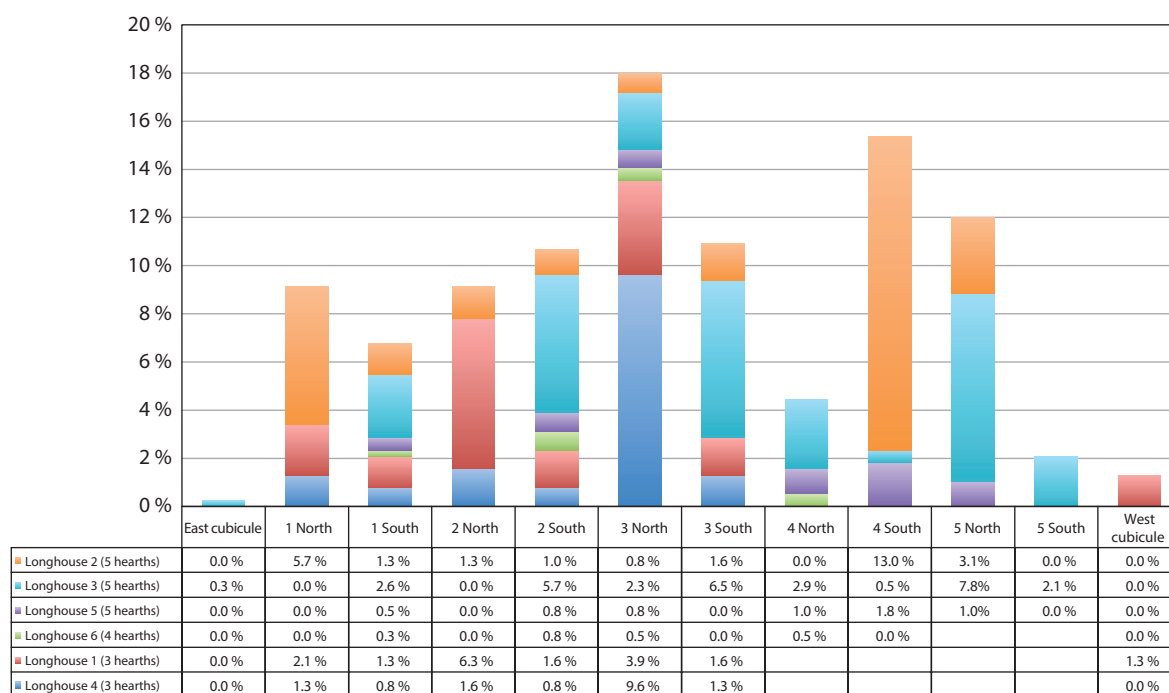


Figure 9 - Spatial distribution of worked bone artifacts (tools and manufacturing debris) inside and between households at the Mailhot-Curran site (N=389).

Conclusion

An analysis of the spatial distribution of the bone objects and bone manufacturing debris on the McDonald and Mailhot-Curran sites demonstrates the presence of a moderate level of variability sufficient enough to reject an hypothesis of homogeneity. The variation is visible in the rejection and abandonment patterns of these bone remains between households as well as between villages. This variability could even be used to identify households composed of Iroquoian families having a slightly different cultural background.

Beyond this variability lie a few common patterns that are significant as well. For example, we can establish that the art of making bone objects of all kinds was not the prerogative of a few specialists, but rather seems to have been a widespread practice within each household, perhaps within each nuclear family. In addition, this socially shared technological knowledge was also carried out without the need for specially designated areas, since we have not been able to identify any sort of workshop via our spatial analyses. In sum, there are no traces of specialization comparable to those that were identified in the ceramic or lithic productions among other Iroquoian nations (Noble, 1978; Trigger, 1981; Martelle, 1999, 2002). Moreover, we did not identify higher concentrations of modified bones around the central hearths in any of the households studied. This in turn does not support the hypothesis of a significant accumulation of goods in those specific spaces occupied by female elders, or by civilian or military leaders who were appointed by women and did not possess hereditary and coercive powers. The longhouse occupancy patterns, as well as the lack of specialized crafts or inequalities in material possessions, together offer the image of a social organization that was firmly communitarian and egalitarian in nature.

The results presented here suggest that the St. Lawrence Iroquoians, at least those of the Saint-Anicet cluster, were not yet about to become what archaeologists call a complex society, despite the favorable conditions such as the adoption of agriculture and a sedentary lifestyle, the accumulation of horticultural surplus, a growing population, and the increasing occurrence of armed conflict. In fact, the social complexification the Saint-Anicet community would have possibly begun a few decades later, was it not for the arrival of the first Europeans which was quickly followed by episodes of wars and epidemics that put a brutal halt to this evolutionary trajectory of the St. Lawrence Iroquoians.

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THE FAUNA EXPLOITED BY THE HOUSEHOLDS AT THE MAILHOT-CURRAN SITE (BGFN-2)

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To cite this article

St-Germain C., Courtemanche M., 2016 - The Fauna Exploited by the Households at the Mailhot-Curran site (BgFn-2), in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 110-125.

THE FAUNA EXPLOITED BY THE HOUSEHOLDS AT THE MAILHOT-CURRAN SITE (BGFN-2)

Claire ST-GERMAIN, Michelle COURTEMANCHE

Abstract

The Mailhot-Curran site yielded a total of 27364 vertebrate skeletal remains. Some forty species were identified among these remains. The Iroquoian villagers concentrated their diet on fish, but also counted on mammals, birds and reptiles to complement their subsistence which relied primarily on agricultural production. The analysis of the horizontal spatial distribution of skeletal remains between various sectors of the site comprised by six longhouses and three middens sheds light on the relative homogeneity of faunal resources distribution within this community.

Keywords

Northeastern North America, zooarchaeology, Late Woodland, Saint Lawrence Iroquoians.

Introduction

The analysis of faunal skeletal remains at the Mailhot-Curran site has allowed us to measure the importance of fish and game resources for the Iroquoian villagers (see further details of this analysis in St-Germain, Courtemanche, 2015). Several animals seem to have been selected, in particular certain fish species (tables 1-3). Beyond the preferences brought to light by the zooarchaeological analyses, it is relevant to evaluate the relative homogeneity, or the contrary, a relative heterogeneity in the distribution of animal resources between various domestic components of the site¹. A comparison between the content of six longhouses, and in particular longhouses # 1 to # 4, and three middens provides us the possibility to question differential patterns in the faunal exploitation between the village's households.

Regarding the households, the reason we have selected longhouses # 1 and # 2, and to a lesser degree longhouses # 3 and # 4, was partially dictated by a more extensive archaeological intervention in those longhouse areas. Excavations inside the selected residences account for an average of over 50 % of the estimated floor area (Chapdelaine, 2015b: 33). However, as excavation details reveal, the excavation coverage for each residential structure is variable (table 4). The uneven faunal samples therefore affect the statistical representativeness of the fauna in the domestic units (table 4). For the pairing between longhouses and middens, we are using the associations proposed by Chapdelaine (2015b): longhouse # 1 with the southwest midden, and longhouse # 2 with the northwest midden.

1. For a map of the site and the detailed description of the site components, see chapter six in Chapdelaine, 2015a and his article in this volume, p. 95-109.

FISHES		NSP (%) 15 495 (56.57 %)
Lake sturgeon	<i>Acipenser fulvescens</i>	120
Longnose gar	<i>Lepisosteus osseus</i>	1
Mooneye	<i>Hiodon tergisus</i>	14
American eel	<i>Anguilla rostrata</i>	672
Cypriniformes		37
Fallfish	<i>Semotilus corporalis</i>	24
Fallfish / creek chub	<i>Semotilus spp.</i>	3
Suckers / redhorses	Catostomidae	430
White sucker / longnose sucker	<i>Catostomus spp.</i>	18
White sucker	<i>Catostomus commersonii</i>	1
Redhorses	<i>Moxostoma spp.</i>	69
Silver redhorse	<i>Moxostoma anisurum</i>	16
Shorthead redhorse	<i>Moxostoma macrolepidotum</i>	3
Catfishes	Ictaluridae	104
Brown bullhead	<i>Ameiurus nebulosus</i>	81
Channel catfish	<i>Ictalurus punctatus</i>	72
Stonecat	<i>Noturus flavus</i>	1
Pikes	Esocidae	51
Northern pike	<i>Esox lucius</i>	266
Muskellunge	<i>Esox masquinongy</i>	1
Salmonids	Salmonidae	6
Ouananiche / Atlantic salmon	<i>Salmo salar</i>	85
Brook trout	<i>Salvelinus fontinalis</i>	10
Burbot	<i>Lota lota</i>	6
Perciformes		3 607
Temperate basses	Moronidae	2
Sunfishes and basses	Centrarchidae	46
Rock bass	<i>Ambloplites rupestris</i>	24
Pumpkinseed	<i>Lepomis gibbosus</i>	15
Largemouth / smallmouth bass	<i>Micropterus spp.</i>	1
Smallmouth bass	<i>Micropterus dolomieu</i>	43
Perches	Percidae	14
Yellow perch	<i>Perca flavescens</i>	2118
Sauger / walleye	<i>Sander spp.</i>	77
Indeterminate fish		7 457

Table 1 - Fauna from Mailhot-Curran (BgFn-2): Fish (NSP = total number of specimens).

MAMMALS		NSP (%) 6629 (24,20%)
Shrew family	Soricidae	3
Mole family	Talpidae	5
Rabbit / hare	Leporidae	69
Snowshoe hare	<i>Lepus americanus</i>	7
Indeterminate rodent	Rodentia	26
Chipmunk / woodchuck / squirrel	Sciuridae	65
Eastern chipmunk	<i>Tamias striatus</i>	68
Woodchuck	<i>Marmota monax</i>	24
American red squirrel	<i>Tamiasciurus hudsonicus</i>	2
Beaver / porcupine (big rodent)		20
American beaver	<i>Castor canadensis</i>	272
Mouse / muskrat / vole	Cricetidae (Muridae)	4
Mouse / vole	Cricetinae	14
Muskrat	<i>Ondatra zibethicus</i>	85
American porcupine	<i>Erethizon dorsatum</i>	5
Indeterminate carnivore	Carnivora	60
Coyote / wolf / dog / fox	Canidae	2
Coyote / wolf / dog	<i>Canis spp.</i>	9
Black bear	<i>Ursus americanus</i>	49
Raccoon	<i>Procyon lotor</i>	30
Marten / fisher / mink / otter	Mustelidae	13
American marten	<i>Martes americana</i>	12
Fisher	<i>Martes pennanti</i>	3
Mink	<i>Neovison vison</i>	1
Northern river otter	<i>Lontra canadensis</i>	7
Indeterminate artiodactyl	Artiodactyla	58
Caribou / deer / moose / wapiti	Cervidae	184
White-tailed deer	<i>Odocoileus virginianus</i>	357
Moose	<i>Alces americanus</i>	1
Indeterminate mammal		5 174

Table 2 - Fauna from Mailhot-Curran (BgFn-2): Mammal (NSP = total number of specimens).

BIRDS		NSP (%) 239 (0.87 %)
Grebe family	Podicipedidae	4
Loon family	Gaviidae	9
Swan / goose / duck	Anatidae	2
Indeterminate goose	Anserinae	1
Indeterminate duck	Anatinae	6
Mallard / black duck		1
Indeterminate raptor		1
Indeterminate eagle	Accipitridae	4
Grouse / ptarmigan	Tetraoninae	74
Sandpiper / plover / gull	Ciconiiforma	1
Pigeon / dove	Columbidae	7
Passenger pigeon	<i>Ectopistes migratorius</i>	19
Owl family	Strigidae	1
Woodpecker family	Picidae	3
Passeriformes	Passeriforma	8
Jay family	Corvidae	1
Indeterminate bird		97
AMPHIBIANS		93 (0.34 %)
Mudpuppy	<i>Necturus maculosus</i>	1
Eastern American toad	<i>Anaxyrus americanus</i>	30
Indeterminate frog	<i>Lithobates spp.</i>	28
Bullfrog	<i>Lithobates catesbeianus</i>	2
Toad / frog		32
REPTILES		8 (0.03 %)
Common snapping turtle	<i>Chelydra serpentina</i>	4
Indeterminate turtle		3
Indeterminate snake	Colubroidae	1
INDETERMINATE ALL CLASSES		4 900 (17,89 %)
TOTAL FAUNA FOR THE SITE		27 364 (100,00 %)

Table 3 - Fauna from Mailhot-Curran (BgFn-2): Bird, Amphibian, Reptile and Indeterminate (NSP = total number of specimens).

% excavated	70%	65%	40%	33%	< 16%	10%	70%	50%	90%	
	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	
ANIMAL CLASS										Total
Fishes	5 451 (88.6 %)	160 (11.7 %)	325 (29.7 %)	263 (37.4 %)	177 (35.8 %)	24 (13.3 %)	865 (53.6 %)	4 659 (81.1 %)	3 277 (72.3 %)	15 201
Amphibians	21 (0.3 %)	5 (0.4 %)	21 (1.9 %)	14 (2 %)	3 (0.6 %)	0	1 (< 0.1 %)	4 (< 0.1 %)	19 (0.4 %)	88
Reptiles	0	1 (< 0.1 %)	0	0	0	0	6 (0.3 %)	0	1 (< 0.1 %)	8
Birds	40 (0.7 %)	2 (0.1 %)	14 (1.3 %)	4 (0.6 %)	3 (0.6 %)	3 (1.7 %)	38 (2.3 %)	30 (0.5 %)	97 (2.2 %)	231
Mammals	637 (10.4 %)	1 201 (87.7 %)	735 (67.1 %)	424 (60 %)	311 (63 %)	154 (85 %)	704 (43.6 %)	1 051 (18.3 %)	1 135 (25 %)	6 352
TOTAL	6 149	1 369	1 095	705	494	181	1 614	5 744	4 529	21 880

Table 4 - Distribution of animal classes by longhouse and midden (NSP and %); highlighted cells indicate the dominant animal class within a structure; % excavated per structure is shown at the top of the table (LH1 to LH6: longhouses; NWM: north-west midden; CWM: central-west midden; SWM: south-west midden) (NSP = total number of specimens).

The total number of specimens (NSP) by vertebrate classes distributed between the six longhouses and the three middens is shown in [table 4](#)². It is obvious that fishes are dominant in well-excavated domestic units (longhouse # 1 and all three middens). Mammals are more numerous in longhouse # 2, which contains less faunal remains than longhouse # 1, but has an interior surface excavated at 65 %. In the other longhouses, mammals are dominant, but their floor area was excavated below 40 % of total.

The study of each household faunal content and their associated middens will be carried out using primarily the identified remains (NISP)³. We start the analysis with the most dominant faunal group in the villagers' diet: fish.

1 - Fishery products

More than half the skeletal remains found during excavations at Mailhot-Curran are fishes (NSP = 15 495), which confirm the importance of fishing at the site. At least twenty local freshwater species were captured, except maybe for the ouananiche, the freshwater version of the Atlantic salmon, which will be discussed later on. The fishery efforts seem to have been concentrated, however, on a few species ([table 1](#)), the yellow perch being the most important and the American eel in second place. The catostomids, fishes with a good yield, are in third position. This family comprises eight freshwater species in Québec, all to be found in the area of Lake Saint François located 10 km north of the site, but they are difficult to differentiate at the osteological level. Because of this difficulty, only three species could be formally identified: silver redhorse, shorthead redhorse and white sucker. A few remains attributed to the genus *Moxostoma*, which corresponds to various species of redhorses present in the region's water, could be associated with the greater redhorse (*Moxostoma valenciennesi*). It is worth mentioning this fish species because it is not among

2. The specimens found outside the domestic structures and the Indeterminate faunal remains are excluded from the total (NSP = 21 880).
3. The identified remains are those determined to Order and lower (taxa more precise than Class).

the species currently registered in Lake Saint François (Armellin *et al.*, 1994; Mongeau, 1979), but it is part of the fish inventory of the Châteauguay River (Mongeau *et al.*, 1979). The presence of this greater redhorse seems to support the idea formerly proposed by Chapdelaine that the Mailhot-Curran inhabitants were exploiting the Châteauguay River regularly as well as Lake Saint François (Chapdelaine, 2015a: 40). This proposition is also supported by the presence of the brook trout in the assemblage of fish remains, a species found essentially in an affluent of the Châteauguay River, namely the Trout River.

The northern pike and some members of the ictalurids (brown bullhead and channel catfish) complete the list of the most captured fish species. Other species such as the lake sturgeon, the burbot, the mooneye and members of the centrarchids are considered marginal.

Regarding the yellow perch, we should add several skeletal remains classified in the percids because they are not diagnostic at the species level (table 1), but could have been assigned to the yellow perch to augment its importance in the diet.

Two salmonid species, the brook trout and the Atlantic salmon (either ouananiche, the landlocked salmon, or even the anadromous form) have been recognized in the fish assemblage. The ouananiche, presently absent, was found throughout the 19th century in Lake Ontario located 220 km west of our site, and in its nearby tributaries (COSEWIC, 2006; Courtemanche, 2006). The presence of salmon could be explained by a network of exchanges between various communities, a possibility to consider in the archaeological context, or conversely by a very large exploitation area for the Mailhot-Curran inhabitants. However, a wider geographic distribution for this species in the past can also be used as a possible explanation for landlocked salmon or the anadromous Atlantic salmon during its spawning run.

Several of the identified species could have been captured with a variety of fishing techniques. The ethnohistorical literature of New France is full of examples of fishing methods observed among many Aboriginal groups. A rough outline has been drawn on Iroquoian fishing methods between 1600 and 1792 (Recht, 1995). Various capture methods were recorded: net, harpoon, line with fishhook, basket fishing, etc. We must note, however, that not a single tool found at the site was firmly identified to fishery (Chapdelaine, 2015c; Gates St-Pierre, Boisvert, 2015). Gates St-Pierre and Boisvert (2015: 284) mention the presence of harpoons but they make the remark that their size is not compatible with the small size of the captured species. Having said that, fishing activities may have been carried out at satellite camps located near good fishing spots, the village being established several kilometers away from promising rivers. Finally, a highly productive fishing technique such as basket fishing, that is made of perishable material which leaves few archaeological traces, may have been used. Incidentally, numerous species at the site, such as yellow perch, centrarchids, northern pike, catostomids and American eel are fishes that could be captured with basket fishing techniques by the experienced fisher. Likewise, a fishing technique derived from basket fishing, hoop net fishing, is still used today by commercial fishermen of the area (Armellin *et al.*, 1994). This highly productive fishing technique allows for the capture of the same species found within the faunal assemblage at Mailhot-Curran (Mongeau, 1976).

Is it possible that the distribution of fish remains among the site's components can indicate marked differences within the Iroquoian village? Table 5 resumes the identified specimens per taxa for fish. Not surprisingly, among the longhouses, it is longhouse # 1 that is the richest in fish remains. Two interior pits rich in fish remains (features # 25 and # 9) contain more than 3000 bones which are mostly identifiable to a fish category contribute significantly to the importance of longhouse # 1. In descending order of importance, longhouse # 3 is followed by longhouses # 4, # 5, # 2, and finally # 6 which is the least excavated within the village. The central-west midden, probably associated with longhouse # 5, is the richest in number of fish remains, followed by the southwest midden linked to longhouse # 1 and by the northwest midden associated with longhouse # 2.

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL
Lake sturgeon	17	7	9	1	5	2	21	55	2	119
Longnose gar			1							1
Mooneye	5							1	8	14
American eel	104	7	13	4	11	1	74	271	176	661
Cypriniformes	17		1					16	3	37
Fallfish	3	2	1		1		2	8	1	18
Fallfish / creek chub							2		6	8
Suckers or redhorses	81	3	7	4	7	2	31	118	86	339
White sucker / longnose sucker	6						1	10	1	18
White sucker								1		1
Redhorses	9	2	2	2	1		4	26	22	68
Silver redhorse	2						1	6	6	15
Shorthead redhorse			1				2			3
Catfishes	5	2	2		2		12	36	40	99
Brown bullhead	1	1			1		5	31	40	79
Channel catfish	4		1	1	1	1	4	37	24	73
Stonecat	1									1
Pikes	3					1	6	18	22	50
Northern pike	43		2	1	3		17	80	117	263
Muskellunge									1	1
Salmonids	2						2	1		5
Ouananiche / Atlantic salmon	17		1		1		11	43	9	82
Brook trout		1					5	2	2	10
Burbot		4						2		6
Perciformes	710	6	27	25	8	5	83	371	331	1566
Temperate basses					1					1
Sunfishes and basses	1			1	1		2	26	15	46
Rock bass	1				1			14	8	24
Pumpkinseed	5							2	7	14
Largemouth / smallmouth bass								1		1
Smallmouth bass	11	2	1				6	7	15	42
Perches	10								3	13
Yellow perch	491	15	74	51	38		134	701	548	2052
Sauger / walleye	4	1	4				2	48	18	77
TOTAL	1553	53	147	90	82	12	427	1932	1511	5807

Table 5 - Fish distribution by site components (NISP by taxonomic order) (LH1 à LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

Table 6 offers a summary of all the fish species identified to taxa for the site components. A total of 5 807 skeletal remains, excluding fish scales and undetermined fish remains, were distributed between the six longhouses and the three middens. It is longhouse # 1 that contains the largest number and diversity of identified taxa (N = 25); longhouses # 3 and # 5 have respectively 16 and 15 determined taxa, while longhouse # 2 contains thirteen taxa, longhouse # 4 nine taxa, and longhouse # 6 six taxa. The central-west midden contains 27 taxa, the southwest midden 26 taxa and the northwest midden 22 taxa.

In short, yellow perch, American eel, various species of the catostomids, and northern pike are the most abundant in all components. Some species are scarcer such as the mooneye, the burbot, and the longnose gar. The major fish species identified seem to be homogeneously and systematically present in each of the studied components. By condensing the data for the taxa (**table 6**) it is easier to perceive this homogeneity by regrouping various species into larger groups.

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL
Lake sturgeon	17	7	9	1	5	2	21	55	2	119
Longnose gar			1							1
Mooneye	5							1	8	14
American eel	104	7	13	4	11	1	74	271	176	661
Cypriniformes	118	7	12	6	9	2	43	185	125	507
Catfishes	11	3	3	1	4	1	21	104	104	252
Pikes	46		2	1	3	1	23	98	140	314
Salmonids	19	1	1		1		18	46	11	97
Burbot		4						2		6
Perciformes	1 233	24	106	77	49	5	227	1170	945	3836
TOTAL	1 553	53	147	90	82	12	427	1 932	1 511	5 807

Table 6 - Distribution of fish groups by site components (NISP by taxonomic order) (LH1 to LH6: longhouses; NWM: northwest midden; DCW: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

Lastly, the comparison of faunal contents from longhouse # 1 and its southwest midden and longhouse # 2 with its northwest midden on one side, and, on the other side, the contents of longhouses # 3 and # 4 does not support the idea that fish remains were differentially distributed between these households (table 7). Only the accentuated presence of salmonids in longhouse # 1 (NISP = 19), including salmon, a fish that was certainly valued (Recht, 1995) and that may have been obtained from elsewhere, seems to provide a slight variation in the overall homogeneity of distribution. In any case, this hypothesis must be nuanced because longhouses # 3 and # 4 are not yet associated with middens in which skeletal remains of salmon could be present in greater.

To conclude, the fishing activities at Mailhot-Curran do not convincingly support any marked contrasts between the village's household components. To follow up on this point, we must now look at what we can learn from the hunting and trapping activities at Mailhot-Curran.

TAXA	LH1	SWM	LH2	NWM	LH3	LH4
Lake sturgeon	X	X	X	X	X	X
Longnose gar					X	
Mooneye	X	X				
American eel	X	X	X	X	X	X
Cypriniformes	X	X	X	X	X	X
Catfishes	X	X	X	X	X	X
Pikes	X	X		X	X	X
Salmonids	X	X		X		
Ouananiche / Atlantic salmon	X	X		X	X	
Brook trout		X	X	X		
Burbot		X	X			
Perciformes	X	X	X	X	X	X
Yellow perch	X	X	X	X	X	X

Table 7 - Comparison of fish groups within longhouses LH1 and LH2 and their middens (SWM: southwest midden and NWM: northwest midden), and within longhouses LH3 and LH4.

2 - Hunting products

The Mailhot-Curran villagers captured a large variety of animals. However, some inventoried species may be intrusive such as insectivores (some moles), some small rodents (mouse or vole), and frogs, although we should not rule out entirely their contribution to the diet.

For the entire site, mammals provide less than one quarter of all skeletal remains (table 2). A total of 1 366 skeletal remains were identified to Order and lower, which corresponds to 85.3 % of all the determined mammal, bird, reptile and amphibian remains (table 8). The remains attributed to mammals comprise 28 taxa among which at least 18 species have been identified. By clustering these taxa by Orders, rodents and artiodactyls are dominant; they are followed by carnivores, lagomorphs and insectivores (table 9). White-tailed deer is the most plentiful species (NISP = 325)⁴. The American beaver is second in importance. These two species contributed in a significant way to the subsistence of the Iroquoian villagers while also providing raw materials to make tools (Gates St-Pierre, Boisvert, 2015) and other derived products such as furs or skins. The other mammalian taxa identified are muskrat, leporids (including snowshoe hare), sciurids (including Eastern chipmunk and American red squirrel), black bear, raccoon, mustelid family (including American marten, Northern river otter, fisher and mink), woodchuck, mouse or vole, the genus *Canis*, American porcupine, mole family, and at the end of the list, moose.

Some birds contributed to the villagers' diet in small proportions (less than 9 % of the determined remains) (tables 3 and 8). The avian group that contributed the most to the diet is the grouse or ptarmigan group (tetraonines). The second avian group is the pigeon family (including the now extinct passenger pigeon), but in proportions corresponding to a third of the tetraonines. The anatid family, which comprises geese and ducks, yielded a few bones (half the number of columbidae). The other identified bird species are few in number: loons, passeriformes, grebes, diurnal raptors (indeterminate eagle), woodpeckers, ciconiiformes (sandpiper, plover or gull), nocturnal raptors (owl family) and the jay family.

The amphibian group yielded 5 % of the determined remains (tables 3 and 8). They belong mostly to the anura group with several bones of Eastern American toad and frogs. Without excluding them from the villagers' diet, several skeletal pieces of these amphibians were so small that it suggests an accidental presence within the assemblage (dead animals *in situ*). Two bones were identified as bullfrog. The mudpuppy, an aquatic salamander of good size, could have been captured accidentally during fishing activities.

Reptiles are poorly represented in the village's fauna with less than 1 % of all determined remains (tables 3 and 8). Testudines (turtles) have yielded the majority of bones for this group and only the common snapping turtle was identified. One small vertebra permitted the identification of a snake.

Looking for disparities between the village's households, determined taxa were distributed between the nine studied components. The data are presented in table 8 (distribution of identified taxa) and table 9 (distribution of clusters of identified taxa).

Faunal distribution inside residential structures reveals no differences among the various domestic units such as living compartments. Among the households, the six numerically dominant taxa (white-tailed deer, American beaver, cervids, muskrat, leporids and chipmunk) are present everywhere and always the most plentiful. Lagomorphs, rodents, carnivores and artiodactyls are

4. This total includes the white-tailed deer remains, as well as cervid and artiodactyl remains belonging most probably to white-tailed deer.

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL	%
AMPHIBIANS	21	5	21	14	3		1	4	19	88	5.50
Mudpuppy									1	1	
Eastern American toad		3	13	9				1	3	29	
Indeterminate frog	12		4		2			1	6	25	
Bullfrog			1					1		2	
Toad / frog	9	2	3	5	1		1	1	9	31	
REPTILES		1					6		1	8	0.50
<i>Turtles</i>											
Common snapping turtle							4			4	
Indeterminate turtle		1					2			3	
<i>Snakes</i>											
Indeterminate snake									1	1	
BIRDS	25	2	9	2	1	3	24	19	54	139	8.70
Grebe family								4		4	
Loon family			7				2			9	
Swan / goose / duck	1						1			2	
Indeterminate goose	1									1	
Indeterminate duck				1			1	2	2	6	
Mallard / black duck							1			1	
Indeterminate raptor								1		1	
Indeterminate eagle					1		1	1	1	4	
Grouse / ptarmigan	15			1		3	4	2	47	72	
Sandpiper / plover / gull							1			1	
Pigeon / dove	1	1					3		1	6	
Passenger pigeon	1	1	1				8	6	2	19	
Owl family							1			1	
Woodpecker family								3		3	
Passeriformes	6						1		1	8	
Jay family			1							1	
MAMMALS	168	178	142	69	34	28	196	267	284	1366	85.30
Mole family	5									5	
Rabbit / hare	8	12	2	2	1	3	12	7	22	69	
Snowshoe hare	1	1					3	2		7	
Indeterminate rodent	1	7			1	1	4	4	7	25	
Chipmunk / woodchuck / squirrel	6	13	10	4			3	14	14	64	
Eastern chipmunk	9	5	4	1	4	1	4	18	18	64	
Woodchuck	9	2			3	1	1	3	3	22	
American red squirrel			2							2	
Beaver / porcupine (big rodent)	1	1		1	1		2	3	11	20	
American beaver	34	24	33	3	7	2	29	72	54	258	
Mouse / muskrat / vole	1			2					1	4	
Mouse / vole			2					2	10	14	
Muskrat	7	3	6	7	1	1	23	27	6	81	
American porcupine						4			1	5	
Indeterminate carnivore	10	3	4		3	3	10	14	11	58	

Coyote/wolf/dog/fox			1	1						2	
Coyote/wolf/dog		3	1			1	1	2		8	
Black bear	7	1	9		1		14	6	4	42	
Raccoon	11	1	1		2	3	8	2	1	29	
Marten/fisher/mink/otter	3	1	1			1	1	4	1	12	
American marten		1	3				1	1	1	7	
Fisher	1	2								3	
Mink			1							1	
Northern river otter								4	2	6	
Indeterminate artiodactyl	4	10	4	5		2	12	5	13	55	
Caribou/deer/moose/wapiti	20	42	22	4	6	2	17	36	28	177	
White-tailed deer	30	46	35	39	4	3	51	41	76	325	
Moose			1							1	
TOTAL NISP	214	186	172	85	38	31	227	290	358	1601	100

Table 8 - Distribution of identified taxa (identified to Order and lower) for amphibians, reptiles, birds and mammals among the site components (NISP by taxonomic order) (LH1 to LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL
AMPHIBIANS	21	5	21	14	3	0	1	4	19	88
Caudata									1	1
Anoura	21	5	21	14	3		1	4	18	87
REPTILES		1					6		1	8
Turtles		1					6		1	7
Snakes									1	1
BIRDS	25	2	9	2	1	3	24	19	54	139
Grebe family								4		4
Loon family			7				2			9
Anatids	2			1			3	2	2	10
Raptors					1		2	2	1	6
Tetraoninae	15			1		3	4	2	47	72
Ciconiiformes							1			1
Columbids	2	2	1				11	6	3	25
Woodpecker family								3		3
Passeriformes	6						1		1	8
Corvids			1							1
MAMMALS	168	178	142	69	34	28	196	267	284	1366
Insectivores	5									5
Lagomorphes	9	13	2	2	1	3	15	9	22	76
Rodents	68	55	57	18	17	10	66	143	125	559
Carnivores	32	12	21	1	6	8	35	33	20	168
Artiodactyls	54	98	62	48	10	7	80	82	117	558
TOTAL NISP	214	186	172	85	38	31	227	290	358	1601

Table 9 - Distribution of larger groupings of identified taxa (identified to Order and lower) for amphibians, reptiles, birds and mammals among the site components (NISP by taxonomic order) (LH1 to LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

found in all houses; only insectivores are found only in longhouse # 1. Regarding the dominant proportions at the Order level, it is noted that rodents are more popular in longhouse # 1, while artiodactyls are more frequent in longhouses # 2 and # 4. Rodents and artiodactyls are almost equal in longhouse # 3. Birds are sporadically distributed between longhouses. Only tetraonines and columbids, the most important numerically, are present in more than one longhouse. Amphibians, while numerically less numerous than birds, are better distributed among households than the birds. Anura (toad and frogs) were identified in almost all longhouses. The bullfrog, the biggest species of frog, was identified in longhouse # 3. As for turtles, they were found only in longhouse # 2.

