

COMMENTS

MIGRATION IN PREHISTORY: PRINCESS POINT AND THE NORTHERN IROQUOIAN CASE

Gary W. Crawford and David G. Smith

Snow has recently challenged the in situ theory of the origins of the Northern Iroquois, arguing that it is a controlling model that does not account for certain linguistic, social, ceramic, and settlement anomalies he identifies in the record of prehistoric Iroquoian development. He proposes a migration model that purports to respond to these anomalies. Data recently gathered from a project focusing on the Princess Point Complex of southern Ontario shed light on Snow's hypothesis for a migration after A.D. 900. These new data do not support Snow's migration scenario, at least as this model concerns Ontario and Princess Point.

Snow ha desafiado recientemente la teoría de los orígenes in situ de los iroqueses nortehños, arguyendo que es un modelo dominante que no explica ciertas anomalías lingüísticas y sociales, así también como anomalías en los asentamientos y en la cerámica que él identifica en los documentos del desarrollo prehistórico iroqués. El propone un modelo de migración que intenta responder a estas anomalías. Datos recientemente recolectados en un proyecto que se centra en el complejo Princess Point del sur de Ontario clarifican la hipótesis de una migración después del 900 a.D. Esta información no sustenta la teoría de la migración de Snow, por lo menos en lo que concierne a Ontario y Princess Point.

The prevailing in situ explanation for the development of Northern Iroquoian culture has recently come under question. Dean Snow, in this journal and in a series of other papers, proposes that Iroquoian-speaking peoples migrated into the Northeast between A.D. 900 and 1000, bringing with them maize horticulture and matrilineal/matrilocal social organization and displacing indigenous groups of Algonkian hunter-gatherers (Snow 1992, 1994, 1995a, 1995b, 1995c). An important component of Snow's model is his interpretation of the archaeological record for the Princess Point Complex in southern Ontario. In brief, Snow argues that Princess Point was one of many Algonkian-speaking foraging societies displaced by invading Iroquois. The model has been debated to some extent, but the recent discussions suffer from a lack of informed reference to the Princess Point Complex

(Chapdelaine 1992). We contend that evidence resulting from research we have conducted on Princess Point since 1993 does not support this aspect of the migration model for Northern Iroquoian development as Snow articulates it. We do, however, agree with Snow's assertion that existing theoretical constructs may act as "strait-jackets" (1995a:75). In fact, we wholeheartedly support rigorous and systematic questioning and review of hypotheses by examining the inferential reasoning involved and testing with new data.

We are not criticizing migration hypotheses per se and we commend Snow for reopening discussion on this sensitive topic and calling for a continued examination of the propagation of societies in time and space (1995a:59). We point out, however, that contrary to Snow's assertion (1995a:60), migration as a demographic process was not "outlawed" by researchers investigating

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American Antiquity, 61(4), 1996, pp. 782-790.
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Northern Iroquois over the last 50 years; indeed, scenarios involving movements of people, albeit within the Northeast, are common in the work of several influential archaeologists. For example, MacNeish's *Iroquois Pottery Types* (MacNeish 1952), in which the in situ hypothesis of Northern Iroquoian origins was formally proposed, includes relocations of various Iroquoian groups. Both Emerson (1961) and Wright (1966) argued for the movement of Iroquoian societies within Ontario. Thus, Snow's argument for a migration of an Iroquoian group from one part of the Northeast to another is not as radical a departure from traditional approaches to Northern Iroquoian demography as it might first appear. Unfortunately, the revitalized migration model depends on either negative or inconclusive evidence as it applies to Ontario. In this essay we introduce the new Princess Point data from Ontario pertinent to the in situ hypothesis critique and show why the recent results cast serious doubts on the migration model as Snow has presented it.

Recent Research on Princess Point in Southern Ontario

The Princess Point Complex has undergone some revision since it was first identified and defined by David Stothers in the late 1960s and early 1970s. Stothers used the term "complex" because he viewed Princess Point as a relatively widely distributed archaeological "manifestation" found in all of southwestern and south-central Ontario (Stothers 1977). He recognized three regional "foci" (Point Pelee, Ausable, and Grand River) and three "phases" (Early, A.D. 600–750; Middle, A.D. 750–850; and Late, A.D. 850–900). More recently, Fox (1990) revised both the spatial and temporal parameters of Princess Point. He excluded the Ausable focus as too poorly known to classify; reassigned the Point Pelee focus to the Riviere au Vase phase of the Western Basin tradition; and shortened the time period by dropping the Late phase. The Grand River focus inherited the label "Princess Point Complex." Although the rationale for using the term "complex" appears to have been eliminated, the designation "Princess Point Complex" remains in general use. Princess Point has never been incorporated within a more

general classificatory framework such as the Ontario Iroquoian tradition (Wright 1966), and redefinition is beyond the scope of this paper. We will continue to use the designation Princess Point Complex for now.