The juxtaposition of taxa between households and their middens does not reveal any connections and the only plausible lines of association are supported by a very low number of remains. A simplified taxa distribution using a qualitative approach (presence / absence)⁵ illustrates the relative uniformity of the distribution (table 10). Some exceptions are worth mentioning. For mammals, we can bring up three cases: canids which are absent from the three middens and appear only in longhouse # 3 (probably a dog – *Canis lupus familiaris*) and longhouse # 4 (maybe fox); the taxon *Canis spp.* is found only in longhouse # 2 (with the possibility of one wolf – *Canis lupus*) and its northwest midden, as well as in longhouse # 3 and in central-west midden⁶; and, the American porcupine identified only in longhouse # 6 and in the southwest midden. Amphibians, found almost everywhere, are in general less important in household # 2 and its southwest midden. Birds, although everywhere, are better represented in longhouse # 1 as well as in the three middens. An additional association is supplied by turtles, which are found only in longhouse # 2 and its associated northwest midden. To summarize, the whole collection seems homogeneous with slight indices linking longhouses # 1 and # 2 as well as their respective middens (southwest and northeast).

White-tailed deer and American beaver spatial distribution inside longhouses # 1 and # 2 was used as an attempt to identify activity areas in the two longhouses' interior. For the entire site, it must be said beforehand that deer yielded mostly primary butchering waste of carcasses (lower parts of legs and cranial elements) while the beaver is represented by all parts of the skeleton (St-Germain, Courtemanche, 2015). Within longhouse # 1, 30 identified deer skeletal specimens and 34 beaver specimens were distributed over the entire surface, although they are mostly encountered within the central alley, near features (hearths and pits), or inside pits such as pit #25 located at the house center near the northern wall. The spatial distribution of deer and beaver remains within longhouse # 2 is similar to the one observed in longhouse # 1. The 46 white-tailed deer skeletal remains are distributed mostly along the central alley in the periphery of the hearths and pits. Two clusters of deer bones are noted: the first near hearth # 41 at the southern end of the house and the second within pit # 17 at the center of the house. The 24 American beaver bones and teeth remains are scattered along the central alley near hearths and pits, except for some specimens located south of hearth # 19 near the southern wall of the house (below a sleeping platform?). In the two longhouses, the axial skeleton (cranium and spine) as well as beaver front and hind legs are found around each hearth. Thus, in longhouse # 1, the three individual animals identified are located near three distinct hearths and each family would have butchered its own beaver.

5. For table 10, the ducks, the columbidae (including passenger pigeon), and the leporids (including American hare) are aggregated.

6. One *Canis spp.* canine found in longhouse # 6 may represent a dog.

TAXA	LH1	SWM	LH2	NWM	LH3	LH4
AMPHIBIANS						
Mudpuppy		X				
Eastern American toad		X	X		X	X
Indeterminate frog	X	X			X	
Bullfrog					X	
Toad / frog	X	X	X	X	X	X
REPTILES						
Common snapping turtle				X		
Indeterminate turtle			X	X		
Indeterminate snake		X				
BIRDS						
Grebe family						
Loon family				X	X	
Swan / goose / duck	X			X		
Indeterminate goose	X					
Indeterminate duck		X		X		X
Indeterminate raptor						
Indeterminate eagle		X		X		
Grouse / ptarmigan	X	X		X		X
Sandpiper / plover / gull				X		
Pigeon / dove ; passenger pigeon	X	X	X	X	X	
Owl family				X		
Woodpecker family						
Passeriformes	X	X		X		
Jay family					X	
MAMMALS						
Mole family	X					
Leporids and snowshoe hare	X	X	X	X	X	X
Indeterminate rodent	X	X	X	X		
Chipmunk / woodchuck / squirrel	X	X	X	X	X	X
Eastern chipmunk	X	X	X	X	X	X
Woodchuck	X	X	X	X		
American red squirrel					X	
Beaver / porcupine (big rodent)	X	X	X	X		X
American beaver	X	X	X	X	X	X
Mouse / muskrat / vole	X	X				X
Mouse / vole		X			X	
Muskrat	X	X	X	X	X	X

American porcupine		X				
Indeterminate carnivore	X	X	X	X	X	
Coyote / wolf / dog / fox					X	X
Coyote / wolf / dog			X	X	X	
Black bear	X	X	X	X	X	
Raccoon	X	X	X	X	X	
Marten / fisher / mink / otter	X	X	X	X	X	
American marten		X	X	X	X	
Fisher	X		X			
Mink					X	
Northern river otter		X				
Indeterminate artiodactyl	X	X	X	X	X	X
Caribou / deer / moose / wapiti	X	X	X	X	X	X
White-tailed deer	X	X	X	X	X	X
Moose					X	

Table 10 - Comparison of identified taxa (identified to Order and lower) for amphibians, reptiles, birds and mammals from longhouses LH1 and LH2 and their middens (SWM: southwest midden and NWM: northwest midden), and from longhouses LH3 and LH4.

3 - Final remarks

From the identified species of vertebrates inventoried at the Mailhot-Curran site, a relative spatial uniformity is perceivable. This observed homogeneity among all of the components does not allow for the definition of distinct clusters which makes it impossible at this stage to recognize any particularities for the six longhouses based on bone remains found inside them. Similarly, the association between longhouses # 1 and # 2 and their respective middens (southwest for longhouse # 1 and northwest midden for longhouse # 2) is conceivable, but remains tenuous.

The animals significantly exploited by the inhabitants were not concentrated in specific sectors but dispersed throughout the village space. The spatial distribution of the two mammalian key species, white-tailed deer and American beaver, does not show any clustering related to their use within longhouses # 1 and # 2. The slight discrepancies observed are from a few taxa such as the salmon and turtles.

Therefore, an even distribution of all of the products of fishing and hunting emerges based on skeletal remains among members of each household. The idea of a communal sharing of animal resources is in harmony with the current understanding of Iroquoian communities characterised by an egalitarian social fabric and strong social cohesion (Chapdelaine 2015d: 405-406). The inhabitants of Mailhot-Curran were part of this socio-economic organisational model.

Acknowledgments

The authors would like to express gratitude to Claude Chapdelaine for the English translation of the original text and Adrian Burke for the revision of the English version.

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HOUSEHOLD GARBAGE:

Classic period (ca. 300-900 CE)
Maya Practices of Discard

Christina T. HALPERIN, Antonia FOIAS

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To cite this article

Halperin C. T., Foias A., 2016 - Household Garbage: Classic period (ca. 300-900 CE) Maya Practices of Discard, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 126-145.

HOUSEHOLD GARBAGE:

Classic period (ca. 300-900 CE) Maya Practices of Discard

Christina T. HALPERIN, Antonia FOIAS

Abstract

What can the practices of discard tell us about Classic period Maya households? Most archaeological analyses of middens are concerned with an analysis of content: describing, classifying, and comparing midden contents to tell us about the people who left such remains. Yet much can be learned about households from studying the actual practices of getting rid of trash. This paper documents midden patterns from the Classic period Maya site of Motul de San José, Petén, Guatemala, and compares them with those found elsewhere in the Maya area. We reveal the ways in which trash deposition was integral to (1) defining household space, (2) marking the lifecycles of households, (3) the differential experience of social status, and (4) the possible expression of regional dispositions.

Keywords

Trash, waste management, refuse, household, ceramic, Classic period Maya.

Introduction

What can the practices of throwing out garbage tell us about Classic period Maya households? Most archaeological analyses of middens are concerned with an analysis of content: describing and classifying midden contents to tell us about the people who left such remains. Indeed, the archaeological focus on what “households do” have largely examined the processes of household production, reproduction, ritual, and goods distribution (Wilk, Rathje, 1982; Wilk, Netting, 1984; Ashmore, Wilk, 1988, Gonlin *et al.*, 2012). Yet, much can be learned from studying the practices of trash discard (Schiffer, 1972, 1987, 1995; Hutson *et al.*, 2007; Hutson, Stanton, 2007). This paper documents Late Classic period (ca. 600-900 CE) midden patterns from the Maya site of Motul de San José, Petén, Guatemala, and compares them with those found elsewhere in the Maya area (figure 1). Rather than investigate only *in situ* debris (primary or *de facto* refuse) to identify specific activity areas (e.g. kitchens, craft production zones), we focus on the more ambiguous refuse thrown or swept away from immediate use contexts. Following Deal (1985, 1988), we primarily use ceramic sherd counts and weights as proxies for identifying middens, although we recognize that this is only a partial view of trash disposal practices.

We underscore that the making of middens was integral in (1) defining household space, (2) marking the lifecycles of households, (3) the differential experience of status and wealth, and (4) the possible expression of regional dispositions. We examine mundane middens as well as what we identify as ritual refuse to provide a more holistic investigation of discard practices among Classic period Maya households. The data from Motul de San José point to the need to think about such discard practices not only as universal or culturally constructed but also as socially embedded and variable.

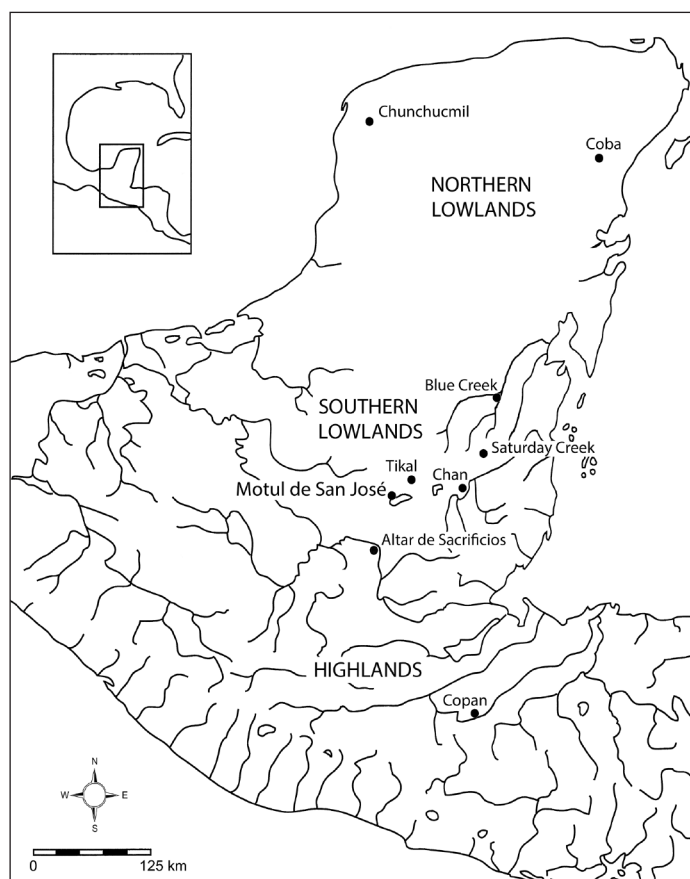


Figure 1 - Map of the Maya area showing the location of Motul de San José.

1 - Thinking about Trash

Part of what household members do is to accumulate and get rid of trash. Such processes, however, are often ignored or regarded as secondary to the “real” activities of households. Such a bias stems, in part, from the goal of trying to interpret activity areas, behavioral patterns, and systematic inventories based on *de facto* or primary refuse, artifacts left behind on occupation surfaces when people abandon a structure or site (Schiffer, 1972, 1987, 1995). While behavioral archaeologists have provided detailed explanations and models for how artifacts make their way from original use contexts to other more remote areas, such formation processes were ultimately seen as “degrading” the archaeologist’s reconstruction of “real” household behaviors.

Nonetheless, the study of middens and trash deposition has always been a central part of archaeological research as discarded items tend to comprise the basic inventories of archaeological assemblages. Ethnographic and ethnoarchaeological studies, in particular, have provided important models for archaeological testing (Deal, 1985, 1998; Arnold III, 1990; Killion, 1992; Hutson *et al.*, 2007; Emery, Brown, in press). For example, Hayden and Cannon (1983) argue, based on a study of approximately 50 households from the Maya Highlands, that contemporary garbage disposal is based on an economy of effort, potential value of refuse, and potential hindrance by refuse. Such ethnographic models have guided archaeologists in their research designs and provided interpretations based in rationalist, economizing logics. In general, these ethnographic studies, as well as many of the archaeological investigations that tested them, treated trash as a neutral byproduct of mundane routines, rather than as endowed with meaning, the result of human agency, or capable of simultaneously affecting human action.

One of the ways in which human agency and the meaning of trash has been explored is through the analysis of ritual deposits of garbage, such as deposits of broken ritual implements and feasting remains, smashed and scattered artifacts found in unusual patterns or contexts, and shell middens mixed with burials (Schiffer, 1995: 29; Moholy-Nagy, 1997; Mock, 1998; Walker, 2002; Bruck, 2006; Stanton *et al.*, 2008; McNiven, 2013). While some archaeologists have treated such deposits as the byproduct of ritual activities, others point to the importance of breaking, scattering, and depositing of such debris as a performance in its own right, such as a way to ritually “terminate” a building. In turn, such practices of ritual deposition may have marked critical events, endowing such places with history. As some have argued, ritual trash deposits affected subsequent human action in so far as they imbue such places with meaning and draw people back to conduct similar activities in the same spot (Lucero, 2008; Joyce, Pollard, 2010). Below we argue that even mundane trash deposits also “act back” on humans, influencing movement and conceptions of space.

The focus on practice theory in archaeology, in particular, has underscored that daily and more mundane trash deposition patterns have the potential to shed insights into the meanings and cultural dispositions of ancient households. What is considered pollution or “matter out of place”, is not inherent but culturally constructed (Douglas, 1966). As Bourdieu (1977, 1990) has underscored, people repeatedly enact, reproduce, and ultimately rework such cultural constructs over the course of daily action. For example, Lightfoot *et al.* (1998: 209-211) contrast the cultural dispositions of cleanliness between Alutiiq and Pomo Native American groups. While the Alutiiq from Alaska left food debris, bones, shellfish debris, artifacts, wood chips, and ash on the living surfaces of their houses, the Pomo of Northern California are known to have kept their living surfaces relatively free of debris and to have deposited their trash in concentrated deposits down slope from their homes. At Fort Ross, California, during the 19th century, interethnic households of what are thought to have been Alutiiq men and Kashaya Pomo women reproduced Pomo patterns of cleanliness even though their diets contained foods typically eaten by Alutiiq peoples. In this case, even the mundane practices of trash deposition may have served as assertions and negotiations of identity.

Below, we build on these diverse studies in our examination of trash deposition patterns of Classic Maya households. We consider trash as both a byproduct of household activities and as meaningful material remains affecting human action and movement. We underscore that ancient peoples acted both in rational logics to minimize their efforts and as part of cultural logics guided by particular norms, beliefs, and values. In contrast to many of the studies cited above, however, we recognize the social heterogeneity of ancient settlements and consider the possibility that even trash deposition practices were socially embedded.

2 - Site Background and Methods

The site of Motul de San José is located approximately 3 km from the northwest shore of Lake Petén Itzá in central Petén, Guatemala. It was the capital (or one of several capitals) of the Ik’ polity identified by the Ik’ emblem glyph (Marcus, 1976: 183-190; Reents-Budet *et al.*, 1994; Just, 2012; Tokovinine, Zender, 2012). The site experienced a florescence during the Late Classic period when most of its architectural groups were occupied and significant building campaigns were undertaken. The Motul de San José Archaeological Project, directed by Dr. Antonia Foias from Williams College and Dr. Kitty Emery from Florida Museum of Natural History, directed archaeological research at the site between 1998 and 2005 (Foias, Emery, 2012).

The project conducted a household test-pitting program to locate middens (Deter-Wolf, Charland, 1999; Ramirez *et al.*, 2000; Halperin *et al.*, 2001). Test-pitting consisted of placing a series of 1 × 1 m test pits in the center of and behind architectural groups (n=47 [not including testing of eastern periphery]). These efforts were also combined with a more intensive program of smaller 50 × 50 cm test pits placed systematically at 3 m intervals from each other along the edges of the architectural group (at a distance of approximately 3 m from the edges of buildings) (n=38). These small 50 × 50 cm units were expanded if middens were encountered.

The Motul de San José project sampling strategy does not have the advantage of more full coverage sampling methods which provide a comprehensive spatial understanding of discard locations and densities (e.g. postholes or shovel tests placed in a grid pattern; systematic surface collections) (Manzanilla, 1987; Webster, Gonlin, 1988; Killion *et al.*, 1989; Robin, 1999; Hutson *et al.*, 2007b; Blackmore, 2011). Nonetheless, the test-pitting program was successful in identifying middens containing durable artifacts. In addition, relatively efficient time / labor parameters for this strategy permitted the sampling of a larger number of households than what is often possible with more full coverage grid or horizontal excavation methods. As such, it allowed us to compare multiple households of different social statuses. To complement the test-pitting program, horizontal excavations of household architectural features and patio spaces were conducted on a more limited number of architectural groups (n=6: ops 2, 15, 29, 31, 39, 42) (Foias *et al.*, 2012).

At Motul de San José, as at other Classic period sites throughout the Maya area, households (or perhaps more accurately, co-residential units) are loosely equated with architectural groups (also referred to here as household groups) of two or more structures that occupy a shared patio space (Ashmore, 1981). The Motul de San José project designated three social status designations for architectural groups based on architectural volume. These designations are considered as heuristic categories related to royal (rank 1), lower-elite / middle-status (rank 2), and commoner (rank 3) household statuses respectively.

Unlike nucleated settlement patterns seen elsewhere, such as at Teotihuacan, Mexico, Classic Maya centers are characterized as exhibiting a low-density urbanism since architectural groups were often interspersed with non-architectural spaces that likely served as gardens and agricultural plots (Chase *et al.*, 1990; Feinman, Nicholas, 2012). Nonetheless, household groups may cluster together forming neighborhoods or districts (Ashmore, 1981; Arnould *et al.*, 2012) without obvious garden or agricultural spaces between them. As we suggest below, the social composition of these settlement clusters can be further understood through the identification of middens.

3 - Household Space

One of the ways trash disposal is implicated in the understanding of households is through its role in defining household space. Ethnographic research of contemporary Mesoamerican house lots has revealed that trash accumulation often occurs in a “toft zone”, an area behind buildings and at the edges of patio spaces where debris was thrown or swept away from heavy traffic and activity areas (Hayden, Cannon, 1983; Deal, 1985; Arnold III, 1990; Killion, 1992) (figure 2a). Although other items may be provisionally discarded inside or at the edges of buildings, and both organic and inorganic waste often ends up in the garden zones of the house lot, the toft zone is one of the richest areas for the deposition of durable trash. Unfortunately, most archaeological investigations in the Maya area focus on interior and exterior architectural spaces, missing the toft zone completely.

Nonetheless, several seminal archaeological studies that have undertaken comprehensive sampling strategies reveal that Classic period middens roughly follow ethnographic models (Manzanilla, 1987; Webster, Gonlin, 1988; Killion *et al.*, 1989; Ball, Kelsay, 1992; Robin, 1999, 2002;

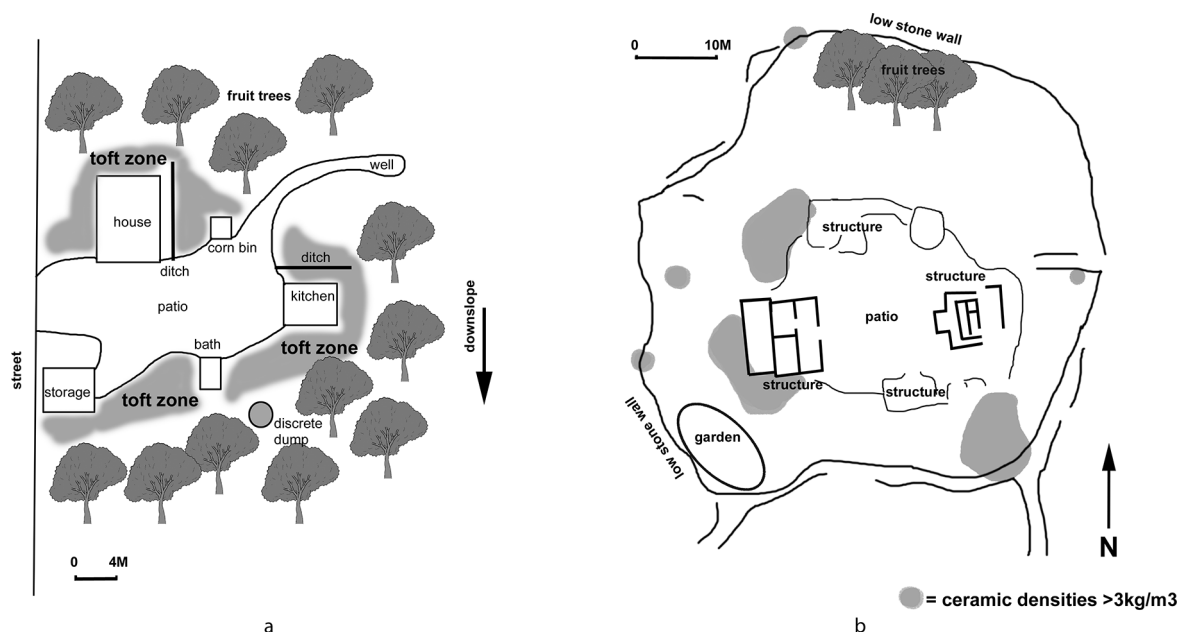


Figure 2 - Maya house lots showing locations of concentrated durable debris: (a) Contemporary Tzeltal Maya house lot showing “toft zone” of midden and sweepings (adapted from Hayden, Cannon, 1983: fig. 5); (b) schematic of Classic period house lot (Muuch group) from Chunchucmil, Mexico, showing ceramic densities (> 3 kg/m³) identified using 50 × 50cm test units placed on a grid pattern (adapted from Hutson *et al.*, 2007: fig. 5a, fig. 11).

Hutson *et al.*, 2007a; Blackmore, 2011). These studies have identified “toft zones” occurring behind or at the edges of structures where artifact densities were the highest (figures 2b-3). They contrast with the relatively clean patio spaces and building interiors. Several of these studies have also located the house lot’s garden and agricultural zones through phosphate, phytolith, and ethnobotanical analyses. The garden and agricultural zones also contained waste, such as organic products used as fertilizers and relatively smaller concentrations of durable artifacts (Hutson *et al.*, 2007; Wyatt, 2008). Similar to these studies, Halperin’s systematic soil sampling and subsequent phosphate analyses of the samples by Richard Terry (Brigham Young University) have revealed that high phosphate zones in Motul de San José residences often coincided with middens from toft zones (see Bair, Terry 2012 for phosphate sampling methods) (figures 4-5). As found elsewhere, however, phosphate concentrations are also indicative of food processing and consumption activities, rituals involving organic materials, and agricultural zones and thus are best interpreted in conjunction with other sources of evidence (Parnell *et al.*, 2002; Hutson *et al.*, 2007b; Eberl *et al.*, 2012).

Despite the identification of these different zones of household space, not all household groups are spatially composed in the same way. For example, Arnold III (1990) and Killion (1990)’s ethnoarchaeological studies of contemporary Sierra de Tuxtla households from Veracruz, Mexico, revealed that as spatial availability decreases, household members more efficiently use house lot space by placing trash in more discrete refuse areas rather than as scatters.

While waste management in these cases may be structured by the availability of space, the recovery of Late Classic period middens between buildings in the urban site core of Motul de San José indicates that the accumulation of trash was also a way in which household boundaries could be defined. Similar boundary-making patterns have been observed among contemporary Maya house lots where trash was thrown along the low stone fences dividing each property (Hayden, Cannon, 1983: 133-134). Returning to Motul, a cluster of Rank 2 architectural groups lined the eastern side of the site’s north-south running causeway (Groups 8L2, 9L7, 9L6, 9L5, 9L3 in figure 3).

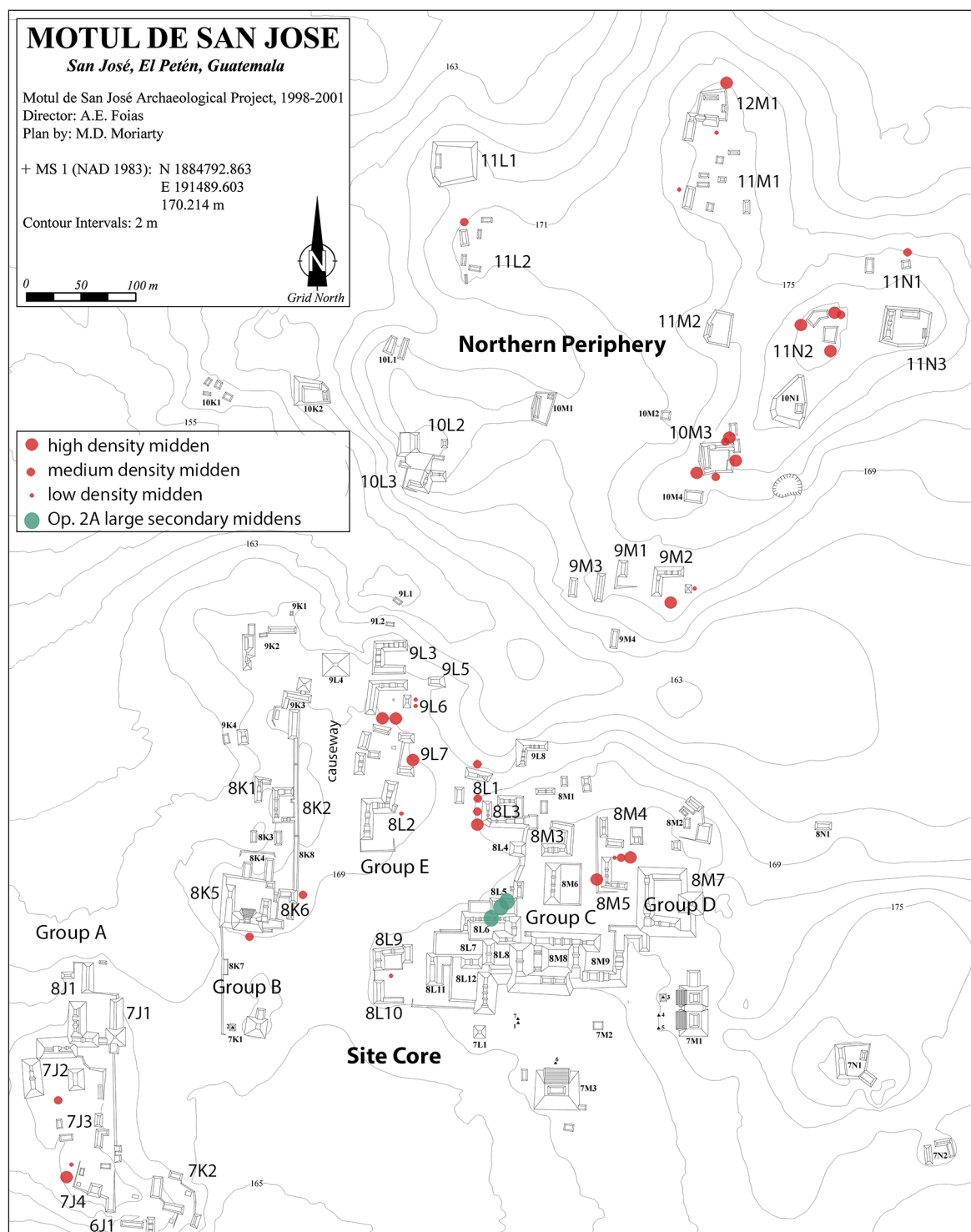


Figure 3 - Map of Motul de San José showing the locations of "toft zone" middens [in red] and Op.2A large secondary middens [green] at the edge of the palace complex (8L6) (note: groups tested with 50 × 50 cm test pits labeled in large font).

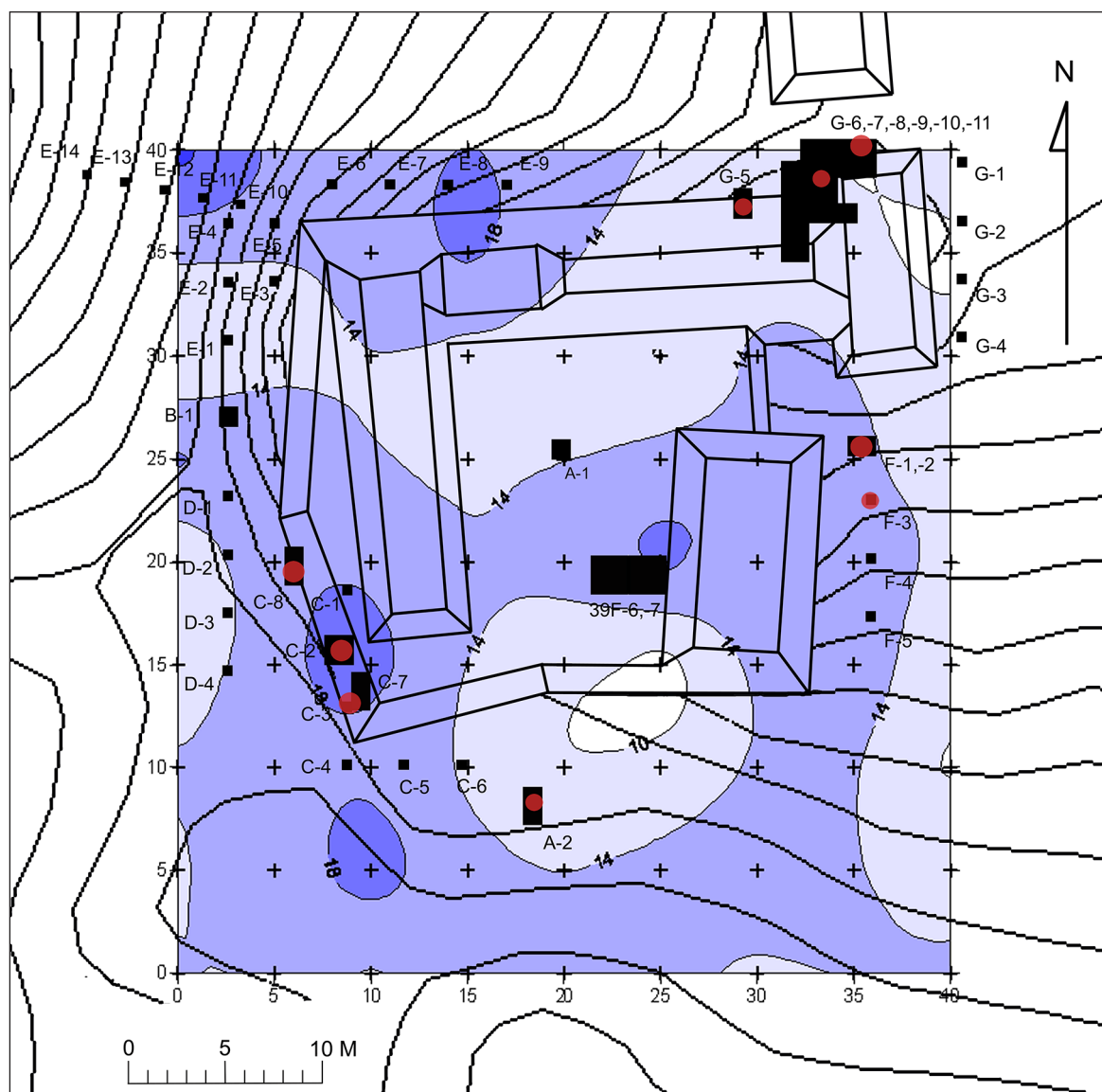


Figure 4 - Plan map of Motul de San José Group 10M3 (Op. 39) showing phosphate concentrations (extractable P mg/kg) [purple], excavation units [black], and midden locations [red].

Since they are closely spaced in relation to one another, the buildings were designated as a single group, Group E, by the Guatemalan government. The Motul de San José Archaeology project adopted such designations but also created smaller group designations (labeled using a grid system of letters and numbers), even though patio spaces between them were not always completely closed off from one another. The recovery of relatively substantial trash accumulation between two of these groups (Groups 9L7 and 9L6) may be an example of how trash can reinforce divisions between households.

Other middens that may have reinforced the delineation of household groups are those found between the clustered groups 8M5, 8M4, and 8M7, between 7J2 and 7J3, between 8L9 and 8L10, and between 8L1 and 8L3. In such instances, trash may have not only been deposited or swept at the edges of household space, but also served as symbolic, physical, or even odorous impediments for regular movement between such spaces. Such aversions may have created implicit or unintended “fences” whereby trash and humans mutually affect each other. Since most Classic Maya sites lack low

stone walls that divide house lots (cf. Manzanilla, 1987; Hutson *et al.*, 2004, 2007a), middens may provide some indication of how household spaces were produced over the course of mundane, everyday activities.

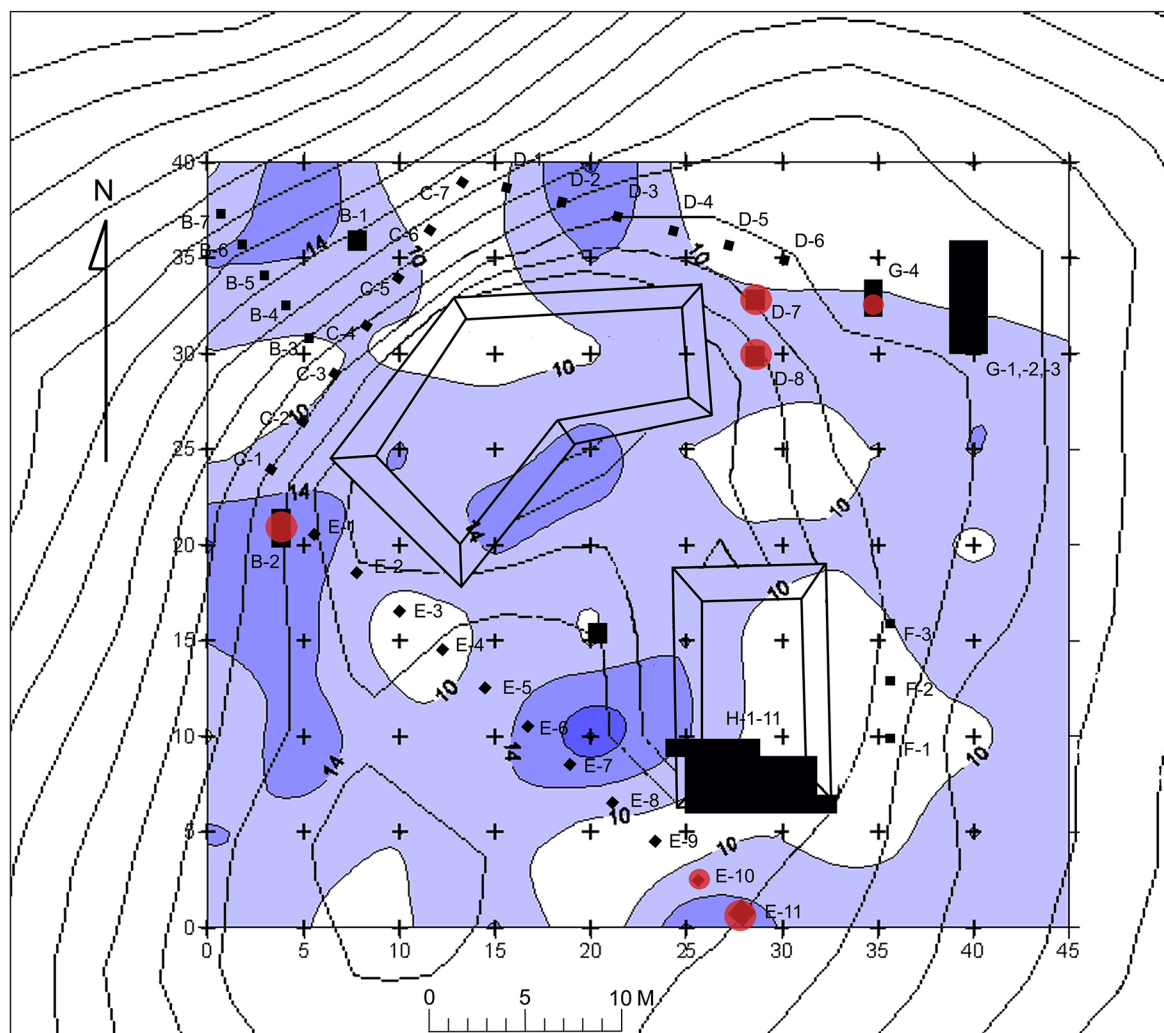


Figure 5 - Plan map of Motul de San José Group 11N2 (Op. 42) showing phosphate concentrations (extractable P mg/kg) [purple], excavation units [black], and midden locations [red].

4 - Household Lifecycles

In addition to its role in defining – and being defined by – household space, the deposition of trash was also related to the lifecycles of a household (Deal, 1985). Ethnohistoric sources suggest that Mesoamerican cleaning cycles were tied to the ceremonial calendar. Similar to the ritual purification of the body through sweating in a sweat bath, the house was ritually swept, cleaned, and renewed (Burkart, 1989; Hamann, 2008). For example, Diego de Landa (Tozzer, 1941: 151-152) reports that Yucatecan Maya New Year's festivities were celebrated with the throwing out of household implements (e.g., plates, vessels, stools, mats, old clothes, wraps for their idols), the sweeping of their homes, and the discarding of these items in a dump outside of town. In preparation of these festivities, men fasted and covered themselves with soot. Like their houses, they were cleaned and ornamented for the festivities on New Year's day (see also household cleaning during Aztec New Fire ceremonies, Elson and Smith, 2001).

Archaeologically, such punctuated moments of trash disposal are most visible at the end of a household's lifecycle with on-floor trash deposits known as "termination rituals", "ritual deposits", and "special deposits" (Coe, 1965; Mock, 1998; Lucero, 2008; Stanton *et al.*, 2008; Newman, 2015). These deposits, found in both public, ceremonial spaces and residential contexts, differ from typical middens in that large quantities of broken artifacts were left on heavy traffic occupation surfaces. They were often accompanied by extensive evidence of burning, depositions of white marl, and/or architectural destruction (Stanton *et al.*, 2008). Although the nature of, meanings, and intentions behind these deposits are debated, we underscore here their possible role in marking time.

Destruction of architecture through the deposition of trash, burning, burying, and/or the dismantling of walls may have also related to the process of de-animating or spiritually killing a place. Contemporary and ancient Mesoamerican peoples conceived of the physical house, as well as many material objects, as a living, animate entities (Houston, 2014). Many Mesoamerican buildings are built successively, one on top of another. New building episodes were often accompanied by the placement of offerings and burials within building foundations, which served to consecrate and ensoul the building. Thus, such dedicatory offerings are bookended with building burial or destruction episodes forming a cycle of dedication, destruction, and renewal (Mock, 1998; McAnany, 2010; Lucero, 2008).

At Motul de San José, evidence of a Terminal Classic termination ritual was found in an elite palace, Group 8M7 (units 15A-22, 23,36,37), and marked the end of a long line of rebuilding episodes dating continuously from the Middle Preclassic (600-300 BCE) to the Terminal Classic period (ca. 830-990 CE). It consisted of large pieces of dismantled stucco and a large quantity of artifacts (broken ceramic vessels [$n=2458$; 34.4kg], ceramic figurines, spindle whorls, animal bones, polishing stones, raw clay and pigment pieces, and lithic debris and tools) thrown directly on the floor, blocking the entrance to one of the building's interior rooms and filling up the patio space between the group's western and southern buildings (figure 6). The stucco floor below part



Figure 6 - Photograph of unit MSJ15A-37 from Group 8M7 showing part of the upper portion of the termination ritual deposit (photo: Antonia Foias) and plan map of Group 8M7 showing its location relative to architecture (units MSJ15A-22,23,36,37).

of the deposit as well as about half of the artifacts had clear evidence of burning. The burning was so intense that it even melted some of the building's stucco walls (Foias *et al.*, 1999: 33, 2012: 110). Although the ceramics comprised large fragments, not a single vessel or figurine could be fully reconstructed. And with the exception of two complete lithic bifaces, the remaining materials were also in fragmentary form. Such deposition patterns are noted for ritual deposits recovered elsewhere, such as Saturday Creek, Blue Creek, and El Zotz (Clayton *et al.*, 2005; Lucero, 2006; Newman, 2015) and reveal that the trash was not created at the moment of its deposition (e.g. smashed and broken *in situ*), but purposefully collected as fragments and thrown on occupation surfaces.

It is difficult to identify, however, whether such deposits were acts of reverential destruction by building inhabitants or violent acts, perhaps undertaken by those external to the household. Evidence of the butchering of human remains, the possible scattering of ancestor bundles, and the recovery of weapons alongside significant quantities of broken artifacts may provide evidence of warfare or violent acts (Ambrosino *et al.*, 2001; Inomata, 2003; Barrett, 2005; Harrison-Buck *et al.*, 2007; Navarro Farr *et al.*, 2008). Beside the evidence of lithic bifaces in the Motul de San José example, however, no evidence were identified.¹ Regardless of intent, however, these deposits marked critical points in the temporal cycle of a building and the lives of the inhabitants residing there.

5 - Household Social Status

Although many of the above mentioned studies treat households as relatively homogenous social units of analysis, a household's social standing was also implicated in its practices of discard. For example, at the hinterland site of Chan, Belize, the type and elaboration of architecture created different opportunities for distancing oneself from the trash one accumulates (Robin, 2002; Blackmore, 2011). Higher status households built their homes on raised basal platforms and, in turn, regularly threw their trash behind or to the sides of them.² This pattern contrasted with their more humble neighbors whose houses were not built on raised platforms. Among these more humble household groups, the separation of trash and dwelling space was created not through elevation, but through horizontal distance, approximately 10-25 m from their structures. These middens were also less dense and generally lacked imported goods.

Although the Motul de San José excavation methods do not allow us to compare them with the Chan finds, our analysis of middens found in the "toft zone" of house lots reveals that the lowest status households possessed, on average, the densest middens (figure 7, tables 1-2). These finds do not signify that lower status households possessed more trash than higher status households since a comparison of Late Classic ceramic sherd counts weighted by estimates of excavation volume reveal that ceramic sherd densities were relatively similar between architectural group rank categories

1. Low quantities of Early Postclassic ceramics were recovered in the humus and collapse levels of this architectural group, suggesting that people continued to use this space after the Terminal Classic. While it is possible that the deposit was left by so-called "squatters" using the material culture left by elite inhabitants, as has been proposed elsewhere, we find this scenario unlikely since even new inhabitants would presumably clean their own living spaces (Stanton *et al.*, 2008). In addition, the termination deposit itself did not contain Early Postclassic ceramics. No Early Postclassic construction episodes were identified.
2. The Chan midden sampling methods consisted of systematic post-hole testing in two neighborhoods, Chan Noohol and the Northeast Group. The Chan Noohol neighborhood was tested on a grid pattern with post-holes placed every 4 m and the Northeast Group was tested on a grid pattern with post-holes placed every 6m with coverage extending out between 20-30 m beyond architecture (Robin, 1999: 121-124; Blackmore, 2011, 2012).

even though elite households possessed greater quantities of prestige and imported goods (Foias *et al.*, 2012). While midden densities are affected by length of house occupation, the toft zone middens are all predominately Late Classic in date (table 1). In addition, because some of these low-ranking households were located in the site core, high midden densities cannot be completely explained by a greater access to agricultural or intermediate spaces between architectural groups, as seen in the northern periphery of the site.

In contrast, the highest status households located in the Motul de San José core disproportionately managed their trash by constructing their buildings with it. One of the largest series of middens excavated from the site was found within construction fill (up to 3 m deep) of a single large platform supporting the northwestern corner of the site's palace, Group 8L6 (Operation 2). Refuse from this fill was one of the richest at the site, containing Late Classic debris from bone tool production, an array of faunal remains, groundstone tools, spindle whorls and other textile production tools, evidence of ceramic vessel and figurine production, and ceramic vessel counts and weights that are higher than all of the "toft zone" middens combined (table 2). Such debris likely derived from the royal and elite households within the site core since they were domestic in nature, but also contained high levels of exotic, prestige, and imported items comparable to those found in tomb and midden contexts from other Rank 1 households (Foias *et al.*, 2012). As detailed elsewhere (Halperin, Foias, 2010, 2012), the large majority of the garbage was concentrated in a stratum without fill rocks, suggesting that it represented a single episode of trash disposal.

Although waste management practices of low-status households may be partly explained by rationalist arguments of practicality and effort minimization, not all households approached the world through the same opportunities and resources. We suggest that elite households benefited from a greater swath of resources, such as people to sweep and maintain living surfaces as well as to undergo more substantial building campaigns in which refuse deposition could be coordinated and hidden.

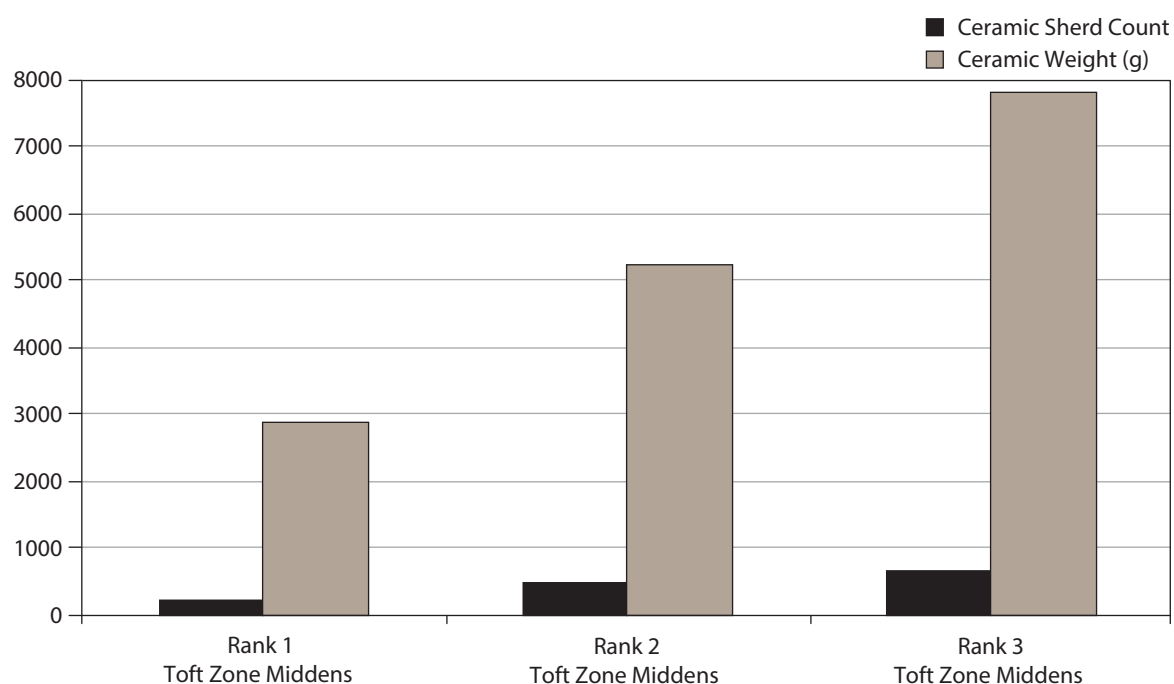


Figure 7 - Comparison of mean ceramic sherd counts and mean ceramic weights (g) by archaeological context.

Group	Operation	Provenience	# of Ceramic Sherds	Ceramic Weight (g)	Density	Direction	% non-Late/ Terminal Classic ceramic sherds	Zone of site	Group Rank
7J2	8	MSJ8D-15	179	2077	medium	south/north	1,1	Site Core	1
8K5&6	12	MSJ12B-18	308	4 133,7	medium	south	0		1
8K5&6	14	MSJ14C-1	197	2 469,9	medium	east	0,5		1
7J4	10	MSJ10D-6	49	600,0	low	west	0		2
7J4	10	MSJ10D-20	651	6 576,6	high	west	6,6		2
8L1	19	MSJ19A-6	163	1 835,6	medium	north/south	0		2
9L6	20	MSJ20B-3	133	1 274,0	low	east	0		2
9L6	20	MSJ20B-5,6	144	1 294,0	low	east	0		2
9L6	20	MSJ20F-3	528	6 234,5	high	south/north	0		2
9L6	20	MSJ20F-10,-11,-12	837	10 689,6	high	south/north	0,1		2
8L2	29	MSJ29C-16	77	916,8	low	east	2,6		2
9L7	30	MSJ30A-16	1 092	18 704,6	high	east	0,1		2
8L9	32	MSJ32D-1	119	445,6	low	south/north	5,9		2
8L3	33	MSJ33B-10	255	2 823,7	medium	west	0		2
8L3	33	MSJ33B-1	360	2 980,0	medium	west/east	0		2
8L3	33	MSJ33B-16	1 595	14 858,2	high	west	0,3		2
12M1	35	MSJ35H-4	601	10 633,45	high	north	2,5	Northern Periphery	2
12M1	35	MSJ35A-2	108	1 090,45	low	south	1,9		2
10M3	39	MSJ39F-3	289	NA	medium	east	NA		2
10M3	39	MSJ39F-1,2	588	NA	high	east	NA		2
10M3	39	MSJ39G-11	211	3 887,5	medium	north	0,5		2
10M3	39	MSJ39G-7	1 690	2 335,5	high	north	0,7		2
10M3	39	MSJ39A-2	304	2 975,9	medium	south	0		2
10M3	39	MSJ39C-2,3,8	603	NA	high	west	1,7		2
10M3	39	MSJ39G-5	374	3 576,0	medium	north	0		2
8M5	17	MSJ17D-6	134	1 619,7	low	east/west	0	Site Core	3
8M5	17	MSJ17D-14	225	2 127,4	medium	north	0		3
8M5	17	MSJ17B-14	960	12 276,9	high	west	6		3
9M3	23	MSJ23A-5	80	718,0	low	east	0	Northern Periphery	3
9M3	23	MSJ23E-12	451	11 334,4	high	south	0		3
11M1	31	MSJ31A-3	119	950	low	west	0		3
11L2	38	MSJ38F-3	389	3 276,3	medium	north	0,8		3
11N2	42	MSJ42G-4	1 146	9 733,0	medium	east	4,9		3
11N2	42	MSJ42D-7,8	1 850	19 384,9	high	east	3,5		3
11N2	42	MSJ42E-10,-11	735	1 441,2	high	south	7,1		3
11N1	45	MSJ45C-1	206	NA	medium	north	0		3
11N2	42	MSJ42B-2	782	8 185,0	high	south	8,6		3
8M5	17	MSJ17D-16,-17	1 584	33 485,0	high	north/south	0,2	Site Core	3

Table 1 - Motul de San José middens recovered from exterior test-pit transects (50 × 50 cm pits).

	Ceramic Sherd Count	Ceramic Weight (g)
Rank 1 Toft Zone Middens	228	2 893,53
Rank 2 Toft Zone Middens	490	5 215,98
Rank 3 Toft Zone Middens	666	7 788,88
Rank 1 Palace Fill (Op. 2A only)	20 798	573 193,80

Table 2 - Comparison of "toft zone" midden with Op. 2 palace midden from construction fill.

6 - Regionalism

As investigations into midden patterns become more common, regional patterns may begin to become more apparent. For instance, at the Classic period site of Chunchucmil, Hutson and Stanton (2007) find a statistically significant preference for depositing trash on the western side of house lots. They find that practical motivations (e.g., downslope from living areas, locations of prevailing winds) were not adequate to explain such a trash disposal pattern and argue that it related to contemporary and ancient Maya views of the west as associated with decay, death, and malevolent spirits. Elsewhere in the world, directional preferences are known for midden locations, such as among 9-12th century households in the northern part of the US Southwest in which room blocks, pit houses, and middens were systematically aligned with each other along a N-S or NW-SE orientation axis with middens always in the S or SE position (Lekson, Akins, 2006).

Our examination of off-mound middens at Motul de San José, however, did not reveal a western preference for trash disposal. In fact, middens were found in all directions without an apparent directional preference (figure 8). These data do not necessarily undermine the findings at Chunchucmil, located some distance from Motul de San José. Nor does it mean that Motul de San José inhabitants did not conceive of the cardinal directions in the same way as such ideologies were also expressed in other ways (Ashmore, Sabloff, 2002). Rather we suggest that a certain regionalism in discard practices occurred with certain preferences (or lack thereof) replicated among groups that shared habitual, everyday experiences with each other. Such regionalisms can only be addressed through further systematic studies targeting off-mound locations.

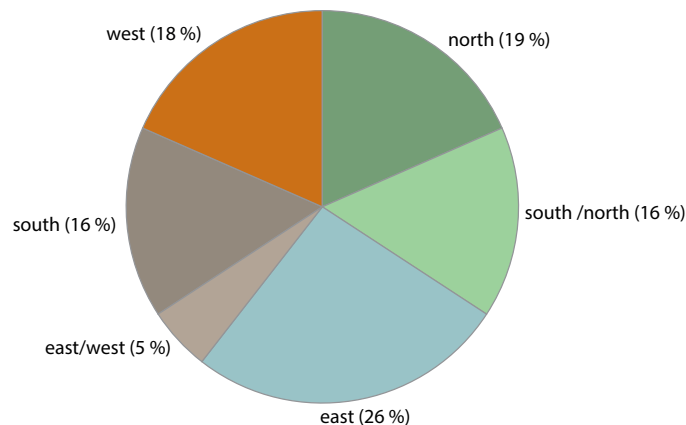


Figure 8 - Graph of midden directional locations identified in Motul de San José (50 × 50 cm) test-pitting program (note: combined designations were found on one side of an archaeological group, but located close enough to another group whereby directional designation may prove to be ambiguous).

Conclusions

Even the seemingly meaningless practices of discarding household trash were implicated in the ways Classic Maya households expressed and constituted themselves. Ethnographic studies indicate that locations of durable trash deposition were often structured by the availability and composition of household space. We suggest, however, that middens also structured household spaces by influencing how household members moved between and conceived of household divisions.

In turn, household trash disposal was part of household lifecycles wherein punctuated moments of trash disposal marked critical moments of household experience. The ending stage of household life cycles may be archaeologically visible through termination rituals or acts of destruction in which trash was thrown on occupation surfaces and burning rites were conducted.

Our analysis of middens at the exterior edges or “toft zone” of households from Motul de José also revealed that the gradual, everyday deposition of trash differed between lower and higher status households. Lower status households possessed more concentrated deposits at the edges of their buildings, while higher status households in the site core disproportionately disposed of trash by placing it into architectural fill. Although all households undoubtedly sought practical solutions to the issues of trash disposal, lower status households appear to have had fewer resources and opportunities for the coordinated disposal of trash in construction fill. Further research on communal practices of trash disposal, such as in caves or public contexts, is needed. Finally, patterns of trash disposal may also express regional differences as suggested in the differences in the directional disposal of durable trash between Motul de San José and Chunchucmil. In general, we underscore the need to think about ancient waste management as socially variable in which households went about their everyday activities with potentially different resources and histories of interaction, and in turn, reproduced and reworked these conditions (and themselves) in subtle, sometimes taken-for granted ways, such as in the practices of discarding trash.

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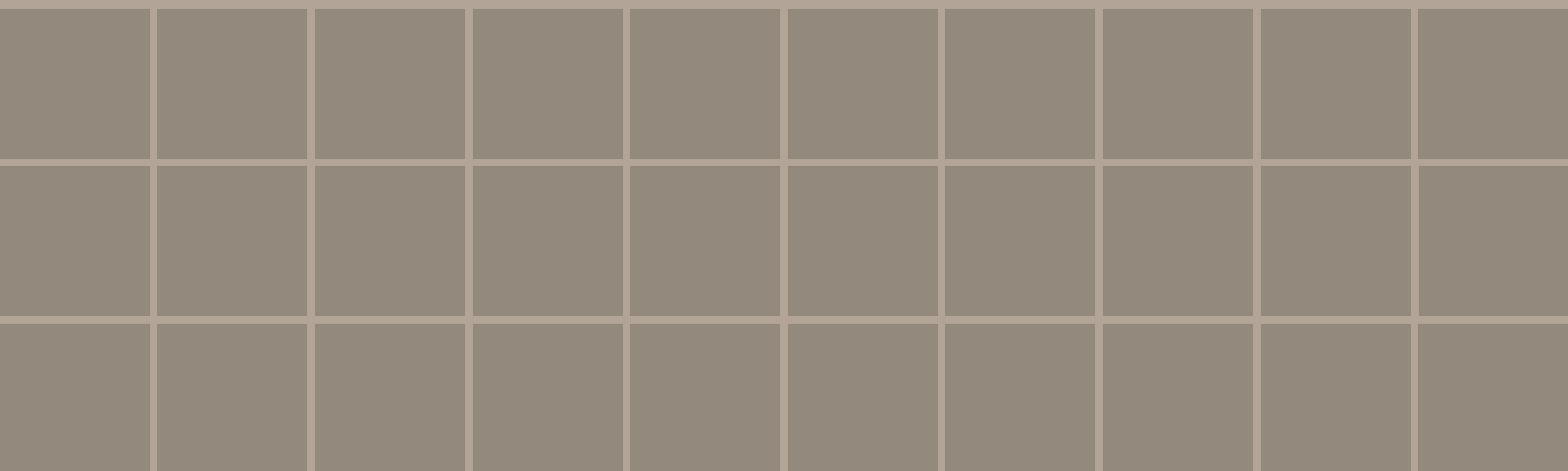
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THE HOUSEHOLD IN EUROPE



VILLAGES BEFORE HOUSES?

The neolithization of Europe reconsidered
through the concept of the household

Karim GERNIGON

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To cite this article

Gernigon K., 2016 - Villages before houses? The neolithization of Europe reconsidered through the concept of the household, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 147-181.

VILLAGES BEFORE HOUSES?