The redefined Princess Point Complex is restricted geographically to south-central Ontario, extending from Long Point to the Niagara River along the north shore of Lake Erie and around the western end of Lake Ontario to the Credit River (Figure 1). Fox's revised chronology dated Princess Point roughly from A.D. 650 to 900, but recent AMS dates on maize indicate a longer duration, from A.D. 500 to 1000 (Crawford and Smith 1996). The Princess Point settlement pattern is distinctive in that most of the known sites are closely associated with lacustrine, riverine, and wetland environments. The material culture is distinguished by pottery decoration dominated by cord-wrapped stick impressions and by a flake-based lithic assemblage that includes Levanna-type projectile points. Snow is correct, however, when he points out that, as of 1992, the Princess Point Complex remained very poorly understood (1995a:67).

Three years ago we launched a multidisciplinary research program to investigate Princess Point and the origins of food production in southern Ontario (Smith and Crawford 1995). This program incorporates both archaeological and geomorphological research. We are investigating regional settlement patterns, chronology, environmental history, and several other aspects of the Princess Point Complex. We have also recompiled the data on site locations for known Princess Point sites, which number about 80 at present. In particular, Crawford is examining palaeoethnobotanical remains from throughout the region, and Smith is analyzing pottery assemblages from a number of Princess Point sites.

We have concentrated our efforts to date on the Lower Grand River valley, where clusters of Princess Point sites have been identified (Figure 1). For three field seasons (1993–1995), we have conducted excavations at one of these clusters near the village of Cayuga (Figure 1). This cluster includes three probable settlement types: first, two large occupations situated on alluvial bars of the Grand River (Grand Banks, AfGx-3, and