The neolithization of Europe reconsidered through the concept of the household

Karim GERNIGON

Abstract

Since the 19th century, the Neolithic period has been conceived as an inevitable stage of the history of human societies in Europe, taking place between the wild times of predation and the industrial civilization contemporaneous to the first prehistorians. The house is a central element of this model considered as proof of sedentarity, the end of nomadism and the beginning of social construction with the hearth drawing the household together. The lack of documentation relative to the architecture of several large geographical and chronological chunks of Neolithic Europe compromised, for a long time, any serious consideration of settlements in discussions about the way Neolithic societies were constituted, while the primacy accorded to Economy in the definition of the Neolithic led to a disregard of the settlement, seen as a sign of the accomplishment of the neolithization process. The development of a sedentary way of life and the construction of perennial settlements are nevertheless the first signs of neolithization in the Middle-East and it is through structured village societies that this new way of life was disseminated to the Mediterranean shores. Taking into account settlements while discussing neolithization leads us to consider all dimensions of the process, and not only through the economic prism. It reveals that the neolithization process is not only the acquisition of farming and herding techniques, but also corresponds to the diffusion of an ideal village society, structured around exchange and a collective procurement of goods. Whether the first impacts of the Neolithic have been expressed by single emblematic tools, by domestic species, by ceramics and/or by long rectangular buildings, the neolithization process has only been fully accomplished when the model of the village society has been developed.

Keywords

Household, neolithization, Europe, village, society, exchange, settlement.

Introduction

In Europe, Neolithic societies are characterized by a production economy (farming and herding), a sedentary lifestyle (around hamlets and villages) and the implementation of new technologies (polished stone tools and ceramics). Among these three criteria, the forms of habitations have always been seen as secondary. The characterization of how people occupy their living spaces is systematically used to describe those societies that are considered as Neolithic, but it is never a criterion used to justify the nature, Neolithic or not, of a prehistoric society.

And yet, the house is a central place in the construction of social relations, and it is also a monumental demonstration of the society that built it. Whether related to Neolithic communities or those groups still considered as Mesolithic, the form of the house was the most obvious expression of the identity of the group that built and lived in it.

This lack of interest in forms of habitation is explained primarily by the conviction among researchers of the primacy of the economy in the structure of society. In Europe and the Middle East, the production economy criterion is considered to be predominant in the recognition of prehistoric societies as Neolithic. In the 19th century, as shown by the literal meaning of the neologism “Neolithic”, it was on the contrary new techniques that served to define and identify the period. Lubbock’s Classification of 1865 distinguished, within Thomsen’s Stone Age, a “chipped” Stone Age and a “polished” Stone Age. At that time, however, knowledge of Neolithic societies was still largely theoretical, based on biblical stories more than the results of excavations which were then mainly a collection of objects, without context or stratigraphy. The progressive importance of Marxist models later led to a paradigm shift. In 1935, Childe proposed to classify societies as Neolithic from the time they are engaged in agriculture and livestock rearing. Economic change in the form of food production is indeed regarded as paramount and as leading to other changes in society such as sedentarization and new technologies.

This association between the Neolithic and domesticated species, whether animal or vegetable, at least had the merit of establishing a close relationship between European Neolithic societies and those in the Middle East. Most domesticated species documented in Europe during the Neolithic are absent from wild strains present on the European continent, but are present in the Near East (Clutton-Brock, 1999; Willcox, 2014). In addition, the study of domesticated species, including those with wild ancestors in both Europe and the Middle East (cattle and pigs), has showed that the Neolithic herds were descended from Near Eastern stock, and so there was no local domestication in Europe (Troy *et al.*, 2001; Rowley-Conwy, 2003; Chaix, 2004). The focus on the economy established the dependence of Neolithic Europe on the Middle East, one of the cradles of the Neolithic revolution.

This lack of interest in habitation structures is also due to uneven knowledge of the forms of European Neolithic settlement. Neolithic settlements were in the great majority built with perishable materials (mud and wood), the traces of which has been severely affected by millennia of erosion processes. It is exceptional to find elevations of Neolithic structures still preserved today. Their foundations themselves are indeed often shallow, and it is not uncommon that their corresponding cuts have not been preserved, or that bioturbations have rendered them invisible to archaeologists. Documentation is therefore minimal compared to that on the economy or material culture. It is also very unevenly distributed in space and time. In south-eastern Europe, in the Balkans, the stability of house structures and the rebuilding of successive buildings *in situ* have generated artificial hills that preserve architectural remains and household objects surprisingly well. In the German-Polish plains, from the Paris Basin to the west of Ukraine, Linear pottery culture Neolithic houses were built with hefty structural posts, the postholes of which are frequently preserved, despite the erosion of soil levels. In the southwest of Europe, on the contrary, around the western Mediterranean Sea it is very rare that the remains of buildings can be observed and habitat is generally characterized by studying structures that are installed more deeply such as storage pits and hearths (Gascó, 1985). The development of developer funded or CRM archeology since the signing of the Valetta Treaty (European Convention on the Protection of Archaeological Heritage) in 1992, and the exponential increase in extensive open area excavations, has however reduced the imbalance of documentation. In addition, greater attention to less obvious structures and the adaptation of soil analysis techniques to archaeological sediments, including micromorphology, have helped reveal the presence of earthen architecture, house floors, and other discreet features such as post packing that previously escaped the trained eyes of archaeologists. Although the ensemble of data available might seem sparse to prehistorians working in regions less affected by taphonomic processes, it is now possible to observe and describe the forms of Neolithic settlement in areas where hitherto it was thought that perhaps the same agro-pastoral communities may have practiced a form of nomadism. The discoveries of recent years show quite the opposite, firmly

established earthfast architecture whose forms often refer to models from the Eastern Mediterranean. Parallels between early Neolithic villages in the far east of Europe and the rectangular house plans that we are beginning to uncover at the other end of the continent leads us to believe that house forms may have been subject to diffusion. Just as it is possible to trace the spread of domesticated species or new technologies such as ceramics and polished stone, it also seems possible to observe the Neolithic in terms of the distribution patterns of the various forms of houses.

1 - The early Neolithic in the Near East and its spread to the southeast of Europe

A - The formation of village societies in eastern Anatolia and their expansion to the shores of the Mediterranean Sea

In the Middle East, the original home of the European Neolithic, agriculture and livestock appeared in societies that were already settled ([figure 1](#)). For millennia, the hunter-gatherers of the Levant, the Natufians, had built and inhabited circular buildings with foundations of stone. The knowledge of the construction of these houses thus preceded the transformation of the economy. The appearance of megalithic sanctuaries such as Göbekli Tepe in southern Anatolia (Schmidt, 2010), around 9500 cal BC, which required the shaping, transportation, layout and erection of thousands of blocks of stone, is contemporary with the earliest farmers of the Pre-Pottery Neolithic A (PPNA). This mastery of the art of building is found in domestic housing. The morphology of the habitat remains circular in plan, but is accompanied by a variety of building types (variety of sizes, differences in the depth dug out), resulting from the variety of functions (housing, storage, specialized activities).

After a millennium, however, around 8500 BC, the circular house plans are gradually replaced ([figure 2](#)) by quadrangular and rectangular layouts (Özdoğan, 2010; Stordeur, 2014). The reasons for this transformation in domestic habits are unclear. It could be that foremostly there are technical reasons related to the changes in the way floors were structured within the buildings (Özdoğan, 2010). Once they had mastered the rectangular building construction techniques, this type of architecture became almost the exclusive household architecture in the Middle East, whether in the Levant, Mesopotamia or southern Anatolia. On many sites, this architecture takes the form of a modular or agglomerated habitat, the most famous example of which is the village of Çatalhöyük in Central Anatolia (Turkey), excavated by James Mellaart (1967) and later by Ian Hodder (2014), occupied from 7200-6200 cal BC ([figure 3](#)).

Shortly after 7000 cal BC, towards the end of the PPNB, the Neolithic extends beyond its initial core zone (and Cyprus, which constitutes its immediate periphery). To the west, the first agro-pastoral communities of the Aegean coast of Anatolia (Ulucak) construct villages grouping quadrangular buildings with mud walls and floors built with lime, identical to those of Central Anatolia ([figure 4](#)). In the earliest phase, and unlike Çatalhöyük, buildings are independent of each other. These early Neolithic villages on the shores of the Mediterranean are most likely founded by populations from Central Anatolia as a result of the crisis of the late PPNB, which sees the abandonment of most sites in Central Anatolia and an impoverishment of the few villages that continue to be inhabited. The material culture is indeed similar to that of the final PPNB sites in Central Anatolia and the only differences with the core region are the lack of collective and cult buildings. Everything indicates that the highly structured and hierarchical society of the Central Anatolian PPNB collapsed (Özdoğan, 1997), and that part of the population emigrated with their technical skills, but without conveying the markers of social inequalities, such as objects of worship and prestige objects made by specialist craftsmen.



- ★ Obsidian sources
- ★ Sources of honey-coloured flints flaked by pressure or by indirect percussion
- Round or oval buildings with monochrome ware
- Round or oval buildings with impressa / cardial ware
- Rectangular buildings from anatolico-balkan traditions
- ▬ Long rectangular buildings with linear pottery
- Other sites mentioned in the article

Figure 1 - Map showing the sites appearing in the article (CAD: K. Gernigon, F. Tessier).

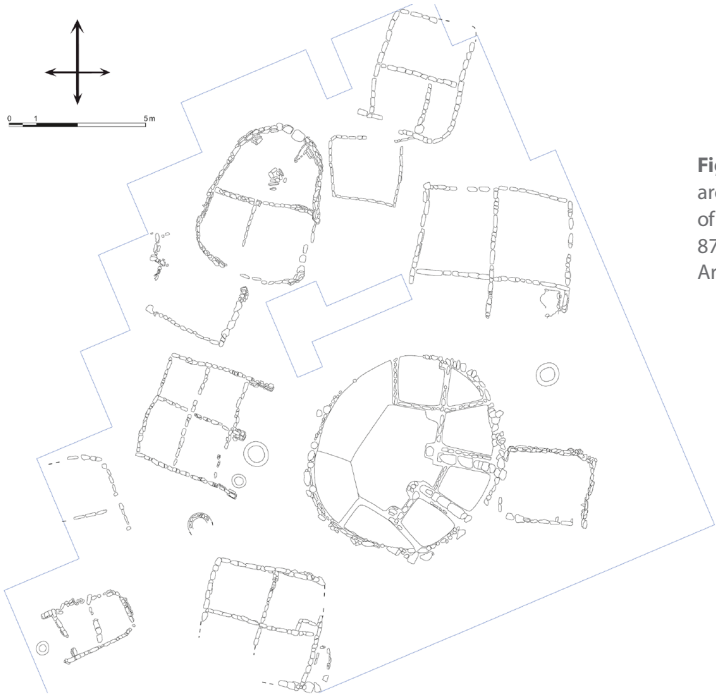


Figure 2 - Example of transition from the first circular architecture to the rectangular architectures, the site of Jerf-el-Ahmar (Euphrates valley, Syria), around 9000-8700 cal BC (after Stordeur, 2014; CAD: E. Régagnon, Archéorient, CNRS).

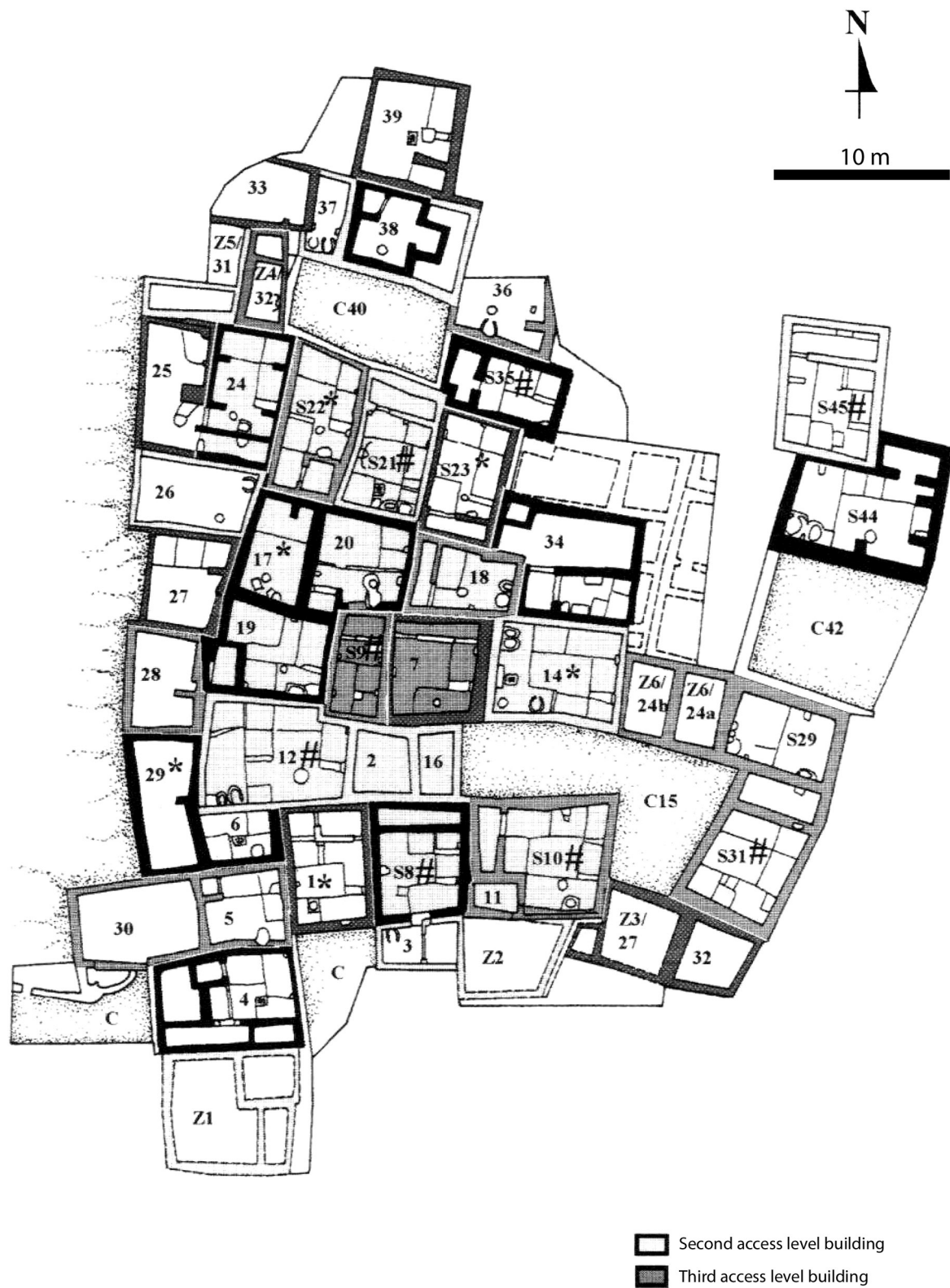


Figure 3 - Rectangular buildings and a densely built settlement around 6700-6500 cal BC in Eastern Anatolia, the example of Çatal Höyük, level VII (Turkey) (after Düring, 2001).

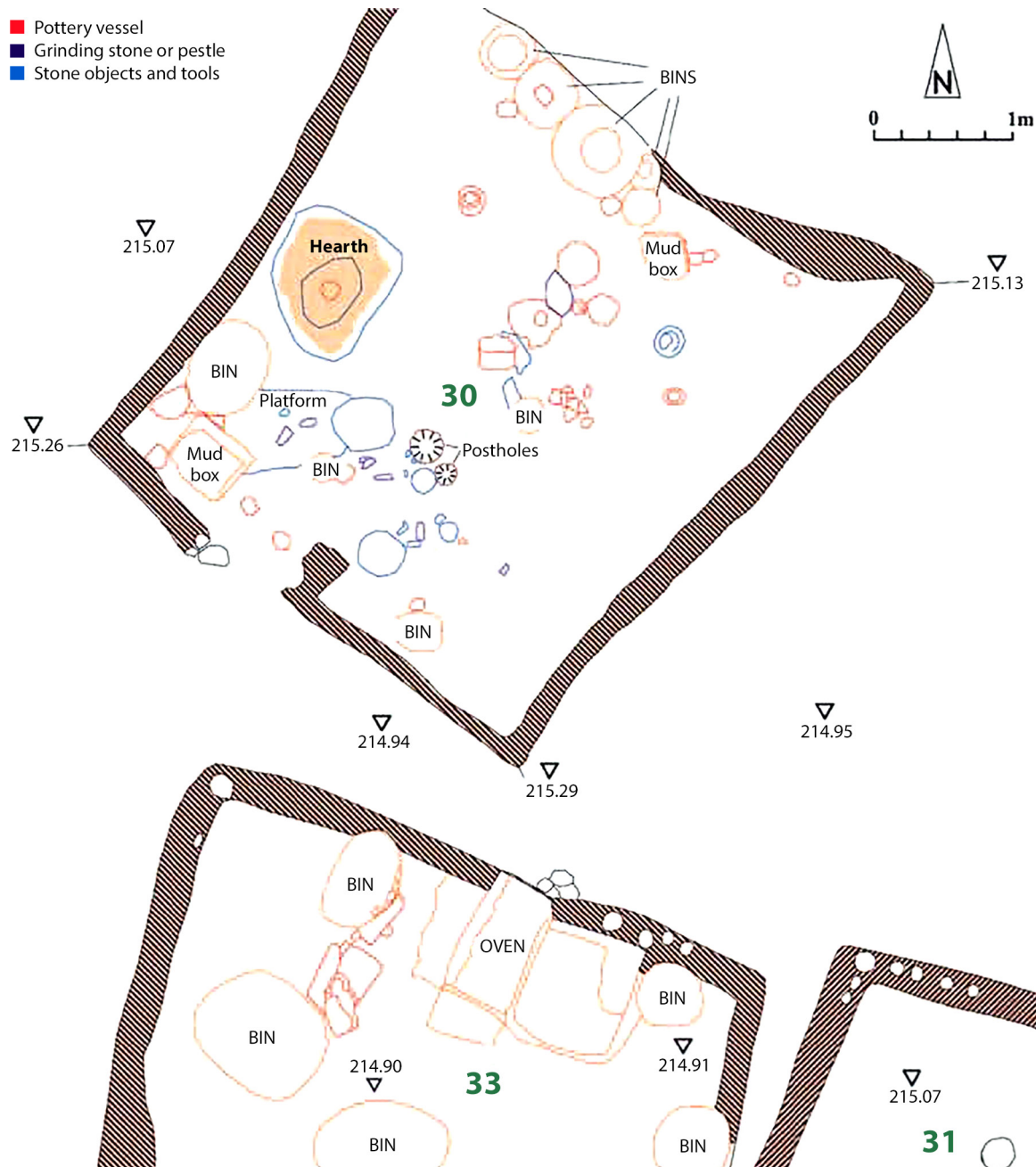


Figure 4 - First Neolithic buildings on the Asian shores of the Mediterranean Sea, the example of Ulucak houses, phase Vb (around 6400-6000 cal BC), in Western Anatolia (Turkey) (after Çilingiroğlu, 2011).

B - Early evidence of the Neolithic in Europe

It is possible that some of these populations also crossed the Aegean Sea early. Archaeological evidence of agriculture, livestock and ceramics appear in fact between 7000 and 6700 cal BC on the Greek islands and the Peloponnese, especially at Franchthi cave (Perlès, 2001, 2009). This corresponds to occupation levels that contain evidence of domesticated species, both animal and plant, and some blades made by pressure technique, though the settlement pattern and the dominant economic practices are similar to those of the previous Mesolithic groups. Brought to light at a time when the Neolithic of Western Anatolia was largely unknown, these indications have been used to develop a Neolithic model in which the Middle East's contribution is limited to domesticated species, while the cultural foundations were fully developed on the European continent, in southern and central Greece, before spreading to the rest of the Balkans and the shores of the Adriatic. The reliability of this data and interpretations is, however, disputed by some (Reingruber, 2011). The corresponding levels at Argissa or Franchthi are very limited in horizontal extent and it cannot be excluded that they correspond to mixtures of both Mesolithic and Neolithic layers.

It is undoubtedly around 6400 cal BC that the Neolithic began on the European continent, with the construction of the village of Hoca Çesme, on the Aegean coast of Thracian Turkey. The material culture discovered shows that the occupants of this site probably originate from the Anatolian plateau. The ceramics (Karul, Bertram, 2005), stone tools, bone industry and female statuettes all represent a well-known material culture from the Anatolian Plateau (Özdoğan, 1997). These early Neolithic groups came with their domesticated animals and cereals, but oddly they did not construct rectangular buildings in use at that time in Anatolia. The three buildings unearthed are perfectly circular huts, with a diameter of approximately 4.5 m, constructed with posts inserted in the rock. The site is bounded by a wall of stone. This first population wave is still poorly known because the material culture rarely enables archaeologists to distinguish it from the following phases. Its main characteristic is monochrome red pottery and the absence of painted ceramics which, given the extreme rarity (approximately 3 to 5 %) of painted pottery in the later horizons, can make it hard to assign these artifacts to one phase or the next (Krauss, 2011). The recurrence of these ceramics along with other more discrete artifacts such as vertically perforated buttons, not only at Hoca Çesme but also Koprivec and Krainici in neighboring Bulgaria, Grncarica in Republic of Macedonia (Kanzurova, Zdravkovski, 2011) and at Sidari on the island of Corfu in north-western Greece (Berger *et al.*, 2014), make a case for the reality of this phase, which remains poorly known. None of these sites has rectangular architecture. The site of Sidari on Corfu has abundant fragments of daub or cob, but no indication of corresponding architecture.

This first foray was followed closely by a second wave around 6400–6200 BC, this time characterized by rectangular buildings. A series of villages is located in the extreme southeast of the Balkans, Turkish Thrace (Asagi Pinar), Bulgaria (Kovačevo) and in Greek Macedonia (Mavropigi). They have been produced by societies considered to be fully Neolithic because they practice agriculture and animal husbandry, produce ceramic containers and make polished stone tools. The similarities of their material culture with the sites of eastern central Anatolia such as Tepecik-Çiftlik and Köşk Höyük suggest that they might be the product of a new wave of migration, probably caused by the aridification of Anatolia (Özdoğan, 2011). Like the Anatolian communities, their tools are manufactured from imported materials with a homogeneous texture and appearance, requiring the implementation of complex technologies (pressure blade technique, polishing, etc.). The buildings are delimited by a rectangular foundation trench, wherein are located the posts. The walls are made of wattle and daub and it is common for floors to be lime-covered. The proportions and dimensions can vary, depending probably on the internal architecture. At Kovačevo the building is 16.5 × 10 m (Lichardus-Itten, 2012) and is divided by a longitudinal inner wall, producing

a narrow shed (figure 5). Each building includes an oven, generally placed alongside a wall. As in Anatolia and Mesopotamia, the houses are regularly rebuilt in the same place, which leads to sediment accumulations creating artificial hills or tells. Therefore, the earliest phases of these villages are generally the least accessible and it is the more recent phases, dated to the 6th and early 5th millennium, which are well documented. These early villages spread quickly in all the Western Balkans. From 6000 cal BC approximately (Karanovo Phase I), they cover the whole of Bulgaria, Thrace, Macedonia and Thessaly. The large number of villages and the speed of their establishment are probably related to a large population that we imagine arriving from Asian Turkey.

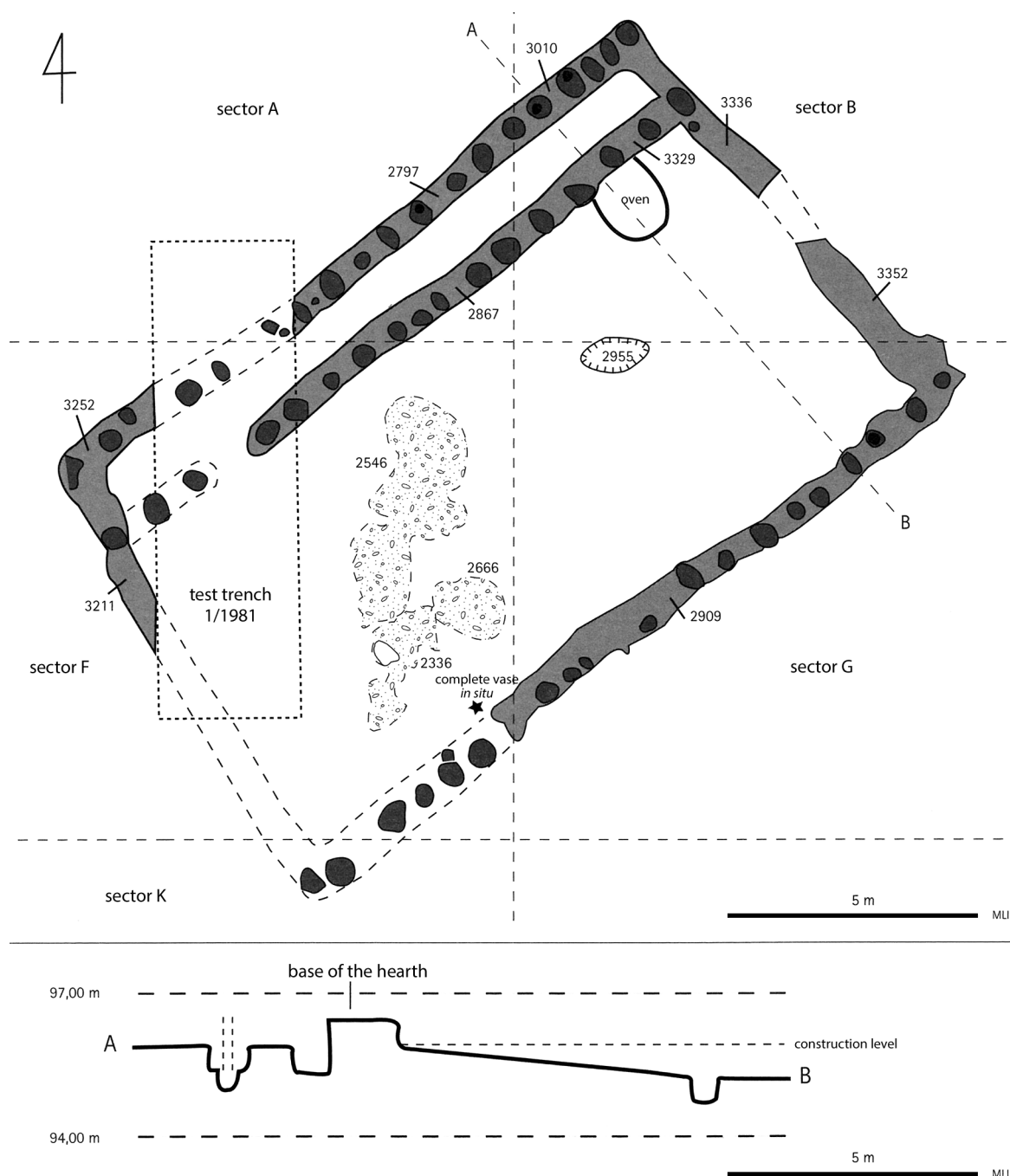


Figure 5 - Plan and section of the house 3383 at Kovačevo (Bulgaria), one of the very first villages of the European Neolithic, around 6400-6000 cal BC (after Lichardus-Itten, 2012).

Beyond the core area, the spread of the Neolithic household is interrupted and uneven. This is not really reflected in the documentation because researchers, following Childe, have chosen to focus almost exclusively on the economic aspects of the Neolithic. Studies of this period have until now focused almost solely on the diffusion of the subsistence economy, and have considered as just so many reinventions the more or less successful attempts to transfer a village society model to areas that do not meet weather and soil conditions for the reproduction of a village lifestyle similar to that bordering the Black Sea.

2 - The first Neolithic societies and the northern European environment

A - The spread of the Neolithic to non-Mediterranean environments

At the beginning of the 6th millennium the distribution of tells is strictly limited to the lower plain of the Danube, where the climate is Mediterranean, and to the north of Greece. Beyond this climatic limit, the Neolithic is also noticeable, but it is first manifested in iconic objects before being materialized in technology, economy or forms of habitations. In the immediate periphery of the settlement area of the first tells, the gorge of the Iron Gates which sees the Danube leave the Pannonian plains to reach the Black Sea yields a series of sites which are all examples of these successive stages of the Neolithic. The oldest are Vlasač on the Serbian bank and Schela Cladovei on the opposite bank in Romania. These sites are occupied from the Mesolithic, well before the arrival of the first Neolithic communities on the European shores of the Aegean Sea or the Black Sea, and thus reflect the characteristics of Aboriginal communities before the time of contact (Radovanović, 1996). The first impacts of the Neolithic, towards 6200-5900 BC, occur on these sites (particularly in Lepenski Vir and Padina) in several forms: the application to the floors of the traditional trapezoidal huts of a similar coating to that of Neolithic houses, the production of a painted pottery type called Starčevo, and the appearance of polished stone axes and long honey-coloured flint celts of so-called Balkan flint (Borić, 2002; Borić, Dimitrijević, 2007). It is only during the succeeding phase, Lepenski Vir III, that these groups will raise animals and practice agriculture. The dissemination of the emblems of a new lifestyle have preceded the actual practice of a new economy.

After 5900 BC, the signs of the Neolithic way of life spread beyond the Iron Gates. In less than two centuries, tens of Starčevo and Körös sites cover almost all of the Pannonian plain, bounded by the Carpathian Mountains to the east and north, by the first Alpine foothills to the west and by the Dinaric chain to the south. The occupants of the Pannonian sites use the same ceramics as in the lower valley of the Danube, are supplied from the same sources of honey-coloured flint and obsidian, and raise animals, but they do not raise tells. In addition, the few rectangular houses known from Starčevo and Körös contexts in the Pannonian Plain, are rare and smaller than those of the Lower Danube tells. The largest measure only 3 × 2.5 m (barely larger than the Mesolithic huts of the Iron Gates). They are built, as in the Lower Danube, on posts with walls of wattle. Early Neolithic sites of the Pannonian Plain frequently have large pits that are several square meters in size with relatively flat bottoms, surrounded by posts in the ground and in which an oven was built (Minichreiter, 2001). These pits were often interpreted as sunken huts, but also sometimes as the place where specialized activities took place, sheltered by the semi-subterranean pit. The scarcity of rectangular houses, their small size and the presence of these depressions that could have served as habitations indicate that the house model imported from Anatolia and implanted in the lower valley of the Danube, was not suited to the environment of the Pannonian Plain. This

area is isolated from the Mediterranean climate of the shores of the Black Sea by the Carpathian Mountains and the Balkan houses were probably not technically able to withstand the harsh winters and snowfall of a more continental climate. Despite these difficulties, the occupants of the Pannonian Plain do not seem to have sought to develop an alternative residential model.

B - The Linear Pottery culture alternative

Not until 5500 cal BC do we see a different kind of building more suited to the climatic conditions of Central Europe (Bánffy, 2013). These buildings are also built using posts, but they differ Mediterranean buildings by setting up rows of posts within the internal space (figure 6), thereby supporting a gabled roof more suitable for snow. This break is certainly not only architectural. It occurs in the most peripheral area of the Pannonian Plain, beyond Lake Balaton, in an area where the Neolithic settlement was episodic and where social control would be less pronounced. The builders of these new homes quickly distinguish themselves from the Körös and Starčevo traditions. They abandon the honey-coloured flint imported from Bulgaria, stop painting their ceramics, and most significantly no longer manufacture anthropomorphic or zoomorphic statuettes. They continue to favor flint that is fine enough to produce blades and still produce fine ceramics that are carefully decorated, but the technical knowledge is reduced from the levels seen in the Balkan communities. The values are not the same and this break will not be restored or reestablished. It will enable these groups called *Linearbandkeramik* in German (LBK) or Linear Pottery culture (named for the linear incised decoration on their pottery) to rapidly spread throughout the northern Alps. After finalizing the new house model around 5400-5300 cal BC (Coudart, 1998), they will take less than three centuries to reach the shores of the Baltic Sea in the north and those of the English Channel to the west. They will in turn totally abandon the territories already occupied by the Körös and Starčevo communities.

Whether the product of settlers or local people, the Starčevo-Körös Neolithic of the Pannonian plains and the LBK Neolithic of the German-Polish plains constitute adaptations of the Balkan model to soil conditions that are different from those of the Mediterranean. The rapid expansion of Neolithic LBK groups across the plains of northern Europe shows that this adaptation was completely successful. Yet despite this success, the model of society represented by the Linear Band culture will be supplanted in its area of origin, from 5200 cal BC, by the Balkan model. From 5200 cal BC, Neolithic groups in the Pannonian plain begin to construct tells, similar to those existing for the 6th millennium in the lower Danube plain. The reasons for this expansion of tells outside of their original settlement area is not very clear. It coincides with a renewal of material culture, first perceptible in the most southern parts of the Pannonian Plain, now known as the Vinča culture. In areas where the Linear Band groups originate like Transdanubia and the Alföld plain, in the neighboring Starčevo and Körös areas, and also in the north-Carpathian area, Slovakia, Moravia and southern Poland, there is an archaeological culture that develops called Lengyel which is a local transcription of the Vinča culture of south-Balkan origin. It is distinguished by the absence of tells and the decoration of its ceramics, but also resembles the Vinča culture in the ceramic forms used, by the adoption of copper metallurgy, by the use of pressure blade techniques on obsidian and honey-coloured flint, by constructing houses on foundation trenches, and by abandoning cemeteries in favor of individual burials associated with houses.

The characteristics of the Lengyel culture certainly show that it is not the result of a new migration from the South Balkan region, but also that the model upon which it is constructed is the same one that prevailed in the first regions to be neolithized and therefore constitutes the abandonment of the Linear Band model. The differences in the decoration of the ceramics demonstrate the absence of any filiation with neighboring populations. The absence of tells can probably



Figure 6 - Plan of the Linear Pottery culture village of Bischoffsheim (Bas-Rhin, Alsace, France), around 5200-5000 cal BC (after Lefranc, 2014).

be explained by the necessity for regular crop rotation and therefore the regular displacement of houses. The similarities are structural and reflect shared values, while the Linear Band groups represent a break from the Balkan model.

C - The expansion of tell architecture

The groups remained in the Pannonian Plain maintained a close relationship with the communities of the Lower Danube. Around 5200 cal BC, they finally started to construct tells, but their architectural model did not change. Houses are still constructed from posts arranged in a linear fashion only along the walls. Construction techniques have, however, become more efficient as shown for example in the use of boards (figure 7) at Crkvine, Serbia (Crnobrja, 2012). The houses are also smaller than their Mediterranean counterparts. The average dimensions are around 10 × 5 m, while the first houses of the European Neolithic were generally 15 × 10 m. These architectural aspects are still insufficiently studied, even though they certainly played a leading role in the development of these Neolithic societies. Nevertheless, the adoption of a tell architecture is certainly the culmination of centuries of close contact between the Pannonian communities and communities in the Lower Danube. The material culture of the communities bordering the Black Sea reflects their growing prosperity and it is this wealth that benefits their neighbors. The 5200-4500 cal BC period represents the culmination of these Neolithic societies. The ceramics reflect an accomplished technical mastery which presumes the existence of specialized potters, and the refined decor is at the same level as the technical production. The chipped stone industry continues to be systematically based on imported materials, obsidian and honey-coloured flint, knapped into standardized blade supports using pressure or indirect percussion. Imports also include shells, alabaster and the first objects made of native or smelted copper. Many products, including decorative objects, the bone industry and others, testify to the almost systematic intervention of craft specialists in the production circuit. This society is characterized by the systematic use of objects for which the production requires the implementation of complex technologies, and / or are manufactured with materials that are difficult to obtain.

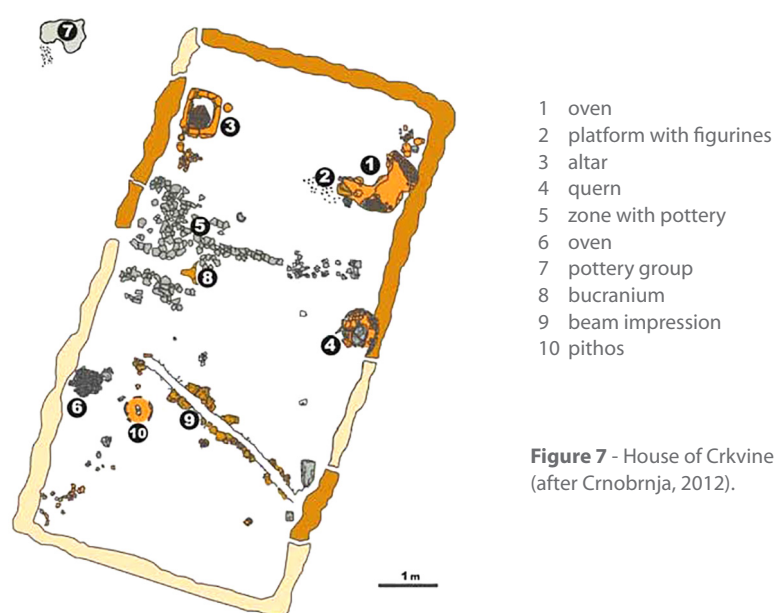


Figure 7 - House of Crkvine in Serbia, around 4800-4600 cal BC (after Crnobrja, 2012).

The collective nature of the supply of these objects suggests that we should consider these wealthy societies as egalitarian, but we would need to conduct a comparative study of the material culture in each household within a tell. Some tells contain up to 200 houses, and therefore this type of study should be possible but the available data are too fragmentary to do it successfully for the time being. We are therefore limited to anecdotal evidence, and we are unable to derive a general model. The best published houses, those of Crkvine in Serbia (Crnobrja *et al.*, 2009), of Herpály (Kalicz *et al.*, 2011) and Polgár-Csőszhalom in Hungary (Raczky *et al.*, 2007), have two or three rooms, and sometimes a first story (figure 8). The floors are coated with lime. The walls are also covered with lime and it is possible sometimes to identify fragments of geometric decoration similar to those adorning the pottery. Each house contains an oven and a hearth, and a device to grind grain. A kind of sink is interpreted as a possible altar. The inventory of household objects always includes a bucrane and small anthropomorphic and zoomorphic statuettes. The range of ceramics includes vessels for storage, cooking and presentation of food. Tools include the knapped stone industry, polished axes and bone industry. Personal ornaments and decorations are always present. Although the quality of some of the products implies the existence of craft specialists, the few houses that are published show no specialized activity areas. It is not possible to say whether these activities took place in other houses, in outdoor areas or on other sites.



Figure 8 - Houses from the Herpály tell, in Hungary, around 5000-4500 cal BC (after Kalicz *et al.*, 2011).

3 - The Mediterranean expansion

A - Early Neolithic evidence on the shores of the Mediterranean

The cultural character of the Neolithic is probably more visible, but also more complex, in the Mediterranean. This Neolithic current is called Impressa-Cardial based on the ceramic style. The decor is characterized by the exclusive use of impression and incision, using in particular the Cardium type of shell. This pottery appears around 6000 cal BC on the western and eastern shores of the Adriatic Sea and then accompanies the distribution of domestic species in the western Mediterranean. The Impressa-Cardial current is therefore considered to be the origin of the development of Neolithic societies in the western Mediterranean and its margins. Its spread was extremely fast. From Greece, the distribution of Impressa/Cardial ware had reached southern Italy (Sicily, Apulia, Calabria) around 6000 cal BC, then skirted the west of the peninsula to reach the Gulf of Genoa and the south of France by 5800 cal BC, and the Spanish and Portuguese coasts by 5600-5400 cal BC.

Unlike what was observed in the Pannonian Plain and the German-Polish plain, the origin of this cultural current is almost certainly not a phenomenon of imitation / transcription of Balkan village society. It is possible in fact that it is related to the first wave of the European Neolithic, the so-called monochrome ceramics which are observed at Hoca Çeşme, Koprivec or Grncarica. The origins of the current that conveys the first Neolithic to the northern coasts of the Mediterranean may be in this horizon of monochrome ceramics. The oldest archaeological evidence dates to 6050-5960 cal BC and is located on the Greek island of Corfu where the corresponding layer overlies a monochrome ceramic layer dated to 6450-6220 cal BC (Berger *et al.*, 2014). It is therefore possible that the first ceramics on the shores of the Adriatic and the western Mediterranean originated in these monochrome ceramics, marking a Neolithic expansion preceding that of the Balkan villages.

Nonetheless, the oldest Impressa sites, those in southeast Italy (Puglia and Basilicata), correspond to the image of fully developed Neolithic societies with an agropastoralist type of economy. Besides the fact that their livelihoods depend heavily on the exploitation of domestic animals and plant species, their houses express clear sedentary characteristics, or at least a marked permanence. The sites in these regions are delimited by an open circular ditch, of which many examples are known (in Passo di Corvo and Coppa Nevigata in particular), or by stone wall enclosures like at Trasano. At Torre Sabea, ditches filled with stones may correspond to the establishment of such an enclosure. The enclosed area includes many storage structures, and elaborate hearths and ovens. Probably the most remarkable element is the hearth packed with heated stones. These features are to become very common throughout the Mediterranean Neolithic and later periods, and are most reminiscent of the types of hearths known from earlier European Mesolithic contexts.

The buildings are on the other hand poorly preserved. Based on the available ground plans, they seem to be very diverse both in their form and their construction methods, but this is undoubtedly reinforced by the reduced potential for archaeological observation and the diachronic nature of the archaeological record. Many of the buildings identified on Impressa sites in southeast Italy indeed seem to date from a later phase of occupation wherein the material culture presents similarities with that of the Balkan villages. Only the house at the site of Favella can be dated to the earliest phase of the Impressa culture (Tin  , 2009). According to the excavators, the building was of post in ground construction, though the post packing has not been identified, with earthen walls. It was rectangular in shape with an apse on one end, but this has essentially been inferred from the analysis of the distribution of daub elements, not from the analysis of the features *in situ*.

The remains of walls have been partially identified on other sites and seem to outline rectangular or apse house plans. At Ripa Tetta, buildings are built on a quadrangular foundation trench, but their early dates are not certain. At Passo di Corvo, a house plan that is very partial presents an apse perhaps, but it is the product of a later phase of the site's occupation (Tin , 1983). Elevations appear to be based on a footing made of stones among which one can make out the beginning of an apse and a portion of a straight wall. On sites with curvilinear trenches, each of the spaces defined by the trench appears to contain only one building.

The Impressa sites northeast of the Adriatic coast in Dalmatia have houses with similar characteristics (Podrug, 2013). The forms of the buildings are just as difficult to reconstruct, and excavators generally propose oval or circular house plans. The boundaries of the house are sometimes delimited by a trench like at the site of Smil    (Batovi , 1966).

This type of household reflects a permanent occupation of the territory and groups that are fully engaged in an agro-pastoral economy. Their origin, however, is unclear. The similarities in cooking practices and the morphology of the pottery which contain features of the monochrome ceramics, or the delimitation of the household by a trench-fence, in a manner similar to the Hoca    me stone wall, are in favor of an Eastern origin for these populations. The use of stone in the function of the hearths is on the other hand a sign of possible affiliation with the Mesolithic populations that are poorly known in southern Italy.

B - The appearance of rectangular buildings in Italy and on the eastern shores of the Adriatic

Starting around 5500 cal BC, the architectural record is less ambiguous. During an early phase, roughly from 5600-5300 cal BC, most of the building plans have one end in the form of an apse. After 5300, strictly rectangular shapes dominate.

At Catignano (Abruzzo), a central Italian site occupied around 5500-5300 cal BC, the two rectangular buildings end in apses (figure 9) and are associated with polished and painted ceramics, which succeeds the Impressa ware in this region (Tozzi, 2001).

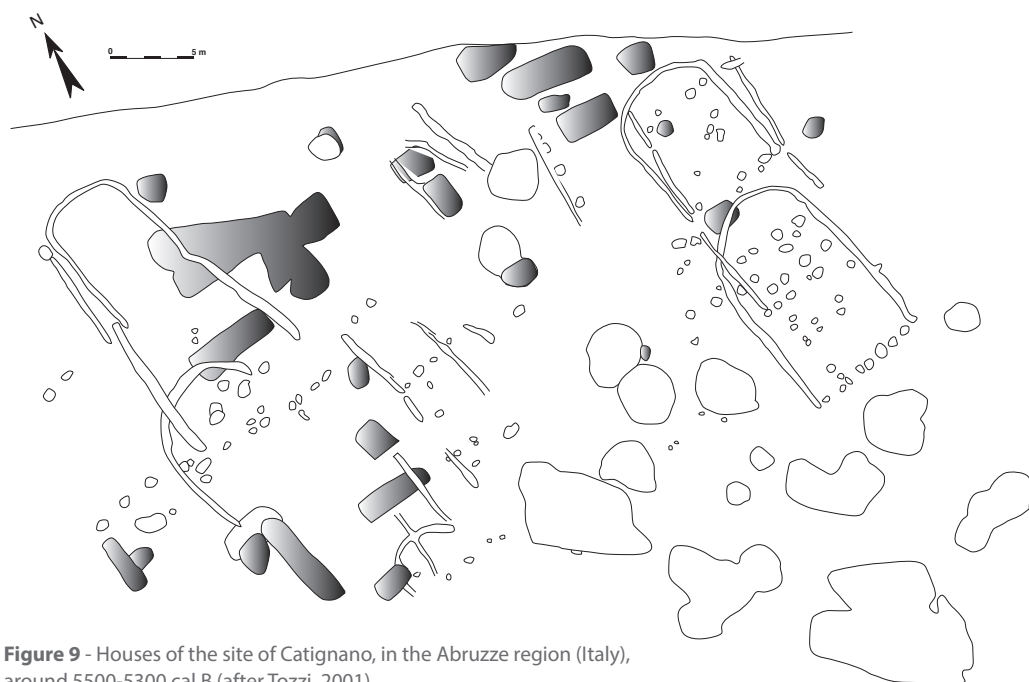


Figure 9 - Houses of the site of Catignano, in the Abruzzo region (Italy), around 5500-5300 cal B (after Tozzi, 2001).

In central Italy, the rise of the water level of Lake Bracciano, near Rome, preserved in outstanding detail the village of Marmotta (dated by dendrochronology to 5690-5230 BCE). The buildings are of wooden architecture but built on stone bases and with extensive use of earth for cladding the floors and walls. The plans are difficult to interpret but appear to consist of short rectangular buildings (6-8 m long), aligned in rows. This would be the oldest and the best example of the diffusion westward of rectangular domestic architecture. This diffusion is accompanied by a profound renewal of the material culture (Fugazzola Delpino *et al.*, 1993). The Impressa-Cardial ceramics are still present, but they are in a minority. The majority of assemblages consist of a fine thin pottery, sometimes painted or incised. Obsidian, whose presence was anecdotal in Impressa villages, makes up 6% of the stone tool industry and excavators have also noted the presence of a gray-blond flint of unknown provenance.

In northern Italy too, the first rectangular building constructions appear along with the polished surface ceramics, complex vessel shapes and geometric decorations, of the Fiorano type. This is the case on the site of Fornace Gatelli in Lugo di Romagna, Emilia-Romagna (Steffè, 1996). This site, dated by radiocarbon to the interval 5284-4949 cal BC, is exceptional for its state of conservation. Destroyed by fire, it was then covered by extremely thick alluvial deposits (14 m), which have remarkably preserved the site. It consists of two small rectangular buildings (10 × 7 m) located behind a small ditch and a double palisade (figure 10). The best preserved of the two buildings presents wattle and daub architecture. The only posts identified are located in the inner area and probably correspond to a feature related to the central hearth. The floor consists of a layer of clay 10 cm thick. As in the Balkan villages, the internal space is divided in two parts (one third and two thirds) by an internal partition. The smaller room was used for storage (it is here that were found most of the ceramic vessels), while the domestic area was in the larger room. Outside the building, near the southeast corner, there was an excavated silo. The ceramics are related to the Fiorano culture, which is the first phase of the development of ceramics with polished surfaces and geometric patterns in northern Italy. The pottery from Fornace Gatelli has relatively complex shapes (drinking vessels with marked shoulders, necked vases), polished surfaces and ornamentation of incised chevrons.

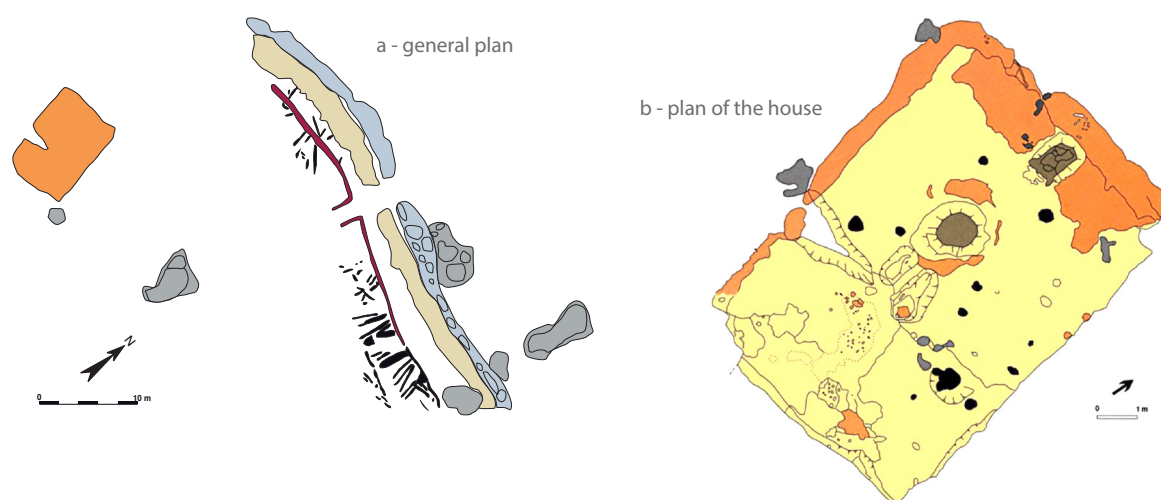


Figure 10 - House and ditch of Fornace Gatelli, at Lugo di Romagna, in Emilia-Romagna (Italy), around 5300-4950 cal BC (after Degasperis *et al.*, 1998).

At Lugo di Grezzana (Verona, Veneto) a series of aligned rectangular buildings dating from the 2nd half of the 6th millennium (5300-5050 cal BC) was identified thanks to the burial of the site by slope deposits (Cavulli *et al.*, 2015). This allowed the preservation of the Neolithic occupation level at the surface of which were identified six sandy loam rectangles that were almost sterile, which were certainly the floors of six buildings measuring 7 to 8 m in length and 3.5 m in width, parallel to each other. Each of these buildings included one or two hearths, one in a central position. The ceramics are attributable to the Vhò group, an archaeological culture that has some forms showing Impressa origins, but also includes Fiorano style cups.

The newer buildings, dating from the 5th millennium, all present rectangular plans, including the best known examples of Quadrato di Torre Spacata near Rome (Anzidei, Carboni, 1995), Botteghino in Tuscany (Mazzieri, Dal Santo, 2007) and le Mose and San Andrea di Travo (figure 11) in Emilia Romagna (Bernabò Brea *et al.*, 2000, 2003; Becching *et al.*, 2009). These houses may be based on load bearing posts, as in Botteghino, or constructed on foundation trenches.

The emergence and development of rectangular architecture in Italy occurs concomitantly with a renewal of material culture, integrating features similar to those of the Balkan villages, such as the use of obsidian, pressure knapping techniques, and the production of fine ceramics with polished walls decorated with geometric patterns that are painted or incised. In Bosnia and Dalmatia, the sequence appears to be the same. The first rectangular buildings appear at the end of the Early Neolithic, around 5800-5600 cal BC, in particular at Crno Vrilo (Podrug, 2013), and the material culture of the occupants show the same tendencies towards an increase in fine decorated ceramics with geometric patterns, the use of obsidian and pressure knapping, compared to older sites like Smilčić. These trends are fully confirmed by 5300 cal BC, on sites like Danilo (Korošec, 1964), or on the first Bosnian tells such as Okoliste (Hofmann, 2013). The chipped stone industry is now commonly made on obsidian or honey-coloured flint and is in the form of standardized blade and micro-blade blanks made of flint, while the pottery is of very high quality, very fine, with polished surfaces, carefully painted or incised with intricate geometric patterns. The forms are very clearly Balkan in inspiration, which is shown in particular by the appearance of vases with a high pedestal foot.

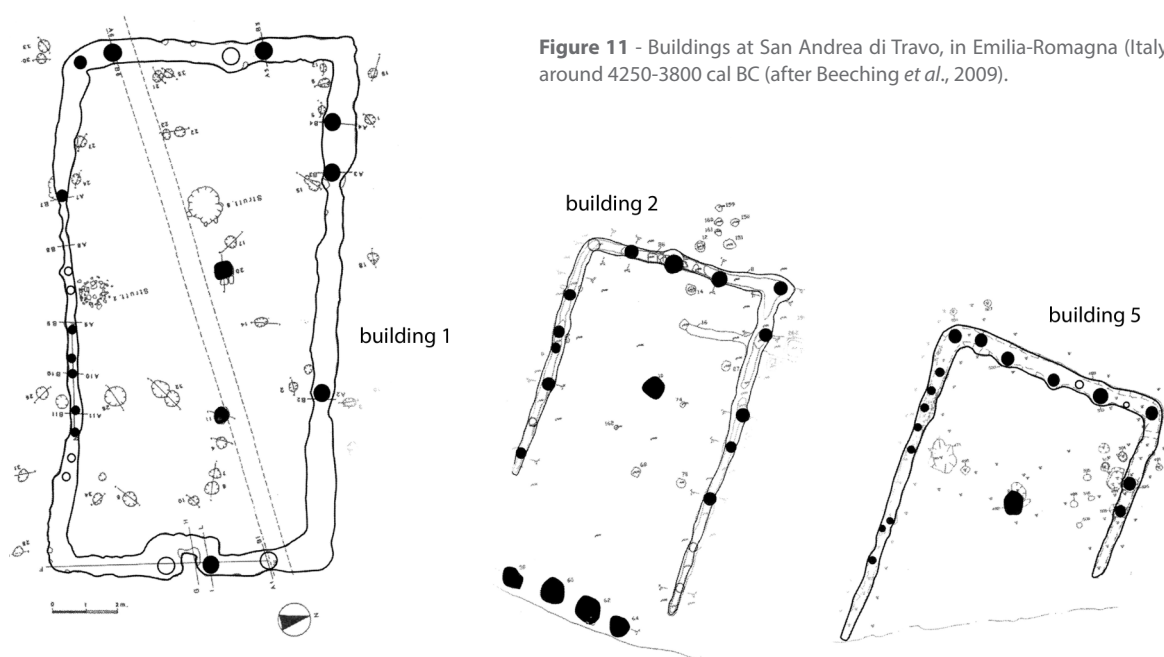


Figure 11 - Buildings at San Andrea di Travo, in Emilia-Romagna (Italy) around 4250-3800 cal BC (after Becching *et al.*, 2009).

This new similarity with the Balkan villages is certainly not the result of an independent development as there are too many similarities, but neither does it mean that this is evidence of a migration. Clues as to cultural continuity abound. The gradual increase of Balkan characteristics within assemblages shows that no rupture marking the influx of a new population can be detected. The continuity of the use of heated stones packing hearths also shows that eating habits were maintained. The phenomenon thus appears to be cultural. Local Neolithic populations adopt the model of Neolithic society that is in vogue in the villages of the Balkans.

C - The French case

The phenomenon is the same in the south of France and its long duration makes it easier to identify. The oldest Neolithic indicator is dated to about 5800 cal BC. It is a small Impressa camp, founded by settlers from the Tyrrhenian coast of central Italy (as shown in the ceramic style and the obsidian they brought with them). This site, Peiro Signado located in Portiragnes, Languedoc, comes in the form of a set of postholes drawing an oval plan 8 m in maximum length and 5 m wide (figure 12) that surrounds a shallow depression filled with a silty sand deposit full of charcoal and rich in artifacts including daub residue (Briois, Manen, 2009). It is not excluded that some of the walls within the oval space were straight as an accumulation of small quartz pebbles draws a straight line. After the pioneer phase with no clear successors, it takes until 5500 cal BC for the Neolithic to become really established. It is now the Cardial, so named because of the shell whose imprint decorates the ceramics. Only two sites of this early Neolithic period yielded traces of architecture (a possible third was identified in a cave). At Baratin (in Courthézon, Provence), between 5380 and 5080 cal BC, several plans of oval buildings have been identified (Sénépart, 2009). The first building is sub-circular in shape (5 × 4 m). It is built with posts and is also bounded by the extension of a pebble area (figure 13). A second building is bounded only by the oval distribution of quartzite pebbles and fragments of sandstone. Its length (at least 5 m) is not properly delimited. It includes several superimposed hearths in the center. A third building was constructed on a nearby molasse bank. It is materialized by a series of postholes dug into the substratum and its dimensions are 10 m long by 4 m wide. On the site of Espéluche in Lalo, in the middle Rhone valley, two sets of post holes, dating from 5269-4996 cal BC, reveal oval plans (Beeching, 2009). The best preserved house measures 11 m long × 7.5 m wide (figure 14). It possessed no hearth, but a feature of this type was excavated 5 m to the west of the building.

Not until the middle of the 5th millennium do rectangular houses make their appearance in the south of France. It is in Auvergne, at Vertaizon, that we find between 4600 and 4300 cal BC the oldest rectangular buildings (Saintot, 2014). The two biggest exceed 10 meters in length and are 5 m wide (figure 15), ending in an apse. They are accompanied by a trapezoidal building 7 m long and four smaller oval buildings, 3 m to 6 m in length. They are all earthfast and the larger ones have preserved their post pads.

Over the following centuries, this diversity of house plans is no longer documented, although the extreme rarity of Middle Neolithic building plans forces us to remain cautious about any interpretations. The more recent buildings seem to prefer the rectangular shape with one or both ends in apses. This is the case of the Blagnat building in Montmeyran, in the middle Rhone valley, dated to about 4000 cal BC (Saintot, 1997). It is 20 m long and 10 m wide and ends in an apse form (figure 16). It is therefore much larger than those of Vertaizon, and larger than the contemporary buildings in northern Italy (such as those at San Andrea Travo, Emilia-Romagna, which are 15 × 7.5 m). Built around the same time but using posts with much smaller diameters, the Roucadour building (Thémines, Lot) seems to respect the rectangular plan (figure 17), but the reduced size of the excavation does not enable us to delimit the full extension of the building, or to determine its shape,

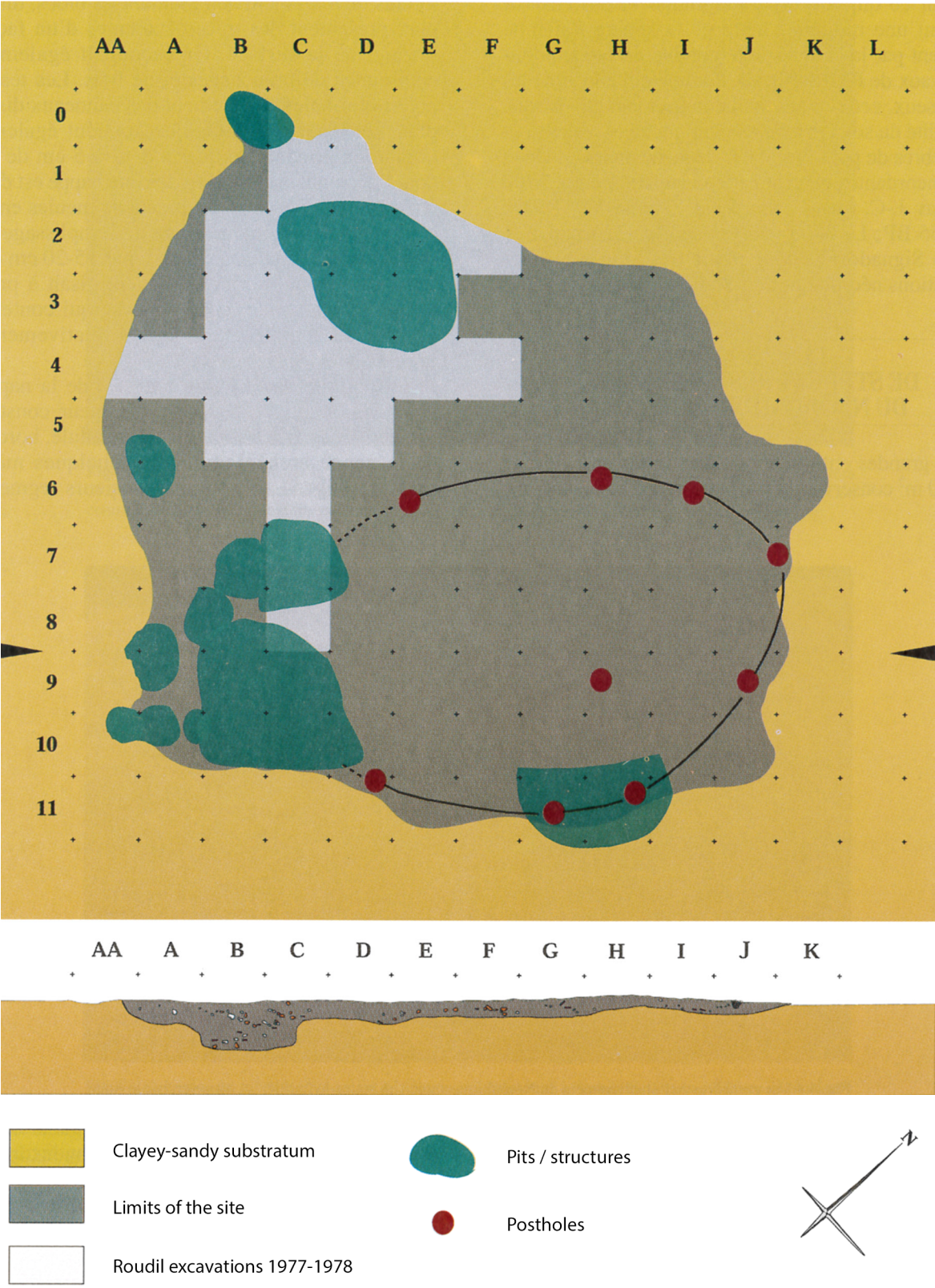


Figure 12 - The oval Impresa building from Peiro Signado, at Portiragnes (Hérault, Occitanie, France), around 5800 cal BC (after Briois, Manen, 2009).