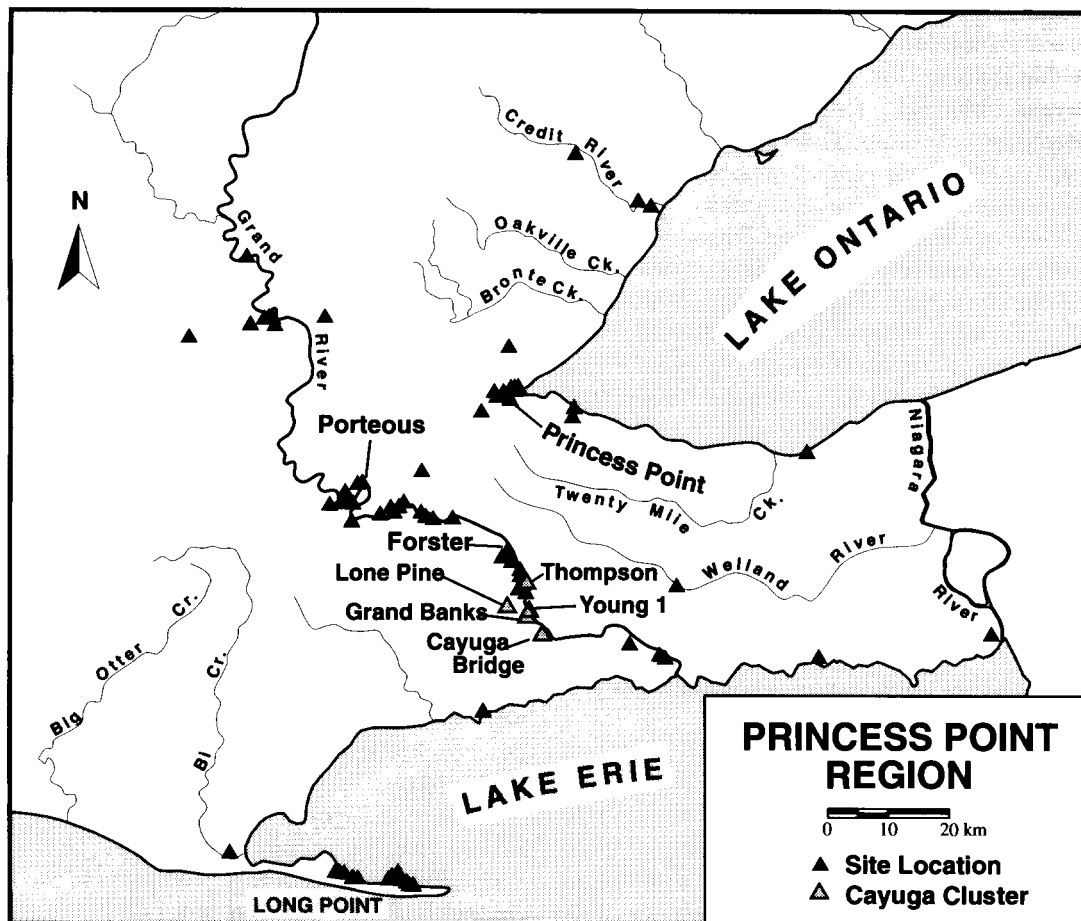


Figure 1. The Princess Point region.

Cayuga Bridge, AfGx-1); second, a small locality on the first terrace of the Grand River (the Young 1 site, AfGx-6); and third, a .5-ha site situated in an upland environment on Roger's Creek, a tributary of the Grand River (the Lone Pine site, AfGx-113). We cannot fully detail the results of our research here; however, we can shed light on earlier interpretations of Princess Point critical to the debate.

First, at the outset of our project we shared Snow's and others' concerns about the validity of the Princess Point corn associations. Only one kernel had been recovered from the Grand Banks site from what, at the time, appeared to be an unequivocal Princess Point context (Stothers 1977). The other two sites with corn of potential Princess Point affiliation were Princess Point and

Porteous. The Princess Point site has a later Iroquoian occupation so the corn could be intrusive to the Princess Point component, and Porteous, which is interpreted to be transitional between Princess Point and the later Glen Meyer branch of the Early Ontario Iroquois tradition (Noble and Kenyon 1972; Stothers 1977), is considered too late to be relevant to the discussion of the earliest corn in Ontario. Radiocarbon dates from Porteous are too wide ranging to allow a clear dating of the occupation, although one interpretation places the occupation at A.D. 900 (Fox 1995:147).

Our palaeoethnobotanical research has resulted in a confirmation of corn associated with Princess Point. So far, the sample resulting from flotation of 419 liters of soil from the 1993 field

Table 1. AMS Radiocarbon Dates on Maize from Two Princess Point Sites.

Site Name	Material	¹⁴ C Years (B.P.)	Calibrated Date (A.D.)	Lab Number
Grand Banks	kernel	1250 ± 80	650 (780) 980	TO-4585
Grand Banks	kernel	1060 ± 60	880 (1000) 1150	TO-4584
Grand Banks	cupules	1570 ± 90	410 (540) 610	TO-5307
Grand Banks	cupules	1500 ± 150	420 (570, 600) 670	TO-5308
Lone Pine	kernel	1040 ± 60	890 (1010) 1160	TO-4586
Lone Pine	cupule	800 ± 50	1210 (1250) 1280	TO-4083

Note: Calibrated at 2-sigma with the program CALIB 3.0 (Stuiver and Reimer 1993). Calibrations are rounded to the nearest 10 years. One or more intercepts are presented between the 2-sigma ranges; dates are corrected for isotopic fractionation.

season at Grand Banks and Lone Pine has been analyzed, and roughly one gram (about 180 fragments) of carbonized corn kernel and cupule remains has been identified, with about one-quarter of these coming from Grand Banks (Bowyer 1995). Six samples of corn from the two sites have been AMS dated so far (Table 1). The dated samples from the Grand Banks site come from separate locations that could represent different occupations of the site. The cal A.D. 540, 570, and 780 dates are from a paleosol containing a high density of Princess Point pottery fragments (Crawford and Smith 1997). The cal A.D. 1000 date is from a pit located in an area of the site with no obvious paleosol and some 25 m north of the area from which the earlier dates were obtained. The pit contains a grinding stone (metate) and two large Princess Point pottery rim sections. The two Lone Pine dates are both associated with the same hearth floor. We consider the cal A.D. 1250 date to be too late for Princess Point. The implications of these dates for Snow's migration hypothesis will be discussed below.