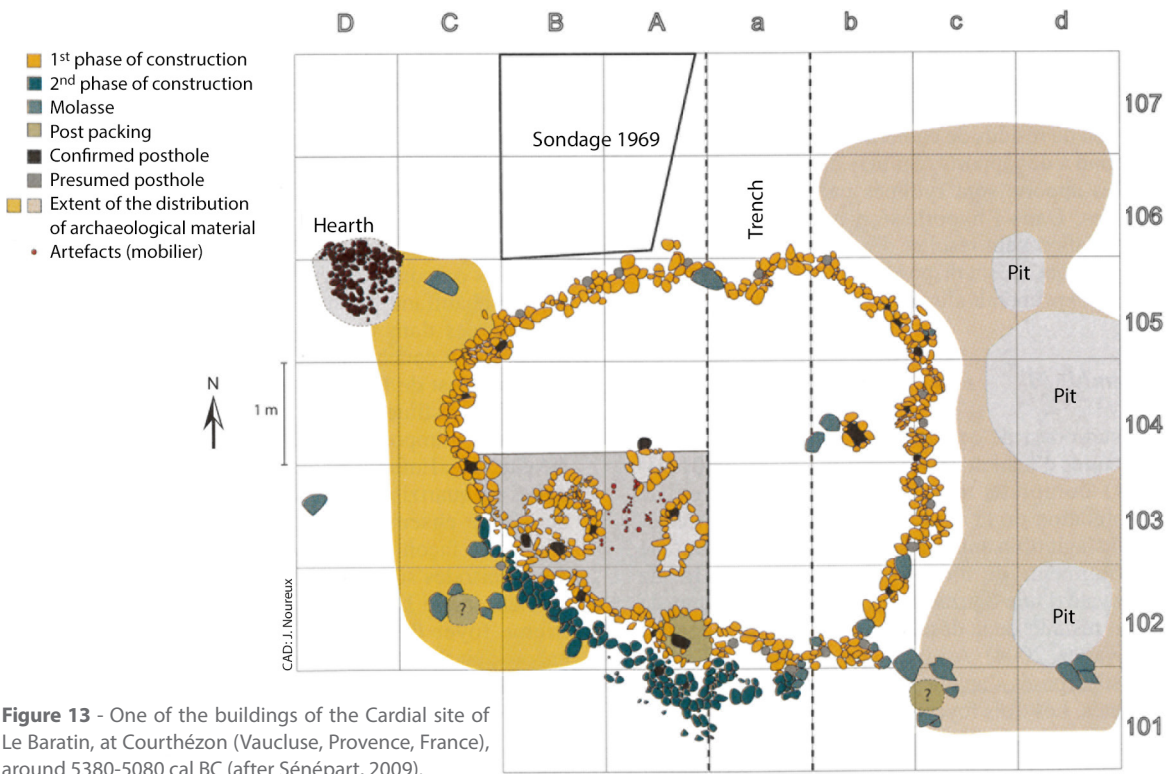


Figure 13 - One of the buildings of the Cardial site of Le Baratin, at Courthézon (Vaucluse, Provence, France), around 5380-5080 cal BC (after Sénépart, 2009).

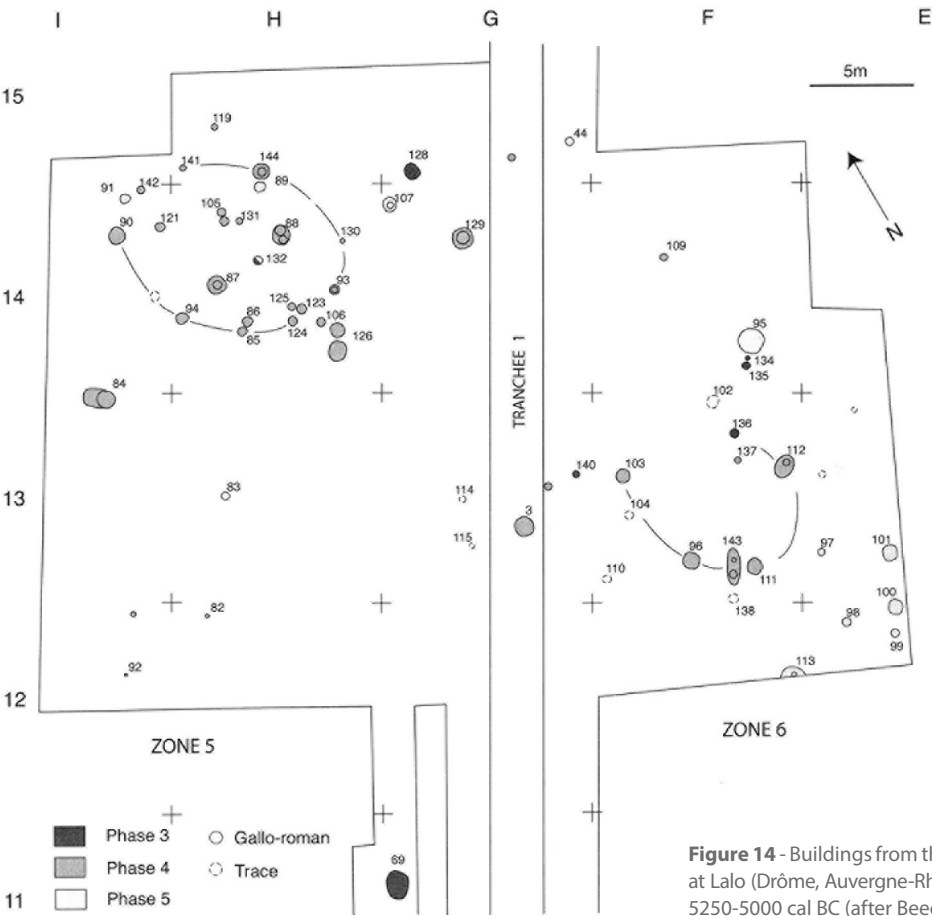


Figure 14 - Buildings from the Cardial site of Espéluche at Lalo (Drôme, Auvergne-Rhône-Alpes, France), around 5250-5000 cal BC (after Beeching, 2009).

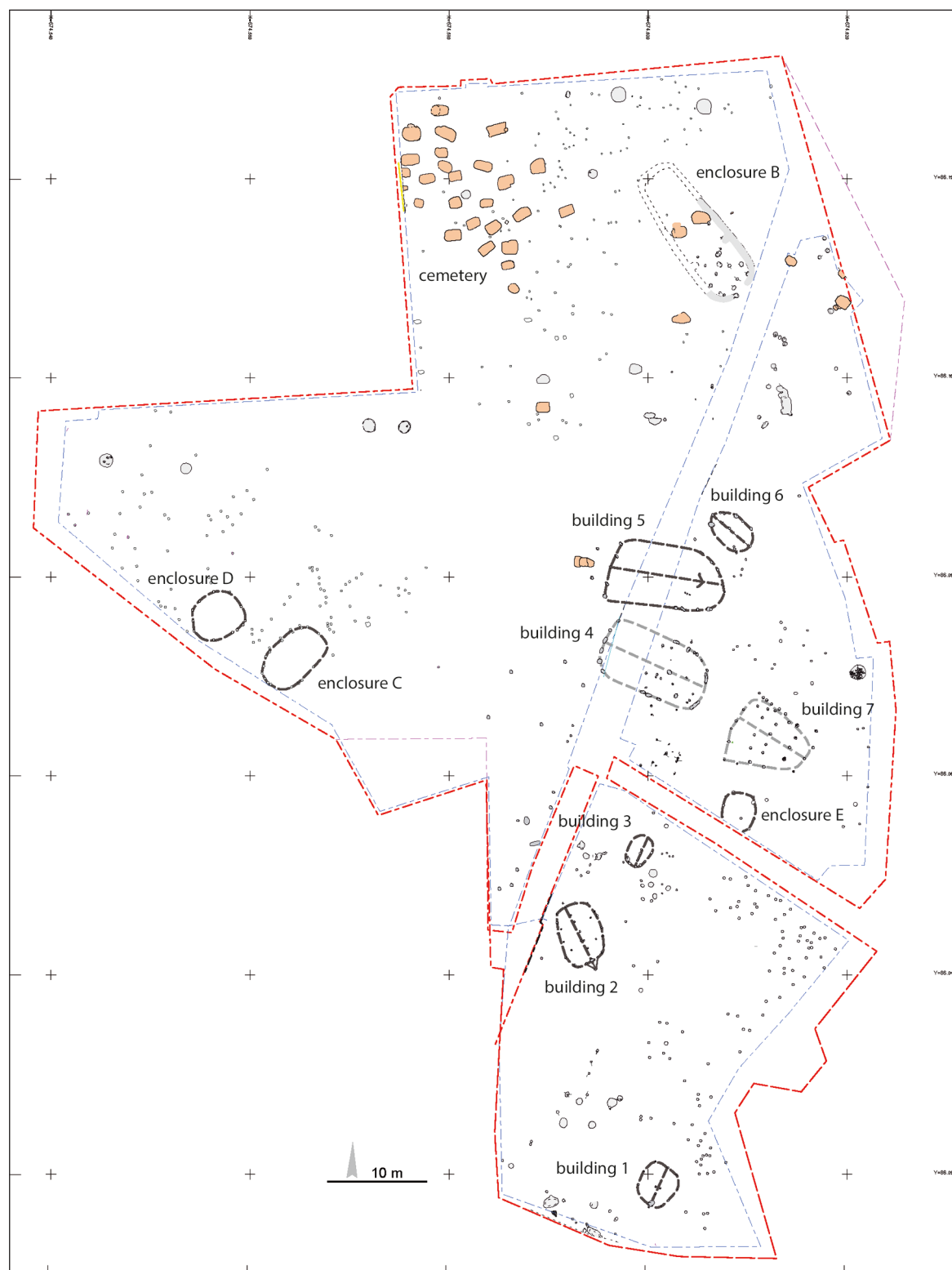


Figure 15 - Buildings from the site of Vertaizon (Puy-de-Dôme, Auvergne-Rhône-Alpes, France), around 4600-4300 cal BC (after Saintot, 2014).

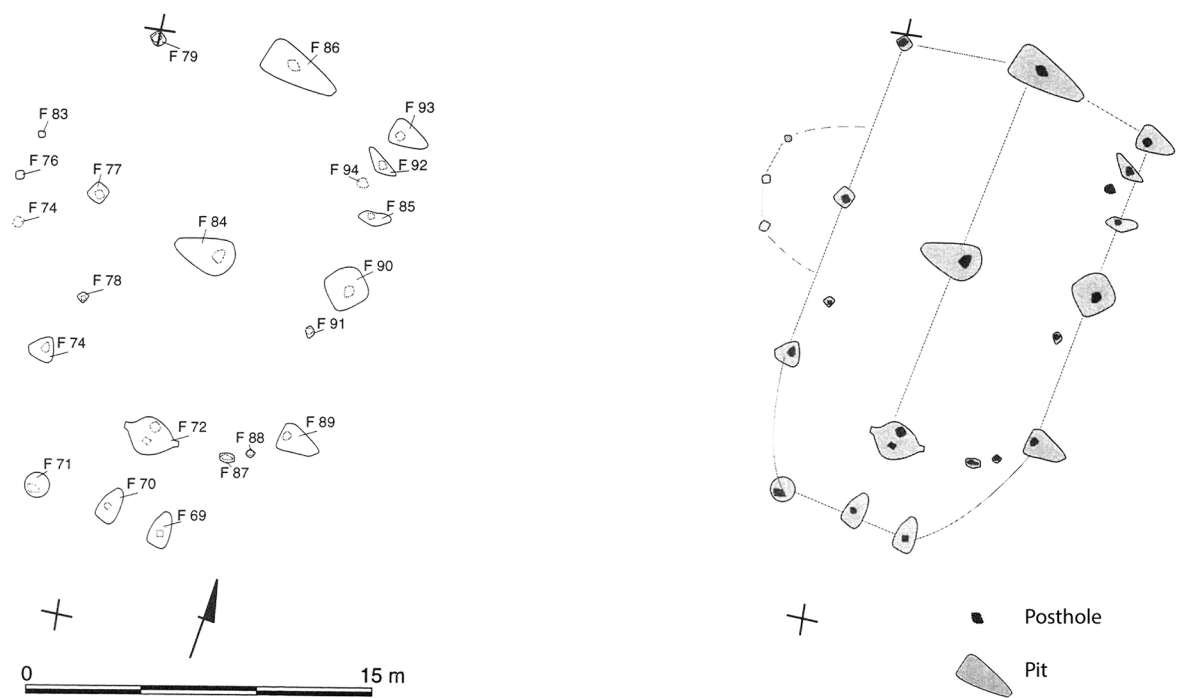


Figure 16 - Buildings from the site of Blagnat, at Montmeyran (Drôme, Auvergne-Rhône-Alpes, France), around 4000 cal BC (after Saintot, 1997; topography: J.-M. Petit, D. Ruf, P. Sarazin, CAD: G. Macabéo).

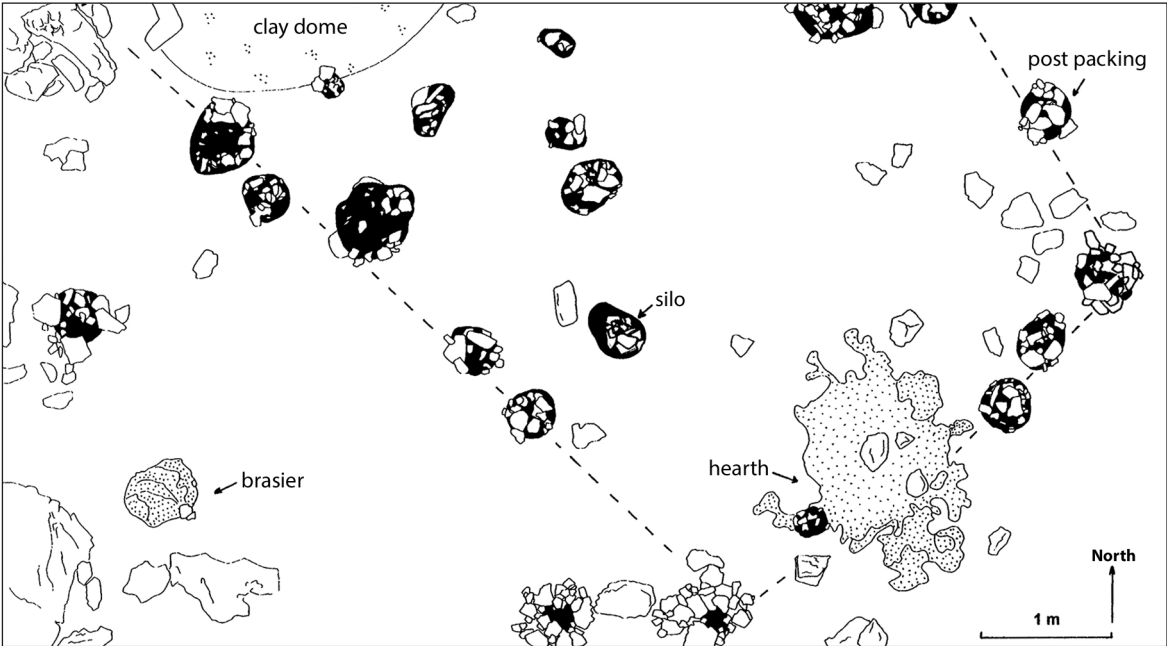


Figure 17 - Buildings from the site of Roucadour at Thémînes (Lot, Occitany, France), around 4000-3800 cal BC (after Gascó, Muller, 2009).

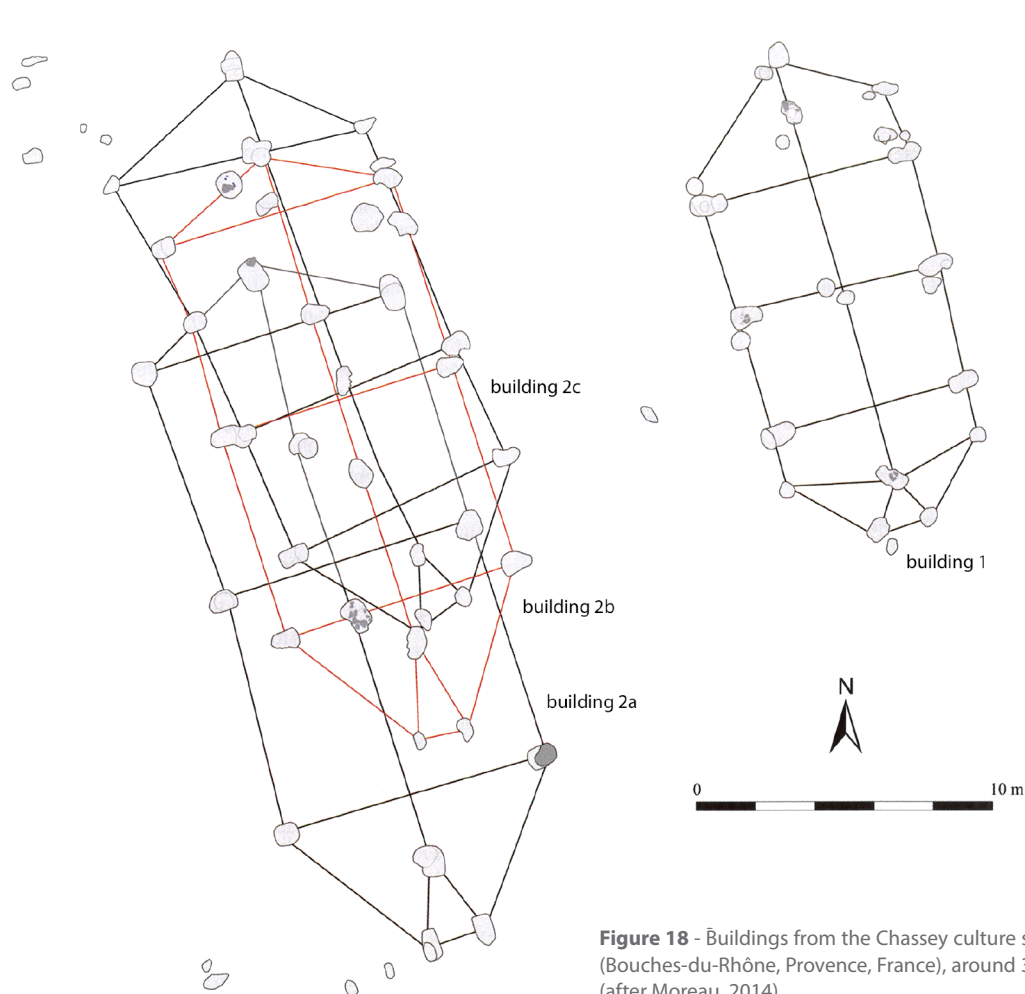


Figure 18 - Buildings from the Chassey culture site of Vernègues (Bouches-du-Rhône, Provence, France), around 3900-3700 cal BC (after Moreau, 2014).

rectangular or with an apse (Gascó, Muller, 2009). It is in any case certainly smaller, but the marginal position of the site in relation to the networks at the time does not allow us to consider it as representative. The buildings recently brought to light at Vernègues, Provence (Moreau, 2014), dated to 3800 cal BC, seem to confirm the trend towards gigantism exemplified by the Blagnat building. They are almost as long and have two apse shaped ends (figure 18). This is not the case of more recent buildings (ca. 3900-3500 cal BC) like those at Champ Madame in Beaumont, Auvergne. These are 11 m long and 8 m wide and have a strictly rectangular shape.

This passage from oval to rectangular house plans was without a doubt progressive taking place at a time of profound renewal of the ceramic traditions and stone industries. The exuberant Cardial and Epicardial decorations disappear after 4700 cal BC, to make way for ceramics with carefully polished surfaces and uniform colors. This continues during the following centuries by with the adoption of some rare forms, decorated plates and vases essentially, the prototypes for which come from the other side of the Alps, in northern Italy. The rest of the repertoire remains in line with local ceramic traditions, using fairly simple spherical forms. It then gradually becomes more complex and from 4000 cal BC onwards presents a range of shapes as extensive as those found in the north of Italy, while the decoration becomes simpler and extends to a greater number of forms. This is actually the same process that which took place in Italy in the Early Neolithic period, whereby the eastern component represented by painted ceramic in the south and Fiorano in the north, gradually replaced the Impressa wares.

The lithic industry experienced a more dramatic renewal. Trade increases at the beginning of the Middle Neolithic, both in the quantity of objects and in the distances involved, and some of these objects are made only to be hoarded. This is particularly the case of large polished stone axes fashioned from green rocks extracted from the Alps and disseminated as far as the British Isles. The populations of southern France also import obsidian blades from the Lipari Islands, southern Italy, and begin to use pressure techniques to knap the honey-coloured Bedoulian flint outcrops of Vaucluse in Provence, and thus obtain the same regular honey-coloured blades as found in northern Italy or the Balkans. In the early Middle Neolithic, before 4200 cal BC, imported objects are still a minority and have a special status, as shown by the fact that they are rarely used and they are frequently part of ritual deposits, found isolated or placed in burials. Probably due to the increased demand, the total volume that is manufactured and distributed then becomes more important. To do this, the craftsmen produce smaller objects, adopt more efficient knapping methods (heating the raw material and changing striking platforms), and change their raw material when the distance to the source is too great or access is too complicated (replacement of Lipari obsidian with Sardinian obsidian, initiate the exploitation of green cinerites from Requistia in the Massif Central). The rule appears to be that the polished axes must be green, and that the flake blanks used for the lithic industry must be standardized and made of obsidian or honey-coloured flint. After 4000 cal BC, this democratization of access to imported items is such that in the better positioned villages within distribution networks, almost all of the chipped stone industry is made of Bedoulian flint from the Vaucluse, regardless of the distance in kilometers between the village and the source.

Three steps can be distinguished within the Neolithic process in the southern half of France. After a first episode of Impressa ware colonization with no apparent successors around 5800 cal BC, the Neolithic manifests itself from around 5500 or 5400 cal BC, by the widespread adoption, all along the Mediterranean coast, of ceramics, the practice of agriculture and the raising of livestock (Binder, 2013). Continuities in the style of arrowheads show that these are indigenous people who incorporate these new practices into their lifestyle (Valdeyron *et al.*, 2013). Farther inland, where the climate is more mixed, evidence for the Neolithic is rarer, more discreet and often later, around 5000 cal BC. In both areas, the adoption of a production economy does not appear to fundamentally change the way of life of local societies, which were already using storage practices during the Mesolithic (Valdeyron, 2013; Verjux, 2014). The environment remains the same, the territories exploited are similar and concentrated in a small radius of a few kilometers around the habitation site, and trade is limited to a few ornaments. The only difference is the increased number of open air sites, but it is questionable to what extent this does not result from the greater visibility of sites for archaeologists due to the presence of ceramics.

No doubt starting around 4900-4800 cal BC, and certainly from 4700 cal BC, the situation changes. Populations of western Europe show signs of fierce social competition. Burial of a few individuals takes on monumental proportions. The larger tombs, burial mounds several meters high, can reach hundreds of meters long. The emblematic objects of village society originating in the Balkans and coming from Italy are imported several hundred kilometers to be placed in tombs or deposited intact, far from any inhabited area. The most dramatic manifestations of these phenomena are visible around the Breton peninsula, the westernmost point of the continent, where the first burial mounds reproduce, as in the rest of the north European plain, the shapes of longhouses and sometimes occupy the same locations as the longhouses of the Linear Band groups, and where indigenous communities have access to the coast, and the ability to produce and export salt. In southern France, these ostentatious manifestations are less spectacular, as if hierarchies were less pronounced there. In the absence of Linear Banded traditions, long barrows are unknown. The mounds are circular and correspond to a later form of the megalithic monuments. They are also significantly

smaller than the circular mounds of the Atlantic seaboard. The preferred form of burial is in a trench or in a burial chest without a mound. The importation of objects emblematic of village society is also evident and relates to a wider range of objects. The large polished greenstone axes from the Alps, the Iberian variscite ornaments and the pedestal vases are now accompanied by etched ceramic plates and spoons and blades made of honey-coloured flint and obsidian. The construction of the first rectangular buildings, including those of Vertaizon, certainly involved this desire for ostentation, because they without doubt are the most obvious sign of the link with village society which spread to Italy and is present beyond the Alps.

This ostentatious phase seems to end at the turn of the 4th millennium. In northern France, there is no longer any trace of contact with village society, not even in the form of any southern stylistic influence. It seems that a new type of society is taking form, a more self-sufficient society in which the domestic unit plays a greater role and where relationships are much more local. In southern France, on the contrary, this is the period of integration into the sphere of village society and the adoption of its rules. Rectangular architecture becomes the norm. In the villages, the collective provisioning becomes the norm relying heavily on imported goods produced by specialized craftsmen (implementation of complex technologies and/or manufactured with imported materials of homogeneous colour and texture). It is the same for the subsistence economy, since the organization of livestock is based on site specialization, which implies an exchange between different pastoralist groups (Bréhard *et al.*, 2010). As in the southeastern Balkans and the Adriatic coast, and then in Italy, this is a society that takes root and which is structured around exchange.

Conclusion

Analysis of the diffusion of Neolithic architecture in Europe requires rethinking the Neolithic process. Considered since Childe's time as a purely economic phenomenon, it has thus far been analyzed only in terms of the spread of agriculture and animal husbandry, as if the concerns of the societies at the time were solely focused on the question of their livelihood. This led archaeologists to amalgamate a number of processes of socio-cultural transformation that were very different from each other while essentializing and opposing concepts of hunter-gatherers and farmers. In this context, the Neolithic was considered complete as soon as communities were practicing agriculture and raising livestock (Dennel, 1985; Zvelebil, 1998). The subsequent development of tools, housing and the subsistence economy was perceived as the "normal" result of the evolution of local Neolithic societies, who either reinvented their own model of the Neolithic (Sherratt, 2006), or as the diffusion of a set of innovations specific to a later period, the Chalcolithic (Lichardus, 1991). These scenarios do not take into account the similarity of the technical, economic and social characteristics of the second Neolithic societies, with those of the older communities from the core area of the Balkans, and were constructed on a lack of knowledge regarding the chronology of those characteristics typically ascribed to the Chalcolithic such as the beginning of milk production, copper metallurgy and craft specialization (Schier, 2014).

If we cease to focus solely on economic data and consider all productions of Mesolithic and Neolithic societies, in particular the household, the diffusion of the Neolithic in Europe appears to reverse these linear models, and is seen as a very long process during which the European communities tried different ways to implement a lifestyle that was considered ideal.

The oldest form of these attempts at neolithisation is the Mediterranean current. This best matches the economic prism privileged since Childe because change takes the form almost exclusively in subsistence. It is indeed a broadening of the spectrum of potential food resources through the adoption of domesticated plant and animal species. For indigenous societies this implies incorporating

new technologies, but in a simple form and without upsetting their lifestyle. Even with ceramics, a few polished axes and small herds, populations continue to exploit small territories where they know all the resources. The most that can be said is that the practice of agriculture implies greater sedentism for at least part of the group. Even houses have circular and oval forms similar to those of the European Mesolithic. It is undoubtedly this flexibility and apparent continuity that explain the very rapid spread of the Neolithic markers along the northern coasts of the Mediterranean. This current probably originates from a first pulse of the Neolithic around 6500 cal BC, which precedes the appearance of village societies and is recognizable by the presence of red monochrome ceramics. To the west of Greece, the diffusion of Neolithic markers can be seen in the spherical forms of ceramics decorated with impressions which rapidly spread along the Mediterranean coast via sea routes. The great distances that were the result of this rapid spread led to the severing of ties with the village societies of the eastern Mediterranean and the development of a particular form of Neolithic society, which ended with the expansion of village societies.

The dominant neolithization model is that of the villagers' world. It is characterized by the importance of the community which takes precedence over the household. The habitat consists of rectangular and quadrangular houses grouped into a village. The economy is organized to generate strong links between individuals and between family units. Procurement is collective and based on a specialization of tasks, thanks to the importation of distant raw materials and the implementation of complex technologies. This partnership model was developed in Central Anatolia during the PPNB and spread during the second half of the seventh millennium to the shores of the Aegean and the southeastern Balkans (Thrace, Macedonia, Thessaly, lower Danube valley) conveyed by massive population displacements. Beyond the core area, the dissemination of this model slows down. In the Pannonian Plain, on the other side of the Iron Gates that separate the lower and middle Danube valleys, diffusion is fast but during the first centuries it only involves the circulation of manufactured goods, animal herds and some cereals, while habitation sites are at best composed of a few isolated small rectangular houses, or indeed pithouses. The data do not enable us to determine if this neolithization of the Pannonian Plain is carried by a colonizing group or if it is the local Mesolithic populations that adopt the emblematic signs of this new type of society. The Pannonian Plain is in any case for several centuries the limit of the expansion of village society and the spread of the Neolithic towards the center of the continent takes an alternative form, that of the Linear Pottery culture. A new phase of expansion is noticeable from 5300-5200 cal BC. It is probably made possible by adapting farming techniques to a wider variety of environments, but is most certainly due to the economic and demographic development of the villages at the heart of this society. The sites of this time, and until about 4500 cal BC, show unprecedented wealth that certainly supported the spread of village society. This expansion, therefore, is probably not the result, or if so only marginally, of a population migration. It is most likely the adoption of a new model of society by neighboring populations. This diffusion is indeed evident in the import and/or imitation of objects considered as markers of village society, and then, in a second phase, by the full adoption of the lifestyle that characterizes village society. This model of society spreads westward to southern France, where it arrives around 4200-4000 cal BC, at the same time as it is being replaced in the Balkans by the Chalcolithic, a model of society based on the exaltation of the richest individuals.

The third form of the Neolithic consists of an alternative model of society to the previous, the Linear Pottery culture. It was developed around 5500 cal BC north of the Pannonian Plain, at a time and in areas where the village model was no longer functional, because of the remoteness and the climatic and environmental conditions that were so different from the shores of the Black sea. This model is characterized by an architecture adapted to the environment of the German-Polish plain, greater flexibility of community organization, village cells reduced in size (at least

initially) and the organization of trade on a smaller scale, that of the micro-region. For Mesolithic communities in northern Europe, the Linear Pottery culture was certainly the archetype of Neolithic society. It was nevertheless replaced around 5200 cal BC, in those same regions where it had taken form, by the village society of Balkan type in the form of the Tisza and Lengyel cultures. Further west and north, its successors were gradually impregnated with the values of local Mesolithic societies, eventually creating new societies like the Michelsberg and Funnel Beaker cultures (TRBK) whose subsistence strategies were more suited to the environmental capacity of northern Europe.

Of the three forms of the Neolithic, the village society model represented the archetype of Neolithic society and this is what explains its success and wide distribution. It is the different characteristics together that make up this model of society that communities wishing to adopt the Neolithic will try to adopt, or adapt to new environments. During the first phase of this process, there is the acquisition or adoption of some of the most iconic elements of the lifestyle of the village societies of southeastern Europe and their use in strategies of ostentatious display and social competition. We observe the distribution of polished axes and adzes among groups that are still considered Mesolithic, and then the appearance of large, fully polished celts, imported over hundreds of kilometers and buried in monumental tombs and in ritual deposits. The predominance of the ox and the axe as motifs in megalithic art, which develops on the western margins of the Neolithic world, is also a sign of this process of attempting to imitate village society by groups that know and practice agriculture and raise livestock. In a second step, which occurs as soon as conditions permit, the Neolithic is no longer limited to a few symbolic elements and the lifestyle of the village societies is implanted into a new territory, where the tools, houses and the subsistence economy become fully aligned with those in force in the oldest neolithicised regions. The start of the second phase is determined by adjusting the technical knowledge to the resources, climate and geology of new territories, and probably also by internal factors in the core zone, such as wealth accumulation, from which it derives its power of attraction and its ability to export the technical expertise required for the development of new territories.

The development of fully agropastoral societies in Europe is not the result of the evolution of the first neolithicised societies, whether Impressa-Cardial or Linear Pottery, but the result of the spread of a societal standard or norm. Faster in their initial expansion, due to their less constraining character, the first Neolithic societies of western Europe had the weakness of being less complete, less perfect from a Neolithic viewpoint, and were prey to increasing social competition and sometimes deadly conflict, which made them less desirable over time. Village society on the other hand had the distinct advantage of extreme coherence.

Within these three types of societies, the household is of variable importance, but is never the central element in the organization of a community. Even within the Linear Pottery culture, where differences between households can be seen within the same village, the autonomy of each domestic unit is limited by respect for community standards and the importance of interaction between the components of the village, and between nearby and complementary villages.

It is ultimately only very late in the Neolithic that the household will grow in importance in the organization of society. Starting around 4100-4000 cal BC in the north of Europe, and from 3700 cal BC along the Mediterranean coast, a new model of society begins to develop that is centered on the exploitation of smaller territories. Although trade does not stop, it covers a smaller range of objects and is carried out on smaller scales. Villages are more independent of each other and households have more autonomy in how they are supplied. This stronger anchor or attachment to the territory is the mark of Neolithic societies that can now be qualified as peasant societies and for whom the household becomes a relevant lens for analysis.

Acknowledgments

I would like to thank Adrian Burke and Claude Chapdelaine for inviting me to participate in the colloquium for which this paper was prepared. It was a great occasion to discover many aspects of Québec archaeology. I also would like to thank Adrian Burke and Nicola Coulthard for the translation and the improvement of the English version of this paper.

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NEOLITHIC HOUSES:

Mediterranean Examples

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To cite this article

Guilaine J., 2016 - Neolithic Houses: Mediterranean Examples, in Chapdelaine C., Burke A., Gernigon K. (eds.), *Household Archaeology – A Transatlantic Comparative Approach*, Proceedings of the International Symposium, October 24-25 2014, Université de Montréal, *P@lethnology*, 8, 182-209.

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Jean GUILAINE

Abstract

In this article I present several different forms of Neolithic and Chalcolithic houses that are found within the Mediterranean basin. In Cyprus, the round form of house appears in the PPNA and has a long lifespan, lasting throughout the PPNB, from the Khirokitian to the Chalcolithic. In south-eastern Italy, subrectangular house plans found in the Early Neolithic sometimes make way for circular or oblong forms during the Chalcolithic such as at Trasano (Laterza culture). In the Midi region of France, houses constructed with stone infrastructures dating to the Final Neolithic-Chalcolithic allow archaeologists to reconstruct lifeways based on the spatial analysis of preserved floors.

In each of these culture areas we can see both continuities and discontinuities in architectural styles. On the other hand, the concept of “household” is harder to study because it requires the archaeologist to define and measure the occupancy of each domestic unit within the village, an element which remains highly speculative given the archaeological data available.

Keywords

Neolithic, Chalcolithic, Household, Mediterranean Sea, Europe, Cyprus, Italy, France.

Introduction

Throughout the three to four millennia which make up the history of the European Neolithic, various types of houses existed, across time and space. These house types utilised various construction materials: earth, stone and brick from the beginning of the Neolithic in the Near-East and the Aegean; wood and wattle and daub in much of Mediterranean and temperate Europe. The design and morphology of these buildings vary across regions, but also over time, within a given cultural sphere. This diversity is a reflection of these societies, their organisation, the way in which they thought about the world and expressed it, their relationship with their environment, their production methods, etc. We also know that the house is a place of socialisation of the individual and a space of integration which reveals the ways of life, the internal relations and even the ideology of its occupants.

In this article, a number of Mediterranean examples of Neolithic houses will be presented. These case studies cover a wide geographic area and are drawn from sites on which I myself have worked: Cyprus in the eastern Mediterranean, Southern Italy in the central Mediterranean, and the South of France for the western Mediterranean (figure 1). Chronologically, these examples will focus on the two extremes of the Neolithic: in Cyprus we will explore structures from the Pre-Pottery Neolithic (9th-7th millennia cal BC); in Southern Italy and France the case studies discussed will focus on houses from the final phase of the Western Neolithic (4th and 3rd millennia cal BC),

whose societies had begun practising copper metalworking. Furthermore, in comparison with the first agricultural communities, these peoples had more advanced techniques at their disposal: yokes for draught animals, the ard, wheeled vehicles, etc. The term Chalcolithic is sometimes used to describe this final stage of the Neolithic.

I will endeavour, however, to avoid being hindered by these choices, and will set each example in a wider geo-cultural and chronological context, in order to broaden the comparative framework.

Beyond the architectural diversity which constitutes the basis of my paper, I will examine several points:

1. the houses' internal structures (where identifiable), and the domestic activities associated with the interior (in particular for the South of France);
2. the nature of abrupt changes in construction, in the context of regional evolutions, which may reveal cultural changes;
3. social perspectives which I will attempt to outline – with caution – in particular based on data from burial contexts. Here I will explore the issue of the human component of “households”, which is at the heart of these conference proceedings.



Figure 1 - Location of the three culture areas mentioned in the paper (CAD: F. Tessier).

1 - The first Neolithic houses in Cyprus

It is impossible to discuss Cyprus, located barely 80 km from the Syrian and Turkish coasts, without placing it in the context of the neighbouring continent because the Neolithic history of the island can only be understood through constant reference to developments in the Levant and Anatolia. Cyprus, from 10 000 cal BC onwards, was in permanent contact with the mainland, and advances towards a Neolithic way of life (i.e. an agricultural society) which appeared in the Levant were more or less immediately adopted on the island. What of the houses? Let us first recall their development in the Levant:

- from ca. 12 000 to 10 000 cal BC, during an Epipalaeolithic phase known as the Natufian, we see the first attempts at sedentarisation in villages with circular, single-celled or semi-circular houses, sometimes dug into hillsides, and with superstructures probably made from perishable materials. Houses found at Mallaha, Israel, were on average 5-7 m in diameter (Valla, 2000).
- Between 10 000 and 8 500 BC, circular or sub-circular houses continued to evolve during the Epipalaeolithic Khiamian period (10 000-9 500 cal BC) and during the Pre-Pottery Neolithic A (PPNA: 9 500-8 500 BC). These houses were sometimes large (from 6 m to 8 m in diameter). They were often built as large pits, the sides of which would be reinforced with stone walls. Interesting observations were made during the recent excavations by F. Abbès in Bal'as, Syria, on the PPNA site of Wadi Tumbaq (figure 2) Abbès notes differences between houses dug shallowly, in which artefacts related to various daily activities (millstones, stone tools, animal bone) were found, and other structures, dug deeper into the ground (1.20 m) which appear to have housed specialised activities, perhaps for use by groups (e.g. a workshop for bead manufacture), or as storage spaces, divided into various recesses (Abbès, 2014). A house found at Mureybet was separated by radial dividing walls and the resulting spaces have been interpreted as silos or granaries. At Jerf-el-Ahmar, a dichotomy also exists between individual houses and buildings for group use. On this site, various types of construction are known to have existed towards the end of the PPNA. Houses have been identified which were sometimes divided into several rooms, constructed at ground level, and which were already rectangular in shape. By contrast, the structures referred to as "community buildings" were larger, circular, and – following a more traditional method – were still dug into the ground to a depth of up to 2.5 m (Stordeur, 2000, 2014) (figure 3). It is during this period that a number of large 'public' buildings were constructed, such as the Tower of Jericho (Palestine) or the monuments of probable ritual vocation at Göbekli Tepe (Turkey), made famous by their megalithic pillars decorated with sculpted animals (Schmidt, 2006) (figure 4).
- from 8 500 to 7 000 cal BC, during the Pre-Pottery Neolithic B (PPNB), buildings were often rectangular in form, and in some cases contained a base which supported a wooden floor (e.g. Cayönü, Turkey). Ritual buildings also adopted these quadrangular forms (e.g. Göbekli Tepe).

In Cyprus, after a few sporadic visits starting around 10 000 cal BC, PPNA groups settled on the island around 9 000 cal BC (figure 5). They cultivated wheat, but also continued to hunt the wild boar introduced onto the island from the mainland a few centuries earlier. These new settlers reproduced continental house types on the island, that is dwellings dug into the ground (e.g. Asprokremnos in Agia Varvara), and sometimes on hillsides (e.g. Klimonas in Ayios Tychonas) with, in this case, a central hearth and possible internal dividing walls. At Klimonas, we also excavated a large community building measuring 10 m in diameter which was dug into the bedrock to a preserved depth of 1 m. This structure contained an earthen wall built in a foundation trench and which was placed against the side of the house pit (figure 6).

We are left with the impression that the individual houses at Klimonas were organised around this central building, which must have had a community function. We believe that this model – a central public building and surrounding houses – is not a Cypriot invention but rather a concept imported by the settlers from the mainland where it has been observed at Jerf-el-Ahmar and Göbekli Tepe.

In the second half of the 9th millennium, on the nearby site of Shillourokambos, the scarce architectural remains consist of postholes, which formed circular huts made from wood and wattle and daub. Two large enclosures have also been dated to this period (8 500-8 000 cal BC).



Figure 2 - Wadi Tumba 3 (Syria) PPNA Building (excavation and photograph: F. Abbès).



Figure 3 - Jerf el Ahmar (Syria). Preceramic Neolithic. Various forms of houses (level II / W) surrounding a communal building dug into the ground. Transitional 10th / 9th millennia (excavations and photograph: D. Stordeur).

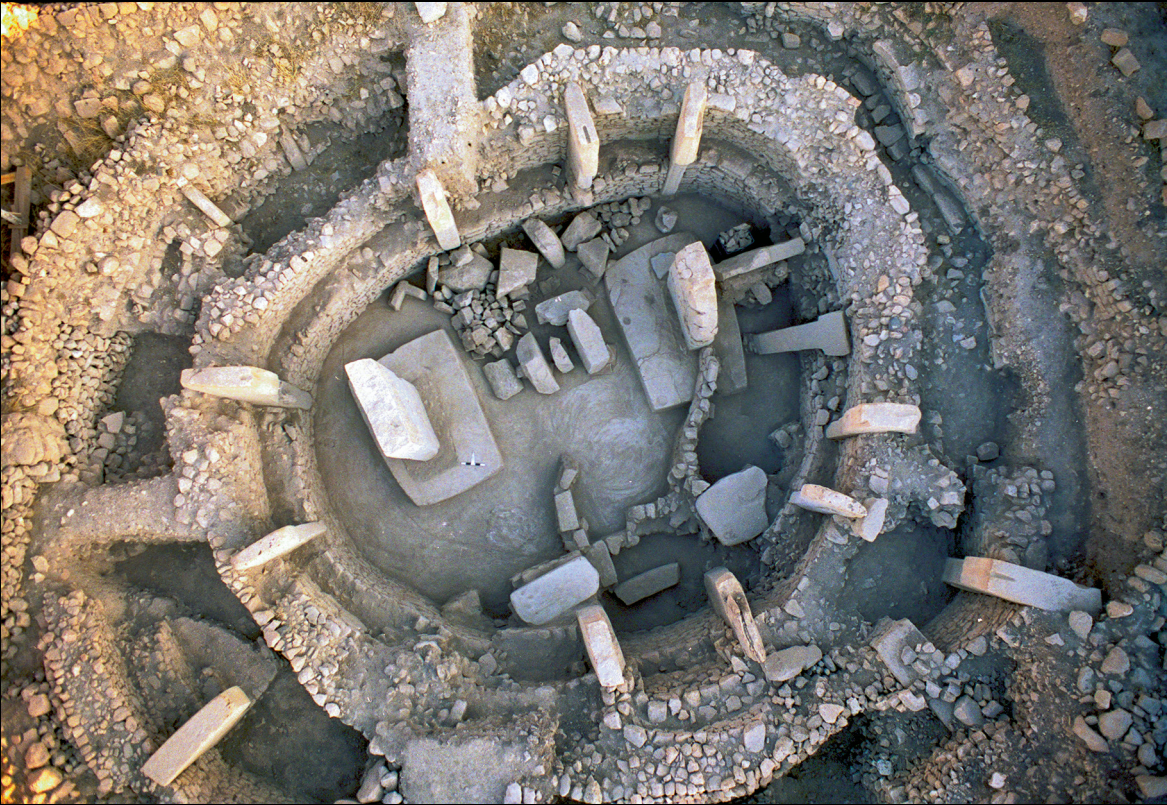


Figure 4 - Göbekli Tepe (Turkey). PPNA circular enclosure with T-stela decorated with carved animals. Enceinte C (photograph: DAI / K. Schmidt).



Figure 5 - Location of the main preceramic Neolithic sites in Cyprus (PPNA and PPNB) (CAD: F. Tessier).



Figure 6 - Klimonas (Cyprus). Large communal building dating to the late PPNA (ca. 8800-8700 cal BC) (excavations: J.-D. Vigne, F. Briois, J. Guilaine).

These were initially circular, but were later enlarged. They were probably used to pen animals as part of early livestock farming (goats and oxen had only recently been brought to the island from the Near-East – Guilaine *et al.*, 2011). These structures may indicate that such activity was carried out by two different “households” living in the same locality.

On the same site at Shillourokambos, a millennium later (ca. 7500-7200 cal BC), we excavated the remains of a village, or rather a hamlet, which comprised small circular features, each of which was only 2-3 m in diameter. This raises the question of their function, given that the interior surface area was very restricted ([figure 7](#)). These can be interpreted as individual “rooms”, a group of which may have constituted a true house or household. They were built of earth, sometimes with an outer ring of stones, but for the most part were simply made of a type of rammed earth comprised of cob, i.e. successive layers of clay and straw mortar. The width of the walls varies between 20 cm and 80 cm but is most often between 60 cm and 80 cm. This thickness, which contrasts with the small interior space, does not rule out the possibility that the internal half of the wall was built to a lower height in order to function as a bench (de Chazelles, forthcoming) ([figure 8](#)). It is also worth noting that there are no hearths in these buildings. The hearths – small pits containing



Figure 7 - Shillourokambos (Cyprus). One of the circular constructions dating to the late PPNB (ca. 7500-7400 cal BC) (excavations: J. Guilaine, F. Briois, J.-D. Vigne).



Figure 8 - Shillourokambos (Cyprus). Reconstruction of the Late PPNB village ca. 7500-7400 cal BC (drawing: A. Jesionka).

burnt stones – were found in a part of the site dedicated to burning. Similarly, a nearby area was, over time, probably used to crush cereal grains on round “tables” made from a screed of pebbles covered with packed earth. These various observations suggest that such specialised activity areas (burning, milling tables) were used collectively by the residents who came, when necessary, to work there. However, food waste consisting of animal bones was sometimes found in piles near these structures. It may seem surprising that such food waste – far from hygienic – should have accumulated here. This may be evidence for the collective nature of meat consumption, as has been suggested at Jerf-el-Ahmar (Stordeur, 2014). The presence of several wells and of a single large cistern also appears to indicate public use (figure 9). All of these elements seem to support the idea of community-based economic activity.



Figure 9 - Shillourokambos (Cyprus). Mouth of a big water tank of the PPNB village dating to the 8th millenium cal BC (excavations: J. Guilaïne, F. Briois, J.-D. Vigne).

Towards the end of the 8th millennium cal BC, the site of Kalavassos-Tenta, built on a small hill, was delimited by a protective wall. Its maximum surface area was less than 3 000 m² (Todd, 1987: 31). The site comprises circular houses built from stone or mud bricks (figure 10). Most of these had small surface areas, between 2.54 m² and 13.20 m², with the average being around 6.50 m². Internal pillars may have supported a wooden floor (thereby increasing the living space) or may have helped support the roof. A large public building, somewhat in the style of the example at Klimonas, was maintained throughout the site's occupation. This “above ground” structure initially consisted of a building 9 m in diameter, with brick walls and a floor replastered several times and coloured red using ochre. Later, it was enlarged to a diameter of 12.3 m. Carefully constructed in stone, it was partly divided into peripheral compartments. No evidence for any particular activity was identified. This exceptional building must have had a special function (Todd, 1987).



Figure 10 - Kalavassos-Tenta (Cyprus). Circular houses in mud, brick and stones from the late PPNB (excavations: I. Todd).

As at Shillourokambos, the burials placed outside the houses (and a few at Tenta inside the buildings) typically contained no grave goods. A single example at Shillourokambos contained two polished stone axes, a flint blade point, and a ball of ochre. Close by, a small picrolite pebble and a collection of shells was deposited. Next to this, a cat had been placed facing its “master”; this is the earliest evidence of a probable domestic status for this animal species (Vigne *et al.*, 2004).

In the 7th millennium, the Cypriot Pre-Pottery Neolithic continued its evolution, which is best illustrated by the site of Khirokitia, located on a natural spur and on the slope down to the Maroni River. The site was protected by a rampart which was later moved and its alignment modified. Covering approximately 1.5 ha, it is the latest and largest Pre-Pottery settlement in Cyprus. Khirokitia also contained circular structures with walls of stone – and in rare cases brick – which were 40-50 cm thick (figure 11). These walls, sometimes double or even triple or multiple, formed various concentric rings, reaching a maximum thickness of 1.2 m to 1.7 m (Le Brun, 1984: 25, 1989, 1994). This thickening of the walls over time appears to be unique to the site. Several structures were grouped around a common area or courtyard, which contained a workshop for milling activities. The roofs were flat, most likely made from reed wattling coated in earth (figure 12). The hypothesis of domed roofs, previously put forward by P. Dikaïos, has today been discarded (Dikaïos, 1953). The interiors contained benches, platforms, partition walls and places for burning: burnt zones and hearths in pits or on a constructed platform, in the centre or against the wall. Used over a long period of time, these buildings demonstrated a stratigraphic sequence of plastered floors. This permanence of several buildings through time demonstrates a form of continuity of occupation of the site concentrated around key houses (Le Brun, 2002). In these long-term structures, the deceased provide evidence for family lineages or genealogies. Burials of men, women and children were placed underneath the floors of the houses. Some of these, rich in grave goods, may indicate status differences. It is interesting to note that the richest graves were those of women. These contained stone vases, necklaces of tusk shells, picrolite and carnelian, while the male graves contained fewer objects (Le Brun, 2002).



Figure 11 - Khirokitia (Cyprus). Circular houses. Aceramic Neolithic (7th millenium cal BC) (photograph: J. Guilaine).



Figure 12 - Khirokitia (Cyprus). Reconstruction of the Neolithic huts by Cyprus' Department of Antiquities (photograph: J. Guilaine).

What stands out about the evolution of the Pre-Pottery Neolithic in Cyprus, which spans the entire Near-Eastern sequence from the PPNA to the very end of the PPNB, from 9 000-6 000 cal BC?

- initially, a settlement model – e.g. Klimonas – directly imported from the continent, comprising circular houses built around a large public structure which probably played an economic or social role within the community. The existence of a similar communal building at Tenta more than a millennium later may indicate that these people’s production and consumption practices had retained a communal nature.
- A similar impression is given by the large enclosures at Shillourokambos in the late 9th millennium and, later on the same site (from 7 500 cal BC), the small “huts” and communal areas for domestic activities. It seems unlikely that economic production was being carried out by independent families.
- Throughout the development of the Pre-Pottery Neolithic, it remains difficult to distinguish between nuclear and extended families, especially as the small size of the constructed spaces (at Khirokitia, the average surface area of the buildings is 4.55 m²) implies that several structures functioned together, with some serving as outbuildings. The nuclear family model appears well supported at Khirokitia during the 7th millennium, as the practice of burial under the floors of the houses was intended to preserve a few individuals, strongly linked with each family unit, within that space. We can also envisage status differences as having led to certain burials being richly decorated, women and children being among those privileged. However, the presence of tombs with no grave goods within the same houses means that hereditary social status was unlikely (Le Brun, 2002). The management of certain problems within a settlement such as Khirokitia must have necessitated the existence of an authority, even if this was collegial and temporary.
- Cyprus’ Pre-Pottery Neolithic appears to have evolved in the context of a society that was rather egalitarian, where cooperation must have been important and where a group of several families could manage an area made up of various circular buildings. The island’s refusal to adopt the rectangular house form which appears on the mainland around 8 500 BC, and the consistent loyalty shown to a more or less fixed circular model, speaks volumes. The continental PPNB house, by becoming rectangular, enabled an internal division into specific units (including storage), through the addition of rooms or extensions. This is considered to be a reflection of nuclear families who freed themselves from the communal way of life to become economically independent. Cyprus therefore appears as somewhat conservative during this long Pre-Pottery period. Could it be the case that this society’s incapacity to transform was at the root of its rapid disappearance? The Khirokitia culture died out around 6 000 cal BC, and for the following millennium, we know virtually nothing of the island’s history. A revival took place in the 5th millennium, with a quick and dense colonisation of agricultural land by the Neolithic Sotira culture. In particular, this also saw the introduction of pottery to Cyprus.

2 - Trasano, a Chalcolithic house in Italy

The examples which I will now discuss for the central and western Mediterranean are drawn from a completely different chrono-cultural context (figure 13). They are from the late 4th millennium and throughout the 3rd millennium cal BC. They concern the societies at the end of the Neolithic, sometimes known as the “Chalcolithic” due to the manufacture and circulation of copper objects alongside flint tools. The economic context is one of agricultural and pastoral communities, a production system established in Western Europe for most of the previous three millennia, but which had recently seen the advent of new technical improvements: the invention of the ard

(ancestor of the plough) or the use of wheeled vehicles, for example. Finally, in relation to burial practices, these societies are characterised by their use of communal graves, for example megaliths, hypogea (caves dug into the bedrock), and natural caves used as tombs. It is worth remembering that during the same period across the Mediterranean, Egypt had become a state, Mesopotamia was populated by city-states, and the Aegean and Anatolian region had reached the proto-urban phase.

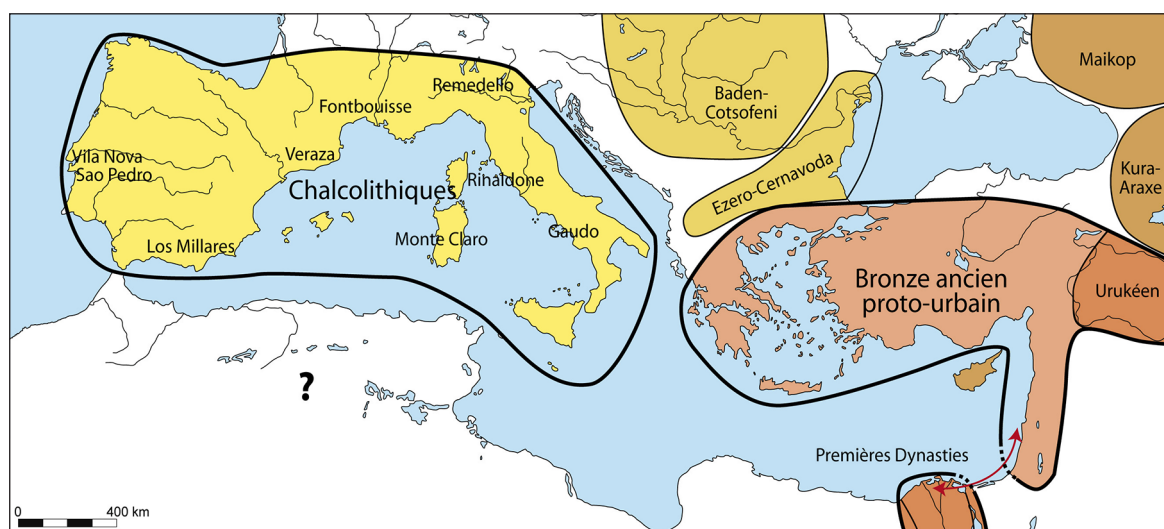


Figure 13 - Map of the Mediterranean ca. 3000 cal BC. A gap divides the Eastern basin which has reached an urban or proto-urban stage, and the Western basin which is still at a Final Neolithic (or Chalcolithic) stage (map: J. Guilaïne).

The central Mediterranean example chosen is a Chalcolithic village in southeastern Italy on which I conducted research in the 1980s.

Firstly, I will summarise the prior architectural history of this region. In the Early Neolithic, houses consisted of wooden posts and wattle and daub walls (e.g. Rendina, Favella, Torre Sabea) (Cipolloni Sampo, 1977-1982; Guilaïne, Cremonesi, 2003). Occasionally, walls were made of stone (e.g. Balsignano, Radina, 2002). These structures were rectangular (Rippa Teta) or sub-rectangular (Rendina). The ritual burning of some houses upon the death of an important figure or the separation of the family, which took place in the Balkans during the Neolithic, was also practised here (e.g. Favella, Tiné, 2009) (figure 14). During the Middle and Late Neolithic, a course of stones often made up the first foundations of the buildings (e.g. Monte Aquilone, Passo di Corvo). The most unusual trait of the Neolithic in southeastern Italy is the enclosing of these small settlements, sometimes comprising a single farmstead, behind a modest-sized ditch. However, a number of these ditched enclosures covered up to several hectares such as at Murgia Timone and Tirlecchia. In the Middle Neolithic, the largest of these ditches, found at Passo di Corvo, surrounded an area of approximately 40 ha (Tiné, 1983). Inside, each house and its outbuildings were marked by an open C-shaped ditch, whose function is yet unclear (water drainage? protection? symbolic marking?). At the Middle Neolithic site of Catignano, longhouses with rounded ends have been found (Tozzi, Zamangi, 2003).

This tradition of rectangular or long houses with rounded ends died out in the south of Italy ca. 3500 cal BC. At this time, circular or oval houses began to appear. An example of this from Maccarese, near Rome, shows that some of these houses contained internal dividing walls (Manfredini, 2002).