Our second area of major concern was the interpretation of Princess Point settlement patterns. The working model, first formulated by Stothers (1977), envisages short-term, seasonal occupations, with large spring-summer encampments located in riverine-lacustrine situations and small fall-winter camps in upland settings. This is essentially the settlement system interpreted for earlier Point Peninsula and Saugene (Middle Woodland) cultures extended to Princess Point. Stothers argued that Grand Banks was an example of a spring-summer site on a riverine bar. Lone Pine, found only recently, is located in an upland environment 2 km from the Grand River, and in

Stothers' model would be interpreted to be a winter camp. Our recent research, however, has not recovered any data to indicate that Lone Pine and Grand Banks must have been short-term, seasonally occupied sites. Lone Pine is about .5 ha in area with substantial artifact densities in a clearly defined area on a flattened knoll. In our testing at Lone Pine we have identified two large hearth areas containing pipes similar to those from Glen Meyer sites.

At Grand Banks, artifacts are distributed over most of a lateral bar of the Grand River. Many of these artifacts may have been redeposited because our geomorphological research details a complex history of deposition and channeling around the area we are excavating (Desloges and Walker 1995). The actual area of occupation is likely much smaller than the floodplain itself, probably confined to the higher areas around which the channeling took place. Nevertheless, we interpret the floodplain locality where we are excavating as having been a stable, rarely flooded locality for centuries (Desloges and Walker 1995). This is contrary to previous interpretations of the Grand Banks site as having been seasonally flooded, thereby forcing people away from the floodplain for parts of the year. We feel that there are no grounds to call for short-term, seasonal encampments there, although claiming a year-round occupation at Grand Banks is still premature. We feel that it is important to explore alternatives to the short-term, seasonal occupation scenario for Princess Point, and it is still too early to offer a conclusive scheduling interpretation for the sites we have been examining. For now, the evidence suggests that both Lone Pine and Grand Banks are relatively large and distinct-

tively compact, similar to later Northern Iroquoian sites (as described by Fox 1990:179). We have no evidence to support the scheduling patterns proposed for Princess Point by earlier investigators (Stothers 1977).

Princess Point and the New Migration Model

Snow (1995a:60) argues that the *in situ* theory for Northern Iroquoian origins has become an "almost universally accepted controlling model," thereby precluding serious consideration of alternatives. For Northern Iroquoian origins, Snow claims that uncritical adherence to the *in situ* paradigm has led researchers to overlook evidence that supports a migration explanation. In the following, we examine the anomalies that Snow proposes as departures from the expectations of the *in situ* model along with our evaluation of his arguments within the context of Princess Point in Ontario. Although Snow has recently stated that "the situation in Ontario is less clear . . ." (1995c:7), an important connotation of his arguments is that Princess Point was a variant of Point Peninsula, a Middle Woodland culture in the Northeast, replaced by invading Clemson's Island people.

In the new model, Proto-Northern-Iroquoian is the common ancestor for Northern Iroquoian languages spoken by a relatively small and homogeneous group occupying a spatially limited homeland until about A.D. 900. The Clemson's Island culture of central Pennsylvania is the proposed archaeological manifestation of this group. The rest of the Northeast was supposedly occupied by groups speaking Algonkian languages. Snow argues that Clemson's Island people expanded out of their homeland shortly after A.D. 900 and displaced Algonkian-speaking groups in New York State and south-central Ontario. Separate Northern Iroquoian languages began to differentiate at this time (Snow 1995a:70). By implication, Princess Point would have been an Algonkian society with no ethnic or linguistic relationship with (1) contemporary Clemson's Island in Pennsylvania, or (2) the subsequent Glen Meyer in the same region of southern Ontario. If such was the case, this distinction should be reflected in a broad array of characteristics, including material culture and settlement-subsis-

tence patterns from which we may also infer aspects of social organization.

Snow argues that matrilocality and matriliney, distinguishing features of Northern Iroquoian social organization, can be inferred from the combination of horticulture, villages and longhouses, and that these features appeared suddenly and coterminously in the Northeast about A.D. 900. The *in situ* model cannot explain this rapid appearance, according to Snow. He cites William Divale's (1984) arguments that matrilineal segmentary lineage systems develop from patrilineal band level social organization only within the context of aggressive and hostile expansion. The new migration model proposes that Clemson's Island is the likely group that expanded to the north. Members of this group adopted corn horticulture and lived in compact hamlets (proto-villages?) by A.D. 775. Their expansion into New York State and southern Ontario after A.D. 900 was made possible by the development of a matrilineal and matrilineal social organization, which gave them an advantage over the resident patrilineal hunter-gatherer bands. The evidence for this social transformation is horticultural villages characterized by palisades and longhouses that appear relatively suddenly in the early Late Woodland of both areas (i.e., after A.D. 1000). Furthermore, the appearance of corn and related evidence for horticulture in the archaeological record must postdate A.D. 900 in Ontario. The changes depicted by the revised migration model should have taken place after Princess Point, the implication being that Princess Point social organization would have been band-level patriliney with patrilocality in a non-village setting.