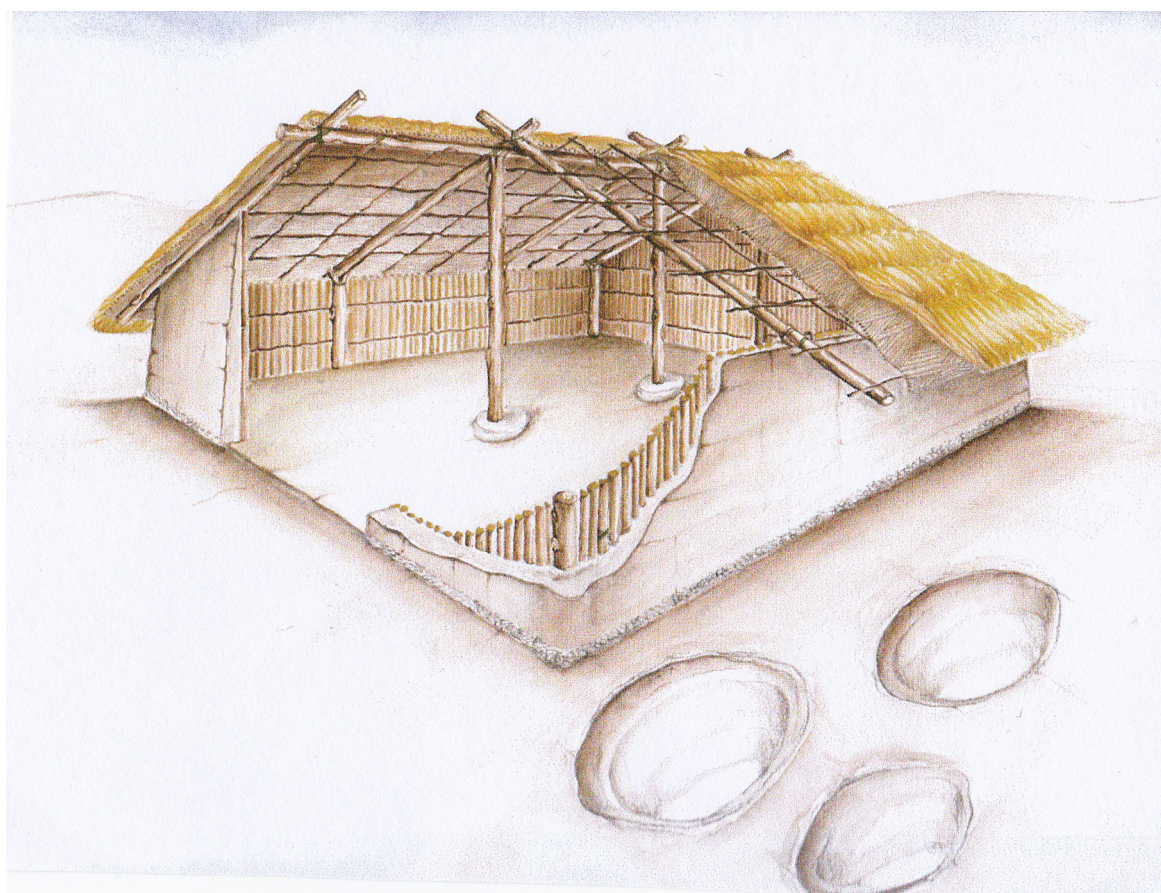


Figure 14 - Favella (Calabria, Southern Italy). Attempt of reconstruction of houses from the Early Neolithic, 6th millennium cal BC (after Tiné 2009).

At Trasano, the site that I excavated with G. Cremonesi near Matera from 1986 to 1991, an area of approximately 3 000m² was explored, though this involved opening large “windows” across an area measuring 180 × 80m (about 1.5 ha). It is likely that the buildings continued outside of the study area, or in the non-excavated zones within it.

The fifteen or so Chalcolithic houses found on the site are circular or oval in shape. They are identified on the ground by post-holes dug into the bedrock. Two central posts typically supported the roof, but there are unique examples with one, four and five posts (figure 15). The average dimensions of these oval buildings were 7-8 m in length and 5-6 m in width. The round houses varied between 4.5 m and 7 m in diameter. One unusual example is Building 26, which measures 12 m in diameter. In Zone C of the site, the remains of several successive houses were found. The walls were made of posts interlaced with wattling and clay daub. The roofs probably consisted of thatch or grass tied in bundles on rods to make a batten. These battens were in turn supported by rafters resting on the ridge beam on one side, and on the outer posts on the other (Guilaine *et al.*, 2014) (figures 16-17).

In the latter stages of the site's occupation the buildings adopted a longer form with rounded ends. The distribution of the round or oval houses was relatively dispersed. The densely packed houses seen on Cypriot sites have not been observed here. These houses may have been contemporary with palisaded animal enclosures, even though these enclosures are mainly confined to the eastern part of the site.



Figure 15 - Trasano (Basilicata, Southern Italy). Chalcolithic circular house with two support posts (Laterza culture). 3rd millennium cal BC (excavations: J. Guilaine, G. Cremonesi).

Unfortunately, at Trasano as at Maccarese, the original floor levels were not preserved, a common problem for the European Neolithic, due to later cultivation and the resulting erosion. It is therefore impossible to reconstruct the spatial distribution of the activities that took place in the interior of the houses. A more general approach to the site allows us to make a few observations:

- the relative dispersal of the houses appears to argue for the economic independence of their occupants, all the more so because each house may have had its own animal enclosure (or enclosures). This was the case for House 33 (Zone G: 33/34). The hypothesis of nuclear families may therefore be proposed here;
- this example does not shed light on possible social differences. The burial practices of the Laterza culture (to which this site belongs) consisted predominantly of collective tombs in hypogea, often rich in grave goods such as pottery, jewellery, and weapons (Biancofiore, 1967, 1971). The necropolis which gave the culture its name contained family tombs, within which it is difficult to distinguish differences in the status of individuals. We cannot, however, rule out the possibility that certain figures occupied a higher social position, as in the case of the male buried in a stone slab tomb at Tursi, in the same town of Matera. The grave goods buried with this individual include decorated vases, a quiver with eight arrows (and probably the bow, though it was not preserved), a necklace of 280 soapstone beads, a copper dagger, and a sandstone sceptre ending in a ring (Cremonesi, 1976). A child was buried with this figure, and it is likely that this was a dependent that was sacrificed.

Two other observations may be added to the Trasano example:

- Firstly, circular houses, often with stone foundations, remain in use in the South of Italy, Sicily and on Aeolian Islands (e.g. Castello de Lipari, Capo Graziano on Filicudi and Milazzo on Panarea) in the early Bronze Age until the arrival of the first Aegean settlers who introduced rectangular houses built with stones of a standard size (e.g. Thapsos);

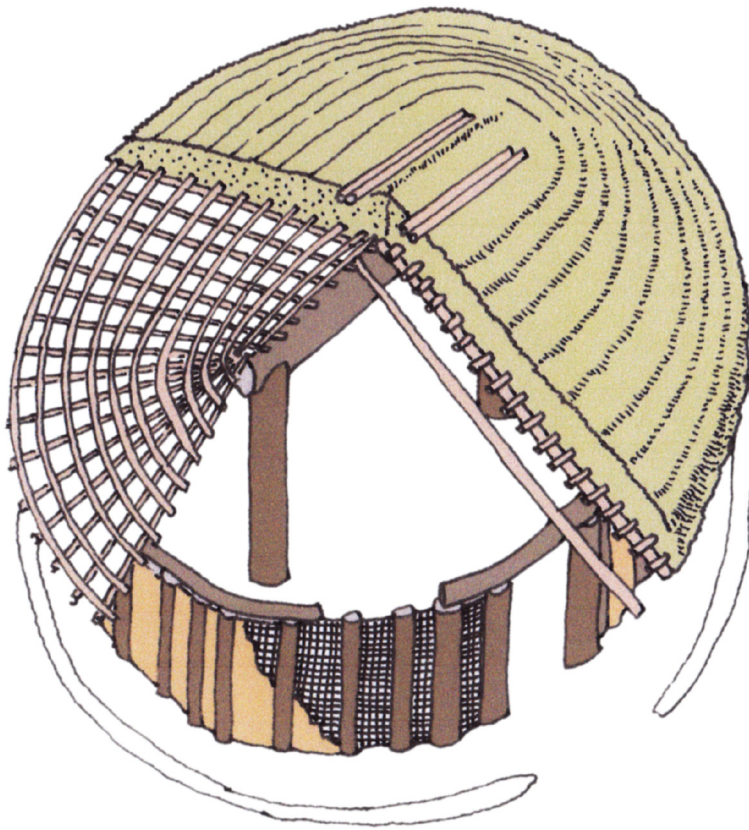


Figure 16 - Trasano (Basilicata, Southern Italy). Reconstruction of houses from the Chalcolithic. 3rd millenium cal BC (drawing: P. Pérez).



Figure 17 - Trasano (Basilicata, Southern Italy). Chalcolithic oval house with two support posts (Laterza culture). 3rd millenium cal BC (excavations: J. Guilaine, G. Cremonesi).

- secondly, these southern Italian circular or oval houses from the Late Neolithic were not adopted elsewhere on the peninsula. In the same period in northern Italy, other (rectangular) house types flourished, some of which took on the form of large buildings like those recently found at Via Guidorossi in Parma, and which recall some contemporary buildings from the French Atlantic region (figure 18). The large structures in Parma, which were rectangular or had one rounded end, were divided into three parts. The largest of these were 50 m (Building IX) and 37 m (Building II) in length (figures 19-20). The hearth in the latter was located at the very back of the building (Bernabò Brea *et al.*, 2013).

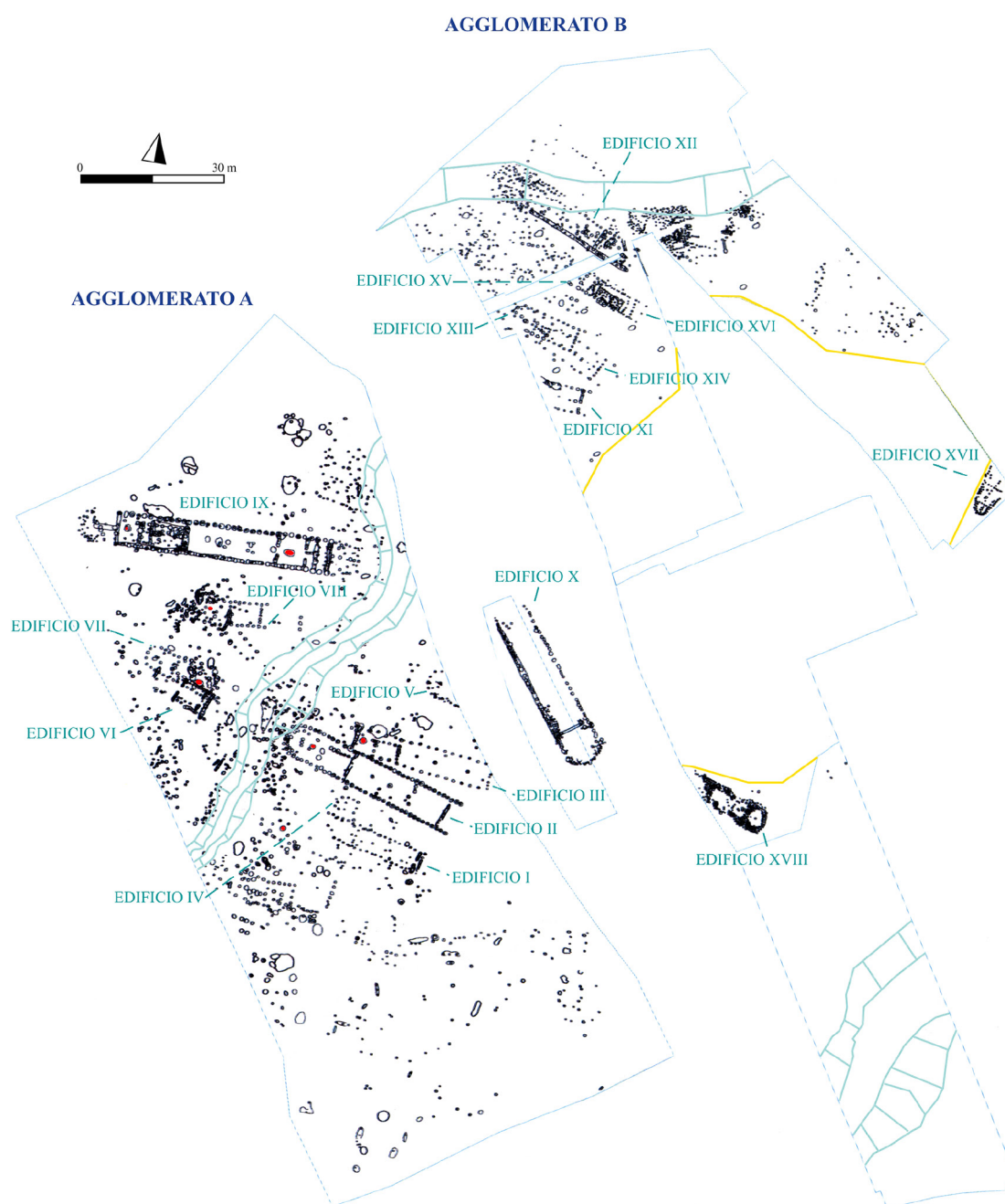


Figure 18 - Parma (Northern Italy). Plan of the excavation of via Guidorossi. End 4th /3rd millenium (after Bernabò Brea *et al.*, 2013).

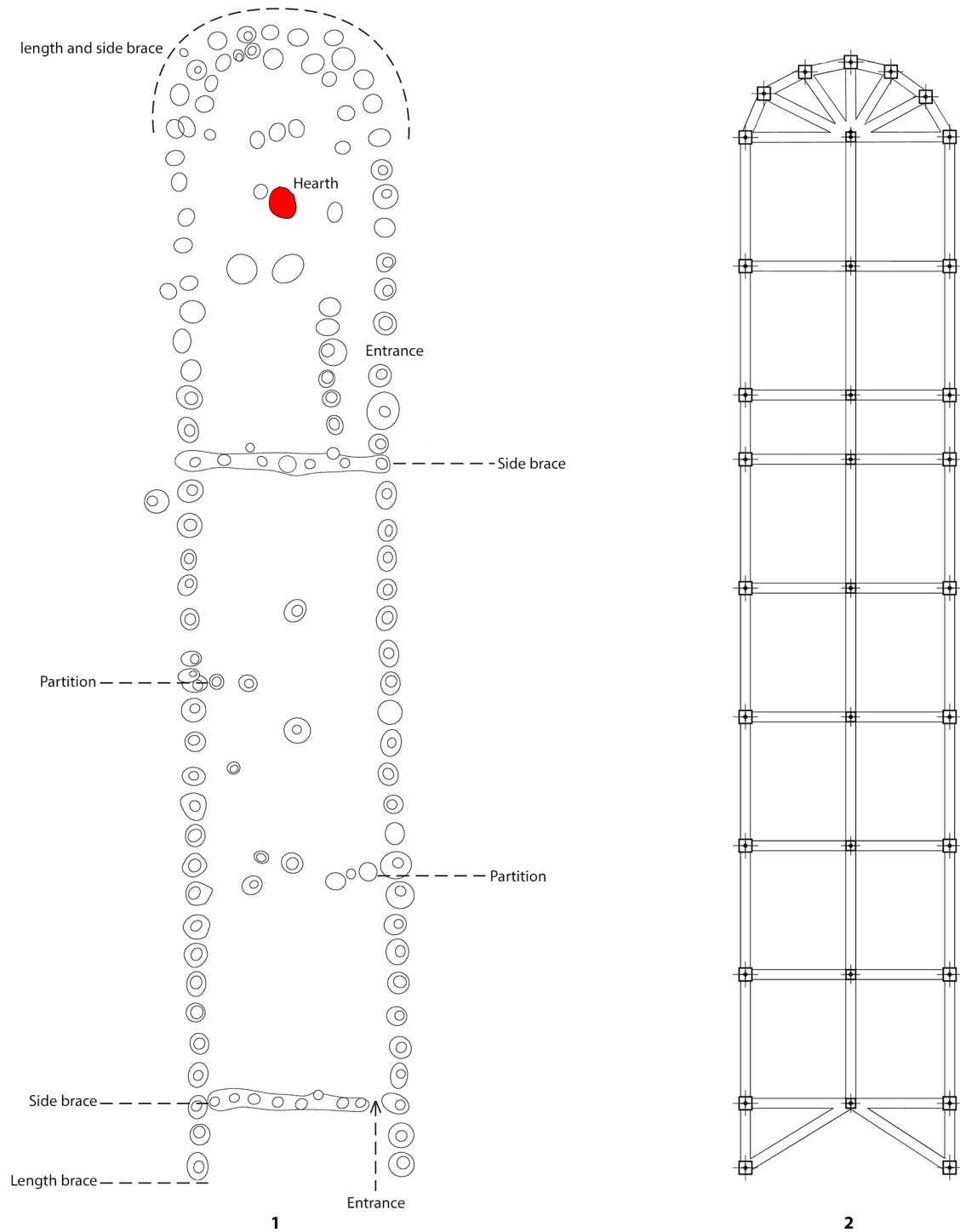


Figure 19 - Parma (Northern Italy). Plan of long building II from via Guidorossi. End 4th / 3rd millenium (after Bernabò Brea *et al.*, 2013).



Figure 20 - Parma (Northern Italy). One of the large buildings (building IX) from via Guidorossi in (photograph: M. Bernabò Brea).

3 - The stone houses of Languedoc's Chalcolithic

The third example I present is from a region in France located in the eastern part of the Languedoc, north of the city of Montpellier. It is an area of limestone plateaus which covers the northeast of the Hérault, the north of the Gard and the southwest of the Ardèche departments. In this region, the abundance of limestone made it the material of choice for the construction of buildings.

However, stone was rarely used as a construction material in the Midi before the 3rd millennium BC. We know rather little about southern houses from earlier periods. During the Early Neolithic, the evidence suggests that dwellings were circular and made of wood and wattle and daub (e.g. Peiro Seignado, Baume de Ronze) or oval in shape (e.g. Lalo). During the Middle Neolithic, houses were long with rounded ends. Those found recently at Vernègues, in Cazan (Bouches-du-Rhône), also of wood and clay, reached 20 m in length and 7-8 m in width (Moreau *et al.*, 2014). Late Neolithic buildings of a similar scale, or even larger, have been found on the site of Le Mourral in Trèbes (Aude), a site surrounded by a ditch and palisade.

By contrast, in the eastern Languedoc during the 3rd millennium BC the local rock source was exploited for construction by the people of the Fontbouisse culture (2,900-2,300 cal BC) in the area known as the “garrigues of the Petits Causses”. While in the low coastal plains houses were built using wood and earth, in inland areas stone was the principal construction material along with wood. The so-called “Fontbouisses” horizon is characterised in terms of its material culture by large earthenware jars sometimes with relief band decoration used to store foodstuffs or water, cooking pots, bowls, a fine pottery often with a fluted decoration, stone tools including flint arrowheads, points, daggers, scrapers and components of sickles (often made from Salinelles flint), and the practice of copper metalworking for the production of axe-heads, dagger blades, awls and jewellery (Gutherz, 1975).

The economy was based on the cultivation of cereals (wheat and barley), the gathering of acorns, and the raising of cattle, pigs and in particular goats and sheep.

The “classic” Fontbouisse house was a thick-walled construction, sub-rectangular in shape, but with no right-angles, that is, the ends were rounded. The walls were made using small limestone slabs, with a double facing, filled in with smaller loose stones. The narrowest of these walls were between 50 cm and 70 cm wide, but for the most part they were much thicker, over 1 m wide. Some reached head height. The upper part of the houses was made of wooden beams resting on central posts which supported a ridge beam. The double-pitched roof was comprised of rafters, bundles of thatch and branches, clay daub and some flat stones (Gascó, 1976; Coularou *et al.*, 2011). These stones were typically placed at the junction of roof and wall to facilitate rainwater drainage, in order to prevent water from seeping into the wall. At the site of Les Vautes (Saint-Gély-du-Fesc, Hérault), it was possible to study in detail the various materials involved in the construction of the roof, which were, from bottom to top: rafters, branches, straw thatch and clay, and a flagstone cladding (de Chazelles, 2003).

Regarding floor plan size, various sizes of house existed. Some were only 5-6 m long, with 20 m² of living space. Then there are larger models based around a standard house type between 7 m and 8.5 m in length, giving a living space of between 20 m² and 30 m².

The largest constructions reached an internal surface area of 40-50 m², with a few exceptional examples, such as some of the buildings at Cambous that were 22-24 m long and had a living space of over 100 m². The function of these structures is not fully understood. In light of their size and volume, they have sometimes been interpreted as having had a social (meeting place or “men’s house”) or economic (sheepfold) function, or perhaps they housed a leading family (figures 21-22).

The doorways were always narrow. In some cases the houses were associated with caves or sinkholes which served as storage areas or burial places.

The sites of the Fontbouisse culture are particularly numerous and show a density of occupation of 20 to 25 villages per 100 km² (Gascó, 1976). We do not know, however, if these settlements were contemporary or spread out over time. Each one was subject to reconstructions throughout its lifespan, including extensions, reductions in size, and modifications to the layout. Isolated “farmsteads” in the forest may have existed, but the typical model is one of a hamlet or small village comprising fewer than a dozen houses which were often attached to one another with common walls. An unusual example is the site of Cambous, which is made up of about fifty houses divided into separate “neighbourhoods”, each with 8-10 small structures and typically a single large building (Canet, Roudil, 1978). The majority of these villages were open, in that there was no system of protection or demarcation.



Figure 21 - Southern France. General view of a sector of the site of Cambous (Viols-le-Fort, Hérault). Fontbousse culture. 3rd millenium cal BC (photograph: A. Colomer / J. Coularou).



Figure 22 - Southern France. General view of several adjacent houses at the Cambous site (Viols-le-Fort, Hérault). Fontbousse culture. 3rd millenium cal BC. The longest building is 22m long (photograph: A. Colomer / J. Coularou).

Nevertheless, a small number of enclosed sites have been identified which are often located in raised areas and were protected by an outer wall containing turrets – circular structures often built at corners in the walls. These defences sometimes fully enclosed a site (as at Le Lébous, Boussargues) or closed off a natural spur (e.g. Le Rocher du Causse) (Colomer *et al.*, 1990; Coularou *et al.*, 2008) (figures 23-24). Curiously, these round features were perfectly standardised. Their walls, 1 m wide, enclose a space that is 2.5 m in diameter. The corbelled roofs were made from carefully chosen flat stones. Some of these turrets were free-standing, while others were attached to the houses within the walls. They were initially interpreted as defensive elements, much like the bastions found on fortified sites in the Aegean and on the Iberian Peninsula. However, their incorporation into the house spaces seems instead to indicate that they were small domestic structures, possibly for storage. Their original function has not yet been established.

A number of recent excavations have shed light on the internal organisation of the Fontbousse houses. Unlike the large numbers of European sites where the floor levels have not survived, in this region, the thick walls and the collapse of the roofs enabled the preservation of domestic features. A few examples have been found of a division between an inner area, towards the back of the house, where domestic activities (burning, cooking, ovens, and storage in jars) took place, and a front area where these activities were not present (figure 25). Could this zone have been used as a sleeping area? Or a stable or pigsty? Or for storage of fodder or large foodstuffs? Or for other functions? (Guilaine, Escallon, 2003). Food storage vessels were placed against the walls or at the back of the building (e.g. Conquette 2), while other vessels, associated with cooking, were organised and placed around the fire (Bailloud, 1973). In the more complex examples from the western zone at Boussargues, one of the two circular structures was clearly used for storage (Colomer *et al.*, 1990).

Little has been written about the social organisation of the Fontbousse culture, and archaeological analysis to date has barely incorporated a social approach. The consistent patterns in the interior organisation of the houses suggest that each may have contained a nuclear family with children, and perhaps grandparents. In the western zone at Boussargues, the two attached buildings, as well as the small circular structure, clearly belonged to a single family unit. The site probably housed two families – in the western and eastern zones.

These communities were no strangers to tensions and conflict as demonstrated by the individuals found shot with arrows in Suquet cave, in Les Matelles. Such confrontations sometimes reached a rather large scale. Raids by populations from the high plateaus may have extended as far as the area of the Petits Causses in the Languedoc. Based on depictions on statue-menhirs from this region of the South of France, we know that a functional dichotomy separated the female sphere (the women, indicated by their breasts, evoke breast-feeding, reproduction and the domestic world) from the male sphere (weapons evoke notions of outdoor activities such as hunting, battle and heavy labour). With regards to social organisation itself, the frequent use of collective tombs inhibits the identification of status differences between individuals. While a few individual burials are known, these do not provide much information on this subject.

This culture disappeared quite abruptly ca. 2 400-2 300 cal BC. The number of settlement sites dropped off drastically. We do not yet know the reasons for this collapse; climate? social? However, it corresponds with a phenomenon seen elsewhere in Europe such as at the lake dwellings in the Jura region or among the fortified sites on the Iberian Peninsula. This sudden change is contemporary with the spread of the Bell-Beaker groups. In the Midi, it also took place alongside a process of greater population movement and a diminished focus on built architecture.



Figure 23 - Southern France. Aerial view of the Le Rocher du Causse site (Claret, Hérault). Fontbouisie culture. 3rd millenium cal BC (photograph: J. Coularou; excavations: J. Guilaine, J. Coularou, G. Escallon).



Figure 24 - Southern France. The outer perimeter wall containing the circular buildings at Le Rocher du Causse (Claret, Hérault). Fontbouisie culture. 3rd millenium cal BC (excavations and photograph: J. Guilaine, J. Coularou).

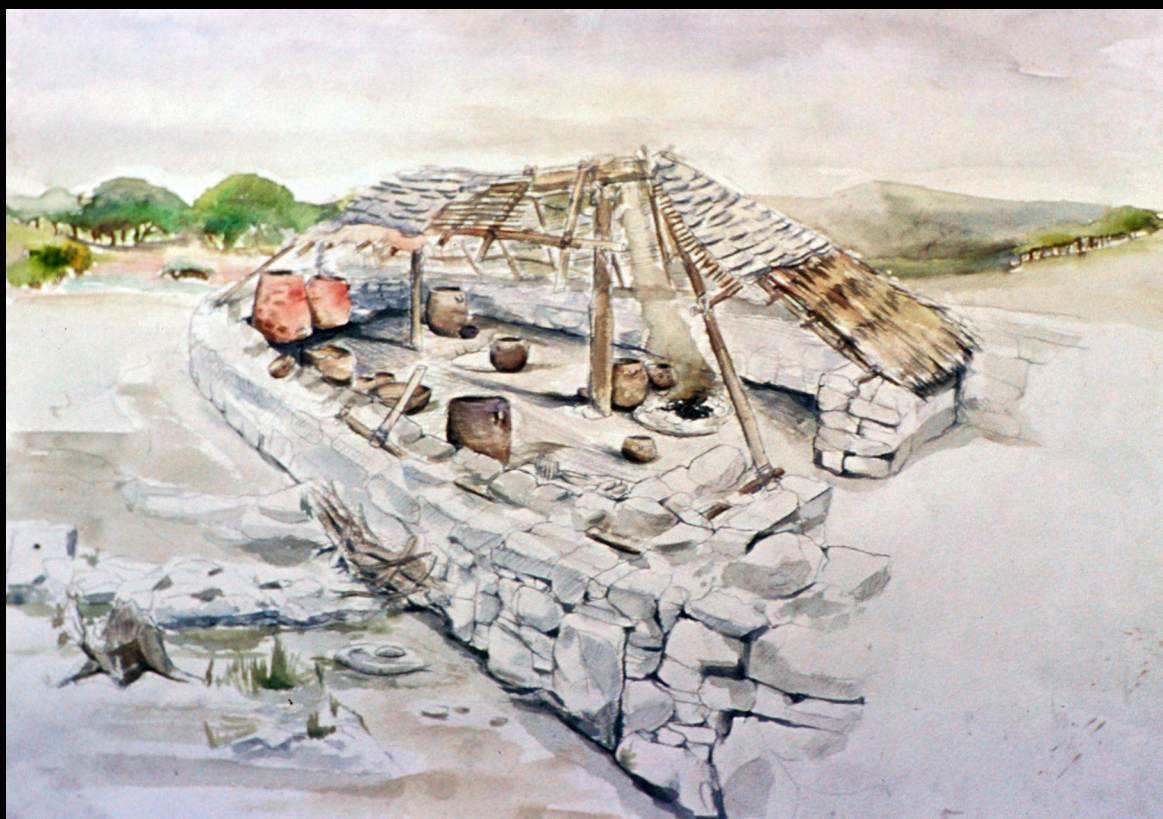


Figure 25 - Southern France. Reconstruction of the interior of a house at the site of Les Vautes (Saint-Gély-du-Fesc, Hérault). Fontbouisse culture. 3rd millenium cal BC (drawings: L. Jallot).



Conclusion

The various case studies discussed here demonstrate the great variability of house models that were used during the Neolithic in the Mediterranean region. These differences can obviously only be explained within their social, cultural and historical contexts. To summarize our conclusions:

- In Cyprus, the society was initially comprised of pioneers, migrants from the mainland at a time when people in the Levant were engaged in a process of economic transformation which turned them gradually into crop and then livestock farmers. These foreigners brought to the island a type of circular house built next to a large public building. It is interesting to note that the island was very conservative between 9,000 and 6,000 cal BC, while on the continent, innovation continued at the same pace. The round house model in Cyprus was not revised, nor was the large public (or cult?) building. "Families" were organised around clusters of small structures. Although important individuals existed, their status does not appear to have been passed on to others and there is no evidence for an elite class among this population.
- In the South of Italy and the South of France, we see the final stages of the Neolithic, three to four millennia later. In other words, it was a period when farming societies were fully settled and already had a long history behind them. In terms of an identity, both regions had in common a strong notion of the group, of family and of community, which was expressed in particular through their collective tombs (megaliths or hypogea). These large graves containing a few dozen, and sometimes several hundreds, individuals appear to be related to a veneration of the ancestors. These accumulations of bodies make it difficult to discern what was a likely underlying social hierarchy (e.g. Tursi). Regarding the houses specifically, the Italian and southern French examples demonstrate that the rather large regional diversity was expressed in the layout, shape and materials used.
- Variations existed within a particular social sphere, for example in the Fontbouis culture, between open sites and a sort of enclosed farmstead. This culture is without doubt one of the rare cases in France which permits a spatial approach to Neolithic settlement, thanks to the high level of preservation of the material culture of domestic life.

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