Snow uses the equation between village horticulture and matriliney-matrilocality to argue that absence of the former will mean absence of the latter. Despite the strength of the association between social organization and subsistence pattern, we feel that the argument does not apply to Princess Point. In particular, to make this connection, Snow must build a case for the absence of corn horticulture in the Northeast before the putative migration. When he formulated his model, the affinity between corn and Princess Point was weak. We now have collected enough corn kernels and cupules from clear Princess

Point contexts to argue that Princess Point people were at least incipient horticulturalists by A.D. 800, well before the Roundtop site (New York) date of cal A.D. 1010 (1180) 1230, and as early as the sixth century A.D. (Crawford and Smith 1996). Five of the calibrated dates from the Cayuga cluster are significantly older than the date cited for Roundtop. In particular, two Grand Banks AMS dates are 300–400 years earlier than the proposed A.D. 900 migration date. Although it appears that corn is earlier in Ontario than it is in Clemson's Island, this is probably an artifact of research intensity in Ontario. Besides the Roundtop site cultigens in New York, corn from the Chenango Point Binghamton Mall site is associated with a radiocarbon date of cal A.D. 970 (1050, 1150) 1280 (Gardner 1992). Corn in Pennsylvania dates to cal A.D. 920 ± 80 at the Gnagey site (Blake and Cutler 1983:83). Evidence for corn from southeastern Michigan and from the Dawson Creek site in Ontario is as early as the seventh century A.D. (Crawford and Smith 1996; Jackson 1983; Stothers and Yarnell 1977). The evidence from these locations, however, is weak because the dates are all on associated wood charcoal. Isotopic analysis of human bone has not been particularly helpful in resolving the question of when corn was introduced to the Northeast, although it gives some indication when corn became a significant dietary component there (Crawford and Smith 1996; Katzenberg et al. 1995). With the new AMS dates, the timing of the appearance of corn in the Northeast changes substantially from what Snow described (Snow 1995a). Evidence of corn dating before A.D. 900 in the Northeast is strong, although only confirmed by AMS dating at the Grand Banks site, Ontario. In part, the reason for this is the lack of attention being paid to this important period in the Northeast.

Migration need not be the only mechanism whereby cultigens are introduced to a region, of course. The "availability" model for secondary agricultural origins proposes an initial period during which cultigens may be transferred across a frontier between hunter-gatherers and farmers (Zvelebil 1986). But besides the presence of cultigens in this model, nothing else in the archaeological record differentiates the cultures receiv-

ing cultigens from its predecessors or hunter-gatherer neighbors. One of us has examined this phenomenon in northern Japan where unequivocal evidence of migration is found in the archaeological record (Crawford 1992; Crawford and Takamiya 1990). In the Northern Iroquoian case, however, the context of the corn, particularly in Ontario Princess Point sites, is instructive in that Princess Point is not simply Point Peninsula with the addition of cultigens.

The migration model argues that the change in settlement distribution represents the requirements of the invading horticulturalists living in villages as opposed to the displaced foragers who engaged in seasonal movements of campsites. Snow claims that the distribution of late Middle Woodland sites can be characterized as widespread and even, whereas that of early Late Woodland sites is restricted and spotty. This change occurs suddenly at about A.D. 900, a discontinuity that cannot be explained by the *in situ* model. More specifically, Snow states that "there is little continuity at the regional level between the distributions of Glen Meyer and Pickering sites on the one hand and the distributions of earlier Point Peninsula and Princess Point sites from which they presumably derive on the other" (1995a:67). The settlement system of patrilineal Princess Point foragers, following Snow's argument, would have been characterized by a widespread and even distribution of camp sites. For Princess Point and Glen Meyer distributions this disparity is more apparent than real. We are just beginning settlement pattern studies for Princess Point, but, despite some differences in site distribution, we are beginning to see overlap in Glen Meyer and Princess Point locations. Indeed, the recent discovery of the Forster (AgGx-134) and Thompson (AgGx-208) sites, the first Glen Meyer villages to be documented in the Lower Grand Valley, reinforces the spatial continuity between Princess Point and Glen Meyer. Furthermore, several Iroquoian communities in our research area are underlaid with earlier Princess Point components, including the Princess Point type site (AhGx-1) and the fourteenth-century Middle Ontario Iroquois tradition Middleport site (AgHa-2). In addition, the distribution of Princess Point sites in general (Figure 1)

shows that it is not widespread and evenly distributed, but concentrated in clusters.

Also, in the new migration model, there would be no evidence for the villages of later horticultural Iroquoian communities nor the "compact" hamlets of contemporaneous Clemson's Island. We have already discussed above whether Grand Banks and Lone Pine are compact hamlets. Our interpretations of site type and season of occupation for the Cayuga cluster suggest that the Princess Point settlement pattern was more complex than that inferred for the southern Ontario Middle Woodland. The current interpretation of Middle Woodland seasonality and scheduling in southern Ontario encompasses a seasonal pattern of large spring-summer macrobands and small fall-winter microbands (Spence et al. 1990). This interpretation has not been adequately tested, so care must be exercised when attempting to base Princess Point scheduling patterns on preceding ones. Grand Banks may not have been simply a spring-summer macroband camp, but may have been occupied for all or most of the year. In fact, the attraction of the Grand Banks location seems to have been the stable flats that seldom severely flooded. The Lone Pine site, if it is a village or "proto-village," suggests that the transition to more centered communities was occurring before the Glen Meyer in south-central Ontario. As far as the ethnic and linguistic character of Princess Point is concerned, we suggest that the broad-based distinctions between Princess Point and either Clemson's Island or Glen Meyer that might reflect a fundamental difference in identity are not evidenced. Snow himself notes (1995a:70) that glottochronology cannot supply dates precise enough to support linguistic replacement in the absence of supporting data, and such data are lacking in this case (see also Fox 1995:144-145). The argument that the divergence among the Northern Iroquoian languages has no great temporal depth is, of course, of great interest, but by itself sheds little light on the relationship between Princess Point and Clemson's Island cultures.

Next, Snow points out that the coil method of manufacture typical of Middle Woodland Point Peninsula pottery is very different from the modeling method employed by Late Woodland potters (1995a:71). He argues that the change from coil

to modeling in the Northeast occurred rapidly at about A.D. 900. The in situ model predicts that such a profound change in ceramic technology would occur gradually. The migration model, on the other hand, has Clemson's Island potters adopting the paddle-and-anvil technique prior to their expansion after A.D. 900. The rapid replacement of the coil method by modeling is, therefore, simply a byproduct of the displacement of Algonkian foragers by Iroquoian horticulturalists. Princess Point pottery would have been manufactured using the coil method in this scenario. In addition, pottery form and decoration should more closely resemble Point Peninsula styles than either Clemson's Island or Glen Meyer pottery.

Unfortunately, Snow's characterization of Princess Point pottery manufacture is incorrect. He states that in Ontario "a sharp technological discontinuity exists between Iroquoian ceramics and earlier ones from which they presumably derive" (1995a:68), and "Owasco, Glen Meyer, and Pickering vessels are technologically similar to each other but contrast strikingly with earlier Point Peninsula ceramics" (1995a:71). Snow supports these assertions by quoting a very general statement by Williamson contrasting Early Iroquoian vessels to pottery made in "earlier times" (Williamson 1990:295-298). Most Princess Point pottery we have examined is made by modeling (also referred to as "paddle-and-anvil" or "paddled" construction) (Smith 1995), although the coil production typical of Point Peninsula pottery is still evidenced. Other researchers have observed this as well (Fox 1990:172, 1995:145; Stothers 1977:58).

Three other aspects of early Late Woodland material culture are not taken into account in the revitalized migration scenario. First, differences between Princess Point and Point Peninsula in both ceramic manufacture and style are, in fact, rather striking. Second, as we have argued elsewhere, there is substantial evidence for continuity between Princess Point and Glen Meyer material culture in general, not just in ceramics (Smith and Crawford 1995). Finally, the diagnostic cord-wrapped stick decoration of Princess Point pottery is ignored entirely. Cord-wrapped stick decoration is found in the pottery assemblages of cultures throughout the Northeast during the time

period from ca. A.D. 650 to 1000, including Clemson's Island (Smith 1995).

Conclusions

The exploration of evidence for anomalies in the early Late Woodland period may ultimately prove useful in understanding Northern Iroquoian development. The strength of the case for these apparent anomalies is weakened by the lack of up-to-date interdisciplinary research on this important period. We undertook our recent reinvestigation of the Princess Point Complex to address a number of outstanding concerns that directly impact on understanding Northern Iroquoian development. Our current evidence indicates Princess Point was not an Algonkian-speaking group of patrilineal foragers displaced by predatory matrilineal horticulturalists entering Ontario from the south. Princess Point is not, in fact, a Middle Woodland culture at all, but should be considered to be early Late Woodland, or at least "Transitional Woodland" (see Spence and Pihl 1984). We can find little or no evidence for discontinuity between Princess Point and Glen Meyer but, rather, a great deal of support for direct continuity (Smith and Crawford 1995). The controversy over the cultural affiliation of the Porteous site (Snow 1995a:67) is a case in point. The problem arises because the material culture at Porteous is clearly derived from Princess Point, not because there is evidence of discontinuity. Porteous could be considered either late Princess Point or early Glen Meyer; the confusion is a reflection of the limitations (if not abuse) of current cultural classification.

Establishing an accurate chronology within the period from A.D. 500 to 1000 in the Northeast is critical to resolving the issues raised by Snow and the present writers. For the time being, without many more AMS dates on cultigens in the area we will still be in the dark. Our dates from the Cayuga cluster of Princess Point sites are beginning to clarify the Ontario situation. We urge a concerted effort to resolve these chronological issues.

Contrary to being a *cultura madre* of all other Northern Iroquoian societies, we view Clemson's Island as simply one group participating in more general changes and developments that affected communities throughout the Northeast between

A.D. 500 and 1000; another of these groups is Princess Point. Although our understanding is generally limited for all regions of the Northeast for this important time period, and downright abysmal in some cases, we can identify a number of cultures that appear to be transitional between Middle and Late Woodland.

Although we do not reject migration as a possible factor during the transitional period between Middle and Late Woodland, we do not find Snow's model as it is presently articulated to be valid for explaining Princess Point and the origins of food production in southern Ontario. With further research, we may learn that substantial migrations occurred several centuries earlier. Perhaps the most important result of Snow's and our examinations is a realization of how poorly we understand this crucial and highly complex period of Northeast prehistory. We hope this discourse stimulates the investigations that this issue so much deserves.

Acknowledgments. This research is being supported by a Social Sciences and Humanities Research Council of Canada research grant (410-93-1095), the Ontario Heritage Foundation, and Earthwatch. We wish to thank the three reviewers and Dean Snow for their useful comments on a draft of this paper. Hugo de Burgos prepared the Spanish abstract.

References Cited

- Blake, L., and H. C. Cutler
1983 Plant Remains from the Gnagey Site. *Pennsylvania Archaeologist* 53:83-88.
- Bowyer, V. E.
1995 Palaeoethnobotanical Analysis of Two Princess Point Sites: Grand Banks (AfGx-3) and Lone Pine (AfGx-113) in the Grand River Area, Ontario. Unpublished Master's thesis, Department of Anthropology, University of Toronto, Toronto.
- Chapdelaine, C. (editor)
1992 L'origine des Iroquoiennes: un débat. *Recherches Amérindiennes au Québec* 22:3-36.
- Crawford, G. W.
1992 The Transitions to Agriculture in Japan. In *Transitions to Agriculture in Prehistory*, edited by A. B. Gebauer, and T. D. Price, pp. 117-132. Monographs in World Archaeology No. 4. Prehistory Press, Madison, Wisconsin.
- Crawford, G. W., and D. G. Smith
1997 AMS-Dated Early Late Woodland Corn (*Zea mays*) from the Grand Banks Site, Ontario, Canada. *American Antiquity*: in press.
- Crawford, G. W., and H. Takamiya
1990 The Origins and Implications of Late Prehistoric Plant Husbandry in Northern Japan. *Antiquity* 64:899-911.

- Desloges, J. R., and I. J. Walker
1995 Fluvial Geomorphic Processes and Archaeological Site Integrity at the Grand Banks Site, Grand River, Ontario. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota.
- Divale, W.
1984 *Matrilocal Residence in Pre-Literate Society*. UMI Research Press, Ann Arbor.
- Emerson, J. N.
1961 Problems of Huron Origins. *Anthropologica* 3:181-201.
- Fox, W. A.
1990 The Middle Woodland to Late Woodland Transition. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by C. J. Ellis and N. Ferris, pp. 171-188. Occasional Publication of the London Chapter No. 5, Ontario Archaeological Society, London.
- 1995 Concluding Remarks. In *Origins of the People of the Longhouse: Proceedings of the 21st Annual Symposium of the Ontario Archaeological Society*, edited by A. Bekerman and G. A. Warrick, pp. 144-151. Ontario Archaeological Society, Toronto.
- Gardner, P. S.
1992 *Identification of Some Plant Remains from the Binghamton Mall Site, New York*. Public Archaeology Facility Report. Department of Anthropology, University of New York, Binghamton.
- Jackson, L.
1983 Early Maize in South-Central Ontario. *Arch Notes* 83:9-12.
- Katzenberg, A., H. P. Schwarz, M. Knyf, and F. J. Melbye
1995 Stable Isotope Evidence for Maize Horticulture and Paleodiet in Southern Ontario, Canada. *American Antiquity* 60:335-350.
- MacNeish, R. S.
1952 *Iroquois Pottery Types*. Bulletin 124. National Museum of Canada, Ottawa, Ontario.
- Noble, W. C., and I. T. Kenyon
1972 Porteous (AgHb-1): A Probable Early Glen Meyer Village in Brant County, Ontario. *Ontario Archaeology* 19:11-38.
- Smith, D. G.
1995 Cord-Marked Pottery and the Early Late Woodland in the Northeast. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota.
- Smith, D. G., and G. W. Crawford
1995 The Princess Point Complex and the Origins of Iroquoian Societies in Ontario. In *Origins of the People of the Longhouse: Proceedings of the 21st Annual Symposium of the Ontario Archaeological Society*, edited by A. Bekerman and G. A. Warrick, pp. 55-70. Ontario Archaeological Society, Toronto.
- Snow, D. R.
1992 L'augmentation de la population chez les groupes Iroquoiens et ses conséquences sur l'étude de leurs origines. *Recherches Amérindiennes au Québec* 22:5-12.
- 1994 Paleocology and the Prehistoric Incurion of Northern Iroquoians into the Lower Great Lakes Region. In *Great Lakes Archaeology and Paleocology: Exploring Interdisciplinary Initiatives for the Nineties*, edited by R. I. MacDonald, pp. 283-293. Quaternary Sciences Institute, University of Waterloo, Waterloo, Ontario.
- 1995a Migration in Prehistory: The Northern Iroquoian Case. *American Antiquity* 60:59-79.
- 1995b The Creation of Continuity: The Hunter's Home Phase in Iroquoian Archaeology. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota.
- 1995c Population Movements During the Woodland Period: The Intrusion of Iroquoian Peoples. In *Origins of the People of the Longhouse: Proceedings of the 21st Annual Symposium of the Ontario Archaeological Society*, edited by A. Bekerman and G. A. Warrick, pp. 5-8. Ontario Archaeological Society, Toronto.
- Spence, M. W., and R. H. Pihl
1984 The Early and Middle Woodland Occupations of Southern Ontario: Past, Present and Future Research. *Arch Notes* (Newsletter of the Ontario Archaeological Society) 84(2):32-48.
- Spence, M. W., R. H. Pihl, and C. R. Murphy
1990 Cultural Complexes of the Early and Middle Woodland Periods. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by C. J. Ellis and N. Ferris, pp. 125-169. Occasional Publication of the London Chapter No. 5. Ontario Archaeological Society, London.
- Stothers, D. M.
1977 *The Princess Point Complex*. Mercury Series No. 58. Archaeological Survey of Canada, National Museum of Man, Ottawa, Ontario.
- Stothers D. M., and R. A. Yarnell
1977 An Agricultural Revolution in the Lower Great Lakes. In *Geobotany*: 209-232.
- Stuiver, M., and G. W. Pearson
1993 Extended ¹⁴C Data Base and Revised Calib 3.0 ¹⁴C Calibration Program. *Radiocarbon* 35:215-230.
- Williamson, R. F.
1990 The Early Iroquoian Period of Southern Ontario. In *The Archaeology of Southern Ontario to A.D. 1650*, edited by C. J. Ellis and N. Ferris, pp. 291-320. Occasional Publication of the London Chapter No. 5. Ontario Archaeological Society, London.
- Wright, J. V.
1966 The Ontario Iroquois Tradition. *National Museum of Canada, Bulletin* 210:1-195.
- Zvelebil, M.
1986 Mesolithic Societies and the Transition to Farming: Problems of Time, Scale and Organisation. In *Hunters in Transition*, edited by M. Zvelebil, pp. 167-188. Cambridge University Press, Cambridge.

Received October 25, 1995; accepted March 26, 1996.